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The first paper of this edition of SAE Journal of Business Economics and Management deals with two fundamental concepts of modern management, strategy and organizational culture. In his paper, N. Janićijević explores interdependencies and influences between the two of them. He finds that organizational culture can affect to a great extent both the process of formulation as well as implementation of the strategy. On the other side, the author explains the role of strategy as a trigger of change in organizational culture.

The second paper focuses on the financial sector and new and redesigned regulation in the form of Basel III document. J. Birovljev, M. Davidović, and B. Štavljanin present the effect of the new capital adequacy requirements on economic growth. They show that the new capital requirements besides already visible decline will cause an additional GDP drop, while emphasizing that such influence will be greater in developing countries, especially taking into account the spillover effect.

J. Perović in her paper analyzes the performance of franchising, distribution and financial leasing in the light of recent developments in Serbian contract law. The paper examines the main rules on determination, content and form of these contracts, the principal obligations of the parties and the grounds for contract termination as well as the crucial issues regarding applicable law and dispute resolution. Also, the author suggests the optimal solutions to secure the contract performance to contracting parties.

The paper written by B. Stojanović, J. Stanković, and M. Ranđelović deals with the competitiveness of city of Niš and its attractiveness for foreign investors. The authors analyze the performances of the city in the past period in terms of number and amount of investments and the impact on economic activity an employment. Also, key sources of competitive advantages as well as opportunities to improve competitiveness are identified.

In their paper A. Nikolić, R. Tepavac, and M. Jezdimirović analyze current trends in European Union with respect to budget deficits and public debt. The authors discus that latest empirical research in this area and point to the fact that debt crisis could contribute to creation of a closer union of European states. They try to anticipate the future developments given the lately expressed willingness of the member states to transfer a part of their fiscal sovereignty under a rigorous program of fiscal consolidation.

M. Anđelković-Pešić, V. Janković-Milić, and A. Anđelković present business process management maturity model which enables description of "as-is" enterprise's state, in terms of presence and acceptance of process approach. The authors also show the state of Serbian economy in the form of two-dimensional model that takes into account factors like strategy, process management, technology, employee management, and business culture. Based on given research, they conclude that the business culture proves to be the greatest constraint for the implementation of process-based management in the enterprises in Serbia.

The paper written by Lj. Maksimović and M. Kostić analyze limitations in the application of concentration indicators on the example of insurance industry in Serbia, Croatia, Slovenia, Romania and Austria. The analysis showed that the application of individual concentration indicator is not sufficient for valid conclusions and the authors suggest that it should be supplemented with qualitative data related to market characteristics, industry tradition, entry barriers, manager behavior etc. in order to ensure efficient implementation of anti-monopolistic regulation.

The last paper written by M. Kržić presents the new IT paradigm – cloud computing. He analyzes various benefits in the form of low investment costs and significant redaction of operating expenses. Furthermore, he presents underlying concept of the first cloud offering on Serbian and regional market provided through Coming – Computer Engineering and Telekom Serbia partnership.

THE 2012 KOPAONIK BUSINESS FORUM CONCLUSIONS

The nineteenth Kopaonik Business Forum brought together more than 90 speakers and over 500 participants, creating what has become a traditional exchange of ideas among economic experts, businesspeople and government officials regarding the economic development of Serbia, at times when the crisis has not yet been overcome (expected growth of 0.5% in 2012), but also when the official candidacy for the European Union membership is opening up new opportunities. Discussed topics continued the debate of the last year's Forum when it was concluded that Serbia needed "a new economic growth model based on production and exports, instead of a model based on consumption and imports."

Government officials, led by the Prime Minister Mirko Cvetkovic, put the emphasis on austerity measures, while experts and economists pointed out that there should be no more delay in implementing structural reforms, which include a serious reform of the pension system, health care system, education and restructuring of public companies. According to the World Bank analysis, one unproductive workplace in the public sector costs 6-7,000 Euros annually, and this money should be diverted to productive work places by stimulating foreign investments, and improving the infrastructure and the education system. One way to spend the state's budget more efficiently and transparently is to switch to the program and project-based budgeting after six years' delay of this reform. If the structural reforms are not undertaken, the alternative is to additionally burden the economy and citizens by increasing taxes and other levies at the expense of competitiveness.

In addition to structural reforms, industrial policies are proposed for sectors with comparative advantages, especially in the agribusiness, energy, health industry, the metal industry and other sectors, which was also a subject of discussion at this Forum. The World Bank analyzed each of these sectors and concluded that they required different levels of support. Economists suggested additional analysis and warned that government interventions should be cautious, ensuring a sufficient level of competition. At the same time, macroeconomic stability should be maintained, including the stability of the exchange rate. The Governor of the National Bank of Serbia, Prof. Dejan Soskic, however, expressed his determination to continue the policy of the floating exchange rate.

The businesspeople stressed the need for predictability of the business climate, which requires more transparent government actions. For example, the representatives of the pharmaceutical industry requested that decisions on prices and list of medicines to be financed by the Health Insurance Fund be adopted in regular time cycles, enabling these companies to plan their business operations. Dissatisfaction was also expressed by the business representatives, especially by foreign investors, regarding the slow implementation of reforms that aim toward a better business environment, despite numerous elaborated recommendations by business associations and adopted action plans of the executive authorities. Concern was also expressed regarding the expected worsening of solvency problems of the economy and limited funding opportunities for doing business in Serbia, as well as regarding the slow development of the infrastructure, particularly railways. The Forum also presented fifteen measures to promote exports proposed by the Serbian Association of Exporters and new initiatives for development of science and innovation, but it also highlighted the problem of quality of the existing workforce and the gap between the educational sector and the needs of the economy. The Serbian Association of Economists and the Serbian Association of Corporate Directors shall continue providing constructive suggestions to the Government with the aim of improving the business climate in Serbia.



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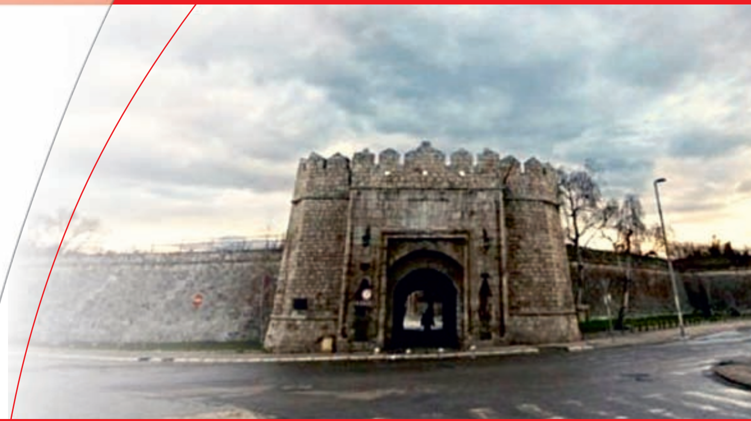

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KONKURENTNOST PRIVREDE SRBIJE I
ZAŠTITA KONKURENCIJE

25. 05. 2012
SVEČANA SALA UNIVERZITETA U NIŠU

PROGRAM

25. 05. 2012: PLENARNA RASPRAVA

SVEČANA SALA UNIVERZITETA U NIŠU

(09:30–09:40) Reč organizatora

(09:40–10:30) Uvodni referati
Aleksandar Vlahović, predsednik Saveza ekonomista Srbije
Dragan Đuričin, Ekonomski fakultet,Beograd
Boban Stojanović, predsednik DEN

KONKURENTNOST PRIVREDE SRBIJE

(10:30–11:00) Referati po pozivu:
Zoran Aranđelović
„Otvoreni problemi konkurentnosti srpske privrede i perspektive njihovog rešavanja“
Ljiljana Stanković
„ Konkurentnost zasnovana na inovacijama“
Ana Trbović
„Novi izvori konkurentnosti elektronske industrije u Srbiji“

(11:00–12:15) **PANEL 1: KONKURENTNOST DOMAĆIH I STRANIH PREDUZEĆA I LOKALNI EKONOMSKI RAZVOJ**

Milan Ranđelović, kancelarija za lokalni ekonomski razvoj Grada Niša

- Tigar Pirot
- Benetton
- Leoni
- Yura
- Jugoimpex
- Tagor Electronics
- Harder digital SOVA
- Yumis
- Resor
- Lovopromet

(12:15-12:30) Kafe pauza

(12:30-13:15) **PANEL 2: KONKURENTNOST NA FINASIJSKIM TRŽIŠTIMA**
Petar Stefanović, KBC banka
Panelisti:
Ivana Ranđelović-Đorđević, AIK banka
Srđan Marinković, Ekonomski fakultet u Nišu
Ivan Radojković, Dunav-dobrovoljni penzijski fond

ZAŠTITA KONKURENCIJE U SRBIJI

(13:15-14:00) Referati po pozivu:
Ljiljana Maksimović, Milan Kostić
„Ograničenja u primeni pokazatelja koncentracije - primer tržišta osiguranja Srbije, Hrvatske, Slovenije, Rumunije i Austrije“
Srđan Redžepagić
„Konkurentnost srpske ekonomije u procesu integracije u EU“
Vladimir Radivojević, Tanja Stanišić
„Politika zaštite konkrencije i sistem kontrole državne pomoći u Srbiji-dometi i ograničenja“

(14:00-14:30) Inicijative:
Grazyna Rokicka, Key Expert, EU funded Project Strenghtening Consumer Protection in Serbia

Udruženja privrednika i klastera jugoistočne Srbije

Klaster reciklaže, „Jug“

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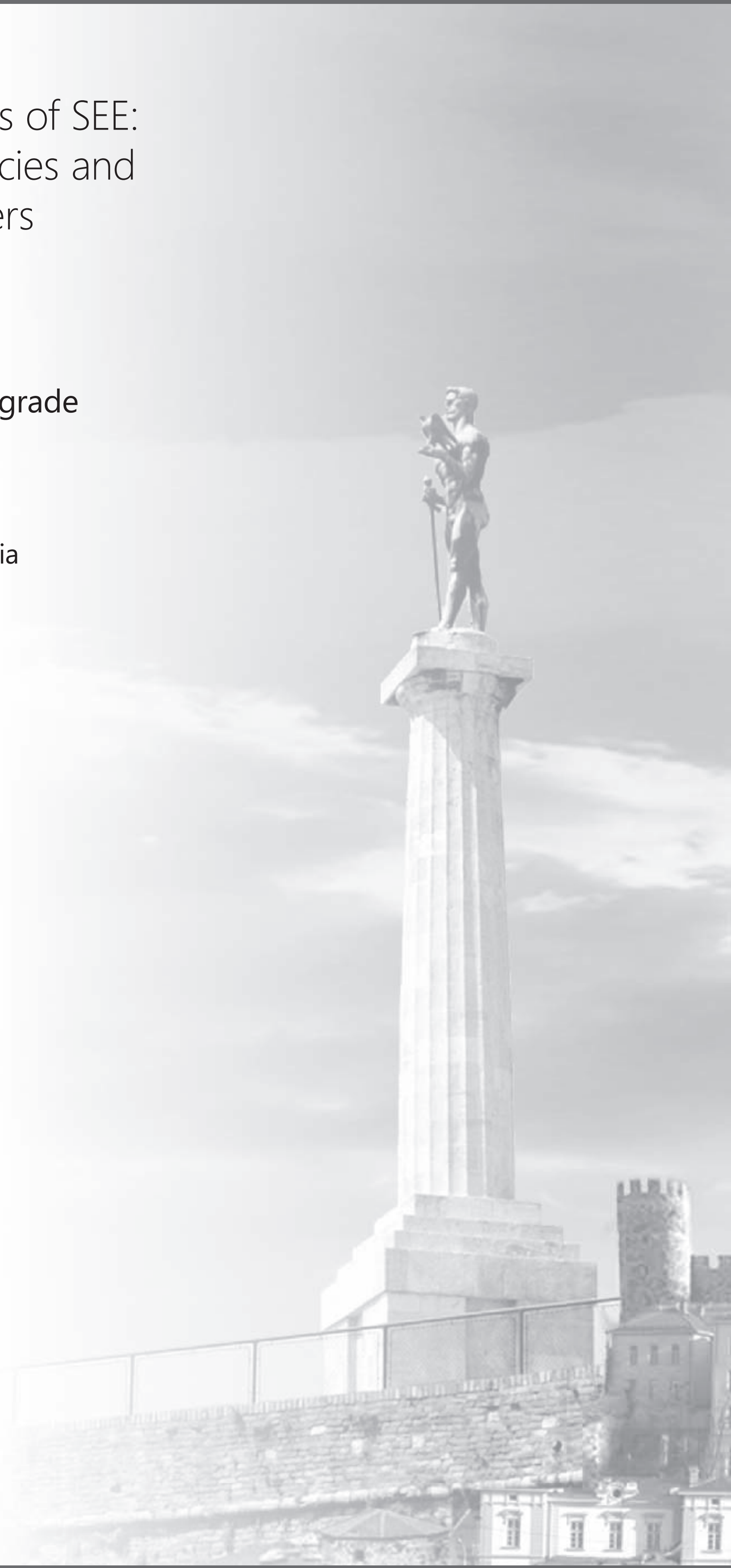
THE 2012 SEE MANAGEMENT FORUM



How to Improve Competitiveness of SEE: Context, Strategy, Economic Policies and the Role of Business Leaders

September 19-20, 2012

Serbian Chamber of Commerce Belgrade

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CURRENT CONTEXT & FORUM PURPOSE

The South East Europe (SEE) economy is clearly struggling to recover from double dip recession of unusual depth and duration. Reductions in tax receipts, the stimulus spending necessitated by the financial crisis and rapid growth in the health care outlays due to population aging are to leave governments with soaring deficits and debts. In the same time SEE national economies face less visible but more fundamental challenge: a series of underlying structural changes that could permanently impair their ability to raise the competitiveness. Today the danger of doing nothing is most serious problem for policy makers. Also, if government and business leaders react only to the downturn and fail to confront deeper challenges, they will leave the economy with weak long-term prospects.

Business leaders from the region can and must play a far more proactive role in transformation of competition and investing in local industries than being passive victims of controversial public policy. We could have double digit economic growth for the next two decades and still have big deficits and indebtedness. Deficits and debt consume the resources we must invest in keeping the SEE competitive. That would not address the fact that demographics have changed and health care costs are increasing at a much faster rate than the GDP. The rate of growth of health care costs in these countries should be, at most, one percentage point more than the GDP growth rate due to population aging. We could not solve the problem just by raising taxes. Also, mentioned contradiction cannot be solved entirely with cost cuts. The solution will require economic growth. It will require industry policies, some revenue which could come from new investments, monetary model justification, simplifying the tax code, broadening the tax base, and eliminating the deficit back door spending.

In times of crisis, business as an institution faces rising skepticism in society. Not to decide is to decide. All of us in business must put aside our individual wish lists and think about what is really important for the country. If we are unwilling to do that, then future generation, are going to be in a word of hurt. Polarized and sometimes paralyzed political system is not alibi for business leaders. In some national economies big state investments in infrastructure development lead to “crony capitalism” which triumphs at the expense of the entrepreneurship and true innovation. Current account and budget deficits are a new bubble, one with terrible ripple effects. Some current SEE strength such as workforce skill levels were seen as declining. The SEE cannot enjoy any more a “late mover” advantage relying on cheap labor, natural resources and imported ideas and innovations. The raising costs of labor, energy, and row materials are already undercutting the competitiveness. In the future the main competitive tenet will not be “made-in SEE” but “created-in SEE”. To do that you need strategists, first-class researchers, inspired entrepreneurs, imaginative financiers and statesmen.

From macro perspective, a competitive nation requires sound monetary and fiscal policies, strong human developments, and effective political institutions. Macro foundations create potential for long term productivity, but actual productivity depends on microeconomic conditions that affects business itself. A competitive nations exhibit a sound business environment including imaginative industry leaders, strong clusters of firms and supporting institutions such as technological platforms. All previous requires stronger links among innovators, businesses, and universities. Discrete reforms would undoubtedly help, but real progress will come only from a systemic, well choreographed approach to creating positive sustainable change.

AGENDA

Wednesday, September 19

08.30-09.00	**Registration**	
09.00-09.30	**Welcome address**	
	Milos Bugarin, President, Serbian Chamber of Commerce **Aleksandar Vlahovic,** President, Serbian Association of Economists	
09.30-10.00	**Special guest**	
	Indermit Gill, Chief Economist for Europe and Central Asia, World Bank	
10.00-11.00	**Plenary session 1: Macroeconomic context and new competitiveness strategy**	
	Branko Grcic, Deputy Prime Minister and Minister of Regional Development and EU Funds, Government of the Republic of Croatia **Janez Sustersic,** Minister of Finance, Slovenia **Dejan Soskic,** Governor, National Bank of Serbia	
11.00-12.15	**Plenary session 2: New competitiveness strategy basics**	
	Joze Mencinger, Professor, School of Law, University of Ljubljana **Ljubo Jurcic,** President, Croatian Association of Economists **Dragan Djuricin,** Professor, School of Economics, University of Belgrade **Erhard Busek**, President, IDM Austria	
12.15-12.30	**Coffee break**	
12.30-14.00	**Plenary session 3: Beating crises: Policy perspective**	
	Franjo Stiblar, Chair of Legal and Economic Science, Faculty of Law, University of Ljubljana **Loup Brefort,** World Bank Office Director in Serbia **Miroljub Labus,** Professor, School of Law, University of Belgrade **Kosta Josifidis**, Member, Council of the Governor, NBS **Tihomir Domazet**, President, Croatian Institute of Finance and Accounting **Vladimir Vuckovic,** Member of the Fiscal Council, Serbia	
14.00-15.00	**Plenary session 4: The use of translational science and technological platforms**	
	Petar Petrovic, Professor, Faculty of Mechanical Engineering, Belgrade University **Franjo Bobinac**, Chairperson, Gorenje **Dragoljub Vukadinovic**, Chairperson, Metalac Gornji Milanovac **Branislav Grujic,** Chairperson, PHP Farman **Stjepan Car**, Chairperson, Koncar – Electrical Engineering Institute, Croatia **Ernst Bode,** CEO, Messer Tehnogas	
15.00-15.30	**Lunch**	
15.30-17.00	**Panel 1: Energy and environmental policy proposals**	**Panel 2: Information and communication technology as a development challenge**
Parallel tracks	**Panel host:** **Aleksandar Markovic,** Chairperson, Elektroprivreda Srbije **Panelists:** **Kirill Kravchenko,** CEO, Naftna industrija Srbije **Tomaz Berlocnik,** President of the Board, Petrol **Branislava Milekić**, CEO, Elektroprivreda Republike Srpske **Martin Novsak,** Director, GEN energija **Vuk Hamovic,** Chairperson, EFT, Serbia **Peter Baloh,** Member of the Board, BISOL **Goran Novakovic,** Partner, Energowind **Ante Curkovic**, EKO Energetski konzalting	**Panel host:** **Branko Radujko,** CEO, Telekom Srbija **Panelists:** **Kjell-Morten Johnsen,** CEO, Telenor, Serbia **Ivica Mudrinic**, Chairperson, T-HT **Biljana Weber**, General Manager, Microsoft **Wilfried Grommen**, Account Chief Technology Officer for Public Sector, Hewlett Packard Belgium **Peter Hajdu**, General Director CEE, Cisco Systems Hungary **Milos Djurkovic**, Managing Director, Hewlett-Packard Serbia

17.00-18.30	**Panel 3: The role of fast growing companies in economic recovery**	**Panel 4: Influence of political, physical and conceptual infrastructure on human capital**
Parallel tracks	**Panel host:** **Iztok Seljak,** President of Management Board, Hidria **Panelists:** **Miroslav Okuka**, CEO, Tarkett Eastern Europe **Miroslav Bogićević**, CEO, Farmakom **Tomislav Debeljak**, Chairperson, DIV, Croatia **Robert Grah,** Director, SG Automotive **Bogomir Strasek,** Director, KLS Ljubno **Vladimira Bahc,** President of the Board, TPV **Janez Skrabec**, President, Riko	**Panel host:** **Toplica Spasojevic,** President, Serbian Association of Corporate Directors **Panelists:** **Vidosava Dzagic**, Vice President, Serbian Chamber of Commerce **Ana Trbovic,** Professor, FEFA **Vidoje Vujic**, Acting President, Primorsko-Goranska County **Milos Ebner**, Innovation Lead Director, Philips Consumer Lifestyle **Nadya Zhexembayeva**, Coca-Cola Chair for Sustainable Development, IEDC-Bled School of Management

Thursday, September 20

09.00-09.15	**1st Day panel reports**	
09.15-09.45	**Keynote speech: What to do from glocal perspective?**	
	Danica Purg, President, IEDC-Bled School of Management **Aleksandar Vlahovic**, President, Serbian Association of Economists	
09.45-11.00	**Plenary session 5: Innovative financiers in crisis**	
	Draginja Djuric, President of the Executive Board, Banca Intesa, Serbia **Bozo Jasovic,** President of the Management Board, Nova Ljubljanska Banka, Slovenia **Vladimir Cupic,** President of Executive Board, Hypo Alpe Adria Bank, Serbia **Philippos Karamanolis,** President of the Executive Board, EFG Bank, Serbia **Radovan Jelasic**, CEO, Erste Bank, Hungary **Slavko Caric,** President of Executive Board, Erste Bank, Serbia	
11.00-11.40	**Plenary session 6: How to improve competitiveness: Policy perspective**	
	Mladen Vedris, Professor, School of Law, University of Zagreb **Dusan Vujovic,** Professor, FEFA	
11.40-13.10	**Panel 5: Regional business alliances in agriculture, food processing and confectionary**	**Panel 6: The new role of insurance industry**
Parallel tracks	**Panel host:** **Miodrag Kostic,** Chairperson, MK Group **Panelists:** **Slobodan Petrovic,** CEO, Danube Foods **Cvetana Rijavec**, President of the Board, Ljubljanske Mlekarne **Ante Todoric,** Executive Vice Chairperson, Agrokor **Emil Tedeschi,** Chairperson, Atlantik grupa **Toni Balazic,** President of the Board, Zito **Milan Grgurevic,** CEO, Delta Agrar Group **Zoran Mitrovic,** Chairperson, Victoria Group **Bojan Radun,** Executive Director, Nectar **Zvonimir Mrsic**, Chairperson, Podravka	**Panel host:** **Rudolf Ertl,** Member of the Extended Executive Board, Vienna Insurance Group **Panelists:** **Antonio Marchitelli,** CEO, AXA Insurance **Zoran Visnjic,** Member of the Managing Board, UNIQA International **Matjaz Rakovec,** President of the Management Board, Zavarovalnica Triglav **Marijan Curkovic**, Croatia Insurance
13.10-13.30	**2 nd Day panel reports**	
13.30-14.00	**Closing keynote**	
	Toplica Spasojevic, President, Serbian Association of Corporate Directors	

ORIGINAL SCIENTIFIC PAPER
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Nebojša Janićijević
University of Belgrade
Faculty of Economics
Department for Business Economics
and Management

ORGANIZATINAL CULTURE AND STRATEGY

Organizaciona kultura i strategija

Abstract

The paper analyzes the relationship of strategy and organizational culture as two fundamental concepts in management. The results of recent empiric research are first presented, which prove that there is a relationship of interdependence and influence between strategy and organizational culture. Then, the nature and mechanism of the influence of culture on strategy formulation and implementation are analyzed, as well as the influence of strategy on organizational culture. It is shown that organizational culture influences the strategy formulation by determining the gathering of information, perception and interpretation. Also, organizational culture can, through the process of legitimization, facilitate or disable strategy implementation. On the other hand, implementation of the selected strategy leads to the strengthening or changing of organizational culture through the process of its institutionalization.

Key words: *strategy, strategic management, organizational culture*

Sažetak

U radu se analizira odnos strategije i organizacione kulture kao dva fundamentalna koncepta u upravljanju preduzećem. Prvo se prezentiraju rezultati novijih empirijskih istraživanja koji dokazuju da između organizacione kulture i strategije postoje odnosi međusobne zavisnosti i uticaja. Zatim se analizira priroda i mehanizam uticaja kulture na formulisanje i implementaciju strategiju kao i uticaj implementirane strategije na organizacionu kulturu. Pokazano je da organizaciona kultura utiče na formulisanje strategije tako što determiniše prikupljanje informacija, percepciju i interpretaciju okruženja. Takođe, kultura može, kroz proces legitimizacije, da olakša ili da onemogući implementaciju strategije. Sa druge strane, primena izabrane strategije utiče na jačanje ili promenu organizacione kulture kroz proces njene institucionalizacije.

Ključne reči: *strategija, strategijski menadžment, organizaciona kultura*

Introduction

The relationship between organizational culture and strategy has, very soon after the establishing of organizational culture concept, become interesting to the academic researchers, but also to the practicing managers. It was immediately clear that there is a specific causal relationship between organizational culture and company's strategy, although it was not clear which of those two was "older" in this relationship, i.e. which one is the cause and which one is the effect. Recent empiric research proved that there is a relationship of interdependence and influence between the company strategy and its organizational culture [12]. Organizational culture significantly influences the process of strategy formulation and selection, as well as its implementation. On the other hand, the selection and implementation of strategy can strengthen or change the existing organizational culture. But, what has less been investigated is the nature and mechanism of mutual influence between organizational culture and strategy. In what way does strategy implementation strengthen or, more importantly, change the existing culture? In what way does culture influence the selection and implementation of strategy? The aim of this paper is to answer these questions. Hence, after presenting the strategy and organizational culture, the results of recent empiric researches regarding their relationship will first be presented. Then the nature of their relationship will be explained through the analysis of the mechanism of organizational culture's influence on strategy and vice versa, the influence of strategy on organizational culture. Finally, both implications and recommendations for management will be presented.

Understanding of strategy and organizational culture

Strategy is the most important planned decision whose influence on business operations of an enterprise is crucial. It is in the heart of the strategic management concept, i.e. the concept of company management by means of strategy. Strategy represents a basic way of achieving the goals of an enterprise [7]. It shows how enterprise harmonizes its abilities and resources with the requirements of ever-changing environment in which it operates. Through its strategy, company strives to use all the options and avoid all the dangers in its environment, but also to use all the advantages and minimize the weaknesses with respect to competitions. Strategy is today observed dynamically, as a continual process. Hence, it is regarded that strategy is "formed, rather than formulated" [7]. The following are usually quoted as basic components of strategy: 1. business area in which the company will perform its business activities; 2. the way in which competitive advantage in the chosen business areas is achieved; 3. allocation of resources on the chosen courses of action. In other words, through strategy, as a planned decision, a company first chooses the business area in which it will perform its business activities, and it usually does so within the frame of the product/market matrix. Then, a specific way in which competitive advantage over the competitors will be achieved in the chosen business areas is determined by the strategy. While determining a competitive strategy, an enterprise must make two choices. The first choice refers to the width of the competitive scope: to cover all market segments within the chosen business area or to focus on just one market segment. The second choice refers to the way in which an enterprise achieves the advantage over its competitors: by a leading position with respect to costs or by differentiation with respect to the competition [22]. Finally, resources (material, financial, human) are apportioned through implementation of strategy, so they are allocated to individual activities with the purpose of acquiring competitive advantage in the chosen business areas.

Strategic management process is actually a process of formulation and implementation of strategy. It consists of three basic phases: strategic analysis, strategy selection and strategy implementation [7]. Strategic analysis includes: analysis of mission and goals; analysis of external factors (environment), analysis of internal factors (enterprise's abilities and resources). Selection of strategy includes: generating of strategic options, evaluation and choosing the best strategic option. Strategic options represent alternative responses of a company to the situation in the environment, which are harmonized with its abilities and resources. In the last phase of strategic management, the implementation of strategy is conduced. In order for the selected strategy to be realized, it is necessary to operationalize it through a plan of action and allocate the resources to the chosen course of actions. Then, it is necessary to adjust the organization to the requirements of the new strategy. Finally, since application of a new strategy usually implicates making certain changes in an organization, the strategic change management is a part and prerequisite for application of the strategy.

Organizational culture may be defined as a system of assumptions, values, norms and attitudes manifested through symbols, which the members of an organization have developed and adopted through mutual experience and which help them to determine the meaning of the world surrounding them and how to behave in it [11]. From the definition, it can be concluded that organizational culture consists of collective cognitive structures, such as assumptions, values, norms and attitudes, but also of symbols which materialize and manifest its cognitive content. Also, it consequently follows that organizational culture is a result of social interaction of the members of organization which takes place during solving of the problem of external adaptation of an enterprise to the environment and internal integration of the collective [17]. The successful solutions to these problems are generalized, systematized, pushed into the subconsciousness of the members of organization, and thus converted into collective cognitive structures shared by all or most of the employees and managers. Then, these collective cognitive structures become a guide to the employees while interpreting the reality and the world surrounding them, as well as a guide for their behavior [1] [13]. Culture helps the employees and managers determine the meaning of the concepts, things and events both within and outside of the organization. In conformity with the interpretation of the reality, they also behave in it: make decisions, take actions and enter interactions with others. From this fact, a strong influence which organizational culture has on the business operations of an enterprise also emerges. Through determining the meanings, which managers and employees attach to the events and occurrences both within and outside of the enterprise, organizational culture shapes each of their decisions, actions or interactions [19]. Therefore, everything that happens in an enterprise, starting with strategic, through operational decisions, to interpersonal relationships is, at least partly, determined by organizational culture. Researches show that strategy, wages system, organizational structure, system of control, knowledge management, leadership style and many other elements of management are under the influence of organizational culture [4]. For this reason, organizational culture is a significant factor of the enterprise's performances; it may be a "magic wand of success", but also a "silent killer" [21].

Collective cognitive structures which are at the heart of organizational culture include assumptions, values, behavior norms and attitudes [4]. Assumptions are descriptive in character, because they explain the nature of the world and relationships in it to the members of organization. Values are prescriptive in character, because they show to the members of organization how they should act and to what should be strived for. Norms are unwritten, informal rules of behavior, which are, as a type of social expectations, imposed on all the members of organization in everyday working activities. Attitudes are beliefs of the members of organization about certain occurrences or things that predispose their behavior and their relations to these occurrences and things. Besides the cognitive component, organizational culture also contains a symbolic component. Namely, the symbols that manifest collective assumptions, values, norms and attitudes are also part of the culture of an organization. Symbols include everything that can be seen, heard or felt in an organization and they can by their nature be: behavioral, semantic and material [9].

Results of the recent researches of the relationship between strategy and organizational culture

Recent empiric research of the relationship between strategy and culture can be, conditionally, divided into two groups. One group of research deals with relations of general strategies and cultural assumptions and values. The other group of research deals with relations of culture and individual functional strategies of an enterprise or strategies within specific business areas, such as human resources management, production or marketing. We will present only representative researches in both groups and their results.

The most comprehensive empiric research of the relationships of general strategy of an enterprise and organizational culture was, recently, conduced in Australia [3]. The authors start from the assumption that organizational culture and strategy are mutually conditioned, and even that they are the two sides of the same coin. For this reason, the authors do not assume existence of dependent and independent variable in the interrelation of organizational culture and strategy, i.e. that one is the cause and the other is the effect. What is of the authors' interest is to operationalize this mutually conditioned relationship by showing that a specific type of strategy and a specific type of organizational culture "get along", i.e. that there is a high correlation between them. This would then mean that, in order to implement a specific strategy, it is necessary to build a specific organizational culture, or that a specific organizational culture leads to selection and implementation of a specific strategy.

The authors operationalized and measured organizational culture by means of modified Organizational Culture Profile (OCP) instrument, i.e. by means of classification of cultural norms, which was conducted, by using the original OCP questionnaire, by O'Reilly and his associates [16]. In the modified version used by the authors, there are six cultural norms: result orientation, detail orientation, support for the people, innovativeness, team orientation and stability. Cultures actually differ by the relative strength of each of these norms. The authors also measured average, or typical, organizational culture profile of Australian firms, finding that organizational culture is above all characterized by result orientation, but this is beyond our interest for the time being. Strategy is operationalized and measured by the use of the well-known Miles and Snow classification [14] which recognizes four types of strategies. Prospectors are companies which highly value innovations, seek and use opportunities in the market, do not flinch from taking risks, intensively invest in research and development, as well as in organizational learning and knowledge management, and often innovate their products. Defenders are companies which highly value safety and stability, refrain from taking risks, and do not seek opportunities in the market. They do not innovate their products often, but they do achieve high quality and/or low price of their products. This is the reason that they invest little in development and innovations. Analyzers are somewhere between prospectors and defenders. Reactors are companies which actually do not have a consistent strategy, but react to events in the environment as they occur, and usually make extorted moves.

By setting up hypotheses about the relationship between strategy and culture, the authors have limited themselves to just four out of six cultural norms. Thus, they first set a hypothesis, which is then proven, that prospectors have a culture which highly values orientation to results and innovativeness, in a certainly greater extent than companies defenders. By the strength of these cultural norms, analyzers are somewhere between prospectors and defenders. This hypothesis is logical, since prospectors are proactive, oriented to innovations, changes, risk taking and learning. In order to be able to implement prospector strategy, companies must build a culture in which precisely innovativeness and result orientation are highly valued. Or, in other words, if they have a culture in which innovativeness and result orientation are highly valued, then implementation of prospector strategy is the right choice for such companies.

On the other hand, defenders highly value, certainly higher than prospectors and analyzers, the values of stability and detail orientation. This hypothesis is also proven empirically. Defenders must create stability, since their strategy is based on high efficiency and low costs. Also, orientation to details which includes norms, such as precision, obeying the rules and attention, is highly suitable to the requirements of high quality and low costs. On the other hand, detail orientation and stability deprive the company of flexibility and innovativeness. Hence, a company that wishes to implement a defender strategy must build a culture in which stability and orientation to details are highly valued. Or, in other words, if a company has a culture dominated by stability and detail orientation, then a defender strategy is the right choice for such a company.

The third hypothesis refers to companies which implement a reactor strategy. Since this is not actually a consistent strategy, a logical hypothesis is that these companies will have a lower score, or weaker all of the cultural norms. This hypothesis was also proven correct.

Another recent empiric research regarding the relationship between company strategy and organizational culture is based on Miles and Snow classification [10]. But, this research uses organizational culture classification known as the Competing Values Framework [5]. In this classification, the following types of organizational culture are recognized: clan culture, hierarchy culture, market culture and adhocracy culture. An important characteristic of this research is that it included different economy sectors with the intention to explore whether the relationship between strategy and culture is equally important in all the sectors. The research started from the assumption that strategy and culture are mutually conditioned, and that every enterprise which changes the strategy must adapt its culture to the selected strategy, otherwise it will face failure in strategy implementation. Culture impacts the behavior of employees and managers, and this is why it must be such to induce the behavior which will lead to the strategy realization. Since every strategy in Miles and Snow classification implicates different behavior of employees and managers, different criteria of success, different styles, etc., it means that different cultures will be needed for the successful implementation of different strategies. Hence, specific strategies will match specific cultures.

The mutual conditioning of organizational culture and strategy also applies in the case of specific, functional strategies in specific business areas of enterprise. Thus, one research focuses on the relationship between company strategy and human resources management (HRM) strategy [6]. This research started with the assumption that mutual compatibility of culture and strategy leads to better performances of the enterprise. The authors set the hypothesis that efficiency of HR strategy depends on its compatibility with organizational culture, but also with the business strategy. In this research, culture does not have a direct, but a modifying influence on human resources management (HRM) strategy. Namely, organizational culture does not directly influence the selection of HR strategy, but the effects of this strategy on company performance and employee turnover rate.

The authors used HR strategy classification which identifies two basic strategies, or systems, of human resources management (HRM): inducement and involvement. These two strategies, or systems, of HRM are based on two different philosophies, or assumptions, on human resources, hence it is no wonder that they are compatible with different types of organizational cultures. Human resources management (HRM) based on inducement includes focus on lowering the costs. This strategy therefore includes narrowly defined and specialized jobs and a very clear connection between individual performances and rewards. Payment based on performances is a mandatory part of HRM system. Performance appraisal is highly developed, systematic, formalized and detailed. Generally speaking, inducement strategy requires very strict control and monitoring of the employees. From the description of this strategy it can be seen that it is based on the assumption that employees are above all motivated by extrinsic factors, such as salary, and that human resources in an enterprise can be best used by inducement based on transactional relationship between an enterprise and its employees, and on clear and fair performance-based salary. Involvement strategy includes a human resources management (HRM) system which emphasizes innovations and quality. This strategy therefore implies a high use of teams, high autonomy of the employees, less clear division of labor, higher emphasis on learning and knowledge management, and higher diversification of work. The assumption here is that people are motivated above all by intrinsic factors, such as the work itself, and that human resources can best be used if they are included in organizing, and not if they are well paid. Involvement strategy is suitable for enterprises with high rate of highly skilled employees who perform non-repetitive tasks.

With respect to organizational culture, authors use Wallach classification [20], which recognizes three types of culture: bureaucratic, supportive and innovative, or competitive. Bureaucratic culture is based on the assumptions of rationality and formalization. Therefore, it includes the focus on clear regulations of work and relations in an enterprise, which is accomplished by means such as hierarchy, structure or formal procedures. Work is clearly and systematically organized. This culture is suitable for repetitive tasks and there are no prospects that it would lead to dedication of the employees. Supportive culture is the one which is based on the assumption that an enterprise is a family, and that the best results from people are achieved when harmonious relationships between them are established. This culture strives to create an ambient of support, harmony, warm and close relationships between people. Supportive culture implies a paternalistic leadership style, but it is likely that it will create a higher degree of employees' satisfaction and their dedication to the company. Finally, competitive culture is the one which focuses on the value of innovations, results, competition, changes and entrepreneurship. It creates a dynamic, but also a competitive ambient, in which success is highly valued in the sense of innovations and revenue.

In the research, the hypothesis is set and then empirically proven that the effects of human resources management strategy on company performance and employee turnover rate will depend on its compatibility with an adequate type of culture. Hence, the culture does not directly determine the selection of HR strategy, but modifies its effects on financial performance and employee turnover rate. When it comes to the specific relationship between organizational culture and HR strategy, three relations have been proven. First, implementation of inducement strategy in supportive culture leads to better performance and lower employee turnover rate. Second, implementation of involvement strategy in competitive culture leads to better performance and lower employee turnover rate. Third, bureaucratic culture has no effect on implementation of either inducement strategy or involvement strategy. Therefore, the conclusion is that inducement strategy is compatible with supportive culture, and the recommendation is that this strategy be used only in this type of organizational culture. Also, involvement strategy is compatible with competitive culture, and therefore it should be used only in the context of this culture.

Relationship between strategy and culture has also been proven with respect to market entry strategy [15]. It has been empirically proven that organizational culture influences company strategy regarding market entry, specifically with respect to the selection between innovation strategy and imitation strategy. Innovation strategy means that company always strives to be the first to place a new product or service to the market segment, while imitation strategy means that company imitates innovators and places similar products or services to the market after them, thus lowering the risk. Innovativeness requires certain characteristics and behavior of an enterprise, such as flexibility, openness for change, entrepreneurship, risk acceptance and error tolerance. Imitation as a strategy implies greater reliance on control, stability, efficiency and precision. It is reasonable to expect that organizational culture will influence the selection of company strategy between innovation and imitation. Organizational culture can significantly stimulate, but also limit those behaviors and attitudes that are compatible with innovativeness or imitation.

In the analysis of organizational culture influence on strategy of innovativeness or imitation, Competing Values Framework is used, which recognizes: clan culture, hierarchy culture, market culture and adhocracy culture [5]. The authors set the hypothesis that adhocracy as a model of organizational culture indeed leads towards innovative company behavior, while hierarchy culture leads to imitation as a market entry strategy. Adhocracy is a type of culture in which values of creativeness, innovations, entrepreneurship and risk taking are strongly present. The fundamental goal of a company with such culture is to be first on the market, i.e. to innovate, and the basic criterion of success is precisely the innovativeness and creation of innovative products and services. The leaders are innovators, and they themselves take risks. The people in such organization are connected by the desire for experimentation and trying out new things. Competition between people is valued instead of team work, but employees and managers are consequently allowed autonomy and discretion in decision-making, which leads to their innovative behavior. On the other hand, hierarchy culture is an excellent ambient for implementation of imitation strategy. In this culture, stability, predictability and safety of employment are highly valuated. Internal and control orientation in this type of culture form orientation toward rules, in which rationality, procedures, hierarchy, authority and division of labor are emphasized. The most important thing is to achieve efficient, harmonious and smooth functioning of organization. Following of the same rules and procedures keeps the people together. The emphasis is on long-term efficiency, low costs and harmonious functioning. Employees enjoy relative safety of employment and certainty regarding the organization. This is not an ambient in which new ideas and new products would emerge, but it is an ambient in which new products that someone else creates are efficiently imitated and all advantages of safe market entry without the presence of large risk are used. Hierarchy culture enables the efficient use of innovations, and even gaining, with greater efficiency, more benefits out of them than the very creators of these innovations have. The remaining two types of culture, clan culture and market culture, do not have values and norms compatible with any of the marker entry strategies.

Another research has pointed out the relationship between marketing, or product–market, strategy and organizational culture [22]. The basic hypothesis is that compatibility of marketing strategy, or product market strategy, and organizational culture type will have influence on better company performance, because this compatibility will enable more efficient implementation of the selected marketing strategy. Compatibility of marketing strategy and organizational culture will contribute to better adaptation of the company to the environment, which is a key factor of good organizational performance. The research uses organizational cultures' classification known as Competing Values Framework which recognizes: clan culture, hierarchy culture, market culture and adhocracy culture [5]. As a basis for marketing strategy classification, three of its dimensions are used: differentiation, cost-based efficiency or leading position in costs, and market scope.

The hypothesis is that marketing strategy influences culture in that the choice of market scope and value propositions signalizes what kind of behavior is expected from the employees and managers, because each choice of market scope and value proposition requires different behavior. Second, selection of marketing strategy influences institutional arrangements (structure and systems) which regulate behavior of the employees and managers, and thus also influences their awareness and organizational culture. On the other hand, the research has shown that organizational culture determines the way in which the employees and managers will perceive stimuli from the environment, and thereby also which decisions they will make regarding the selection of marketing strategy. Also, culture influences the choice of company goals, and thereby also the selection of strategy for realization of these goals.

Hence, the authors set the hypothesis that marketing strategy and organizational culture influence one another, and that they fluctuate in the same direction. Compatibility of marketing strategy and culture leads to greater customer satisfaction. The reason for this is that compatibility of marketing strategy and cultural values and norms enables the employees to identify themselves with the selected strategy, so their behavior develops in the direction of realization of the selected marketing strategy. Then the performances will also be better, and the first performance aspect that the authors analyze is customer satisfaction. Another performance aspect of influence of marketing strategy and culture compatibility is financial aspect, and the authors measure it through cash flow return on assets. Greater compatibility of marketing strategy and organizational culture leads to higher value delivered to consumers, which makes them more satisfied, and thereby the cash inflows are higher.

Relationships between organizational culture and production strategy are explored in the work of Fang and Wang [8]. Production strategy is defined as a long-term work program of production function which is compatible with the overall company strategy. Key elements of company production strategy are four competitive goals which should be achieved by production function: costs, quality, flexibility and reliability. Production strategies differ with respect to which of the stated goals has the priority in the company.

In the paper, the hypothesis is set and proven that organizational culture and organizational learning influence the production strategy. Organizational culture is measured through four dimensions which Hofstede also used for national cultures analysis: power distance, avoidance of uncertainty, individualism–collectivism, and male–female values. The research showed that out of four stated cultural dimensions, two have especially significant influence on production strategy: power distance and individualism.

The nature of relationship between strategy and organizational culture

A survey of empiric research shows that there is a strong mutual influence, or compatibility, between strategy and organizational culture, as well as that this compatibility positively influences financial, market and other company performances. Compatibility of strategy and culture is manifested in that certain types of company strategies are effective and applied only in certain types of organizational culture and vice versa, that certain type of organizational culture is developed only in the companies which apply a certain type of strategy. In other words, certain types of organizational culture imply formulation and implementation of certain strategies, while certain strategies lead to creation of specific types of organizational cultures. However, in order to fully understand the nature of the relationship between strategy and organizational culture, we must explain the mechanism of this mutual influence of strategy and culture. We must understand the way in which organizational culture determines the selection and implementation of strategy, and the way in which strategy implementation influences organizational culture. In the rest of this paper we will provide answers to these questions.

Influence of organizational culture on strategy

Organizational culture strongly influences both the strategy formulation process, as well as strategy implementation process. In strategy formulation phase, culture significantly influences the selection of strategy, while in the phase of its implementation culture may be both stimulating factor, as well as an insurmountable barrier. The influence of culture in both phases emerges from its influence on interpretative schemes or mental maps of top management, as well as middle- and lower-level managers and employees.

In strategy formulation process which, as we have seen, includes activities of strategic analysis, strategic options generation and selection of strategy, organizational culture represents a reference framework in which strategic decisions makers operate. Cultural assumptions, values and norms shared by all the people in an enterprise create a framework which encloses the perception, interpretation and conclusions of all the people in the enterprise, including those who conduct strategic analysis, generation and selection of strategic options. Generally accepted assumptions, values and norms significantly shape top management mental schemes. These schemes in turn significantly influence their perception and interpretation of both the external environment and the organization itself, making conclusions regarding possible organizational strategies, as well as selection of the best strategy. Whether the management of an enterprise will even notice the occurrence of new trends in consumers' taste, whether trade liberalization in some sector will be interpreted as a threat or an opportunity, whether the management faced with decrease of sale will lower the costs or increase marketing efforts, it all in a great extent depends on top management interpretative schemes, and they are strongly influenced by cultural assumptions and values. More specifically, organizational culture influences the strategy formulation in the following ways.

Organizational culture determines the way in which management gathers information and analyzes both the environment and company resources. Which information from the environment will a company gather and what image of the environment will it build in the process of external analysis, it depends on the way in which it gathers information. Through its assumptions, values and norms regarding the environment and the position of the company within it, organizational culture determines sources, types and ways of information gathering. Whether a company prefers qualitative or quantitative information, whether it even has formal procedures for environment scanning, and whether a company is at all systematic and continual in its environment scanning, it all depends on the values and assumptions shared by the employees and company management. The enterprises with a culture in which openness toward environment, extrovert perspective and flexibility prevail have a significantly more developed practice and mechanisms of environment scanning, in comparison to the enterprises with prevalent introvert perspective, inaccessibility and stability. However, not only the analysis of external environment is under the strong influence of organizational culture, but so is the internal environment as well. Procedures of company resources and abilities evaluation are also determined by company values and norms.

Organizational culture causes selective perception of events in an environment. Organizational culture influence on perception during strategic decisions making is achieved through mental or interpretative scheme. Mental or interpretative scheme represents a systematized and generalized knowledge which an individual has gained during his experience with certain occurrences, and which helps him interpret events around him. It is already stated that organizational culture, with its assumptions, values and norms, determines a significant part of mental schemes of the members of organization. Psychologists have determined that people are prone to "oversee" those events, people or occurrences which are not in conformity with their mental schemes, and also to overrate the significance of those which are. Information from the environment which is not compatible with mental schemes is significantly more difficult to perceive and more easily forgotten. Since a significant part of these schemes is determined by assumptions, values and norms of organizational culture, it means that organizational culture also represents a kind of filter through which some information can go through, and some cannot. In this way significant errors may occur while making strategic decisions. Selective perception is the basic cause of many failed investments, as in the case when, during decision-making regarding entering into some investment project, only those facts that go in favor of the preferential option are taken into account, while other information, regarding possible negative effects, are consciously or unconsciously suppressed.

Organizational culture directs interpretations of events in the environment and organization. It is not enough that decision-makers in an enterprise perceive some occurrences or events. In order to truly have impact on strategy formulation, it is necessary for them to be interpreted in the way which will cause specific effects. Interpretation of perceived events in the environment or, even, of company resources depends on mental schemes of those who perform this interpretation. Since a significant part of mental schemes has actually emerged from organizational culture, it may be said that culture is a very active factor which direct the way in which external and internal factors of strategic selections will be interpreted and understood. The example of IBM is very illustrative here. This world known leader in personal computers was the first world producer of large computers, the so called mainframe computers. When PC first appeared, IBM top management simply did not realize what that occurrence actually meant. IBM was paralyzed by its assumptions that information actually meant memory. The assumption underlying PC was, however, that information meant software. Led by wrong interpretation of the nature of personal computers, IBM was not in the beginning able to react in the right way. The change still occurred, although somewhat later, after IBM management had changed their perspective on business in which their company operated.

Organizational culture determines the selection of strategic option. From the perception of external environment and company resources, as well as from their interpretation, the selections of strategic directions of actions also emerge. Thus, culture indirectly, through perception and interpretation of the environment and the company itself, directs strategic selection. But, assumptions, values and norms prevailing in organizational culture also directly influence the generating of possible strategic options, as well as the selection of the best one among them. Strategic options that top management generates based on strategic analysis can be set only within the framework set by cultural assumptions and values. Top management cannot consider some strategic action if it surpasses the framework defined by cultural assumptions and values. Simply put, such strategic alternatives are "unthinkable" to managers, and therefore impossible. Hence, culture, in the first place, influences strategic selection by narrowing down the list of strategic options and excluding from it the culturally unacceptable ones. Another way in which culture, with its assumptions and values, influences strategy selection is its role in strategic alternatives evaluation and in selection of the best one among them. It is misconception to think that evaluation and selection of strategic option is an "objective" process in which decisions are made based on the clear and quantified criteria known in advance. Motives, interests, battle for power, as well as subconscious assumptions and values of those who make the selection of strategy become prominent in this process. The best strategy is the one marked as such by top management, starting from certain assumptions, values, beliefs, attitudes and norms, and not from numbers and analyses. Besides organizational culture, the selection of strategy is also influenced by subcultures in an enterprise. The differences between functional subcultures in an enterprise are especially important. Differences in assumptions, values and beliefs between commercial, production, financial, and research and development department in an enterprise make the process of strategy formulation significantly more difficult. Functional managers and experts, who participate in the process of business strategy formulation, sometimes start from completely different assumptions, values and beliefs of both the character of trends in the environment, as well as of the company mission, goals and resources. Therefore, their discussion on the procedures of company strategy shaping often resembles a "dialogue of the deaf". The situation is further complicated by the connection which may be established between different subcultures in an enterprise and different interests, so the entire process of strategy formulation may assume political dimension. Subcultures may easily turn into interest groups, and in such a way that their members will unite in order to impose their views and perspective. On the other hand, interest groups in a company are often organized around subcultures, since it gives legitimacy to their own interests. In that situation, the members of an interest group represent something that is of pure partial interest of some sector or a group as legitimate difference in views and perspective.

The numerousness of influences that organizational culture has on strategy formulation leads to the conclusion that strategy may be observed as a cultural symbol. It reflects and manifests the basic cultural assumptions, values and norms shared by strategic decisions makers in a company. By analyzing company strategy, values and beliefs shared by managers and employees in an enterprise may be revealed.

Organizational culture influences not only the process of strategy formulation, but also the process of selected strategy implementation. Culture may be an incentive factor, but also an insurmountable barrier to implementation of the selected strategic courses of action. It will depend on the degree of conformity of cultural assumptions, values and norms with the selected strategy. Each selected strategic course of action implies a specific set of operating activities through which it is implemented. If these activities are consistent with cultural assumptions, values and norms, they will be interpreted as legitimate, i.e. useful, justified and needed. In this case, employees and managers who conduct these activities will be motivated to apply them in both shape and manner as the top management pictured it. This is a situation in which organizational culture is an incentive factor of strategy implementation. In this case, culture *legitimizes* strategy which is, as far as culture is concerned, implemented without problems and difficulties.

However, it might be the case that a strategy incompatible with the existing organizational culture is formulated. In that case, culture becomes a barrier to strategy implementation. Formulation a culturally unacceptable strategy may occur for numerous reasons. One of them is certainly environmental pressure, which forces strategic decisions makers to change their existing views and accept a completely different, culturally unacceptable, course of actions. Incompatibility of strategy and culture also emerges in a situation when new management takes over the enterprise. It is very often the case that new leader and his associates, who are outsiders and unburdened by the existing cultural values, make radical changes in company strategy which go beyond the limits the framework of the existing organizational culture. The new management can then formulate a strategy which confronts the values and beliefs of the majority of the employees and managers. Finally, incompatibility of strategy and culture is often the case in the situation of acquisitions. When one company overtakes another, the acquired company is forced to change its strategy and accept the one imposed by the new owner, even though this new strategy is often incompatible with the culture of the acquired company.

The consequence of incompatibility of strategy and culture is that implementation of strategy includes a set of operating activities which are not in conformity with the existing cultural assumptions, values and behavior norms. The implementation of strategy then implies performing the activities which are not culturally acceptable for all or most of the employees and managers. In this case, activities necessary for strategy implementation are illegitimate in the view of employees and managers, and they are not justified, useful, or needed. In other words, culture *delegitimizes* strategy. Of course, performing of operating activities with the aim of strategy implementation will be extremely difficult. These activities should be performed by employees and managers who do not understand them and do not accept them, since they find them wrong, unnecessary or useless. Through the pressure performed by top management, who formulated the strategy to begin with, it is possible to enable strategy implementation, but this implementation will be inefficient, slow, or done with a very strong resistance. The result would be failed strategy implementation, its incomplete or delayed implementation, or a certain strategy modification during its implementation in order for it to be adjusted to culture and become culturally acceptable.

In all the cases when culture and strategy are incompatible and represent a barrier to strategy implementation, the risk of non-implementation of strategy is called cultural risk. The question arises how the company should react and thus decrease the cultural risk [18]. In case of incompatibility of business strategy and organizational culture, company has several options.

Ignoring of culture. In most cases, this strategy does not pay off, nor can it be recommended. Ignoring of culture may in short term seem as a simple solution, but in the long run it may cause serious problems in strategy implementation. This strategy might be recommended only with respect to small and young firm, which has not yet firmly established its system of values and beliefs, and in which company management may hope that the selected strategy will gradually shape the necessary cultural profile.

Modify the culture to adapt to strategy. This strategy is often used in situations when new management wishes to impose new strategy to the company they acquired. One of prerequisites of successful strategy realization is also a modification of the culture incompatible with the new strategy. However, this is very risky, expensive, uncertain and long-lasting operation. It can easily be the case that the time needed for the culture to be changed is significantly longer than the time available for strategy implementation. The situation is slightly less difficult when, instead of completely changing the culture, successful strategy implementation requires only smaller adaptations of some behavioral norms.

Modify the strategy to adapt to culture. This is often the way in which tensions between strategy and culture are solved. It is particularly present in the acquisition situations, when the acquired companies change their strategies which are incompatible with organizational culture of the mother company.

Change strategy implementation plan. If strategy is of vital importance for the company, and culture cannot be adapted to strategy, the company can change strategy implementation plan by adapting it to culture. Thus, the company will not give up the strategy, but will modify certain elements, which are not culturally acceptable, of its implementation plan.

Influence of strategy on organizational culture

We have seen that organizational culture influences strategy formulation and implementation, but also that long-lasting implementation of a certain strategy can influence organizational culture, i.e. strengthen or change the existing type of organizational culture of an enterprise. What influence will strategy have on company culture depends on the compatibility of cultural values and norms, on the one hand, and operational activities implied by implementation of a certain strategy, on the other. If the formulated company strategy implies conducting of activities which are consistent with the existing cultural values, then the strategy will positively influence the existing organizational culture, in the way that it will additionally strengthen its values. It does so through the process of *institutionalization*, since strategy is a formal, institutional decision. Implementation of strategy requires conducting of a specific set of operating activities, which imply that employees and managers perform specific jobs and tasks and also perform them in a specific way. When performing of activities, jobs and tasks in the process of strategy implementation is in conformity with the existing assumptions, values and norms in organizational culture, the employees and managers will have confidence in properness of activities implied by the strategy, as well as in properness of the strategy itself, hence they will be willing to completely implement it. On the other hand, this conformity of cultural values and norms with the selected strategy reassures the employees and managers in the properness of organizational culture. In this way, implementation of strategy, compatible with the existing organizational culture, will strengthen this culture. In this process, culture becomes institutionalized through strategy. Institutionalization of culture represents a process through which cultural assumptions, values and norms in an enterprise are being built in its strategy. Institutionalization of culture is a form of its perpetuation, i.e. its self-renewal.

If newly formulated strategy requires employees and managers to perform jobs and tasks in a way which is not in conformity with values and norms of the existing organizational culture, two situations may develop. One was already described above in this text and it refers to the situation in which organizational culture becomes a barrier to new strategy implementation. However, if the pressure by top management to implement the selected strategy prevails, it may change the existing organizational culture. In this case, strategy *deinstitutionalizes* the culture and thereby initiates the process of its change. By radical strategic turn, company management forces employees to behave, during a certain time period, in a way incompatible with the prevailing cultural assumptions, values and norms. Thereby, management leads employees into the state of cognitive dissonance. It is an unpleasant state in which values important to an individual are not in conformity with the behavior he/she is forced to practice. Since people have the need to be consistent and act according to their beliefs, they will strive to exit the state of cognitive dissonance as soon as possible. They may do so in two ways. First, they may strictly stick to their values, which are determined by the existing culture, and therefore return to the previous behavior, which is in conformity with their values. This situation was already described as a situation in which organizational culture blocks the implementation of strategy or leads to modification of strategy and adapting it to culture. However, the members of organization may also exit the state of cognitive dissonance by abandoning their existing values and norms and accepting new ones, which legitimize the new behavior forced on them by the new strategy. Massive dealing with the state of cognitive dissonance of the members of organization in this way will lead to organizational culture change. Therefore, if management persists in new strategy implementation, the employees will have no other choice but to change their values and norms in the way to comply them with the new strategy. The final result would again be harmony between culture and strategy, but with a new culture which legitimizes the new strategy. In this way strategy shapes new organizational culture.

Conclusions and implications to management

The survey of empirical researches, as well as their theoretical elaborations, indicates that strategy and organizational culture are mutually conditioned, and that their mutual conformity and harmony bring advantage to the company.

Organizational culture influences strategy in both the process of its formulation, as well as in the process of its implementation. Organizational culture influences strategy formulation by shaping the interpretative schemes and meanings which strategic decisions makers assign to the occurrences within and outside of the company. Culture determines the way in which top management gathers information, the way in which they perceive and interpret the environment and the company resources, but it also influences the way in which they make strategic decisions, i.e. make the strategy selection. Organizational culture influences strategy implementation by legitimizing or delegitimizing the strategy, depending on the consistency between cultural values and the selected strategy. When culture legitimizes strategy, it significantly facilitates strategy implementation, and when culture delegitimizes strategy in the view of employees and managers, it makes the implementation of the selected strategy almost impossible.

Strategy influences organizational culture by institutionalizing or deinstitutionalizing the culture, depending on the conformity with cultural values and norms. If activities through which the selected strategy is operationalized and implemented are in conformity with cultural values and norms, the strategy will institutionalize and strengthen the existing culture. Conversely, long-lasting and consistent implementation of the selected strategy will deinstitutionalize organizational culture, whereby the process of its change begins.

The basic recommendation to management regarding the relationship between strategy and organizational culture is that a way must be found for these two fundamental company management components to be harmonized. This can be achieved in two basic ways. First, in strategy formulation, management of the company must have in mind cultural assumptions, values and norms in order to provide in advance for the new strategy to comply with them. To be able to do this, management must, in the phase of strategic analysis, perform and scan organizational culture profile of the enterprise. Also, management must, in the phase of strategy selection, be ready to adapt the strategy to the existing culture of the company. On the other hand, if management is forced to select a strategy which is inconsistent with the existing culture, they must be ready and able to close the "cultural gap" during the strategy implementation, which is achieved by changing the existing culture. In order to do this, management must have abilities and knowledge of how to change organizational culture in a planned manner.

References

1. Alvesson, M. (2002). *Understanding Organizational Culture*. London: Sage
2. Ashkanasy, N., Wilderom, C., Peterson, M. (eds.) (2000). *Handbook of organizational culture & climate*. Thousand Oaks: Sage.
3. Baird K., Harrison G., Reeve R. (2007). The Culture Of Australian Organizations And Its Relation With Strategy, *International Journal Of Business Studies*, Vol. 15, No. 1, pp. 15 – 41.
4. Brown, A. (1998). *Organizational Culture*. Edinburgh: Person Education.
5. Cameron, K.S. , Quinn, R.E. (1999). *Diagnosing and changing organizational culture: The competing vales framework*. Reading, Ma: Addison-Wesley.
6. Chow I.H.S., Liu S.S. (2009). The effect of aligning organizational culture and business strategy with HR systems on firm performance in Chinese enterprises, *The International Journal of Human Resource Management*, Vol. 20, No. 11, pp. 2292–2310.
7. Đuričin D., Janošević S., Kaličanin Đ. (2012). *Menadžment i strategija*, Beograd: Ekonomski fakultet.
8. Fang S., Wang J. (2006). Effects of Organizational Culture and Learning on Manufacturing Strategy Selection: An Empirical Study, *International Journal of Management*, Vol. 23, No. 3, Part 1.
9. Frost, P.J., Moore L.F., Louis M.R., Lundberg C.C., Martin J. (1991). *Reframing organizational culture*. Newbury Park, CA: Sage.
10. Gupta B. (2011). A comparative study of organizational strategy and culture across industry, *Benchmarking: An International Journal*, Vol. 18 No. 4, pp. 510-528
11. Janićijević N. (2011). Methodological approaches in the research of organizational culture, *Economic Annals*, Vol. LVI, No. 189, pp. 69–100.
12. Klein A. (2011). Corporate culture: its value as a resource for competitive advantage, J*ournal of Business Strategy*, Vol. 32, No. 2, pp. 21–28.
13. Martin, J. (2002). *Organizational Culture: Mapping the Terrain*. London: Sage.
14. Miles, R.E., & Snow, C.C. (1978). *Organizational Strategies, Structure and Process*. New York: McGraw-Hill.
15. Naranjo-Valencia J.C., Jimenez-Jimenez D., Sanz-Valle R. (2011). Innovation or imitation? The role of organizational culture, *Management Decision*, Vol. 49, No. 1, pp. 55–72
16. O'Reilly, C.A., III, Chatman, J.A., & Caldwell, D.F. (1991). People and Organizational Culture: A Profile Comparison Approach to Assessing Person-Organization Fit, *Academy of Management Journal*, Vol. 34, pp. 487–516.
17. Schein E. (2004). O*rganizational Culture and Leadership*, Thousand Oaks: Sage.
18. Swartz, Davis, (1981). Matching Corporate Culture and Business Strategy, *Organizational Dynamics*, Vol. 10.
19. Smircich L. (1983). Organizations as shared meanings, in L. Pondy, P. Frost, G, Morgan & T. Dandridge (eds.) *Organizational symbolism*, pp. 55–65. Greenwich: JAI.
20. Wallach, J.E. (1983), Individuals and Organizations: The Cultural Match, *Training and Development Journal*, Vol. 37, No. 2, pp. 29–36.
21. Wilderom C. et al. (2000). Organizational Culture as a Predictor of Organizational Performance, in Ashkanasy N. et al. (eds.) *Handbook of Organizational Culture & Climate*. pp. 193–209. Thousand Oaks: Sage.
22. Yarbrough L., Morgan N.A., Vorhies D.W. (2011).The impact of product market strategy-organizational culture fit on business performance, *Journal of the Academy of Marketing Science*, Vol. 39, pp. 555–573.

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BASEL III: REDESIGNED REGULATORY FRAMEWORK FOR BANKS

Bazel III: redizajnirani regulatorni okvir za banke

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Abstract

The global financial crisis has confirmed the global regulatory mechanism weakness in the prevention of the causes and consequences in stress situations. As an expression of inadequacy, Basel Committee designed Basel III standard as a new regulatory framework for banks. Its implementation involves the compliance of strict capital requirements, liquidity standards and leverage. Researches about the effects of Basel III standards indicate that a shorter time horizon, these are the consequences for economic growth is greater. For the four-year implementation period, the increase in capital requirements for the 1% would result in a reduction in global GDP by 0.1%, while the largest drop in GDP would be recorded after 18th quarter and amounted to 0.19%. Also, during the implementation horizon cross-country spillover effect will occur that would be stronger in developing countries relative to developed countries and amounted to 0.03%. Based on the above, pure effect of increasing capital requirements on the reduction of world GDP is estimated to 0.016%.

Key words: *Basel III, capital adequacy, capital conservation buffer, countercyclical buffer, leverage ratio, liquidity standards*

Sažetak

Globalna finansijska kriza je potvrdila nemoć globalnog regulatornog finansijskog mehanizma u prevenciji uzroka i smanjenju posledica u stresnim situacijama. Kao izraz neadekvatnosti, Bazelski komitet je dizajnirao Bazel III standard kao novi regulatorni okvir za banke. Njegova implementacija podrazumeva poštovanje strožijih kapitalnih zahteva, standarda likvidnosti i nivoa leveridža. Istraživanja efekata Bazel III standarda ukazuju da što je kraći vremenski horizont, to su posledice po ekonomski rast veće. U okviru procene za četvorogodišnji period implementacije, povećanje kapitalnih zahteva za 1% bi rezultiralo smanjenjem svetskog BDP-a za 0.1%, dok bi najveći pad BDP-a u periodu implementacije usledio nakon 18-og kvartala i iznosio bi 0,19%. Takođe, prilikom implementacije će se pojaviti efekat prelivanja između zemalja koji bi bio snažniji u zemljama u razvoju u odnosu na razvijene zemlje i iznosio bi 0,03%. Na osnovu prethodnog, čist efekat povećanja kapitalnih zahteva na smanjenje svetskog BDP-a je procenjen na 0,016%.

Ključne reči: *Bazel III, adekvatnost kapitala, tampon za zaštitu kapitala, kontraciklični tampon, leveridž racio, standardi likvidnosti*

Introduction

The absence of regulation and supervision and "cheap money policy" are identified as main causes of the current financial crisis. The development of "shadow financial system" and the "myopia" of monetary policy created a housing market bubble that burst and caused financial system bankruptcy. In addition to the inadequate monetary management, perhaps the most important factor for generating the crisis is certainly inadequate financial regulation. Regulatory arrangements in pre-crisis period were the result of international coordination and cooperation, but they had a high degree of rigidity. The rigid regulatory standards are not able to follow modern trends in financial markets triggered by deregulation, globalization and the development of information technology. The dynamics of financial market created additional maneuver space in which, through "creative accounting" as a tool, financial institutions respect regulatory standards *de jure*, while the real situation was unsustainable: a high degree of leverage, an unacceptably high systemic risk, lack of transparency, moral hazard and negative selection, lack of market discipline etc. In such circumstances, the financial crisis was inevitable. Regulators and supervisors, based on past experience and lessons from the current crisis are designed regulatory framework for banks and established a stronger regulatory requirements in terms of volume and quality of capital, liquidity, leverage, risks coverage and information disclosure. In addition, stricter requirements are imposed in the procedure for the regulatory capital calculation relative to risk-weighted asset. Impact of new standards can be considered at two levels: the level of the *banking industry* (as a need for additional capital, as a reduction of the current capital adequacy coefficient) and the level of *economic activity* (through the impact of increased capital requirements to the GDP, taking into account the spillover effect).

Global crisis - Spiritus movens of regulatory reforms

Together with the policy of "cheap money", a importance factor for generating financial crisis is certainly a lack of adequate financial system regulation and supervision practice. Past few decades we have witnessed dramatic evolutionary changes in modern financial systems: powerful trends of deregulation, financial engineering has become a tool for creation of complex financial packages, development of the shadow financial system. When it comes to the shadow financial system, it operates with high leverage, with no maturity matching of assets and liabilities (short-term borrowings, and long term investments). Also, the financial intermediation flows have been redirected from traditional banks to other financial institutions that had not strong capital base and had not been under stringent regulation and supervision. Faced with declining volume of financial intermediation, traditional banks have gradually changed their business form to compete with the modern financial institutions. In order to achieve scale economies of, they are engaged in agencies that are granted loans as credit agents. Since the profitability of their business was connected with the volume of signed arrangements and that were not subject of regulation and supervision (because they are not banking institutions *de jure*), their business was morally hazardous. The problem of moral hazard is expanded in the banking sector, which because of the possibility of securitization was not interested in the proper assessment and adequate risk management. Moral hazard was also immanent in the ranking of structured financial instruments, created in the securitization process. Rating agencies, in order to increase profitability, ranked collateralized securities as first-class investments to make it marketable. In this way the problem of information asymmetry on the financial market escalated: investor perceptions regarding the high-quality of collateralized securities are based on the rating agencies assessments, but these were essentially high-risk financial instruments. With a problem of information asymmetry, the logical consequence is the suboptimal investment decision making. Also, decades behind we were witnesses the lack of comprehensive supervision of the biggest multinational financial institutions, because national supervisors and regulators have been unable to get to the essence of their business transactions, due to the lack of valid information. The financial system regulatory framework, challenged by "too big to fail" philosophy broke down. The first major bankruptcies have shaken confidence in the financial system, systemic risk has increased sharply, funding flows have dried up, a complex financial architecture has collapsed.

Lessons for regulators and supervisors

The rapid growth of "shadow financial system", the proliferation of new financial instruments and modernization of traditional banking procedures for monitoring and risk management have established a dynamic financial system. The pace of financial innovation was faster than the pace of regulatory mechanisms development and this regulatory gap was the cause of the modern financial system collapse. What are the lessons for supervisors? [9, pp: 112-113]

Lesson No 1: It is necessary to "remove the shadow" from a part of the financial system in order to enable the modern financial institutions to become subject to direct regulation and supervision, enabling thereby leverage monitoring and increasing the transparency of their business operations (e.g. securitization). In this way, a uniform regulatory framework might be established for the entire financial system. This framework would be sufficiently flexible in order to enable financial innovations (making the financial market deeper and more liquid), as well as sufficiently robust to prevent potential future crises.

Lesson No 2: The "Too big to fail" logic has proved to be inadequate. Instead of *ex post* responses to rescue major financial institutions, the *ex ante* response, i.e. the preventive supervision and audit of large financial institutions, is more efficient. In this way, the risk of bankruptcy and the total system risks have been reduced to a minimum.

Lesson No 3: It is clearly that financial conglomerates were the largest source of the crisis, so their strict regulation and supervision on a consolidated basis is highly important. The effective coordination and harmonization of regulatory mechanisms of national regulators and supervisors at the global scale are the necessary requirements enabling the financial conglomerates' business operation to be controlled. The comprehensive supervision of their activities would contribute both to the increase of transparency of their operations and to the increase of efficiency of monitoring and risk management

Lesson No 4: It is necessary to extend the focus of supervisors' activities also to the rating agencies and loan brokers. As to the rating agencies, by supervising their operations and evaluating the rating process, the moral hazard in the financial market, i.e. the issue of information asymmetry, would be decreased. Loan brokers should be given the status of banks, in order to become subject to regulation and supervision.

Lesson No 5: Based on experiences from the current crisis, national regulators should be able to develop effective regulatory mechanisms and apply the stress test on a continuous basis. Based on the SCAPE methodology, a sophisticated stress test may be developed which could be a combination of historical experience and innovation in the field quantitative models. For the purpose of efficiency, monitoring and stress test procedures, once established, would have to be subject to permanent evolution according to the pace of development of modern financial systems.

Supervisors, faced with the lessons responded with regulatory reform that can be structured as a regulatory reform at the national level and regulatory reform at the international (global) level. At the national level, they started with the stress testing of financial institutions, to assess the liquidity status and potential capital shortfall. Crisis showed that banks in many countries (because of "creativity" in applying regulative requirements) did not meet minimum capital requirements and adequate risk management systems. Consequently, it was necessary reactions of international regulators and supervisors (Basel III). Joint, national and international regulatory initiatives should act towards establishing more stringent capital adequacy and liquidity standards, to prevent future financial crises or mitigate its consequences.

Basel II: Reform package for the financial Regulation improvement

The reform package relating to new capital requirements and liquidity standards is based on the previous regulatory instruments (Basel I and Basel II) and lessons learned, but steams from the need of designing a new regulatory agenda that would ensure a more stable financial system, as prerequisite for long-term economic growth. Basel III provides more stringent requirements in terms of quantum of capital but also in terms of its quality. It also introduced new regulatory elements (leverage ratio and liquidity standards), while the macroeconomic aspect of the new agreement is reflected in the implementation of appropriate requirements to increase banking system resilience. In order to reduce systemic risk, Basel III establishes a capital conservation buffer and countercyclical buffer, as an additional amount of capital relative to risk-weighted assets. The transition from Basel II to Basel III standard, in terms of capital quantity and quality, is presented in the following table.

In addition to quantitative changes, Basel III has provided more stringent requirements in terms of coverage of certain items when calculating regulatory capital. In relation to the Basel II those rules are much stricter, as it provides a number of deductions that will reduce the regulatory capital, or affect the provision of additional

Table 1: Calibration of the capital framework (Capital requirements and buffers, %)

% relative to risk-weighted asset	CET1		Tier1		Total capital	
	Basel II	Basel III	Basel II	Basel III	Basel II	Basel III
Minimum (1)	2	4,5	4	6	8	8
Capital conservation buffer (2)	-	2,5	-	-	-	-
(1) + (2)	2	7	4	8,5	8	10,5
Countercyclical buffer range	-	0-2,5	-	-	-	-

Source: [1, p. 64]

capital from the regular (acceptable) sources. In addition to stronger requirements regarding capital adequacy, Basel III provides innovation in terms of leverage ratios, liquidity ratios and risks coverage.

Capital conservation buffer

This regulatory mechanism is a novelty compared to the previous regulatory arrangements and is based on the proactive approach to capital requirements to ensure bank solvency. Capital conservation buffer is 2.5% relative to the risk-weighted assets, and it includes common equity capital. In regular economic conditions bank absorb adequate capital amount, which can be reduced in stressful situations, but only up to the prescribed amount. This proactive mechanism is based on prevention of capital reducing below the minimum prescribed level, and operates automatically: in relation to the movement of the regulatory coefficient (Tier 1 ratio) supervisors are prescribed percentage amount (expressed as a percentage of earnings) that will be allocated for the capital conservation buffer (Table 2).

The intention to preserve the capital amount implied a gradualist approach: the less favorable position in terms of capital adequacy, it is necessary to extract the higher from net profit and the greater the restrictions on dividend payments and privileged distributions. Also, the implementation of this regulatory instrument has the attribute of gradualism: its implementation will start 2016th and the initial amount will be 0.625 %, with a permanent increase each year to the 01 January 2019th, when banks have to apply the prescribed standard of 2.5 % relative to risk-weighted assets.

Countercyclical buffer

This regulatory instrument is designed with respect of ascending-descending business cycle phases. The banking system is, in accordance with their functions, expressively procyclical: in period of prosperity intensive lending contributes to economic growth, while in the period of stagnation and recession problematic loans reduce credit potential of banks, which causes the additional decline in economic activity. These interactions especially emphasize the importance of establishing an additional defense lines for the banking system during periods when the likelihood of systemic stress is evident [2, p. 57]. This mechanism is based on respect for the macroeconomic conditions and involves the implementation at the national and global level (for internationally active banks). At the national level, local regulators assess whether and how aggregate credit growth encourages systemic risk and provides an additional capital amount to fund potential losses. It is recommended that this amount ranges from 0 to 2.5% in relation to risk-weighted assets. The standard for internationally active banks should be calculated as a weighted average of the countercyclical buffer established within national jurisdictions in relation to the individual bank exposure. The countercyclical buffer regime consists of the following elements: [5, pp: 57-58]

Table 2: Individual bank minimum capital conservation standards

Common Equity Tier 1 Ratio	Minimum Capital Conservation Ratios (expressed as a percentage of earnings)
4,5-5,12 %	100%
> 5,12 - 5,75	80%%
> 5,75 – 6,375	60%
> 6,375 – 7,0	40%
> 7,0	0%

Source: [1, p. 56]

1. National authorities will monitor credit growth and other indicators that may signal a build up of system-wide risk and make assessments of whether credit growth is excessive and is leading to the build up of system-wide risk. Based on this assessment they will put in place a countercyclical buffer requirement when circumstances warrant. This requirement will be released when system-wide risk crystallises or dissipates.
2. Internationally active banks will look at the geographic location of their private sector credit exposures and calculate their bank specific countercyclical capital buffer requirement as a weighted average of the requirements that are being applied in jurisdictions to which they have credit exposures.
3. The countercyclical buffer requirement to which a bank is subject will extend the size of the capital conservation buffer. Banks will be subject to restrictions on distributions if they do not meet the requirement.

This standard shall be applied parallel to the capital conservation buffer: from 01 January 2016th the standard will be introduced to a maximum level of 0.625% in relation to risk-weighted assets, with periodic increases that would lead up to the maximum standard of 2.5% at the end of the planned implementation period (2019th).

Leverage ratio

Due to the lack of transparency in financial reporting before the crisis, many financial institutions are, using technology leverage (specific forms of lending, derivatives, etc.) with modest investments provide great exposure to the profit / loss (depending on the market conditions). This fact encourages the creation of aggressive capital structure of banks, with a significant amount of debt, rising interest rate and problems in terms of interest payments. One of the basic characteristics of the current crisis is creating on-balance sheet and off-balance sheet leverage in the banking system. During the most severe part of the crisis, the banking sector was forced by the market to reduce its leverage in a manner that amplified downward pressure on asset prices, further exacerbating the positive feedback loop between losses, declines in bank capital, and contraction in credit availability [5, p. 61]. To prevent it, in addition to requirements in terms of market discipline (disclosure), which is provided by Pillar 3 in previous regulatory arrangement (Basel II), a new regulatory agreement establishes a minimum leverage ratio in the amount of 3% relative to Tier 1. Implementation of this requirement began in 2011th, with the parallel period during the application horizon from 2013th to 2017th. Banks are required to calculate the leverage ratio relative to the prescribed definition of capital and overall exposure, respecting the new definition of capital, accounting standards, off-balance sheet activities of banks, repurchase agreements, derivatives, securitization, etc.

Liquidity standards

Strong capital requirements are a necessary condition for banking sector stability but by themselves are not sufficient. A strong liquidity base reinforced through robust supervisory standards is of equal importance

[5, p. 8]. To enhance regulatory architecture Basel III introduced new standards in terms of liquidity to made more resistant to short-term liquidity problems, but also to ensure the necessary conditions for long-term structural liquidity. For this purpose it established two liquidity standards:

a) *Liquidity Coverage Ratio (LCR)* – It is calculated as the ratio between the highly liquid assets and bank liabilities with original maturity of 30 days. The recommended value of this liquidity indicator is 1 (100%), which implies that, in short-term turbulence condition and expressed liquidity pressure, bank has sufficient funds available to pay off current liabilities. Liquid reserve should consist of liquid funds (cash and deposits) and short-term cashable securities that can be quickly transformed into primary liquidity medium. Starting from the previous one, the regulatory standards in terms of liquidity favoring the asset conversion strategy compared to a strategy of borrowed liquidity.
b) *Net Stable Funding Ratio (NSFR)* – It is calculated as the ratio of available financial sources, in relation to the required resources. It is more long-term

character than the LCR and its calculation is based on more complex balance sheet analysis. The objective of balance sheet analysis is to find the neuralgic liquidity points, and the standard suggests that banks use long-term sources of funds to achieve appropriate liquidity.

Implementation of this standard involves the application of appropriate techniques for monitoring, measuring and analyzing liquidity trends at the micro level and the banking system level. The Basel Committee has also established 17 principles of management and supervision of liquidity risk, respecting the lessons from the crisis period. These principles recommend appropriate practice for liquidity risk treatment and suggest appropriate supervision procedures. They also point out that, for an effective liquidity regulation and supervision, it is necessary coordination and cooperation between supervisors and other stakeholders, primarily the central banks and the banks themselves [5, p. 10]. Because of the potential impact on profitability, and ultimately to the accumulation of capital, liquidity standards implementation requires special caution. After an observation period beginning in 2011, the LCR will be introduced on 1 January 2015. The NSFR will move to a minimum standard by 1 January 2018. The Committee will put in place rigorous reporting processes to monitor the ratios during the transition period and will continue to review the implications of these standards for financial markets, credit extension and economic growth, addressing unintended consequences as necessary [5, p. 10].

When it comes to risks coverage, Basel III devotes particular attention to credit and market risk. Calculating credit risk is enabled or standardized approach or internal rating-based approach, alternatively, with a focus on counterparty credit risk, which is particularly expressed in financial derivatives transactions. There is a possibility for measuring counterparty risk with the current exposure model (CEM) model and the positive expected exposure model. Special attention was paid to the trading book, off-balance sheet activities and securitization. For the credit and market risk assessment Basel III recommends VaR methodology, stress tests, developing the internal risk measurement procedures, with consideration of the external rating agencies assessments.

Basel III standard implementation: assessment of the effects

Financial regulatory reform in terms of capital adequacy, liquidity, leverage and risk assessment will certainly cause the relevant economic implications. These implications can be seen as the impact on the banking industry, but as the impact on economic growth across the globe. The results presented should be taken with a grain of salt in some segments, despite the representativeness of research, since some banks were unable to provide adequate information necessary to fully assess the effects of Basel III standard implementation.

The impact on the banking industry

The study results are based on a survey of the Basel Committee, which included 263 banks from 23 member jurisdictions. Banks are divided into two groups: first group consists of 94 banks and second of 169 other banks. Group 1 banks are those that have Tier 1 capital in excess of €3 billion, are well diversified, and are internationally active. All other banks are considered Group 2 banks [3, p. 8]. The effects of stronger capital requirements to the banking industry are sublimated through the impact on the capital ratios and capital shortfall.

Table 3: Average capital ratios by banking group, in percent

	Number of banks	CET 1		Tier 1		Total	
		Gross	Net	Current	New	Current	New
Group 1	74	11,1	5,7	10,5	6,3	14,0	8,4
Group 2	133	10,7	7,8	9,8	8,1	12,8	10,3

Source: [3, p. 8]

In this study, 74 banks are participated in Group 1 and 133 in Group 2, since they were able to offer consolidated data ending to 2009th. Table 3 shows the changes of capital adequacy, if we apply the new standards should be implemented by 2019on on the balance sheet data in 2009th.

The CET1 ratios presented in the table compare gross CET1 amounts (before the application of deductions and filters) in relation to banks' current risk-weighted assets (column "Gross") with net amounts in relation to new risk-weighted assets and the application of deductions and filters (column "Net") [3, p. 8]. Also, we can see that, in relation to all three capital structures, capital adequacy ratios decreased. This decreasing is the result of more stringent rules, and represents at least two facts. On the one hand, the sharper new rules provide a broader range of deductions that can not be calculated as capital, while provide clearer standards for calculating the risk-weighted assets, on the other hand. Consequently, capital (numerator) are reduced while risk weighted assets (denominator) are increased, which results in capital adequacy reduction. If we compare two groups, banks in Group 1 recorded higher average reduction of capital ratios.

Table 4: Estimated overall CET1 shortfall, participating Group 1 and Group 2 banks, in € billions

	Group 1 banks	Group 2 banks
Number of banks	87	136
CET1 shortfall – 4.5%	165	8
CET1 shortfall – 7.0% (2019)	577	25
Note: The shortfall is calculated as the sum across individual banks where a shortfall is observed. The calculation includes all changes to RWA (eg definition of capital, counterparty credit risk, trading book and securitisation in the banking book). For banks where complete data on the total change in RWA were not available, it was assumed that RWA for missing items would remain constant.		

Source: [3, p. 8]

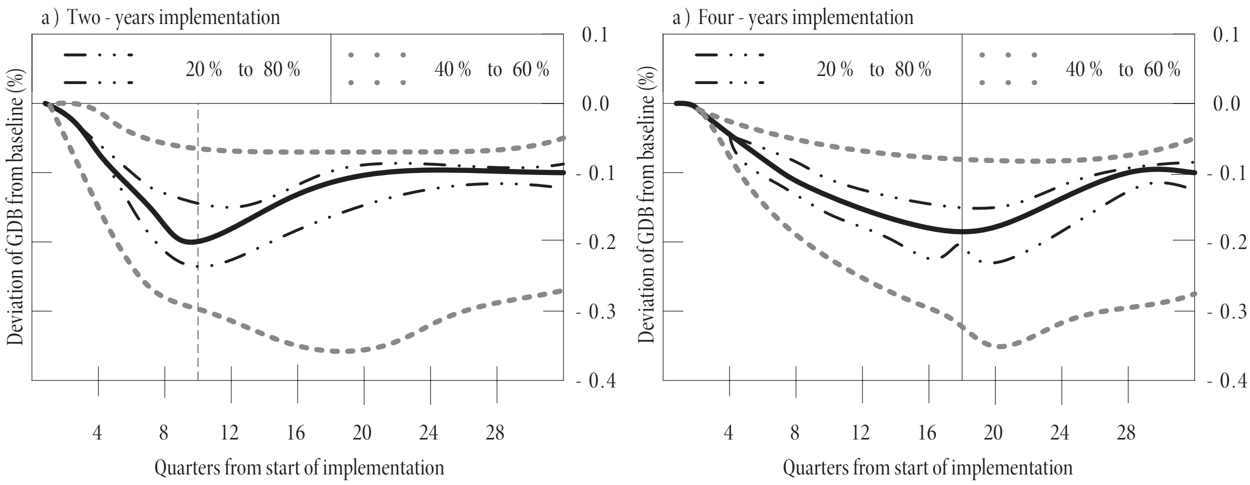
Table 4 shows the additional capital that banks need to meet new regulatory standards based on data from the end of 2009th. It is evident that the booth banking groups have a lack of capital, but this lack is particularly high in the Group 1. This result can be justified by the fact that Group 1 composed by the internationally active banks that are under stricter requirements, with respect to its global financial role. Also, it is unambiguously stated that the profits that banks made in 2009th (209 billions of euro), was quite enough to fill the gaps in the capital shortfall within three to five years, even if the profits are distributed to shareholders in some percent [13, p. 1].

The impact on economic growth

Implementation of Basel III standards has caused reactions both optimistic and skeptical regarding to economic implications of the new regulatory framework. Optimists expect that will, the higher level of capital, together with measures of liquidity, significantly reduce the probability of occurrence and intensity of banking crises in the future. Historical data show that banking crises occur on average every 20 to 25 years. Thus, the annual probability that there will be a crisis is 4-5%, which is extremely high [8, p. 2]. Also, the average GDP loss o is about 60% of annual GDP, which means that any reduction in the probability of crisis by 1% resulted in benefits in the amount of 0.6% of GDP [8, p. 4]. Research shows that increasing capital standards for the 1% probability of banking crises decreased from 4.6 to 2.3%, which would result in benefits of 1.4% of annual world GDP. Skeptics who not support the global regulatory reform emphasize the counter-argument related to the reduction in GDP (Figure 1).

Based on the Figure 1, it is clear that regardless of the

Figure 1: Aggregate impact of a 1 percentage point increase in the target capital ratio: distribution of estimated GDP deviation



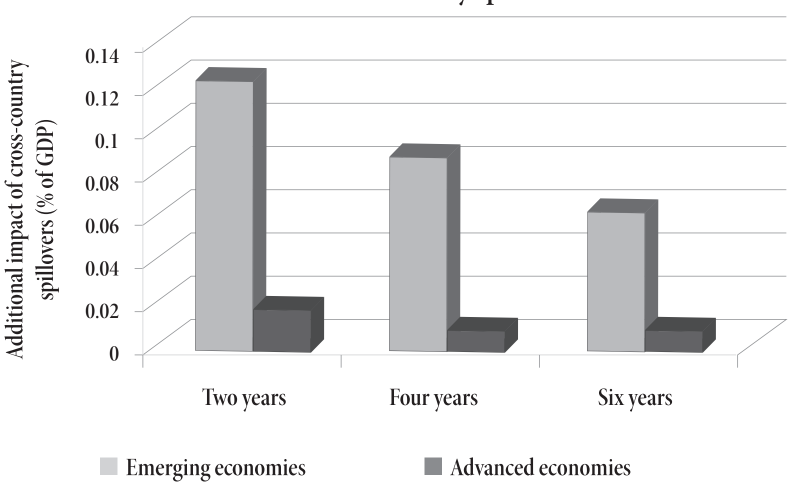
Source: [12, p. 2]

implementation period, increasing capital requirements for 1% reduces GDP for about 0.1% (at the end of implementation horizon). In addition, two-year implementation causes more appreciable GDP reduction at about the 10th quarter from start of implementation, , while the four-year implementation has the greatest negative effect at 18-th quarter. Also, with the 20 to 80% probability estimation, two-year implementation could cause a decrease in GDP in the range of 0.05 to 0.28%. The maximum possible reduction during the implementation period is about 0.35%. Almost identical results are expected in the implementation of capital standards in the four-year implementation horizon. However, shorter implementation period would cause a little sharper maximum drop in GDP (0.22%) during the implementation period, compared to a longer (4-years) implementation period (0.19%). This estimate does not take into account the *cross-country spillovers* effect.

If the estimates include the *cross-country spillovers effect*, there are accompanying negative effects on GDP (Figure 2).

Figure 2 shows the spillover effect, i.e. the additional effect of GDP reducing caused by increasing of capital standards for 1%. For four-year implementation period, the maximum impact of the spillover effect is estimated at the 0.09% for emerging countries and 0.01% for developed countries. Figure 2 suggests that, the shorter implementation period, the greater spillover effect, especially when it comes to developing countries. This downward spillover effects trend in the developing countries appears to extend the implementation period from four to six years, while the reduction is much more modest in developed countries. The existence of spillover effect is evident if one takes into consideration the impact of more stringent regulatory standards in the leading economies at the same time, in relation to the partial implementation of standards in individual countries [8, p. 6].

Figure 2: Impact of higher capital ratios on GDP: effects of cross-country spillovers



Source: [8, p. 6]

Conclusion

The global financial crisis, partly initiated by inadequate regulatory standards, provoked the financial regulatory reform at the national and international level. Based on experience from previous regulatory arrangements, and respecting the lessons of the current crisis, the Basel Committee on Banking Supervision is conceived the new regulatory framework as an architectural basis for monitoring and evaluation of bank performance. This regulatory mechanism is based on increasing the quality of capital, the new standards of liquidity, leverage and risk coverage. The main objective of the new regulations is to remove the shadow of the financial sector, to be based on improving market discipline and transparency, with respect to new capital and liquidity standards, provide longer-term financial and economic stability. Implementation has begun 2011th in certain areas and the first results of estimates are already visible. It is obvious that, compared to data from 2009th, most banks have significantly lower capital adequacy ratios, if you respect the new regulatory standards. Also, this scenario analysis shows that banks have a shortage of capital in the amount of 173 billion euro, if viewed CET1 -4.5% as a standard, or even 602 billion euro, if viewed CET1 - 7.0%. Cost-benefit analysis reflects all the ambivalence of the attitudes of both proponents and skeptics regarding the implementation of Basel II standards. Proponents point out that the new regulatory framework creates robust global banking system that will be less prone to deviations, which will result in savings of loss GDP loses. Skeptics point out that the new capital requirements will cause and additional GDP drop, while emphasizing that such influence will be greater in developing countries, especially taking into account the spillover effect.

References

1. Basel Comittee on Baning Supervision, (2010), *Basel III: A global regulatory framework for more resilient banks and banking systems*, Bank for International Settlements, Basel.
2. Basel Comittee on Baning Supervision, (2010), *Basel III: International framework for liquidity risk measurement, standards and monitoring*, Bank for International Settlements, Basel.
3. Basel Comittee on Baning Supervision, (2010), *Results of the comprehensive quantitative impact study*, Bank for International Settlements, Basel.
4. Basel Comittee on Baning Supervision, (2010), *The Basel Committee`s response to the financial crisis: report to the G20*, Bank for International Settlements, Bazel.
5. Basel Comittee on Baning Supervision, (2011), *Basel III: A global regulatory framework for more resilient banks and banking systems (revidirana verzija)*, Bank for International Settlements, Basel.
6. Basel Committee on Banking Supervision, (2010), *An assessment of the long-term economic impact of the new regulatory framework,* Bank for International Settlements, Basel.
7. Caruana, J., (2010), Basel III: towards a safer financial system, *3rd Santander International Conference*, Madrid.
8. Cecchetti, G. S., (2010), „Strengthening the financial system: comparing costs and benefits", *Remarks prepared for the Korea-FSB Financial Reform Conference*, Seul.
9. Davidović, M., Zelenović, V., (2010), "Global Financial Crisis – Lessons Learned", Rad saopšten na međunarodnoj konferenciji *Contemporary Issues in Economics, Business and Management*, Kragujevac.
10. Hannoun, H., (2010), „The Basel III Capital Framework: a decisive breakthrough", *BoJ-BIS High Level Seminar on Financial Regulatory Reform: Implications for Asia and the Pacific*, Hong Kong.
11. Institute of International Finance, (2010), *Interim report on the cumulative impact on the global economy of proposed changes in the banking regulatory framework*, Washington D.C.
12. Macroeconomic Assessment Group of the Financial Stability Board and Basel Committee on Banking Supervision, (2010), *Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements*, Bank for International Settlements, Basel.
13. Wall Street Journal, *Banks Need More Cash to Meet Basel Requirements*, 17. decembar 2010., Preuzeto 15. marta 2012. godine sa http://online.wsj.com/article /SB10001424052748 703395204576023140257369716. html
14. Wellink, N., (2010), "A new regulatory landscape", *Proceeding the 16th International Conference of Banking Supervisors*, Singapur.

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HOW TO SECURE CONTRACT PERFORMANCE? DISTRIBUTION, FRANCHISE AND FINANCIAL LEASING IN SERBIAN LAW

Kako obezbediti izvršenje ugovora? Distribucija, franšizing i finansijski lizing u srpskom pravu

Abstract

Subject of the article is the analyses of the selected critical issues regarding performance of franchising, distribution and financial leasing in the light of recent developments in Serbian contract law. After adoption of the Law on Financial Leasing and preparation of the Draft Civil Code of Serbia which includes the rules on franchising and distribution, the legal framework of these transactions is much better shaped than is used to be. The article examines the main rules on determination, content and form of these contracts, the principal obligations of the parties and the grounds for contract termination as well as the crucial issues regarding applicable law and dispute resolution and suggests to contracting parties the optimal solutions to secure the contract performance.

Key words: *franchising, distribution, financial leasing, contract, rules*

Sažetak

Predmet rada predstavlja analiza pojedinih spornih pitanja u pogledu izvršenja ugovora o franšizingu, distribuciji i finansijskom lizingu. Analiza je izvršena u svetlu novijeg razvoja srpskog ugovornog prava. Usvajanje Zakona o finansijskom lizingu i priprema nacrta Građanskog zakonika Srbije koji obuhvata i rešenja o franšizingu i distribuciji, predstavljaju značajne korake u unapređenju pravila koja prate pomenute privredne ugovore. U radu se ispituju pravila koja se odnose na određenje, sadržinu i formu pomenutih ugovora, najznačajnije obaveze ugovornih strana, osnovi za raskid ugovora, kao i osnovna pitanja u pogledu merodavnog prava i rešavanja sporova i sugerišu se optimalna rešenja za obezbeđenje uspešnog izvršenja ugovora.

Ključne reči: *franšizing, distribucija, finansijski lizing, ugovor, pravila*

General introduction

The key aspect of the success of business transactions is the quality of the contracts concluded. Rules on negotiating and drafting a contract are essential for commercial dispute prevention; had the contract been better drafted the relationship between the parties could have been better preserved and developed. In Serbian legal system the majority of contracts are regulated by the Law on Obligations. The rules of the Law on Obligations are mostly of non-mandatory nature, meaning that the Law, for the most part, allows the parties to regulate their contractual relationship in accordance with the principle of party autonomy. On the other hand, there are certain commercial contracts not regulated by law (the so-called modern contracts) which, according to the principle of party autonomy, can be validly concluded, subject to requirements of public policy, mandatory rules and good trade usages. These contracts, resulting from the needs of contemporary business transactions, could not have been encompassed by the Law on Obligations as they had not been common, or even known, at the time the Law was adopted. Thus, for example, in Serbian legal system, distribution, franchise, factoring, forfeiting and some other modern contracts are not regulated by law despite the fact they are quite usual in commercial transactions. On the other hand, financial leasing is regulated by the recently adopted special law but the jurisprudence in that field is not developed yet. Why and what to do when these contracts go wrong? What are the principal obligations of the parties, what are the grounds of failure and how to prevent it, which rules shall apply and what are the methods of dispute resolution? The article will focus on these and other issues essential to successful drafting and performance of modern commercial contracts in Serbian legal system and particular attention will be given to distribution, franchise and financial leasing as the transactions of special importance for development and further improvement of commercial relations.

Franchise

General overview

The franchise contract, as a relatively new commercial contract is not regulated by law in the Serbian legal system and is thus classified as an unnamed contract (*contrat innommé*). The situation is similar in other national legal systems [list of countries that have regulated franchise by law see in : 20, p.291] since this transaction, established in the USA, was only developed significantly in the mid-twentieth century and was introduced to Europe, primarily, by American companies (McDonald's, Coca-Cola etc). In addition, franchise transaction, due to its mixed legal nature, relates to different legal fields such as contract law, representation and distribution of goods, financial investments, intellectual property, competition law, company law, fiscal law, consumer protection law and liability for damages from products, insurance law, labour law, technology transfer, foreign investment law, etc. For that reason, there are many difficulties in the attempts to regulate it by law [23].

In the Serbian legal system, the franchise contract is subject to the general principles of law, the general rules of the Law on Obligations, as well as to the rules provided by the Law on Obligations for other similar contracts (licence, sale, lease, commercial representation, etc).[1] In the development of the Civil Code of Serbia, which is underway, the question arose on whether the franchise contract should be regulated by law. In this respect, the expressed views were very much in favour of the regulation of this contract by the national codification, given that the franchisor, in the master agreement, by the choice of law clause, usually imposes his own national law, which could place both the local franchisor and the franchisee into a subordinate position. In addition, it was stated that invoking other similar contracts in resolving a dispute arising from a franchise contract was not a preferred solution, since in this case elements of different contracts would have to be combined. On these grounds, editors of the Civil Code presented a possible Draft of the provisions of the franchise contract (hereinafter: Draft).

Definition and form of the franchise contract

In the legal doctrine there is no uniform definition of the franchise contract. Pursuant to the Draft, the franchise contract is a contract in which one party – the franchisor - grants exclusive rights of sale of goods or provision of services to the other party – the franchisee, authorising the franchisee to act under his registered name (brand), to use his licences (commercial names and trademarks) and other distinguishing marks, to use his technical and commercial methods of conducting business, know-how, marketing, with the provision of expert services and assistance in training and operation of the franchisee, also including the right to constantly provide instructions and monitor the operation of the franchisee, while the other party -

1 It is generally considered that principal international legal sources for this contract comprise the general terms and conditions of business, type-contracts, legal guidelines and model contracts. At the EU level, the Commission has, within the regulations related to competition, adopted its Ordinance 4087/88 pertaining to a block of exceptions to the categories of franchise agreements of November 30, 1988. A significant role in regulating franchise belongs also to the European Code of Ethics for Franchise, adopted by the European Franchise Federation on September 23 1972, terms and conditions of business transactions by the International Franchise Association (IFA) and the ICC model Contract on Franchise. Within the UNIDROIT, the Legal Guideline for the International Master Franchise Agreements was developed in 1988 and revised in 2007, as well as the Model Law on Disclosure in Franchise in 2002. Franchise rules are also provided by the *Draft Common Frame of Reference*.

the franchisee - pays the adequate fee to the franchisor for the rights granted and services provided (Art. 1257).[2]

As the franchise contract is not regulated by law in the Serbian legal system, its content is determined by the contracting parties, pursuant to the principle of party autonomy. On the other hand, the Draft provides that a franchise contract must comprise: identification of the contracting parties; the commercial activity in question; exclusive rights transferred by the contract; the amount, deadlines and method of payment of the fee; the territory on which the exclusive rights are used (Art. 1258). According to the Draft, the contractual limitations are to be considered void if they lay down the following: that the franchisor has the right to determine the price at which the franchisee sells the goods, or the price of labour (services) of the franchisee, or determines the lowest or highest price; the franchisee has the right to sell goods or supply services solely to a distinct category of clients, or solely to clients on a specific territory. In addition to the mandatory content of the franchise contract, the Draft, by non-mandatory rules, provides for the contract provisions which may be inserted into the contract (Art. 1265).

Given that it is not regulated by law, the franchise contract may become a formal contract only by the will of the contracting parties. Nevertheless, franchise contracts are generally concluded in writing, primarily due to the need to prove their contents. In addition, this being a long-term and complex contractual relationship which is not regulated by law, the rights and obligations from this relationship should be defined in the contract precisely and in detail, to avoid any potential ambiguous situations that would be a basis for different interpretations and disputes. Finally, an important reason for concluding franchise contracts in writing lies in the fact that they usually comprise the arbitration clause; in most national laws and international conventions, written form is a prerequisite for the validity of such a clause. The Draft provides for the mandatory written form of the franchise contract (Art. 1259).

In most cases, franchisors conclude standard contracts with their partners from a single franchise system, which are completely prepared in advance as forms and which, in terms of the technique of conclusion, represent contracts of adhesion. Therefore, the franchise contract is, as a rule, concluded as a type contract, prepared in whole by one of the parties. The other party adheres to the pre-defined elements and conditions of the contract, which, as a consequence, leads to the application of general rules of the Law on Obligations, stating that in such a case (Art.100) unclear provisions are to be interpreted in favour of the party that adhered to the contract (the *contra preferentem* rule). On the other hand, contracts of this type usually point to general conditions. In this respect, the Law on Obligations provides a general rule pursuant to which general conditions are mandatory for a contracting party if that party was aware of them at the time the contract was concluded (Art. 142 par.3). In that context, special attention should be paid to the possibility for the Court to abolish certain provisions of the general terms that are "contrary to the objective of the contract itself or good business practices..." or to refuse to apply the provisions that "deprive the other party of the right to object, or cause that party to lose contractual rights or miss deadlines, or are generally unjust or too strict for the other party" (Law on Obligations, Art. 143). When a certain provision of the contract is abolished, the whole contract will not be abolished if it can survive without the abolished provision, i.e. if this provision was neither a prerequisite for this contract, nor the principal motive for its conclusion (about the rules on partial nullity, (Law on Obligations, Art. 105).

Obligations of the franchisor

The main obligation of the franchisor from the franchise contract is to grant, to the franchisee, an exclusive right of sale of products or a group of products or supply of services, as well as the right to use the trademark or service marks and other intellectual property rights pursuant to the terms agreed on in the contract. This obligation encompasses the obligation of the franchisor not to grant this right to other persons on the agreed territory, nor to open branches for the

2 Compare with the definition of the franchise contract in the Draft Common Frame of Reference, pursuant to which: "*This Chapter applies to contracts under which one party, the franchisor, grants the other party, the franchisee, in exchange for remuneration, the right to conduct a business (franchise business) within the franchisor's network for the purposes of supplying certain products on the franchisee's behalf and in the franchisee's name, and under which the franchisee has the right and the obligation to use the franchisor's trade name or trade mark or other intellectual property rights, know-how and business method.*" (Art. 4: 101).

sale of the goods or services on the territory covered by the contract, nor deliver the goods or services under the franchise to other businesses on the given territory. Other forms of intellectual property rights that the franchisor may grant to the franchisee encompass the right to use other distinguishing marks of goods and services, such as symbols, outer packaging, labels of geographic origin, industrial shaping, design of the building, business premises, and interior decoration and equipment. Intellectual property rights must be free from demands or aspirations of third parties. The franchisor is also obliged to transfer certain knowledge and experiences, pertaining, mostly, to know-how. Another group of obligations pertains to the services that are provided in order to make it easier for the franchisee to begin operations and to increase the efficiency of his business, for the activities defined in the franchise contract (assistance in the selection of materials and equipment of business premises, to ensure the uniform appearance conforming to the franchise system, assistance in the selection of adequate premises, staff training, assistance in managing the company, the disclosing of business information and innovations, as well as commercial and technical assistance, etc). Finally, the franchisor must guarantee the franchisee that he will provide an adequate and regular supply. On the other hand, the franchisor reserves the right to control the business operations of the franchisee and the right to be informed on all the issues pertaining to the quality and progress of the franchise. The franchisor also has the right to demand that the franchisee sell only the franchisor's products and the right to influence the price, but in EU countries, he does not have the right to fix the price, whether directly or indirectly, as this would be contrary to Art. 81 (1) of the Contract on Association of the European Community.

In this respect, a special provision in the Draft specifies the basic obligations of the franchisor. Pursuant to the Draft, the franchisor is obliged to allow the franchisee to use his exclusive rights, for the purpose of exclusive sale of goods or services. These rights include: the right to use the brand name, the right to use the trademark or service marks, models and other distinguishing marks, marketing methods and all the other knowledge and experience in the promotion and sale of goods and services. To ensure the realisation of the contracted business activities, the franchisor is obliged to constantly keep the franchisee informed of any facts that enable the successful conduct of business, to organize training and professional development courses for the franchisee's employees in taking up and managing business transactions, to assist the franchisee in case of dispute in the process of trademark registration and licensing. The franchisor is obliged to supervise the operations, in order to protect the trademark and control its use, as well as to protect the rights transferred to the franchisee in case of any demands put forth by third parties (Art. 1262). The franchisor is responsible for the existence and content of the transferred rights, as well as for the information provided to the franchisee for the realisation of programs included in the transferred rights. In case this responsibility is violated, the franchisee is entitled to terminate the contract or to reduce the fee owed to the franchisor, in the percentage determined by an independent expert (Art.1263). Finally, the franchisor holds a subsidiary responsibility in third party claims against the franchisee, in case of non-uniformity of characteristics of goods or services sold to third parties by the franchisee, pursuant to the franchise contract. In third party claims towards the franchisee, relating to the products manufactured by the franchisor, the franchisor assumes joint liability with the franchisee (Art. 1266).

The Serbian legal system has no special regulations related to the obligation of advertising under the franchise contract. Nevertheless, franchise contracts concluded in practice regularly comprise a clause regulating this matter. This clause most frequently prescribes that the franchisor is obliged to invest his best efforts in promoting and preserving the reputation of the franchise network. They are, among other things, obliged to design and harmonise the advertising campaigns aimed at promoting the franchise network. Any activities relating to the promotion and protection of reputation of the franchising network are conducted at the expense of the franchisor.[3]

Obligations of the franchisee

Franchisee's obligations may be classified into those regarding the payment of the fee, and those pertaining to the manner of using the franchise.

The basic obligation of the franchisee is reflected in the payment of a fee for the transferred rights and services. The parties define the type and manner of compensation by

3 See Draft Common Frame of Reference, Art. 4:207.

contract. In practice, it is common to set an initial fee and a fee depending on turnover. In contracts for the franchise of services, as well as contracts between wholesalers and retailers, when it comes to the franchise of goods, it is usually stipulated that the franchisee is obliged to pay a fee depending on turnover (royalty fee). In addition, a single payment at the beginning or upon adhesion (initial fee) is also defined, as well as the minimum amount that the franchisee must pay if the fee is calculated depending on turnover. The fee may be included in the sales price of the product that the franchisor is selling to the franchisee. With regard to the obligation of the franchisee to pay a fee, the Draft provides that the franchisee is obliged to pay a fee for the transferred rights, the amount of which is determined, in general, according to the percentage of realised profit or turnover (Art. 1264).

Concerning the other franchisee's obligations,[4] the Draft primarily prescribes the obligation of paying a fee for the transferred rights, the amount of which is determined, in general, in accordance with the percentage of the profit gained or turnover. Furthermore, the franchise contract may also impose additional obligations on the franchisee, such as, for example, the procurement of goods from the franchisor or persons named by him, implementation of all the instructions and standards of operation, as well as technological procedures in the production or supply of services, obligation of specific investments, the uniform external appearance of the business seat, etc. (Draft, Art. 1264). In addition, the franchisee is obliged not to disclose to any third parties confidential information or business secrets of the franchisor that were disclosed to him during the term of the contract. This obligation continues to apply even after the termination of the franchise agreement (Draft, Art. 1273).

Supply of equipment, products and services

The obligation of supplying equipment, products and services is not laid down by any special regulations in the Serbian legal system, but rather prescribed under the contract based on the principle of party autonomy. In this respect, it is a widely accepted rule that if the franchisee is obliged to procure products from the franchisor or from a supplier appointed by him, the franchisor undertakes to supply the franchisee with the ordered products in a reasonable time frame. This rule is applied even when the franchisee is not bound by the contract to procure the products from the franchisor or a supplier appointed by them but is, in practice, directed to procure the products in such a way.[5] In general, the franchisor, as a supplier, is obliged to supply the franchisee in sufficient quantities and regularly; any breach of this obligation is subject to the general rules of the Law on Obligations. On the other hand, the Draft specifies that the franchisor bears subsidiary responsibility in third-person claims against the franchisee in the case of non-uniformity of goods or services sold by the franchisee under the franchise contract. The franchisor shares joint responsibility with the franchisee in third-party claims against the franchisee, with regards to the goods produced by the franchisor (Draft, Art. 1266). If the franchise contract prescribes the procurement of

4 The following are, as a rule, the obligations of the franchisee relating to the manner of franchise use:
1) to sell exclusively the franchisor's goods defined in the contract on the business premises stipulated in the contract;
2) to refrain from performing a similar business activity outside of the territory defined in the contract for the duration of the contract or following contract termination in the agreed period of time;
3) to invest his best efforts into the sale of goods or the supply of services that are the subject of the franchise;
4) to maintain the building, business premises, equipment and assets pursuant to the contract and the corresponding standards;
5) to sell the goods produced exclusively by the franchisor or a third party defined by the franchisor and, in the case this is impractical due to the nature of the goods, to apply objective quality standards;
6) to refrain from engaging, directly or indirectly, in similar business activities on any territory which poses competition to the members of the franchise network;
7) to sell to end consumers, other franchisors and resellers through other distributive channels only the goods supplied by the franchisor or with his consent;
8) to keep, as a business secret, all the information disclosed to them by the franchisor;
9) to protect the know-how and preserve the common identity and reputation of the franchise network, selling only the goods that meet the quality standards set by the franchisor;
10) to use all the transferred rights only in the business unit defined in the contract, according to the prescribed standards and in the manner specified in the contract;
11) to use the know-how solely for the purposes of exploiting the franchise;
12) to inform the franchisor of any infringements of industrial or intellectual property rights, and to undertake action against any person committing such infringements or assist the franchisor therein;
13) to inform the franchisor of all the experiences gained in his exploitation of the franchise.

In addition to these, the franchisee may take on other obligations prescribed in the contract.

5 See Draft Common Frame of Reference, Art. 4:204.

goods, as a rule, general rules of delivery and payment for these goods are appended to the contract and represent its constituent part which includes explicit provisions on payment guarantees and consequences of delay.

Intellectual property rights, know-how and confidentiality

One of the principal obligations of the franchisor is to transfer the right of use of trademarks or service marks, as well as other intellectual property rights to the franchisee, in line with the contractual conditions. Other forms of intellectual property rights that may be transferred to the franchisee by the franchisor include the right to use other distinct marks, such as symbols, external packaging, marks of geographic origin, industrial design, design of the building, business premises and interior decoration and equipment. The franchisor has to transfer to the franchisee the right to use intellectual property to the extent necessary for the performance of the franchise business. In that respect, the franchisor must grant to the franchisee an unhindered, continuous use of these rights, so long as the aforementioned rights are free from third party claims or aspirations. Within the general provision on franchisor liability, the Draft holds the franchisor responsible for the existence and content of the rights transferred to the franchisee, as well as for the information disclosed to the franchisee necessary for the realization of the programs defined in the rights transferred. In case of an infringement of this obligation, the franchisee is entitled to terminate the contract or to reduce the fee owed to the franchisor to the amount determined by an independent expert (Draft, Art. 1263).

The franchisor is obliged to transfer certain knowledge and experience (know-how) to the franchisee, which the franchisee requires for the conduct of the franchised business activities (Draft Common Frame of Reference, Art. 4:202). This obligation includes not only the technical know-how (secret production methods, the use of recipes, formulae, specifications, procedures and methods of production), but also the so-called commercial know-how, including the knowledge on winning over the consumers, on marketing and turnover, as well as the knowledge on the basic financial management and calculation, including the methods of training commercial associates.

The obligation of the franchisee to protect the information and data on the franchisor and his business as classified information, i.e. as a business secret, is regularly prescribed by franchise contracts (confidentiality clause). A franchisor can impose confidentiality agreements before, during and after the expiration of the agreement. During and after the franchise agreement, parties are free to stipulate these kinds of clauses. However, it should be emphasized that this obligation exists in the Serbian legal system even if it is not explicitly prescribed in the contract, as it derives from the general principles of the Law on Contracts and Torts, primarily the principle of good faith and honesty. The obligation of keeping business secrets is explicitly stipulated in the Draft as well, according to which the franchisee is obliged not to disclose to third parties any confidential information or business secrets of the franchisor, which they obtained during the term of the contract. This obligation continues to be valid following the termination of the franchise contract (Draft, Art. 1273).

Termination of the franchise contract

Termination of the franchise contract due to non-performance is subject to general rules of the Law on Obligations. In addition to the general provisions, the Draft specifies the rules on the termination of franchise contracts due to the expiration of the contractual period, the expiry of the franchisor's exclusive rights, and enforced liquidation or insolvency.

With respect to the termination of contract due to the expiration of the contractual period, the Draft specifies that the duration of the franchise contract is determined by the contracting parties, depending on the needs of distribution of goods or services which are the subject of this contract. If the duration of the contract has not been determined or exceeds ten years, each of the contracting parties has the option of terminating the contract with the obligation of giving a six-months notice, unless the contract prescribes a longer notice period. If an extension of the contract following its expiration has not been prescribed and the contracting parties continue to meet their contractual obligations, the contract is extended, tacitly, each time for a two-year period. Once the contract is terminated due to its expiry, the franchisee is obliged to return all the leased assets to the franchisor, as well as to stop using the words, elements, marks and all the other brand distinctions that he was granted to use by the franchisor, pursuant to the franchise contract, in the business transactions of his company (Draft, Art.1267).

When it comes to the expiry of the franchisor's exclusive rights, the Draft prescribes that in case the right to use a brand name and other trademarks expires, and they are not replaced by a new brand name or trademark, the franchise contract shall cease to take effect. If there is a change in the brand name and other trademarks of the franchisor, the franchise contract shall produce legal effects with regard to the new brand name or trademarks, if the franchisee does not request termination of the contract and compensation for damage. If the contract is extended, the franchisee may demand a proportional reduction of the compensation paid to the franchisor (Draft, Art.1269).

Finally, pursuant to the Draft, the franchise contract ceases to produce legal effects in the case of enforced liquidation or insolvency of either the franchisor or the franchisee (Draft, Art.1270).

A special rule of the Draft relates to the case of substitution of the holder of exclusive rights. Pursuant to this rule, transfer of any exclusive right, transferred pursuant to the franchise contract to the franchisee, to any other person, does not lead to the modification or termination of the franchise contract (Draft, Art.1271)

Distribution

General overview

In the legal system of Serbia the distribution contract is not regulated by law, so that it falls in the category of unnamed contracts (contrats innommé). As an unnamed contract, distribution agreement may be validly concluded in accordance with the principle of party autonomy, within the limits of public policy, mandatory rules and good faith. Due to non-existence of statutory provisions that replace or supplement the will of contracting parties, the distribution contract should be formulated with special attention, so that the intention of the contracting parties be expressed correctly, precisely and unequivocally. In case of dispute, the court shall in principle apply general rules and principles of law on obligations as well as the rules relevant for other similar contracts (analogy) provided by the Serbian Law on Obligations. In a general sense, one may conclude that the most important national sources of law relating to the distribution agreement include contract as the first source, practices which the parties have established between themselves, trade usage to which parties have agreed, general principles in the field of commercial relations, general principles and rules of the national Code on Obligations as well as its specific rules relevant for the similar contracts, especially the contract of commercial agency and licensing agreement. Having in mind the importance and frequency of distribution transactions in commercial practice, editors of the Serbian Civil Code presented a possible Draft of the provisions of the distribution contract (hereinafter: Draft).

Definition and form of the distribution contract

Distribution agreement, as a typical contract with the origins in the *lex mercatoria*, provides a wide legal framework for housing various forms of distribution transactions that, quite often, involve different legal regimes. However, all forms of that transaction are dominated by specific common characteristics, opening up a possibility of appropriately making its definition. These characteristics are the following: the distribution agreement is a general contract; this contract is an instrument by which a distributor undertakes to periodically buy specified goods from a designated supplier for the purpose of selling them to customers; the distributor purchases the goods on his own behalf, for his account and at his own risk; the distributor sells the goods to buyers at the price and under the conditions determined by himself;[6] the distributor's profit is expressed by the difference between the selling and the buying price [about general characteristics of the distribution agreement, see more in: 2, p.260; 1, p.100; 8, p.13; 26, pp: 430-473; 14, pp: 359-377]

On that ground, one may conclude that distribution contract is a contract under which one party, the supplier, agrees to supply the other party, the distributor, with products

6 See Art. 2 of the Belgian Law, of 27 July 1961, relating to unilateral termination of contract on exclusive distribution entered into for an indefinite period of time, according to which a distribution agreement is any contract by which a manufacturer, who grants distributorship to one or several distributors, grants the right of sale of products (manufactured by the supplier or distributed by him), on his own behalf and for his account.

on a continuing basis and the distributor agrees to purchase them and to supply them to others in the distributor's name and on the distributor's behalf. Within the framework of these general definition various types of distributorship arrangements have been developed in business practices among which the most significant are the following: a) an exclusive distribution contract under which the supplier agrees to supply products to only one distributor within a certain territory or to a certain group of customers; b) a selective distribution contract under which the supplier agrees to supply products, either directly or indirectly, only to distributors selected on the basis of specified criteria and c) an exclusive purchasing contract under which the distributor agrees to purchase products only from the supplier or from a party designated by the supplier. These definitions are widely accepted in comparative law[7] and reflected in the Draft (Arts.620-621).

There is no formality required to the validity of a distribution contract in Serbian law. A distribution contract concluded orally would be valid according to the principle solo consensu obligat, although in practice it is mostly concluded in written in order to provide the prove of its existence and content. Where there is no formality requirements by law, the effects of the form depend of the intention of the parties. If the parties agree upon the written form as a condition of validity of the contract, the contract would produce legal effects only if concluded in the agreed form. It also applies to clauses requiring written form as the condition of validity of possible future amendments. However, one should take into consideration that the court may deny application of clauses of the general terms and conditions precluding the other party to raise exceptions, or of those on the ground of which such party loses its contractual rights or loses time limits, or those which are otherwise unjust or excessively strict towards such party (Law on Obligations, Art.143.2). In addition, such clause would be without effect if it is contrary to the general principle of prohibition of the creation and misuse of a monopoly position (Law on Obligations, Art.14.). In other words, the distributor may not be exposed, by such a clause, to the arbitrariness or *mala fide* acts on the part of the supplier. Taking into consideration that distribution is a long-term and complex contractual relationship for which there are no supplementary statutory provisions, the rights and duties emanating from that relationship should be precisely and minutely stipulated in the contract, in order to avoid controversies that could be a ground for different interpretation which, as a rule, lead to disputes.

7 See Draft Common Frame of Reference, art. IV.E.-5:101

Principal obligations of the parties

The obligations of the contracting parties are defined by contract, in accordance with the principle of party autonomy, and depend on the nature and type of a specific distribution contract to be entered into. However there are certain obligations that regularly appear in contracts of that kind and that, because of this, may be designated as typical.

The basic obligation of the distributor consists in organizing the sale in the interest of the supplier. As a rule, a general clause is included in the agreement by which the distributor undertakes to use best efforts to sell, promote, market and support the products, and to develop and maintain the reputation and goodwill of the supplier and the products in the territory with distributors' consumers [6, p.213] In respect to that obligation of the distributor, the term "best efforts" might become a critical issue due to the possibility of different interpretations, so the parties are well advised to precisely its meaning in the contract.[8]

8 The "best efforts" clause means that the distributor is obliged to perform a specific act by applying due care that stems out of the appropriate standard, but he will not be liable for damage should the act taken fail to realize for supplier the result of the transaction. The Law on Obligations provides that parties in a contractual relationship are bound, in performing their obligations, to proceed with care required in legal transactions in the corresponding kind of such relationships, i.e. the care of reasonable man of business (commercial contracts), and the care of a *bonus pater familias* (civil contracts). This is a general rule, requiring the conduct in conformity with the specific standard. That standard, depending on a particular obligation relationship, presupposes the existence of care of a higher or lower degree, taken as a criterion of liability of debtor who, in performing his obligations, fails to apply due care otherwise required of him. The due care is evaluated in each particular case according to the type of person behaving normally in respect to his capacity, knowledge and profession, the other relevant elements including the expectation in the sphere of business from such person in the corresponding kind of obligation relationships. The Law on Obligations has accepted, as a standard, the objective care, meaning that individual characteristics of contracting parties are not taken as relevant. Since in the concrete case a professional businessman is at issue, i.e. the distributor who performs commercial activities, the criterion would be stricter, so that professional care would be required of him. It goes without saying that this is a *questio facti* which has to be assessed by the court in each particular case, while taking in consideration all relevant circumstances of the case. With respect to this obligation of the distributor, one should underline that, unless otherwise agreed, the distributor has no authority to enter into contracts on behalf of the supplier, or in any way to bind supplier towards third parties.

The Distributor may advertise the Products and/or his activity as Distributor of the Supplier on Internet, provided he informs the Supplier so that the latter can check that such advertising conforms to his trademark image. The costs of such advertising will be borne, unless otherwise agreed, by the Distributor. Under EC Antitrust Law the distributor must be free to use the internet because the promotion through internet is considered (if not specifically directed to customers outside the territory) as a "passive sale" that cannot be inhibited. Therefore, a general prohibition to advertise on internet would make the distribution contract illegal. The supplier may however verify that the advertising conforms to his image, provided this is not used as an pretext for simply inhibiting to use of internet.[9] The meaning of the "passive sale" is similarly defined in Serbian law by Regulation on agreements on participants in market trading on different levels of production and distribution (Art.2 point 8).

In addition, the distributor, as a rule, undertakes to establish an appropriate organization of sale, to recruit staff and provide sales premises, in order to effect sale in the entire territory – which is most frequently done in conformity with the supplier's standards. The distributor may also assume the obligation to establish, within a given time limit, a sales network of a specified number of sales centres. If the distributor possesses his own retail trade network, the contract is concluded and does produce legal effects directly between him and the retailer. Various modalities are possible in the sphere of relationship of the supplier towards this contract – full freedom of the distributor in the choice of subcontractors, the obligation of preliminary notification of the supplier, specific conditions making dependent the choice of subcontractors on the supplier's consent.

9 IDI International distribution contract – balanced- Art.4, www.idiproject.com. Regulation 2790/1999, art.4; EC Guidelines on Vertical Restraints (§ 51): „If a customer visits the web site of a distributor and contacts the distributor and if such contact leads to a sale, including delivery, then that is considered passive selling. The language used on the website or in the communication plays normally no role in that respect. Insofar as a web site is not specifically targeted at customers primarily inside the territory or customer group exclusively allocated to another distributor, for instance with the use of banners or links in pages of providers specifically available to these exclusively allocated customers, the website is not considered a form of active selling. However, unsolicited e-mails sent to individual customers or specific customer groups are considered active selling."

The distribution agreement in most case includes stipulation as to minimal quantities of goods to be purchased from the supplier within a specified time period, which is coupled with the supplier's duty to provide for adequate conditions to ensure such quotas. In principle, should the distributor fail to realize the minimal quota (that may be stipulated in terms of money, quantity of goods or percentage of fulfilling the optimal quota), the supplier may terminate the contract, cancel the exclusivity and/or reduce the contracted territory of the distributor, which depends on the terms of a concrete agreement. On the other hand, the parties frequently include the contract clause providing that supplier must warn the distributer within a reasonable time (or some other period fixed by the parties) when the supplier foresees that the supplier's capacity will be significantly less than the distributor has reason to expect. Taking into consideration the importance of this obligation in commercial practice as well as its legal consequences, the Draft regulates it in the form of a non-mandatory rule (Art. 629).

Remaining obligations of the distributor in most cases include: respecting the ban on sale outside the agreed territory in exclusive distribution contracts, informing the supplier on all matters relevant for enhancing the sales, confidentiality, possessing minimal warehouse stocks, effecting post-sale services (sale of spare-parts, providing servicing facilities, personnel training, guarantees for proper functioning of products, and the like), exhibiting of products at fairs and expositions, etc . (see Arts.632-641 of the Draft). In exclusive distribution contract and selective distribution contracts, the distributor, as a rule, must provide the supplier with reasonable access to the distributor's premises to enable the supplier to check that the distributor is complying with the standards agreed upon in the contract and with reasonable instructions given.[10]

The principal obligation of the supplier is delivery of the products ordered by the distributor, subject to their availability, and provided payment of the products is adequately warranted. The parties frequently include a contract clause providing that the supplier may not unreasonably reject orders received from the distributor and that a repeated refusal of orders contrary to good faith

10 Common Frame of Reference, art.IV.E-5:305.

(e.g. if made for the purpose of hindering the distributor's activity) shall be considered as a breach of contract by the supplier. Having in mind the legal consequences of rejection of orders by the supplier, the distributor should be obliged to warn the supplier within a reasonable time (or some other period fixed by the parties) when the distributor foresees that the distributor's requirements will be significantly less than the supplier had reason to expect. The same rules are adopted in the Draft (Arts.625 and 629).

Sales of the products to the distributor in most cases are governed by the supplier's general conditions of sale. It is usual that the supplier retains the right to modify prices, provided he gives an appropriate notice to the distributor. In order to avoid abuses, parties may agree that the distributor will be granted the most favoured customer condition. With respect to resale prices of the products, the distributor is usually free to autonomously determine them, with the exception that he is not allowed to sell at prices higher than the maximum resale prices that the supplier may impose. The supplier may indicate recommended resale prices which are not binding and do in no way affect the distributor's right to grant lower prices to his customers. In several jurisdictions antitrust rules forbid suppliers to impose to distributors a fixed resale price. In the EU countries this matter is regulated by EC Regulation 2790/1999, which prohibits clauses or practices requiring the distributor to observe a resale price imposed by the supplier and only allows clauses imposing a maximum sale price or recommending a price on which the distributor is free to grant discounts.[11] The similar rule is provided in Serbian law by the Competition Act (Art.10.2.1) and Regulation on agreements on participants in market trading on different levels of production and distribution (Art.5.point 1). For these reasons, the parties to international distribution contract should carefully check whether the contract clause defining the resale prices is in accordance with mandatory provisions of the applicable law.

The other obligations of the supplier usually include: obligation to provide the distributor with information concerning the characteristics of the products, the prices and terms for the supply, any relevant communication between the supplier and customers, any advertising campaigns relevant to the operation of the business; obligation to provide the distributor with all relevant advertising materials needed for the proper distribution and promotion of the products; obligation to make reasonable efforts not to damage the reputation of the products, etc. (Draft, Arts 625-631).

Termination of the distribution contract

Grounds for termination of distribution contract due to non-performance are in most cases stipulated by the parties themselves (termination clause). General rules of the Serbian Law on Obligations on contract termination (Arts.124-132) will be relevant as supplementary rules in case of implementation of Serbian law as applicable law. One should note in that respect that the Draft adopts a special rule concerning termination due to non-performance providing that the distribution contract may be terminated only in case of fundamental breach of contract (Art.645). Taking into consideration that contract termination is one of the most frequent causes of disputes arising from distribution transactions, parties are well advised to precisely define in the contract all the issues relevant for contract termination - grounds for termination with immediate effect - automatic, *ipso iure* termination, grounds for termination where the other party is obliged to fix to the party in breach an additional period of time for performance (including duration of that additional period of time), notice on termination (means and effects of notice), legal effects of termination, etc.

In addition to termination due to non-performance, the Draft specifies the rules on the termination of distribution contract for a definite period and termination of distribution contract for an indefinite period as well as the rules relevant for the cancellation of contract without giving the cancellation notice in due time (Arts.642-644). The rules are of non-mandatory nature, so the parties may otherwise agree.

One of the most delicate questions in distribution contracts relates to the indemnity in case of termination. Some jurisdictions recognise to distributors a goodwill

11 IDI International distribution contract – balanced- Arts.9 and 10, available at: www.idiproject.com, 23.04.2012.

indemnity at the end of the contract, subject to the existence of certain conditions. If the distributor is domiciled or is doing business in a country having mandatory rules on indemnity, it is recommended to check the situation under the law of such country before formulating the appropriate contract clause.[12] In practices, the parties frequently provide that in case of termination by the supplier for reasons other than a fundamental breach by the distributor, the distributor shall be entitled to an indemnity calculated in accordance with the contract provisions. In principle, the grant of an indemnity does not affect the distributor's right to claim damages for breach of contract committed by the supplier.[13] Following the best practices, the Draft adopts the rule on indemnity for goodwill, under which, when the distribution contract comes to an end for any reason except for termination due to non-performance, distributor is entitled to an indemnity from the supplier for goodwill if the distributor, on the basis of distribution contract, has significantly increased the supplier's volume of business and if the supplier continues to derive substantial benefits from that business (Art. 646).

Financial leasing

General overview

Financial leasing in the Serbian legal system is regulated by the Law on Financial Leasing of 2003 (hereinafter: Law). By regulating this relatively new transaction, the Law attempts to introduce a high level of legal security in the relations between the contracting parties, without limiting the possibility of their further development of financial leasing transactions, but rather encouraging and stimulating such development. Therefore, the Law establishes a general framework for leasing activities, allowing the contracting parties to regulate their relationships within that framework in accordance with the principle of party autonomy [13; 16, pp: 503-516; 17, pp: 140-152]

The principal legal source used in the Law in defining financial leasing transactions, its basic characteristics and rights and obligations of parties to these transactions was the UNIDROIT Convention on International Financial

Leasing.[14] A comparative analysis of the Law and the Convention shows that the Law, especially with regard to its basic issues, contains a large number of solutions of the Convention, thus transposing internationally accepted standards into national legislation, in accordance with the entire national legal system, legal tradition and fundamental legal principles. In addition to the UNIDROIT Convention, a significant legal source in drafting this Law were the solutions of the Serbian Law on Obligations pertaining to legal transactions related to financial leasing. Thus, the Law on Obligations regulates rental agreements, agreements on sale with reservation of title – *pactum reservati dominii*, sale with payment in instalments, agreements on loans as well as credit agreements. Finally, in drafting the Law, rules of national laws of other countries regulating financial leasing were also taken into consideration, as well as doctrine views and jurisprudence in comparative law.[15]

Definition, content and form of the distribution contract

For the purposes of the Law, a financial leasing transaction is a transaction in which the lessor:

1) enters into an agreement with the supplier of the leasing object chosen by the lessee, pursuant to the specifications provided by the lessee and under the terms approved by the lessee so far as they concern his interests, under which the lessor acquires title to the leasing object (supply agreement);
2) enters into a financial leasing agreement with the lessee, granting to the lessee the right to possession and use of the leasing object for the agreed period of time in return for the payment of the

12 See IDI International distribution contract – balanced- Art.21, available at: www.idiproject.com, 23.04.2012

13 Ibidem

14 *Unidroit Convention on International Financial Leasing*. The Convention was adopted in Ottawa on May 28, 1998 and came into force on May 1, 1995

15 The principle of party autonomy as an expression of the centuries-long evolution of contract law and the imperative of compliance with contracts embodied in the principle *pacta sunt servanda* have found its full expression and implementation in the Serbian Law on Financial Leasing. In financial leasing transactions, special importance is given to the principles of the Law on Obligations, in particular to the principle of equality of the parties, principle of good faith and honesty, principle of prohibiting the creation and exploitation of a monopoly position, principle of equivalence of mutual contributions and principle of application of good business practice

agreed fee in the agreed instalments by the lessee (financial leasing agreement).

The concept of financial leasing, thus defined, represents a wide legal formula encompassing different forms of this transaction which often include different legal regimes, but which are, nevertheless, dominated by certain common characteristics allowing for the possibility of formulating a definition such as this. These characteristics are reflected primarily in the three-dimensional relationship of financial leasing, with three parties engaged in the transaction: the lessor, the lessee and the supplier, as well as in the rule that the compensation paid by the lessee to the lessor for the use of the leasing object (leasing fee) is established by taking into account primarily the depreciation of the whole or the most important part of the value of the leasing object. These two specific features, in synergy, represent the main characteristics of financial leasing and are, at the same time, the key starting points for distinguishing financial leasing from other related legal transactions.

The Law specifies that the financial leasing agreement must include the following: precise identification of the leasing object, the amount of fee to be paid by the lessee, the amount of individual fee instalments, their number and time of payment, and the duration of the agreement. In addition to these, the financial leasing agreement may include the following: the place, time and manner of delivery of the leasing object, title to the leasing object, the party obligated to insure the leasing object and insured risks, the manner of termination of the agreement, option to purchase or extend the agreement, the transportation costs of the leasing object, its installation, disassembly and maintenance, parts replacement, servicing, technical and technological improvement, training of the lessee's staff to use the leasing object and other terms on which the parties reach an agreement. The leasing agreement must be concluded in written form.

Principal obligations of the parties

The Law specifies the principal rights and obligations for all the parties of the financial leasing transaction – the lessor, the lessee and the supplier. These rules are mostly of non-mandatory nature, so the parties to the particular contract may otherwise agree.

Under the law, the lessor is obliged to acquire the leasing object from the supplier chosen by the lessee, pursuant to the specifications provided by the lessee – *the obligation to acquire the leasing object* (Art.14). In the event of the lessee's bankruptcy, the lessor has the right to exempt the leasing object (exclusion right) from the lessee's bankruptcy estate, in accordance with the law governing bankruptcy proceedings. The lessee and the court competent for conducting bankruptcy proceedings shall notify the lessor, without delay, of the initiation of the bankruptcy proceedings – *protection in the event of lessee's bankruptcy*. The supplier is liable to the lessee for material defects of the leasing object, unless otherwise provided in the agreement – *exclusion of liability for material defects*. The lessor does not incur any liability to the lessee for damage caused by the leasing object except to the extent the lessee has suffered loss as a result of its reliance on the lessor's skill and judgement, or due to the lessor's participation in the selection of the supplier, or specification of the leasing object, unless otherwise provided in the agreement – *exclusion of liability for damage caused by the leasing object*. The lessor is liable for existence of third party's rights on the leasing object which exclude, reduce or limit the lessee's unhindered possession, and of which the lessee was not informed, nor did he agree to accept the leasing object on such conditions – *liability for legal defects*. The lessee notifies the lessor of any third party's claim of rights to the leasing object requests the lessor to free the leasing object of the third party's right or claim within a reasonable time thereafter. The lessee, who initiated and lost a lawsuit against a third party, may invoke the lessor's liability for legal defects, unless the lessor proves that he had available means to reject the third party's claim. The lessee also has the right to invoke the lessor's liability for legal defects of the leasing object even when he, without notifying the lessor and without entering into lawsuit, admitted a third party's right. If the lessee has paid a certain amount of money to the third party to give up its right, the lessor may be released of his liability if he indemnifies the lessee for the amount paid and the loss suffered – *notification of the lessor*. The leasing agreement is terminated if the leasing object is removed from the possession of the lessee and the lessor does not act according to the indicated lessee's request, unless otherwise stipulated in the agreement. If the lessor does not act according to the indicated lessee's request, where the lessee's unhindered possession is reduced or limited, the lessee has the right to terminate the agreement if the purpose of the agreement cannot be fulfilled accordingly, or has the right to request proportionate reduction of the leasing fee. In both cases, the lessee has the right to claim damages for the loss suffered. The lessee does not have the right to claim damages where the leasing object is taken away from him or his unhindered possession is reduced or limited, if he was aware of such possibility at the time of the conclusion of the leasing agreement – *sanctions for legal defects*. The lessor's liability for legal defects of the leasing object shall not be excluded or limited by the agreement – *limitations or exclusions of the lessor's liability by the agreement*. The lessor may transfer title to the leasing object to a third party. In case of transfer of title to the leasing object, the third party enters the role of the lessor, and the rights and obligations from the leasing agreement are established between him and the lessee accordingly. In this case, the third person cannot request that the lessee delivers the leasing object before the expiry of the agreed period of duration of the leasing agreement. The transfer of title to the leasing object to a third party may be excluded by the agreement or provided otherwise therein – *transfer of title to the leasing object* (Arts. 14-22).

On the other hand, the lessee is obligated to take over the leasing object in the manner, at the time and place specified in the agreement – *taking over of the leasing object*. If the supplier does not deliver to the lessee the leasing object, if he delivers it with delay, or if the leasing object has a material defect, the lessee may, in accordance with the law governing contracts and torts, refuse admission of the delivery or terminate the leasing agreement and is entitled to damage compensation. In this case, the lessor may uphold the agreement if he himself delivers the leasing object to the lessee without delay, under the conditions provided by the leasing agreement. Until the delivery obligation is performed in total conformity with the leasing agreement, the lessee has the right to suspend payment of the fee which he would, under the leasing agreement be required to pay to the lessor. If he terminates the agreement, the lessee is entitled to refund the fee he paid in accordance with the leasing agreement, minus the amount equal to the benefit derived from the use of the leasing object (reasonable amount) – *termination of agreement due to non-delivery*. The lessee shall use the leasing object with the diligence of a good businessman, i.e. diligence of *bonus pater familias*. The lessee shall use the leasing object in accordance with the leasing agreement or in accordance with the purpose of the leasing object. The lessee is liable for losses suffered by the use of the leasing object contrary to the leasing agreement or contrary to the purpose of the leasing object, regardless of whether the leasing object was used by him or a person authorized by him, or any other person whom he enabled to use the leasing object – *use of the leasing object*. The lessee is obliged to maintain the leasing object in good condition and perform all necessary repairs on the leasing object. The lessee is liable for losses suffered due to the failure to maintain the leasing object in good condition – *maintenance of the leasing object*. The lessee is obliged to pay the lessor the leasing fee in the amounts, at the time and in a manner provided by the leasing agreement – *payment of leasing fee*. The risk of accidental loss or damage of the leasing object shall be borne by the lessee. The risk shall pass to the lessee at the time of taking over the leasing object, unless otherwise provided by the agreement – *risk of accidental loss or damage to the leasing object*. The lessee shall, upon termination of the agreement, return the leasing object intact, with all parts and attachments, to the lessor or the person whom the lessor designates, unless the leasing agreement stipulates that the lessee has the right to purchase the leasing object or to extend the leasing agreement. The lessee is not liable for the wear and tear of the leasing object due to its regular use or for any modifications of the leasing object – *obligation to return the leasing object*. The lessee shall insure the leasing object against risks specified in the leasing agreement, if not otherwise provided in the agreement – *insurance obligation*. The lessee may give the leasing object, in entirety or its parts, to any third party for use, with the written consent of the lessor. The lessor may terminate the agreement and claim damages if the lessee, without his written consent, gave the leasing object to any third party for use. The special procedure for repossession of the leasing object prescribed by this Law may also apply in case of termination of the agreement. Transfer of the leasing object to be used by any third party shall not relieve the lessee of his obligations to the lessor under the leasing agreement. Transfer of the leasing object for use by a third party may be excluded by the agreement or otherwise stipulated therein – *transfer of the leasing object to third party for use* (Arts. 23-35).

Finally, the supplier is obliged to deliver the leasing object to the lessee in good condition, with any parts and attachments, in the manner, at the time and place specified in the supply agreement, unless the leasing agreement provides that the leasing object is to be delivered by the lessor – *delivery of the leasing object*. If the lessee agreed to the contents of the agreement concluded between the lessor and the supplier, under which the lessor acquired title to the leasing object, subsequent changes to this agreement will not affect the lessee's rights, unless he consented to them – *amendments to the agreement*. If the supplier does not deliver the leasing object to the lessee, if he delivers it with delay, or if the leasing object has a material defect, the lessee has the same rights he would have had under the law governing contracts and torts as party to the agreement with the supplier. Exceptionally to this rule, the lessee is not entitled, without the lessor's consent, to terminate or annul the agreement concluded between the lessor and the supplier, or the right to claim a price reduction. The supplier shall not be responsible both to the lessor and the lessee for the same damage – *supplier's liability to the lessee*. If the supplier was chosen by the lessor, he is jointly with the supplier responsible to the lessee if the leasing object is not delivered to the lessee, if delivered with delay, or if the leasing object has a material defect – *joint liability of the lessor and the supplier* (Arts. 36-39).

Termination of the financial leasing contract

The general rules on termination due to non-performance provided by the Law on Obligations apply to termination of the financial leasing agreement. In addition to general rules of the Law on Obligations, the Law on Financial Leasing specifies special rules: (i) on termination of the financial leasing agreement by the lessee due to non-delivery of the leasing object, delay in delivery, or material defects in leasing object (Art. 24), (ii) on termination of the financial leasing agreement by the lessor due to non-payment of the leasing rentals (Art. 28), (iii) on termination of the financial leasing agreement by the lessor in the event of unauthorised transfer of the leasing object by the lessee to a third party for its use (Art. 35).

The rules of the Law on contract termination are of non-mandatory nature, meaning that contracting parties, under the principle of party autonomy, may regulate this issue otherwise. The parties may provide different terms for contract termination, whereas these conditions must always be within the limits of public order, mandatory rules and good customs. With regard to termination itself, one should take into consideration the general rule of the Law on Obligations according to which the agreement is terminated automatically (*ipso iure*) when performance of obligation at the agreed time is the essential element of the contract and the debtor fails to perform the obligation at within that time, as well as when the nature of obligation is such that timely performance represents the essential element of the contract (Art. 125). This means that the financial leasing agreement may be terminated automatically, without the obligation of the other party to fix an additional period of time and to inform the lessee of termination, in two cases – where contracting parties have stipulated that the agreement will be terminated if not executed within the agreed deadline or where the circumstances of the case and the nature of the transaction indicate that the performance at the agreed time is the essential element of the contract.

Applicable law and dispute resolution

A crucial issue that arises in all international contracts is that of determining the applicable law. If one consider international franchising, distribution and financial leasing transactions, the differences from country to country are significant. Some legal systems provide special rules protecting one of the parites; other law systems have no statutory rules but the courts have worked out principles which apply to such contracts; finally, there are national laws which give no special rules concerning these transactions, except the rights granted by the general rules on contracts. Considering this, it is easy to understand why the problem of determining the applicable law is one of the main issues within international franchising, distribution and financial leasing contracts.

Almost all legal systems allow in principle the parties to choose the law to be applied to an international contract. This means that, as a general rule, it is possible to choose a law other than the law that would apply in the absence of a choice of law clause. One should consider some critical issues that could arise in that respect from international distribution and financial leasing transactions.

With regard to distribution contract, one has to distinguish between the framework distribution contract on the one side, and the individual contracts of sale concluded between the supplier and the distributor on the basis of the framework contract on the other side. The framework distribution contract which regulates the long-term relationship between the parties, which is mainly related to the rights and obligations of the parties arising from the distribution relation, by prevailing opinion is not governed by the UN Convention on Contracts for the International Sale of Goods (CISG). Contrary to that, the individual sales contracts which parties conclude each time when the goods suppose to be supplied to the distributor, may fall under the CISG, if the other requirements for application are met. Consequently, the international distribution contract is generally submitted to the different legal regimes.

However, the problem could arise from the fact that the borderline between the framework distribution contract and the sales contracts may be uncertain if the framework contract already contains most of the typical obligations of a seller and a buyer (precisely formulated), so it is only up to the distributor to require delivery at a certain date, in a specified quantity, and just to confirm the seller's obligations which are already provided by the framework contract. It for this reason that some authors does not exclude possibility of application of the CISG rules relevant to the entire framework agreement, if such rules arise from the general rules of the law of obligations (i.e., if they are not specially adapted to the contract of sale.

In the light of the mentioned problems, one can note that the CISG is created for the needs of international sale. It means that: a. it does not contain the rules adequate for the rights and obligations of the parties arising strictly from the distribution contract (e.g. the distributor's obligation to promote the goods and the seller's brand name or the obligation of the supplier to provide advertising and merchandising); b. regarding the rights and obligations of the supplier and distributor arising from sale, the CISG rules could be inadequate in particular case since they do not take into consideration the specific characteristics of the distribution relation, like for instance the *intuitu personae* nature and the economic objectives to be achieved. On the other hand, the CISG rules which are of "more general nature" like the one related to interpretation of the contract usages, formation of the contract, etc. could perfectly fit the distribution contract.

In sum, one may conclude that problems of applicability of the CISG to the international distribution contract are to be solved on the basis of the facts of each particular transaction and not under a general rule specifying a priori whether it is possible to apply the CISG or not. In case the dispute arises from the rights and obligations of sale, the judge/arbitrator may apply CISG, taking into consideration all relevant circumstances of the case. Contrary to that, if the dispute is related strictly to the distribution contract, the application of the CISG could be inappropriate. Thus, in order to avoid uncertain situations, the parties should, by choice of law clause, precisely solve the question of applicable law to the framework contract as well as to the individual sale contracts.

The other critical issue regarding distribution contract related to the restriction of the the parties' freedom to choose the applicable law provided in some national legislations. As for example, concerning distributors, Belgian law considers the provisions of the law of 27 July 1961 on the «concessionnaires de vente» as rules that cannot be derogated to the disadvantage of the Belgian distributor by submitting the contract to a foreign law. One can therefore conclude that it depends on the law of each country if its rules on distribution contracts have an «internationally» mandatory, i.e. if they will remain applicable when the contract has been submitted to the law of another country.

As regards the financial leasing, if it is of international character, it is necessary to draw attention to the amendment to Article 10 of the Law on Financial Leasing, according to which the lessor is a company established in accordance with the Law on Companies, which has obtained a license of the National Bank of Serbia to perform financial leasing transactions. In other words, the lessor is considered to be only a Serbian company, which implies that this Law does not apply to cases of international financial leasing, i.e. to such leasing transactions where the lessor is a foreign company. However, in terms of general rules, the contractual relations of international financial leasing are governed by the Serbian Law on Financial Leasing and the Serbian Law on Obligations, if the Serbian law is stipulated as the applicable law by the the parties. In absence of the choice of law clause, these laws will be applied if the corresponding rules of international private law lead to Serbian substantive law.

Application of the CISG to financial leasing transaction is doubtful. The main reason is the nature of financial leasing – the financing part of the leasing contract and its regulation of the possession and use of the equipment by the lessee regularly are of greater importance than the sale part of the transaction. In terms of Article 3.2, the CISG does not apply if the preponderant part of the obligations relates to financing and use of the goods available to the lessee. On the other hand, the rules of the CISG in most cases would be inappropriate for the rights and obligations of the parties with respect to the financial part of leasing contract. The second reason lays in the fact that specific rules for financial leasing have been developed on international level, as for instance the 1988 UNIDROIT Convention on International Financial Leasing (Ottawa).[16]

However, one should note that financial leasing transaction includes three parties – the lessor, the lessee and the supplier, and two contracts – the supply contract and the leasing contract. In the frame of this transaction, the supply contract between the lessor and the supplier may be governed by the CISG since it is basically a contract of sale. With regard to the leasing contract, two general rules constitute the main distinction between leasing and sale: 1. the rentals payable under the leasing contract are calculated so as to take into account in particular the amortisation of the whole or a substantial part of the cost of the equipment and 2. when the leasing contract comes to an end the lessee, unless exercising a right to buy the equipment or to hold the equipment on lease for a further period, shall return the equipment to the lessor (the result of the leasing contract is not the final acquisition of the equipment by the lessee unless otherwise agreed by the parties).[17] In the light of these and other specific characteristics of a leasing contract,[11, pp:20-27] one should conclude that this type of contract generally does not fall into the scope of the CISG. Finally, one may note that, although there is no contract between the lessee and the supplier, the lessee in certain cases may be entitled to claim directly the supplier on the basis of the general rule that duties of the supplier under the supply contract shall also be owed to the lessee as if it were a party to that contract and as if the equipment were to be supplied directly to the lessee.[18] In that case, the problem of the applicability of the CISG may arise as well. Therefore, probably the safest solution would be to expressly stipulate the applicable law both in the leasing contract concluded between the lessor and the lessee and in the supply contract concluded between the lessor and the supplier where the lessee approves the terms so far as they concern its interests.

The other crucial issue of international franchise, distribution and financial leasing contracts is that of choosing the best solution for the resolution of disputes. The main question to be answered is the choice between arbitration and ordinary jurisdiction, i.e. the jurisdiction of national courts. In that respect, one should take into consideration a number of arguments in favour of arbitration.

One of the main advantages of the arbitration is that it provides an independent, impartial and neutral tribunal; if arbitration is chosen, the dispute will be

16 There are also more and more domestic rules regulating financial leasing.

17 See Articles 1.2.c and 9.2 of the 1988 UNIDROIT Convention on International Financial Leasing.

18 See Article 10 of the 1988 UNIDROIT Convention on International Financial Leasing.

decided by arbitrators appointed by the parties – usually two arbitrators of the respective countries and a chairman of a third country or a sole arbitrator of a third country. Contrary to that, in case of the ordinary jurisdiction, disputes will be decided by state courts having jurisdiction on the matter. Other arguments in favour of arbitration lay in the fact that arbitrators are highly qualified experts in the field of international commercial law and that arbitration proceeding is confidential, less formal and more efficiant than the state courts proceedings [15, pp: 9-41]. However, if the parties decide to choose arbitration as the means for solving their disputes, they should also take into consideration the costs of arbitration - arbitration is not the best solution in cases of small economic value where the costs of arbitration may be out of proportion. In such situations the parties are well advised to opt for special types of simplified, fast track arbitration which is normally less expensive.

Conclusion

The complex legal nature and structure of franchising, distribution and financial leasing as well as the fact that in most of the legal systems these transactions are not regulated by law, frequently cause disputes and economic loss in commercial practice. The main critical issues in performance of these contracts arise from ambiguous contract clauses defining the rights and obligations of the parties, contract termination and its legal effects, applicable law and jurisdiction. In the Serbian legal system, after adoption of the Law on Financial Leasing and preparation of the Draft Civil Code of Serbia which includes the rules on franchising and distribution, the legal framework of these transactions is much better shaped than is used to be. The statutory rules of non-mandatory nature do not only help the parties in finding the best solutions for their contracts but they also contribute to a better understanding of the principles which are more or less common to the various types of modern commercial contracts. However, the parties shall be aware that, despite the efforts to achieve the appropriate regulation of modern contracts, the courts may express discrepancies in interpretation of the statutory rules. Therefore, the parties are well advised to precisely define a number of the broad concepts, such as »best efforts« or »reasonable time«. The appropriate contract drafting may avoid most of the uncertainties and provide a successful contract performance.

References

1. Bradgate R., White F., (2004) *Commercial Law*, Oxford University Press
2. Christou R.,(1998) *Drafting Commercial Agreements*, London, Sweet/Maxwell
3. *Draft Common Frame of Reference*, Book IV, Part E, Chapter 4: Franchise contracts, 2009
4. Draškić M., (1983), *Ugovor o franšizingu*, Belgrade
5. Draškić M., (1990), *Međunarodno privredno ugovorno pravo*, Belgrade
6. Fontaine M., De Ly F., (2003), *Droit des contrats internationaux*, Bruylant
7. IDI International distribution contract, available at: www.idiproject.com,
8. Kelly P., et al, (1992), *Schmitthoff's Agency and Distribution Agreements*, Kenyon-Slade & Thornton, London
9. *Model Franchise Disclosure Law* , UNIDROIT International Institute for the Unification of Private law, Rome 2002
10. Parivodić M., (2003) *Pravo međunarodnog franšizinga*, Belgrade
11. Perovic J., (2004) *Fundamental Breach of Contract of International Sale of Goods*, Belgrade
12. Perovic J., (2011)"Selected Critical Issues Regarding the Sphere of Application of the CISG", *Annals of the Faculty of Law in Belgrade, Belgrade Law Review*, Journal of Legal and Social Sciences University of Belgrade, Year LIX.2011.No.3, 181-196
13. Perović J., (2003), *Komentar Zakona o finansijskom lizingu*, Belgrade
14. Perović J., (2010) „Sporne odredbe ugovora o međunarodnoj distribuciji" , *Pravo i privreda*, br.4-6/2010, Belgrade, 359-377
15. Perović J., (2002), *Ugovor o međunarodnoj trgovinskoj arbitraži*, Belgrade
16. Perović J., (2003), "Financial Leasing in Serbia: an Overview of Recent Legislation", *Uniform Law Review*, UNIDROIT, 2005-3, Rome, 503-516
17. Perović J., (2004), Finansijski lizing kao faktor podsticanja investicija (Financial Leasing as an Investment Stimulating Factor), Oživljavanje privrede i završetak tranzicije (Revival of the Economy and Completion of Transition"), Kopaonik business forum 2004, Belgrade, 140-152
18. Perović J., (2006) "Odgovornost za nedostatke na predmetu finansijskog lizinga", *Pravo i privreda*, br. 5-8/2006, Belgrade, 2006, 445-458
19. *Prednacrt – Građanski zakonik Republike Srbije*, Druga knjiga, *Obligacioni odnosi*, (2009), Vlada Republike Srbije, Komisija za izradu Građanskog zakonika, Belgrade
20. *Rad na izradi Građanskog zakonika Republike Srbije*, (2007), Vlada Republike Srbije, Komisija za izradu Građanskog zakonika, Belgrade

21. Regulation 2790/1999, available at:http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:l:1999:336:0021:0025:en:PDF,
22. UNIDROIT *Convention on International Financial Leasing*, Ottawa, 1998
23. UNIDROIT, Annex 3 au Guide sur les Accords Internationaux de Franchise Principale, www.unidroit.org.
24. Vasiljević M., (2006), *Trgovinsko pravo*, Belgrade
25. Vukadinović R., (2009), *Međunarodno poslovno pravo*, Kragujevac
26. Willes J., (2005), *International Business Law Environments and Transactions*, McGraw-Hill International Edition
27. Zakon o finansijskom lizingu („Službeni Glasnik Republike Srbije", 27. 05. 2003. br.55)
28. Zakon o obligacionim odnosima („Sl. list SFRJ", br. 29/78, 39/85, 45/89 i 57/89 i „Sl. list SRJ", br. 31/93)
29. Zakon o zaštiti konkurencije („Službeni glasnik RS", broj 51/09 od 14/07/2009. god.)

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THE CITY OF NIŠ COMPETITIVENESS ANALYSIS IN THE FIELD OF FOREIGN DIRECT INVESTMENT*

Analiza konkurentnosti Grada Niša na polju stranih direktnih investicija

Abstract

The favourable climate and the environment in which economic activity takes place is one of the factors for attracting investments, both in terms of the state or when it comes to regions, cities and municipalities within the state. At the international level, states are competing for funds and investors and they are trying to attract as much as possible of investments for starting or accelerating economic activity. Analogue process has been taken within the state, where cities and municipalities are rivals to each other in attempt to emphasize their comparative advantages. Due to specific characteristics that make them able to stand out in relation to other cities and municipalities and with the prior support of a favourable climate for investors, municipalities become "business friendly". Experiences from the past in Serbia shows that local government can create a business environment such that the level of competitiveness of the city, municipality or region is far above the level of competitiveness of the state. City of Niš has attracted a significant number of investors over the past period and positioned itself in third place in Serbia in the amount of foreign direct investment, as well as in fourth place by the total number of jobs created after the activation of these investments. The aim of this paper is primarily analysis of the results that City of Niš achieved in the previous period in the field of attracting FDI, but also to emphasize its competitive advantages and opportunities to improve competitiveness.

Key words: *FDI, competitiveness, "business friendly" environment, municipality certification, regional development*

Sažetak

Povoljna klima i ambijent u kome se odvija privredna delatnost predstavlja jedan od faktora privlačenja investicija, kako kada je reč o nivou države, tako i kada je reč o gradovima i opštinama unutar države. Na međunarodnom nivou države se međusobno nadmeću za sredstva investitora i nastoje da ih privuku što više radi pokretanja ili ubrzavanja privredne aktivnosti. U okviru države odvija se analogni proces, gde gradovi i opštine predstavljaju konkurente jedni drugima i nastoje da istaknu svoje komparativne prednosti. Zahvaljujući određenim specifičnostima koje ih ističu u odnosu na druge gradove i opštine, uz prethodno obezbeđenje povoljne klime za investitore opštine postaju „prijateljski naklonjene investicijama". Iskustva iz prethodnog perioda u Srbiji idu u prilog tvrdnji da lokalna samouprava može kreirati poslovnu klimu takvu da nivo konkurentnosti grada, opštine ili regiona bude daleko iznad nivoa konkurentnosti same države. Grad Niš jeste jedan od gradova koji je privukao značajan broj investitora u proteklom periodu, što ga je pozicioniralo na treće mesto u Srbiju po ukupnom iznosu stranih direktnih investicija, a na četvrto mesto po ukupnom broju novih radnih mesta otvorenih nakon aktivizacije ovih investicija. Cilj ovog rada jeste pre svega analiza rezultata koje je Grad Niš ostvario u proteklom period na polju privlačenja FDI, ali i da istakne njegove konkurentske prednosti, kao i mogućnosti unapređenja konkurentnosti.

Ključne reči: *strane direktne investicije, "business friendly" okruženje, sertifikacija opština, regionalni razvoj*

Introduction

Global foreign direct investment (FDI) has not yet bounced back to pre-crisis levels, though some regions show better recovery than others, according to data in *World Investment*

* Authors would like to thank SIEPA and NALED for support during the research and sharing their information base about FDI in the territory of City of Niš. The research in this paper was conducted within the Project No 44007 financed by Ministry of Education and Science of Republic of Serbia.

Report 2011 [15]. The reason is not financing constraints, but perceived risks and regulatory uncertainty in a still fragile world economy. The main benefits of FDI in host countries is increased production, improve technology and increase the efficiency of domestic companies, development of human capital, promotion of foreign trade, increased revenues and use for domestic investors - a good investment climate is beneficial to all investors in the country [7] and [10]. In 2010, for the first time, developing economies absorbed close to half of global FDI inflows [4]. Increasingly, transnational corporations are engaging with developing and transition economies through a broadening array of production and investment models, such as contract manufacturing and farming, service outsourcing, franchising and licensing [8] and [11]. These relatively new phenomena present opportunities for developing and transition economies to deepen their integration into the rapidly evolving global economy, to strengthen the potential of their home-grown productive capacity, and to improve their international competitiveness.

The scientific approach to evaluating the competitiveness of cities and regions in terms of ability to attract FDI is through benchmarking of these cities and regions. At this moment there are only two benchmarking models for cities and regions which are available for cities and regions in South-East Europe. One is European level benchmarking in the area of FDI competitiveness conducted by FDI Intelligence Unit and Financial Times named "European Cities and Regions of Future 2012/13" and the other is Serbian national level benchmarking in the area of "business friendliness – business climate" conducted by National Alliance for Local Economic Development - NALED via Business Friendly Municipalities Certification Process. According to the World Economic Forum, Serbia is at the 95th place on Competitiveness Index (GCI = 3.9) [17]. On the other hand, FDI Intelligence Agency in its report "European Cities and Regions of Future 2012/13" and the magazine Financial Times ranked the Municipality of Indjija as a second region in Europe, in terms of cost-effectiveness of the investment immediately after the Bucharest-Ilfov, Romania [18]. Besides Indjija, at third place in this list is Sremska Mitrovica, and at fourth Vojvodina, as region as well. Evaluation is based on data of FDI benchmarking of 253 European cities and 110 regions. The evaluation was conducted in six standard categories: (1) economic potential, (2) human resources, (3) cost effectiveness, (4) quality of life, (5) infrastructure and (6) a favourable business environment [6]. The seventh category was introduced in the evaluation process is a strategy to promote foreign direct investment in the city and the region. In the evaluation of this category participated 60 regions and 73 cities in Europe. In addition to these regions, on the list of micro cities (up to 250,000 people) who are considered attractive to investors in terms of cost effectiveness, are Vranje and Zaječar, while in the category of Top 10 large cities (over 1 million inhabitants) Belgrade is positioned in 7th place. In the category of Eastern European cities with the best FDI promotion strategy, in the top ten is Subotica. Such relation between the competitiveness of the state and certain regions and municipalities within the state is the result of initiatives of local governments to improve their competitiveness.

One way of improving the competitiveness is the certification process of cities and municipalities. The process of certification which is implemented in municipalities in Serbia in past five years has been conducted by the National Alliance for Local Economic Development (National Alliance for Local Economic Development - NALED). According to the methodology of NALED, every city or municipality that is involved in the certification process, receive specific recommendations and based on them improve the functioning of its institutions and create a favourable business environment trough efficient administration, transparent local governance, adequate infrastructure and partnership with local industry. So far, Serbia has 17 cities and municipalities that are received a «business friendly» certificate [19]. All cities in Serbia that FDI Intelligence pointed out as attractive to investors are on the list of certified cities.

Foreign direct investments in the City of Niš - Experiences and perspectives

City of Niš is one of the cities that received a "business friendly" certificate and made the best result in this process comparing to other participating municipalities and cities. The City of Niš has 257.000 habitants and its size by population makes it middle size city in the evaluation methodology of European Cities and Regions of the Future 2012/13 by FDI Intelligence and financial Times. [1] Being in the group of cities with the high developed mid-size European cities, made almost impossible for City of Niš to be on top of the list (among top ten) in this benchmarking process. Having in mind that this two models are currently the only available benchmarking processes for cities and regions in the field of direct investments and business climate it makes the City of Niš very interesting for the analysis of its competitiveness in the market of foreign direct investment.

Analysis of foreign direct investments in Niš for the period 2001 – 2011

SIEPA (Serbian Investment and Export Promotion Agency) database of foreign direct investment projects in Niš shows total of 18 completed projects since 2001. These projects amount to value of 963.4 million €, which puts Niš as third most interesting city for foreign investments in Serbia (after Belgrade and Novi Sad). In addition to this the foreign investments in Niš have created 5,252 jobs, putting Niš in fourth place overall (after Belgrade, Novi Sad and Smederevo) [20]. The list of FDI projects in Niš are presented in Table 1.

Analysis of FDI projects in Niš by country of origin display the leading role of several countries such as USA, Italy, South Korea and Germany. US leads dominantly in value of projects, but the attention must be paid that this is only one, capital intensive, FDI project in question – the investment of Philip Morris into the privatization of Niš tobacco industry. The project dates back to 2003, and since then there have been no new US FDI projects in Niš. Italian investments display a steady result of two projects, valued 113 million €, with a creation of 1203 jobs. This is an overall good record, with balanced score in all categories, that displays potential for further growth of Italian investments, especially given the fact that both Italian investments are from 2010 and 2011. German investments lead in number of projects (3 overall), but show lower results in value of projects (25.3 million €) and number

1 Statistical Office of Republic of Serbia, according to population census in 2002 [12]

Table 1. List of completed FDI projects in Niš in period 2000-2011

Name	Country	Sector	Type	Land (m2)	Buildings (m2)	Value (mil €)	Jobs	Announced
Philip Morris - DIN	United States	Tobacco	Privatization		60,900	630	560	2003
Italnis	Italy	Tourism	Greenfield	150,000		100	800	2011
Idea	Croatia	Retail	Privatization			70	600	2007
Mr. Bricolage	France	Retail	Greenfield	15,000	6,500	40	90	2009
Mercator	Slovenia	Retail	Greenfield	25,000	33,000	40	159	2008
Metro Cash & Carry	Germany	Retail	Greenfield			16	186	2006
Yura Corporation	South Korea	Automotive industry	Greenfield	40,000	18,735	15	1500	2010
Dytech F&F Serbia	Italy	Automotive industry	Greenfield	25,827	9,255	13	403	2010
Yura Eltec	South Korea	Automotive industry	Greenfield	15,378	14,000	11	300	2010
OMV	Austria	Oil & Gas	Greenfield			7.6	60	2003
Harder Digital Sova	Germany	Electrical & Electronics	Privatization	0	2,350	6.3	70	2010
Hellenic Petroleum Eko	Greece	Oil & Gas	Greenfield			6	40	2004
Frezenius	Germany	Medical	Greenfield			3	36	2010
U-63 Skaj servis Jastebac	Russia	Machinery & Equipment	Privatization			2.2	274	2007
Batiqoc	France	Construction	Privatization			2	80	2011
Ergomade	Denmark	Wood & Furniture	Brownfield	9,000	2,000	1	23	2009
Seavus Macedonia	[FYROM]	Software & ICT	Brownfield	0	500	0.3	56	2007
MOL	Hungary	Oil & Gas	Greenfield				15	2006
				280,205	**147,240**	**963.4**	**5,252**	

Source: Author's preview based on data from the SIEPA - Serbian Investment and Export Promotion Agency and City of Niš Local Economic Development Office, [20] and [21] of jobs (292). The conclusion is that German companies are looking for opportunities in Niš, but did not discover them yet, and that they are showing restrain in investing into more capital intensive projects. The record of South Korea displays highest result in job creation (1800), with lower capital value (26 million €). The Korean companies clearly recognize Niš as source of inexpensive labour, which is a mid-term potential for investments. FDI projects of other countries do not differ much from each other, and are often focused on retail business. The graphical preview of the above results is on the Figure 1 and Figure 2.

Similar to analysis of FDI projects in Niš by country, analysis by sector display large dominance of tobacco industry in project value (630 million €). This is, of course, based on project of Philip Morris and should not be regarded as growth potential without bearing in mind that this is the only FDI project in tobacco industry in Niš since 2003, and one of totally three in this sector in Serbia. The Table 1 also shows excellent results for retail and oil and gas sectors in both number of projects, value and number of employee. This must be regarded more through the size of Niš (third largest city in Serbia) as a local market, then through GF, BF or privatization opportunities. Similar result is for tourism industry, showing good figures in value (100 million €) and job creation (800), but all in one project (aqua park) that is focused only on local market. Out of manufacturing sectors only the automotive industry stands out with excellent results in both number of projects and leads in job creation with total of 2203 jobs.

The analysis of FDI projects by type of investment show extreme dominance of privatization or Greenfield type of projects. Once again, with results of Philip Morris project of privatization seems to be the dominant type, but it is the Greenfield projects that amass for the largest number of projects and job creation. The parameters of FDI projects by type are presented in Table 2.

Figure 1. Ranking of investors (by country origin) according to amount of FDI

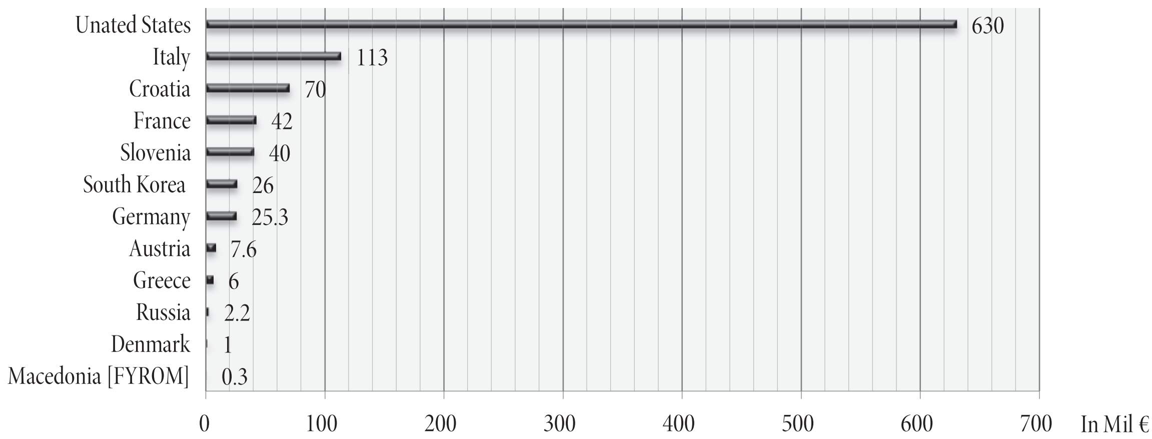


Figure 2. Ranking of investors (by country origin) according to job creation

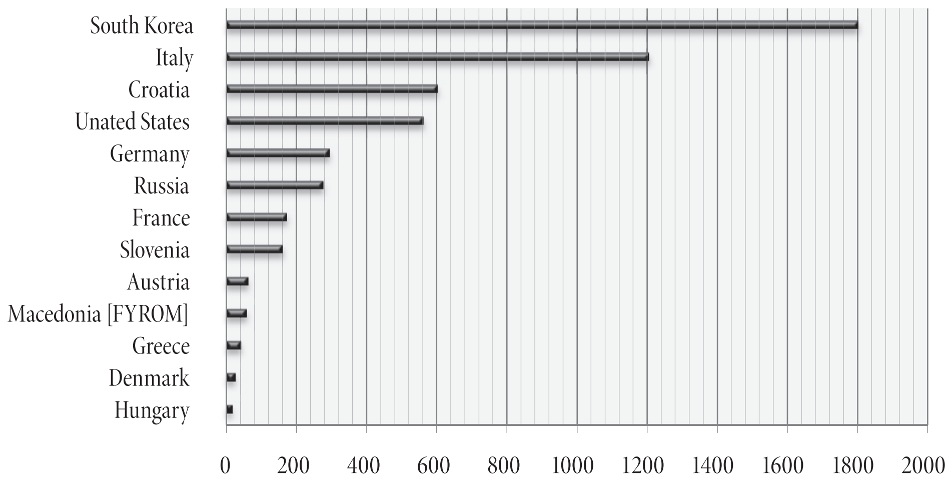


Table 2. FDI projects realized in Niš the by type of investment

	Number of projects	Value in Mil €		Jobs Created	
Privatization	5	710.5	73.75%	1,584	30.16%
Greenfield	11	251.6	26.12%	3,589	68.34%
Brownfield	2	1.3	0.13%	79	1.50%
Total	**18**	**963.4**	**100.00%**	**5,252**	**100.00%**

More importantly it is the Greenfield projects that are showing the greatest potential in the last years, with privatization generally running out of steam in Serbia in 2006. The results also show evidently the poor results for Brownfield projects which can only be explained by poor condition of the Brownfield locations in Niš. The poor result for the Brownfield projects is also the reason of the strong result of Greenfield projects, where interested investors obviously had no other means of realizing their intentions then through Greenfield. Figure 3 shows the structure of FDI projects in Niš by the project value and the investment type.

Figure 3. FDI projects in Niš by value of projects and type

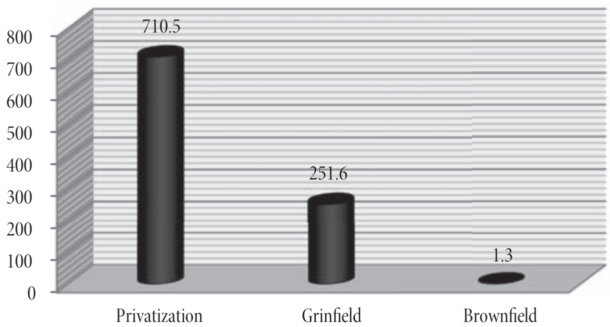
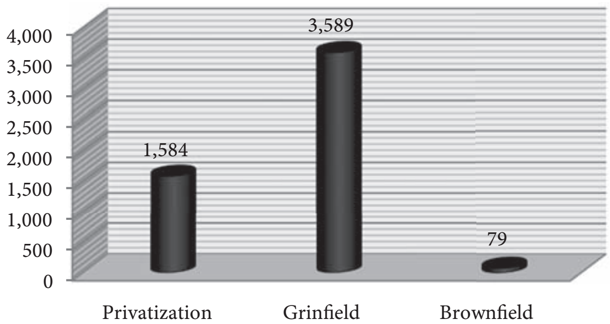


Figure 4. FDI projects in Niš by number of jobs created and type



The influence of FDI projects that are realized in Niš in past ten years is reflected primarily trough increase in economic activity, and then, indirectly, trough the reduction of unemployment. In terms of evaluation of this influence are conducted following statistical analysis: χ square test and correlation analysis. Those analyses are referent for the field of determination of (co)relation between variables.

Primarily, it's been testing the relation between the value of FDI investment and jobs that are created its activation. The results of Chi Square Test are presented in Table 3 and Table 4.

Table 3. Chi-Square Tests between "Type" and "Value"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	**34,000(a)**	**30**	**,281**
Likelihood Ratio	31,411	30	,395
N of Valid Cases	17		

Source: Author's calculation using SPSS

Table 4. Symmetric Measures between "Type" and "Value"

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	**,816**	**,281**
N of Valid Cases		17	

Source: Author's calculation using SPSS

As in previously discussed in the review of the Table 2 and Chi-square test, also shows that there is a correlation between the variables Type and Value (0.816), but this dependence is not statistically significant (p = 0.281 > 0.05). Based on this result it can be concluded that the higher values of investments are in the type of Privatization and Greenfield, but it cannot be conclude that these types of investments are necessarily related to the higher values of invested assets.

In the next segment been tested the relation between the type of investment and jobs that this investment creates, using the same statistical procedure. The results of Chi-Square Test for these two variables are given in Table 5 and Table 6.

Table 5. Chi-Square Tests between "Type" and "Jobs"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	**36,000(a)**	**34**	,375
Likelihood Ratio	32,433	34	,545
N of Valid Cases	18		

Source: Author's calculation using SPSS

Table 6. Symmetric Measures between "Type" and "Value"

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	,816	,375
N of Valid Cases		18	

Source: Author's calculation using SPSS

Similar to the previous, the Chi - Square Test showed that there is a correlation between the variables Type and Jobs (0.816), but this dependence is not statistically significant (p = 0375 > 0.05). So, it cannot be concluded that there is a specific type of investment which will create larger number of jobs.

Finally, trough correlation analysis has been tested relation between value of investment and jobs that investment creates. Results are shown in Table 7.

Based on the values of Pearson correlation coefficient can be concluded that between value and jobs is negligible direct correlation (r = 0.242), which is not statistically significant (p = 0349).

Table 7. Correlation between "Value" and "Jobs"

		Value	Jobs
Value	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	17	
Jobs	Pearson Correlation	**,242**	1
	Sig. (2-tailed)	,349	
	N	17	18

Source: Author's calculation using SPSS

Realized vs. missed opportunities in past as a valuable lesson for the future

SIEPA database of FDI interest will be used to analyze the foreign investor's interests in terms of Greenfield and Brownfield locations in Niš. The database displays total of 17 FDI interest projects, since 2007. that were looking to be located in Niš. This makes Niš the most desired investment location in Serbia in comparison to other cities and municipalities. The list of potential FDI projects in Niš are presented in Table 8. Due to SIEPA rules of client confidence the investor's names are not displayed.

The analysis of project status displays the key

Table 8. List of FDI projects with an interest for realization in Niš

Country	Sector	Value (mil €)	Jobs	Type	Status	Announced	Land	Buildings
United States	Automotive industry	7	2,000	Brownfield	Dead	16.03.2007		15,000
Belgium	Machinery& Equipment	3	200	Brownfield	Dead	01.05.2007		5,000
Italy	Automotive industry	23	504	Brownfield	On-hold	23.06.2009		13,000
South Korea	Automotive industry	15	1,500	Greenfield	Complete	23.04.2010	40,000	
Italy	Automotive industry	13	403	Greenfield	Complete	31.04.2010	30,000	
Italy	Textile	43	2,700	Privatization	Active	28.05.2010	76,356	35,973
Austria	Construction	9	200	Brownfield	Dead	31.05.2010		2,000
Germany	Electrical&Electronics	6.3	70	Privatization	Complete	23.07.2010	2,138	3,336
Russia	Electrical&Electronics	4.3	160	Brownfield	On-hold	26.07.2010		5,000
South Korea	Automotive industry	11	300	Greenfield	Complete	06.09.2010	20,000	
France	Electrical&Electronics	6.5	250	Greenfield	Active	15.10.2010	10,000	
Greece	Food&Baverage	0.7	95	Greenfield	On-hold	26.10.2010		Unknown
South Korea	Metallurgy &Metalworking	10	100	Greenfield	Intent	10.12.2010	20,000	
Italy	Software&ICT	50		Brownfield	Intent	15.11.2010		Unknown
Poland	Electrical&Electronics	1	50	Brownfield	On-hold	10.02.2011		1,000
Germany	Automotive industry		600	Greenfield	Active	07.04.2011	20,000	
Slovakia	Plastic&Rubber		230	Privatization	Active	29.04.2011	257,418	21,097
		202.8	**9,362**				**475,912**	**101,406**

Source: Author's preview based on data from the SIEPA - Serbian Investment and Export Promotion Agency and City of Niš Local Economic Development Office, [20] and [21] information regarding the current potential for Brownfield projects in Niš – out of 7 potential Brownfield investment projects in Niš none is successfully completed with all of them being in status "dead" or "on-hold". The interpretation of SIEPA for this occurrence is due to the poor condition of Brownfield locations where their refurbishment in addition to administration entanglements becomes higher cost then a Greenfield project. This fact is also underlined by the much better result of Greenfield projects – three completed, only one on-hold.

Analysis by project type display dominant interest of investors in Greenfield and Brownfield projects and lower interest in privatization according to the number of projects. However, in terms of projects value and job creation the results are almost similar. The comparison of project types is presented in Table 9.

Table 9. FDI projects with an interest for realization in Niš the by type of investment

	Number of projects	Value in Mil €		Jobs Created	
Privatization	3	49.3	32.26%	3,000	31.87%
Greenfield	7	56.2	36.78%	3,248	34.51%
Brownfield	7	47.3	30.96%	3,164	33.62%
Total	**17**	**152.8**	**100.00%**	**9,412**	**100.00%**

The equal distribution among different types of investments in terms of value and created jobs is obvious from the Figure 5.

As an investment location in the period 2001 – 2011, the City of Niš displayed very strong record in realization of FDI project being the third most attractive location in Serbia in terms of value of investment and the number of FDI projects. As a point of interest for further FDI projects, according to the track record of SIEPA, Niš is the leading investment location in Serbia in terms of investment value, number of projects and number of jobs. This can be contributed to cities size, position on Serbia's main highway, proactive local government, higher subsidies from Republic of Serbia (4,000 to 10,000 €/job created), but unfortunately also to low wages cost and high unemployment.

Statistical analysis for FDI projects with an interest for realization in Niš is given in the following tables. Chi-Square Tests between variables "Type" and "Value" is presented in Table 10 and clearly shows that there is is a correlation between the variables Type and Value, but this dependence is not statistically significant ($p = 0.363 > 0.05$).

Table 10. Chi-Square Tests between "Type" and "Value"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	**30,000(a)**	**28**	**,363**
Likelihood Ratio	29,725	28	,376
N of Valid Cases	15		

Source: Author's calculation using SPSS

By the same analogy, as it is shown in Table 11, it can be concluded that there is is a correlation between the variables Type and Jobs, but this dependence is not statistically significant ($p = 0.252 > 0.05$).

Figure 5.The structure of FDI projects (by type) with an interest for realization in Niš according to invested amount and created jobs

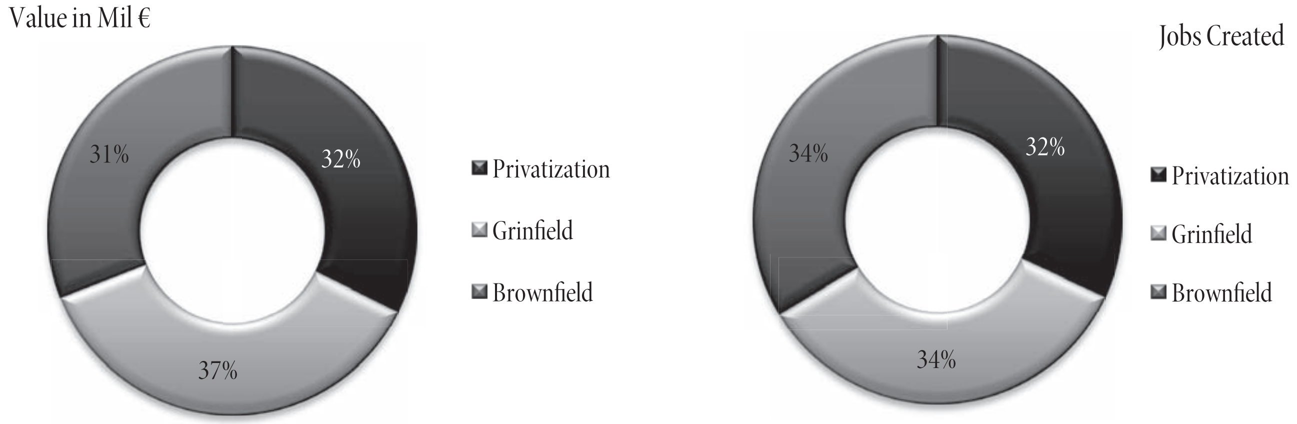


Table 11. Chi-Square Tests between "Type" and "Jobs"

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	**26,000(a)**	22	**,252**
Likelihood Ratio	26,321	22	,238
N of Valid Cases	13		

Source: Author's calculation using SPSS

The result of correlation analysis between variables "Value" and "Jobs" are presented in Table 12.

Table 12. Correlation between "Value" and "Jobs"

		Value	Jobs
Value	Pearson Correlation	1	,846(**)
	Sig. (2-tailed)		,001
	N	15	11
Jobs	Pearson Correlation	**,846(**)**	1
	Sig. (2-tailed)	,001	
	N	11	13

Source: Author's calculation using SPSS

It is interesting when it comes to FDI with an interest for realization in Niš that the value of Pearson correlation coefficient (Table 12) clearly shows existence of high level of direct correlation relation (r=0.846) which is statistically very significant (p=0.001).

Table 13. Cross-tabulation between "Status" and "Type"

		FDI Type with an interest for realization in Niš			Total
		Brownfield	Greenfield	Privatization	
STATUS					
	Active	0	2	2	4
	Complete	0	3	1	4
	Dead	3	0	0	3
	Intent	1	1	0	2
	On-hold	3	1	0	4
Total		7	7	3	17

Source: Author's calculation using SPSS

Trough the cross-tabulation between variables "Status" and "Type", it is evident interest of investors into the Brownfield projects in Niš was equal or higher to the interest into Greenfield or privatization projects since 2007. However, the realization of Brownfield projects in Niš had no result at all unlike for the Greenfield or privatization projects (Table 13). With this is mind there is a strong and justifiable reason to develop existing Brownfield locations in Niš.

Table 14. Chi-Square Tests between "Type" and "Status"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	**32.571(a)**	**15**	**.005**
Likelihood Ratio	25.661	15	.042
N of Valid Cases	17		

Source: Author's calculation using SPSS

Table 15. Symmetric Measures between "Type" and "Status"

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	**.803**	**.005**
N of Valid Cases		17	17

Source: Author's calculation using SPSS

Chi - Square Test showed that a high degree of dependence between the variables "Type" and "Status" (0.803), the dependence was statistically significant (p = 0.005 < 0.05), as it is presented in Table 14 and Table 15.

Analysis of FDI competitive advantages of City of Niš - Chances for the future

Important determinants of the host country or region for foreign investors include political and economic framework, and government regulations to facilitate investment and business. The importance of individual determinants of implementation depends on the motives of FDI [1] and [14]. Hence the importance of individual economic determinants of the country varies depending on the motives for investment. Theoretically, foreign investors are likely to invest in countries where competitiveness indicators such as human resource capability, resource endowment, market opportunities and per capita incomes are high [16]. Regarding to these investor's demands, in this section will be presented competitive advantages of Niš in terms of (1) location, (2) industrial zones, (3) labour force, (4) business support infrastructure and (5) business climate and development strategy.

Location. City of Niš is one of the oldest cities in the Balkans. It is the third largest city in Serbia. Niš is the administrative centre of the Nišava District and the region of South and east Serbia, and it is located at crossroads of Balkan and European highways, connecting Europe to Near East [3]. Niš is among the developed Serbian cities and industrial and tourist centre of national importance. It is a modern university city and at the same time natural, social, economic, educational, health, cultural and sports centre of South and East Serbia. Niš is situated at the crossroads of the most important Balkan and European traffic routes.

Industrial Zones. On the territory of City of Niš there are four industrial zones: Industrial Zone Donje Medjurovo, Zone in Ivana Milutinovica Street, Industrial Zone East and Industrial zone North. Those zones are fully equipped with infrastructure including gas, electricity, waste water and sewage system, access roads, internet and railway, according to the highest demands of investors. Besides industrial zones there are 25 more locations on the territory of City suitable for FDI [22].

Labour Force. Generally, labour force in Niš combines exceptional working efficiency with sizable labour supply. With a unique combination of high quality and low costs, it is one of the key factors in reaching a strong business performance. The quality of the local labour force is best reflected in robust industrial productivity, rising at an 11% rate between 2004 and 2008 [3]. As well educational level of labour force is one of important criteria for investors [5] and [9]. Including the size of the City, as well as the fact that whole Nišava district (area of approx. 30 km distance from the City centre) is the source for labour force. According to Statistical Office of Republic of Serbia, working age population (15-64 years old) in Niš amount to 173,151 [13]. At the other hand, City of Niš is facing a huge unemployment problem (the unemployment rate is 20.1%), but at the same time it makes the competitive advantage in sense of the availability of labour force.

Business Support Infrastructure in the City of Niš includes: Office for Local Economic Development, Centre for Construction Permit Issuance, Job Centre, Business Incubator Centre (BIC) and Free Trade Zone South (Export processing zone). The main tasks of these institutions are:

- Strengthening of Local economic development
- Attracting new investments
- Supporting local business community
- Strengthening of entrepreneurship
- Creating better conditions improving life quality, commercial development of Niš City through managing, monitoring and implementation of project implementation and activities of local economic development.

Business Climate and Development Strategy. For last three years the City of Niš managed to regain the investors' trust and to become a serious partner on the road to faster economic development. All this was made possible by taking seriously the problem of equipping infrastructural the land properties to be offered to potential investors. Niš created positive business climate for initiation of big investment project which directly influence the problem of unemployment. Finally, after 20 years, the City created favourable climate for investing in this part of Serbia. The City of Niš managed to attract foreign investors in these times of global economic crisis and it managed to become the most attractive destination in Serbia for the construction of new factories and production facilities. Niš has become the one of the cities with the most direct investments. The interest of investors in Niš is the direct consequence of the changed attitude of local self-government towards potential investors.

With the analysis of the prior results achieved, the main goals of the City of Niš Development Strategy (2010-2020) are [2]:

- Territorial development oriented to environmental sustainability (transform the City of Niš into an urban regional centre with high environmental quality, communal services and transport links in accordance with advanced development policies and best practices of the developed European towns and cities);
- Establish a safe and reliable environment for investment conducive to sustainable economic development (create conditions for adequate workforce formation, opening up of financial opportunities, logistics, attracting of investments, industrial relocation and creation of new enterprises in high-added value economic sectors);
- Balanced and comprehensive improvement of the quality of life in the City of Niš (create an encouraging and safe social environment in which

all citizens will be able to express and fulfil their needs for belonging and identity, socialization and personal growth);

- Improvement of the institutional setting and the governances processes (implement institutional reforms aimed at increasing the capacities and the efficiency of the community decision-making processes, following principles of subsidiary on the territory of the City).

Conclusions

Having in mind all the above mentioned we can draw conclusions in two ways: (1) Overall conclusion related to existing methodologies for benchmarking of competitiveness of local self governments and on direct investment market and (2) Conclusion about the analysis of City of Niš competitiveness on direct investment market.

Overall conclusion related to existing methodologies for benchmarking of competitiveness of local self governments and on direct investment market. It has been satiated in the introduction that there are two available ongoing benchmarking processes for local self-governments in the area of foreign direct investment attractiveness and business climate. These are European level research "European cities and regions of future 2012./2013." conducted annually by Financial Times FDI Intelligence Unit and Serbian national level project Certification of Business Friendly Municipalities implemented by National alliance for local economic development - NALED.

European level research "European cities and regions of future 2012./2013." conducted annually by Financial Times FDI Intelligence Unit is excellent benchmarking for potential investors since it is conducted by relevant, reliable and well known agency and it can be used for international promotion of investment potentials but it has at least three big problems. First, It 'covers only participating local self-governments and promote only 10 best ranked participants per category which is not relevant since it depends on the numbers of participating cities and regions per category. Second, It does not provide any assistance for participating cities and regions for improvement of competitiveness of participants and third is a fact that this is European level survey and it cannot take into consideration specifics of different macro regions such as transition economies in south east Europe, since cities and regions are competing for investors with the neighbouring cities and regions within the wider macro regions.

Certification of Business Friendly Municipalities implemented by National alliance for local economic development - NALED is unique methodology which is implemented in Serbia for last five years and it gives results. This project becomes regional project since this methodology will be used regionally by partner organisations from Croatia, Bosnia and Herzegovina, Macedonia and Montenegro, with the support of German GIZ. Methodology covers support to participating cities and municipalities in improvement of their results and facilitate competitions among local self-governments. At the same time this methodology is focus on business environment and cooperation with local business community and grading process can make mistake since it gives too much importance to certain criteria which are very important for business environment but they are not important for direct investments competitiveness.

It can be concluded that it is needed to develop model for direct investment competitiveness benchmarking of local self-governments and regions which will take into account regional specifics and based on the investors needs and location de vision making process and jurisdictions of local self-governments and their role in improvement of local self government and region competitiveness on direct investment market.

Conclusion about the analysis of City of Niš competitiveness on direct investment market. Conclusion of this paper must be that City of Niš is very attractive for direct investments and that it is competitive on the local self government direct investment market.

If we start with the analysis of the needs and implemented FDI projects we can conclude that Niš has proven capacity for investment implementation and that it started improving its position in the investor's point of view. One can also recognise proactive approach of the marketing and bending activities in the area of promotion of investment potentials.

It can be also concluded that key competitive advantages of the City of Niš are:

- its geostrategic position and excellent traffic connection including intermodal accessibility,
- availability and quality of labour force due to the existence of University and vocational school network and industrial tradition,
- developed and functional business infrastructure, both physical (industrial zones) and proven institutional capacities,
- growing business environment and positive business climate and development trends, and
- best practice examples both from commercial and industrial investments and local and multinational investors.

Based on statistical analysis of previous period in terms FDI realized and with an intention for realization in Niš can be pointed out that City of Niš had quite good results in privatization and Greenfield investments. At the other hand the realization of Brownfield investments wasn't so good. This is the segment where local government should make improvements in future period.

References

1. Bordo, Michael D. and Christopher M. Meissner (2006) Foreign Capital and Economic Growth in the First Era of Globalization, *Conference on Sovereign Debt and Development* at the World Bank, October 2006, downloaded April 19th, 2012 from http://siteresources.worldbank.org/ INTDEBTDEPT/ Resources/20061012_02.pdf
2. City of Niš, Local Economic Development Office (2007) *City of Niš Development Strategy*, downloaded on March, 17th 2012 from http://www.kler.ni.rs/index.php?section=downloads &subsection=category&category_id=7
3. City of Niš, Directorate for Economy, Sustainable Development and Environmental Protection - Department for Statistics (2010) Statistical Report of City of Niš for period 2000-2009, downloaded on February 16th, 2012 from http:// www.kler.ni.rs/index.php?section=downloads&subsection= category&category_id=3
4. Diekmann, Katharina and Frank Westermann. (2012) Financial development and sectoral output growth in nineteenth-century Germany. *Financial History Review,* Pages 1-26.
5. Egger Hartmut, Peter Egger, Josef Falkinger and Volker Grossmann. (2010) The Impact of Capital Market Integration on Educational Choice and the Consequences for Economic Growth. *The World Economy 33:10*, Pages 1241-1268.
6. FDI Intelligence (2012) *European Cities and Regions of the Future 2012/13*, downloaded on April 2nd, 2012 from http:// www.fdiintelligence.com/Rankings/European-Cities-and-Regions-of-the-Future-2012-13
7. Marjanović., Vladislav and Dejan Đorđević (2007) The increase of export as a surviving mode of transitional economies under globalization conditions (example of Serbia), *Problems and prospects of cooperation between the countries of SEE, Yalta, 2007.*
8. Merlevede, B. & Schoors, K. (2004). *Determinants of Foreign Direct Investments in Transition Economies*, Department of Economics and CERISE, Ghent University, Ghent.
9. Prasad, Eswar, Raghuram Rajan and Arvind Subramanian (2006) Foreign Capital and Economic Growth, *Kansas City Federal Reserve Jackson Hole Symposium*, 2006.
10. Schularick, Moritz and Thomas M. Steger (2010) Financial Integration, Investment, and Economic Growth: Evidence from Two Eras of Financial Globalization, *The Review of Economics and Statistics, November 2010, Vol. 92, No. 4*, Pages 756-768
11. Schularick, Moritz and Solomos Solomou. (2011) Tariffs and economic growth in the first era of globalization. *Journal of Economic Growth*, vol. 16, issue 1, Pages 33-70
12. Statistical Office of Republic of Serbia (2011) Municipalities and Regions in Serbia 2011, Belgrade, ISSN 1450-9075, downloaded January 30th, 2012 http://webrzs.stat.gov.rs/WebSite/Public/ PublicationView.aspx?pKey=41&pubType=1
13. Statistical Office of Republic of Serbia (2011) Statistical Yearbook of the Republic of Serbia 2011, Belgrade, ISSN 0351-4064, downloaded December 08th, 2011 http://webrzs.stat.gov.rs/ WebSite/Public/PublicationView.aspx?p Key=41&pubType=1
14. United Nations Conference on Trade and Development (2003) *Investment and Technology Policies for Competitiveness: Review of successful country experiences*, UN, New York and Geneva, downloaded on January, 22nd 2012 at http://unctad.org/en/ docs/iteipc20032_en.pdf
15. United Nations Conference on Trade and Development (2011) *World Investment Report: Non-Equity Modes of International Production and Development*, UN, New York and Geneva. downloaded on March, 28th 2012 at http://www.unctad-docs.org/files/UNCTAD-WIR2011-Full-en.pdf
16. Yussof, Ishak and Rahmah Ismail (2002) Human Resource Competitiveness And Inflow Of Foreign Direct Investment To The Asian Region, *Asia-Pacific Development Journal, Vol. 9, No. 1*, June 2002
17. World Economic Forum (2011) *The Global Competitiveness Report 2011-2012*, downloaded on January 28th, 2012 from http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf
18. http://www.fdiintelligence.com/
19. http://www.naled-serbia.org/
20. http://www.siepa.gov.rs/site/en/home/
21. http://www.kler.ni.rs/
22. http://www.ni.rs/location/index.html

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REVIEW PAPER
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THE EUROPEAN UNION BETWEEN MONETARY AND FISCAL UNION

Evropska unija između monetarne i fiskalne unije

Abstract

The aim of the paper is to point out the important issues of functioning of the European Union since its foundation, which are further complicated by global economic and financial crisis. In elaboration of problems, relevant studies and articles, documents of the European Union were used, as well as reports and publications (national and international). Existing data and trends in this area were analyzed, as well as measures affecting further functioning of the EU, by using the methods of qualitative and descriptive analysis. This approach is necessary because there are no universal patterns in domain of specified problems, and the conclusions are valid in strictly defined international symbolic systems and relate to entities of strictly established international interactions in the context of a specific time. The basic results derived from the available empirical research in this area point to the fact that today's debt crisis could contribute to creation of a closer union of European states. This conclusion follows from the fact that member states have expressed willingness to transfer a part of their fiscal sovereignty under a rigorous programme of fiscal consolidation.

Key words: *budget deficit, the European Union (EU), financial crisis, monetary union, the stabilization program.*

Sažetak

Cilj rada je da ukaže na važne probleme funkcionisanja Evropske unije od njenog osnivanja, koji su dodatno usloženi svetskom ekonomskom i finansijskom krizom. U razradi problematike korišćene su relevantne studije i članci, dokumenta Evropske unije, kao i izveštaji i publikacije (domaće i međunarodne). Analizirani su postojeći podaci i trendovi iz ove oblasti, kao i mere koje utiču na dalje funkcionisanje EU, metodama kvalitativne i deskriptivne analize. Ovakav pristup je neophodan, jer ne postoje univerzalni obrazci iz domena razmatranih problema, a izvedeni zaključci validni su u strogo definisanim medjunarodnim simboličkim sistemima i odnose se na subjekte strogo utvrdjenih medjunarodnih interakcija u određenom vremenskom kontekstu. Osnovni rezultati izvedeni iz dostupnih empirijskih istraživanja na ovom području ukazuju na činjenicu da bi današnja dužnička kriza mogla doprineti formiranju čvršće unije evropskih država. Ovakav zaključak sledi iz činjenice da su zemlje članice izrazile spremnost ka ustupanju dela svog fiskalnog suvereniteta pod rigorozne programe fiskalne konsolidacije.

Ključne reči: *budžetski deficit, Evropska unija (EU), finansijska kriza, monetarna unija, stabilizacioni program.*

Introduction

In the early 1990s there was a monetary crisis outbreak in what was then the European Community, as a result of combined effect of several factors related to the strongest economies within the Community. So Germany, for instance, was overburden with the necessity of public financing that could not have been met with the savings of citizens, due to which the country accumulated debt, whereas Bundesbanka rejected its monetisation. A possible solution included attraction of foreign capital by offering high interest rate or by promise to carry out revaluation of domestic currency. In such constellation it was not proper for the EMS to be based on the currency that was subject of speculation due to the economic problems of the issuing country. On the other hand, Italy needed a drastic cutdown on social budgets, financial sector and public companies [10].

It is obvious that any political programme related to implementation of such project would not have been accepted by citizens since it could be implemented only by a government that would dare to declare economic war. That practically means that such government must be based on cooperation between employers and trade unions, which is completely impossible. In such situations the market of high interest rates, as result of economic weakness records, makes profit, which creates a wicked circle: increase of budget deficit that leads to a new rise of interest rates, currency depreciation that tends to reduce the new rise of interest rates, and so on until reaching an unbearable situation.

The essential issue related to the functioning of EMU since its foundation is the link between the monetary policy of a country and its financial structure. Namely, in the EU there are three confronting types of financial structures:

(1) German, with high actual interest rates policy, universal banking and where the industrial capital is dependant upon the financial capital;
(2) Southern European, where the country plays the role of growth stimulator and social shock- absorber;
(3) Anglo-Saxon, where the market prevails over the industrial capital [11, pp: 240-286].

From the stated point of view, EMU requires stronger coordination and control of fiscal policies and creation of funds that would be transferred in case of unilateral shocks. This might be the only model of solving the current crisis in the EU, especially having in mind the trend of deficit increase among the most developed countries that significantly contribute to the instability of the whole system.

The impact of fiscal deficit and public debt on economic growth

According to the conventional definition, fiscal deficit is the difference between the government's total revenues and total expenses realized within a certain period, mostly within one year. However, fiscal deficit defined in this manner is not a reliable criterion, so for the purpose of analysis of deficit and its effect on other macroeconomic values, it is necessary to precisely determine the contents of such term. That is because the amount and importance of fiscal deficit depends on the scope of the state: central state; consolidated central state, that apart from the central state includes the off-balance funds; consolidated general state, that includes revenues and expenses of local government bodies; public sector as a whole, that includes the balance of financial transactions of public companies, as well as fiscal transactions of financial sector (privatization funds and/or development banks). In accordance with that, the most comprehensive measure of state's impact on other sectors and entire economy should contain the deficit of the state in its widest scope. As we know, such measure is rarely announced, so usually the deficit of central, consolidated central or consolidated general state is used in the analyses [15].

In addition to the deficit measure that is based on the plain difference between revenues and expenses, very often for special purposes some other deficit indicators are calculated, such as: primary deficit, operational deficit, structural deficit, cyclically adjusted deficit, government budget current account deficit, and the like. For analytical purposes most often conventional deficit, primary deficit and cyclically adjusted deficit are used, whereas during inflation, the actual amounts thereof are used. Cyclically adjusted deficit is applied in multiplier analysis based on traditional IS-LM model. Since conventional deficit is partly endogenous, it has no multiplicative effect because it is a result of rise of transfers to unemployed persons (unlike the deficit that is a result of public investment increase), and as such is embedded in the multiplier [30].

Since the government budget deficit is a residual value, it is obvious that there are some significant difficulties when evaluating its impact on the entire economy, as well as on certain macroeconomic aggregates. This is due to the fact that the cause of deficit does make a difference, whether it is a result of tax reduction or government expenses increase, and especially the fact that the effect of deficit depends on the tax i.e. expenses that are being changed. The conclusion drawn from the above stated is that the impact of deficit on economy should be considered in the context of particular fiscal policy and measures the policy is based on.

One of important conclusions drawn from numerous empirical analyses is that there is a difference in the performance of permanent and temporary deficits. While the effect of temporary deficits may be stabilizing, the effect of permanent deficit dependes on the manner of deficit financing: money issue and/or borrowing. Namely, public debt does not increase when the deficit is financed by means of money issue, nor it affects the level of indebtedness of the state, except in case the debt is denominated in local currency and it is not indexed. That practically means that public debt is a result of permanent deficits that are financed by means of borrowing (in the country or abroad). From the abovementioned it follows that deficit is the change of public debt level between two years (if not financed by money issue), and their effects on economy correspond in case of permanent fiscal deficit and financing by borrowing.

The consequences of fiscal deficit and public debt

There are three theories on the consequences of budget deficit and public debt: Keynesian, Ricardian and Neoclassical school. Their common characteristic is the fact that they mostly consider the case of deficit due to decrease of tax revenues and not due to increase of public expenditure (although Keynesian school in its original version observes the effect of public spending increase on change of employment and *output*, and only later the effect of decreased tax revenues). Generally speaking, disparate views of deficit and public debt arise from different selection of assumptions on which the models of different schools are based [26].

Pursuant to the classical economic doctrine, deficit and public debt are phenomena legitimate only in exceptional conditions and short-term public spending requirements, whereas their permanent existence is legitimate only in case of financing productive capital projects with return rate that is higher than the interest rate of the taken loans. The views of classical economists are that there is no crucial difference between the borrowing of a state and that of an individual. The only purpose of each type of debt is reconciliation between the flow of revenues and expenses for a specific period.

Neoclassical school is based on the assumption that people's life cycle is limited and that generations overlap, so there is a constant equilibrium on the market. Budget deficits increase total spending for a living by transfering taxes to future generations. If economic resources are completely exhausted, increased spending necessarily means decreased savings. The situation on the capital market is changeable so the interest rate must rise so that the market could regain equilibrium. Deficits of permanent nature in that manner "squeeze out" private capital accumulation, the consequences of which are fatal for economic growth [5].

Keynesian school chronologically precedes the Neoclassical school and is based on the assumption that timely deficits have more favourable influence on prosperity. However, there are situations when stimulation of aggregate demand caused by deficit has unfavourable effect. For example, such is the situation of full employment and fixed supply of money, when increased demand for money leads to increase of interest rates and decrease of investments. Pursuant to the stated, Keynesian school leaves a possibility that the deficit has positive or negative effects, depending on the state of economy. That means that Keynesian theory is not able to provide to politicians universal recommendations, that is, they should recognize the state of the economy in order to take certain measures [14].

Ricardian school assumes that successive generations are connected by voluntary and unselfish resource transfer. That means that expenditure is a function of resources of tax payers and their descendants. Deficits only postpone tax payment, leaving it to future generations, while discounted current tax value is equal to government expenditures, which means that deficit from previous generations leaves unchanged resources. Expenditure, as resource function of generations, does not change due to influence of tax changes. In other words, policy of fiscal deficit has no effect on real economic dimensions.

Ricardian school starts with a hypothesis on debt neutrality, and it is based on the following, extremely restrictive assumptions: 1) time horizon of citizens/tax payers is infinite, 2) differences between tax burdens motivate citizens to engage in inter-generation transfers based on altruism, 3) consumers are rational and foresighted, 4) capital markets are either perfect or contain a specific mistake, 5) taxes are single (lump-sum), 6) use of deficit cannot create values and 7) public spending cannot indefinitely be funded by means of borrowing. Considering the fact that these assumptions do not match reality and that the hypothesis on debt neutrality cannot maintain if any of the stated assumptions is abandoned, it is deemed that ricardianism cannot provide good instructions for running a specific budget policy [1].

Neoclassical and Keynesian paradygm can be quite well complemented, if they are understood as analyses of two different aspects of fiscal policy. By breakdown of deficit to its permanent and temporary components it can be concluded that neoclassical analysis takes into account effects of permanent deficits, while Keynesian takes into account effect of temporary deficits that are taken in order to stabilize cyclical fluctuations within equilibrium with full employment. In other words, neoclassicists believe that lower debt is more favourable from the point of view of average national savings, but they allow temporary deficits that serve to the government for stabilization of economy near equilibrium.

From theoretical point of view, it seems that neoclassical analysis is based on least restrictive assumptions and that provides the most realistic description of reality. Considering the effect of deficit on economy, neoclassicists believe that the key question is whether the deficit is temporary or permanent. Namely, if consumers are focused on their own consumption, reduction of deficit caused by increase of tax burden would, according to the neoclassicists, cause greater decrease in demand if consumers believe that such reduction is permanent. In that case, attempt by the government to achieve equilibrium with greater savings can reduce demand to such an extent that it will cause recession. On the other hand, neoclassicists believe that influence of permanent deficit of any sign to the economy depends on degree of economic development and economic goals. In other words, if private savings are insufficient to achieve desired level of capital accumulation, then the state must achieve permanent suficit.

The main shortcoming of these theories lies in the fact that they, when studying effects of deficit and public debt to economic activity, mostly neglect: (a) method for deficit financing (debt emissions or monetary financing); (b) cause of occurrence of deficit (increase of government expenditure or reduction of tax revenues); (v) structure of tax revenues and structure of government expenditure; (g) deadline for deficit financing (except for neoclassical that differentiates permanent and temporary deficits); (d) whether exogenous policies were anticipated or not. From that point of view, some recent considerations of the effect of deficit to economic activity start with the fact that, with the aim to evaluate effect of fiscal policy to aggregate demand, it is necessary to create a model of economy and specify reference policy (in relation to which some other policy can be called expansive or restrictive) [7].

Sustainability of budget deficit

Problem of sustainability can be formulated as follows: budget deficit leads to public debt growth that would have to be serviced in the future. If interest rates to the public debt exceed growth rate of economy, debt is dynamically set so that ratio between the public debt and GDP is deteriorating. It is clear that this can become unsustainable and that it requires corrective measures [4].

When considering ratio between the debt and deficit, starting point is known restriction of the budget [13]:

$$G - T + rB = dB/dt + dM/dt \qquad (1)$$

where: G – level of public spending (without payment of interest rate to the public debt), T – tax revenue, r – interest rate to the public debt B, and M – level of primary money (monetary base). The left side of the equation (1) presents budget deficit. Debt consists of primary budget deficit (G - T) and payment of interest rates to the public debt (rB). The right side is the financial side: budgetary deficit can be financed through creation of debt (dB/dt) or printing of primary money dM/dt.

Growth rate in time unit, marked by a dot above the symbol is: □ = dB/dt

When we express variables as ratio toward GDP:

b= B/YW (2)

where: Y - BDP, and b - ratio debt/GDP; where follows:

□ = □/Y – □F/□ (3)

or by using (2) and inserting equation:

□ = □Y + b□ (4)

By replacing (4) in (1) follows

□ = (g-t) + (r-x)b (5)

where: g = G/Y; t = T/Y a x - □/Y (GDP growth rate).

Equation (5) defines debt dynamics: once nominal interest rate r exceeds nominal growth of economy x, the government should take actions to realize suficit of primary budget (g-t), and by not doing so, the ratio debt/GDP would increase indefinitely. Final outcome would be unsettled public debt, out of which arises that is condition of government solvency necessary: □= 0 or (r - x)b = t – g [11, pp: 322-335].

Therefore, if the government accumulates significant deficit in the past, it has to realize in the folowing periods adequate budget suficit in order to protect ratio debt/GDP against automatic growth. At first glance we conclude that the only way of such situation is by cutting public expenditure and/or increase of taxes [3, pp: 408-411].

In a stable country □ equals 0, which means that d ≡ gb (6), where:

b – (stable country) level of public debt stabilization (expressed in % GDP);

g – growth rate of nominal GDP,

d – government budget deficit expressed in % of GDP.

Necessity for the Stability and Growth Pact reform in global economic crisis

Key condition of convergence for countries that intend to join the Economic and Monetary Union refers to request for reduction of budget deficit to 3% and public debt to 60% of GDP (defined by the Stability and Growth Pact). If we consider now mathematical identity d ≡ g × b and introduce conditions for budget convergence, conclusion would be that stabilization of public debt to 60% of GDP could be achieved *only and only if* nominal growth rate of GDP was equal to 5%, that is, 0,03 = 0,05 × 0,60. However, there is no rational economic explanation to this rule because it is not clear why should public debt be stabilized at precisely 60%?

In the last ten years of existence, the Stability and Growth Pact went through several crises. The first big crisis occurred in 2003 when fiscal thresholds were exceeded by two big EU countries: France and Germany. Those two countries exceeded the public debt limit of 60% of GDP several times in the period between 1999 to 2004. Thus, in 2003 a procedure for excessive debt was initiated. However, instead of getting a *note* as their final warning before sanctions, after ignoring recommendations by the European Commission, further procedures were blocked and another set of 'recommendations' was delivered. This case was the reason for reforms from the Pact from 2005.

Criticism of the Pact was divided into three groups related to the following:

a) basic methodology of defining criteria for fiscal discipline,
b) unwanted effects that can occur due to strict execution of fiscal rules,
c) loose and selective implementation of fiscal discipline [8].

The issue of implementation and imposition of criteria from the Pact that should be fulfilled is actualized today, especially within Eurozone countries. Fiscal responsibility in all phases of economic cycles means both expansion of government expenditure in period of crisis and 'tightening the belt' in times of economic 'boom'. A deficit-prone policy, often for political reasons (e.g. increase of social payments in election year), leads to unsustainable public finance. On the other hand, averting decision-making within the Pact from automatic punishment of the countries that exceed the limit of 3% to possibility of discretionary decision-making led to politization of decisions on excessive deficit.

From the stated point of view, strict observance of fiscal discipline criteria in Eurozone causes numerous unwanted effects. Some Eurozone member states are EU countries with the most vulnerable public finance. For some countries like Greece, Italy, Portugal and Spain rating agencies have already gave low international rating marks due to excessive share of the public debt and deficit in GDP, which additionally complicates position of these countries.

Global economic crisis showed numerous shortcomings of the Pact and monetary union, so when bankruptcy of some member states was mentioned a question was posed regarding *'non-bail out clause'*. In that context, the following question is considered: will Greece, Spain, Ireland and other countries continue to burden EU economy with its high deficits and *'bury'* european financial market by selling their debts or some countries will have to leave the Eurozone. What is completely clear is the fact that healthy and quality consolidated public finance with mid-term or long-term sustainability have proven to be *conditio sine qua non* of macroeconomic stability. In other words, since monetary policy of the Eurozone countries is under supra-national competence, fiscal policy remains the only instrument for maintenance of stability.

Effect of the world financial crisis on the European Union

After current crisis outbreak, European banks have been exposed to risky American mortgage loans, due to which they had already experienced great losses. Fear of the same scenario on the European Union market affected the increase in interbank interest rates, because banks have reluctantly lent money to one another. Instead, banks and other investors have invested surplus of available assets into government bonds and other financial instruments of low risk and low yield. Such a situation made European countries engage into joint protective measures aimed at curbing the crisis. However, unlike the USA as a single state, the EU consists of 27 states, which additionally complicates and makes hard reaching a joint solution. The EU has important financial institutions such as the European Central Bank, but its major drawback is the lack of European government that would enact quick and binding decisions for all member states. Namely, under the current legislative solutions each member state is allowed to independently create measures for overcoming the crisis, in which process the planned measures do not have to be harmonized among the member states.

Similarly to bailout package provided to Greece, the adopted European stabilization mechanism should provide loans to states with financial difficulties within next three years. The new mechanism will entail 60 billion Euros from the European Commission and 440 billion Euros as a Special Purpose Vehicle, to be guaranteed by member states, in proportion to their share in the ECB capital. In addition, the IMF should provide additional 250 billion Euros. Of course, Germany will have the highest share of 123 billion Euros, whereas the share of France will be significantly lower, around 92 billion Euros [29, pp: 12-16].

After adopting the European stabilization mechanism, the European Central Bank showed readiness to buy back eurozone government and corporate bonds in order to ensure market profundity and liquidity, and that all interventions are sterilized and do not pose so-called quantitative easing, by which the fear of inflation is excluded. Appraisals that such stabilization fund is the first step towards fiscal union are well grounded, since a clear political will to back the Euro and euro bonds is shown by its adoption. However it should be highlighted that unless those measures are supported by rigorous fiscal measures, the solvency problems will worsen and monetary union will get into deadend that would eventually lead to its quick demise.

Similarly to the crisis of the fixed currency rates maintenance system (Exchange Rate Mechanism - ERM) in the early 1990s that sparked the quick foundation of a monetary union, current debt crisis could contribute to the foundation of a tighter European union. Such a conclusion can be drawn from the fact that member states have agreed to back to one another and showed readiness to put a part of their fiscal sovereignty under rigorous fiscal consolidation programmes. The fact that the Stabilisation fund accounts for 8% of the eurozone GDP and that leads to joint issue of government bonds through the European Commission is very significant, although past experience of the Stability Pact brings a doubt of efficiency of the process within Ecofin and the European Commission. Next important conclusion is that the major role in the stricter control will have the biggest guarantor of this construction and the state that invested and gained the most from the Euro project - Germany.

However, regardless of the new financial package, one key question remains open - how to make certain governments limit their spending and thus avoid payment of their debt by other states. So far, only Greece is in question but soon it could apply to other states, such as: the Great Britain, Spain. The process of bridging the problem of Greece as well as of other indebted nations highly affects the additional increase in debt and deficit regional ratio, without possibility of solving the main problem.

However, all that looks good on paper, but becomes useless since only a symptom instead of a source of a disease is being cured. Permanent depreciation of Euro and aggravation of business conditions in Europe have damaged American export, so American federal reserves were used to help by activating a programme of euro to dollar swap that the European Central Bank will borrow to European banks. Since European banks need dollars and American banks are unwilling to meet their needs ever since the chaos in Greese started, the problems the European partners are about to encounter are obvious [6].

Next step is an attempt to coordinate group economies, and one of the main steps should be introduction of stricter rules that would prevent overborrowing of states. Currently, the EU limits deficit to three percents, but that is being complied with by few countries. The European president Herman Van Rompuy announced the preparation of a series of proposals that will enable the EU to function as a single economic power instead of a set of nations acting independently [10].

However, it should be underlined that it is not the main problem. The bottom line is how to solve the problem of almost nonexistent economic growth? Many analysts warn that European governments have not found an adequate solution so far, although they are familiar with the measures to be taken:

(a) to cut down social rights and
(b) to effectively force working population to work longer and more.

If they fail to take such measures on their own, the states will be forced to do so by the bond markets, which is an undesired solution.

Increase of public debt and spending

Various empirical researches throughout the world showed that the main instruments and leverage of public finances are budget deficit, public debts, public expenses and revenues; and that for the last ten years or so they have been loosely controlled by the state as an institution. Unlike proclaimed and much praised principles of liberalism and monetarism, most world economies developed in their practice state interventionism and New Keynesian theory and policy for regulating economy by means of deficit financing and cheap money policy.

Previously, states appeared on financial market just like any other entity, especially before recession and crisis, at what time borrowing exceeds the limits, public debt and budget deficit rise rapidly, and the share of public expenses in gross domestic product grows continuously. Parallel to these processes, the role of public sector in basic economic sectors has also grown, especially in investment, employment and social sector (developed countries became ”economies of old men“ or ”zombie economy“) [20].

Table 1: Public debt share for selected states - in % GDP

	1970.	1990.	2000.	2007.	2008	2009.	2010.	2011.
Austria	18,9	57,9	71,1	63,1	66,3	72,6	78,6	80,0
Belgium	64,0	125,7	113,7	88,1	93,3	100,5	100,7	100,7
Denmark	38,8	65,8	60,4	34,3	42,6	52,3	55,5	57,1
Finland	11,8	14,4	52,5	41,4	40,6	52,4	57,4	62,7
France	30,1	40,2	65,6	72,3	77,0	89,2	94,0	97,3
Germany	18,1	43,2	60,4	65,3	69,3	76,3	87,0	87,3
Greece	17,6	90,0	115,3	112,9	110,0	131,6	147,3	157,1
Ireland	4,9	97,2	39,4	28,8	43,6	71,6	102,4	120,4
Italy	38,1	105,4	121,6	112,8	121,6	122,1	126,8	129,0
Japan	10,6	61,4	135,4	167,0	174,0	194,1	199,7	212,7
Holland	51,5	78,8	63,9	51,5	64,5	67,6	71,4	74,3
Norway	41,8	42,8	32,7	57,4	54,9	48,0	49,5	56,1
Portugal	-	60,5	60,2	75,4	80,6	93,1	103,1	110,8
Spain	3,9	50,6	66,5	42,1	47,4	62,3	66,1	73,6
Sweden	31,5	44,3	64,3	49,3	49,6	52,0	49,1	45,4
G.Britain	4,9	39,1	45,1	47,2	56,8	72,4	82,0	88,5
USA	11,7	55,3	54,5	62,6	71,8	84,3	93,6	101,1
Eurozone	-	-	75,8	71,6	76,5	86,9	92,7	95,6
OECD	-	-	69,8	73,1	79,3	90,9	97,6	102,4
Serbia			37.7%	30.9%	29.2%	34.8%	42.9%	44.9%

Source: OECD Economic Outlook, Volume 2011, Issue 1 – No.89, © OECD 2011, Annex Tables: Table 32. General government financial liabillities.

Data given in Table 1 show that many of the European Union states do not meet criteria they impose on prospective members. In the end of 2011, almost all EU states (with the exception of Sweden, Finland, Norway and Denmark) exceeded the limit of "allowed" 60%, whereas in Belgium, France, Greece, Portugal, Italy and Ireland public debt exceeded 100% of their GDP. Likewise, it is interesting to observe the movement of public debt in some EU countries. One can see that since 2000, in Belgium, Greece and Italy debt has continuously exceeded the limit of 100% GDP. Average share of public debt in GDP in eurozone countries is around 90% of GDP, and is not likely to drop soon to the level specified under the Maastricht criteria. Serbia's public debt reached statutory minimum of 45% GDP, which is far from being the highest debt in Europe [25]. But Serbia has another problem: distrust of investors in Serbia's capacity to pay back already relatively low debt, which results in borrowing under the rates several times higher than the GDP growth.

Besides, data from Table 1 - unambiguously point to the conclusion that Western economies have been maintained and "developed" by means of ever increasing debts and unhealthy economic structure thus "producing" the stagnation of economic growth and development, which has finally led to economic breakdown. Accumulation of debt and liabilities arising therefrom have become permanent processes, causing economic crisis, downfall of banks, financial market breakdown and stock exchange collapse [16, pp: 84-89].

These data correspond to previously stated conclusions on the negative impact of public debt on economic growth, which is confirmed by the data on modest rates of GDP real growth, given in Table 2. It is estimated that global economy did not enter the crisis earlier owing to the cheap money and ever growing state debts. Public debt in Greece exceeded 300 billion Euros or 157,1% GDP, with the estimate of further growth in 2012 to 159,3%. Portugal, Spain, Ireland, Italy and Iceland are near bankruptcy [17, pp: 29-32].

Table 2: GDP real growth for selected countries

	2000.	2007.	2008	2009.	2010.	2011.
Austria	3,3	3,7	2,2	-3,9	2,1	2,9
Belgium	3,8	2,8	0,8	-2,7	2,1	2,4
Denmark	3,5	1,6	-1,1	-5,2	2,1	1,9
Finland	5,3	5,3	1,0	-8,3	3,1	3,8
France	4,1	2,3	0,1	-2,7	1,4	2,2
Germany	3,5	2,8	0,7	-4,7	3,5	3,4
Greece	4,5	4,3	1,0	-2,0	-4,5	-2,9
Ireland	9,7	5,6	-3,6	-7,6	-1,0	0,0
Italy	3,9	1,4	-1,3	-5,2	1,2	1,1
Japan	2,9	2,4	-1,2	-6,3	4,0	-0,9
Holland	2,9	3,4	-0,7	0,0	2,5	0,8
Norway	3,3	2,7	0,8	-1,4	0,4	2,5
Portugal	3,9	2,4	0,0	-2,5	1,3	-2,1
Spain	5,0	3,6	0,9	-3,7	-0,1	0,9
Sweden	4,6	3,4	-0,8	-5,3	5,3	4,5
G.Britain	3,9	2,7	-0,1	-4,9	1,3	1,4
USA	4,1	1,9	0,0	-2,6	2,9	2,6
Eurozone	4,0	2,8	0,3	-4,1	1,7	2,0
OECD	4,2	2,7	0,3	-3,5	2,9	2,3

Source: OECD Economic Outlook, Volume 2011, Issue 1 – No.89, © OECD 2011, Annex Tables: Table 1. Real GDP.

On the other hand, data from Table 2 show that debt of the new EU member states, i.e. states outside the eurozone, is lower. This phenomenon can partially be explained by so-called *Balassa-Samuelson effect*. Higher inflation of developing countries means higher nominal GDP, which contributes to the decrease of public debt/GDP ratio [2, pp: 584-596]. The practice of presenting budget deficit and public debt of Serbia confirms this conclusion.

Table 3: Public debt of countries outside the eurozone in the period 2007-2011)

	2007.	2008.	2009.	2010.	2011.
Bulgaria	17.2	13.7	14.6	16.3	17.5
The Czech Republic	27.9	28.7	34.4	37.6	39.9
Denmark	27.5	34.5	41.8	43.7	44.1
Latvia	9.0	19.8	36.7	44.7	44.8
Lithuania	16.8	15.5	29.4	38.0	37.7
Hungary	67.0	72.9	79.7	81.3	75.9
Poland	45.0	47.1	50.9	54.9	56.7
Romania	12.8	13.4	23.6	31.0	34.0
Sweden	40.2	38.8	42.7	39.7	36.3
Great Britain	44.4	54.8	69.6	79.9	84.0
EU	59.0	62.5	74.7	80.3	82.5

Source: Statistical Annex, European Economic Forecast – Autumn 2011., http://ec.europa.eu/ economy _finance/eu/ forecasts/2011_autumn_forecast_en.htm

Budget deficit movement in developed economies

Great portion of debts has been incurred for the purpose of economic recovery, and the states have actually failed in this respect since economy was developing under very low growth rates of 1-2%, which leads to the conclusion that debts are out of control. According to the IMF aevaluation, in 2014 public debt will reach 239% GDP in Japan, 132% in Italy, 113,51% in the USA and 100% in Great Britain, which has lead to rating downgrade of the states with high debt and weak fiscal position [12, pp: 7-23]. These facts confirm the validity of assumption on unsustainability of key convergence criterion that defines the ratio of budget deficit, public debt and economic growth rate.

Data from table 4 illustrate that budget deficits are skyrocketing in developed economies. Regardless of the proclamations on deficit decrease and restriction of public expenses, they increase is getting greater thus affecting growth of the role of the state in economy [17, pp: 29-32]. State intervention is spread in all economies which leads to constant increase of public expenses in GDP.

Table 4: Budget deficits of some of the most developed countries in the world (in % GDP)

	1970.	1980.	1990.	2000.	2007.	2008.	2009.	2010.	2011.
USA	-0,6	-2,3	-2,6	1,5	-2,9	-6,9	-13,5	10,6	-10,1
Germany	-0,6	-1,0	-2,0	1,3	0,3	0,1	-3,0	-3,3	-2,1
France	-0,7	1,1	-1,8	-1,5	-2,7	-3,3	-7,5	-7,0	-5,6
Italy	-3,8	-9,2	-10,8	-0,9	-1,5	-0,7	-5,3	-4,5	-3.9
G.Britain	-1,1	-2,5	-4,0	3,7	-2,8	- 4,8	-10,8	-10,3	-8,7
Sweden	-0,9	-3,4	-3,3	3,6	3,6	2,2	-0,9	-0,3	0,3

Source: Budget deficits: What governments are d-oing, available at: http://www.oecd.org/ document/ 49/ 0,3746,en_33873108_3 3873500_46664497_1_1_1_1,00.html, (12.03.2011)., and OECD Economic Outlook, Volume 2011, Issue 1 – No.89, © OECD 2011, Annex Tables: Table 27. General government financial balances.

Another paradox, connected to the level of budget deficit and public debt confirms overall complexity of the role of a modern state as an institution, refers to the fact that all states note extremely high increase of government expenditure and increase of their share in GDP (data from the Table 5). In the USA it increased from 28% in 1960 to 41% in 2011; in Germany from 32% to 45%; France from 35% to 55%; in Italy from 33% to 51%; G. Britain from 32% to 50% and Sweden from 31% to 51%. Almost identical situation can be seen with other countries. What is most worrying is the fact that the greatest part of this expenditure refers to non-production expenditure, so that long-time hidden problem of pension, health and social system emerged to the surface, which cannot be financed any longer. Thus, indebtedness leads to a new pressure on the social function of the state (budgets) that becomes "guilty" for high non-production expenditure and budget deficit [6].

Table 5: Public expenses of some of the most developed countries in the world - in % GDP

	1960.	1980.	1990.	2000.	2007.	2008.	2009.	2010.	2011.	2012.
USA	28	33	35	37	37	39	42	42	41	41
Germany	32	36	48	48	44	44	48	47	45	44
France	35	36	55	56	52	53	56	56	55	55
Italy	33	38	46	53	48	49	52	51	51	49
G.Britain	32	48	56	57	44	44	51	51	50	49
Sweden	31	45	65	55	51	52	55	53	52	51

Source: OECD Economic Outlook, Volume 2011, Issue 1– No.89, © OECD 2011, Annex Tables: Table 25. General government total outlays.

Conclusion

The European Monetary Union calls for tighter coordination and control of fiscal policies alongside with the forming of funds which would be transferred in the event of unilateral shocks. In general, this is the only possible model for solving the present crisis in EU, particularly when taking into account the upward deficit tendency in the most developed countries, which considerably contribute to the instability of the whole system.

As the government budget deficit is a residual value, it is clearly very difficult to assess its impact on the economy as a whole, as well as on individual macroeconomic aggregates. This means that it matters how the deficit occurs, whether as: a consequence of tax reduction; a consequence of government expenditure growth; and an important fact is that the deficit`s impact differs depending on which taxes, i.e. expenditure is changed. From the above said it may be inferred that the deficit` s impact on national economy should be considered in the context of a concrete fiscal policy and measures on which it is based.

From the above presented point of view follows the conclusion that sound and adequately consolidated public finances, with medium-term or long-term sustainability, proved to be *conditio sine qua non* of macroeconomic stability. In other words, as the monetary policy of the Eurozone member countries comes within supranational competence, the fiscal policy remains the only instrument for maintaining stability.

References

1. Arrau, P., (1990), "How Does the Debt Crisis Affect Investment and Growth?", *International Economics Department, The World Bank*, April 1990., http://www-wds.worldbank. org/servlet/ WDSContentServer /WDSP/IB/1990/04/01/000009265_39 60929014431/ Rendered/PDF/ multi0page.pdf, (accessed: 22.12.2011).
2. Balassa, B., (1964.): "The Purchasing Power Parity Doctrine: A Reappraisal", *Journal of Political Economy*, vol. 72, str. 584-596.
3. Bajt, A., (1979), "Osnove ekonomske analize i politike", *Informator*, Zagreb.
4. Ball, L. & Mankiw G., (1996), "What Do Budget Deficits Do?", http://mostlyeconomics. wordpress. com/2009/06/05/what-do-budget-deficits-do/, (accessed: 12.11.2011).
5. Bernheim, D. B., (1989), "A Neoclassical Perspective on Budget Deficit", *Journal of Economic Perspectives,* vol. 3, br. 2, 1989; spring 1989., pp 55-72, http://www.jstor.org/pss/1942669, (accessed: 12.11.2011).
6. Budget: finances publiques 2009-2012., dostupno: http:// www.assemblee-nationale. fr/13/ dossiers/loi_finances_2009. asp, (22.12.2011).
7. Buiter, W. H., (1985), "Guide to Public Sector Debt and Deficits", *Economic Policy: A European Forum 1,* 13-79., (accessed: 12.11.2011).
8. Calmfors, L., (2005), "What remains of the Stability and Growth Pact?", *Swedish Institute for European Policy Studies*, novembar/2005.
9. Council Financial Regulation of 21 December 1997 applicable to the general budget of the European Communities, OJ No L 356, 21.12.1997, p.1; Regulation as last amended by Regulation (EC, ECSC, Euratom) No 762/2001 (OJ L 111, 20.4.2001, p.1)., (accessed: 12.11.2011).
10. Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities, OJ L 248/1, 16.9.2002; Commission Regulation (EC, Euratom) No 2342/2002 of 23 December 2002 laying down detailed rules for the implementation of Council Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities, OJ L 357/1, 31.12.2002., (accessed: 20.01.2012).
11. De Grauwe, P., (2004), „Ekonomija monetarne unije", *Izdavačka knjižarnica Zorana Stojanovića*, Sremski Karlovci – Novi Sad.
12. *Eurobarometer* 70, June 2010, str. 7-23, dostupno: http:// ec.europa.eu/eurostat/ euroindicators, (accessed: 12.02.2012).
13. Horvat B., (1976), „Ekonomska politika stabilizacije", *Naprijed*, Zagreb.
14. *Investopedia*, (2011), „Can Keynesian Economics Reduce Boom-Bust Cycles?", http://www. investopedia.com/articles/ economics/08/keynesian-economics.asp #axzz1jnZqhnfz, (accessed: 12.11.2011).
15. Jacobs, D., Schoeman N., Jan van Heerden, (2002), „Alternative Definitions of the Budget Deficit and its Impact on the Sustainability of Fiscal Policy in South Africa", http://www.essa. org.za/ download/papers/ 006.pdf, (accessed: 12.11.2011).
16. Komazec, S., (2011), "Dolar, evro i kriza svetskog monetarnog sistema", *Studija o budućnosti dolara i evrozone, Biblioteka naučno-istraživačkih radova – Savremena kriza i izazovi budućnosti*, Asterix i Obelix, Zemun.
17. Margolis, M., (2011), "Welcome to Welfare 2.0 For the World's Poor, The Key to Power", *Newsweek*, Special Edition, Issues 2011, December - February, str. 29-32., (accessed: 12.01.2012).
18. Nikolić, A., Đorđević, D., (2008), "Evropske javne finansije i budžet Evropske unije", *Privredna akademija*, Novi Sad.
19. Nikolić, A., (2011), "Teskoće funkcionisanja Evropske unije u odsustvu čvršće fiskalne koordinacije", *Ekonomija-teorija i praksa*, 1/2011.
20. *OECD Economic Outlook*, Volume 2011, Issue 1 – No.89, © OECD 2011, Annex Tables: Table 27. General government financial balances & Table 32. General government financial liabilities.
21. *OECD Economic Surveys*, dostupno: http://www.oecd-ilibrary.org/ economics/ oecd-economic-surveys_16097513. (22.12.2011).
22. *OECD*, "Economic Survey of the United States 2010", http:// www. oecd.org/ home/ 0,2987,en_ 2649_ 201185 _1_1_1_ 1_ 1,00.html, (accessed: 16.12.2011).
23. *Revidirani memorandum o budžetu i ekonomskoj i fiskalnoj politici za 2011*. godinu sa projekcijama za 2012. i 2013. godinu, decembar 2010., (accessed: 02.12.2012).
24. Samuelson, P. A. (1964.), "Theoretical Notes on Trade Problems", The Review *of Economics and Statistics*, br. 46, str. 145-154
25. *Statistical Annex*, "European Economic Forecast – Autumn 2011.", http://ec.europa.eu/ economy _finance/eu/ forecasts/2011_ autumn_forecast_en.htm
26. Tempelman, H. Jerry, James M., (2007), „Buchanan on Public-Debt Finanse", http://www. jerrytempelman.com /Jerry's%20 website/Publications/03.%20Government% 20debt%20 finanse/01.%20 Buchanan%20Gov't-Debt%20Finanse%20 paper.pdf, (accessed: 12.11.2011).
27. Tepavac R, (2008), "Institucionalni investitori na finansijskom tržištu", Beograd, *Izdanje IP Filip Visnjić.*
28. Tepavac R, (2011), "Novi pristup reformi budžetskog sistema", *Revizor* 54/2011, Beograd, *Institut za ekonomiku i finansije*, str 78-82.
29. Theil, S., "How Europe's New Goals - Will Pay Off, The Key to Power", *Newsweek*, Special Edition, Issues 2011, December - February, 2011, str. 12-16.
30. Tobin, James, (2001), „Its Macroeconomics in Perspective", *Cowles Foundation for Research in economics, Yale university Box 208281*, New Haven, Connecticut, dostupno - http://cowles. econ.yale.edu /P/cd/d13a/ d1301.pdf. (accessed: 12.11.2011).

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BUSINESS PROCESS MANAGEMENT MATURITY MODEL - SERBIAN ENTERPRISES' MATURITY LEVEL

Model zrelosti upravljanja poslovnim procesima - nivo zrelosti preduzeća u Srbiji

Abstract

Business process management maturity model enables description of "as-is" enterprise's state, in terms of presence and acceptance of process approach. The heart of this model includes five factors or levers, critical for successful implementation of business process management. These factors are: strategic approach, process management, technology, employee management, and business culture. The above-mentioned factors influence the level of enterprise's maturity. At each level, an enterprise is in a specific state: silo, tactical integration, process orientation, optimized enterprise, and intelligent network. When maturity factors are analyzed simultaneously with maturity levels one can formulate two-dimensional business process management maturity model. From the perspective of process management maturity, the state of Serbian economy is also shown in the form of two-dimensional model.

Key words: *management, business processes, maturity, levels, factors.*

Sažetak

Model zrelosti upravljanja poslovnim procesima omogućava dijagnostifikovanje trenutnog stanja preduzeća, u smislu zastupljenosti i prihvaćenosti procesnog pristupa. U srcu ovog modela nalazi se pet faktora, kritičnih za uspešnu implementaciju upravljanja poslovnim procesima. To su: strategijski pristup, upravljanje procesima, tehnologija, upravljanje zaposlenima i poslovna kultura. Navedeni faktori utiču na nivo zrelosti preduzeća. Na svakom nivou preduzeće se nalazi u određenom stanju: silosi, taktička integracija, procesna orijentacija, optimizirano preduzeće, inteligentna mreža. Vodeći se faktorima i nivoima zrelosti moguće je formulisati dvodimenzionalni model upravljanja poslovnim procesima. U vidu dvodimenzionalnog modela prikazano je i stanje preduzeća u Srbiji, posmatrano sa aspekta zrelosti upravljanja procesima.

Ključne reči: *upravljanje, poslovni procesi, zrelost, nivoi, faktori.*

Introduction

Successful enterprises are characterized by a constant striving towards excellence in all areas of business, which is achieved by continuous improvement of business activities. Since the activities constitute the business processes, the assumption is that high performances and business excellence may be achieved through appropriate business process management.

Business process management is defined as a holistic management approach that focuses on identifying, defining, implementing, measuring, monitoring, analyzing, and continual improving of business processes [9]. This approach assumes top management involvement and support, because its implementation starts from the top and spreads vertically and horizontally through the enterprise [2]. Top management support is necessary but not sufficient, since all employees have to accept this management change.

The importance of business process management has been an inspiration and challenge for many authors. The first one, who actually introduced a model for business process management implementation is Watts Humphrey [13]. Since this model points out the path an enterprise has to pass in order to reach process management maturity, it is called Capability Maturity Model. The basic assumption of this model is that enterprises whose managers understand the processes and systematically manage their realization are more capable to respond to customer demands, compared to traditionally managed enterprises [12].

Today there are a lot of models that describe maturity of an enterprise in terms of business process management. If one ignores minor differences between them, all business process maturity models describe the evolutionary path that leads an enterprise to the state of maturity, when its managing is based on processes [17]. While describing the maturity levels, these models point out the factors significant for the transition from lower to higher maturity level.

Characteristics and principles of business process maturity models

As it is mentioned, Humphrey introduced the first maturity model. After Humphrey, the significance of business process management maturity was emphasized by Maull, Tranfield, and Maull [14]. They studied the programs of reengineering in 33 enterprises and set out three reengineering programs: the strategic, process, and cost-based. According to them, cost reduction and process approach are very important for starting the journey towards process maturity, but strategic aspect is necessary for reaching the high level of maturity.

One of the latest models was developed by Rosemann and de Bruin [16]. This model includes observation of five factors' influence during five phases an enterprise has to pass in order to reach maturity of business process management. It is called Business process management maturity model. Another business process maturity model appeared in 2006 and was promoted by Weber, Curtis, and Gardiner [20]. Hammer [11] also accepts the phase approach to process management, and emphasizes that all the previous stages must be fully completed before moving to the next phase (to the higher level of maturity). Hammer's model clearly highlights the difference between process maturity and the enterprise maturity. In order to analyze process performances, the model takes into account the maturity of five drivers, and they are: design, performers/implementers, owner, infrastructure, and measures. When it comes to an enterprise's maturity, Hammer emphasizes four skills, and they are [15]: leadership, culture, expertise, and way of managing. However, the models proposed by Curtis and Hammer are based on the Rosemann and de Bruin model, and are very similar. Therefore the following pages will point out the characteristics of *Business process management maturity model* (*BPMMM*), formulated by Rosemann and de Bruin [3].

Business process maturity models are based on the following principles [7]:

- Process performances must be evaluated to identify its ability to contribute to the achievement of an enterprise's goals,
- Capable processes cannot survive if an enterprise is not at an appropriate level of maturity,
- Process improvement must be accompanied by organizational changes and changes in managing,
- Each maturity level is the basis for further improvements.

Identification of business process maturity level

The maturity model includes five stages and five factors of process maturity [18]. The stages are actually levels achieved by an enterprise during the implementation of process orientation. Through identification of maturity factors and their impact on business processes, it is possible to determine in which stage of maturity an enterprise is and which factors should be improved to ensure the path to business excellence [19].

Maturity level of an enterprise is determined by the factors whose influence prevails, which means that not all factors have equal influence on all levels of maturity. According to the Delphi study, conducted by De Bruin, the factors of maturity are [8]:

- Strategic approach,
- Process management (methods),
- Information technology and standards,
- Employee management,
- Business culture.

Enterprises that are at the first level are focused on achieving local optimum. Therefore this first level is marked as silo state. If managers act as promoters of change in business culture, the awareness about the importance of process orientation will be a part of value system [2]. So it can be said that the key factor or condition lever to reach the second level of maturity is *business culture*. The application of identical measures contributes to unification of the reports required for the analysis of process flow and results, and information technology makes it easier to share them, which contributes to better decision-making. This is why *information technology* is seen as a second key lever of change from silo to the next level called tactical integration.

The identification of processes is a condition for process orientation implementation. After identifying, it is necessary to provide harmonization of activities and resources needed for their realization, as well as continuous measurement, improvement, and control. Therefore, *process management* is considered a significant factor for the transition to the next level - process orientation.

However, the identification of processes and the introduction of measures and information technology do not matter if training of employees for process realization is missing. Therefore, a critical lever of change for reaching the next maturity level or transition to the state called optimized enterprise is *employee management*. Employee education and training, their knowledge and skills, and communication, as well as an adequate compensation system affect the speed of reaching the optimization state.

As the term itself indicates, the state of optimization means that the enterprise has adopted a process approach. However, since modern conditions impose the need for establishment of long term cooperation with partners, process approach should be expanded beyond the borders of the enterprise. To make it possible to transform the enterprise into an intelligent network, as the last maturity level, long-term strategic approach is required, and so the most important lever of change is *strategy* (*strategic approach*). Therefore, in order to achieve this state an enterprise must define the processes based on the strategy, because in this way they will be directed towards the implementation of the same. The last, the fifth maturity level is a utopia for most enterprises, but also the goal they have to strive for. In this sense, it can be said that an effort an enterprise makes to move from lower to higher maturity level is important in and of itself.

This structure of factors is justified by the research that is related to the problems in the implementation of process orientation. The most frequent problems according to this research are [5]:

- "Resistible" business culture,
- Insufficient or inadequate process performance measures, as well as information system,
- Insufficient or no cooperation between organizational units,
- Lack of process owners,
- Local compensation system (instead of at the process level, as a whole).

Business Process Maturity Model highlights important elements for reaching the maturity of business process management. However, the fact that it does not emphasize the links among those elements can be considered as a limitation of this model. Also, presented model simplifies the maturity of business processes. However, the factors that determine the maturity level are not linear, in the sense that certain factors may indicate that the enterprise is at one, while the analysis of other factors may indicate another maturity level. Therefore it can be said that business process maturity model is not one-dimensional, but two-dimensional, where dimensions of the model are previously mentioned factors and levels of process maturity. In this case the level is viewed as a state in which the enterprise is, while the factor is explained as lever that contribute to the transition from one state to another [10].

The analysis of process approach presence in Serbian enterprises

Bearing in mind that the theory suggests that the factors which determine the business process maturity level do not have equal importance in different stages or levels of maturity, nor must be harmonized, it is desirable to identify which factors are dominant at the specific maturity level, or presence of which is a prerequisite for achieving a specific maturity level. As it is already mentioned, the theoretical study shows the following schedule of factors for each maturity level in terms of domination of their importance:

- In the second stage dominate business culture and information technology,
- In the third stage dominates process management,
- In the fourth stage dominates employee management,
- In the fifth stage dominates strategy.

The theoretical research of process orientation issues has been approached with the task of identifying the activities that management should undertake, as well as the factors whose impact is particularly important for reaching a higher maturity level of business process management. In order to verify whether and to what extent the practice of Serbian enterprises deviates from the theoretical generalization, the research, including 80 randomly selected enterprises, has been conducted. The sample size is not sufficient to declare the sample as representative, but it can certainly be considered informative for gaining insight into presence of process orientation in the enterprises in Serbia. This means that the task of the analysis of process management maturity in Serbia is to determine in which state (silo, tactical integration, process orientation, optimized enterprise, and intelligent network) is the largest number of enterprises or what is the distribution of the enterprises by the state or stage of maturity. Also, the task of research is the assessment of the level at which each of the levers of change (strategy, processes, technology, employees, culture) is. Based on this information, at the level of individual enterprises, managers can see if all the factors/levers are at the same development level and, possibly, which of the factors are "behind" compared to the others, and consequently focus on their correction and improvement. This will either prove or disprove the hypothesis that the *business process maturity model is not linear.*

Grouping of enterprises in the sample was carried out starting from different criteria: enterprise size (number of employees), the origin of the capital (whether an enterprise capital is mostly domestic or foreign), and organizational structure. The structure of the sample, according to these criteria, is presented in the tables below.

Table 1: Sample structure according to the origin of the capital and size of enterprise

Capital origin	Number of employees			Total
	Less than 50	51-250	Over 250	
Domestic	21	19	8	48
Foreign	20	8	4	32
Total	41	27	12	80

Table 2: Sample structure according to the origin of capital and organizational structure

Capital origin	Organizational structure					Total
	Simple	Functional	Division	Team	Matrix	
Domestic	14	16	8	8	2	48
Foreign	14	11	3	2	2	32
Total	28	27	11	10	4	80

Table 3: Sample structure according to the size of enterprise and organizational structure

Organizational structure	Number of employees			Total
	Less than 50	51-250	Over 250	
Simple	28	0	0	28
Functional	13	14	0	27
Division	0	8	3	11
Team	0	5	5	10
Matrix	0	0	4	4
Total	41	27	12	80

Data collection was done by interviewing top management. In addition, the task of managers was to identify the level of each factor of business process management maturity. For analysis of data the attribute description of the factors was replaced with numerical, ranging from 1 to 5. In doing so, it is assumed that each level automatically includes everything that has been achieved at levels that precede it. Part of the questionnaire relating to the description of factors maturity level is shown in Table 4.

Identification of the enterprise maturity level is based on the average assessment of maturity level of each factor. Since the lowest average score of maturity at the enterprise level is 2.20 (meaning that there are no enterprises at the first level, or that managers are at least aware of the importance of process orientation), and the highest 4.60, the following interval groups that reflect the maturity levels of enterprises and the identified number of enterprises inside these groups are defined (Table 5):

- Up to 2.50 – the second maturity level,
- From 2.51 to 3.50 – the third maturity level,
- From 3.51 to 4.50 – the fourth maturity level and
- Over 4.51– fifth maturity level.

Table 4: Description of the levels of business process maturity factors

Maturity levels - states / Factors	Silo	Tactical integration	Process orientation	Optimized enterprise	Intelligent network
Information technology	Information technology is not used for the exchange of information	Information technology is used to exchange information within the organizational units	Information technology is used to exchange information vertically	Information technology is used to exchange information horizontally	Information technology is used to exchange information with partners
Process management	Processes are not defined	Key processes are defined	All the processes within the organizational units are defined	Processes that connect several organizational units are defined	Processes that connect the enterprise with partners are defined
Employee management	Employees are treated only as executives	Employees are responsible for collecting data about the activities they carry out	Employees continuously improve their capabilities	Employees have a possibility to express their ideas	Employees are seen as the owners of the activities they perform
Strategy	The strategy is known only to top managers	All managers are familiar with the strategy	All employees are familiar with the strategy, but top managers create it	All employees are familiar with the strategy, but only managers participate in the creation	All employees are familiar with the strategy and involved in its creation
Business culture	There is no awareness of managers about process approach importance	Managers are aware of process approach importance, but not all employees	Managers and all employees are aware of process approach importance	Managers and employees act in accordance with process approach	Managers and employees promote process approach

Table 5: Sample structure according to the business process maturity level

Factors	Second level	Third level	Forth level	Fifth level
Number of enterprises	18	36	21	5
Relative structure	22.50%	45.00%	26.25%	6.25%

One segment of the data analysis refers to the examination of process management maturity level dependency of the independent variables – the capital origin, enterprise size, and organizational structure. The application of $\chi 2$ test showed that the maturity level does not depend on capital origin, but that depends on enterprise size (Table 6) and organizational structure (Table 7).

Table 6: Distribution of enterprises according to maturity levels and enterprise size

Maturity level	Number of employees			Total
	Less than 50	51-250	Over 250	
Second level	15	2	1	18
Third level	15	15	6	36
Forth level	11	8	2	21
Fifth level	0	2	3	5
Total	41	27	12	80

Maturity level depends on the enterprise size, because the realized level of significance is less than 0.05, while p-value is equal 0.005 (calculated value of the χ^2 test statistics is 18.712). For small enterprises dominant is the second or the third maturity level, for medium-sized as well as for large enterprises the third level. However, a significant number of large enterprises (25%) have reached the fifth maturity level, as opposed to small and medium-sized enterprises.

Table 7: Distribution of enterprises according to maturity level and organizational structure

Maturity level	Organizational structure					Total
	Simple	Functional	Division	Team	Matrix	
Second level	11	5	2	0	0	18
Third level	9	15	5	5	2	36
Forth level	8	7	3	2	1	21
Fifth level	0	0	1	3	1	5
Total	28	27	11	10	4	80

The value of χ^2 test for testing dependence of maturity level from organizational structure is 23.782, while the significance level is 0.022, which is less than 0.05. This suggests that maturity level depends on organizational structure.

For further testing the maturity of process management in the enterprises in Serbia, it is desirable to analyze the impact of these independent variables on each factor of maturity. As it is previously determined that maturity level does not depend on the capital origin, further analysis is based on the examination of factors dependence on the enterprise size and organizational structure.

The result of χ^2 statistics shows that valuing process management as a factor of maturity of the enterprises in Serbia depends on enterprise size (Table 8). The value of χ^2 statistics which is equal 18.786 and p-value of 0.005 represent the basis for confirmation of dependency.

Table 8: Distribution of enterprises according to process management maturity level and enterprise size

Number of employees	Process management maturity levels				Total
	Second	Third	Forth	Fifth	
Less than 50	14	21	6	0	41
51-250	3	15	6	3	27
Over 250	1	4	3	4	12
Total	18	40	15	7	80

The significance of employees (employee management) as maturity factor also depends on enterprise size (Table 9). Statistics of χ^2 test was used again in the conclusion procedure, where realized significance level of 0.003 confirms the statistically significant dependence of employee management maturity level, as maturity factor, from the enterprise size, again in favor of large enterprises.

Table 9: Distribution of enterprises according to employee management maturity level and enterprise size

Number of employees	Employee management maturity levels				Total
	Second	Third	Forth	Fifth	
Less than 50	8	14	4	15	41
51-250	2	2	13	10	27
Over 250	0	3	6	3	12
Total	10	19	23	28	80

The analysis has shown that the consideration of information technology as a maturity factor also depends on the enterprise size (Table 10). The value of χ^2 test is 21.884, while the p-value (0.001) is lower than the defined level of significance (0.05), which confirms the previously mentioned dependence.

Table 10: Distribution of enterprises according to information technology maturity level and enterprise size

Number of employees	Information technology maturity levels				Total
	Second	Third	Forth	Fifth	
Less than 50	20	13	8	0	41
51-250	4	13	8	2	27
Over 250	7	2	0	3	12
Total	31	28	16	5	80

The analysis has shown that the organizational structure of enterprises, as an independent variable, has influence on the process management maturity level and the business culture maturity level, as factors of maturity. This means that process management and business culture have different importance depending on the organizational structure (Tables 11 and 12). In both cases the p-value is less than 0.05, thus confirming the dependence of process management maturity level (p = 0.034) and business culture maturity level (p = 0.048) of the organizational structure.

Table 11: Distribution of enterprises according to process management maturity level and organizational structure

Organizational structure	Process management maturity levels				Total
	Second	Third	Forth	Fifth	
Simple	10	15	3	0	28
Functional	6	15	5	1	27
Division	2	4	3	2	11
Team	0	5	3	2	10
Matrix	0	1	1	2	4
Total	18	40	15	7	80

Table 12: Distribution of enterprises according to business culture maturity level and organizational structure

Organizational structure	Business culture maturity levels				Total
	Second	Third	Forth	Fifth	
Simple	5	18	5	0	28
Functional	0	19	8	0	27
Division	0	9	2	0	11
Team	0	4	5	1	10
Matrix	0	3	1	0	4
Total	5	53	21	1	80

In order to check if the situation in the enterprises in Serbia, in terms of dominance of certain maturity factors, coincides with the theoretical generalizations of authors dealing with the analysis of business process maturity, enterprises were grouped based on dominance of the factors at the maturity levels. Grouping was done according to the highest frequency or the number of enterprises for maturity factors. The dominant factors are shown in Table 13.

Table 13: Dominant factors for the maturity levels

Factors \ Maturity levels	Second	Third	Forth	Fifth
Strategy	2 (11)	3(17)	4(10)	**4 (5)**
Process management	2(13)	**3(27)**	4(9)	5(4)
Employee management	2(10)	4(16)	**5(13)**	5(4)
Information technology	**2(14)**	3(17)	4(12)	**5(5)**
Business culture	3(13)	3(26)	**3(13)**	4(3)

By grouping enterprises according to the dominant factors and comparison with theoretical generalizations, it can be concluded that the factors which dominate in Serbian enterprises at different maturity levels are almost identical to the distribution that theory suggests. Given that in the sample there were no enterprises at the first level of maturity, there is no empirical result for the same, but for all other levels the match can be observed. The exceptions are the fourth and fifth level, where empirical results show the same dominance of two factors (Table 14).

Table 14: Dominant factors comparison

	Theoretical generalization	Empirical results
Second level	*Business culture* and Information technology	Information technology
Third level	Process management	Process management
Forth level	Employee management	Employee management and *business culture*
Fifth level	Strategy	Strategy and *information technology*

This slight difference indicates that the business culture is the factor which is harder to adjust (improve) in Serbian enterprises compared to the enterprises in developed countries, as well as that the managers, beside strategy, consider information technology as highly important for reaching the fifth maturity level. This is acceptable given that the information technology is important for establishing partnerships with other enterprises, and not only at the enterprise level.

The following table shows that all factors, according to the research, are correlated (interdependent). This suggests that, despite the possibility that they are at different maturity levels, it is desirable to improve them simultaneously.

Based on the values of Spearman correlation coefficient, shown in Table 15, it can be concluded that the greatest degree of agreement is between the factors: process management and business culture (correlation coefficient is 0.501), and employee management and information technology (correlation coefficient is 0.463). Such research results, in terms of the interdependence of these factors, have been confirmed in studies by other authors, who showed that the change of business culture is the factor of successful implementation of process orientation [1]. On the other hand, it can be said that learning about the effects of process orientation is a way to initiate the change of business culture. The problem for most enterprises in Serbia may be the fact that the business culture is a dominant factor in the enterprises that are at the fourth maturity level, which shows a significant lag and may jeopardize the effects of process orientation. The correlation coefficient between the factors of employee management and information technology is also high, compared to the others. This correlation is also pointed by some authors. According to Baloh and Trkman [4] information technology has a great influence on communication, work, and employee learning, but at the same time, employees must have the necessary knowledge and skills to use it.

Table 15: Values of Spearman correlation coefficient between business process management maturity factors

Factors		Strategy	Process management	Employee management	Information technology	Business culture
Strategy	Value (sig. level)	1.000 .				
Process management	Value (sig. level)	0.370 (0.001)	1.000 .			
Employee management	Value (sig. level)	0.386 (0.000)	0.383 (0.000)	1.000 .		
Information technology	Value (sig. level)	0.227 (0.043)	0.332 (0.003)	**0.463** (0.000)	1.000 .	
Business culture	Value (sig. level)	0.301 (0.007)	**0.501** (0.000)	0.243 (0.030)	0.202 (0.073)	1.000 .

Conclusion

Process management maturity model should help managers to identify the state in which the enterprise is and to eventually take the initiative to improve processes management and to increase the level of management maturity. According to some authors [15], the separation of process maturity from the process management maturity is very important. If one or a small number of critical processes have high maturity level, it does not necessarily mean that the process management in the enterprise is at a high maturity level. One of the reasons for specific process maturity may be the heroic effort of individuals, which may last shortly. However, indicators of maturity of at least one process refer that the enterprise is on track to reach higher business process management maturity level.

One of the criticisms of the process management maturity models based on the Humphrey's model refers to the focus on practice of managing all processes, and not only the key ones [6]. However, this criticism is completely unfounded. The goal of business process maturity models is to transfer the philosophy of process management improvement to the enterprise as a whole. To make this possible it is not enough just to manage the key processes, but also all the others, which support the realization of the key ones (supporting processes). A significant limitation of business process maturity models is the fact that they do not offer a methodological approach which managers could use as some kind of road map for achieving higher maturity levels. Therefore, these models belong to the descriptive models and their effects can be significant only with the parallel application of appropriate methodological model. In this sense, one of the future challenges may be imposed formulation of the process management model, which will, except describing the possible maturity states of the enterprises, include methodological approach for increasing the level of business process management maturity.

The research results show that the majority of enterprises in Serbia are at the third maturity level (45%), but there are a significant number of those that are at the fourth level. Moreover, among these enterprises dominate the large enterprises. At the fifth maturity level there is 25% of enterprises from this group. The percentage of medium-sized enterprises is significantly lower (7%), while at the fifth level of maturity there are no small enterprises. Since it has been found that the maturity level depends on organization structure, it is evident that, in terms of maturity level, team structure provides the best results. The analysis showed that the capital origin is not a significant factor of process management maturity level.

Based on the research results, it can be concluded that the managers of the enterprises in Serbia are aware of the importance of process orientation and dominance of process management maturity factors in various stages in the process of achieving business excellence, but that the business culture, which should be transformed in the first phase, gains the importance only in the fourth. One can therefore conclude that this factor is a significant constraint for the implementation of process based management in the enterprises in Serbia.

References

1. Alibabaei, A., Aghdasi, M., Zarei, B., Stewart, G., (2010), "The Role of Culture in Business Process Management Initiatives", *Australian Journal of Basic and Applied Sciences*, Vol. 7, No. 4, 2143-2154.
2. Anđelković Pešić, M., (2006), "Preduzeća nove ekonomije: Preduzeća visokih performansi", *Poslovna politika*, God. 35, Br. 1, 54-57.
3. Anđelković Pešić, M., (2009), "Business Process Management Maturity Model and Six Sigma: An Integrated Approach for Easier Networking", *Proceedings of the International Conference on Economics and Management of Networks – EMNet 2009*, 3-5 September, Sarajevo, http://emnet.univie.ac.at/uploads/media/Andjelkovic-Pesic_01.pdf, assessed 16.02.2012.
4. Baloh, P., Trkman, P., (2003), "Influence of Internet and Information Technology on Work and Human Resource Management", *Proceedings of the 3rd International Conference - Informing Science and Information Technology Education – InSITE "Where Parallels Intersect"*, June, http://proceedings.informingscience.org/IS2003Proceedings/docs/071Baloh.pdf, 17-25, assessed 10.12.2011.
5. Burgess, K., Doebeli, G., (2008), "Business process management: are implementation breakdowns due to conceptual failures in ontology", *Proceedings of the XI International Conference*, International Association for Critical Realism, London, June.
6. Curtis, B., Alden, J., (2006), "BPM & Organizational Maturity", *BPTrends*, November, No. 11, 1-3.
7. Curtis, B., Alden, J., (2007), "The Business Process Maturity Model: What, Why and How", *A BPTrends Column*, February, No. 2, 1-4.
8. De Bruin, T., (2007), "Insights into the Evolution of BPM in Organizations", *Proceedings of the 18th Australasian Conference on Information Systems*, Toowoomba, 5-7 December, 1-10.

9. De Oliveira, P., Ladeira, M. B., McCormack, K., "The Supply Chain Process Management Maturity Model – SCPM3", *Supply Chain Management – Pathways for Research and Practice*, 201-218. http://cdn.intechopen.com/pdfs/17153/InTech-The_supply_chain_process_management_maturity _model_scpm3.pdf, assessed 11.04.2012.
10. Fisher, M., (2004), "The Business Process Maturity Model: A Practical Approach for Identifying Opportunities for Optimization", *BPTrends*, September, No. 9, 1-7.
11. Hammer, M., (2007), "The Process Audit", *Harvard Business Review*, April, 1-17.
12. Harmon, P., (2008), "Governance and Maturity", *BPTrends*, July, No. 7, 1-2.
13. Humphrey, W., (1988), "Characterizing the software process: a maturity framework", *IEEE Software*, No. 5, Vol. 2, 73-79.
14. Maull, S., Tranfield, D., Maull, W., (2003), "Factors characterising the maturity of BPR programmes", *International Journal of Operations & Production Management*, Vol. 23, Issue 6, 596-624.
15. Power, B., (2007), "Michael Hammer's Process and Enterprise Maturity Model", *BPTrends*, July, 1-4.
16. Rosemann, M., De Bruin, T., Hueffner, T., (2004), "A Model for Business Process Management Maturity", *Proceedings of the Australasian Conference on Information Systems ACIS 2004*, Hobart, 1-3 December.
17. Rosemann, M., De Bruin, T., (2005), "Application of a Holistic Model for Determining BPM Maturity", *BPTrends*, February, No. 2, 1-20.
18. Rosemann, M., Hjalmarsson, A., Lind, M., Recker, J., "Four Facets of a Process Modeling Facilitator", http://aisel.aisnet.org/icis2011/proceedings/projmanagement/3/, assessed 23.03.2012.
19. Spanyi, A., (2004), "Beyond Process Maturity to Process Competence", *BPTrends*, June, No. 6, 1-5.
20. Weber, V., Curtis, B., Gardiner, T., (2006), *Business Process Maturity Model*, Object Management Group, Needham, http://www.omg.org/docs/dtc/07-07-02.pdf, assessed 25.10.2011.

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LIMITATIONS IN THE APPLICATION OF CONCENTRATION INDICATORS – EXAMPLE OF INSURANCE MARKET IN SERBIA, CROATIA, SLOVENIA, ROMANIA AND AUSTRIA

Ograničenja u primeni pokazatelja koncentracije - primer tržišta osiguranja Srbije, Hrvatske, Slovenije, Rumunije i Austrije

Abstract

Contemporary competition policy is characterized by the application of economic principles and economic analysis in its legal framework in order to measure companies' anti-competitive behavior. The aim of the paper is to show the possibilities and limitations of indicator application as an instrument for the assessment of companies' non-competitive behavior concentration on the example of the insurance market of the selected countries (Serbia, Croatia, Slovenia, Romania and Austria). The paper analyses the following indicators: Concentration ratio of the four largest companies, Herfindahl-Hirschman index, Lorenz curve, Gini coefficient and Entropy index.
The analysis showed that independent application of indicator concentration is not sufficient and should be supplemented with qualitative data on: market characteristics, industry tradition, the height of entry barriers, manager behavior and the like. Only then one can expect that the market concentration analysis is complete and useful for the implementation of anti-monopolistic measures.

Key words: *competition policy, concentration indicators, limitations, analysis of market characteristics.*

Sažetak

Savremenu politiku zaštite konkurencije karakteriše primena ekonomskih principa i ekonomske analize u njen pravni okvir sa ciljem da se izmeri antikonkurentsko ponašanje kompanija. Cilj rada je da se na primeru tržišta osiguranja odabranih zemlja (Srbija, Hrvatska, Slovenija, Rumunija i Austrija) pokažu mogućnosti i ograničenja primene pokazatelja koncentracije kao instrumenta procene nekonkurentskog ponašanja kompanija. U radu su analizirani sledeći pokazatelji: Racio koncentracije četiri najveće kompanije, Herfindal-Hiršmanov indeks, Lorencova kriva, Gini koeficijent i Indeks entropije.

Analiza je pokazala da samostalna primene pokazatelja koncentracije nije dovoljna i da je treba dopuniti i kvalitativnim podacima o: karakteristikama tržišta, industrijskoj tradiciji, visini ulaznih barijera, ponašanju menadžera i sl. Tek tada se može očekivati da analiza koncentrisanosti tržišta bude kompletna i korisna za sprovođenje antimonopolskih mera.

Ključne reči: *politika zaštite konkurencije, pokazatelji koncentracije, ograničenja, analiza karakteristika tržišta.*

Introduction

Competition policy has a long history. The first country which has developed a set of laws on competition protection in order to prevent competition limitations is the USA. European countries, until the 90's of the twentieth century, had weak, and some conflicting anti-monopoly laws. The formation of the European Union and unique economic area in Europe has imposed the introduction of a unique competition policy (Article 85 and 86 of the Treaty of Rome, Article 81 and 82 Treaty of Amsterdam).

The USA anti-monopoly legislation has some differences in relation to competition policy in the EU. However, common feature of anti-monopoly policy in the USA and EU is the implementation of economic principles and economic analysis in the legal framework of regulation which should measure the anticompetitive behavior of companies. So, the standard practice of the USA and EU is the definition of relevant market using the SSNIP (Small but Significant and Non-transitory Increase in Price, or test of Hypothetical Monopolist) test and measurement of supply concentration through Herfindahl-Hirschman index. Guidelines of Federal Trade Commission (FTC) and the European Commission develop the regulatory procedures and methods by which to determine competition violation.

Continuous improvement area of the regulatory analysis is a more precise definition of market size (relevant product market and relevant geographic market). The importance of this approach lies in the fact that the result of market defining is identification of companies (that are subject to regulation) in accordance with their spatial location and product characteristics.

Firms tend to advocate wider market definition than those advocated by competition authorities. Therefore, besides SSNIP test, anti-monopoly authorities use the cross-price elasticity of demand in defining the relevant product market. A number of economists have suggested using price correlations in order to define product or geographic markets, or Elzinga-Hogarty test that shows the percentage of total consumption that goes to goods produced in the region and the percentage of total production that is consumed in the region where it is produced [6, p. 315].

The development of anti-monopoly policy will certainly be in the direction of giving guidelines for the implementation of a number of tests for the relevant market definition and application of various concentration indices. This paper should contribute to the elucidation of significance and limitations of certain indicators of market structure limitation, on the example of insurance market.

Concentration indicators on the example of the insurance market of Serbia, Croatia, Slovenia, Romania and Austria

The research on the market limitation degree, using different concentration indicators, was performed on the example of the insurance market of some countries of Southeast and Central Europe. The countries were selected to represent a wide range of countries from the standpoint of development level, and thus there are Austria as a developed country and a longtime member of the European Union, followed by Slovenia as a country that has concluded the transition process and nearly ten-year member of the EU, Romania that is at the end of the transition process and a recent EU member, Croatia that is on its way to transition completion and accession to the EU and Serbia, which is in the middle of transition process and away from the EU membership.

For the indicator analysis we used the data on total premium at the disposal of both, association of insurance supervisors in the field and individual agencies involved in surveillance operations of insurance companies. We used data available to the *International Association of Insurance Supervisors* (IAIS) and some of its members such as *National Bank of Serbia, Croatian Agency for Supervision of financial services, Slovenian Insurance Supervision Agency, the Romanian Insurance Supervisory Commission and the Austrian Financial Market Authority* (FMA) [9, 10, 11, 12, 13].

Selection of the total premium as a variable for concentration measurement has been made for the following reasons: premium is the most important component of the insurance company income and as such is the result of its core activity. The data on the premium is easy to reach because we are regularly informed about it by the publications of regulatory agencies responsible for supervision and control of insurance company operations. Also, it is consistent with the production defined limits of the relevant market, because behind the paid premium is the sale of insurance services. As for the selection of spatial dimension (relevant geographic market), for the assessment are taken the entire territories of the countries, as required by the very nature of business and available data. In fact, insurance of every company operating in a particular country is available on the entire territory of the country [3, p. 61].

The data used include 6 consecutive years (from 2004 until 2009). Using the collected data, corresponding values of concentration indicator were obtained, which were used for comparative analysis of the concentration degree of insurance markets of the countries.

Concentration ratio of the four largest companies (CR_4)

Concentrations ratio of the four largest companies is the sum of market shares of the four leading companies [8, p. 95]:

$$CR = \sum_{i=1}^{n} s_i$$

where s_i is the market share of i company.

Using the given concentration indicator on the example of the insurance market in the five selected countries, the following results were obtained:

Table 1: Comparative analysis of CR_4 index between the selected countries in the period 2004-2009

	Serbia	Croatia	Slovenia	Romania	Austria
2004	**89,91**	67,65	83,60	53,63	38,01
2005	79,02	67,54	**85,81**	51,05	38,09
2006	81,15	65,49	**82,18**	46,93	39,46
2007	**81,15**	63,96	78,99	46,08	38,97
2008	77,98	63,34	**78,30**	44,58	38,84
2009	74,20	60,81	**78,09**	43,47	37,38

Given the standards for assessing the market limitation with CR_4 indicator, which is used in anti-monopoly practice of the USA and EU, we can say that Serbia, Croatia and Slovenia have a high degree of market concentration, while that is not the case with Romania and Austria.

The EU believes that the high degree of market concentration exists when the CR_4 index exceeds the value of 25, while the limit in the USA is 50. The market where the index is above 50 is considered highly concentrated, where the value is 25 to 50 is medium concentrated, and where the value is below 25 is non-concentrated market [3, p. 65]. In the literature there are interpretations that if the value of the index is above 40 it talks about an oligopolistic, and value above 90 about monopoly market.

As can be seen from Table 1, for the Romanian insurance market in most of the observed years (except 2004 and 2005) can be said to belong to medium concentrated market, while for the Austrian insurance market that can be said for all the observed years. Other countries have high concentration level in the observed period. Slovenia and Serbia stand out with the highest degree of concentration as follows: Serbia in 2004 and 2007, and Slovenia in 2005, 2006, 2008 and 2009.

Table 2: The change of the CR_4 index where the base is previous year (ΔCR_4)

	Serbia	Croatia	Slovenia	Romania	Austria
2005	-10,89	-0,11	2,21	-2,58	0,08
2006	2,13	-2,05	-3,63	-4,12	1,37
2007	0,00	-1,53	-3,19	-0,85	-0,49
2008	-3,17	-0,62	-0,69	-1,50	-0,13
2009	-3,78	-2,53	-0,21	-1,11	-1,46

Table 2 shows the change of the CR_4 index where previous year is used as the base of comparison. As we can see in Table 2 in all the observed countries there is a trend toward reduction of concentration degree measured by the index. The following years are exceptions: for Serbia 2006 and 2007, for Slovenia 2005 and Austria 2005 and 2006.

Herfindahl-Hirschman index

Herfindahl-Hirschman index is a convex function of the analyzed companies' market shares, and is therefore sensitive to inequality in the distribution of the market shares. The importance assigned to each company corresponds to the value of its market share ($w_i=s_i$), which implies that the index is determined as the sum of market share squares of individual companies [5, p. 336].

$$HHI = \sum_{i=1}^{n} w_i s_i = \sum_{i=1}^{n} (s_i^2)$$

where s_i is the market share of i company.

This index gives a more accurate image of market concentration because the squaring of market shares contributes to the importance of the firms with larger market share.

Table 3: Comparative analysis of the HH index between the selected countries for the period 2004-2009

	Serbia	Croatia	Slovenia	Romania	Austria
2004	**2831.92**	2052.52	2490.54	984.22	594.22
2005	2270.29	1882.98	**2488.81**	937.00	592.82
2006	2236.47	1721.32	**2291.90**	869.37	616.67
2007	2050.62	1601.23	**2128.22**	835.17	615.22
2008	1820.38	1551.44	**2118.98**	784.28	607.70
2009	1640.99	1447.31	**2054.77**	743.91	576.02

Table 4: Referent values of the HH index

HH index value	Supply concentration level
HHI < 1.000	Non-concentrated (low concentrated) supply
1.000 ≤ HHI < 1.800	Medium concentrated supply
1.800 ≤ HHI < 2.600	Highly concentrated supply
2.600 ≤ HHI < 10.000	Very high supply concentration
HHI = 10.000	Monopoly concentrated supply

Source: Begović, B., Bukvić, R., Mijatović, B., Paunović, M., Sepi, R. i Hiber, D., (2002), *Antimonopolska politika u SR Jugoslaviji*, Centar za liberalno-demokratske studije, Beograd, str. 35.

Looking at Tables 3 and 4 we can reach the following conclusion about the degree of market concentration: the insurance markets of Austria and Romania belong to low concentrated markets; Croatian insurance market belongs to medium concentrated markets (except in 2004 when it was highly concentrated); the market in Serbia transformed into a highly concentrated market in 2004 and in 2009 it become medium concentrated market; in Slovenia, the degree of concentration in the whole period was high.

Table 5: Change of the HH index where the base is previous year (ΔHHI)

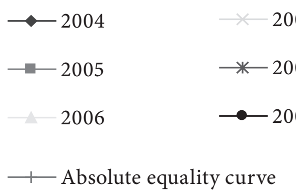
	Serbia	Croatia	Slovenia	Romania	Austria
2005	-561,63	-1,73	-169,54	-47,22	-1,40
2006	-33,82	-196,91	-161,66	-67,63	23,85
2007	-185,85	-163,68	-120,09	-34,20	-1,45
2008	-230,24	-9,24	-49,79	-50,89	-7,52
2009	-179,39	-64,21	-104,13	-40,37	-31,68

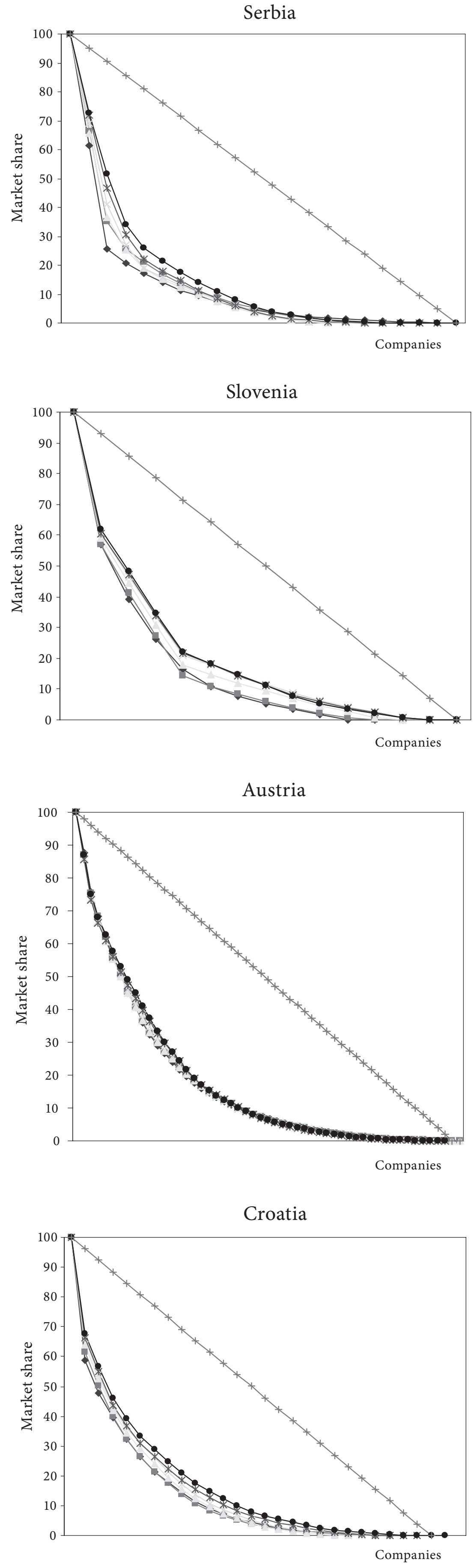
As for the change of the HH index it can be seen that in all the observed countries (except in Austria in 2006) there is a trend to reduce the market limitation degree.

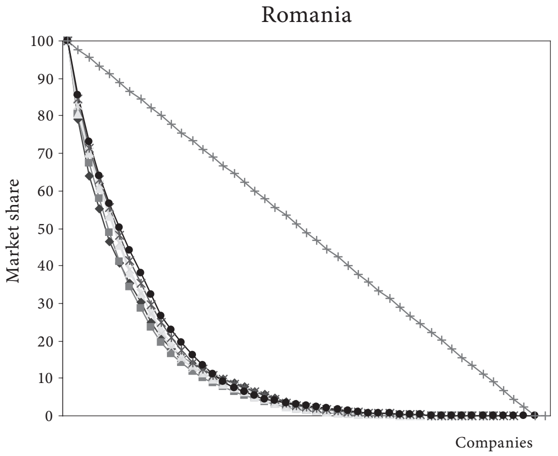
Lorenz curve

Lorenz curve is an indicator of inequality in the distribution of market shares between individual subjects. Inequality is estimated by deviation of Lorenz curve from the curve of absolute equality (45^0 curve), which shows a hypothetical situation in which all companies have equal market share.

Figure 1 Comparative description of Lorenz curves for the selected countries in the period 2004-2009







As we can see in Figure 1 there is a general tendency to reduce inequality in the distribution of market shares of companies in the insurance sector in all countries. As for individual countries it can be noted that Romania is leading in the inequality of market shares between companies, because the distance of Lorenz curve from the curve of absolute equality during the observed years is the highest.

We will check the results obtained by using the Lorenz curve with Gini coefficient.

Gini coefficient

Gini coefficient is an indicator of inequality in the distribution of market share among companies that operate in a market. This coefficient is based on the logic of the Lorenz curve and shows the deviation of the Lorenz curve from the curve of absolute equality. A value of 0 indicates that all firms are equal in size, while the value that approaches unity indicates that there is a huge disproportion between the distributions of companies' size. If the value is equal to unity it implies that the entire supply goes to a single company. The value of the Gini coefficient is determined through the following formula [4, p. 205]:

$$G = \left\{ \frac{\sum_{n=1}^{N} \sum_{i=1}^{n} x_i}{0{,}5(N+1)\sum_{i=1}^{N} x_i} \right\} - 1$$

where N is the rank of firms sorted in descending order from largest to smallest, n is the number of firms included in the calculation, and x_i the firm size measured by the sale value or the total premium.

Table 6: Comparative analysis of the Gini coefficient between the selected countries in the period 2004-2009

	Serbia	Croatia	Slovenia	Romania	Austria
2004	0,7225	0,6746	0,6171	0,7078	0,6369
2005	0,6449	0,6593	0,5820	**0,7122**	0,6407
2006	0,5949	0,5925	0,5668	**0,6840**	0,6417
2007	0,6261	0,6086	0,5620	**0,6959**	0,6290
2008	0,6770	0,6358	0,5623	**0,6866**	0,6213
2009	0,6610	0,6374	**0,6938**	0,6772	0,6152

Looking at Table 6, one can conclude that by the inequality of market share distribution the Romanian insurance market stands out, and that Serbia is a leading country according to the inequality of market share distribution in 2004 and Croatia in 2009.

Table 7: Change of the Gini coefficient where the base is previous year (ΔG)

	Serbia	Croatia	Slovenia	Romania	Austria
2005	-0,0776	-0,0153	-0,0351	0,0044	0,0038
2006	-0,0500	-0,0668	-0,0152	-0,0282	0,0010
2007	0,0312	0,0161	-0,0048	0,0119	-0,0127
2008	0,0509	0,0272	0,0003	-0,0093	-0,0077
2009	-0,0160	0,0016	0,1315	-0,0094	-0,0061

Change in the indicator value distinguishes Croatia as a country in which this indicator increases in 2007, 2008 and 2009, and Slovenia where the same process takes place in 2008 and 2009.

Entropy index

Entropy index is another indicator of inequality in the distribution of market shares. It is obtained as the product of market share and the reciprocal values of its natural logarithms, that is via formula [2, p. 15]:

$$E = \sum_{i=1}^{n} s_i \log_e \left(\frac{1}{s_i} \right)$$

where s_i is the market share of i firm. The value of the index can range from 0 which indicates the existence of monopoly to $E=log_e(n)$, when there is n company of the same size in the branch. The degree to which a market is concentrated is estimated based on the position of determined value between these two extremes.

The coefficient itself is taken from the information theory to show the degree of decision certainty. If there was only one company in the market, the uncertainty of customer retention for a monopolist is minimal, because customers practically have no choice. The opposite situation is when there are a number of companies, because then customers can choose and uncertainty of choice increases.

For comparability of the index between the branches and various time moments, its relative value is used in the analysis. Because of the unevenly defined high threshold, the results can be incomparable between the market structures that contain in itself different numbers of companies, so it is necessary to find a comparable indicator, and it can only be the index of relative entropy [4, p. 203].

$$RE = \frac{E}{\log_e(n)} = \left[\frac{1}{\log_e(n)}\right] \sum_{i=1}^{n} s_i \log_e\left(\frac{1}{s_i}\right)$$

As we can see from the table, the largest index of entropy and relative entropy has Austria, which is logical because in this country there is the greatest uncertainty in the selection of some insurance companies. Insurance companies, because of the more noticeable competition, are not sure about the choice of consumers.

Conclusion and research limitations

Concentration indicators are very useful tool in analyzing the degree of market limitation. They give exact assessment of concentration degree and inequality of market share among companies that operate in a market, based on data. As such they are able to give a relatively clear image of companies' potential to use market power in pricing, in determining volume and quality of products and services. However, they are not immune to some problems and limitations.

First, and perhaps most important, is the problem of defining the relevant market or market scope in production and spatial terms within which to assess market limitations. In the case of market insurance this problem is related to various types of insurance and levels of their substitutability, and the degree of consumers' obligation to use a certain type of insurance. It follows that we can observe the entire insurance market as the relevant product market, and we can specifically distinguish life insurance market and non-life insurance market. Also, it is possible to single out motor vehicle insurance market as a separate market. In this paper, we opted for a complete insurance market. The framework for the analysis was identical for all countries so that data is comparable.

The second problem is related to the inability of indicators to acknowledge certain qualitative characteristics of the market, such as market structure stability, the level of product differentiation, the height of entry barriers, operating cost, etc. Also, these indexes do not include industrial tradition, as well as features and objectives of managers who run the market that is being analyzed. Without consideration of these characteristics the assessment of market limitation, based solely on numbers, can not be complete.

The third problem is related to the size of economy and specific market. Same value of the indicator will not have the same meaning for "small" and "large" economy. In small economy it is normal that because of the small space and low purchasing power there is a higher level of tolerance to high value of concentration indicator. In such economies, a small number of companies operate and market is limited.

Some authors suggest that most of the indicators are correlated and that they alone are not able to show the true nature of a market. The reason for this lies in the fact that no indicator takes into account some of the

Table 8: Comparative analysis of the Entropy index between the selected countries in the period 2004-2009

	Serbia		Croatia		Slovenia		Romania		Austria	
	E	RE	E	RE	E	RE	E	RE	E	RE
2004	1,7240	0,5755	2,1688	0,6824	1,7403	0,6785	2,7269	0,7296	**3,1739**	**0,8072**
2005	1,9067	0,6730	2,2017	0,7022	1,7402	0,7003	2,7017	0,7275	**3,1837**	**0,8057**
2006	1,8712	0,7091	2,2532	0,7522	1,8537	0,7227	2,7702	0,7510	**3,1739**	**0,8033**
2007	1,9281	0,6954	2,3152	0,7490	1,9476	0,7380	2,7842	0,7449	**3,1662**	**0,8094**
2008	2,0282	0,6770	2,3711	0,7366	1,9536	0,7403	2,8428	0,7558	**3,1825**	**0,8135**
2009	2,1413	0,7033	2,4490	0,7430	1,9669	0,7263	2,8735	0,7640	**3,2044**	**0,8191**

important characteristics of the analyzed market, such as market size and coalition potential that exists on it [7, p. 1].

Regardless of the disadvantages faced by concentration indices, they are nevertheless important indicator of market limitation. In order to completely fulfill this role they need to be supplemented with qualitative data on analyzed market characteristics. Only the combination of quantitative and, based on the ingenuity of researchers, qualitative data the degree of market limitation can be well assessed.

References

1. Begović, B., Bukvić, R., Mijatović, B., Paunović, M., Sepi, R. i Hiber, D., (2002), *Antimonopolska politika u SR Jugoslaviji*, Centar za liberalno-demokratske studije, Beograd.
2. Bikker, J.A. and Haaf, K., (2002), "Measures of Competition and Concentration in the Banking Industry: a Review of the Literature", *Economic & Financial Modelling*, European Economics & Financial Centre, London, UK pp. 1-46.
3. Kostić, M., (2009), „Analiza koncentracije ponude u sektoru osiguranja Srbije", *Industrija* 2/2009, Ekonomski institut, Beograd, pp. 59-77.
4. Lipczynski, J., Wilson J. and Goddard J., (2009), *Industrial Organisation – competition, strategy, policy*, Prentice Hall, Harlow, UK.
5. Martin, S., (2002), *Advanced Industrial Economics*, Blackwell Publishers Ltd, Oxford, UK.
6. Massey, P., (2000), "Market Definition and Market Power in Competition Analysis: Some Practical Issues", *The Economic and Social Review*, National University of Ireland, Maywood, Vol. 31, No. 4, pp. 309-328.
7. Vanlommel, E., Brabander, B. and Liebaers, D. (1977), "Industrial Concentration in Belgium: Empirical Comparison of Alternative Seller Concentration Measures", *The Journal of Industrial Economics*, Blackwell Publishing, Vol. 26, No. 1, p.1 – 20.
8. Waldman, E., D. and Jensen, E., (2001), *Industrial Organization - theory and practice*, Addison Wesley Longman, New York, USA.

Data sources used for the calculation of the concentration indicators

9. Romanian Insurance Supervisory Commission, *Annual Report for 2004, 2005, 2006, 2007, 2008, 2009,* Bucharest.
10. Slovenian Insurance Supervision Agency, *Annual Report for 2004, 2005, 2006, 2007, 2008, 2009,* Ljubljana.
11. Hrvatska agencija za nadzor financijskih usluga, *Godišnje izvješće za 2004., 2005., 2006., 2007., 2008. i 2009. godinu,* Zagreb.
12. http://www.fma.gv.at/en/statistics-reporting/fma-financial-statements.html, downloaded 02 June 2011
13. http://www.nbs.rs/internet/cirilica/60/60_2/index.html, downloaded 15 September 2011

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CLOUD COMPUTING – THE NEW IT PARADIGM

Oblak računara – nova IT paradigma

Abstract

Cloud computing is becoming the new IT paradigm. After 50 years of development, the original idea of McCarthy to deliver information technology and applications as a public service comes to life. The secret sauce of this new development is a combination of commodity components (standardized and cheap), ubiquitous Internet connectivity, and virtualization technology of computing resources. After a few years of discussion and sometimes even disputes there is finally a solid and accepted definition of what cloud computing really is. But that's not all. Cloud offerings mushroom these days: from big global offering (*Amazon*, *Google*, *IBM*, and *Microsoft*) to very small, focused, and highly customized solutions. Economics of the cloud are promising, in particular for small and medium businesses, and public sector. Cloud solutions enable elimination of investment costs (no upfront investments in IT infrastructure and software licenses) and significant reduction of operating expenses (50% or even more). Some special solutions, like disaster recovery in the cloud, are for the first time viable for all enterprises. Economics of the cloud come from aggregation and sharing of common infrastructure as is the case for all public services: power distribution, public transportation, telephone services. In this article, we present a underlying concept of the first cloud offering on Serbian and regional market provided through *Coming - Computer Engineering* and *Telekom Serbia* partnership. Key differentiator in comparison to global offerings is a full customization of solution to meet user's expectations and a solid support that goes as far as full outsourcing of IT operations to provider (i.e. *Coming CE*). Also, we are willing to spark discussion about community cloud solutions that can serve many institutions otherwise unable to build their own IT services. We point directly at: local (community) authorities, schools and universities, public administrative services, to name just a few. Also, we invite academic community to critically assess how reality of the cloud lives up to promises made by service providers.

Key words: *cloud computing, public cloud, private cloud, hybrid cloud, virtualization, enterprise cloud, interoperability, economics of cloud, services, information technology, infrastructure.*

Sažetak

Oblak računara postaje nova IT paradigma. Posle 50 godina razvoja originalne Mek Kartijeve ideje iz 1961. godine da se informacione tehnologije i aplikacije isporučuju kao javni servisi pojavile su se prve takve usluge na tržištu. „Tajna" ovih usluga je u kombinaciji: standardizovanih i jeftinih komponenti, sveprisutnih Internet veza i tehnologije virtuelizacije računarskih resursa. Posle nekoliko godina diskusije i, ponekad, nesporazuma, pojavila se solidna definicija oblaka računara. Ne samo to. Ponuda usluga u oblaku buja ovih dana: od velikih globalnih isporučilaca (*Amazon*, *Google*, *IBM*, *Microsoft*) do vrlo malih, fokusiranih i visoko prilagođenih rešenja. Ekonomičnost usluga u oblaku je obećavajuća, posebno za mala i srednja preduzeća i javni sektor. Usluge u oblaku omogućuju eliminisanje investicionih troškova (nema investicija u IT opremu i softverske licence), a realna je i značajna ušteda u operativnim troškovima (50% ili čak i više). Neka posebna rešenja kao što je rešenje za oporavak od katastrofe po prvi put postaju dostupna svim preduzećima. Ekonomija usluga u oblaku dolazi kao posledica agregacije i deljenja zajedničke infrastrukture, kao što je slučaj i sa drugim javnim uslugama: distribucijom električne energije, javnim transportom i telefonskim uslugama. U ovom članku izložen je koncept na kome počiva prva ponuda usluga u oblaku u Srbiji i region koja je nastala kroz partnerstvo *Coming - Computer Engineering*-a i *Telekoma Srbija*. Ključne razlike u odnosu na globalnu ponudu predstavljaju potpuna prilagodljivost zahtevima korisnika i solidna podrška, koja ide čak do potpunog iznajmljivanja svih IT operacija kao usluge (t.j. *Coming CE* preuzima brigu o njima). Takođe, voljni smo da pokrenemo i diskusiju o zajedničkim (komunalnim) uslugama u oblaku koje mogu biti od interesa za mnoge institucije koje nisu u stanju da sopstvenim sredstvima izgrade IT. Ukazujemo direktno na: lokalnu samoupravu, škole i univerzitete i javnu administraciju. Pored toga, pozivamo i akademsku zajednicu da se kritički osvrne na stvarnu vrednost usluga u oblaku u odnosu na obećanja koja su dali isporučioci.

Ključne reči: *oblak računara, javni oblak, privatni oblak, hibridni oblak, virtuelizacija, oblak za preduzeće, interoperabilnost, ekonomija oblaka, usluge, informacione tehnologije, infrastruktura.*

Introduction

In 1961 McCarthy first formulated the idea of delivering information technology and application as a public service. This idea actually copied experience from the past: railroad and public transportation, power distribution, telephone – just to name a few. It seemed very compelling but unfortunately technology was not able to deliver IT services economically. It took almost 50 years to come to current state of development thanks to Moore's law (number of elements on integrated circuit doubles every 18 months – or more colloquial: computer power doubles every year and a half). Improvements were not just quantitative. On the contrary, IT went through many development phases: mainframes (1960s), minicomputers (1970s), personal computers (1980s), Internet in the 1990s, to the latest phase – pervasive connectivity, device diversity (mobile phones, PDA, tablets, desktops) and mobility of users. Because of these characteristics this phase is named: "post PC-era".

Also, the idea of delivering IT as a service has been transformed from initial formulation through many phases: on-demand computing, autonomic computing, hosting (equipment and applications) – but failed more or less to fulfill expectations of users. Two critical components were missing:

- Standardized and cheap IT components – "commoditization" of IT
- Virtualization of IT resources (most important: virtualization of computing through enablement of virtual machines).

Pattern of commoditization of IT closely followed patterns from the past: steam machine, power distribution, and telephone. Except that the whole cycle from over a century for steam machine is shortened to a few decades for IT. Current state of affairs is clearly visible: personal computers and other devices now sell together with home appliances. And manufacturing brands are the same: *Samsung*, *LG*, etc. Server and storage businesses follow the same pattern in a bit different way – this is more than visible through lower margins and migration towards more complex service offerings – away from less profitable segments. The other side of the coin is lowering of prices of IT equipment – inversely proportional to Moore's law. This development was nicely exposed in N. Carr article "IT does not matter" [1]. Article sparked discussion about IT role in the enterprise (once again) and we think the best part was actually discussion about commoditization of IT and its consequences.

Commoditization alone would not be enough to spark cloud computing story because vendors always find intelligent (and not so intelligent) ways to lock-in current users. Secret missing ingredient that appeared from oblivion becomes virtualization. The main idea is very simple: create illusion for a user that all resources he/she needs are always available and that the user is perfectly isolated from other users. On the other hand this illusion created a new possibility for service providers: build shared infrastructure, virtualize it, and present it to the users. This is where solution requested by the users goes arm in arm with economics of delivery.

IT as a public service

Development of information technology led for the first time to mature offering of public services capable of fulfilling growing needs of modern enterprises. Common name of broad services delivered this way is:

Cloud computing. At the very beginning of this new trend, a few years ago, there were many critics like this one: "cloud computing is nothing new; this is what we used to do for years" (L. Ellison, *Oracle*). In spite of these, new trend (and new terminology) grabs attention of IT community and many providers come to market quickly offering services under the cloud computing umbrella. Today (2012) you can hardly find anybody in IT sector not offering cloud services. Size of the company does not matter much. All sectors are active too: infrastructure, system software and management tools, application development, not to mention Internet services and hosting providers. Analysts predict this trend will continue in the following years and market will soon grow above 100 billion dollars per year [9] Also, confusion is growing regarding this new class of services. Is there any commonly accepted definition? What is the content and difference of existing offerings? What about size of the providers and cloud infrastructure? Is there any place for small companies? What is the pace of migration, obstacles, and price? Many questions like these pop up asking for quick and clear answers. In the text that follows we shall try to clarify at least a few of them.

Cloud computing – A definition

Commonly accepted definition of cloud computing comes from NIST [3]:

"Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models."

We have to highlight a few most important consequences of this definition and current implementations: cloud services (public offering of these) enable provision of new IT resources (infrastructure elements) without investments and with lower-than-usual operating costs. Besides, no IT people training are needed; buying new licenses and implementation of provisioned resources either. This is (should be!) an easy way of extending capabilities of existing IT infrastructure of the enterprise or even fully outsourcing IT to external service provider(s). These promises are yet to be proven, but they represent the essence of cloud computing and a key test whether technology and providers will survive in the long term.

Type of cloud services

Cloud computing is commonly defined as: everything as a service. Or shortly: *XaaS*. But there are three main categories prevailing today:

- *IaaS* – infrastructure as a service
- *PaaS* – platform as a service
- *SaaS* – software as a service.

IBM includes in its own portfolio the fourth type: *BPaaS* – business process as a service (beyond scope of this article).

Infrastructure services are the most common type and probably the most mature offering today. These services can vary from very simple (plain virtual machines) to very complex offerings (like full SAP ERP landscape). The first on the market and the most visible one is *Amazon Web Services*. But other offerings mushroom these days: from very small to big ones (*IBM*, *Microsoft*, *Google*, etc.).

Customer (enterprise) using IaaS offering gets all needed infrastructure elements: networking resources, data storage, and computing resources in a form of virtual machines. IT administrators take these elements to build enterprise infrastructure, install application software and manage it as its own. Except for provisioning of resources this type of service resembles the most traditional way of IT infrastructure design, implementation, and maintenance. Granularity of provisioned resources makes another big difference. Traditionally, equipment was provisioned with one physical server per application – very coarse granularity. IaaS virtual machines are provisioned as a fraction of physical server and configured exactly for application they serve.

Service delivery models of cloud computing

At the very beginning of cloud offerings on the market it was expected that new services will concentrate around 4-5 major players (*Google, Amazon, Microsoft, IBM* and maybe a few others) who would share more or less all customers. Situation was very similar to the 1950s when it was predicted at the beginning of mainframe era that a few (maybe 5) mainframes would be enough to serve the whole world. So, this "prophecy" was nothing new and was equally wrong. It did not take too much time to evidence cloud offerings mushroom, as we mentioned at the very beginning of the article.

Leading cloud and virtualization platform vendor, *VMware* proposes a bit deferent approach: mixed environment and gradual migration from traditional to fully (someday!) cloud capable infrastructure. In the text that follows we shall give more details regarding this approach as it is now broadly accepted by IT community.

Instead of 4-5, the major cloud services are now offered using a few delivery models:

- Private cloud
- Public cloud computing
- Hybrid cloud
- Community cloud.

Underneath all four models there is virtualization layer and virtualization management infrastructure. Vendor solutions differ but conceptually this is common denominator of all solutions. Some providers even hide this kind of architectural information, but nevertheless use very similar solutions (*Google* for example).

Besides, we will mention a few obstacles providers and customers have to overcome to be able to reap benefits of cloud infrastructure.

Private cloud

In 2006 virtualization technology came back from oblivion as a mainstream trend and technology promising to transform the whole IT operations. Until then it was common to provide one physical server per application service. The result was disappointing efficiency of resource usage. CPU usage hardly went over 4-5%. Other resources were underutilized too. This trend had to be stopped because it was economically unacceptable. After initial and visible cost savings from infrastructure consolidation, it was obvious that there were many less tangible benefits: much less power and datacenter space used, easier maintenance, no vendor lock-in possible, and drastically improved uptime of services. Statistics from the field of virtual infrastructure show cost savings of 50% and more and utilization of most expensive resources (like CPU) well over 60%.

Through many very successful consolidation projects virtual infrastructure gradually and almost invisibly has been transformed from consolidation tool to platform for cloud computing services. Key for this transformation was development of management, monitoring, and automation tools.

Now with the cloud services booming it is obvious that virtual infrastructure is a "secret sauce" missing in the previous generation of hosted services offering.

This global picture was repeated locally through many (over 100) projects *Coming - Computer Engineering* delivered to customers in Serbia and in the region. Pattern was applied successfully for small and even for very big companies with equal success.

Today we see gradual transformation of already virtualized infrastructure to private clouds of the enterprises. Private clouds enable even higher costs savings (through automation and less administration) and preparation for the next phase: hybrid solutions (to be discussed later). Companies not virtualizing datacenter resources now see stronger pressure to follow this development as quickly as possible. Otherwise, they risk staying behind for at least two generations of technology.

Public cloud

This is what is commonly seen as cloud computing: computing and storage services delivered over Internet. There are many offerings on the market today: *Amazon AWS* [4], *T-Systems*, *IBM* and many others. In spite of many similar characteristics, no two clouds are equal. Besides, interoperability among different clouds is not standardized, and it is still not possible to move services around on the fly. There is a serious ongoing debate whether hardware vendor lock-in from the past could be repeated in the cloud.

Existing services differ sharply by the existing and target customer base: from plain virtual machines for small or even individual users to enterprise solutions customized to strict customer needs. *Coming – Computer Engineering* decided at the very beginning of development to focus on enterprises: small and medium at first, large ones later, offering fully customizable services. Individual (residential) customers are not excluded, but pricing still prevents massive deployments for this class of users.

Hybrid cloud

Hybrid cloud is an extension of customer's private cloud infrastructure. Through this customer can add resources to his own IT infrastructure, use outsourced resources as if they are his own and move services between private and public clouds at wish (finding optimal place for a service regarding performance, security, scalability, and other criteria). Therefore, the interoperability of different clouds is prerequisite for such an operation. Key standards like Open Virtualization Format are in development and so are numerous tools like VMware vCloud Connector [5]. The tool creates a "single pane of glass" for administrator who is able to manage full set of services and move them around no matter where they are currently located.

Community cloud

Community cloud has all the characteristics of a public cloud, but it is serving limited number of users who are sharing the same policies regarding security/privacy, management or any other. It can serve, for example, a number of government institutions, university, local community (municipality). Internal users (organizations) are treated as independent entities and have management and administrative independence. For the outside world community cloud is not visible (except through carefully controlled Internet links). Therefore, through aggregation of resources belonging to many similar organizations, community cloud enables significant cost savings and build-up of qualified IT organization. Underlying technology – including virtualization, network isolation, and security appliances – is the same as for public cloud solutions.

Let us mention one of the most famous initiatives for community cloud build-up: Obama Cloud Initiative from 2009 [11]. Many more similar initiatives are in progress today. There is no sign that this wave will stop soon. Again, economic impact of the solution is a key driving factor.

Characteristics of cloud computing

To qualify market offering as cloud computing, provider has to fulfill and guarantee a few distinctive characteristics. Otherwise, solution could be qualified as traditional or at most "cloud like". This distinction is not a cosmetic one. In essence, this is what new cloud concept is bringing to IT world. Let us take a look:

On-demand activation of services

On-demand delivery (activation) of services is probably the most distinctive characteristic of cloud computing. Very often activation time is measured in minutes or even seconds and activation is a kind of self-service. For example (once again): *Amazon Web Services*. But even a bit longer activation time – day or two makes a big difference to traditional one – measured in weeks and even months.

Internet and private virtual network access

Cloud services started as a public service delivered over Internet (public network) and this method is still prevailing. For enterprise customers and others who need complex solutions it is now common for providers to have other means of delivery: highly isolated and protected private MPLS networks. As security over Internet could be easily compromised, secure transport services are mandatory (encrypted protocol like IPsec or SSL – out of scope of this article).

Aggregation (pooling) of resources

In order to be economically feasible, cloud computing services inherently use shared physical infrastructure (networking, storage, and computing resources). This is achieved through a profound use of virtualization technology: aggregate resources of different kind in a pool of shared resources (not necessarily of the same characteristics), and then: partition resources as it is requested by user applications (normally in very small portions compared to aggregated capacity). It's nothing new: this way we share public transportation, power supply, telephone infrastructure. To be successful, sharing of resources is to be invisible to users (i.e. users are invisible to other users) and partition should guarantee quality of services. All the other characteristics of cloud computing and the whole economics of it come from sharing of common elements and this is not possible without a full virtualization of underlying resources.

Instant elasticity

As we mentioned earlier, user services are very often just a small fraction of physical servers of which cloud infrastructure is built. But cloud brings other very interesting possibilities not seen before: to build very large applications consisting of tens, even hundreds, of instances of underlying virtual machines. And build it automatically and almost instantly. There is fameous Animoto case on top of AWS that shows what elasticity really means: adapt to user and application needs instantly. Scale up as well as scale down on demand.

Metering of resource usage

Metering usage of resources in the cloud infrastructure and be able to do precise accounting of them is another distinctive characteristic of the cloud. Cloud brings to life possibility for a user to pay resource per usage – similar to other public services (for example: telephone). This is not the only possible method of metering/payment but it is prevailing today. For enterprises and other permanent users of cloud services accounting of resources can be done on a fixed/flat basis, as a fraction of reserved resources (inaccessible to others) and on many other ways. No matter what nuances we have in mind, user is always paying for what it uses – per request or on a monthly basis.

Usage scenarios for different customer types

What are the use-cases of cloud computing? How do they differ from traditional ones? We shall give non-exhaustive list of possibilities and potential benefits.

- *Business users* – enterprises, small and medium in particular, by using cloud offerings can outsource more or less all IT infrastructure or provision a new one with no investments and lower (compared to their own) operating costs. If infrastructure cannot be fully outsourced (for whatever reason, for example, security policy of the enterprise), it can be at least partially outsourced: test and development, training infrastructure, remote backup, and disaster recovery services.
- *Public sector and government agencies* – users from this segment have very sophisticated publicly accessible applications for which cloud could represent "native" environment for secure, accessible, and economical delivery to the society.
- *Independent software vendors* – they are focused on development and marketing/sales of various business applications and not on infrastructure itself. Therefore, cloud is particularly inviting for ISVs. Proof of concept solutions, training, demonstration of applications can be delivered from the cloud in no time wasted for provisioning, decommission and other for ISV not particularly interesting activities.
- *Hybrid solutions* – for many enterprises fully outsourced cloud infrastructure is still (and maybe never will be) the only infrastructure delivery model. It could be much more feasible to outsource part of infrastructure: for testing, remote backup and disaster recovery, even peak or seasonal load, typically batch operations (like analytics). Besides, number of publicly accessible (external) applications is growing. By the rule these are put in so-called: demilitarized zones – isolated regions inside enterprise private infrastructure. Cloud is even better isolated so these application can more securely be delivered to the users from it. This division of infrastructure to private-public is artificial. Mature cloud offering should enable interoperability of the services (applications) and transparent migration from one infrastructure to the other at user request – i.e. finding the best place to work (accessibility, economics, security, whatever user sees as a feasible criteria).
- *Events of limited duration and big projects* – traditionally IT infrastructure for such an event is provisioned well in advance, installed, and used very shortly and decommissioned – all with high costs. Usage of delivered infrastructure and hardware in particular after the event is never perfect fit and much of the investment cannot be recovered after. Cloud comes here as a rescue. *Coming - Computer Engineering* showed feasibility of such solution at Eurosong 2008 and University Games 2009, Belgrade.
- *Schools and universities* – they have to equip a huge population with personalized, functional, and secure environment for work. Instances of services and applications have to be delivered in no time, with minimal administrative efforts and very cheaply. As it is shown from recent past, traditional solutions fail quickly with millions wasted. As we

can see, cloud computing as a platform for schools and universities represents today the only viable solution. Examples from USA, Brazil and other countries show clearly why this is the case.

- *Residential users* – last but not the least. Mostly this class of users has expected to be able to surf Internet securely. But those days are over: now they expect to be able to share and backup data and valuable documents, be free of end-user computing devices, be able to use devices of different form factors – from PDAs over tablets, to desktops, to access their application from any place at any time. Cloud is very inviting regarding this but many obstacles are to be overcome: security (like for all other user categories), delivery of multimedia content with the same quality as for non-cloud solutions (its own desktops). In a few last years we have seen intermixing of personal and professional life through social networking so that a distinction of what is inside (private) and outside (public) becomes quite vague.
- *And many more* – limited only by price/performance compared to traditional solutions. All other factors (like security) will play less significant (we do not want to say unimportant) role, because in the end economy always wins.

Quality of cloud computing services

Resource metering in the cloud is a must have feature of any offering. But quality of service matters even more. Promises given by provider at contract signing have to be secured by clear definition of quality of service and measurements/accounting at the time of delivery. Without measurable quality of service anything that user gets can be considered "adequate" and also user can complain about any characteristic if acceptable values of it are not clearly set.

Therefore it is common, and we would say mandatory, to put quality of service term into service contract with cloud provider. It is done with so-called Service Level Agreement, or shortly SLA.

SLA should have at least the following elements:

1) *Guaranteed service availability:* defined as percentage of time services are at user disposal compared to times when they are not available (i.e. downtime). Now it is common to have this measure at the level of 99, 5% or more. Critical services are to be available for at least 99,95% of time, but real values heavily depend of user needs and usage scenario,
2) *Way of support and availability of support resources and qualified personnel* – normally repair time should be very short – a few hours, with most of the hardware incidents resolved automatically using high availability functions of underlying virtual infrastructure,
3) *Data privacy, security and protection* – it is common these days to have nondisclosure agreements signed or included in service delivery contract. Provider must guarantee protection of user's sensitive data and documents, and prevent any leakage of them. This is commonly considered as one of the pain points of cloud computing and obstacle to broader acceptance. All user requests and measures, to be implemented to secure user data, are to be put into SLA part of the service contract. Examples from recent past show that unrecoverable destruction of user data is possible and that consequences are huge: lost intellectual property, lost reputation, in the end lost clients and maybe bankruptcy,
4) *Penalties of not delivering services* within the limits defined by SLA. Normally this is defined as a monthly discount for future payments. Critical incidents are to be treated with special care. It is not uncommon for users to request bank guarantees as an additional security.

Other SLA elements are to be negotiated too:

- Planned maintenance of applications and cloud infrastructure
- Disaster recovery procedures (in case of fire, flood, earthquake, etc.)
- Limitations and acceptance of provider policy of service delivery
- Licensing of software used if paid on a monthly

basis. Users now can relatively easy bring their own licenses to the cloud (without paying a new)

- Other commercial terms (way of payment, due dates, etc.).

Without solid SLA journey to the cloud, it could be full of (mostly unpleasant) surprises.

Economics of cloud computing

For any technology to survive in the long term, economics of delivery and usage are of critical importance. Graveyards are full of "promising" technologies from the past. Cloud computing does not show signs of these already forgotten solutions. On the contrary, economy of the cloud seems to be quite solid. Besides, other less tangible advantages play important roles too.

Main sources of cost savings are the following:

1) *Capital expenditure do not exist* (more precisely go on provider's account and are part of service price) – investments in IT infrastructure consists of the following: networking, storage, computing resources, datacenter facility, software licenses (system software like operating systems, databases, email or application software like ERP, CRM, POS and many other well-known enterprise applications). Investments in the infrastructure can be fully eliminated (or transferred to provider who has better negotiating position with vendors and shared infrastructure through economies of scale will do the rest). Application licenses can be paid on a monthly basis without upfront investments and in practice it is shown (that) aggregated price is comparable to traditional way of licensing. Additional savings come from the possibility for users having private cloud solutions to provision only infrastructure volume needed by everyday operations and to spare (use cloud instead) peak load needs which are estimated to 30% or more of "regular" infrastructure capacity. Many "extra" services can be provided this way and the cost can be shared (through provider) with others.
2) *Operating costs – promises for operating costs savings are very compelling* – estimate goes to 50% and even more. What is the source of such a big improvement? Economics again come from shared infrastructure – lower costs for power supply and air conditioning, datacenter space rental and, mostly, administration and maintenance personnel costs. It is estimated (*Microsoft* study) that one administrator in a private infrastructure is managing close to 170 virtual machines – in the cloud this number goes to over 1000 (!). Besides, separation of duties in the cloud is possible with a consequence of better service and lower costs.
3) *Disaster recovery services* – IT manager's dream (or nightmare!) for a very long time can now become true thanks to low service costs in the cloud. This complements growing management awareness of possible consequences of disastrous events like flood, fire, earthquake, and others. Studies show (Gartner) that more than 40% of the enterprises which experienced disasters do not recover at all – in other words, stop doing business. A significant part of recovery from disaster is ability to recover IT infrastructure to serve critical applications and data. Now this can be done by provider in different (cloud) location. Is there any excuse now for not having DR plan? It seems (finally) that cloud is bringing this opportunity even to very small enterprises that were not able to provision DR solutions in the past and were exposed to above mentioned risks. Calculations (beyond the scope of the article), as well as experience of the other providers show that DR in the cloud can be delivered for a fraction of the cost (less than 15%) of traditional DR solution.

Cloud computing obstacles

In the well-known paper [2] Berkeley researchers named ten most serious obstacles that cloud computing concept and implementations have to overcome to become finally respectable, reliable, and dependable public service. We shall not go into details here. To summarize, we see a few important categories of obstacles:

- Reliability and availability of service
- Performance and scalability
- Privacy and security
- Software licensing.

Of these, we find security as the most serious one. There are two aspects of it: psychological and technological. Both should be treated with care. For many users it is difficult to overcome feeling that by moving sensitive data into the cloud they are losing control and that data leakage is only matter of time. Provider must be ready to answer concerns like this one and provide even financial guarantees that can be activated in case of failure to prevent incidents.

On the other side, technology is mature enough to enable adequate protection of sensitive data and applications. What could be questioned is provider's ability to implement security measures without holes and in an auditable way. We suggest potential user to take a careful look whether provider has adequate security policies in place and certificates like ISO 27001. For example: *Coming CE* and *Telekom* organizations and facilities passed this certification last year.

Cloud services market – global picture and global players

As it is well known, the biggest global cloud computing providers today are *Amazon*, *Google*, *IBM* and *Microsoft* along with rapidly growing number of providers of different sizes and market focus. On the other hand, *VMware* is a global cloud computing platform leader – building virtualization and cloud management tools for implementation and delivery of private, hybrid and public cloud services. Locally, on the Serbian market the first services of a kind are delivered by *Coming/Telekom Serbia* partnership.

Of service type by far the biggest is SaaS segment with *salesforce.com, Google* and *Microsoft* as the leaders. *SAP* and *Oracle* and hundreds of others are closely following this trend. Practically there is no application software company which is not offering at least cloud services for testing and training.

First domestic cloud for enterprise users – Coming CE and Telekom Serbia partnership

This comes as no surprise as *Coming* is recognized leader in virtualization in the region and so is Telekom in communication sector. Many of the services hosted in a traditional way in the past are now being transformed in cloud offering. Many virtualization projects, a few of which inside *Telekom*, represent a solid foundation for cloud computing. Very important for this development is strategic decision of *Telekom Serbia* to lean on partners of different kind in delivering innovative services to the market. In the cloud segment, *Coming CE* is the first to propose and materialize a new approach. This article aims to explain key elements of the approach and current offering.

At first services are particularly well tailored to small and medium businesses and ISVs, but the others will follow soon. Key differentiator from established global offerings is full customization to user needs and solid support from standard infrastructure services to complex outsourcing of all administrative and support duties.

Cloud for the enterprise – fully customizable solution

Generic cloud services – delivered through plain virtual machines – more or less uniform no matter what real usage could be, are just the basics no longer able to fulfill user needs. For enterprises, it would not be very serious to offer it as a solution. Besides customization, enterprise services must be carefully engineered and integrated with the existing user's infrastructure and application. Solid support and maintenance – all with reasonable price – are unavoidable part of the offer. This is the key of *Coming CE* offering to the regional enterprise customers. Let us mention some of the services delivered lately to the customers and currently under development:

1) *ITaaS* – enterprise outsources all IT operation to cloud provider (in this case *Coming CE*; examples: *Mona*, Belgrade; *Squadra*, Belgrade). This type of the solution is very compelling to small and medium enterprises, because they are not

able to build and pay all technical staff they need for reliable operation of IT,

2) *Small infrastructure* through rental of plain virtual machines. In this case user takes the whole responsibility of IT infrastructure and application management. Provider, on the other hand, is responsible for reliable operation of cloud (virtual) infrastructure and connection endpoints,
3) *Storage as a service* – service growing in popularity – enabling customers to store large volumes of data/documents reliably and securely in the cloud,
4) *Backup as a service* – do remote copies of backups in the cloud. This type of service is very cost effective form of basic disaster recovery. With minimal effort provider can convert remote backup into fully functional DR solution,
5) *Archiving* – besides remote copy of data, this solution includes applications too, for customer to be able to search archive and extract needed data/documents. In a way this can be treated as SaaS service type,
6) *Development and testing of software* – very broad category which enables reliable and isolated development, test, and training of new or changed applications built in-house or by independent software vendor. For this purpose customer needs no infrastructure – only test data are needed and promotion of a test system to production can be done with ease,
7) *Proof of concept solutions* – resembles much the previous case but differs in scope. Any new solution can be proven and stress test done without interrupting normal operation of customer's infrastructure. This is probably the preferred service for ISVs as is the previous one,
8) *Public services* – so called services from demilitarized zone (DMZ) – this class of services needs full isolation from internal ones. Therefore it is quite natural to put them in the cloud. Channel between customer's productive (private) infrastructure and the cloud DMZ can be controlled, inspected and activated only when needed,
9) *Internet sites and portals* – traditional segment for Internet service providers now can be freely mixed with DMZ services or isolated by customer request. There is no need any more to run them completely separately (even physically).
10) *Batch processing in the cloud* – this is a natural way of processing for many advanced services like High Performance Computing or Data Warehousing (especially data mining), because cloud can scale well and provide massive parallel processing in a short time (and convert some complex analysis into real time or close to real time applications). We have in mind that in the cloud 1000 hours of one virtual machine cost the same as 1 hour on 1000 machines (not possible at all without cloud infrastructure!),
11) This is just a short list of possible services in the cloud. Some of them are very innovative and were impossible or prohibitively expensive in the past.

From the list it is obvious (having in mind economy and other factors too) that even the biggest enterprises could productively use cloud services. For the small ones, cloud finally offers economical alternative to traditional way of developing of IT infrastructure and services.

Conclusion

There are many testimonials of existing cloud computing users that evidence viability and economics of current services. Level of sophistication of cloud services is also improving. Now is the time for academic community to jump in and help in analysis to what extent early promises match with real achievements from the field. Besides, *Coming CE* and *Telekom Serbia* cloud services show clearly that cloud is not only for big players and that on the local (regional) market we can develop and put in production sophisticated cloud services. It would be interesting to predict and analyze the social consequences of this, especially in public sector for which IT infrastructure can be totally transformed by community cloud solutions.

References

1. Carr, Nicholas G., (2003), "IT Doesn't Matter", *Harvard Business Review*, May 2003, p. 41- 49
2. Armbrust M., Fox A., Griffith R., Anthony D. A., Joseph A.D., Katz H. R., Konwinski A., Lee G., Patterson D.A., Rabkin A., Stoica I., and Zaharia M., (2009), *"Above the Clouds: a Berkeley View of Cloud Computing"*, UC EECS Department, University of California, Berkeley
3. Mell, P., Grance T., (2011), "The NIST Definition of Cloud Computing", *National Institute of Standards and Technology, Special Publication 800-145*, September 2011
4. Amazon Web Services at http://aws.amazon.com
5. VMware – http://www.vmware.com
6. Google Apps: http://www.google.com/enterprise/apps/business/index.html
7. Coming – Computer Engineering – http://www.coming.rs/
8. Telekom Srbija – http://www.telekom.rs
9. Smith, D. M., Natis, Y., Petri, G., Bittman, T. J., Knipp, E., Malinverno, P., Feiman, J., (2011), "Predicts 2012: Cloud Computing Is Becoming a Reality", Gartner, December, 8th 2011
10. Witty, R.J., Scott, D., (2001),"Disaster Recovery Plans and Systems are Essential", Gartner, September, 12th 2001
11. Obama Cloud Initiative, (2009), available at http://fcw.com/articles/2009/05/18/news-obama-in-the-cloud.aspx

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