

# Ekonomika preduzeća



**Serbian Association of Economists  
Journal of Business Economics and Management**

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VISA INFINITE

UNLOCKS FREEDOM



**VISA**

SVET MOGUĆEG.

 **BANCA INTESA**



# EP **Ekonomika preduzeća**

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ne whole cannot develop unless all its parts develop. That is the leitmotiv of the first paper in this edition of *Ekonomika preduzeća*. In the *Introductory paper*, *E. Jakopin* alerts of regional consequences of transition in Serbia. The author points out the importance of affirming the integrative function of strategic regional development planning, the decentralization process and polycentric regional development.

In the *Organization and Management* section, *B. Paunović* and *V. Ivanić* estimate the conditions and the possibility of applying strategies of integrating SMEs in Serbia into global value chain, as well as the ability and propulsiveness of SMEs to enhance their role in the value chain of fruit and vegetables. The methodology for assessing the readiness of SMEs for their integration into the value chain of fruit and vegetable processing has been developed to assess the readiness of the selected SMEs for their integration and promotion in the fruit and vegetable processing chain. In the second paper, *V. Kuč* analyzes the performance of the so-called business controversial or zombie companies in the period from 2008 to 2017. Having in mind that 31 analyzed business controversial companies generate almost one-fourth of the total losses exceeding the equity value of the Serbian economy, as well as the level of their liquidity and bankruptcy risks, the author points out that the restructuring of these companies is not only a matter of their existence, but also the matter of strategic importance for the entire Serbian economy. In the third paper in this section, *S. Aćimović* and *V. Mijušković* made an effort to identify specific factors important for the usage of the reverse logistics process in Serbia, as well as to widen and enrich the scientific and practical findings in this area. In the last paper in this section, a trio of authors, *D. Cvijanović*, *D. Sekulić* and *D. Pavlović*, explore consumers' perceptions of green hotels, their intention to visit them again and to recommend them to friends and acquaintances or through social networks. Survey results enable entrepreneurs to understand the benefits of applying environmental principles in business and the manner in which these principles are valued by consumers.

In the *Law and Taxes* section, *I. Domazet*, *D. Marjanović* and *I. Stošić* investigate how certain tax incentives may affect the business of foreign investors in Serbia. The authors paid special attention to tax incentives in certain areas of business conducted by foreign investors in Serbia, depending on the activity of foreign investors and the level of internationalization of business operations. In the second paper, a duo of experts in law, *J. Perović* and *M. Jovanović*, analyze the issue of confidentiality in international business contracts concluded by the state and explore the shift from confidentiality to transparency that has been emerging in recent years.

The last paper in this edition goes to the *Accounting* section. A trio of authors, *M. Todorović*, *V. Janjić* and *V. Pašić*, research the effects and limitations of activity-based costing application in small and medium-sized enterprises.

Prof. Dragan Đuričin, Editor in Chief

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Edvard Jakopin  
University of Belgrade  
Faculty of Geography

## REGIONAL STRUCTURAL IMBALANCES OF SERBIA AS A CONSEQUENCE OF APPLIED TRANSITIONAL MODEL OF ECONOMIC GROWTH

Regionalne strukturne neravnoteže Srbije kao posledica primenjenih tranzicionih modela privrednog rasta

*'If a country were ready to apply the doctrine of balanced growth, then it would not be underdeveloped in the first place.*

(Albert O. Hirschman, 1969, Strategy of Economic Development: 53–4.)

### Abstract

One whole cannot develop unless all its parts develop. Regional development has direct implications for overall economic and social development! Regional transition in Serbia takes its toll on key development dimensions – demographic, spatial, economic, social, security and political. The state was not aware of the regional consequences of the transition. Regional policy was in the second plan, the focus of state instruments was dominantly placed on the process of transferring the planned economy into a market-oriented economy, regional imbalances were developed and intensified spontaneously and uncontrollably, the individual actions of the state were uncoordinated and selective, mainly initiated from particular political interests. State instruments were not in the function of depreciation of transitional consequences.

The key message of the paper is that a more balanced regional development in Serbia cannot be implemented without building an efficient institutional framework, consisting of institutions and instruments, various policies that ensure stability, continuity and harmonization in the development process. In addition, the author points out the importance of affirming the integrative function of strategic regional development planning, the decentralization process and polycentric regional development. In regional theory and practice, it is generally accepted that a higher efficiency of implementation of regional development policy and planning is ensured through hierarchically differentiated decision-making systems.

**Keywords:** regional structural imbalances, transition models of growth, transition regions - winners and losers.

### Sažetak

Celina se ne može razvijati ukoliko se svi njeni delovi ne razvijaju. Regionalni razvoj ima direktne implikacije na ukupan privredni i društveni razvoj! Regionalna tranzicija u Srbiji uzima svoj danak u ključnim razvojnim dimenzijama – demografskoj, prostornoj, privrednoj, socijalnoj, bezbednosnoj i političkoj. Država nije imala sluha za regionalne posledice tranzicije. Regionalna politika bila je u drugom planu, fokus državnih instrumenata je bio dominantno usmeren na proces prevođenja planske privrede ka tržišno orijentisanoj privredi, regionalne neravnoteže su se razvijale i intenzivirale spontano i stihijski, pojedinačne akcije države su bile nekoordinirane i selektivne, uglavnom pokrenute iz partikularnih političkih interesa. Državni instrumenti nisu bili u funkciji amortizacije tranzicionih posledica.

Ključna poruka u radu je da ravnomerniji regionalni razvoj u Srbiji nije moguće sprovesti bez izgradnje efikasnog institucionalnog okvira koji se sastoji od institucija i instrumenata, različitih politika kojima se obezbeđuje stabilnost, kontinuiranost i usklađenost u razvojnom procesu. Pored toga, autor ukazuje na značaj afirmacije integrativne funkcije strateškog regionalnog planiranja razvoja, procesa decentralizacije i policentričnog regionalnog razvoja. U regionalnoj teoriji i praksi opšte je prihvaćeno mišljenje da se veća efikasnost sprovođenja politike regionalnog razvoja i planiranja obezbeđuje kroz hijerarhijski izdiferencirane sisteme odlučivanja.

**Ključne reči:** regionalne strukturne neravnoteže, tranzicioni modeli rasta, regioni dobitnici i gubitnici tranzicije.

## Introduction

Development must be managed! Development implies a harmony of economic growth and social justice. One whole cannot develop unless all its parts develop. Regional development has direct implications for overall economic and social development. Regional development is not a matter of compensation or solidarity! Regional development planning can be an effective method for relaxing social, economic, regional, ecological, cultural and political transformation of Serbia in the period of transition. The subject and essence of the research can be found within these findings.

Research on regional development dimensions is not possible without a complex analysis of overall development. Although the process of property transformation of the economy in Serbia has been formally initiated in the last decade of the last century, the essential transition of the economic and social system began at the beginning of the new millennium. From the point of view of development, the decade of economic distortion and economic collapse has been replaced by almost twice as long a period of economic consolidation and the formation of a new economic system. Nevertheless, the consequences of the lost decade can still be felt in all development dimensions, the economic backlog of the 1990s has not been overcome yet. An additional negative impulse was caused by the devastating recessionary waves of the world economic crisis, which splashed the transitional shores of the countries of Southeast Europe (SEE) with their weight. A number of systemic imbalances and deformations have risen to the surface.

Marginalization of regional development has its roots in the socialist period of the former state; development has been observed through the sector prism for decades, while regional development was in the second plan. In the period of economic distortion (1990-2000), the mutual articulation of parts (regional) within one whole was at a very low level. The transitional period (2001-2017) was characterized by the multidimensionality of regional and structural disproportions. The point of view of the research focuses on the analysis of regional transition, its causes, ranges, tendencies, institutional solutions and their deviations in practice.

Can the divergent movements in the regional map of Serbia and an increasingly sharper division of developed and undeveloped areas be reversed? Optimists would point to the improvement in resource management in the transitional period, but also to the still underdeveloped potentials for the encouragement of the development of new industries in underdeveloped areas. The pessimists would focus their analysis on issues of competitiveness of developed areas, dynamics of export growth, and introduction of new technologies. The rational approach seeks answers within the analysis of the sustainability of regional growth and the necessary changes in the institutional framework in order to achieve the most efficient rapid growth and higher level of convergence [3].

The focus of the paper are the consequences of the applied transition models on the regional development of Serbia. Structural imbalances in the transition period have affected the growth of regional imbalances in all developmental dimensions.

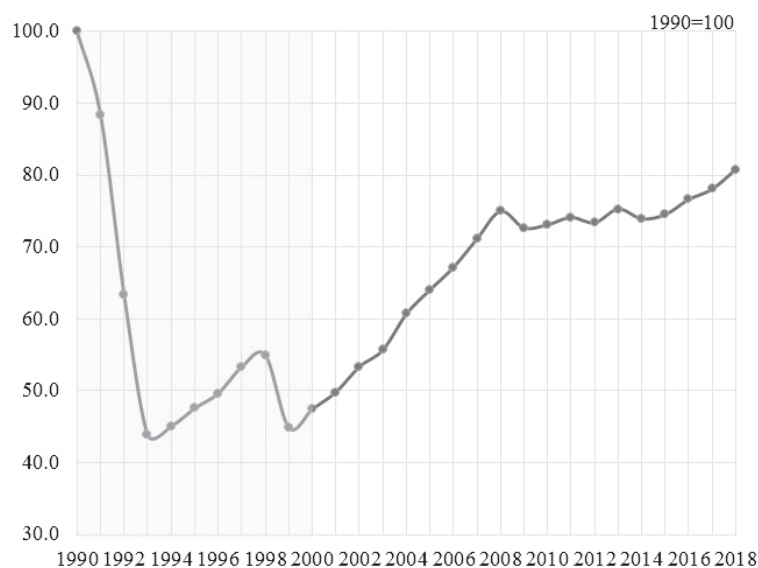
The study of the effects of regional transition in Serbia pointed to the need for re-examining existing institutions, policies, mechanisms and measures. The institutional framework of regional development in Serbia is asymmetric, non-functional and inefficient, not in the function of optimal resource reallocation. The red thread in the work is the necessity of institutional building of regional development of Serbia on new bases.

## Development trajectory of Serbia - consequences of economic distortion, transition and recession

Serbia has lost three decades of economic growth and development (due to economic distortions in the last decade of the last century, sanctions and NATO bombing, transition and recession), which confirms the economic legitimacy that it takes twice as much time to return the system to the previous equilibrium from the length of time the system was in recession. Today, Serbia's economic growth is at the level of 1976, amounting to only 78.1% of the average GDP of 1990 (Figure 1). With an average rate of annual growth rate of 4%, it will take another 7 years for Serbia's economic growth to be at the 1990 level. The



Figure 1: Development trajectory of Serbia - GDP 1990-2018



Source: Author's calculations.

Methodological note: Due to the changes in methodology for the period up to 2000, a series of Gross Domestic Product was used (at 1994 prices), and in the 2001-2018 period, a series of GDP growth rate was used [14, p. 36].

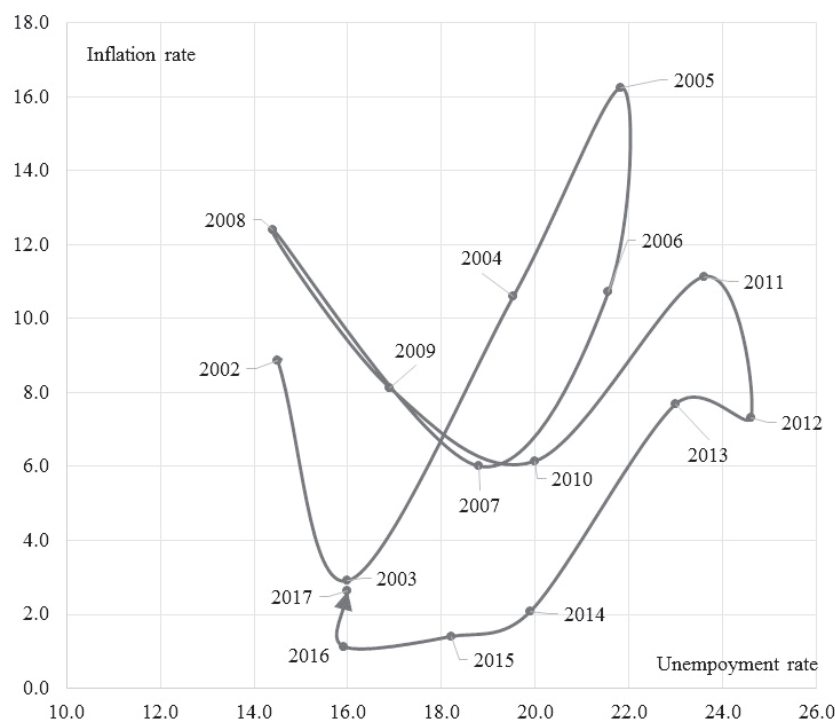
average growth rate of 4% is the minimal growth for Serbia to slowly leave economic periphery of the EU [20, p. 24].

The transition process in Serbia is bounded by five key epistemological elements:

- (1) Slowness and selectivity of reform processes during the entire 17 years of transition [14, p. 40];
- (2) Permanent spending over opportunity. By borrowing, the state closed the macroeconomic equation. In the years of breaking “balloons”, consumption was up to 20% higher than production. In 2016 and 2017, consumption is higher than production by 6%;
- (3) Disinvestment and devastation of the industry. Investments in fixed assets in 2017 amounted to only 38% of investments in 1990. The level of investments from 2008 has not been reached yet, the share of investments is permanently low, and in the 2009-2016 period it was constantly below 18% of GDP. The industry of Serbia has gone through a real transitional tsunami [11, p. 514], more than half a million workers fewer than in 1990 work in Serbian industry today. Compared to 1990, the physical volume index of industrial production at the end of 2017 was two times lower (51%), it was at the same level as it was in 1972;
- (4) High structural unemployment, as a result of unfinished structural changes in the economy, which has a particularly aggravating dimension from the social, development and regional angle. The analysis of the transitional Philips curve of Serbia shows various combinations of unemployment and inflation rates, which were under the influence of transition, recession and economic policy at different times (Figure 2);
- (5) The transition coupling of two deficits, which were the biggest triggers of systemic imbalances: current account deficit and fiscal deficit. The balance of payments deficit has steadily grown since the beginning of the transition; in 2008 it amounted to -21.1% of GDP, in order to stabilize at 4-5% of GDP in the 2015-2017 period. The foreign trade deficit is financed by permanent borrowing on the domestic and international capital markets. The fiscal consolidation period 2015-2017 contributed, for the first time in Serbia's transition, to bring the fiscal outcome from the negative zone into a positive one, i.e. to move from deficit to surplus [8]<sup>1</sup>. Structural imbalances in the

<sup>1</sup> “Following centrality of hard budget constraints, architects of the last program for fiscal consolidation 2015-17 revisited fiscal golden rule by separating the current account and the capital account.” [8, p. 30].

Figure 2: Transition Phillips curve of Serbia



Source: Author's calculations.

form of a combination of two deficits depreciated FDI and found workers from abroad. By 2008, the inflow of remittances and FDI was only partially managed to dampen the fiscal deficit, and only since 2012 has exceeded the balance of the current account deficit.

The most difficult consequence of transitional structural imbalances is the continued growth of external and public debt. Total external debt of Serbia increased from 11.8 billion EUR in 2001, to 21 billion EUR in 2008, at the end of 2017, amounting to more than 26 billion EUR. Serbia was above the red line of indebtedness in 2012, it was included, according to the criteria of the World Bank and according to the criterion of debt servicing, in the group of highly indebted countries. Based on the share of the present value of debt in GDP and the value of export-related debt, Serbia belongs to the group of medium-indebted countries. The total indebtedness of Serbia in 2017 was 70% of GDP, but it is more important that the debt service was significantly improved at the end of 2017 (133% is the ratio of debt and exports of goods and services). Also, after a worrying trend of public debt growth (28.3% of GDP in 2008, 56.2% of GDP in 2012 and

71.9% of GDP in 2016), the public debt has decreased to 57.2% (January 2018).

The macroeconomic risks of sustainability of economic growth in the entire SEE region are permanently present, unemployment is the highest in Europe. Economic disparities between the SEE and the EU are constantly at extreme boundaries. According to all economic parameters, the SEE region belongs to the EU periphery [9], [2]. The living standard in SEE in 2016 is almost 3 times lower than the EU average, and the unemployment rate is 3 times higher. Regional and social cohesion in Europe is getting weaker [3], the SEE region has been increasingly confronted with various forms of poverty and backwardness [14, p. 157]. Most SEE countries try to get out of the "vicious circle of poverty"<sup>2</sup>, their economies chronically lacking additional capital for faster economic growth (all countries give significant incentives to attract FDI), underdeveloped markets do not allow the expansion of the production specialization necessary for higher incomes [1].

<sup>2</sup> "They (the backward nations) cannot get their heads above water because their production is so low that they can spare nothing for capital formation by which their standard of living could be raised." [22, p. 49].



## Transition models of growth and structural imbalances

The global recession, created by speculative price growth and the bursting of bubbles in 2007, opened many theoretical and practical dilemmas, beginning with the source of the crisis, the role of the state, market distortions, systemic deformations, resource mobility, alternative solutions and growth models [14, pp. 38-44].

Even before the outbreak of the global recession, all transition economies, especially those with a delayed transition, such as the Serbian economy, have been overheated for years, faced with rising current account deficits, increasing indebtedness and unbalanced exchange rates [18] and unsustainable non-quality growth [16, p. 30]. By causing a crisis, the generator of which is always of a systemic character [10], the problem of financing has become more and more important (the “balloon” has become more and more important), especially in the economies in which restructuring has not been completed. Macroeconomic implications are clear: external debt has grown in all countries. A number of systemic imbalances, primarily, of a structural character, were spilled on the surface [8, pp. 39-40].

A brief theoretical excursion about the causes of the global recession. Causes of the greatest crisis of the Great Depression lie in the combination of three factors: (1) the enormous growth of the greediness of businesses (the famous Keynes “animal spirits”), (2) economic policy failures and (3) the institutional framework (regulatory system).

In recessionary periods, the state is more superior to the market, primarily because it has instruments to mobilize resources. For example, in all variants of the state in order to reduce the “perception of risk” economic policy stimulates the faster development of entrepreneurship. The crisis-trigger generator is always a system, not a state with its policy, because the economic system is inherently unstable [10]. Through its instruments, the state creates structural reforms and changes the system to minimize losses. Some authors believe that neither the reconstruction of the system nor the transformation of economic policy can eliminate the causes of the crisis. In a word, the

key determinant of the recession is systemic instability. In addition to systemic causes, recession weights were intensified by the weaker export sector and the wrong economic policy, which manifested itself primarily through a strong domestic currency. Occasionally, breathing operations gave revenue by privatization, FDI and foreign borrowing [14, p. 42].

Systemic imbalances in Serbia were deepened by the applied transformation model. The model functioned according to the principle of purchasing time with privatization revenues and FDI inflows, as the unstructured export-oriented economy borrowed and increased external debt<sup>3</sup>. On the other hand, vulnerable internal stability was conditioned by the huge surplus of imports over exports and the overstated dinar that this huge foreign trade deficit has stimulated and sustained. The overdue dinar was carrying the pillar of anti-inflation policy, influenced the commodity flows, but, due to cheap import of raw materials and intermediate goods, it also affected production costs. In such a situation, the global recession only added oil to the fire. But, the recession did not affect all the regions with the same intensity, some were more resilient than others.

The average rate of economic growth in the transition period 2001-2017 was modest, only 3.0%<sup>4</sup>. After a dynamic economic growth in the pre-crisis 2001-2008 period (average growth rate was 5.9%), a fall in the crisis in 2009 (-3.1%) and a long-term recession period (the average fall in the rate of economic growth in the 2010-2014 period was -0.1%), mild signs of recovery of economic growth followed in the 2015-2017 period (average growth was 1.8%).

The transformation period in Serbia in the 2001-2017 period was characterized by different models of growth:

- (1) Growth model based on the growth of personal consumption and services (2001-2008). In the period leading up to the outbreak of the world economic crisis, Serbia’s economic growth grew

3 “Serbia failed to achieve catch-up and convergence due to the burden from the past and wrong experiments that failed to tackle core structural imbalances.” [7, p. 26].

4 “A markedly lower rate of growth of a post-socialist economy could be interpreted as a sign of superior efficiency in comparison with much higher rates achieved in limited time spans during the socialist epoch.” [19, p. 339].

at a high average rate (5.9%), which was not enough, however, to compensate for the backlog of sanctions and economic problems in the state at the end of the last century. The service sector was the main contributor to the growth model, with services in the structure of gross domestic product (GDP) reaching 60% [11, p. 518]. In 2008, the level of GDP of Serbia reached the level from 1975.

- (2) Recession period of 2009-2014, a period without growth, with average annual fall of -0.2%. Under the influence of the global recession, economic growth was interrupted in 2009, forcing economic policy makers to redesign the growth model and face new growth sources, confronted with multi-sector negative effects of the global recession (Figure 2).
- (3) Growth model based on investment and exports (2015-2017), with average annual growth of 1.8%. Only in 2016, the economic growth reached the pre-crisis level of 2008. At the end of 2017, the level of GDP was at the level of 1977, which speaks of the extent of economic distortions in the last decade of the last century.

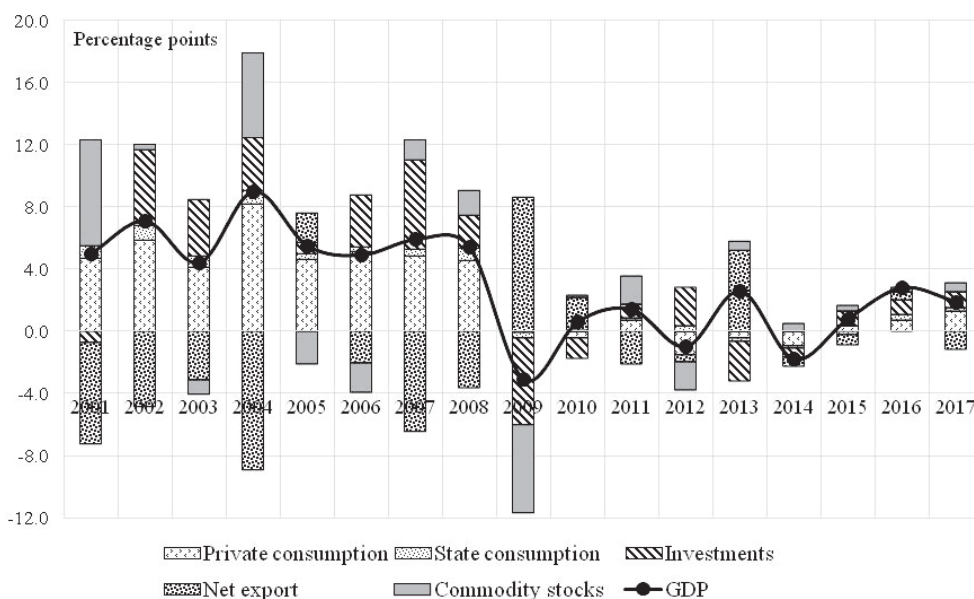
By consistently implementing fiscal consolidation in the 2015-2017 period, internal and external macroeconomic imbalances have been reduced, structural adjustment

has begun, economic and investment environment has improved, as confirmed by renowned international institutions (WB, IMF, EBRD, WEF).

Analysis of the transformation period 2001-2017 shows the degree of unsustainability of the growth model in the 2001-2008 period, the negative effects in the recession period 2009-2014, primarily the rise in unemployment, the fall in living standards and debt growth and the change in growth patterns over the last few years [14, p. 43]. The consequences of the transformation model of “debt economies” have been reflected in all development dimensions, from demographic regression, through industrial devastation, educational gap, regional imbalances to non-construction of institutions [5].

Turning and the implementation of the new model of economic growth are best illustrated by the analysis of the expenditure structure of the contribution to GDP growth (Figure 3). The pre-crisis growth model 2001-2008 was based almost exclusively on the growth of personal consumption, which is somewhat understandable, bearing in mind the effects of economic distortion on the standard of living of the population in the last decade of the last century. The contribution of personal consumption to growth was constantly around 5%, while, for example, in 2008, it was as much as 8%. The foreign trade deficit is permanent, the contribution of

Figure 3: Transition growth models of Serbia - structure of contributions to GDP



Source: Author's calculations.



investments to economic growth was mainly through the privatization process. State consumption also contributed to growth by 2009.

During the period of recession, there was a drastic fall in personal consumption and investment, while a significant contribution to the recession dropped also in the foreign trade deficit. In 2015, for the first time, a positive contribution of investments was registered, which continued in 2016 and 2017. From the growth model based on the growth of consumption, after five recession years, in 2015, it slowly focuses on the growth model based on investment and, after a long time, on personal consumption. The contribution of personal consumption has an upward trend: in 2015, the contribution to growth was 0.4, in 2016 it was 0.7, and in 2017, 1.3 percentage points.

The red thread of Serbia's transition over the past 17 transition years is that structural economic reforms were not in the function of a competitive sectorial reallocation of economic resources. Except for the several early years of dynamic structural reforms, the complete transition period is characterized by reform stagnation: following a rapid reform start in the 2001-2003 period, a period of reform stagnation followed, with mild movements in 2005 and 2008. Such a conclusion is confirmed by relevant international indicators (EBRD transition indicators), and the research of sector reallocation of growth factors using the Structural Changes Index (Indicator of the rate of change in the structure of GVAs) and the Lilien's coefficient.

The transition period is characterized by a deterioration in structural imbalances, a change in the structure of the total added value in favor of the non-exchangeable sector [12]. The global recession has only deepened already formed disproportions. The service sector increased its contribution to GVA growth by 14.2 percentage points,

while agriculture reduced its share of GVA by 12.0 pp, and manufacturing by 2.5 pp (Table 1).

**Table 1: Changes in the structure of GVA Serbia 2000-2016**

	2000	2004	2008	2009	2014	2015	2016
Agriculture	19.9	13.9	10.3	9.6	9.3	8.2	7.9
Industry	28.4	24.2	22.3	22.8	25.1	25.9	25.9
Construction	5.1	6.0	6.4	5.8	5.1	5.5	5.4
Services	46.6	55.8	61.0	61.7	60.5	60.5	60.8

Source: Author's calculations.

Changes in the production structure, analyzed through the structural change index, took place with the highest intensity in the 2001-2005 period, when the largest decline in agricultural participation was recorded, as well as the highest growth of services in the structure of GVA (Table 2).

Structural changes in the sector Industry and Construction were the most dynamic in the 2001-2005 period (decline in employment, index -5.10). The service sector throughout the transitional period records turbulent changes, both indicators are growing in all sub-periods (2001-2005 GVA growth index was 5.83). Thanks to FDI in the 2013-2016 period, the most dynamic positive changes (employment growth) were recorded by the sector Industry and Construction (1.33). The aggregate indicator of structural changes (average rate of change in the structure of GVA and employment) indicates that the highest rate of change occurred in the service sector (aggregate index 8.5), in the sectors of industry and construction (4.2) and agriculture (4.4), thanks in particular to the reduction of the number of employees in the pre-crisis period.

The previous conclusions on the assessment of the speed of transitional structural reforms, that is, the sector

**Table 2: Structural changes index**

	GVA				Employment			
	2001-2005	2005-2009	2009-2013	2013-2016	2001-2005	2005-2009	2009-2013	2013-2016
Agriculture	4.01	1.18	0.12	0.74	-0.71	0.36	0.35	0.12
Industry & Construction	1.82	0.32	1.49	0.17	-5.10	2.39	2.19	1.33
Services	5.83	1.50	1.38	0.91	2.70	2.41	1.28	0.65
Total	11.66	2.99	2.99	1.83	5.44	4.95	2.73	1.06

Source: Author's calculations.

Table 3: Lilien's coefficient

	2001	2003	2004	2005	2008	2009	2014	2015	2016
<b>Agriculture</b>	0.094	1.019	0.707	1.865	2.565	0.122	0.190	1.409	1.925
<b>Industry</b>	0.379	5.140	10.394	3.404	3.637	2.349	0.420	0.085	0.990
<b>Construction</b>	0.038	0.027	0.036	0.395	0.428	5.184	0.595	0.519	0.076
<b>Services</b>	0.311	3.719	7.146	2.179	1.762	3.098	0.424	0.839	0.002

Source: Author's calculations.

reallocation of employees, is additionally provided by Lilien's coefficient<sup>5</sup> [17].

The main findings of the research of the sector reallocation of growth factors using the Lilien's coefficient show (Table 3) the following:

- The most intensive dynamics of structural changes was in the period until 2008,
- In fact, there were no reallocations of employees in the period 2009-2014,
- The most intensive sector changes were in the sectors: Manufacturing (2004: 10.6%), Trade (2004: 8.4%), Administrative and support service activities (16% in 2015), Education (7.3 % in 2015), Accommodation services (9.5% in 2015), Professional and scientific services (4.3% in 2008),
- The smallest changes in the reallocation of employees are in the sectors of Transport, Water supply and waste water management and Electricity supply,
- The average speed of structural reforms was greatest in the Manufacturing industry (2.592), in Trade (2.162) and in the Administrative services (2.775),
- The largest contribution to changes in the structure of employment in the transition period provided in addition to the processing industry (15.3%) and trade (12.7%), administrative services (6.3%), education (6.3%) and accommodation services (5.3%).

The speed of implementation of structural reforms shows the commitment, problems, potentials and capacity

<sup>5</sup> Methodologically, Lilien's coefficient represents a deviation from the long-term trend in the movement of employment, in total and by sectors of the economy, and indicates the intensity of the achieved reallocation of employees in the economy and its sectors. If all sectors grow at the same rate, it will be zero. The coefficient is always positive and higher if the employment growth rates of individual economic sectors deviate more than their long-standing average. The present change, increase or decrease, employee participation by sector corresponds with employee reallocations. Lilien's criterion is counter-cyclic, as it points to higher fluctuations in the total number of employees between sectors in periods of recession than in expansion [14, p. 143].

of states to complete the transition process and empower their economies for a competitive match in the world market. Serbia's competitive position in the world was lower in 2017 than in 2003 (when it was first ranked); namely, in 2003, Serbia was ranked 77th in the world and 2017/2018 at the 78th position [23, p. 256], which speaks about the slow ("stop-start") process of structural reforms.

The sluggishness and difficulty of the implementation of the reform agenda are best illustrated by some of the indicators of competitiveness [23, p. 257]: for example, out of 137 ranked countries, Serbia is ranked 122nd on the burden of government regulation, 124<sup>th</sup> on valuing property rights; what is particularly worrying is that in terms of capacity to attract talents, it is in 132nd place, almost entirely at the bottom of the world rankings, while in capacity to retain talents it is in 134<sup>th</sup> place in the world!

### The effects of applied growth models on deepening regional imbalances in Serbia

The consequences of the applied transitional growth models have been manifested in key regional development dimensions: demographic, spatial, economic, social, security and political. Active regional policy was in the second plan, the focus of state instruments was dominantly placed on the process of translating the planned economy into a market-oriented economy, regional disparities have developed and intensified spontaneously and impulsively, individual state actions were uncoordinated and selective, mainly initiated from particular political interests. State instruments were not in the function of depreciation due to the applied models of transitional growth.

Regional demographic regression of Serbia is one of the most serious consequences of transition, whose negative repercussions on regional development are irreplaceable and immeasurable [14, p. 65]. Regional demographic

regression is manifested in all demographic dimensions, from the level of demographic emptying of the territory, natural depopulation, migration processes, to the extent of the demographic aging process of the working and active population. Regional demographic polarization is becoming more pronounced between urban and rural areas. Regional centers still achieve demographic growth due to the mechanical influx of the population and somewhat more favorable age structure, so they are faced with slightly lower reproductive problems of the population. By contrast, in most rural environments, the critical human development potential has been permanently lost in the underdeveloped and border regions. During the last three decades, negative biological reproduction has affected almost the whole territory of Serbia, while in 1991 every other municipality had a negative natural increase; in 2011 the number of municipalities with positive natural increase is almost negligible. The intensive migration of the population caused huge demographic imbalances, through the concentration of the population in Belgrade and several cities, that is, through the discharge of the whole region of Eastern and Southern Serbia. The

following data shows the extent of regional demographic age imbalances: 93% of the population of Serbia, according to all characteristics, belongs to a group of extremely old populations; in the 2002-2016 period, the average age of the population increased from 40.3 to 42.9 years, in as many as 80 municipalities the population is in the stage of deep age, in 58 municipalities the last stage was recorded - the deepest demographic age.

Regional contribution to economic growth is characterized by the positioning of the region of Belgrade to 40% of the economic growth in Serbia, the region of Vojvodina to 26%, the region of Sumadija and Western Serbia to 20% and the most underdeveloped region of Southern and Eastern Serbia to 14% (Table 4).

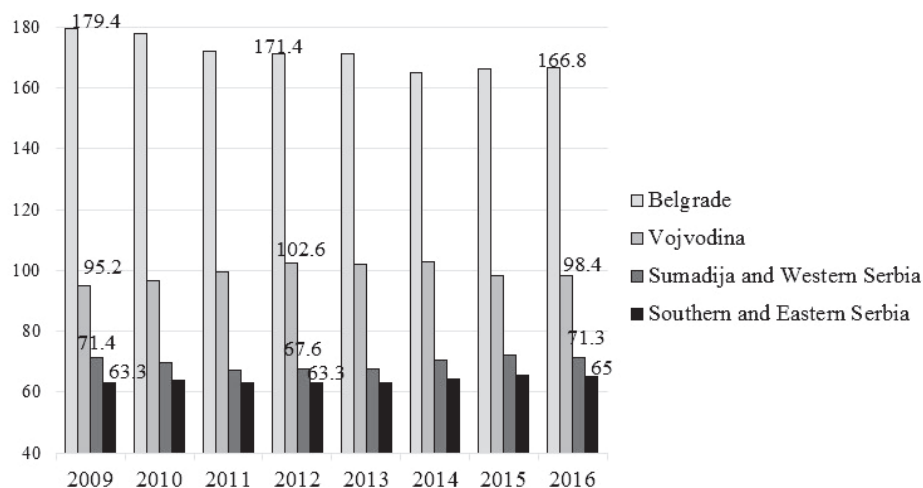
Regional disparities in the standard of living (GDP per capita) at macro level (NUTS-2) in the post-crisis period decreased from 2.83:1 (the region of Belgrade versus the region of Southern and Eastern Serbia) to 2.57:1 in 2016, which confirms the economic legitimacy to reduce regional disproportion in the period of the crisis (Figure 4). The recession affected the decline in economic activity and employment, especially in the 2009-2013 period. The

**Table 4: Post-crisis regional contribution to economic growth (GDP of Serbia=100)**

Regions NUTS-2	2009	2010	2011	2012	2013	2014	2015	2016
Belgrade	39.8	39.9	39.6	39.7	39.9	38.7	39.3	39.8
Vojvodina	25.6	25.9	26.8	27.2	27.2	27.4	26.2	26.2
Sumadija and Western Serbia	20.0	19.5	19.0	19.0	18.9	19.7	20.0	19.8
Southern and Eastern Serbia	14.4	14.5	14.5	14.0	13.9	14.1	14.3	14.1

Source: SORS

**Figure 4: Regional imbalances in living standards, GDP/pc (Serbia = 100)**



Source: SORS



average number of workers per enterprise in Serbia has been reduced from an average of 14 to 12 workers. In the three regions, the average number of employees in enterprises in the industry decreased by about 10 workers (only in Belgrade it was less by 5), in the construction sector by 8 workers, in the transport sector by 3 workers per enterprise.

In addition to the inherited factors of regional asymmetries, the primary reasons for the deepening of regional imbalances are the transition effects of privatization and the restructuring process, which have contributed to the one-dimensional concentration of the economy of Serbia in the areas of large centers, which have a distinct appeal in relation to the rural area both for domestic as well as for foreign capital owners.

The regional concentration of economic activities and business results is in the two regions - Belgrade (in the 10 representative indicators of Serbia, it participates with 47.6%) and the region of Vojvodina (26.2%). North of Serbia, on average, participates with almost 70% in the number of enterprises, in employment with 69%, in value of capital and permanent assets with over 82%, in total income and business income with an average of 76%, and similar, with net gain and net loss (69%). On the other hand, the region of Sumadija and Western Serbia and the region of Southern and Eastern Serbia together participate in the Serbian economy with 25%. On average,

**Table 5: Concentration of economy in Belgrade and South Backa District (Serbia = 100)**

Indicators	2000	2008	2017
Number of enterprises	47	53	54
Employees	39	52	52
Income	53	65	61
Profit	50	66	60
Loss	48	62	54

Source: Author's calculations

**Table 6: Regional extreme imbalances - GVA per capita**

Serbia=100	2002	2008	2016
Belgrade	200	240	223
Toplica District	27	15	44
Extreme disparities	7:1	16:1	5:1

Source: Author's calculations.

values three times higher are realized in the northern regions of Serbia in relation to the region of the central and southeastern region.

The transition period is especially characterized by the regional concentration of economic activities in the capital and the South Backa District (Table 5). In 2017, the total added value of these two regional districts participated with 63% in Serbia, the share of income was 61%, and of the profit 60%. The largest concentration of economic activities was carried out in the pre-crisis period until 2008. Interestingly, the concentration of losses in these two areas is also significant (54%).

The extreme transitional regional imbalances provide a fairly illustrative analysis of the added value at the district level (NUTS-3) [14, p. 273]. Extreme disparities (Table 6) at the start of the transition were 7:1 (Belgrade vs. Toplica District), in 2008 they jumped to 16:1, so in 2016 they were to be three times smaller (5:1).

Regional imbalances between cities have increased in the transition period. In the area of 28 cities (30% of the territory of Serbia), there are close to 2/3 of the total population and almost 4/5 of the total employed in Serbia. All economic indicators confirm that 4/5 of economic activities are concentrated in cities and that the actual regional transition is over (Table 7).

In contrast to the concentration process in cities, the vastly underdeveloped area in Serbia is, in fact, in addition to demographic devastation, left out of business flows, which speaks of the state's attitude towards regional development. In the underdeveloped area, which includes 44 municipalities (defined by law), during the transition the number of companies has been reduced by 50%, the

**Table 7: Regional imbalances between cities in 2017 (Serbia=100)**

	Number of enterprises	Employee	Income	Profit	Loss
Belgrade	44.6	44.1	49.6	46.8	48.4
Novi Sad	8.9	7.6	11.0	13.2	6.9
Nis	3.0	2.6	1.6	2.0	1.1
Kragujevac	2.8	2.2	1.8	1.5	1.1
Subotica	1.6	2.1	2.6	1.8	0.8
23 cities	18.8	20.1	17.4	20.4	26.7

Source: Author's calculations.

number of employees and profit was more than 2 times lower, while the income was reduced by almost 2.5 times (Table 8).

**Table 8: The share of the economy of the underdeveloped areas in Serbia (%)**

	Number of enterprises	Employee	Income	Profit	Loss
2001	6.6	7.3	4.2	3.0	3.9
2008	4.6	3.8	1.6	1.2	1.8
2017	4.3	3.6	1.7	1.3	1.6

Source: Author's calculations.

The impact of the applied transitional models on regional imbalances has its own social dimension.

The reflection of regional economic and social imbalances is most evident in the rise in poverty. Other negative manifestations are reflected in the increase in unemployment in undeveloped areas, social stratification and increased vulnerability to material and general security, especially vulnerable groups (children, frail and elderly people, people with disabilities, etc.).

Serbia has the highest rate of poverty risk compared to the countries of the region, and every fourth inhabitant is at risk of poverty. Greater general inequality in Serbia than in EU Member States is mainly due to the modest volume of social protection and the lack of progressive income taxation.

In the 2008-2016 period, the poverty rate in Serbia increased from 6.1% to 7.3%, or about 25,000 more are poor. Apart from the region of Vojvodina, the poverty rate has increased in all other regions. Almost half a million inhabitants are unable to meet minimum existential needs. Although in absolute terms there is a slight decrease in the number of poor people, the trends are the primary

consequence of reducing the number of Serbian citizens, and the smaller part of reducing the incidence of poverty.

The international position from the point of view of consumption trends places Serbia as a country of relatively even distribution of consumption. The ratio of one-fifth of the richest and the poorest shows that the consumption of 20% of the richest is about four times higher than the consumption of 20% of the poorest. The regional aspect points out that the regions of Sumadija and Western Serbia stand out in a slightly even distribution compared to other regions. The depth and severity of poverty remained unchanged (1.2% and 0.4%).

Social transfers (without pensions) reduced the absolute poverty rate by 26.3% in 2016. If we were to exclude social transfers, 9.9% of the population would be poor (170 thousand people). The effects of social transfers (without pensions) on poverty reduction are the highest in Belgrade and the region of Vojvodina, and the smallest in the region of Southern and Eastern Serbia. The effects of involvement and pensions in social transfer are even more significant. It can be freely said that this is a third of the population whose consumption was not sufficient to cover the existential needs. Without supplementary consumption from own production of goods in 2016, the number of the poor would be almost 100 thousand more (8.7%). The total contribution of pensions and other social transfers to poverty reduction is greatest in the Belgrade region, and the smallest in the region of Southern and Eastern Serbia.

The poverty rate is twice higher outside urban centers. Regional analysis shows that residents in the region of Southern and Eastern Serbia are the poorest (Table 9). The

**Table 9: Transition growth of regional poverty**

Indicators	Serbia		Belgrade		Vojvodina		Sumadija and Western Serbia		Southern and Eastern Serbia	
	2008	2016	2008	2016	2008	2016	2008	2016	2008	2016
Poverty rate	6.1	7.3	2.9	4.0	6.8	6.3	4.0	6.6	11.0	13.0
The number of the poor (in 000)	467.3	492.3	48.4	62.7	138.9	110.7	86.5	126.5	193.6	192.4
Gini coefficient	26.05	26.13	26.17	27.85	27.16	26.19	23.18	24.58	25.50	25.00
S80/S20	3.80	3.89	3.74	4.20	3.92	3.98	3.53	3.59	3.79	3.75
The impact of social transfer	-20.8	-26.3	-19.4	-36.5	-20.0	-32.3	-28.6	-27.5	-17.7	-16.9
The impact of social transfers and pensions	-81.6	-78.8	-92.0	-89.0	-77.2	-81.0	-86.0	-79.6	-73.3	-64.8

Source: SORS RSO.

lowest poverty rate is in the Belgrade region, a positive trend is the approaching of the region of Vojvodina and Sumadija and Western Serbia. Gini coefficient recorded growth in Belgrade and in the region of Sumadija and Western Serbia, while the biggest trend of population growth was registered in Belgrade (the ratio S80/S20 rose from 3.74 to 4.20).

### Transition regions - winners and losers

Regional transition economic balance in the 2001-2016 period is: the net result (difference in profit and loss) is negative, amounting to -3.27 billion EUR. The bright positive points of business of the Serbian economy were in 2006 (1.26 billion EUR), 2007 (688 million EUR), 2011 (855 million EUR), 2015 (589 million EUR) and the most

positive one in 2016 (1.5 billion EUR). The largest losses were registered at the beginning of the transition (2001-2005), in the years of recession struggles (2009-2010, 2012-2013) and in the year of catastrophic floods in 2014 (-1.1 billion EUR).

Regional distribution is extremely uneven, regional extremes range from the positive net results of the South Backa District of 2.39 billion EUR, to negative in South Banat (-1.26 billion EUR), Danube (-1.17 billion EUR), Sumadija (-1.08 billion EUR) and the Bor District (-952 million EUR).

The largest economic losses were made in the pre-crisis transition period until 2008 (-2.47 billion EUR), but their regional structure is more balanced (Table 10), the largest losing districts were Sumadija (-757 million EUR) and the Bor District (-607 million EUR), while the largest winners were South Backa District (1.07 billion EUR) and Belgrade (858 million EUR).

In the post-secession 2009-2016 period, total economic losses were about 800 million EUR. The region's biggest losers were the Danube District (902 million EUR) and the South Banat District (880 million EUR), while the group of winners of the region included Zlatibor (350 million EUR), Pirot (399 million EUR) and the Srem District (243 million EUR). In that period, the Belgrade region registered a loss of 109 million EUR.

Regional transitional analysis by districts shows that the largest loss was made by the South Banat District in 2011, Bor in 2007, the Danube District in 2005, while the Sumadija District distributed the loss evenly by 2014. The biggest transitional winner is the economy of South Backa District, the only loss was made under the effect of a strong recessionary strike in 2009 (-227 million EUR).

### Conclusion

Serbia has lost three decades of economic growth and development, which confirms the economic legitimacy that it takes twice as much time to return the system to the previous equilibrium from the length of time the system was in recession. Regional transition in Serbia takes its toll on key development dimensions - demographic, spatial, economic, social, security and political.

**Table 10: Transition winners and losers 2001-2016 (in million EUR)**

Districts	2001-2008	2009-2016	2001-2016
South Backa	1,067	2,394	3,461
Belgrade	858	-109	749
Zlatibor	-38	350	312
Pirot	-35	299	265
Moravica	-11	156	145
Srem	-119	243	124
West Backa	75	-47	28
Kolubara	-90	79	-12
Toplica	-49	37	-13
Nisava	-111	-10	-121
Jablanica	-176	48	-127
Branicevo	-266	68	-198
Raska	-273	68	-205
Zajecar	-135	-73	-208
Central Banat	-172	-89	-261
North Backa	-137	-143	-280
Rasina	-96	-311	-407
North Banat	-163	-273	-436
Pcinja	-166	-272	-438
Pomoravlje	-263	-225	-488
Macva	-158	-533	-691
Bor	-607	-345	-952
Sumadija	-757	-325	-1,083
Danube	-271	-902	-1,173
South Banat	-380	-880	-1,259

Source: Author's calculations.

The starting points in the research on regional imbalances in Serbia are that it is a systemic multi-decennial problem that culminated in the process of transition and the global economic crisis, and that the state itself is responsible for its own regional development. The basic motives for the state's engagement in this area are enormous regional and interregional disparities that hinder development, initiate migration flows, leaving large and strategically important spaces uncovered by population, and their resources unused, while in the more developed centers there is excessive concentration of population and economy, which produces negative consequences in the economic, social, spatial and ecological sphere.

The regional model of development that was applied not only in Serbia, but also in all socialist countries in the last century was based on the industrialization model, on the policy of redistribution of funds to underdeveloped regions, in order to reduce regional disproportions and achieve the principle of balance. Of course, since there is just a small amount of balance left over in the past six decades in Serbia (as well as in all former republics), there were neither "revolutionary jumps", nor the reduction of regional differences, we can only talk about excessive (even theoretically) optimism.

Marginalization of the regional development of Serbia has continued in the transitional period, regional development is still not considered as an integral part of the overall socio-economic development, and the fact permanently avoided is that development has its own regional dimension, that is, that the creation and implementation of institutional development mechanisms are not regionally neutral.

The state was not aware of the regional consequences of the transition. Regional policy was in the second plan, the focus of state instruments was dominantly placed on the process of transferring of the economy of planning into a market-oriented economy, regional disproportions were developed and intensified spontaneously and very fast, the individual actions of the state were uncoordinated and selective, mainly initiated from particular political interests. State instruments were not in the function of depreciation of transitional consequences.

Systemic and structural regional imbalances in Serbia are deepened by the applied models of transformation of the social economy. The model functioned according to the principle of buying time with privatization revenues and FDI inflows, as unstructured export-oriented economy became indebted and increased the external debt. In such a situation, the global recession only poured oil on the fire. The global recession has shown two things: endogenous regional resources are primary factors which increase regional resilience [13, pp. 101-2], namely infrastructure, educational institutions, intellectual capital (human, structural and relational capital) [15, p. 350], entrepreneurial capacity and financial capacity [4], and the importance of institutionalization of regional specialization [6].

The unfinished process of transformation of the Serbian economy and the great transitional backlog have contributed to the increase of regional and social inequalities in Serbia, the trend of reducing regional cohesion is more pronounced, demographic devastation is becoming more and more rapid, and few development points in the area manage to keep the active population. Transitional cities seek a new identity, the economic transformation of the ownership structure has opened up new economic, social and institutional issues of the transformation of post-socialist cities and their role in regional development. The institutional framework of regional development is unfinished, statistical macro regions are dysfunctional, they are not in the function of systemic management of regional development, rational use of state resources, and optimal economic reallocation of resources.

Investigating regional imbalances in Serbia, a particularly emphasized conclusion is that regional imbalances increase macroeconomic vulnerability, that during the period of faster transitional reforms regional inequalities increase, as well as that recession waves have affected regional inequalities.

Moving the focus down from central to regional level shows a change in the paradigm of regional policy [21, p. 47]. In regional theory and practice, it is generally accepted that a higher efficiency of implementation of regional development policy and planning is ensured through hierarchically differentiated decision-making systems. This enables active involvement of regional, local



authorities, institutions and economic entities in the process of planning, coordination and implementation. Political will is decisive for the beginning of decentralization, and the process itself can decisively influence the transformation of a centralized institutional system. It is necessary to choose a combination of historical models and recent experiences and, above all, planned (development) regions that have never been fully established, which are further stimulated by a narrow local political initiative.

A centralized system gives rise to a lot of deformation. Institutional solutions based on centralized intervention are actually unsustainable in the long run. The natural characteristic of centralized systems is the concentration of both economic resources and the decision-making method for the reallocation of these resources. Centralized systems are reallocating resources at fewer regional points than decentralized systems based on private property. Centralization of decision-making also causes the centralization of knowledge and information, which are primary for making optimal decisions. This is the root of the inefficiency of centralized systems, since societies that want to be efficient locate decision-making processes where the knowledge is located.

Decentralization is not an end in itself, and it does not necessarily automatically lead to a reduction in regional disparities, but it represents a good institutional and governance framework in which, under the mentioned conditions, it is possible to pursue an effective regional development policy. Decentralized control of resources under certain social conditions, such as, for example, underdevelopment, impoverishment, deterioration of natural resources, etc., can also aggravate conflicts. Instruments for overcoming such a situation are related to the financial balance, decentralization of available capacities, horizontal coordination and participation [3, 13-7]. The process of devolution of power is usually taking place along with economic regionalization, but in terms of partnership and subsidiarity. The significance of the polycentric system is in the formation of a network management concept that would, on the one hand, prevent any centralization, and on the other hand, establish possibilities for harmonious regional development. The model of “shallow” and decentralized networks, the so-called satellite cities, within

the functionally and gravitational connected urban regions, which is based on the modern principles of networking of development generators, is more realistic for Serbia and more in line with the contemporary aspirations of socio-economic development.

The answer to the question whether the effects of the decentralization process are positive or not is ambiguous. Practice has shown that both centralized and decentralized systems can be both efficient and inefficient, depending on the historical, cultural and political context of the country, as well as on its ability to make use of its own advantages and minimize potential weaknesses. In a word, there is no “optimal model”, but a common key coordination and capacity issues that relate to the management of mutual relations between the levels of government.

Decentralization is not a one-time policy change, it is a process that seeks to increase the accountability and efficiency of local governments. In addition, in the process of institutional change, inertia and resistance can occur in those who have benefited from a previously centralized system, especially in terms of power, information and decision-making.

The key message of the paper is that a more balanced regional development in Serbia cannot be implemented without building an efficient institutional framework, consisting of institutions and instruments and various policies that ensure stability, continuity and harmonization in the development process. In addition, it is particularly highlighted the importance of affirming the integrative function of strategic regional development planning, the decentralization process and polycentric regional development. The process of alleviating regional differences is difficult, expensive and slow.

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# VALUE CHAIN UPGRADING IN TRANSITION ECONOMIES

## Napredovanje u lancima vrednosti u tranzicionim ekonomijama

### Abstract

The integration of small and medium-sized enterprises (hereinafter referred to as SMEs), operating in transition economies, into global division of labour is characterized by barriers that are not only caused by the size of those enterprises, but also by the fact that these are the companies with limited experience in the internationalization of business operations. The barriers that SMEs can be exposed to while entering international markets can be overcome when the governments choose the most effective strategy for improving the competitiveness of their SMEs. The most common strategies for improving the competitiveness of SMEs in transition economies are: subcontracting, integration in value chains, market niche development, and networking. The paper estimates the conditions and the possibility of applying strategies of integrating SMEs in Serbia into global value chain, as well as the ability and propulsiveness of SMEs to enhance their role in value chain of fruit and vegetables. The methodology for assessing the readiness of SMEs for their integration into value chain of fruit and vegetable processing has been developed to assess the readiness of the selected SMEs for their integration and promotion in the fruit and vegetable processing chain. Upgrading in value chains depends on the willingness of companies, but also on the willingness of the governments of transition economies to reduce the costs of knowledge, kinetic and transaction costs that SMEs in transition economies are exposed to while trying to integrate into value chains. To upgrade in value chains, the innovation of the process is an essential feature.

**Keywords:** *competitiveness, small and medium enterprises, value chains, VCRA methodology, management, innovation.*

### Sažetak

Uključivanje malih i srednjih preduzeća (u daljem tekstu: „MSP“) koja posluju u tranzicionim zemljama u globalnu podelu rada odlikuje se barijerama koje nisu prouzrokovane samo veličinom tih preduzeća, već i činjenicom da je reč o preduzećima koja su imala limitirano iskustvo u internacionalizaciji poslovanja. Barijere kojima MSP mogu biti izložena u nameri da pristupe međunarodnim tržištima mogu biti savladane zahvaljujući sposobnosti vlada da odaberu najfunkcionalniju strategiju za unapređenje konkurentnosti MSP. Najčešće strategije za unapređenje konkurentnosti MSP u tranzicionim zemljama su: podugovaranje, uključivanje u lance vrednosti, razvoj tržišnih niša i umrežavanje. U ovom radu testiraju se uslovi i mogućnost primene strategije uključivanja MSP u Srbiji u globalne lance vrednosti kao i sposobnost i propulzivnost MSP za napredovanje u lancu vrednosti voća i povrća. Razvijena je metodologija procene spremnosti MSP za uključivanje u lance vrednosti prerade voća i povrća, sa ciljem da se oceni spremnost izabranih MSP za uključivanje i napredovanje u lancu prerade voća i povrća. Napredovanje u lancima vrednosti zavisi od spremnosti preduzeća, ali i od spremnosti vlada tranzicionih zemalja da snize troškove znanja, kinetičke, kao i transakcione troškove kojima su MSP u tranzicionim ekonomijama izložena u nastojanju da se uključe u lance vrednosti. Za napredovanje u lancu vrednosti, inovativnost procesa predstavlja esencijalni činilac.

**Ključne reči:** *konkurentnost, mala i srednja preduzeća, lanci vrednosti, VCRA metodologija, menadžment, inovativnost.*

## Introduction

Globalization encourages SMEs to internationalize their business operations [2, p. 11]. In addition to integrating in value chains, companies can internationalize their business by exporting, licensing, joint ventures and generating other forms of strategic alliances, acquisitions and direct foreign investments.

Up to now, the literature has focused primarily on internationalization of business operations of large enterprises, while no attention has been paid to the internationalization of SMEs' business operations.

The strategies for increasing the competitiveness of SMEs in transition economies depend on the type of barriers that these companies encounter while trying to internationalize their business operations. Apart from the strategies such as subcontracting, networking and market niche development, the integration of SMEs in value chains is another strategy for increasing the competitiveness of enterprises in transition economies [20, p. 111]. The integration of transition economies' SMEs into value chains is the strategy used when the environment for decreasing strategic costs has already been created, but there is still a need to create the conditions for decreasing the costs of knowledge, kinetic and transaction costs. The readiness of the enterprises to engage in value chains greatly influences the efficiency of their upgrading in value chains.

The subject of the research paper is the readiness of SMEs in Serbia to produce and process fruit and vegetables as low and medium technologically intensive industries and integrate into export-oriented value chains. The aim of the analysis is to identify general and specific factors that influence the success of integrating into value chains, striving to enhance the competitiveness of SMEs. The aim of the research is to examine the readiness of SMEs in Serbia to integrate in fruit and vegetable production and processing sector, but also to upgrade their role in export-oriented fruit and vegetable processing chains.

In the paper, we are going to test the credibility of the assumption that SMEs in Serbia are not exposed to strategic costs, and that, therefore, it is necessary to reduce the costs of knowledge, kinetic and transaction costs. The confirmation of the credibility of these assumptions would

confirm the importance of integrating into value chains in order to increase the competitiveness of SMEs in Serbia.

First, we are going to present the literature on the strategies of internationalization of SMEs' business operations. Afterwards, we are going to discuss the most important strategies for internationalization of business operations of transition economies' SMEs, the importance of integrating SMEs into export value chains, and the ways of value chain management. In the empirical part of the paper, we are first going to introduce the methodology of researching the readiness of SMEs in Serbia for integrating in export value chains of fruit and vegetable processing, and finally present and discuss the results of the research.

## Literature review

SMEs can internationalize their business operations in direct and indirect ways. Empirical research studies suggest that exports and foreign direct investment are the forms of business internationalization that are mainly used by large companies. SMEs mostly internationalize their business indirectly through integrating in value chains [1, p. 12]. In order to internationalize their businesses, SMEs encounter more barriers than large enterprises. These barriers encourage economic policy makers to focus on finding the ways to reduce the costs that SMEs are exposed to during the process of overcoming the barriers [6, p. 20].

The largest number of studies elaborates the internationalization of SMEs in developed, industrialized countries, while the studies for developing countries are rather rare, with little empirical data and findings on the internationalization of SMEs [12, p. 2]. There are data indicating the link between the internationalization of SMEs and the employment rate, as well as the socio-economic development of the countries whose SMEs have been internationalized, thus encouraging the governments in transition economies to focus their policies on supporting the internationalization of SMEs [39, p. 52].

In the literature, there are several theories and models of company internationalization: stage models, network perspective, born-global or international new venture (INV), resource-based view (RBV), and eclectic paradigm. Although these theories, each from their



own perspective, contribute to the understanding of the phenomenon of enterprise internationalization [36, p. 479], there is still no universally accepted theory of internationalization, holistic and sufficiently developed to serve as a conceptual framework for the study of the phenomenon of internationalization of SMEs in transition economies [47, p. 47].

Since none of these models alone can fully explain the internationalization of SMEs, for the purpose of the paper, a conceptual framework has been created that integrates the elements of Uppsala, network and resource models. The remaining two models of internationalization, such as eclectic paradigm and international product life cycle (IPLC), have not been considered, because they are the models that are more suitable for later stages of internationalization of SMEs in transition economies.

Uppsala model has been used, as one on which our conceptual framework of research was created, since it places considerable importance on the management of companies in the process of internalization of their business. According to the Uppsala model, during the learning process, managers collect the information on foreign markets, the opportunities offered by these markets, and develop tacit knowledge, i.e., specific type of knowledge that is necessary for operating in foreign markets [30, p. 11].

According to the network model, the internationalization of companies depends on the position of companies in networks and the ability of companies to use their position in the networks for obtaining resources [31, p. 295]. By developing the relationships within certain networks, companies can cooperate with other companies to provide the resources they do not have, thus creating the preconditions for internationalization of their business operations [9, p. 90]. According to this approach, the process of internationalization is explained by the company's position in international networks [31, p. 111]. Resource theory highlights the impact of internal company resources on creating competitive advantage in the process of internationalization [4, p. 102], [41, p. 77].

Empirical research studies on internationalization of business mainly point to the barriers during the internationalization of SMEs' business operations. Few

authors and research studies explore the advantages that SMEs have in the process of internationalization compared to large enterprises, and there are fewer studies that compare these advantages through possible forms of internationalization. Therefore, research studies on small enterprises conducted in the United Kingdom point out the fact that the lack of resources is one of the main reasons why these companies do not export [49, p. 53]. The authors such as Smallbone and Wyr [42, p. 410] indicate that the quality of small business management is one of the main barriers to the internationalization of their business operations.

Gallo, Arino, Manez and Cappuyns believe that companies that want to internationalize their business should have "a strong management" [17, p. 3]. The same group of authors mentioned that the strengthening of small enterprise management is an essential factor in the internationalization, especially the one that is performed through strategic linking. Flamholtz emphasises that the transformation of the entrepreneurial management style into professional management is crucial for the successful growth of companies [16, p. 427].

Motives, forms and methods of internationalization of SMEs and large companies are very different. Therefore, there is a growing need for understanding the strategies of SMEs competitiveness [34, p. 480]. The importance of the issue is particularly significant in transition economies.

### **Internationalization strategies for SMEs in transition economies**

In order to help transition economy SMEs to internationalize their business operations, the economic policies of transition economies should focus on reducing the type of costs these companies are exposed to in the process of gaining competitive advantage in foreign markets [20, p. 110].

The costs that enterprises in transition economies encounter while internationalizing their business operations can be divided into four categories. These are: strategic costs, the costs of knowledge, kinetic and transaction costs. These types of costs are related to the challenges that transition economy SMEs face when choosing some of the possible strategies for internationalizing their business.

Strategic costs are the costs of gaining managerial skills and knowledge, as well as the costs of acquiring entrepreneurial skills and developing capacities to identify the opportunities offered by foreign markets. The strategic costs include both the costs of high business risk and high financial risk. These types of costs, except for the costs due to high business and financial risks, are the costs that SMEs have to bear in order to acquire the knowledge that was not available to them at the time of a planned economy, especially the knowledge of foreign markets, entrepreneurial and managerial skills.

The costs of knowledge are the costs of analyzing and researching foreign markets, the costs of customizing products and services to more sophisticated demand of foreign customers, the costs related to gaining experience while operating in foreign markets, the costs of acquiring knowledge about educational and research policies, etc.

Kinetic costs are “costs of movement”, that is, the costs of entering foreign markets and refer to travel expenses, the costs of building distribution and sales networks in foreign markets, the costs of acquiring knowledge about national politics and competitiveness.

Transaction costs are the costs of negotiating transactions and securing transaction execution according to specified terms, such as the costs of lawyer services, translation services, the costs of intellectual property rights, the costs of regulations, etc.

The level of development of a country defines the nature of its competitive advantage, and the nature of the competitive advantage defines the forms of internationalization of the companies operating in that country. As for the competitive advantage of Serbia, Serbia ranks 133<sup>rd</sup> in the World Economic Forum (WEF) out of 137 countries, which indicates that Serbia is a country where its low cost of labour is its competitive advantage

as well as natural resource abundance [40, p. 257]. The nature of Serbia’s competitive advantage highlights the importance of integrating its SMEs into a value chain, as one of the possible forms of internationalization of business apart from other forms, such as foreign direct investment or exports.

Integration in export-oriented value chains is one of the strategies based on companies’ willingness to reduce the costs of knowledge, kinetic and transaction costs, and thus contribute to increasing the competitiveness of the companies. Additionally, the increase in the competitiveness of SMEs integrated into value chains contributes to their flexibility and provides considerable benefits that the companies obtain from the specialization. Flexibility implies the ability of making prompt business decisions compared to large companies that mostly manage value chains [33, p. 41].

In addition to the abovementioned advantages, integration into value chains encourages SMEs to enhance their role in value chains, moving from the phases of low value-added production to higher value-added phases.

SMEs integrated in the finalization of products in value chains have more chances to succeed compared to SMEs that are integrated in value chains only as raw material suppliers. Improving the position of SMEs in value chains depends on the amount of investment in improving their position. Moreover, the position of SMEs in value chains depends on the readiness of corporate management to innovate [24, p. 20].

Other internationalization strategies for SMEs in transition economies differ from the strategy of integrating into value chains. Subcontracting strategy was used in transition economies of Eastern Europe in the clothing production sector. This strategy was based on low labour costs in the sector characterized by intense labour, without

**Table 1: Overview of the importance of different strategies for reducing the costs faced by SMEs in transition economies in order to internationalize their business operations**

Types of costs /Strategies of competitiveness	Strategic costs	The costs of knowledge	Kinetic costs	Transaction costs
Subcontracting		✓	✓	✓
Integrating in value chains		✓	✓	✓
Focusing on market niches	✓	✓		
Networking	✓	✓	✓	✓

the intention of changing the technological intensity of the clothing production sector at a certain point.

Focusing on market niches for transition economy SMEs is possible only if a number of conditions are met, such as: appropriate technology, flexible management, organizational and market capacity, quality control, sales services, affirmative brand, the network of relationships with customers and suppliers, etc. As presented in Table 1, SMEs opt for this strategy when their governments support the reduction of strategic costs.

On the other hand, transition economies' SMEs choose networking strategy when the owners and managers of SMEs possess managerial and entrepreneurial skills, i.e., when the environment is suitable enough for developing these skills. Networking is especially important in transition economies, whose production markets do not operate properly, their institutions are weak and the SMEs need to overcome a number of institutional barriers while aiming to make progress [35, p. 162].

### **Integration in value chains as a SMEs' internationalization strategy**

According to the World Bank's classification, Serbia ranks as an upper middle-income country. The paper presents a type of value chain that can be developed under the conditions characteristic of upper middle-income countries such as Serbia. A conceptual and methodological framework analysis was presented for such a value chain. Value chain readiness assessment (hereinafter referred to as VCRA) methodology was created and the results of the application of VCRA methodology were analyzed as well [11, p. 2]. For the countries that are in the middle or upper middle-income range, the suppliers are poorly organized, and lead to the so-called "captive value chains". In addition to captive value chains, value chains can be relational or modular. This type of value chain is characterized by a broad supplier base with well-developed, specific and unique competencies.

Most companies from Serbia, as well as fruit and vegetable processing companies, can be involved in value chains at the stages in which less value added is created, and not in the stages in which products are finalized and

the added value is high. The nature of the value chain in which SMEs from the fruit and vegetable processing sector in Serbia can be involved is a captive value chain, as it is characterized by a significant imbalance of power between the leading companies in that value chain and companies participating in it as raw material suppliers or suppliers. In addition, value chains in food processing companies are "buyer-driven".

The threat for SMEs involved in captive value chains is that, in the long run, they can lose competitiveness and, consequently, the ability to operate independently, and thus become "captive" in such value chains [24, p. 19]. To avoid the danger of becoming "captive" in such value chains, SMEs have to be innovative, so that their long-term competitiveness would not erode, especially with the emergence of new competitors offering products or services at more favourable prices [24, p. 20].

It is essential to understand value chain management: how companies in transition economies can enter a foreign market, the benefits of entering foreign markets, the risks and costs of not entering foreign markets, the ways of increasing profits from participating in global value chains, etc.

There are several strategies to improve the position of SMEs in the value chain. These are: process improvement, product development, enhancement of functions and a value chain change [19, p. 13]. The improvement largely depends on the type of value chain management [25, p. 1010]. Captive value chains often enable rapid improvement, but they can inhibit functional improvement, which can make it difficult to develop cooperation in the value chain. The value chains in which the relationship between the participants is more balanced offer better conditions for improvement [37, p. 177].

Value chain enhancement is usually accomplished through several stages, starting with process improvement, followed by product development, function improvement, and, finally, a value chain is ready to be changed. Therefore, for example, a company can begin its cooperation in the value chain by participating in the assembly of equipment, which is a low value added stage, then it can independently produce that equipment, which increases the value added, and, finally, the company can participate in the activities

that have a higher value added, for example, designing, branding, etc. [33, p. 43]

By improving the competences of the supplier base, the architecture of global value chain management varies greatly from those with hierarchical ones to relational and market management. [18, p. 96]. The dynamics in global value chains is determined by the modes and dynamics of the variation of variables that present their constituent elements, such as communication costs, the complexity of information exchanged between the participants in the value chain, the change of participants in the value chains, the change in codification costs, and an adequate supplier base. The change of the architecture of value chain management from hierarchical, captive to the relative type is based on lowering the power asymmetry between the leading firms and suppliers and reducing the degree of explicit control of suppliers by leading firms. Thus, the decrease of the complexity of information between the participants in the value chain (leading firms and suppliers) affects the ability of leading companies to codify transactions, information and knowledge, and also the ability of the supplier base to respond to the demands of leading companies. Simultaneously, suppliers can obtain more resources for innovation, and the conditions for the architecture of relative value chains are created with less power asymmetry. Due to new technologies, which always put the leading companies in the situation of “restarting the clock”, when it comes to codifying transactions, it is clear that leading companies in the value chains will always place new demands on existing suppliers, and that only those suppliers that are not only responsive to the demands, but also innovative, will bring about the change in value chain management architecture. This type of change in value chain architecture results in the change of power relations in the value chains, that is, there is less explicit control, and less evident power asymmetry between leading companies and suppliers.

## Methodology

The VCRA methodology was created in order to assess the readiness of SMEs in fruit and vegetable processing sector to be included in the export-oriented value chains

of processing fruit and vegetables. An integral part of the methodology gives an explanation of the conceptual framework, the checklist with the accompanying explanations – the explanation of each claim and the way the company’s area affects the readiness of the company to integrate into value chains, explaining the purpose and method of applying the scale for measuring attitudes as well as the explanation of filling in the checklist.

The checklist consists of 92 claims, classified into seven areas that the authors considered essential for assessing the readiness of SMEs to engage into value chains and assess their potential position in the value chain. These are the following areas: i) Management, ii) Innovation, iii) Financing, iv) Relations with suppliers, v) Product features, vi) Standardization and vii) Customer relations. The structure of the checklist for individual areas is displayed in Figure 1. On the Likert scale, the level of agreement or disagreement of respondents (owners and/or managers of the selected SMEs) with the stated claims was measured in order to determine not only the cognitive but also the action component of their attitudes regarding various aspects of the activities from the seven areas mentioned above.

The checklist structure corresponds to the conceptual and theoretical framework that is applicable to the socio-economic level of development of Serbia, the competitive position of the observed fruit and vegetable processing sector, as well as the value chain that is inherent to the level of economic development of Serbia.

The opening part of the checklist consists of questions relating to demographic data such as the area in which the company is located, the size of the company, the legal form, the period of establishment and length of business operation, including the questions concerning the professional development of the manager or the owner of the company, as well as the gender of respondents.

Since there is an information gap regarding relevant information on the assessment of the business environment in which the observed SMEs operate, the methodology covers the assessment of the quality of the environment through the issues that are directed at assessing the level of satisfaction of the respondents regarding the cooperation with the companies that produce similar types of products, the



ability to jointly launch the products with other companies, the quality of information infrastructure, the readiness of accredited laboratories to issue certificates in foreign languages, the quality of physical infrastructure in the environment (quality of roads, etc.), the conditions that the state creates for wastewater treatment, quality, dynamics and the price of electricity delivery and, ultimately, the quality of business infrastructure (faculties, institutes, laboratories, etc.).

The methodology was developed and tested while working with focus groups made up of the representatives of the largest exporters of fruit and vegetables in Serbia [28, p. 3].

Geographical distribution of the selected companies is shown in Figure 2. The statistical survey had two phases: statistical observation and statistical analysis. Statistical observation consisted of collecting data by interviewing these SMEs, grouping data, and drawing up tabular and graphical representation of data. Statistical analysis included the processing of the collected data. The basic indicators of descriptive statistics were calculated: average value ( $\bar{x}$ ), extreme values (minimum and maximum), standard deviation ( $\sigma$ ) and coefficient of variation ( $V$ ) [45, p. 55].

In the preparatory phase, 67 companies were surveyed for the testing of the checklist, which was 84% of the sample planned for the first phase of the survey. The first phase of the survey was conducted in the first half of May 2018, while the second phase of the survey was conducted by the end of September 2018. The number of companies in the sample, the number of analyzed companies and the response rate according to the phases are displayed in Table 2.

The data processing has been conducted based on the data analysis from the reports from 59 enterprises, which is considered statistically significant for the conclusions. The structure of the checklist (Figure 1) as well as the number and structure of the questions in individual areas are adapted to the specific features of the (“buyer-driven”) value chain in which the surveyed SMEs aim to get integrated, as indicated by a high share of questions (48%) related to process management, that is, the standards set by leading exporters in the value chain. The evident power asymmetry in the captive value chains does not exclude the possibility of increase; therefore, the challenge was to notice through the management function analysis how the surveyed SMEs perceive these possibilities.

**Table 2: Number of companies in the sample, surveyed companies and responsiveness**

	The number of selected companies	Analyzed companies in the survey	%
The first stage of the survey	80	67	84
The second stage of the survey	240	82	34

**Figure 1: Checklist structure, participation percentage of seven assessed areas**

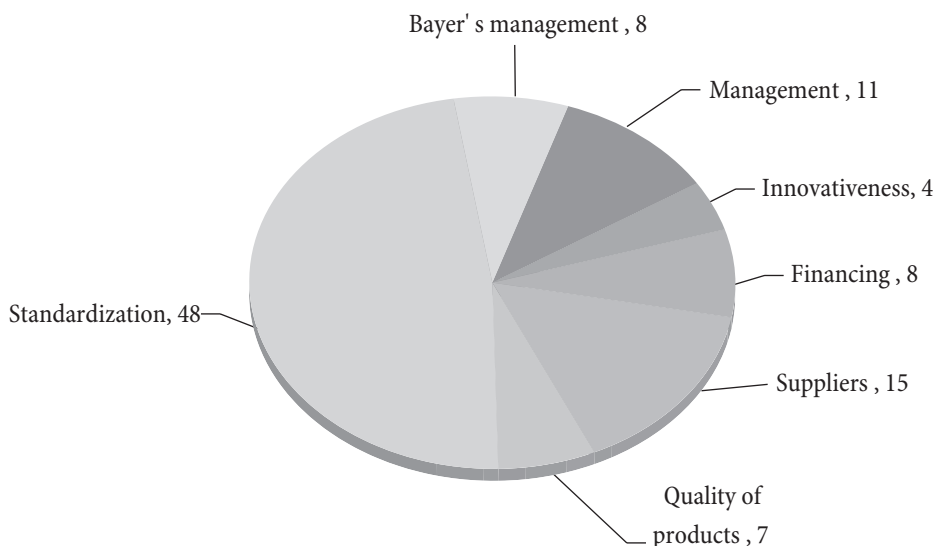


Figure 2: Geographical distribution of the companies from the sample

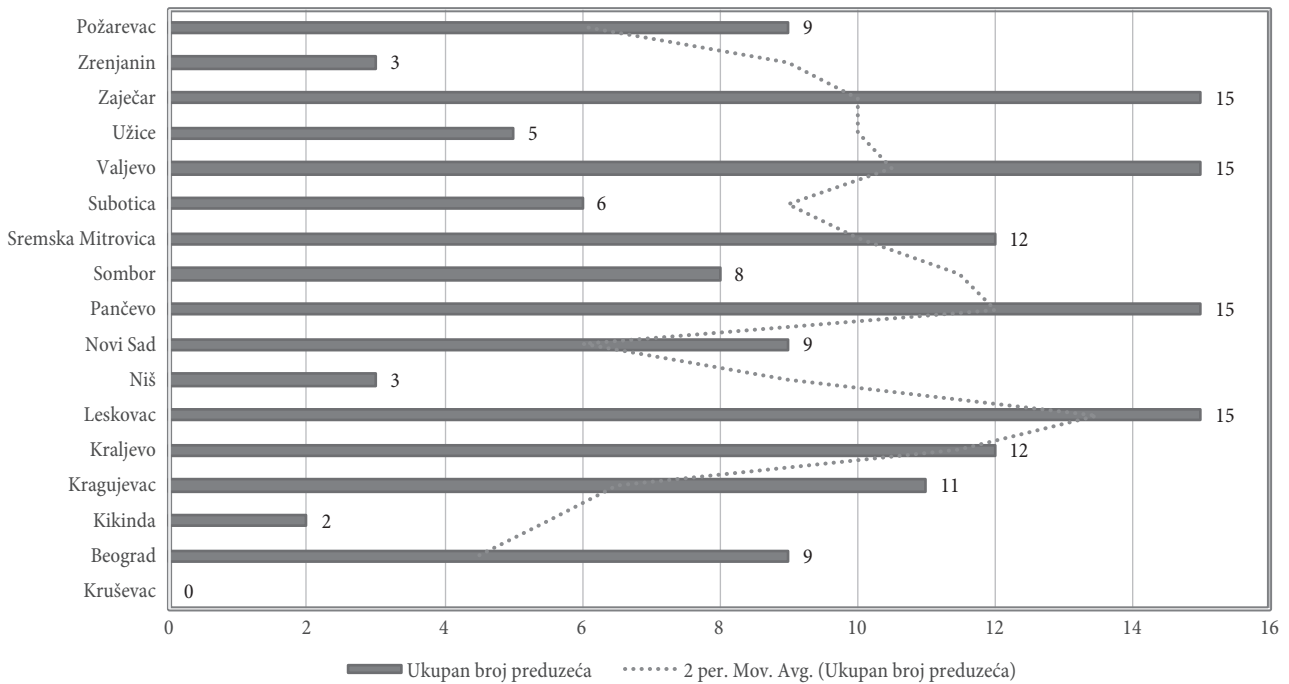
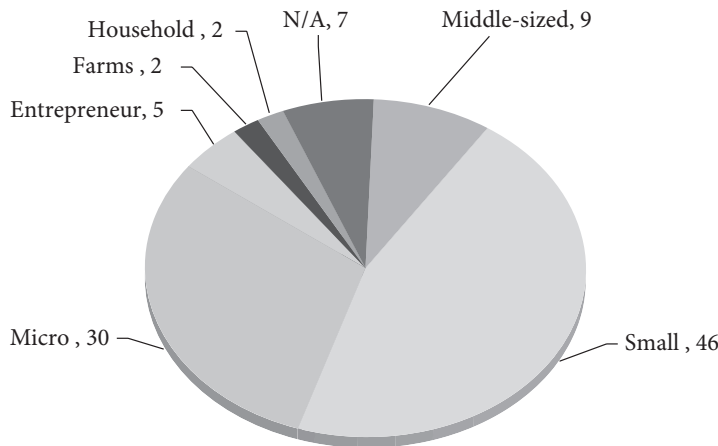


Figure 3: Structure of the sample according to the size of the enterprises



As for the size, the biggest percentage accounts for small enterprises (45%), followed by micro enterprises (30%), while other enterprises are less than 10%. Figure 3 shows the structure of the sample according to the size of the enterprises.

### Results and discussion

The assessment of competencies of the selected SME group in the seven areas indicated their readiness in each area regarding the integration into export-oriented value chains of fruit and vegetable processing. Deviations in relation to the maximum possible number of points in each of these

areas indicate the extent to which intervention is needed to improve their readiness.

Simultaneously, deviation of the achieved number of points from the maximum possible number of points represents the percentage of risk that a company faces when entering value chains. Based on the relationship between the achieved and the maximum possible number of points in each group, or on the basis of the percentage of the achieved score, all analyzed SMEs are classified into four groups. The first group consists of the companies operating in the high-risk zone, the second group of the ones operating in a moderately high-risk zone, the third group includes companies from moderately low-risk

zone, and the fourth group consists of the companies from a low-risk zone. The percentages of the achieved score (risk interval) were determined during the work with focus groups [11, p. 4]. Table 3 gives an overview of the percentage of achieved score by risk groups. The assessment of the activities within each of the analyzed areas was conducted in the same way. In the paper, the focus is on management activities.

We decided to consider the activities in the field of management, since this is the area that has been assessed as belonging to a moderately high-risk zone. Figure 4 shows the results of the assessment of individual areas of SMEs, where it can be seen that the area of management belongs to a moderately high-risk zone. Therefore, if the SME group wants to get integrated into value chains, there should be further development of their ability to improve the management function. In the long run, the lack of planning, the unwillingness to delegate authority and responsibility, the lack of knowledge to formalize and standardize processes will keep the SME group in the forms of resource and labour intensive competitiveness,

which, consequently, can only result in captive value chain, with great power asymmetry and low potential for SMEs to move towards higher stages of finalization. The lack of planning is directly related to SMEs' inability to realize the full potential of their growth regarding their revenue, employment rate, as well as the rate of sales growth and survival rate [27, p. 460].

The readiness of SMEs to integrate into value chains in the area of management was assessed according to the answers to 10 questions. The maximum number of points per question was 5, so the maximum total number of points that a management could get was 50.

Managers' activities in the high-risk zone were identified based on the SMEs' answers to the following questions:

- 1) Do you have normative acts for managing protection against natural disasters?
- 2) Do you have a normative act for financial risk management?
- 3) Do you have a media and marketing plan?

**Table 3: Risk interval**

Groups of companies	Achieved score
Companies that do business in high-risk zone	from 0 to 54%
Companies that do business in moderately high-risk zone	from 55% to 64%
Companies that do business in moderately low-risk zone	from 65% to 84%
Companies that do business in low-risk zone	from 85% to 100%

**Figure 4: Results of the assessment of individual areas of SMEs**

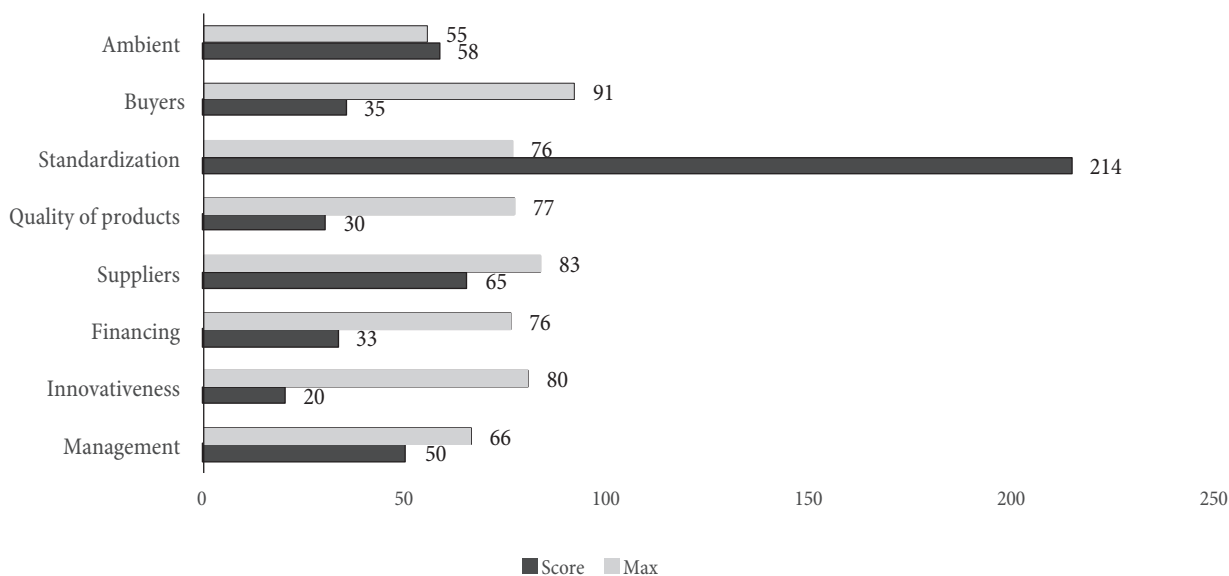
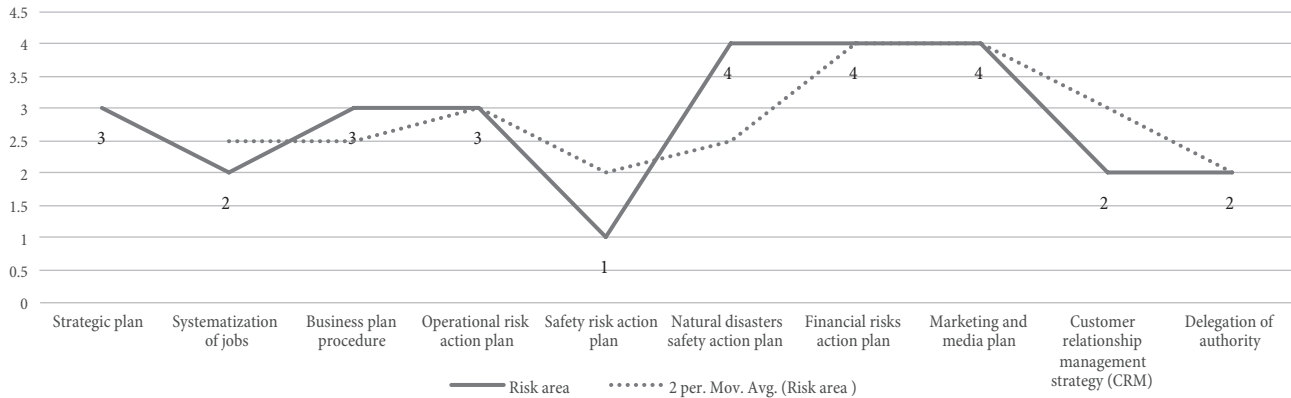


Figure 5: Management activities by risk zones



The activities in moderately high-risk zone were identified on the basis of the answers to the following questions:

- 4) Do you have a written development plan?
- 5) Do you have the procedures and deadlines for developing business plans?
- 6) Do you have normative acts for operational risk management?

The activities in the low-risk zone were determined based on the following questions:

- 7) Do you have job systematization?
- 8) Do you have a customer relationship plan?
- 9) Do you delegate authority to your associates?

The managerial activity in the low-risk zone was based on the answer to the following question:

- 10) Do you have normative acts on occupational safety management?

It was found out that most of the analyzed SMEs in the field of fruit and vegetable production and processing have normative acts on occupational safety management, so that no improvement is needed in this area to increase the ability of SMEs to integrate and upgrade within export-oriented production value chains in processing of fruit and vegetables.

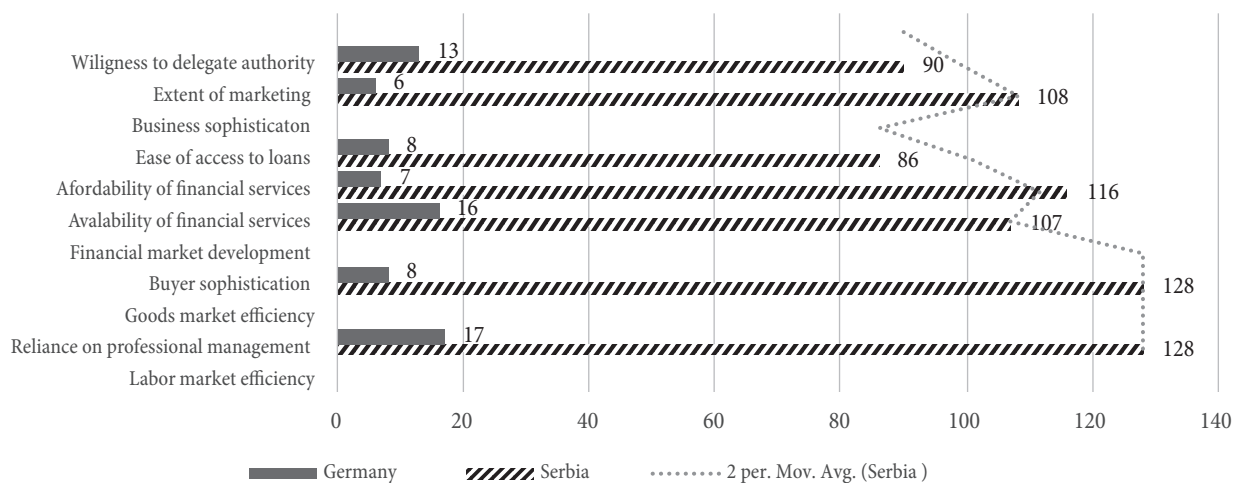
The activities in a moderately low-risk zone are: planning customer relationships, readiness to delegate authority to associates and the existence of job systematization in the company.

The evident power asymmetry in the value chains of fruit and vegetable processing indicates the dominant status of leading firms that set ad hoc conditions on their suppliers, which reinforces the need to control the fulfilment of these conditions.

The reluctance to delegate authority to associates implies that owners or managers have to control management functions. The lack of willingness to delegate authority to associates is an obstacle to the growth of a company and it has been present in Serbia for a long time. According to Hofstede’s findings, Serbia is classified as a group of countries with a high distance of power [23, p. 501], which implies that organizations in Serbia tend to have highly centralized hierarchical forms. The concentration of power, or decision-making from a single centre, is one of obstacles to corporate growth [26, p. 274]. When it comes to willingness to delegate authority, this dimension, according to WEF findings, indicates the sophistication of the business environment. The more sophisticated corporate environment is, the more receptive the state is regarding the stimulation of the development of innovation-driven competitiveness. If Serbia’s readiness to create the conditions for the development of the model of innovation-driven competitiveness is assessed, then its ranking in the indicators of business sophistication have to be assessed. One of these indicators is the willingness to delegate authority, and according to the findings of the Global Competitiveness Report for 2017-2018, Serbia ranks 90<sup>th</sup> out of 137 countries [40, p. 257]. Another perspective, when it comes to SMEs’ growth opportunities in the field of fruit and vegetable production and processing, is the nature of the fruit and vegetable value chain. There is evident power asymmetry in favour of leading firms, the lack of “ethical leadership” when it comes to the value chain management, and, in particular, ad hoc attitude towards suppliers when it comes to prices, standards, quantities, delivery terms, etc.



**Figure 6: Comparative overview of the ranking of Serbia and Germany based on the indicators from the Global Competitiveness Report regarding management function**



Source: The Global Competitiveness Report 2017-2018.

In the moderately high-risk zone in the management of the analyzed SME group, there are activities regarding planning (manifested by the existence of written development plans), the setting up of processes and relationships (manifested by the existence of procedures and deadlines for business plan development), as well as the activities related to the ability to manage operational risks (manifested by the existence of normative acts for operational risk management). The level of development of these activities indicates that, within the analyzed SME group, there are enterprises that are in their initial phases, characterized by very few business policies, systems, procedures in the organization, etc. Organizations in their initial phases can function until the founder loses control of the organization. The companies at this stage have high rates of mortality, so the elimination of these characteristics contributes to the higher vitality of SMEs in this group [28, p. 14].

In captive value chains, power asymmetry in favour of the leading companies is evident in their intention to set standards that are not codified, as well as their expectations that suppliers and executors of all other complementary activities (designing, packaging, transport, etc.) operate according to the standards that are established ad hoc. Under such circumstances, the ability of suppliers to plan their business and formalize their processes is very limited. In the network-based value chain management (which is characteristic of modular or relational value

chains), the relationships between buyers and suppliers are characterized by the exchange of knowledge and standards that are codified. The fact is that this kind of relationship can allow suppliers to plan their activities, as well as to formalize processes within their companies.

In the high-risk zone in the areas of management of the analyzed SME group, there are activities related to natural disaster management (lack of written procedures related to this type of risk), willingness to manage financial risks (lack of normative acts related to financial risk management), as well as willingness to communicate with the environment based on the media and marketing plan. The lack of normative acts for financial risk management indicates the short-term orientation of the analyzed SMEs and the maintenance of liquidity, while neglecting other objectives of financial management. In a large number of cases, in value chains that are modular, leading firms choose to finance a large number of activities transferred to their suppliers. When the supplier base is poorly organized, and when the goal is to connect suppliers much better and technically upgrade them to get them integrated in value chains, technical assistance can be of great importance.

The results of our analysis are confirmed and further explained by the results of The Global Competitiveness Report 2017-2018. According to the report, in terms of availability of financial services and the qualification of companies regarding financial services, Serbia has quite a low position. According to the readiness of companies

to apply for loans, Serbia ranks 116<sup>th</sup> out of 137 analyzed countries worldwide [40, p. 257]. The lack of willingness to apply for loans is also confirmed by our research, which can be explained by the lack of collaterals. In addition to the lack of collaterals, the low willingness of companies to decide to take loans is influenced by other factors, such as the development and quality of the financial market. The ease of access to loans is one of the indicators of the development of the financial market, and the development of the financial market of Serbia ranks 86<sup>th</sup> in relation to the 137 analyzed countries worldwide [40, p. 257].

The lack of willingness to communicate with the environment in the form of a planned media performance or marketing plan indicates that companies have not handled kinetic costs and the costs of knowledge. The fact is that, according to the findings of WEF for 2018 [40, p. 257], Serbia has a very low ranking when it comes to the development of marketing. According to the business sophistication and marketing development, as one of the dimensions that measures the marketing sophistication, Serbia is 108<sup>th</sup> in relation to 137 countries in the sample. How far Serbia is behind in this area can be seen from the comparative presentation of the rankings of Serbia and Germany, shown in Figure 6. The above findings lead to the conclusion that a more efficient involvement of the observed SME group into export value chains can be expected after improving efficiency of the commodity market, labour market, financial markets and sophistication of the business environment.

Value chain management is based on three key factors: reduction in transaction costs, the costs of codification of knowledge about processes and products, and the ability of the supplier base to respond to the requirements regarding the standards set by leading companies in the value chain. Transaction costs depend on the complexity of the information and are connected to knowledge transfer essential for the communication between the participants in the value chain. In the case of the export-oriented value chain of fruit and vegetable production and processing, the transaction costs include the costs of communication between the exporters in the field of fruit and vegetable processing in Serbia and the suppliers – the selected SMEs,

and these costs are high due to the ad hoc practice and informal establishing of standards.

The level of transaction costs is affected by the need to control directly each part of the supplier manufacturing process. The need for direct control of all parts of supplier manufacturing process is not necessary when the leading companies in the value chain are ready to codify standards, as well as to improve the communication with suppliers. The codification of standards and knowledge leads to lowering transaction costs.

The value chain management models differ in relation to the level of power asymmetry, as well as the level of explicit coordination between the participants. Thus, the relationship in the captive value chain is characterized by a high power asymmetry between suppliers and leading firms, as well as the relationships of explicit coordination, while relational value chains are based on a lower power asymmetry between the value chain participants.

Based on the aforementioned management features of captive value chains, such as the chain of production and processing of fruit and vegetables, it can be concluded that training the supplier base to become more receptive in terms of standards and quality of products and processes can be achieved by greater engagement of leading firms regarding the codification of knowledge on products and processes. If there is no effort to codify knowledge on processes and products, there is a “transactional dependence” between buyers and suppliers, with the tendency to keep suppliers “locked” and dependent on leading firms. The companies located in captive value chains can initiate the change of the position of power by planning innovation, especially in the situations where competitive firms can offer more favourable prices and conditions.

The lack of planning regarding the development of products and processes, financial planning, as well as the formalization and standardization of processes and relations in the analysed SME group, indicates the captive nature of fruit and vegetables value chains. In order to strengthen the receptivity of the supplier base to the requirements of the leading companies in the field of fruit and vegetable production and processing, it is necessary to reduce the level of transaction costs that the leading companies in this field have in relation

to the transfer of information and knowledge regarding the production and process specifications, as well as the costs of the codification of information and knowledge related to products and processes. The analysis of the management activities of the analyzed SMEs indicates that the companies are “externally guided” on an ad hoc and informal basis by leading customers. Innovation of the process, and above all innovation of management, depends on the willingness of companies to delegate authority and responsibility, to plan as well as formalize processes and relationships.

Regarding risk management process related to natural disasters, i.e., the management area that represents a high-risk zone for the analyzed SMEs, innovation in this area depends to a large extent on the capacity of the analyzed SMEs to cooperate with the environment, but also with the SMEs that produce the same or similar types of products.

All of the abovementioned shortcomings of the analyzed SMEs can be eliminated if there is willingness to cooperate. Cooperation leads to a phenomenon called “unintended consequences of proximity” [32, p. 41], and it is manifested as the influence on governments of countries to create the policies and measures aimed at improving the environment in which SMEs can operate smoothly. A large number of small companies can create a large volume demand for a certain type of physical or business infrastructure, thus encouraging the government to provide the necessary infrastructure.

## Conclusion

With the application of the VCRA methodology, the readiness of SMEs in Serbia to be integrated in export-oriented value chains of fruit and vegetable production and processing is estimated based on the assessment of 92 parameters in seven areas [11, p. 5].

According to the survey, in order to improve the competitiveness of the analyzed SMEs, i.e., captive value chain of fruit and vegetables production and processing, the transaction and codification costs should be lowered. The costs of communication between the leading companies in the value chain or the exporters in the field of fruit and vegetable processing and their suppliers, and the analyzed

SMEs, are high, ad hoc and include high costs of direct control of all parts of the production process. The costs of codification of standards and knowledge are high.

The improvement of the competitiveness of the analyzed SME group leads to the strengthening of the supplier base, which from a low capable base characteristic of captive value chain becomes a high capable one, thus creating the preconditions for the existing value chain to upgrade into a relational or modular value chain, characterized by a lower power asymmetry between the analyzed SMEs as suppliers and leading firms. To sum up, regarding the improvement of the competitiveness of the analyzed SMEs, their integration in the value chain and the state-level interventions in Serbia, the survey results suggest that at this moment it is very important to encourage innovation not only in high-technology sectors, but also in the sectors distinguished by low and medium technological intensity (fruit and vegetable processing sector). In addition, SMEs should be encouraged to prepare development plans, formalize processes, delegate authorities and responsibilities, and cooperate not only horizontally but also vertically with the leading companies that manage value chains. Such kind of cooperation would also have impact on the state’s willingness to provide the infrastructure that would reduce the level of strategic costs, and, ultimately, develop the strategy of integrating into value chains.

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## SUSTAINABILITY OF THE BIGGEST BUSINESS CONTROVERSIAL ENTERPRISES IN SERBIA

Održivost najvećih poslovno kontroverznih preduzeća u  
Srbiji

### Abstract

In the period after the outbreak of the global financial crisis, the number of loss-making companies has been increasing both in EU countries and in Serbia. Their losses were often so staggering that they exceeded their own equity resulting in a negative equity. From 2008 to 2016, the total losses exceeding the net capital of the Serbian economy continued to increase at an average annual rate of 20%. The peak was reached in 2016 (1,608 billion dinars), which was 4.3 times higher compared to the year of the outbreak of the global economic crisis. This paper analyzes the performance of the biggest companies in Serbia which were making losses exceeding the equity in the period from 2008 to 2017. In the literature these companies are also referred to as "business controversial enterprises" and "zombie" companies. The research was conducted on a sample of 31 loss-making companies whose losses accounted for almost one-fourth of the total losses exceeding the capital value of the Serbian economy. Consequently, the restructuring of business controversial enterprises is not only the matter of their existence, but also the matter of strategic importance for the entire Serbian economy.

**Keywords:** *business controversial enterprises, losses exceeding equity, financial structure, the biggest companies in Serbia.*

### Sažetak

U periodu nakon izbijanja globalne finansijske krize broj preduzeća koja su poslovala sa gubicima se povećavao kako na području zemalja EU tako i na području Srbije. Gubici su neretko toliki da nadmašuju nivo sopstvenog kapitala usled čega je neto vrednost kapitala ovih preduzeća negativna. U periodu od 2008. do 2016. godine ukupni gubici iznad nivoa kapitala privrede Srbije su se kontinuirano povećavali po prosečnoj godišnjoj stopi od 20%. Maksimalni nivo dostignut je 2016. godine (1.608 milijardi dinara) što je 4,3 puta više u odnosu na godinu izbijanja globalne ekonomske krize. Ovaj rad bavi se analizom performansi najvećih preduzeća u Srbiji koja su u periodu od 2008-2017. godine poslovala su gubicima iznad nivoa kapitala. Ova preduzeća se u literaturi mogu sresti pod nazivom „poslovno kontroverzna preduzeća“ i „zombi“ preduzeća. Istraživanje u ovom radu je sprovedeno na uzorku od 31 preduzeća čiji gubici iznad nivoa kapitala u posmatranom periodu dosežu gotovo ¼ ukupnih gubitaka iznad nivoa kapitala privrede Srbije. Posledično, restrukturiranje poslovno kontroverznih preduzeća nije samo pitanje njihove egzistencije već i pitanje od strateškog značaja za celokupnu privredu Srbije.

**Ključne reči:** *poslovno kontroverzna preduzeća, gubici iznad nivoa kapitala, struktura finansiranja, najveća preduzeća u Srbiji.*

## Introduction

The paper focuses on the biggest companies in Serbia according to their revenues which in the period from 2008 to 2017 operated at a loss exceeding the equity. The paper builds on research analysis of the financial structure in the biggest companies in Serbia [8], [9], focusing on one segment of these companies and extending the time horizon of the observation.

The initial criterion for defining the sample was the annual revenue above 5 billion dinars (EUR 44.2 million) in 2013, resulting in the total of 186 companies from the real sector. The original idea was to select the healthiest and the most vital segment of the domestic economy, although there were loss-making companies in the group whose losses occasionally exceeded the value of their own equity. During the financial analysis of the companies, a group of companies was identified whose performance primarily caused negative tendencies among the analyzed companies, and in the entire economy as well. These are companies that operated at losses exceeding the level of their own equity. From 2008 to 2017, 35 out of 186 companies made losses exceeding the equity at least for one year. As the losses can be caused due to extraordinary circumstances, an additional criterion was introduced: operating at losses which exceeded the equity for 2 years or more. The criterion was met by 31 companies from the group of the biggest companies in Serbia and they will be the subject of the analysis in the paper.

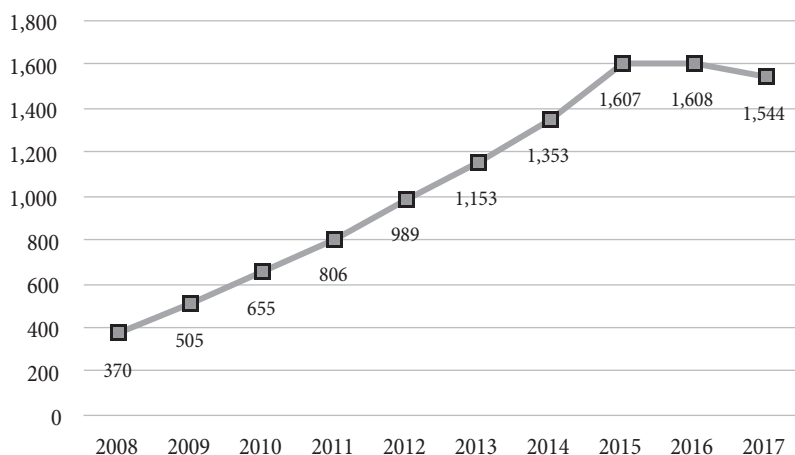
The necessity and importance of analyzing this group of companies is best illustrated by the trend of increasing the total losses above the level of the capital of the Serbian economy, which on average increased by 20% in the period from 2008 to 2016. The peak was reached in 2016 when it amounted to 1,608 billion dinars, 4.3 times higher than at the outbreak of the global economic crisis. The unfavorable trend was discontinued in 2017, since the total loss was decreased by 64 billion dinars (-4%) (Figure 1).

## Business controversial enterprises

Companies that operate at losses exceeding their equity are defined in the literature as “business controversial enterprises” [4] and “zombie” companies [7], companies in financial disturbances, etc. According to Đuričin [4, p. 122], business controversial enterprises are the companies that operate at a loss despite their profit potential. Operating at a loss results in: 1) decrease in reserves and the risk of bankruptcy increase (which affects the interests of creditors); 2) equity erosion (affecting the interests of the owner). However, there is a difference between loss-making companies and value-subtracting companies. Value-subtracting companies make losses even on the assumption that labor and capital are free (Figure 2).

The situation when losses exceed the equity is usually the result of a tactical crisis, that is, a profitability crisis in which companies experience negative financial results. Losses gradually reduce the level of the equity that the owners have invested in the company as well as the

Figure 1: Losses exceeding the equity value in the Serbian economy, 2008-2017 (in billion dinars)



Source: Author's illustration based on [13]

accumulation from previous years. On the other hand, the situation may be due to other financial processes such as: leveraged buyouts, significant currency depreciation, substantial adjustments to intangible assets (amortization of goodwill), etc. [12].

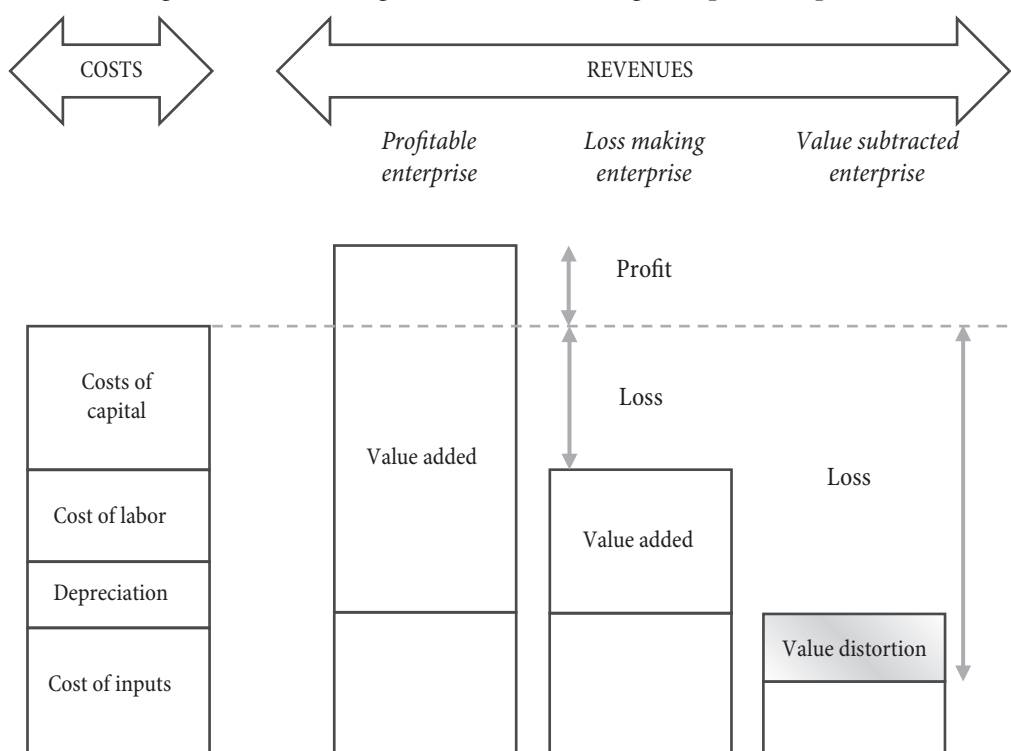
Business controversial enterprises are characterized by over-indebtedness, when liabilities exceed the value of the total assets of a company. In the event of liquidation of the company, the available assets would not be sufficient to cover the liabilities of the company, or the creditors' claims. To put it differently, the survival of these companies is financed by creditors. The controversy is reflected in the fact that such companies survive even though there are all formal (legal), and in some companies even essential (economic) conditions to undergo bankruptcy and/or liquidation. The legislator clearly defines the conditions under which bankruptcy and liquidation of a company can be initiated. Creditors have the legal right to initiate a bankruptcy proceeding before judicial authority in a timely manner, or significantly before the liabilities of the company exceed the value of its assets, which is the main feature of these companies. Therefore, the issue rightly arises as to whether the survival of the companies with a negative equity is justified.

In a negative transition, i.e., the transition from the phase of the economic cycle marked as "stability" to the recession phase, there is a contraction of economic activities. The company's response to the situation, especially the one with a high financial leverage, is by implementing a deleveraging, that is, the sale of non-profitable assets and the use of the so increased liquidity for servicing previous loans during revenue decline. The companies that in this way make financial adjustments in a particular business phase reduce the level of business activities concentrating on cash flows instead of investments, resulting in growing liquidity and the phase characterized by a "lack of development opportunities and excess capital". The aforementioned does not apply to business controversial enterprises with profit potential and poor financial health, which are "too big to fail".

### Basic features of the sampled companies

As already mentioned, the sample consists of 31 business controversial enterprises in Serbia. The largest number of the analyzed companies belongs to the processing and trade sectors that are equally present (32%). Sectoral membership of the analyzed business controversial enterprises is depicted

Figure 2: Loss-making and value-subtracting enterprises [5, p. 102]





in Figure 3. In terms of the legal form, the prevailing companies are limited liability companies (69%), followed by joint stock companies (24%) while public companies are least represented (7%). Perhaps at first glance, the low share of public companies in the group of business controversial enterprises is surprising, but this is a consequence of the basic criterion for creating the sample (companies with the highest revenue).<sup>1</sup> Consequently, the sample comprises primarily the vital segment of public companies. However, two public companies operating at a loss exceeding the equity represent the generators of the largest losses from the sample. Along with the public companies, there are eight other companies with full or majority state ownership among the business controversial enterprises.

1 Out of the 186 biggest companies in Serbia, there are 13 public enterprises, out of which only 2 companies operate at a loss exceeding the equity (JP Srbijagas and JP PEU Resavica).

The largest increase in the number of business controversial enterprises in the group of the biggest companies in Serbia occurred in the initial stage of the financial crisis (2008-2010), and gradually decreased and increased in the following years, reaching the peak in 2015-2016 (Figure 4). Whereas there was a fluctuation in the number of companies operating at a loss exceeding the equity, the total losses exceeding the equity of these companies were increasing progressively.

From the macroeconomic perspective, the importance of these companies is best illustrated by the data from the aggregate financial statements presented in Table 1 and Table 2. At the beginning of the analyzed period, these companies employed approximately 32,000 employees. However, the number of employees slightly fluctuated over the first few years, and after 2011 there was a significant decline. The downward trend in the number of employees resulted from the implementation of restructuring measures in several companies from the sample (Figure 5).

Figure 3: Sectoral membership of the biggest business controversial enterprises

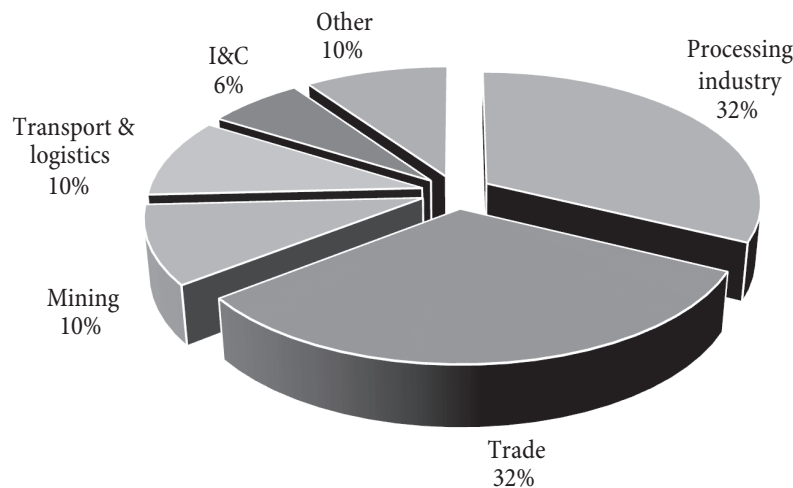


Figure 4: The number of business controversial enterprises in the group of the biggest companies

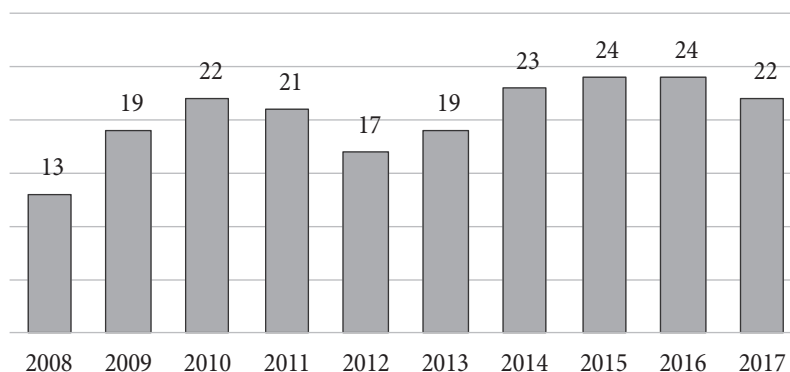


Figure 5: The number of employees

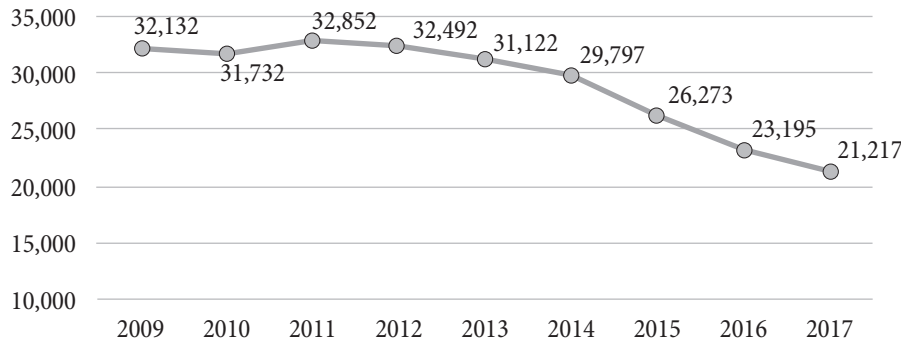


Table 1: Summary of the aggregate balance sheets of the analyzed companies

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Fixed assets</b>	<b>201.1</b>	<b>216.0</b>	<b>242.3</b>	<b>288.5</b>	<b>290.7</b>	<b>309.0</b>	<b>338.0</b>	<b>342.2</b>	<b>321.9</b>	<b>327.9</b>
Subscribed unpaid capital	1.4	0.1	0.5	0.2	0.1	0.1	0.1	-	-	-
Intangible assets	39.6	38.8	37.7	36.5	35.8	57.1	57.2	60.8	59.3	58.6
Property, plant and equipment	137.7	145.6	171.0	189.8	202.7	221.9	241.9	242.0	229.2	233.7
Long-term investments	22.4	31.5	33.1	62.1	52.1	29.9	38.8	39.4	33.4	35.6
<b>Deferred tax assets</b>	<b>0.1</b>	<b>0.3</b>	<b>0.1</b>	<b>0.3</b>	<b>0.6</b>	<b>1.2</b>	<b>0.7</b>	<b>0.9</b>	<b>0.8</b>	<b>1.1</b>
<b>Current assets</b>	<b>118.1</b>	<b>143.4</b>	<b>219.4</b>	<b>221.5</b>	<b>226.1</b>	<b>208.5</b>	<b>172.5</b>	<b>185.4</b>	<b>183.4</b>	<b>183.4</b>
Inventories	37.9	42.6	64.4	71.7	69.1	64.4	55.2	55.0	44.1	49.8
Account receivables	59.0	72.7	92.9	92.6	101.7	94.3	84.7	92.1	92.5	77.2
Short-term investments	8.1	12.6	35.8	36.2	23.8	16.3	10.0	9.6	14.6	15.1
Cash and cash equivalents	6.2	5.7	10.4	7.5	12.0	10.4	8.6	15.2	21.7	21.0
Value added tax and accruals	6.8	9.9	15.8	13.5	19.5	23.0	14.0	13.5	10.5	20.3
<b>Total assets</b>	<b>319.3</b>	<b>359.7</b>	<b>461.9</b>	<b>510.3</b>	<b>517.4</b>	<b>518.7</b>	<b>511.2</b>	<b>528.5</b>	<b>506.1</b>	<b>512.5</b>
Equity	47.8	28.4	47.4	54.9	49.3	43.6	15.5	19.3	27.7	58.2
Long-term provisions	3.0	3.5	2.2	3.3	3.6	7.1	7.2	8.8	8.8	6.2
Long-term liabilities	151.4	190.5	259.7	325.0	293.7	289.3	345.7	316.2	356.7	309.1
Deferred tax liabilities	1.7	2.0	2.4	2.5	3.8	7.4	8.0	7.1	6.8	5.8
Short-term liabilities	149.6	205.9	252.9	269.5	304.5	385.4	452.6	510.4	480.5	417.4
Loss over equity	34.2	70.7	102.7	144.9	137.5	214.1	317.8	333.4	374.4	284.2
<b>Equity and liabilities</b>	<b>319.3</b>	<b>359.7</b>	<b>461.9</b>	<b>510.3</b>	<b>517.4</b>	<b>518.7</b>	<b>511.2</b>	<b>528.5</b>	<b>506.1</b>	<b>512.5</b>

Source: Author's calculation based on the official financial reports of the analyzed companies.

Table 2: Summary of the aggregate income statements of the analyzed companies

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Operating revenues	365.0	332.9	481.6	543.2	529.1	521.4	495.4	471.0	433.5	423.3
Operating expenses	386.4	363.0	494.5	566.2	554.7	548.7	511.9	474.9	422.9	396.2
<b>Operating profit (loss)</b>	<b>(21.4)</b>	<b>(30.0)</b>	<b>(12.9)</b>	<b>(23.0)</b>	<b>(25.6)</b>	<b>(27.3)</b>	<b>(16.5)</b>	<b>(4.0)</b>	<b>10.7</b>	<b>27.1</b>
Financial revenues	25.2	16.1	23.7	39.8	30.4	19.0	14.8	25.2	15.8	30.9
Financial expenses	49.5	40.6	58.9	53.1	58.2	37.5	70.0	47.5	42.5	22.0
<b>Profit (loss) from financing</b>	<b>(24.3)</b>	<b>(24.5)</b>	<b>(35.2)</b>	<b>(13.3)</b>	<b>(27.8)</b>	<b>(18.5)</b>	<b>(55.2)</b>	<b>(22.3)</b>	<b>(26.7)</b>	<b>8.8</b>
Other revenues	13.4	23.0	17.8	17.5	14.7	12.3	20.4	27.7	21.0	50.2
Other expenses	13.3	22.5	17.4	26.4	35.2	78.7	73.0	38.5	47.6	20.1
<b>Profit (loss) before tax</b>	<b>(45.6)</b>	<b>(54.0)</b>	<b>(47.6)</b>	<b>(45.2)</b>	<b>(73.9)</b>	<b>(112.3)</b>	<b>(124.4)</b>	<b>(37.1)</b>	<b>(42.6)</b>	<b>66.1</b>
Tax	0.1	0.6	0.4	(0.0)	0.7	(1.2)	0.1	(0.7)	(0.7)	(0.7)
<b>Net profit (loss)</b>	<b>(45.8)</b>	<b>(54.7)</b>	<b>(48.0)</b>	<b>(45.2)</b>	<b>(74.6)</b>	<b>(111.2)</b>	<b>(124.4)</b>	<b>(36.4)</b>	<b>(41.9)</b>	<b>66.8</b>

Source: Author's calculation based on the official financial reports of the analyzed companies.

## Performance of business controversial enterprises

The book value of the total business assets of the analyzed companies increased significantly from 2008 to 2011 (average annual growth rate of 17%), after which it successively increased and decreased by a few percentage points. At the end of 2017, the book value of the total assets of the analyzed companies amounted to 512.5 billion dinars (about 4% of the property of the Serbian economy). The asset structure was dominated by fixed assets (accounting for 61% on average). The growth in business assets was largely due to revaluation, i.e., reassessment of asset valuation (intangible investments, property, plant and equipment), rather than real investments into fixed and working capital. Fourteen companies from the sample conducted a revaluation of assets in the observed period. Total revaluation reserves increased from 12.1 billion dinars in 2008 to 79.4 billion dinars in 2017. The gas distribution company Srbijagas and the companies from RTB Bor Group had the major influence on the growth of revaluation reserves.

Unlike the value of fixed assets, the value of total working capital recorded significant fluctuations in the observed period (standard deviation of 19%). The growth trend from 2008 to 2012 was followed by a significant decline, recording the minimum value of working capital in 2014. The decline in the value of working capital could be attributed to the decline of business activities in 2014, leading the fall in the value of almost all positions of the working capital in majority of the analyzed companies. Not surprisingly, the most significant decline in the working capital occurred in the companies that were in the process of restructuring and bankruptcy, where the fall in activities was accompanied by the implementation of write-off measures.

Considering the nature of the sample, liabilities dominate the financial structure. The total value of the liabilities of the analyzed companies in the observed period continued to increase until 2016, when they reached 852 billion dinars, the increase of 2.8 times compared to 2008. Total liabilities decreased by 13% in 2017. Since the book value of the equity is calculated as a difference between the value of assets and total liabilities, the total net value

of the equity of the analyzed companies was negative. As for the analytical positions of the equity, in addition to increasing the revaluation reserves, the total value of the capital assets increased as a result of the primarily applied financial restructuring measures of some companies, which are mostly reduced to the conversion of debts into equity and/or recapitalization of the owners (strategic partners).

Financial analysis based on individual financial statements enabled a deeper insight and better understanding of various aspects of financial health of the analyzed business controversial enterprises. Two measures of central tendency were used: the arithmetic mean and the median which is essential as it is not affected by extreme values.

The average ratio of total leverage (TL) had increased steadily over the past decade. Total leverage increased from 0.99 in 2008 to 2.19 in 2017. The median of this indicator was at a slightly lower level and also had an upward trend with the exception in 2012 and 2017 (Figure 6).

The worsening of the financial structure can be seen not only due to increasing indebtedness, but also due to the unfavorable maturity structure, bearing in mind the dominance of short-term sources. Figure 7 indicates that the growth of total liabilities was primarily due to the growth of the short-term financial leverage (STL). The average (median) value of the STL rose from 0.63 (0.60) in 2008 to 1.66 (0.78) in 2017. Such a large deviation between the average and median value in the last year can be attributed to sharp increase in indebtedness, such as the case of Železara Smederevo. When it comes to the share of long-term leverage (LTL), the average value increased from 0.36 to 0.53, while the median value decreased from 0.21 to 0.16.

The unfavorable liability maturity structure results in the absence of net working capital (NWC), i.e., a negative net working capital, during the entire observed period. Total NWC of business controversial enterprises in 2017 reached -234 billion dinars, which is 7.4 times higher compared to its level in 2008. The financing of fixed assets from short-term sources is unsustainable in the long run. 74% of companies from the sample had a negative NCW in 2017.

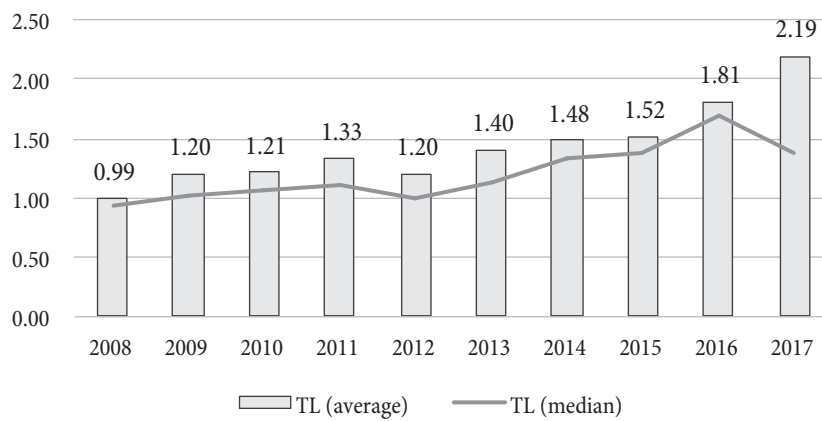
The low liquidity is best illustrated by the current and quick liquidity ratios of these companies that are

far below the normal orientation. The average current and quick ratios at the beginning of the observed period were 0.82 and 0.51, respectively, while the values of these indicators at the end of 2017 amounted to 0.72 and 0.44 respectively. These liquidity ratios also had a negative trend (Table 3).

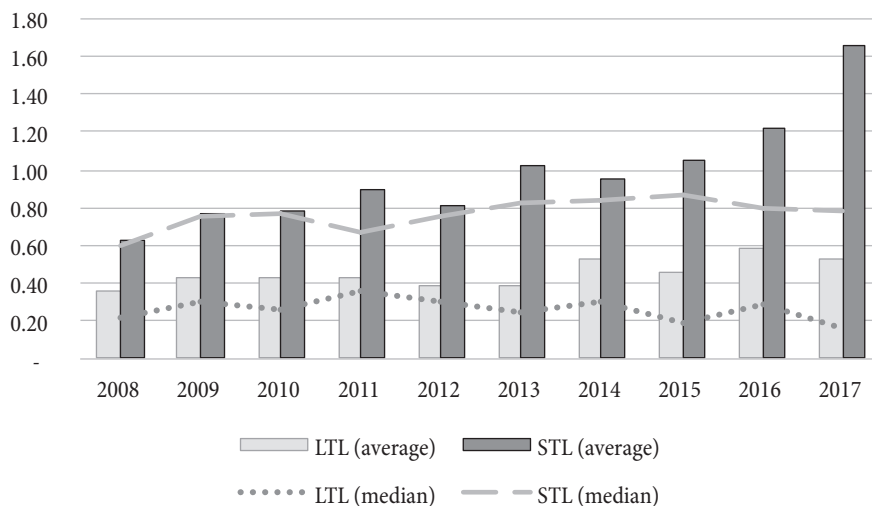
In the absence of liquid assets, business controversial enterprises have to rely on spontaneous sources of financing. Spontaneous sources were measured based on the so-called cash gap. It is the period for which a company should provide additional sources for financing working capital

(Table 4). The average cash gap of the analyzed companies was -42 days (median -9 days). A negative cash gap means that the companies from the sample had been significantly prolonging the deadlines for settling liabilities to suppliers, that is, the burden of financing the working capital was passed on to their suppliers. The inefficiency in debt collection was compensated by prolonging the settlement of liabilities to suppliers, maintaining own liquidity at the expense of others' (non)liquidity. Consequently, companies operating at losses exceeding the equity are the generators of insolvency for the entire economy, since the burden

**Figure 6: The ratio of the total leverage of the analyzed companies**



**Figure 7: Liability maturity structure of the analyzed companies**



**Table 3: Liquidity ratios**

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Current liquidity	Average	0.82	0.93	0.77	0.85	0.90	0.72	0.75	0.74	0.75	0.72
	Median	0.76	0.79	0.71	0.85	0.96	0.66	0.59	0.56	0.45	0.52
Quick ratio	Average	0.51	0.64	0.48	0.49	0.53	0.44	0.47	0.52	0.53	0.44
	Median	0.54	0.47	0.46	0.47	0.48	0.40	0.32	0.30	0.43	0.41



of financing is transferred to a healthy segment of the economy creating the so-called illiquidity spiral [2], [10].

Although they are in the same group, these companies significantly differ in their financial performances. Some companies operated at a loss which exceeded the equity only at the beginning of the observed period or during the first half of this period. At the outbreak of the global financial crisis, these companies were in the state of over-indebtedness. However, gradually they managed to consolidate their financial structure. This is the proof that a negative equity does not necessarily lead to a strategic crisis (for example, Elixir Zorka-Mineralna đubriva d.o.o, SBB d.o.o.). The largest number of analyzed business controversial enterprises experienced indebtedness in the years after the outbreak of the crisis, which can be seen in Figure 4. Out of 31 companies, 65% of the companies operated at a loss which exceeded the equity for longer than 5 years. Moreover, 4 companies operated at a loss exceeding the equity during the entire ten-year period of observation (for example, JP PEU Resavica, RTB Bor Group - Copper Mines in Bor and Majdanpek).

In spite of the fluctuations in the number of the companies operating at a loss exceeding the equity, the

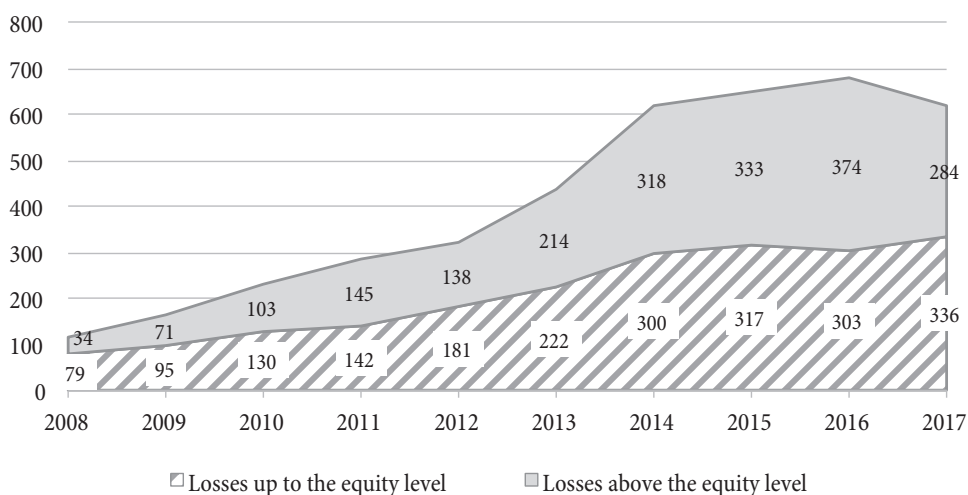
total losses exceeding the equity of these companies increased significantly. Average annual growth rate of the losses exceeding the equity in the 2008-2017 period was 32%. The total losses exceeding the equity in 2017 were almost 8.3 times higher compared to 2008 (Figure 8). The losses exceeding the equity of these companies in 2008 accounted for 9.2% of the total losses exceeding the capital value of the Serbian economy, doubling their share in 2017 (18.4%).

Bearing in mind the previous data, it is not necessary to prove the non-profitability of the companies whose losses have fully outweighed their own equity. Total cumulative net financial result of the analyzed companies in the 2008-2017 period amounts to -515.5 billion dinars. When revenue is not sufficient to cover debts, increased level of indebtedness magnifies the negative effect of the financial leverage. This is primarily the result of low operating margins, but also the high cost of capital due to underdeveloped (shallow and full of imperfections) capital market in Serbia [6]. However, it should be pointed out that in this group of companies there are some companies which managed to recover and achieve a positive financial result. Thanks to these companies, the overall financial

**Table 4: Spontaneous sources of financing**

		2009	2010	2011	2012	2013	2014	2015	2016	2017
Cash gap (in days)	Average	2	(34)	(38)	(44)	(41)	(60)	(33)	(80)	(48)
	Median	5	-	(11)	(12)	(12)	(21)	(13)	(16)	(4)
Companies with negative cash gap	Number	14	15	17	17	18	17	18	20	17
	Share	45%	48%	55%	55%	58%	55%	58%	65%	55%

**Figure 8: Total balance losses of business controversial enterprises from the sample**



(in billion dinars)

result of the observed companies from the sample was positive in 2017 (Table 2). Malinić *et al.* [11] conducted a research indicating that even in the group of companies with the largest net profit in Serbia, one-third of the companies cannot create the value for the owners, that is, their revenue cannot cover the cost of capital.

Long-term financial security of a company is determined by its earnings power and its equity. It is not difficult to estimate the financial health of a non-profitable company whose losses have fully outweighed its own equity. Long-term non-profitability and chronic illiquidity, individually, and especially together, increase the risk of bankruptcy.

The risk of bankruptcy was measured by using Emerging Market scoring model (EM-score). This is a special version of the Altman Z-score model adapted for emerging markets [1]. A higher value of the indicator indicates a lower probability of bankruptcy in the forthcoming period and vice versa. Based on an EM-score value, a credit rating equivalent can be determined.

There are three security zones, i.e., risk levels. The EM-score above 5.85 indicates a safe zone, and the credit rating equivalent for such enterprises ranges from BBB to AAA (investment ranking). The EM-score lower than 4.15 implies a red zone indicating a high probability of bankruptcy (the credit rating ranging from B- to D). A grey zone represents a moderate safety zone ranging from 4.15 to 5.85 (credit rating ranging from BBB- to B).

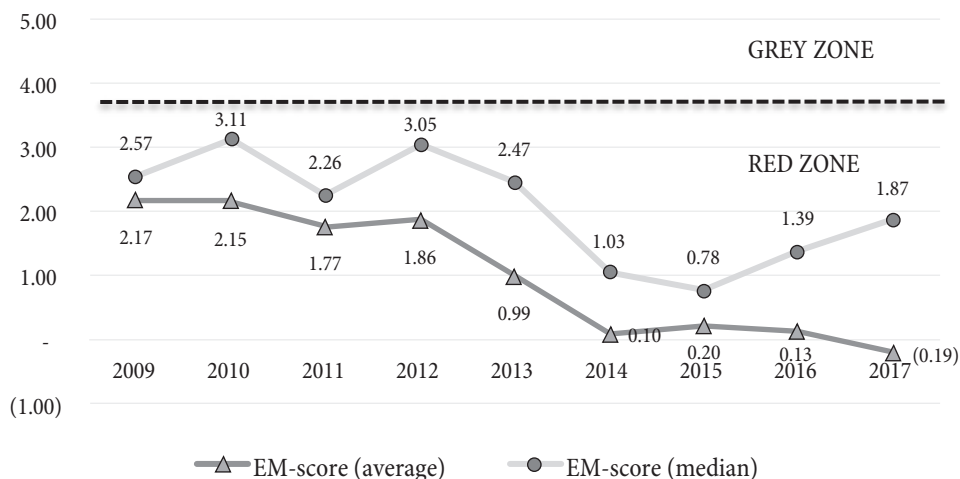
An average value and a median of the EM-score of the analyzed business controversial enterprises are in the

highest risk zone, that is, a red zone. Based on Figure 9 several conclusions can be made. Firstly, the downward trend in the average EM-score indicates an increase in the bankruptcy risk of business controversial enterprises in the observed period. Secondly, the average value of the indicator was decreasing below 1.75 from 2013, indicating the probability of bankruptcy (credit rating D). Thirdly, the EM-score median indicates a more favorable situation since it is at a higher level. From 2008 to 2013 the EM-score median ranged between CCC- and CCC credit rating interval, after which it fell below the level indicating a default (with the exception in 2017).

### Concluding remarks

The survival of business controversial enterprises depends primarily on the intentions of their owners. As for state-owned enterprises, the state finances and prolongs the survival of these enterprises in various ways, such as: artificial recapitalization, public procurements, spontaneous financing, etc. [4, p. 123]. First of all, the state encourages commercial banks to grant (short-term) loans, even though the risk assessment and the creditworthiness of these companies indicate clearly that this is not rational. These funds are mostly used to pay salaries to employees, and only the remaining part of the funds to increase working capital. Secondly, by public procurements, the state uses its budget and its natural reserves to conduct the collateralization of commercial loans in order to encourage more business activities of these enterprises (for

Figure 9: Risk of bankruptcy based on EM-score



example, an agricultural machinery program). The third type of support is the so-called spontaneous financing. The state exempts such companies from payments and/or tolerates non-payment of due liabilities to their suppliers, banks and employees instead of initiating bankruptcy [4, pp. 123-124].

The aforementioned financial measures only partially reduce the symptoms, but not the causes of losses exceeding the equity. The state as the owner has to make a clear distinction between the companies of the highest strategic interest and the ones which are not. For the first group of companies, the survival is crucial and therefore not brought into question and the state strives to find the way to improve their effectiveness and efficiency. However, the justification of the survival of other group of companies has to be based on fundamental economic principles.

Regarding privately-owned enterprises, the justification of their survival has to be based on the essential (economic) criteria, which is whether the company's going concern value is greater than its liquidation value. The private interest operates according to the market mechanism and relevant laws.

The isolated implementation of financial restructuring measures often does not eliminate the causes of the problems due to which the restructuring became inevitable in the first place. For loss-making companies which are at the stage of the crisis of profitability, an adequate response is

a turnaround strategy that implies changing the existing business model, refocusing of the business portfolio and concentrating on the activities that essentially promote the competitive advantage. Without these measures or in the event of their unsuccessful implementation, the enterprises quickly face a strategic crisis (the so-called program crisis). For the enterprises at this stage of crisis there are two (radical) alternatives: reorganization (financial consolidation, strategic re-focusing and organizational change) or liquidation.

Restructuring is justified when the going concern value is higher than the liquidation value of the enterprise. If there are investors willing to buy the company at a price higher than the going concern value, selling the company through a merger or an acquisition is a better option than restructuring. If a company is in such a stage of crisis that there are no real prospects for its revitalization, the liquidation of the company is the only option, given that the liquidation value is higher than the going concern value of the company (Table 5). Naturally, if it is an enterprise of public interest, i.e., strategic interest to the state, the survival of such a company is not doubted, and the appropriate measures are taken to improve its effectiveness and efficiency. On the other hand, enterprises operating in commercial sectors, regardless of the ownership structure, have to operate according to the market mechanism and relevant laws.

**Table 5: Strategic options for companies in financial distress**

Hypothesis	Option	Outcome
Selling price in M&A transactions > Going concern value or liquidation value	Selling companies in M&A transactions	The company continues to operate as a dependent company of the buyer or merges into the customer's business and ceases to exist
	Selling companies in M&A after submitting a pre-prepared reorganization plan	
Going concern value > liquidation value	Voluntary restructuring	Continuation of the business operation in accordance with the conditions agreed with the creditors
	Reorganization according to a pre-prepared reorganization plan	Continuation of the business operation in accordance with the plan of reorganization reached by court order
	Bankruptcy reorganization	
Liquidation value > going concern value or selling price	Voluntary liquidation	The company ceases to exist, the sale of assets is conducted by the liquidation manager, liquidation distributions are conducted in accordance with the terms agreed with the creditors
	Bankruptcy liquidation	The company ceases to exist, the sale of assets is conducted by the bankruptcy manager, liquidation distributions are conducted in accordance with court order

Source: According to [3, p. 635] and [14, p. 439].

The restructuring of business controversial enterprises is essential for their existence, but also a matter of strategic importance for the entire economy of Serbia. In the period from 2008 to 2017, the total losses exceeding the equity of 31 business controversial enterprises from the sample increased by 8.3 times, which indicates their increasingly bad performance, and the urgency to take appropriate measures. The companies operating at losses exceeding their equity are generators of insolvency for the entire economy, since the burden of their financing is transferred to their suppliers, that is, a healthy segment of the economy, creating the so-called illiquidity spiral. Moreover, state-owned business controversial enterprises are also public debt generators. For example, in 2014 the fiscal costs of only two companies from this group (JP Srbijagas and Železara Smederevo d.o.o.) exceeded all the revenues that the state realized under VAT increase and the implementation of solidarity tax. Consequently, the restructuring of these companies is an imperative leading to the fiscal consolidation and the avoidance of the public debt crisis, as well as the improvement of the performance of the entire economy. By direct and indirect subsidies (tolerance of non-payment of social security taxes, non-payment to other public companies, issuing state guarantees for loans, etc.) the state does not solve the causes of the problems of these companies, but merely postpones the application of appropriate measures. Therefore, appropriate strategic options for these enterprises can be full or partial privatization, establishment of public-private partnerships, simultaneous business and financial restructuring, etc.

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## WHICH FACTORS DRIVE THE REVERSE LOGISTICS PROCESS IN PRACTICE: EVIDENCE FROM SERBIA

Koji faktori pokreću povratni logistički proces u praksi –  
Dokazi iz Srbije

### Abstract

Green supply chain and reverse logistics, as its key dimension of functioning, represent one of the most up-to-date areas of analysis in the business philosophy of supply chain management, which have been in the focus of scientific and expert public for less than two decades. The basic shortcoming concerning the research in this field is insufficient practical research in the area, which is the main motive for the realization of this paper. The research subject of this paper is identification of the most relevant factors for the usage of the reverse logistics process activities in companies that participate in the supply chain in Serbia. The aim of the paper is to identify specific factors important for the usage of the reverse logistics process in Serbia, as well as to widen and enrich the scientific and practical findings in this area.

**Keywords:** *green supply chain, reverse logistics, Delphi method, Serbia.*

### Sažetak

Zeleni lanac snabdevanja i povratna logistika, kao njegova ključna dimenzija operacionalizacije, predstavljaju jedno od najaktuelnijih područja analize poslovne filozofije upravljanja lancem snabdevanja, koje je u fokusu naučne i stručne javnosti manje od dve decenije unazad. Osnovni nedostatak vezan za razmatranje ove problematike jeste nedovoljno prisustvo praktičnih istraživanja u oblasti, što je i glavni motiv za realizaciju ovog rada. Predmet istraživanja u radu jeste identifikovanje najrelevantnijih faktora za primenu aktivnosti povratnog logističkog procesa kod preduzeća-učesnika u lancu snabdevanja u Srbiji. Cilj rada jeste da se identifikuju specifični faktori od kojih zavisi primena procesa povratne logistike u Srbiji, kao i da se prodube i obogate naučna i praktična saznanja u ovoj oblasti.

**Ključne reči:** *zeleni lanac snabdevanja, povratna logistika, Delfi metod, Srbija.*

## Introduction

The entire scientific and expert analysis of the green supply chain and reverse logistics, as its main dimension, conducted up to now has confirmed the absence of empirical analyses in the area. When a certain sphere of scientific, but also practical interest is on such a rise on a global scale, as is the case here, the mentioned empirical analyses and primary research represent an essential initiative for its further progress and propulsivity. Bearing in mind that the area of green supply chain and reverse logistics is almost marginally present in scientific and expert analyses in our national milieu, the importance of carrying out empirical research is additionally emphasized. That was the basic, starting idea when devising this paper.

The analysis in the paper is dedicated to identification of the most relevant factors for the usage of the reverse logistics process in companies that participate in the supply chain in Serbia. The paper itself is divided into four parts. A short review dealing with the previous findings about this topic and the explanation of the importance of carrying out empirical analysis are presented in the first part. The second part of the paper explains the methodological procedure of empirical analysis. The research uses the Delphi method, as a technique of providing expert group opinion. The methodological procedure initially refers to a detailed review of research participants, i.e. the managers from several chosen industries in Serbian business practice. The usage of the Delphi method is realized through several rounds until consensus between managers is reached. Specific results of every round are separately analyzed. Finally, the consensus reached through rounds is measured, as the following logical segment of the methodological review. The third part of the paper is dedicated to the discussion of obtained results, with the review of their theoretical and practical

implications. Since no research can be carried out in ideal conditions, the limitations of the conducted analysis are also presented. Finally, based on all stated facts and results, the directions and key challenges of future research are pointed out. The last two segments represent the area of analysis within the fourth part of the paper. The aim of the paper is to identify specific factors important for the usage of the reverse logistics process in Serbia, as well as to widen and enrich the scientific and practical findings in this area. The analysis of all of the stated issues follows.

## Previous findings and the importance of carrying out new research

Managing the green supply chain and reverse logistics, as its key dimension, represents a relatively unfamiliar and challenging scientific area. However, based on the previous statement it cannot be concluded that there is a lack of good research in this area. Affirmed authors in this area, such as Carter, Ellram, Daugherty, Closs, Guide, Gupta, Srivastava, Rao, Mollenkopf and others, have written a handful of papers, but mostly of conceptual and theoretical nature. The analysis in this area has been performed both on the micro and macro levels. Focusing on the research which has a macro perspective, some of the most important contributions are presented in Table 1.

Besides dealing with this issue on a macro level, a far greater number of papers focus on the micro level of analysis. The examples of such research are given in Table 2.

The aforementioned papers belonging to both analyzed perspectives should not be perceived in any way as the only ones worth mentioning, but solely as chosen to illustrate the issue they cover. The main characteristic of all of the given papers, as well as generally of other papers in the field in the past period has been rare empirical verification.

**Table 1: Chosen key research of the issue of green supply chain and reverse logistics on a macro level**

Research authors	Research results
Croxton & associates (2001)	Adequate management of the reverse logistics flows and the green supply chain has a positive economic and ecological influence on the performance of chosen industries.
Lambert & associates (2005)	The successful development and implementation of the green supply chain and its dimensions has a positive impact on the development of the economy as a whole.
Closs & associates (2011)	Adequate management of the reverse flows and the usage of resources along the supply chain represent the basis of a sustainable strategy.

Source: [5, pp. 242-263].

For example, after an extensive and detailed literature review in the field, which included more than 150 expert articles published in renowned global magazines in the last 15 years, it can be stated that less than 15% of them contain some sort of empirical verification. The reasons for the identified shortcoming can be various: lack of the needed set of skills and knowledge of the authors of the papers to devise empirical research; difficulty in connecting theoretical findings and practical implications due to expressed complexity in the area of analysis; insufficient recognition of the issue, importance and benefits of green initiatives and reverse flows in company operations in certain parts of the world, etc.

Taking into consideration the situation in national scientific circles, the need for carrying out empirical research is even more expressed and justified. Particularly, the issue of managing green supply chain and reverse logistics flows has been marginally present in scientific analyses in the domestic academic milieu, i.e. it has hardly been addressed at all. There are only few scientific papers which deal with this area in some segments. The main findings in the national scientific circles are presented in Table 3.

Based on the shown elements of analysis in stated papers, but also bearing in mind their identified shortcomings, it can be stated that the topics of green supply chain and reverse logistics have been treated only by few review papers, mostly of theoretical character, without the integrating perspective and adequately established relations between the key terms. Therefore, the foreseen empirical research can practically be interpreted as the initial endeavor in clarifying the unknown elements in this area in Serbia. It is justified to believe that it can seriously contribute to future incentives for its development and detailed examination.

### The steps of the methodological procedure used in the research<sup>1</sup>

The aim of the empirical analysis in the paper is to respond to the research question presented in the title of the paper: Which factors drive the reverse logistics

<sup>1</sup> The presented research has originally been carried out for the purpose of a PhD thesis: Mijušković, V. (2017). *Adaptabilnost modela i uticaj povratne logistike na konkurentnost zelenog lanca snabdevanja*. Beograd: Ekonomski fakultet Univerziteta u Beogradu, and has not been published up to now.

**Table 2: Chosen key research of the issue of green supply chain and reverse logistics on a micro level**

Research authors	Research results
Bacallan (2000) [1, pp. 11-12]	Greening the activities within the supply chain leads to the achievement of competitive advantage for its participants.
Daugherty & associates (2002) [4, pp. 85-106]	The implementation of IT support has a significant positive influence on the improvement of reverse logistics activities.
Guide & associates (2003) [6, pp. 259-279]	The development of cognitive planning improves the "closing of the loop" and product return within the supply chain.
Hazen & associates (2011) [7, pp. 379-389]	Consumers perceive the products of the reverse logistics process as products of inferior quality compared to new ones.
Hazen & associates (2012) [8, pp. 244-274]	Return options represent the main group of activities within the reverse logistics process.
Huscroft & associates (2013) [10, pp. 304-327]	Client support, top management support and developed system of communications have been identified as the key factors of influence on the reverse logistics process.

**Table 3: Elements of analysis of green supply chain and reverse logistics in national scientific circles**

Research authors	Elements of analysis	Limitations of analysis
Milovanović, Barac (2007) [15]	Consideration of importance of reverse logistics as a part of the supply chain.	No direct connection between green supply chain management and reverse logistics has been established; review, theoretical paper.
Krstić, Stefanović (2008) [13, pp. 1-10]	Connection between the concept of corporate social responsibility (CSR) and the ecological performance of the supply chain.	CSR is completely equated with green initiatives, which is denied by theory.
Krstić, Jovanović (2008) [12, pp. 107-121]	Expression of importance of green and ecological initiatives for a company to achieve competitive advantage.	Insufficient recognition of the concept of green supply chain and reverse logistics; review, theoretical paper.
Miljanović (2012) [16, pp. 75-86]	Explanation of the concept and strategies of the green supply chain.	CSR is completely equated with green initiatives, which is denied by theory; review, theoretical paper.

process in practice? Namely, after analyzing the research carried out on a global scale, concerning the key factors of influence on the realization of reverse logistics flows, several conclusions can be made.

First, there are generally few scientific and research papers treating the mentioned issue. Second, after analyzing those few papers, it has been demonstrated that the most common and best approach to addressing this issue is the creation of certain frameworks and models within which the factors considered the most important for the realization of reverse logistics flows are shown in a comprehensive way. Third, out of the existing theoretical models which analyze the key factors driving the realization of reverse logistics flows, experts identify the model developed by Carter and Ellram in 1998 as the best and most comprehensive. This model identifies 9 factors of influence on reverse logistics: state regulations, client support, input quality, system of communication and vertical coordination, independence, dedication of interest groups, top management support, influence of internal entrepreneurs and system of incentives. These factors can additionally be divided into internal and external, as well as into those of limiting and stimulating nature. The main shortcoming of this model is the absence of practical verification [2, pp. 85-102]. Fourth, the only existing model which analyzes key factors of influence on the realization of reverse logistics flows, generated in an empirical manner, is the model of Huscroft and associates from 2013. This model identifies 7 factors of influence on the reverse logistics process: client support, top management support, developed system of communication, costs, process formalization, timeliness of operations and ecological issues. The key result of this research, which is in line with the findings of the model by Carter and Ellram, is that there is a direct connection between three factors in the theoretical Carter and Ellram's model and the empirically confirmed model devised by Huscroft and associates. These factors are: client support, top management support and developed system of communication. Research has shown that the managers have achieved consensus regarding these three factors, declaring them to be the most important three factors for the realization of the reverse logistics process in the given order of importance [10, pp. 304-327].

Bearing in mind the stated conclusions and seeking to respond to the posed research question, the following hypothesis has been constructed:

*H<sub>1</sub>*: The most important factors of the reverse logistics process in Serbia are client support, top management support and developed system of communication.

The research is carried out in the same manner as the only mentioned empirical research in this area – the research performed by Huscroft and associates in 2013, in order for the results to be comparable. This means that the research is carried out using the Delphi technique. Thus, it consists of the following steps: defining research participants, analyzing each of the three Delphi rounds, measurement of the reached consensus and the discussion of the obtained results. Each step is explained below.

#### Defining research participants

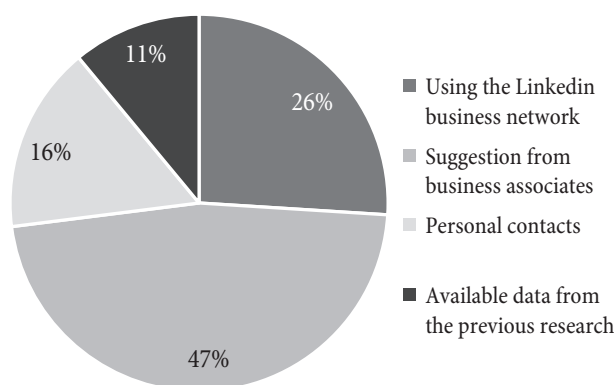
Bearing in mind the specific nature of the problem, but also following the recommendations by Huscroft and associates [10, pp. 304-327], we created an expert panel gathering a wide range of managers from different parts of the economy as the representatives of entities typically involved in the implementation and/or realization of any type of reverse logistics activity. Particularly, company managers from the following industries have been contacted: logistics providers, retail and fast moving consumer goods industry, metal processing, carton and soft drinks production, construction materials industry, pharmaceutical industry, IT industry, automotive industry, etc. All contacted managers are representatives of companies from the private sector. The decision to analyze only the private sector was made due to the fact that in Serbia mostly the companies from this sector have commercial arrangements in some form connected to reverse logistics flows and, thus, their managers have the knowledge necessary to be included in the process of research. Since the expert panel should ideally consist of 5 to 30 participants [14, pp. 762-769], and respecting the fact that more than 50% of initially contacted respondents can be lost during the process of research [3, pp. 29-49], initial invitation for participation in the Delphi study was sent to email addresses of 76 company managers in Serbia



covering the previously stated industries, hoping that the minimum of 20 managers would be present during all phases of the Delphi study. Email addresses were obtained from four sources: 1. based on a suggestion from business associates (36 email addresses), 2. using available data from the previous research (20 email addresses), 3. based on personal contacts (12 email addresses) and 4. using the LinkedIn business network (8 email addresses).

The structure of managers initially contacted for participation in the Delphi study by the source of acquiring email address is shown in Figure 1.

**Figure 1: The structure of managers initially contacted for participation in the Delphi study by source of email address**



Thirty-five out of 76 contacted managers generally agreed to participate in the Delphi study, representing the response rate of 46%, which can be interpreted as significant. However, at the end of the Delphi round I the response was given by 32 managers, while 25 participants remained until the end of the research. Since the research was anonymous, the identity of managers from the group of 35 experts who generally agreed to participate and later on resigned through rounds is not known and neither are the basic data regarding the company from which the managers generally originate. Other personal data about the managers (gender, level of education, age, length of service, possession of knowledge about logistics, level of management) and the data about the companies they come from (size and type) were gathered through questionnaires in every Delphi round and the process was repeated in each round, which was the recommendation from the research performed by Huscroft and associates [10, pp. 304-327]. The questionnaires were analyzed while interpreting

individual rounds. A detailed accompanying letter was sent via email to managers who generally expressed their willingness to participate in the research, thanking them for the participation and shortly explaining the purpose of the Delphi technique and what was expected of them, as well as the very purpose of this research. The participants were informed that the study would be realized through several iterations and that each of them would contain a link with a questionnaire, available for two weeks. The questionnaire should be filled out and sent back in every round. Also, managers were offered assistance from the authors of the paper, if necessary, at any point of the research.

### Delphi rounds

The entire Delphi study was realized through three separate iterations, i.e. three Delphi rounds, which is the usual number of rounds. Each of the Delphi rounds was open for providing answers in the period of two weeks, making the total length of the Delphi study 45 days. The entire study was conducted in the first quarter of the previous year. Each Delphi round included filling out a particular questionnaire. All three questionnaires consisted of two parts. The first part was the same in all three questionnaires and it gathered general data about the manager (gender, level of education, age, length of service, possession of knowledge about logistics, level of management) and the data about the company they were coming from. The purpose of repeating this part was to at least see how the structure of respondents changed through rounds, despite the obligatory anonymity. Since this part of the questionnaire is less important for the final results of the research, and due to limited space for analysis, the focus shall hereafter only be on the second part of the questionnaire, which presents the essence of every round. That essential, second part of the questionnaire is specific, i.e. it differs in all three questionnaires and is aimed at identifying the relevant factors of influence on reverse logistics. The answers obtained through a focused process lead to a group consensus about the way the given factors were ranked according to the degree of importance. Specifics of each of the three rounds are analyzed as follows.

### Delphi round I

As it has already been pointed out, out of 35 managers who generally consented to participation in the Delphi study, 32 completed the questionnaire from the Delphi round I, which indicates that the initial response rate was 91.4%.

The purpose of the Delphi round I questionnaire was for the experts to initially identify on their own the factors that influence the realization of reverse logistics flows. To that effect, the mentioned questionnaire (i.e. its second part) contained an open-ended question to which the managers had to give an answer.

The precise question was:

“Which factors predominantly determine the implementation of the process and program of reverse logistics in your company?”

With the aim of offering additional clarification of the very term and avoiding potential confusion about what reverse logistics represents, expert and colloquial interpretation of the meaning of the term was given in addition to the question [17, p. 4]. After the answers of panel participants had been gathered, qualitative analysis was performed by sorting and categorizing them and finding mutual relations between them, which was the logical next step. In order to adequately sort and categorize data, a logistics practitioner with long-term experience in the segments of business connected with reverse logistics was consulted, as well as an expert in business connected with market research. After the consultations and a detailed analysis of the answers, 19 logical elements, i.e. influence factors were initially identified. Bearing in mind which factors

have been identified as relevant for the reverse logistics flows in global research, and noting that there is noticeable similarity between certain initially identified factors in this research (for example legal regulations concerning green practice and existing laws and regulations), individual factors were regrouped and united, where possible, thus forming a group of 6 factors of influence on the reverse logistics process. These are the following (in no specific order): top management support, costs and benefits of usage, developed system of communication, ecological issues, state regulations and client support. The way of regrouping and unification of factors is shown in Table 4.

### Delphi round II

At the beginning of the Delphi round II, a link with a new questionnaire containing the results of the Delphi round I (an unranked list of 6 identified factors of influence on reverse logistics) was forwarded to email addresses of all managers who had given their general consent to participate in the study. Out of 32 managers who had participated in the Delphi round I, 28 answered the questionnaire from the Delphi round II, which indicates that the response rate in the second round was 87.5%. The Delphi round II questionnaire starts with the information obtained as the result of the Delphi round I: the factors identified in the Delphi round I were presented to the managers in the second part of the Delphi round II questionnaire, asking them to put the 6 factors in order of importance from the most important (rank 1) to the least important (rank 6). Managers were informed that two factors cannot have

**Table 4: Way of regrouping the identified factors of the Delphi round I**

Grouped factor	Top management support	Costs and benefits of usage	Developed system of communication	Ecological issues	State regulations	Client support
Individual factors	Understanding the importance by company management; Funds allocated by company management for the realization of reverse logistics activities; Leadership vision.	Financial benefits of using reverse logistics; The amount of costs of activities; Return on reverse logistics investment; Operating costs.	Constant information exchange within the supply chain; Joint IT systems of supply chain participants; Tracing goods through the supply chain; Integration of all participants within the supply chain.	System of recycling; Organization of waste disposal;	Obligations prescribed by the state; Legal regulations concerning green practice; Existing laws and regulations.	Client expectations; Impact of reverse logistics on customer service; Better company image in the eyes of consumers.

the same rank. In order to help them with the process of ranking, they were given a short explanation for each of the factors on the basis of individual elements/factors which had been grouped in the Delphi round I. After individual rankings of the factors performed by 28 managers who participated in the Delphi round II, group ranking of six factors of influence on reverse logistics was performed using the method of weighted rank average. According to the model of Huscroft and associates [10, pp. 304-327], the weight was calculated according to the following formula:  $(\text{the lowest rank} + \text{the highest rank} + (n-2) \times \text{average rank})/n$ , where  $n$  is the size of the expert panel, which in this precise case was  $n=28$ . According to group ranking, costs and benefits of usage have been identified as the most important factor from the Delphi round II, while the developed system of communication was nominated as the least important factor. The factors ranked by the group and their weighted rank averages are presented in Table 5.

**Table 5: Group ranking of factors that influence the reverse logistics process in the Delphi round II**

Rank (1-the most important factor, 6-the least important factor)	Factor	Weighted rank average
1	Costs and benefits of usage	2.34
2	Top management support	3.17
3	State regulations	3.43
4	Client support	3.77
5	Ecological issues	4.10
6	Developed system of communication	4.20

### Delphi round III

At the beginning of the Delphi round III, a link with a new questionnaire, containing the results of the Delphi round II (group ranking of factors that influence the reverse logistics process), was forwarded to email addresses of all managers which had given their general consent to participate in the study. Out of 28 managers who had participated in the Delphi round II, 25 answered the questionnaire from the Delphi round III, which indicates that the response rate in the third round was 89.3%.

The Delphi round III questionnaire starts with the information obtained as the result of the first two rounds. Based on the aforementioned, the group ranking of key

factors of influence on the reverse logistics process was shown to the managers. After that, they were asked to consider them once again and perform an additional ranking of the identified 6 factors using the weighted rank average method. The used weight was calculated in the same manner as in the Delphi round II. Again, according to group ranking, costs and benefits of usage were identified as the most important factor from the Delphi round III, while developed system of communication was again nominated as the least important factor. The group ranking of the factors in between also remained unchanged. The final factors according to group ranking and their weighted rank averages are given in Table 6.

**Table 6: Final group ranking of factors of influence on the reverse logistics process in the Delphi round III**

Rank (1-the most important factor, 6-the least important factor)	Factor	Weighted rank average
1	Costs and benefits of usage	1.23
2	Top management support	2.04
3	State regulations	2.74
4	Client support	4.11
5	Ecological issues	4.89
6	Developed system of communication	5.92

Since, in general, there is no difference between the group ranking of the key factors of influence on the reverse logistics process in the Delphi rounds II and III, it can be concluded that a consensus was reached among the managers who were members of the expert panel.

### The measurement of the reached consensus

The consensus reached after the Delphi rounds II and III was measured based on the Kendall's coefficient of concordance (Kendall's  $W$ ). Besides the recommendation to use this coefficient for measuring the consensus in Delphi studies reached by the experts in the area [18, pp. 763-774], the reason for its use was also the model of Huscroft and associates which is followed in this research [18, pp. 763-774]. This coefficient measures the degree of concordance between the ranks which, in the case of this research, have been attributed by the managers, members of the expert panel. Values taken into consideration range from 0 to 1, where 0 means that there is perfect

discordance between the experts doing the ranking, while 1 implies perfect concordance between the experts. Using the IBM SPSS statistics 22.0 software package [9] allows for a nonparametric test based on the *W* statistic to be carried out in the following manner: in the menu for analysis, the nonparametric tests option is to be chosen, followed by marking the K-dependent samples option. After that, the testing of the variables option is set and Kendall's *W* is marked as the test type [19]. In this test,  $H_0$  stands for no concordance between the experts giving the rank, while  $H_1$  stands for absolute concordance between experts giving the rank. Using the mentioned statistical software package, it was tested whether there is consensus between the managers in the Delphi round II. The result is shown in Table 7.

**Table 7: Obtained results on the degree of reached consensus between the managers in the Delphi round II**

N	28
Kendall's <i>W</i>	0.157
Degrees of freedom	5
P value	0.001

Since  $p=0.001$ , the decision was made to discard  $H_0$  and to conclude that concordance between the managers in the Delphi round II existed. The obtained value of the Kendall's *W* was 0.157, which indicates that only mild consensus was reached between the managers – members of the expert panel. After that, the same test was also used in the Delphi round III. The obtained result is shown in Table 8.

**Table 8: Obtained results on the degree of reached consensus between the managers in the Delphi round III**

N	25
Kendall's <i>W</i>	0.953
Degrees of freedom	5
P value	0.000

Since  $p=0.000$  for any level of significance, the decision was made to discard  $H_0$  and to conclude that concordance between managers in the Delphi round III existed. The obtained value of the Kendall's *W* was 0.953, which indicates that almost perfect consensus was reached between the managers who were members of the expert panel. Bearing in mind the results of the cited test, it can

be concluded that the Delphi study was successfully carried out, since the consensus between managers about the key factors, i.e. the most important factors, for the realization of the reverse logistics process was reached.

### Discussion of the obtained results

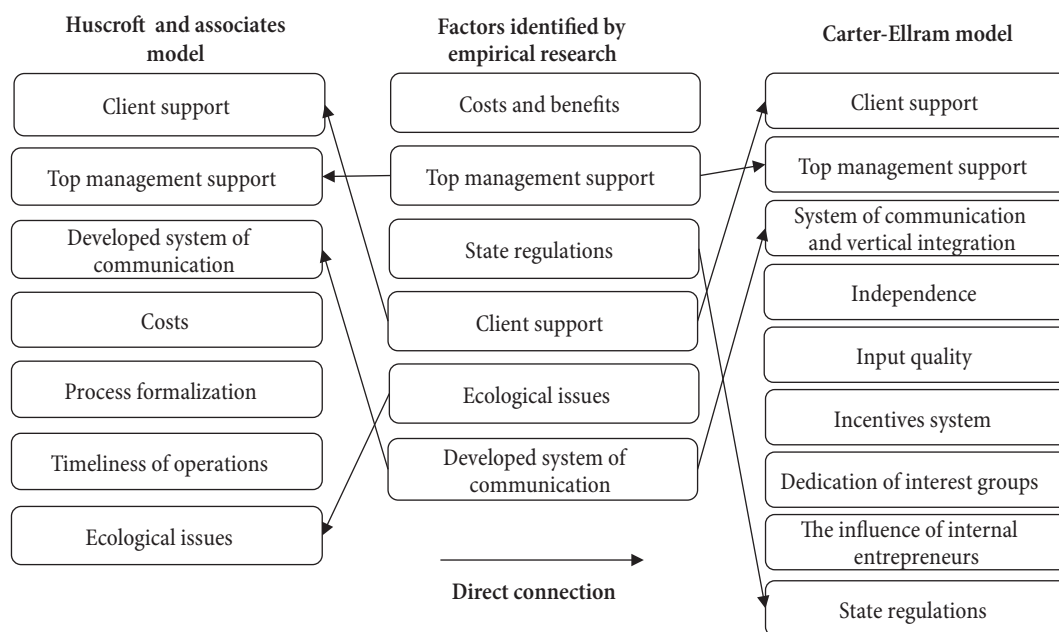
Since consensus between Serbian managers about the most important factors was reached, identifying top three among them (costs and benefits of usage, top management support and state regulations), we can notice that only one of these three factors (top management support) has also been ranked among top three in the research performed by Huscroft and associates, which served as a model for this research and for the testing of  $H_1$ . The other two factors (client support and developed process of communication) are identified among the six most influential factors in Serbian business scene, but have not been ranked as the three most important ones. This means that the paper hypothesis  $H_1$  has only been confirmed partially.

Based on the obtained conclusions and the tested research hypothesis, it can be said that the conducted analysis has a great number of implications of both theoretical and practical nature. Since this is a scientific research paper, the analysis predominantly contains elements of theoretical nature. From the theoretical aspect, it can be concluded that the most important factors of influence on reverse logistics identified in Serbian business scene are compatible with those within globally affirmed models, such as the Carter-Ellram model or the model of Huscroft and associates. As it has already been mentioned, out of a total of six identified factors in the research, five factors exist in the empirical model of Huscroft and associates (out of which 3 factors are identical in both models), while one factor recognized earlier in the theoretical Carter-Ellram model has also been recognized in this research under the same name and degree of comprehension (the state regulations factor). There is direct connection between the factors identified in Serbian business practice and those in global research shown in Figure 2.

Besides the direct connection with individual factors of globally affirmed models, one other fact is immediately noticeable in the group of factors identified



**Figure 2: The connection between reverse logistics factors identified in Serbian business practice and the Huscroft and associates/Carter-Ellram models**



in Serbian business scene. Their number is smaller than in empirical research performed by Huscroft and associates, and especially in relation to the theoretical settings given by Carter and Ellram. Bearing in mind that this field of logistics management is still marginally researched and equally modestly present in the everyday business life in Serbia, it comes as no surprise that there is generally little familiarity with the reverse logistics process and, thus, with the factors which determine its functioning. However, it is encouraging that the identified factors or problem areas, although present in a smaller number, are identical with the dilemmas met by the managers in more advanced economies of the world where reverse logistics activity is far more developed. That means that applied research in this field, in Serbia or on a global level, treats the same issues that can be compared in practice, when it comes to ways of surpassing and/or improvement thereof.

### Research limitations and directions of future analysis efforts

It is almost impossible to conduct any empirical research in ideal conditions. Therefore, it is always important to point out the limiting factors which influence the degree of plausibility of the conclusions drawn and the implementation of the drawn conclusions connected to the key research

questions. In that manner, a more realistic image of the phenomenon or the issue analyzed is presented.

Focusing attention on potential limitations of empirical research connected to adaptability of the model of reverse logistics through the analysis of key factors of its usage, two key elements can be noted [11, pp. 87-94]:

- a) *The selection of managers who entered the expert panel in the Delphi study.* As it has already been mentioned, in this case the expert panel was formed from a number of managers coming from different branches of the economy, as the representatives of entities typically connected with the implementation of or having expertise in at least some form of reverse logistics activities. Specifically, the expert panel included managers from companies from the following areas: logistics providers, retail and fast moving consumer goods industry, metal processing, carton and soft drinks production, construction materials industry, the pharmaceutical industry, IT industry, automotive industry, etc. Although significant diversification was achieved concerning the industries from which the managers came from, all managers were representatives of the companies coming exclusively from the private sector. Bearing in mind that the defense industry represents one of the

biggest collective supply chains in the world and an important part of a country's economy, the absence of this state segment can influence the results to a certain degree, making them insufficiently representative. However, there are at least two reasons in favor of the decision to exclude the state sector (defense). First, the very research performed by Huscroft and associates showed that, although general differences in perceptions of managers in the private and state sector surely exist, in this precise case, i.e. identification of the key factors of reverse logistics, a very high degree of consensus was achieved (Kendall's W was 0.9, and p value was equal to 0.001, indicating that the difference was not noticeable, i.e. that it was irrelevant whether the state sector was included or not). Second, which is even more important, the decision to analyze only the private sector was made due to the fact that in Serbia private companies mostly can and dominantly do have a commercial arrangement in some form connected to reverse logistics flows and, thus, the knowledge necessary for their managers to be included in the process of research. As regards reverse logistics flows, the military is mostly in charge of the management of waste disposal, specifically of dangerous substances and raw materials used for its own purposes (explosive devices, various poisonous substances, etc.), which has no wider commercial implications. Such point of view was additionally confirmed in conversations with a certain number of members of the state sector of defense and security. The aforementioned arguments somewhat "cushion" the specified shortcoming.

b) *Exclusive use of the Huscroft and associates/Carter-Ellram models in the conducted analysis.* The research was performed exclusively according to the model and methodology of the empirical survey performed a few years ago by Huscroft and associates, based on the theoretical achievements from the paper written by Carter and Ellram. On the one hand, it could rightfully be stated that the model defined in 2013 is not in use long enough, i.e.

that it has not been affirmed in practice as the basic model for the analysis carried out in this paper. On the other hand, it can also be said that the second theoretical model, almost twenty years old, is probably surpassed and non-functional. However, there are several arguments which could counter the cited shortcomings in this segment as well. First, in the entire theoretical analysis of reverse logistics up to now, the Carter-Ellram model represents the most comprehensive insight into the existing literature with the aim of identifying the key factors which determine its realization, which is confirmed by numerous other more recent papers in the field [20, pp. 953-962], [21, pp. 120-141]. Second, it is important to note the fact that up to now the model by Huscroft and associates has represented a unique empirical testing of this topic, which is why its contribution is especially valuable. Finally, it is necessary to point out that the positioning of this empirical analysis covering Serbia within affirmed research in global context allows for a special dimension of comparison and connection with global knowledge, which increases its value and justifies the choice of the models.

In the period to come, the focus of research efforts can be directed toward the following topics connected to the performed research:

a) *Performing in-depth one-on-one interviews with the representatives of companies that have participated in empirical research concerning key factors of influence on reverse logistics.* It has already been pointed out that the use of the Delphi study is simpler and economically more favorable than using one-on-one interviews. However, these interviews can secure precious information which cannot be gathered using a classical Delphi study. As a reminder, the Delphi study allows the identification of factors of influence on some manifestation and the achievement of consensus regarding their ranking, nothing more. Using established contacts with the existing sources of information, i.e. employees in companies which participated in the research, a series of in-depth interviews can be organized one-on-one, securing

and establishing a greater degree of trust and closeness with the respondents, which would result in greater freedom in defining types and scope of questions and in a corpus of information of better quality as the final output. Of course, in order for this method to be carried out, it is necessary to obtain consent from all managers-respondents, but also to meet other criteria which were previously discussed.

- b) *Carrying out a regional survey concerning key factors of influence on reverse logistics using the research model already implemented in Serbia.* Bearing in mind the defined methodology based on the research by Huscroft and associates, it is possible to carry out an identical Delphi study for the chosen countries of the region – Bosnia and Herzegovina, Republic of Srpska, Macedonia, Montenegro, Croatia, Slovenia. The data obtained for every country would be an ideal basis for carrying out a unique comparative study, where a clear insight could be obtained into the specifics, similarities and differences which exist among all of the mentioned countries when it comes to issues of managing reverse logistics flows and identifying key factors of influence on it. It would be especially interesting to see the situation regarding this issue in Croatia and Slovenia, since they are members of the EU, which is the primary strategically defined geopolitical goal of Serbia as well. It is clear that the realization of this regional survey would represent a serious financial, organizational and logistics endeavor, which is why a detailed preparation would be necessary if a decision to perform the regional research was made.

## Conclusion

After carrying out the empirical analysis concerning the identification of the factors which influence the reverse logistics process in Serbia, several conclusions can be drawn. First, an almost perfect concordance of the managers who participated in the expert panel was reached. The identified factors of influence on the reverse logistics process in Serbian business practice, in order of decreasing importance, are the following: costs and benefits of usage, top management

support, state regulations, client support, ecological issues and developed system of communication. Second, it has been stated that the identified factors exist under the same or similar name and have the same level of comprehension as the factors identified within globally affirmed models of Carter and Ellram and Huscroft and associates. There is no particularly differentiated factor specific for the Serbian business scene which has not been identified in one of the two globally affirmed models. Third, theoretical implications of this analysis indicate that the number of factors identified in the Serbian business scene is smaller than the number of factors in the model by Huscroft and associates, and especially in the theoretical model of Carter and Ellram, which comes as no surprise since in the national context there is generally less familiarity with the reverse logistics process and, thus, with the factors which determine its structure and functioning. Fourth, the practical implications of this analysis indicate that the managers who do decide to implement reverse logistics flows must value the importance of individual factors, since this enables them to correctly allocate scarce resources when making managerial decisions. Finally, based on the entire analysis of this empirical study, certain future directions of research concerning reverse logistics in the national business context have been suggested.

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## ARE GREEN HOTELS SUITABLE FOR THE DEVELOPMENT OF ENTREPRENEURSHIP IN TOURISM?

Da li su zeleni hoteli pogodni za razvoj preduzetništva u turizmu?<sup>1</sup>

### Abstract

The environment is exposed to the negative impact of business activities, which is reflected in extensive exploitation of natural resources and pollution of nature. The issue of environmental protection is very important for tourist destinations that are exposed to negative effects of business operations of numerous companies in their surroundings. In this regard, green hotels are becoming increasingly important because their business is based on reduced consumption of natural resources and pollution reduction. The aim of this paper is to explore consumers' perceptions of green hotels, their intention to visit them again and to recommend them to friends and acquaintances or through social networks. In addition, this research contributes to defining opportunities for the development of entrepreneurship in the field of green hotel industry. Survey results enable entrepreneurs to understand the benefits of applying environmental principles in business and the manner in which these principles are valued by consumers. For the purpose of this paper, empirical research was conducted on the basis of a questionnaire consisting of 5 variables and 21 statements. The results show that the implementation of green practice in hotel industry has a positive impact on the satisfaction of consumers, their intention to visit these hotels and to recommend them to friends and acquaintances and through social networks.

**Keywords:** *entrepreneurship, green hotels, tourism, satisfaction.*

### Sažetak

Životna sredina izložena je negativnom uticaju poslovanja koji se ogleda u velikoj eksploataciji prirodnih resursa i zagađenju prirode. Pitanje zaštite životne sredine je veoma značajno za turističke destinacije koje su izložene negativnim efektima poslovanja brojnih preduzeća u njihovom okruženju. S tim u vezi, zeleni hoteli dobijaju sve više na značaju jer svoje poslovanje baziraju na smanjenju potrošnje prirodnih resursa i smanjenju zagađenja. Cilj ovog rada je da istraži percepciju potrošača u vezi sa zelenim hotelima, njihovu nameru ih ponovo posete, kao i da ih preporuče prijateljima, poznanicima ili posredstvom društvenih mreža. Osim toga, doprinos ovog istraživanja je u definisanju mogućnosti za razvoj preduzetništva u oblasti zelenog hotelijerstva. Rezultati istraživanja omogućavaju preduzetnicima da uvide prednosti primene ekoloških principa u poslovanju i kako ih potrošači vrednuju. Za potrebe ovog rada sprovedeno je empirijsko istraživanje na bazi upitnika koji je sadržao 5 varijabli i 21 konstataciju. Rezultati pokazuju da implementacija zelene prakse u hotelijerstvu ima pozitivan uticaj na satisfakciju potrošača, nameru da posete ove hotele, kao i da ih preporuče prijateljima, poznanicima i posredstvom društvenih mreža.

**Ključne reči:** *preduzetništvo, zeleni hoteli, turizam, satisfakcija.*

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## Introduction

In the last several decades, green hotels, also known as eco hotels, have become increasingly represented in the countries that have gravitated towards environmental protection. At the same time, they attract numerous conscientious tourists [1]. They make a contribution to nature through the reduction of consumption of natural resources, such as energy and water, as well as the reduction of solid waste [2], [3].

Innovation in tourism, which includes the phenomenon of green hotels, has been followed by economic growth. The goal of an increasing number of small hotels, more accurately entrepreneurs, is to join the green tourism. However, some authors think that bigger hotels are more capable of fulfilling the criteria for obtaining the Green Key than smaller hotels [4]. Of course, the criteria for obtaining the Green Key address environmental principles in considerable detail, starting from the adequate position of the hospitality facility to the type of material the facility was built of; from food served in hotel restaurants to devices and equipment used; from the content of hotel services to the way guests relate to environmental issues [5], [6].

At an international level, Green Globe 21, Green Leaf and Ecotel, as well as some non-governmental organisations, are in charge of issuing the green certificates, but in some countries national organisations were established with their own certification programmes. The attitude of researchers engaged in green hotel management is that the mentioned organisations do not have unique criteria, their terms for obtaining a certificate differing drastically in specific cases [7]. In Serbia, the Foundation for Environmental Education [8] is responsible for awarding the Green Key to eco hotels. The first such Key was awarded to the Radisson Collection Hotel, Old Mill Belgrade in 2015. In Serbia, only few hotels today belong to the group of green hotels, while there are a lot more of them in Slovenia and Croatia. On the other hand, the issue whether eco hotels are only a marketing move or a turning point in the hotel industry is often raised. By reviewing the current situation, we see that some hotels still use the green mark in their logo as a marketing trick, not understanding the importance of the Green Key. They put the Key in their logo by themselves,

justifying it by fulfilment of their own criteria, such as more frequent replacement of towels and change of bed sheets. Lack of definitions in laws and regulations governing the field of green hospitality in some countries presents an additional problem [7].

Besides environmental preservation, the strategy developed by green hotels aims at attracting numerous satisfied consumers [1]. The result is an increasing number of research studies aiming to understand the eco hotel users' needs and define the eco hotel clients' decision-making process [9], [10], [11]. However, there is no strong evidence that would indicate the answer to the question why tourists opt for green hotels. The research results of the Travel Industry Association showed that more than 40 million tourists had expressed concern for environmental protection [12]. Green hotel users are aware of the negative impact of hotels on the environment and tend to spend their holidays in "healthy" buildings [2].

In their research, a group of authors came to a conclusion that possession of a green certificate and a recycling centre were important factors which affected users' satisfaction. It is important for users, when choosing a hotel, to be able to use towels and bedclothes made of eco-friendly materials, as well as to have control over the use of electricity, i.e. the used lighting [12].

The group of researchers, who explored why clients chose green hotels by analysing a group of factors, have come to a conclusion that satisfaction, hotel image and the quality of service have significantly affected the client's decision to return to a hotel. The results also implicate that hoteliers should develop a strategy for the improvement of the hotel's image, by investing in marketing campaigns on ecological practices carried out by the hotel [8].

The hotel industry, which is one of the most important users of natural resources, was chosen for this study because tourism is an important and extremely competitive sector. There is no doubt that the development of entrepreneurship and introduction of innovations in hotel industry will greatly contribute to economic welfare. Numerous research studies so far have shown that the development of tourism based on the protection of the environment provides new employment possibilities, infrastructure development and obtaining of financial resources, especially in developing countries [1],

[2]. Moreover, development of entrepreneurship in tourism implies creativity, flexibility, proactivity, the ability of finding new solutions, recognition of possibilities, creating values, but also taking certain risks [13]. The term 'sustainability' covers an increasingly large number of fields in everyday life, along with the protection of natural resources, while the term 'social entrepreneurship' implies identification of various social problems and creating social values [14], [15], and, more precisely, eco-entrepreneurship is a special manifestation of entrepreneurship in ecological context [16].

This paper aims at determining consumers' perception of green hotels' components, their desire to visit them and recommend them to friends and acquaintances or to share their experiences through social networks, but also their readiness to pay a premium price to stay in such a hotel. Research results provide entrepreneurs with an insight into the manner in which consumers value green hotel components and whether the concept of "go green" business in hotel management is suitable for the development of small and independent entrepreneurial hotels.

The paper is structured as follows. The research subject matter and objective will be presented in the introduction, followed by the literature review showing previous results in the field of development of green hotels and social entrepreneurship in hotel industry. Methodology is presented in the second section where the results of the survey into the influence of a hotel's green components on consumer satisfaction are displayed. The final section draws some conclusions from these results.

## Literature review

### Green hotels

In the last few decades, the public has recognized the radical changes that have occurred in the environment [17], [18] and thereby consumer attitude has also changed [19]. An increasing number of consumers use green products and favour eco-friendly companies [18]. The results of the study carried out by Grail Research [20] on consumers' needs in the green market showed that 85% of consumers in the USA bought a green product once, while 8% of consumers declared that they had used green products on a regular basis. Global Online Environment and Sustainability Survey

carried out by Nielsen showed that 83% of respondents considered that it was important for a company to apply the programme observant of environmental protection, while 22% of respondents stated they were ready to pay a higher price for a green product [21].

Hotels affect the environment negatively by using non-degradable material, large amounts of water, as well as energy for heating hotel rooms [22]. The research of the American Hotel and Lodging Association has shown that on average one hotel spends around 200 litres of water a day [23]. Care for the environment has led to changes in all business sectors, including the hotel industry. Aiming to achieve greater competitiveness, an increasing number of hotels engage in sustainable activities in order to protect the environment [3]. On the other hand, this kind of activity saves hoteliers a lot of money through the reduction of operational costs [24], [25].

Green hotels have become a popular field of research among many researchers [8], [12]. There is an increasing number of papers on the identification of factors that affect the clients' decision to use the green hotels' services (Table 1). The goal of green hotels is not only to identify consumers who take care of the planet we live on, but also to get the guests to come back and recommend the hotel to others [10], [11].

The previous research has shown that the hotels that implemented eco-programmes had a better public image [3], [26], having contributed to environmental protection by reducing electricity consumption, water, air and soil pollution [3].

The activities introduced in eco hotels are the recycling of all waste materials and the use of recycled material for printed matter [27]. The results of the research on buyers' intentions to visit green hotels showed that the attitude of consumers, subjective norm and perceived behavioural control have positively affected their attitude.

### Relationship between social entrepreneurship and green hotels

Hotel industry is an important branch for the economic development of a state. The development of entrepreneurial spirit has been accompanied by innovation in tourism.

**Table 1: Results of the previous research in the field of green hospitality**

Author and year	Topic of the paper	Results
Millar and Baloglu, 2011	Hotel guests' preferences for green guest room attributes	It is important for clients that the hotel has a green certificate and a recycling centre.
Han and Kim, 2010	An investigation of green hotel customers' decision formation: Developing an extended model of the theory of planned behaviour	Service quality, satisfaction and overall image have a significant positive association with revisit intention.
Manaktola and Jauhari, 2007	Exploring consumer attitude and behaviour towards green practices in the lodging industry in India	Customers patronise the hotels that have adapted green practices though not compromising on service quality. The consumers would prefer to use lodging that follows these practices but are not willing to pay extra for these services.
Barber, 2012	Profiling the potential "green" hotel guest: Who are they and what do they want?	The results of this study highlight the importance of environmental concern, attitudes and intentions in the prediction of green consumer behaviour.
Gao and Mattila, 2014	Improving consumer satisfaction in green hotels: The roles of perceived warmth, perceived competence, and CSR motive	When service delivery is successful, consumer satisfaction is higher for green (vs. non-green) hotels. Results showed that consumer satisfaction with green hotels is enhanced when a firm engages in green initiatives for public-serving (vs. self-serving) motives.

Source: Authors.

Atuahene-Gima and Ko carried out a research on the connections between market orientation and entrepreneurship, by using a linear model. Their results suggested that entrepreneurship had a significant influence on the market and business [28]. Competitiveness in tourism depends on innovative activities, aiming to achieve better results and make a profit [29], [30]. In order for managers to maintain competitiveness and remain successful, it is important that they provide innovative services [31]. Innovation is a significant factor for the development of business and is followed by new technologies, regulatory rules, as well as new consumers' needs. Entrepreneurship is defined as "the process of creating value by bringing together a unique package of resources to exploit an opportunity" [32].

The primary goal of social entrepreneurship is to create social and economic values, and not only to make a profit for the owners of enterprises and other stakeholders. Sustainability of social enterprises depends on the ability of an enterprise to cover its total business costs and obtain an adequate market share [33]. Social entrepreneurship is not a new type of entrepreneurship, but it deals exclusively with environmental issues [16]. Social entrepreneurship by hoteliers in "going green" promotes a better future for the environment and arguably also for the human race [34]. The focus of social entrepreneurship

is doing business in accordance with the principles of environmental preservation. The Italian law defined two types of eco-entrepreneurship: 1) social entrepreneurship that focuses on delivering social, health and educational services and 2) social entrepreneurship that provides job opportunities for disadvantaged individuals [35]. Some research studies point out that there are specific factors which influence hotels not to accept the concept of green hospitality, such as the uncertainty of income and high costs of implementation [36]. Furthermore, they suggest that this concept is more suitable for big hotel chains than for small independent hotels due to economy of scale [4]. On the other hand, eco-conscious consumers are not ready to pay higher prices for hotel services in green hotels, and a key factor for accepting higher prices is their ecological awareness and concern for environmental preservation [8], [37].

Many hotels have incorporated sustainability as a part of their business strategy [38]. Thus, Marriot accentuated that "sustainability supports the business growth, but on the other hand, the hotel protects the natural resources of planet Earth". The Disney hotel in Paris encourages its guests to protect the environment by reducing the amount of electricity used for washing hotel towels. Hilton Worldwide emphasizes that sustainability is the priority

for their hotels [39]. IHG is devoted to construction, designing and functioning of ecologically sustainable hotels [40]. In his research on sustainability in hospitality, Jauhari pointed out that it included designing green hotels, minimizing electricity consumption, introducing technological innovation, developing sustainable tourism and marketing, as well as influencing consumers to contribute to sustainability [41]. Social entrepreneurship, as an important factor for the economic development of the state [38], identifies social problems and creates social values [14]. The study dealing with the impact of environmental education (EE) on increasing customer uptake of green hotels showed that entrepreneurs who use green services can enlist more potential customers by supporting EE [34].

## Materials and methods

The research into the influence of a hotel's green components on consumer satisfaction was conducted on a sample of 112 respondents. Convenience sampling was used as its application is customary in marketing research. The research used a test method, i.e. by applying a direct structured questionnaire. The questionnaire consisted of 5 groups of questions (variables), with the total of 21 statements (assertions) which respondents evaluated on a seven-point Likert scale, from 1 to 7, 1 meaning absolute

dissatisfaction and 7 meaning absolute satisfaction. The statements were defined according to the literature review related to previous research [1], [2], [10], [42]. The first group of assertions tests consumers' perception of the significance and role of green business practice in hospitality. The second group tests their satisfaction with the hotel's green aspects. The third and fourth variables reflect the aspects of consumers' loyalty, i.e. the readiness of consumers to recommend a green hotel and their intention to stay in it. The fifth variable shows the readiness of consumers to pay a higher price for services in this hotel. Out of the total number of respondents, 44 were male and 68 female (Table 2). Most respondents were between 25 and 55 years of age (75.5%), with higher education (65.2%).

## Results and discussion

The Statistical Package for the Social Sciences (SPSS) was used for data analysis. The mode of all latent variables ranged from 4.00 to 7.00.

Having observed individual statements within the defined variables, the respondents expressed the highest level of agreement (grade 7) with the following findings: the hotel should operate in accordance with environmental protection (75.9%), use clean and renewable energy sources and apply recycling policy (65.2%), have a green certificate (64.3%).

On the other hand, only 1.8% of respondents would pay a higher price than usual for a green hotel, while 2.7% would pay a higher price just to stay in a green hotel.

Out of the total number of respondents, 65.2% absolutely agree that the hotel should use clean and renewable energy sources, organic products in cooking (60.7%) and bio-degradable packaging (57.1%). On the other

**Table 2: The sample structure (n=112)**

Demographic characteristics	Frequency	%
Gender		
Male	44	39.3%
Female	68	60.7%
Age		
Up to 25	9	8.1%
25-34	44	39.5%
35-44	23	20.3%
45-54	17	15.7%
55-64	13	11.3%
65+	6	5.1%
Education		
Secondary school	23	20.5%
College education	16	14.3%
University education	73	65.2%

Source: Authors' analysis.

**Table 3: Value of the mode and the standard deviation**

Variables	N	Minimum	Maximum	Mode
Green practice	112	1.00	7.00	7.00
Satisfaction	112	1.00	7.00	7.00
Recommendation	112	1.00	7.00	7.00
Intention	112	1.00	7.00	6.00
Price	112	1.00	7.00	4.00

Source: Authors' analysis.

**Table 4: Share of respondents who absolutely agree with the presented statements**

Variables	% Share
A hotel should:	
use sensors and timers in order to reduce electricity consumption	52.7%
use energy-saving lamps in rooms and halls	55.4%
use clean and renewable energy sources (solar, geothermal, wind energy)	65.2%
use products packed in bio-degradable packaging (soaps, shampoos, etc.)	57.1%
use bedclothes for several nights (3 the most)	16.1%
use towels for several days (they are not to be changed on a daily basis)	10.7%
use recycling paper for toilets and bathrooms	33.0%
use dishes several times (linen napkins, glass, pottery)	31.3%
use organic products in cooking	60.7%
Satisfaction	
do business in accordance with the rules of environmental preservation	75.9%
possess the green certificate (Green Key, Green Leaf, etc.)	64.3%
apply the recycling policy	65.2%
Hotel that applies green practice in its business:	
I would gladly recommend it to friends and acquaintances	53.6%
I would gladly recommend a green hotel, if someone is looking for a hotel	40.2%
I would speak positively about it	64.3%
Intention to visit a green hotel:	
I would like to stay in a green hotel	49.1%
I plan to stay in a green hotel	13.4%
I would spare no effort to stay in a green hotel	10.7%
Attitude towards the price in a green hotel:	
Services in a green hotel should be more expensive than in a regular hotel	7.1%
I would pay a higher price of accommodation in a green hotel than in a regular hotel	1.8%
I would pay a higher price only to stay in a green hotel	2.7%

Source: Authors' analysis.

hand, 10.7% of respondents absolutely agree that hotels should use towels for a few days, while 16.7% believe that hotels can use the same linen for several days.

Reliability of the model and consistency of assertions were measured by the Cronbach's alpha coefficient, ranking from 0 to 1, where values higher than 0.7 suggested adequate reliability and consistency of assertions [43]. The Cronbach's alpha for the whole model amounted to 0.712.

The level of correlation among the variables in the model was determined based on the value of the Spearman's rank correlation coefficient. There is statistically significant correlation between green practice and satisfaction (0.548,  $p < 0.05$ ), green practice and recommendation (0.509,  $p < 0.05$ ), as well as green practice and intentions (0.332,  $p < 0.05$ ), while correlation is not significant between green practice and price.

The lowest degree of statistically significant correlation occurs between price and intention (0.285,  $p < 0.05$ ), as well as between the desire to recommend the hotel and price (0.211,  $p < 0.05$ ).

**Table 5: Ordinal regression analysis (independent variable – green business practice)**

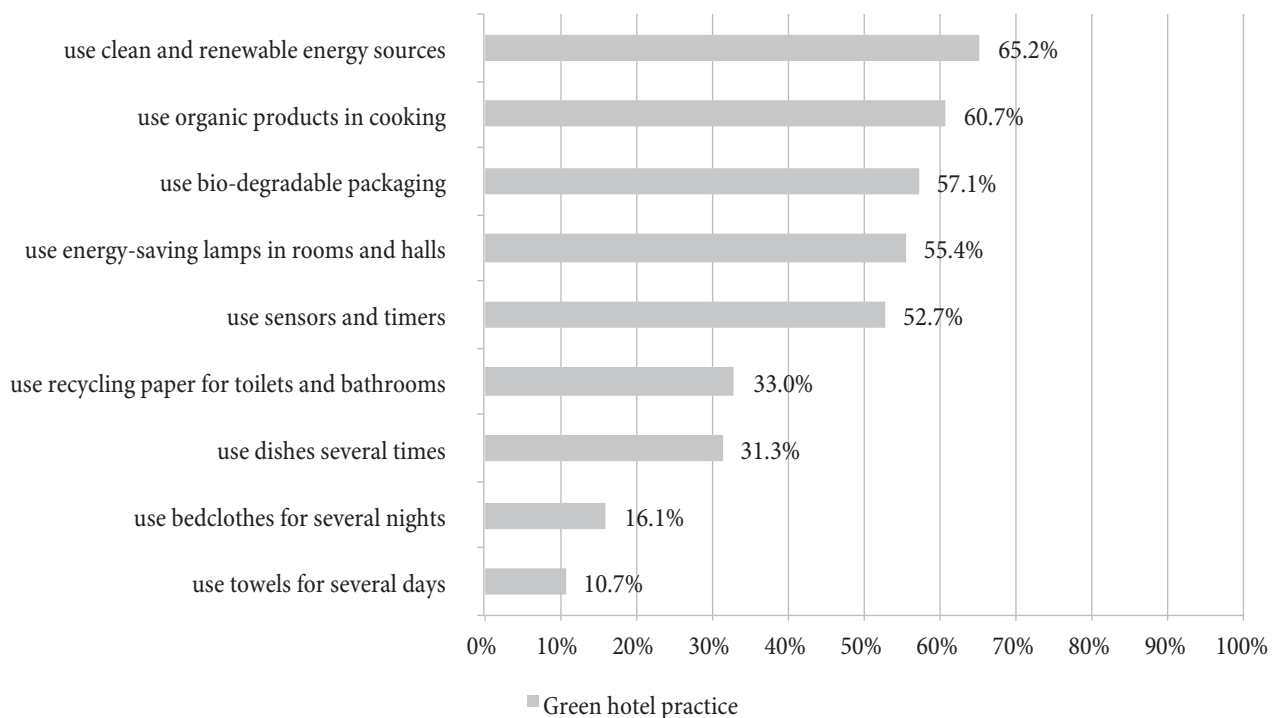
Variable	Chi-square	Sig.
Satisfaction	65.961	0.000
Recommendation	57.064	0.000
Intention	33.545	0.000
Price	8.703	0.560

Note: Significant at:  $p < 0.01$  (\*\*),  $p < 0.05$  (\*).  
Source: Authors' analysis.

Applying the ordinal regression analysis, we examined the influence of the hotel's green business practice on consumer satisfaction, their readiness to recommend



**Figure 1: Green hotel practice: What should hotels absolutely do? Share of respondents who absolutely agree with the presented statements**



Source: Authors' analysis.

a green hotel and intention to stay in it, as well as their willingness to pay a higher price for the service in such a hotel (Table 5).

Application of ordinal regression in this study is based on the assumptions that the dependent variables (satisfaction, recommendation, intention, price) and independent variable (green practice) are ordinal variables measured on a 7-point Likert scale. In the proposed model, there is no multicollinearity which occurs if there is correlation between two or more independent variables. The assumption of proportional odds means that each independent variable has an identical effect at each cumulative split of the ordinal dependent variable. The appropriateness of this assumption can be evaluated through the test of parallel lines. The test of parallel lines indicates that the PO assumption ( $p > 0.05$ ) is not violated, indicating acceptance of the null hypothesis of PO.

The results of the survey show that the application of green business practice in hospitality industry has a significant impact on consumer satisfaction ( $\chi^2 = 65.961$ ,  $p < 0.01$ ), on their readiness to recommend a green hotel to friends and acquaintances or through social networks ( $\chi^2 = 57.064$ ,  $p < 0.01$ ), as well as their intention to visit these

hotels ( $\chi^2 = 33.545$ ,  $p < 0.01$ ). However, the application of green business practice does not have a significant impact on the willingness of consumers to pay a higher price for service in a green hotel ( $\chi^2 = 8.703$ ,  $p > 0.01$ ).

## Conclusion

The conducted research provides useful empirical implications significant for the development of entrepreneurship in tourism. The results of the research showed that the application of green business practice in hospitality, in accordance with the principles of environmental preservation, has positively affected consumer satisfaction, their intention to visit a green hotel, as well as to gladly recommend it to friends and acquaintances. However, consumers are not ready to pay a higher price for services in such a hotel. On the other hand, green hotels can significantly reduce their business costs by saving on water and energy consumption and solid waste reduction. Thus, the positive impact of the application of green business practice is twofold, which can be of great significance for small, independent entrepreneurs in hospitality, primarily with regard to consumer satisfaction and loyalty, and also with regard to

reduction of business costs which results in lower prices of services in these hotels. Hotel's green attributes affect the satisfaction of hotel service users and their loyalty, implying their positive attitude towards the green business practice that hotels apply in their business, intention to revisit them and recommend them to others. The green hotel image is a powerful means for attracting new guests and building their loyalty.

Green hotels are becoming an increasingly significant segment of hospitality industry in the world, while the construction of green hotels in the Republic of Serbia is very rare. That is exactly why entrepreneurs can easily and quickly differentiate themselves from the competition based on the "green standards" in business. Green business practice is a means of innovation and a means to increase competitive advantage in global hotel business today. Care for the environment and future generations has a positive effect on the attitude of guests towards these hotels, as well as on their business results. We also have to take into account significant savings in expenses as the result of application of green business principles. In order for green hotels to develop, there is a need for intensive education of both consumers and hoteliers on the significance and contributions that green hotels can make in a broader community.

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# ATTRACTIVENESS OF THE DOMICILE ECONOMY THROUGH TAX INCENTIVES

## Atraktivnost domicilne privrede kroz prizmu poreskih olakšica

### Abstract

In most world economies, foreign investments are recognized as an important means of development, but also as an important channel for activating their own potentials. Taking into consideration global trends in foreign direct investment, it is noticeable that they are very significant for the overall development of the world economy, which can be seen through the value of the investments made in the last twenty years. In order to become the leading state in attracting foreign capital in the region, Serbia needs to practice fiscal incentives that can attract foreign investors.

The main goal of this paper is to present in an adequate manner how certain tax incentives may affect the business of foreign investors in Serbia. In order to determine the significance of tax incentives, it was necessary to collect enough information from foreign investors, aimed to present their attitudes, opinions, expectations and perceptions regarding the investment of their own capital. In this paper, special attention is paid to tax incentives in certain areas of business conducted by foreign investors in Serbia, depending on the activity of foreign investors and the level of internationalization of business operations. The methodology of empirical research is focused on a quantitative approach, which is reflected in the collection of primary data, the survey carried out among foreign investors, comparison of the collected data, and analysis of causality of the researched phenomena.

The results of the conducted empirical research express the views of foreign investors operating in Serbia in an objective and comprehensive way, showing the great significance of tax incentives that undoubtedly influence the choice of the country as an investment destination. Therefore, in the following period, it is extremely important to offer even better conditions to foreign investors, which will primarily be related to a wider range of tax incentives, not diminishing the importance of other factors that may also have an impact on raising the competitiveness of the Serbian economy.

**Key words:** *tax incentives, FDI, competitiveness, foreign investors, capital.*

### Sažetak

U većini svetskih ekonomija strana ulaganja su prepoznata kao važno sredstvo razvoja, ali isto tako i kao značajan kanal za aktiviranje vlastitih potencijala. Posmatrajući globalne trendove u kretanjima stranih direktnih investicija uočljivo je da one imaju veoma veliki značaj na celokupan razvoj svetske ekonomije, što se može videti i kroz vrednost ostvarenih ulaganja u poslednjih dvadesetak godina. Kako bi postala vodeća država u regionu po pitanju privlačenja inostranog kapitala, od izuzetne važnosti su fiskalni podsticaji koji mogu u velikoj meri zainteresovati strane investitore za ulaganje kapitala u Srbiju.

Osnovni cilj ovog rada jeste da se na adekvatan način prikaže kako pojedine poreske olakšice utiču na poslovanje stranih investitora u Srbiji. Kako bi se utvrdio značaj poreskih olakšica, bilo je neophodno prikupiti dovoljno informacija od stranih investitora, a koje je trebalo da prikažu njihove stavove, mišljenja, očekivanja i percepcije po pitanju ulaganja sopstvenog kapitala. U ovom radu posebna pažnja je usmerena na poreske olakšice u pojedinim oblastima za poslovanje stranih investitora u Srbiji, u zavisnosti od delatnosti stranih investitora kao i nivoa internacionalizacije poslovanja. Sama metodologija empirijskog istraživanja usmerena je na kvantitativni pristup koji se ogledao kroz prikupljanje primarnih podataka, anketiranje stranih investitora, komparaciju prikupljenih podataka kao i analizu kauzalnosti istraživanih pojava.

Sve ovo je u velikoj meri doprinelo da rezultati obavljenog empirijskog istraživanja na jedan objektivni i celishodan način iskažu stavove stranih investitora koji posluju u Srbiji, prikazujući veliki značaj poreskih olakšica koje nesumnjivo utiču na izbor zemlje kao investicione destinacije. Zbog toga je u narednom periodu od izuzetne važnosti da se investitorima ponude još bolji uslovi, koji će se prevashodno ogledati kroz širi spektar poreskih olakšica, ne umanjujući značaj drugih faktora koji takođe mogu imati uticaj na podizanje konkurentnosti srpske privrede.

**Ključne reči:** *poreske olakšice, SDI, konkurentnost, strani investitori, kapital.*



## Introduction

After expansion of the European Union in 2007, the countries of Southeast Europe became very interesting to foreign investors as investment destinations. In particular, this was expressed in terms of risk reduction, which until then was at a very high level and therefore decelerated the inflow of foreign capital. For this reason, for most of the countries, including Serbia, it was of the utmost importance to attract as many foreign direct investments as possible, which would contribute to the introduction of new technologies and the creation of new workplaces.

Analyzing the effects of tax competition between countries, it can be concluded that it leads to a change in the relative tax burden on labor and capital factors. However, the effects of tax competition in individual countries are in many cases different, given that they depend on the initial level and structure of taxation. It is therefore very important that the competitiveness of the tax system is analyzed through its simplicity, transparency and compliance with international standards governing this area. In addition to tax incentives, it is necessary to emphasize that other tax instruments also influence the overall assessment of the tax competitiveness of a country.

As part of the economic policy, fiscal policy tends to achieve certain objectives through the management of public revenues and public expenditures. Fiscal policy measures are an essential instrument for the realization of basic macroeconomic goals. Fiscal policy can affect the level of production, employment, prices, balance of payments and emerging of the recession.

It is of utmost importance that every modern state creates its own fiscal policy which will stimulate economic development, development of underdeveloped areas, development of entrepreneurial initiative, and expansion of technical and technological innovations. After fiscal consolidation, the future fiscal policy must be income-neutral [10]. If an inadequate fiscal policy is being conducted, this can be an obstacle to the development of a country, affecting the investment of both domestic and foreign capital.

Along with determining the fiscal system and fiscal policy as the key factors in starting the process of improving the competitiveness of the Serbian economy

is necessary, there is still a need to intensify the process of overall institutional regulation in Serbia based on the EU model. Also, the current policy of harmonizing the legislative regulation in the economy should be continued. However, it is clear that the effects of a complete institutional arrangement of economic life in Serbia will be perceived only in the long run [7]. In that case, the regulation of the institutional basis of the fiscal system, raising tax administration capacity to the European level as well as ensuring the control of public finances in terms of establishing full public confidence should be the priority. One of the most important factors that influence multinational companies to invest is tax competition.

In order to be tax competitive, countries provide tax incentives, reducing the risk of investment and giving the investor the opportunity to earn more profits. In countries where high taxes are the biggest obstacle to investing, tax incentives will have the greatest effect. However, if other non-profit factors are barriers to investment, then tax incentives will not greatly affect the inflow of foreign direct investment. Therefore, investors should first determine whether it is possible to achieve the desired rate of return, and afterwards take into account tax incentives as a factor of allocation of funds.

## Literature review

Competition is created in moments when individuals and companies can have a choice. The tendency towards as little jurisdictional expenses as possible, i.e., to the state in which they operate, is considered as the most satisfying among individuals and companies [19]. Nowadays, companies make their investment decisions primarily based on the goal of maximizing profits and minimizing the cost of production and services [18]. In order to improve competitiveness, economic policy includes, *inter alia*, the policy of stimulating foreign direct investment [1]. Policy makers should first examine current position of the national economy and competitiveness of certain industries within it [11].

One of the main tasks of each country is to increase production and exports, which should result in achieving stable economic growth over a longer period of time. In

order to achieve this, the necessary condition is to attract foreign direct investments [5].

Multinationals are the most important bearers of foreign direct investment. Investment arrangements require significant financial resources from business entities, while on the other hand they achieve the highest level of control, their business dependency decreases, and are more agile in prepossessing local market [24]. The accelerated process of globalization, the liberalization of foreign investment regime and the deregulation of many activities has allowed multinational companies to choose amongst a huge range of investment locations.

As a result of that, multinationals are becoming increasingly demanding when choosing the host country for investment. Countries that ensure the environment in which conditions are stable for unobstructed and profitable operations, through their overall policy, will surely attract foreign direct investments more easily than the countries where the investment environment is not sufficiently favorable [8], [9].

Due to the lack of domestic investment potential, countries must engage in international flows to attract investors from other countries. In addition to the large number of incentives that states offer to investors, tax incentives are among the most important [25]. Despite the fact that there is a long history of tax incentives, it seems that a debate on tax competition began in the last decade of the twentieth century.

Issues related to the active versus neutral tax policy, i.e., the choice of instruments of active tax policy, were replaced by the issue of tax competition [1], [3], [7]. It is in each country's interest to attract as many foreign investors as possible by offering a number of incentives. Tax incentives represent a concession made by the state in favor of a taxpayer (tax exemption), a tax base (tax deduction), tax rates and the amount of tax calculated (tax credit) [35].

Tax incentives are common around the world, especially in developing countries. The governments of these countries are trying to attract domestic and foreign capital using tax incentives that usually provide for a favorable tax treatment to certain economic activities [6], [21], [22]. Tax incentives have the potential to achieve

different economic development goals. However, their excessive use and poorly designed programs can badly affect the development of a country [26], [27]. The dramatic increase in the use of tax incentives over the past 40 years and the long-term challenges faced by many countries have suggested that fiscal policy makers must seriously consider how these incentives should be used [20], [23].

## Research methodology

Since the choice of the method which will be applied in empirical research directly influences the results of the research and determines whether the researcher has managed to find the answer to the questions asked, it is necessary to define the appropriate strategy prior to data collection [2]. An empirical research strategy represents a general approach dedicated to answering the set of research questions, which sequence of steps to follow, and which methods and techniques should be used [39].

In this research, the emphasis is on a quantitative approach, since it seeks to adequately understand the problem stated in the research. In order to obtain as precise data as possible, the aim was to focus on descriptive data obtained in a natural environment, all through the collection of numerical data, their mutual comparison, and the analysis of the interrelationships between them.

For this reason the survey technique based on the use of a structured questionnaire was selected. The reason for the choice of this technique is the fact that in comparison with other techniques, it is easier to administer, respondents are limited in their answers to several fixed alternatives, while encoding, analyzing and interpreting of the obtained data is much clearer and more precise [12].

Although survey is one of the most commonly used techniques in business research, it is very important to carefully plan and test its instruments in order to minimize the disadvantages. It is possible to get the information promptly, there is a high level of quality and quantity of data obtained, eliminating every kind of bias of the person performing the research.

Considering that Serbia is a very attractive investment destination, one of the first tasks was to provide a representative sample for this research. This was achieved through the

direct involvement of 300 largest foreign investors, which invested their capital in Serbia in the last 15 years. Out of the total number of foreign investors planned to participate in this survey, positive response was received from 88 investors, representing a response rate of 29.33%. That percentage can be considered quite satisfactory, since survey questionnaires were sent exclusively to managers in charge of investment or operations in foreign markets, general managers or owners of enterprises, with the remark that only authorized persons familiar with the companies' business in Serbia had the opportunity to fill in the questionnaires. It should also be noted that the average response rate in research involving business entities is generally around 30% [14].

The basic characteristics of the companies that participated in the survey are presented in the form of frequency and percentage schedules in Table 1.

The data collected in this research were analyzed at two levels. The first level implied a graphical representation technique for each of the dependent variables and descriptive statistics with the aim of showing results with the calculation of frequencies, average grades, percentages, variances, and standard deviations. The second level involved analyzing the differences in dependent variables, and according to subgroups, the independent variables, i.e., linking dependent and independent variables in order to determine the possible existence of statistically significant differences.

$$\eta^2 = \frac{\sum_{i=1}^k N_i (\bar{X}_i - \bar{X})^2}{\sum_{i=1}^k \sum_{j=1}^{N_j} (X_{ij} - \bar{X})^2} \quad (1)$$

If there is a difference between three and more groups of respondents, the best way is to apply a single-

factor analysis of variance of different groups, in order to determine the existence of statistically significant differences in the evaluation of the investigated issues among different groups of foreign investors. (1)

$$\eta^2 = \frac{t^2}{t^2 + (N1 + N2 - 2)} \quad (2)$$

Provided that a comparison is made between two groups of respondents, a *t*-test of independent samples was used to calculate the values of a statistically significant difference. (2)

## Research results

In order to thoroughly investigate the direct attitudes of foreign investors that already operate in Serbia, this empirical research examined the significance of tax incentives in certain areas of their business in Serbia, depending on (a) the level of internationalization of foreign investors' operations, and (b) their field of activities.

The existence of statistically significant differences among foreign investors in assessing the importance of tax incentives in certain areas of their business in Serbia was investigated through ANOVA different groups and *t*-test of independent samples.

In order to invest their capital in Serbia, foreign investors pay special attention to tax incentives. As the most important tax incentives the following are stated: corporate income tax incentives (35.2%), tax incentives for employment of new employees (26.1%) and tax incentives for exporting companies (21.6%).

In a slightly smaller percentage, although not less important, are tax incentives for investment in insufficiently developed regions (18.2%), tax incentives for investment in certain branches of industry (11.4%), tax incentives for

**Table 1: Basic characteristics of the companies that participated in the survey**

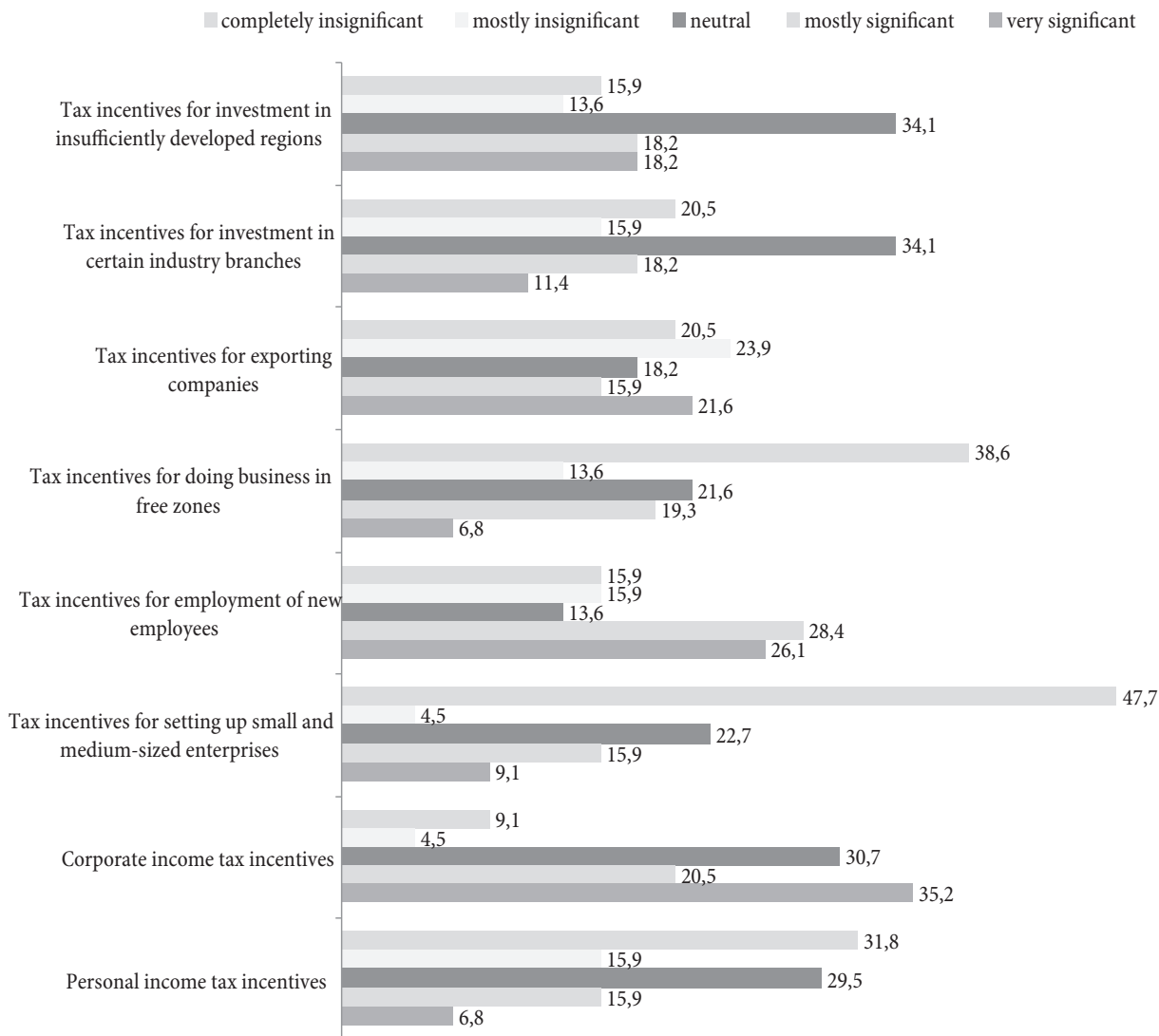
MAIN ACTIVITY OF FOREIGN COMPANY					
Production industries (PI)			Service industries (SI)		
Frequency	Percentage		Frequency	Percentage	
55	62.5		33	37.5	
LEVEL OF INTERNATIONALIZATION OF FOREIGN COMPANY					
Regional companies (RC)		Multinational companies (MC)		Global companies (GC)	
Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
24	27.3	41	46.6	23	26.1

Source: Authors' research.

setting up small and medium-sized enterprises (9.1%), personal income tax incentives (6.8%) and tax incentives for doing business in free zones (6.8%).

Using descriptive statistics, Table 2 shows more detailed data on how foreign investors assess the impact of tax incentives in certain areas on their business.

**Figure 1: The importance of tax incentives in certain areas of foreign investors' businesses in Serbia**



Source: Authors' research.

**Table 2: The importance of tax incentives in certain areas of foreign investors' businesses in Serbia – descriptive statistics**

	Degree of evaluation					M	SD	V
	1	2	3	4	5			
	f (%)	f (%)	f (%)	f (%)	f (%)			
Tax incentives for investment in insufficiently developed regions	14 (15.9)	12 (13.6)	30 (34.1)	16 (18.2)	16 (18.2)	3.0909	1.30107	1.693
Tax incentives for investment in certain industry branches	18 (20.5)	14 (15.9)	30 (34.1)	16 (18.2)	10 (11.4)	2.8409	1.26751	1.607
Tax incentives for exporting companies	18 (20.5)	21 (23.9)	16 (18.2)	14 (15.9)	19 (21.6)	2.9432	1.44920	2.100
Tax incentives for doing business in free zones	34 (38.6)	12 (13.6)	19 (21.6)	17 (19.3)	6 (6.8)	2.4205	1.35377	1.833
Tax incentives for employment of new employees	14 (15.9)	14 (15.9)	12 (13.6)	25 (28.4)	23 (26.1)	3.3295	1.42814	2.040
Tax incentives for setting up small and medium-sized enterprises	42 (47.7)	4 (4.5)	20 (22.7)	14 (15.9)	8 (9.1)	2.3409	1.43748	2.066
Corporate income tax incentives	8 (9.1)	4 (4.5)	27 (30.7)	18 (20.5)	31 (35.2)	3.6818	1.25529	1.576
Personal income tax incentives	28 (31.8)	14 (15.9)	26 (29.5)	14 (15.9)	6 (6.8)	2.5000	1.27757	1.632

Source: Authors' research.

**Table 3: Differences among foreign investors in assessing the significance of tax incentives in certain areas, depending on their field of business**

	M (SD)		MD	95% CID		t	p*
	PI, N = 55	UI, N = 33		Lower	Upper		
Tax incentives for investment in insufficiently developed regions	3.3091 (1.38608)	2.7273 (1.06867)	0.58182	0.05709	1.10655	2.206	0.030
Tax incentives for investment in certain industry branches	3.0182 (1.44646)	2.5455 (0.83258)	0.47273	-0.01034	0.95579	1.945	0.055
Tax incentives for exporting companies	3.3818 (1.42063)	2.2121 (1.19262)	1.16970	0.60717	1.73222	4.141	0.000
Tax incentives for doing business in free zones	2.5091 (1.50151)	2.2727 (1.06867)	0.23636	-0.31047	0.78320	0.860	0.392
Tax incentives for employment of new employees	3.4182 (1.49927)	3.1818 (1.30993)	0.23636	-0.39035	0.86308	0.750	0.455
Tax incentives for setting up small and medium-sized enterprises	2.3818 (1.64981)	2.2727 (1.00849)	0.10909	-0.45427	0.67245	0.385	0.701
Corporate income tax incentives	3.7455 (1.32243)	3.5758 (1.14647)	0.16970	-0.36344	0.70283	0.612	0.542
Personal income tax incentives	2.5636 (1.39793)	2.3939 (1.05887)	0.16970	-0.35484	0.69424	0.644	0.522

\*There is statistically significant difference at the level  $p < 0.05$ .

Source: Authors' research.

#### *Tax incentives in certain areas of foreign investors' business in Serbia, depending on their activity*

The results of the  $t$ -test of independent samples on the existence of statistically significant differences between foreign investors whose main activity refers to production and those whose main activity refers to the service industry in assessing the significance of tax incentives in certain fields of business are shown in Table 3.

The results of the  $t$ -test of independent samples showed that there are following statistically significant differences among foreign investors:

1. In assessing the impact of tax incentives on investing in insufficiently developed regions,  $t(86) = 2.206$ ,  $p = 0.030$ ,  $MD = 0.58182$ , 95% CID: from 0.05709 to 1.10655 between foreign investors belonging to production industries ( $M = 3.3091$ ,  $SD = 1.38608$ ), and those belonging to service industries ( $M = 2.7273$ ,  $SD = 1.06867$ ). The size of the difference between these two groups of foreign investors expressed by the eta square is  $\eta^2 = 0.053$  and can be considered as a small difference.
2. In assessing the impact of tax incentives on exporting companies,  $t(86) = 4.141$ ,  $p = 0.000$ ,  $MD = 1.16970$ , 95% CID: from 0.60717 to 1.73222

between foreign investors belonging to production industries that entered the Serbian market by direct investment ( $M = 3.3818$ ,  $SD = 1.42063$ ), and those belonging to service industries ( $M = 2.2121$ ,  $SD = 1.00849$ ). The size of the difference between these two groups of foreign investors expressed by the eta square is  $\eta^2 = 0.166$ , and can be considered as a big difference.

#### *Tax incentives in certain areas of foreign investors' business in Serbia, depending on the level of internationalization of their operations*

The results of ANOVA different groups on the possible existence of statistically significant differences in assessing the significance of tax incentives in certain areas, depending on the level of internationalization of foreign investors' operations, are presented in Table 4.

The ANOVA results have shown that there is statistically significant difference among foreign investors in the following:

1. In assessing the degree of impact of tax incentives on investing in certain branches of the industry,  $F(2, 85) = 3.980$ ,  $p = 0.022$ , where the size of the difference among different groups of foreign investors expressed by the eta square is  $\eta^2 =$



**Table 4: Differences among foreign investors in assessing the degree of importance of tax incentives in certain areas depending on the level of internationalization of foreign investors' businesses**

		M (SD)	95% CIM		F	p*
			Lower	Upper		
Tax incentives for investment in insufficiently developed regions	RK, N = 24	2.8333 (1.43456)	2.2276	3.4391	2.622	0.079
	MK, N = 41	2.9512 (1.16084)	2.5848	3.3176		
	GK, N = 23	3.6087 (1.30520)	3.0443	4.1731		
Tax incentives for investment in certain industry branches	RK, N = 24	2.2500 (1.25974)	1.7181	2.7819	3.980	0.022
	MK, N = 41	3.0000 (1.18322)	2.6265	3.3735		
	GK, N = 23	3.1739 (1.26678)	2.6261	3.7217		
Tax incentives for exporting companies	RK, N = 24	2.2500 (1.39096)	1.6626	2.8374	10.513	0.000
	MK, N = 41	2.7805 (1.25523)	2.3843	3.1767		
	GK, N = 23	3.9565 (1.33070)	3.3811	4.5320		
Tax incentives for doing business in free zones	RK, N = 24	2.1667 (1.23945)	1.6433	2.6900	1.543	0.220
	MK, N = 41	2.3415 (1.37131)	1.9086	2.7743		
	GK, N = 23	2.8261 (1.40299)	2.2194	3.4328		
Tax incentives for employment of new employees	RK, N = 24	3.0000 (1.56038)	2.3411	3.6589	4.240	0.018
	MK, N = 41	3.1220 (1.26876)	2.7215	3.5224		
	GK, N = 23	4.0435 (1.36443)	3.4535	4.6335		
Tax incentives for setting up small and medium-sized enterprises	RK, N = 24	2.5000 (1.35133)	1.9294	3.0706	0.203	0.817
	MK, N = 41	2.2683 (1.44956)	1.8108	2.7258		
	GK, N = 23	2.3043 (1.55021)	1.6340	2.9747		
Corporate income tax incentives	RK, N = 24	3.4167 (1.47196)	2.7951	4.0382	1.538	0.221
	MK, N = 41	3.6341 (1.19909)	3.2557	4.0126		
	GK, N = 23	4.0435 (1.06508)	3.5829	4.5041		
Personal income tax incentives	RK, N = 24	2.5833 (1.28255)	2.0418	3.1249	3.345	0.040
	MK, N = 41	2.1707 (1.20213)	1.7913	2.5502		
	GK, N = 23	3.0000 (1.27920)	2.4468	3.5532		

\*There is statistically significant difference at the level  $p < 0.05$ .

Source: Authors' research.

0.085, and can be considered as a medium-sized difference. Subsequent comparison through the THSD test, the results of which are shown in Table

5, found that the abovementioned statistically significant difference exists between foreign investors belonging to regional companies (M

- = 2.2500, SD = 1.25974), and those belonging to global companies (M = 3.0000, SD = 1.26678).
- In assessing the degree of impact of tax incentives on exporting companies,  $F(2, 85) = 10.513$ ,  $p = 0.000$ , where the size of the difference among different groups of foreign investors expressed by the eta square is  $\eta^2 = 0.198$ , and can be considered as a big difference. Subsequent comparison through the THSD test, the results of which are shown in Table 6, found that the abovementioned statistically significant difference exists between foreign investors belonging to regional (M = 2.2500, SD = 1.39096) and multinational companies (M = 2.7805, SD = 1.25523), and those belonging to global companies (M = 3.9565, SD = 1.33070).
  - In assessing the degree of impact of tax incentives on employing new employees,  $F(2, 85) = 4.240$ ,  $p = 0.018$ , where the size of the difference among different groups of foreign investors expressed by the eta square is  $\eta^2 =$

0.090, and can be considered as a medium-sized difference. Subsequent comparison through the THSD test, the results of which are shown in Table 7, found that the abovementioned statistically significant difference exists between foreign investors belonging to regional (M = 3.0000, SD = 1.56038) and multinational companies (M = 3.1220, SD = 1.26876), on the one hand, and those belonging to global companies (M = 4.0435, SD = 1.36443), on the other hand.

- In assessing the degree of impact of tax incentives on personal income tax,  $F(2, 85) = 3.345$ ,  $p = 0.040$ , where the size of the difference among different groups of foreign investors expressed by the eta square is  $\eta^2 = 0.073$ , and can be considered as a medium-sized difference. Subsequent comparison through the THSD test, the results of which are shown in Table 8, found that the abovementioned statistically significant difference exists between foreign investors belonging to multinational

**Table 5: The results of THSD test on differences among foreign investors depending on internationalization of their business in evaluating the impact of tax incentives for investing in certain industry branches**

	(I)	(J)	MD (I-J)	p*	95% CIM	
					Lower	Upper
Tax incentives for investment in certain industry branches	RK	MK	-0.75000	0.051	-1.5018	0.0018
		GK	-0.92391	0.031	-1.7774	-0.0704
	MK	RK	0.75000	0.051	-0.0018	1.5018
		GK	-0.17391	0.850	-0.9359	0.5881
	GK	RK	0.92391	0.031	0.0704	1.7774
		MK	0.17391	0.850	-0.5881	0.9359

\* There is statistically significant difference at the level  $p < 0.05$ .  
Source: Authors' research.

**Table 6: The results of THSD test on differences among foreign investors depending on internationalization of their business in evaluating the impact of tax incentives on exporting companies**

	(I)	(J)	MD (I-J)	p*	95% CIM	
					Lower	Upper
Tax incentives for exporting companies	RK	MK	-0.53049	0.263	-1.3353	0.2744
		GK	-1.70652	0.000	-2.6203	-0.7928
	MK	RK	0.53049	0.263	-0.2744	1.3353
		GK	-1.17603	0.003	-1.9918	-0.3602
	GK	RK	1.70652	0.000	0.7928	2.6203
		MK	1.17603	0.003	0.3602	1.9918

\* There is statistically significant difference at the level  $p < 0.05$ .  
Source: Authors' research.

companies ( $M = 2.1707$ ,  $SD = 1.28255$ ), and those belonging to global companies ( $M = 3.0000$ ,  $SD = 1.27920$ ).

## Discussion

Tax incentives are the most common form of state intervention in the function of increasing competitiveness. The policy of tax incentives includes measures and instruments of state intervention in order to encourage competitiveness. One of the most important measures is the creation of an investment climate that can attract foreign direct investments, whereby the stimulating tax environment is a very important instrument for increasing foreign investments.

In order to determine the significance of tax incentives, special attention has been paid to tax incentives in certain areas of foreign investors' business, depending on their business activity, as well as depending on the level of internationalization of foreign investors' operations. In the analysis of the main activity of foreign investors, 55

production and 33 service companies participated in the survey.

Having compared the obtained results, the conclusion can be made that foreign investors belonging to production industries value the impact of tax incentives for investing in underdeveloped regions more than those from service industries. On the other hand, foreign investors belonging to production industries emphasize the impact of tax incentives for companies that export, more than those coming from service industries.

Observed by the level of internationalization of a foreign company, the research included 24 regional companies (operating in one region or in neighboring countries), 41 multinational companies (operating in many countries, with certain geographic regions having priority), and 23 global companies (which operate in almost all countries, no geographic region has a priority). Foreign investors belonging to global companies have given more importance to tax incentives for investing in specific industries than foreign investors which belong to regional companies.

**Table 7: The results of THSD test on differences among foreign investors depending on internationalization of their business in evaluating the impact of tax incentives on employment of new employees**

	(I)	(J)	MD (I-J)	p*	95% CIM	
					Lower	Upper
Tax incentives for employment of new employees	RK	MK	-0.12195	0.937	-0.9666	0.7227
		GK	-1.04348	0.030	-2.0025	-0.0845
	MK	RK	0.12195	0.937	-0.7227	0.9666
		GK	-0.92153	0.032	-1.7777	-0.0653
	GK	RK	1.04348	0.030	0.0845	2.0025
		MK	0.92153	0.032	0.0653	1.7777

\* There is statistically significant difference at the level  $p < 0.05$ .  
Source: Authors' research.

**Table 8: The results of THSD test on differences among foreign investors depending on internationalization of their business in evaluating the impact of tax incentives on personal income tax**

	(I)	(J)	MD (I-J)	p*	95% CIM	
					Lower	Upper
Personal income tax incentives	RK	MK	0.41260	0.405	-0.3504	1.1756
		GK	-0.41667	0.488	-1.2829	0.4496
	MK	RK	-0.41260	0.405	-1.1756	0.3504
		GK	-0.82927	0.033	-1.6026	-0.0559
	GK	RK	0.41667	0.488	-0.4496	1.2829
		MK	0.82927	0.033	0.0559	1.6026

\* There is statistically significant difference at the level  $p < 0.05$ .  
Source: Authors' research.

On the other hand, investors belonging to global companies place greater importance on tax incentives for companies that export in relation to foreign investors that belong to regional and multinational companies. As for tax incentives for employment of new employees, they were given greater importance by foreign investors belonging to global companies, compared to regional and multinational companies. Foreign investors which belong to global companies gave greater importance to tax incentives for personal income tax in relation to foreign investors belonging to multinational companies.

## Conclusions

In the era of globalization of business, characterized by the elimination of obstacles so as to enable the free flow of capital, goods, services and labor, the study of the problem of tax competition is one of the most important tasks in finance and economics in general. After the admission of most Eastern European countries into the European Union, the focus of the tax competitiveness issue was transferred to the countries of South East Europe that were left outside the European Union, including Serbia, which do not have enough domestic capital in their economies, nor enough investments necessary to encourage economic activities.

Particular attention should be paid to the influence that tax competition can have on the overall economy, so the primary task of the fiscal policy makers in these countries is to constantly monitor world trends in this area, and harmonize domestic regulations in order to attract foreign investments. With the rise in the free capital movement on the world market, all countries are in a position to compete with one another to engage economic entities, in order to attract as many investments as possible to their territory.

They support the standpoint that fiscal policy is a very powerful instrument for attracting investment, meaning that tax competition is one of the most important indicators of overall competitiveness. For this reason, it is very important for them to try to provide favorable conditions for foreign investments, above all by favorable tax treatment, in order to secure high capital inflow.

In most international studies dealing with doing business conditions and competitiveness, Serbia was ranked rather low compared to the other countries from the CEE and the Western Balkans [36]. In the last 10 years, the issue of the tax system reform has been constantly in the focus, with two basic reasons why it is important to implement it in practice. The first reason is the low efficiency of the public sector, i.e., a relatively high level of costs in relation to the quality and scope of services that this sector can offer. Therefore, it is necessary to reduce the costs of the public sector, but also to improve the quality of public services.

The second reason is to ensure a long-term sustainability and stability of public finances. The existing tax system and the level of public spending may result in a high level of fiscal deficit, as well as the rapid growth of public debt. Additional income is possible only if the fiscal discipline is tightened. It is necessary to amend the existing tax regulations, because with the change in tax rates and taxation coverage, the tax system would become more fair, simple and efficient.

In order to make the tax system as good as possible, it is also necessary to use the experience of other countries. Serbia should rely on the experience of more developed countries from the region, since they are direct competitors, among other things, in attracting foreign investments, which are one of the factors enabling the progress of the economy [8]. It is very important for the tax authorities not to violate the principle of security when conducting tax policy. For this reason, tax regulations must be made only after a detailed analysis of all the consequences that these changes may bring.

Based on the results obtained by the conducted empirical research, it can be concluded that tax incentives are very important to foreign investors operating in Serbia. Foreign investors pay special attention to tax incentives in the income taxation system, as incentives that could have a decisive influence on the final decision for capital investment in Serbia.

In addition to these incentives, foreign investors expressed the view that tax incentives related to the employment of new workers as well as tax incentives for

enterprises that are predominantly export-oriented are very important to them, while the significance of other stimuli is far less significant. Therefore, it is very important that fiscal policy makers pay special attention to these tax incentives, since they can contribute to the improvement of the business environment in Serbia to some extent.

In this manner, the conditions created will greatly be in favor of foreign investors, consequently making Serbia an attractive investment destination for all business entities aiming to invest their own capital in other countries.

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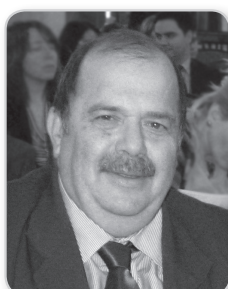
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# FROM CONFIDENTIALITY TO TRANSPARENCY IN BUSINESS CONTRACTS CONCLUDED BY A STATE

Od poverljivosti do transparentnosti u poslovnim  
ugovorima zaključenim od strane države

## Abstract

This paper analyses the issue of confidentiality in international business contracts concluded by a state and explores the shift from confidentiality to transparency emerging in recent years. Confidentiality obligation may be established with respect to information arising out of or connected to the contract, or with respect to the elements of the dispute settlement mechanism. While the principle of confidentiality still predominantly governs the information arising out of or connected to the contract, the dispute settlement system gradually becomes much more permeable to the principle of transparency. This is particularly true for the treaty-based investor-state arbitration, whose legal framework has undergone significant changes over the last decade. The reason for the emergence of the principle of transparency in international business contracts concluded by a state lies in greater public interest. Still, confidentiality obligation is most often included in international business contracts concluded by a state by free will of contracting parties, and the parties to the contract are encouraged to use this possibility. To that effect, they may find model confidentiality clauses and model contracts prepared and published by international organisations particularly useful.

**Keywords:** *confidentiality, transparency, international business contracts, confidentiality clause, non-disclosure agreement, dispute settlement.*

## Sažetak

Predmet rada predstavlja analizu obaveze poverljivosti u međunarodnim poslovnim ugovorima zaključenim od strane države. U posebnoj fokusu je tendencija pomeranja do sada dominantnog principa poverljivosti ka principu transparentnosti, koja naročito dolazi do izražaja poslednjih godina. Obaveza poverljivosti može da bude ustanovljena kako u pogledu podataka i informacija koji proističu iz ugovora ili su u vezi sa njim, tako i u pogledu pojedinih aspekata rešavanja sporova iz tog ugovora. Dok princip poverljivosti i dalje dominira u pogledu podataka i informacija koji proističu iz ugovora ili su u vezi sa njim, dotle se princip transparentnosti u poslednje vreme sve češće uspostavlja u fazi rešavanja sporova. To naročito dolazi do izražaja u oblasti rešavanja sporova između ulagača i države prijemnice ulaganja, a koji proističu iz povrede međunarodnog sporazuma o zaštiti ulaganja. Razlog za uvođenje i jačanje principa transparentnosti u međunarodnim poslovnim ugovorima zaključenim od strane države ogleda se u prisustvu javnog interesa, koji inače, nije karakterističan za poslovne odnose između „čisto“ komercijalnih ugovornih strana. Ipak, kako se i u poslovnim ugovorima zaključenim od strane države obaveza poverljivosti najčešće uspostavlja slobodnom voljom ugovornih strana, one bi ovom pitanju trebalo da pristupe oprezno i svrsishodno. U tom smislu, ugovornim stranama od značajne pomoći mogu biti modeli klauzula i sporazuma o poverljivosti izrađeni od strane međunarodnih organizacija.

**Cljučne reči:** *poverljivost, transparentnost, međunarodni poslovni ugovori, klauzula poverljivosti, sporazum o poverljivosti, rešavanje sporova.*

## Introduction

International business contracts often contain some exclusive, specific and delicate information. That information may refer to various aspects of business of contracting parties – commercial, technical, financial, etc. It is of vital importance for the contracting party to which the information refers to keep them confidential due to their economic value, as well as potential business consequences that their disclosure could entail. As a matter of fact, the contracting party may find out sensitive information on its counterpart at any point during the conclusion and performance of the contract – from initial negotiations to acceptance of the offer to conclude the contract to the fulfilment of contractual obligations, as well as during the settlement of a dispute which may arise between the parties. For these reasons a confidentiality clause is often inserted into international business contracts [5, pp. 262ff], [8, pp. 241-244], [2, pp. 134ff], [3, p. 80], [3, p. 409], [9]. By virtue of the confidentiality clause, one or both contracting parties assume the obligation to keep as confidential and not to reveal to third parties without prior consent of the counterpart any information on the counterpart or in relation to the contract that became known to it at any point during the conclusion and performance of the contract [12, pp. 239-248].

International business contracts are generally concluded by business entities, but they can also be concluded by a state. When a state enters into an international business contract, it normally does so in “private” capacity, i.e. without using its *imperium* (supreme power) [21, pp. 27-33]. An example would be the case when a state sells its shares in a company. The case in which a state is one of the contracting parties in such a transaction is no different from the case where the same contract is concluded between business entities – both parties freely decide whether they want to conclude a contract, they shape its content within the boundaries set by applicable law and negotiate the value of the transaction freely, etc. However, there may also be cases where international business contracts concluded by a state are of a mixed nature – they essentially represent commercial transactions, but the state nevertheless undertakes some obligations that it

can perform only in its public capacity, e.g. the stabilisation obligation, grant of a concession, etc. Irrespective of the type of the contract, i.e. whether it is purely commercial or mixed, the involvement of the state in an international business transaction has certain repercussions in the field of confidentiality. This is due to the fact that, unlike in the case of a transaction between two business entities, a business transaction involving a state attracts a wider public interest. Consequently, there is tension between the need of the contracting parties to keep some of the elements of their business relation confidential and the need of the public to ascertain whether the state exercises its commercial role with sufficient prudence and diligence.

This paper will present the legal regime applicable to the confidentiality obligation in international business contracts concluded by a state and explain the shift from confidentiality to transparency that exists with respect to some elements of these contracts. To that effect, the paper will first analyse the substantive aspects of the confidentiality obligation. It will then assess the confidentiality of the dispute settlement system in international business contracts concluded by a state and, finally, it will consider the emergence of the transparency principle in resolution of certain types of disputes.

## Substantive aspects of confidentiality obligation in international business contracts

Proper understanding of the confidentiality obligation in international business contracts requires a summary overview of critical substantive issues that arise from this obligation – its legal basis, subject matter, temporal scope, as well as sanctions in case of breach thereof.<sup>1</sup>

*Legal basis of the confidentiality obligation.* In most legal systems, the obligation to keep certain information confidential (usually the information which qualifies as trade secret) is prescribed by law. Depending on specific aspects of confidentiality obligation, its legal regime can be regulated by general acts governing criminal law, labour law, company law, competition law, etc. Additionally, confidentiality obligation can also be governed by specific

1 For further details, see [12, pp. 239-248].

laws on trade secrets. On the other hand, general rules of the law of obligations usually consider breach of the confidentiality obligation to be the grounds for civil liability, either contractual or tortious, on the basis of the good faith principle, as well as other general principles of the law of obligations and appropriate standards of diligence.<sup>2</sup>

The legal system of Serbia contains a specific Law on the Protection of Trade Secrets, while the Law on Companies explicitly prescribes the obligation of the persons having special duties towards the company to protect the confidentiality of trade secrets (Arts. 72-74) [13, pp. 290-291]. On the other hand, the Law of Obligations (Law of Contracts and Torts) does not contain any explicit obligation of confidentiality, yet this obligation can be derived from the general principle of good faith, as one of the basic principles of the Law. Confidentiality obligation is expressly provided for in the Predraft of the Serbian Civil Code, in the part regulating the negotiations on conclusion of a contract. Namely: "If one party divulged confidential information to the other or enabled it to become aware of such information, the other party, unless otherwise agreed, must not make those information known to third parties nor use them for its own interests, irrespective of the fact whether the contract was subsequently concluded or not. The liability for the breach of obligation of confidentiality may consist in the compensation of damage and in handing over to the injured party any benefit received by the party in breach by way of such breach" (Art. 23).

As far as the legal regime of business contracts concluded by the state in Serbian law is concerned, one should also consider the Data Secrecy Law. This Law governs the confidentiality of information important for the protection of public interests of the Republic of Serbia. It recognises trade secrets as a type of confidential information, but it does not define the legal regime of those secrets. Rather, it points to a specific law that would govern this issue (Art. 7). That would mean that the aforementioned principles and rules of Company Law and Law of Obligations also apply to business secrets relevant for the state.

Obviously, legal provisions cannot foresee all particular circumstances of each specific case that may occur in practice, so they cannot always provide answers to all questions that may arise with respect to confidentiality. For these reasons, contracting parties regulate the confidentiality obligation at their own discretion, stipulating confidentiality clauses in their contracts or concluding specific confidentiality (non-disclosure) agreements. In both cases, the legal basis of the confidentiality obligation is of a contractual nature and the contracting parties are in principle free to tailor it to their specific needs and interests, within the boundaries set by the public policy, mandatory rules of the applicable law and *boni mores*. Seeing that the differences between the confidentiality agreement and the confidentiality clause are mainly of a formal nature, the following considerations of the confidentiality obligation shall be made from the perspective of the confidentiality clause.

The confidentiality clause has become a standard term in a large number of international business contracts, especially the ones on transfer of technology, consulting services, conduct of studies, analyses and research, technical and business cooperation, equipment production and delivery, business representation, agency, commission agency and distribution, franchise contracts, contracts concluded within takeover, merger and acquisition transactions, setting up joint venture companies, etc. Additionally, the confidentiality obligation is often stipulated in relation to contract negotiations, where it appears to be particularly useful. Namely, while still considering the possibility of concluding a contract, the parties may reveal sensitive information that could help in assessing the interest for concluding a contract. Since the main contract has not yet been concluded at this stage, the confidentiality obligation is usually introduced by way of concluding a confidentiality agreement as a separate document or by adding the confidentiality clause to some of the agreements on negotiations (letter of intent, memorandum of understanding, preparatory agreement, etc.) [15, pp. 427-438], [18, pp. 495-505].

*Subject matter of the confidentiality obligation.* When drafting a confidentiality clause, it is particularly important to define the subject matter of the confidentiality obligation.

<sup>2</sup> For comparative study of this issue, see [1, pp. 287ff], [7, pp. 194-195]. In English law, this obligation is based on the principle of equity.



Namely, when information relative to a certain business transaction is not protected by law,<sup>3</sup> the intellectual property rules or a contract, the contracting parties are generally not bound to treat them as confidential [24, p. 62], [7, p. 194]. For these reasons, the contract needs to precisely define the scope of information that is to be considered confidential in the specific case, so that its unauthorised use or disclosure to third parties by the contractual counterpart represents a breach of the confidentiality obligation and is subject to sanctions. Additionally, it is implied that even in absence of such a contractual clause, when one party expressly declares that certain information is to be considered confidential, the other party tacitly undertakes the obligation of confidentiality by the very receipt of such information. Furthermore, even in absence of an explicit contractual clause or express declaration of confidentiality, the contractual counterpart may be obliged to keep the confidentiality of information on the basis of the principle of good faith. That would be the case where, because of specific nature of the information in question (e.g. know-how, business strategy, list of clients or suppliers, audit reports, etc.) or the professional capacities of contracting parties (especially when the contractual counterpart or third parties may become competitors to the contractual party to which the information relates), its use or disclosure by the contractual counterpart would be contrary to the principle of good faith.<sup>4</sup>

Apart from the definition of the subject matter of confidentiality obligation, contracting parties often stipulate the scope of information to which the confidentiality

obligation does not apply.<sup>5</sup> In the most general sense, this information may be classified under four groups: 1. information which is generally available to the public; 2. information which must be disclosed in conformity with mandatory legal requirements, court judgments or decisions of other competent organs; 3. information that has already been known to the contractual counterpart before it was disclosed to it by the party which was in possession of the information; 4. information whose disclosure the party to which such information relates has explicitly allowed.

*Duration of the confidentiality obligation.* As a rule, contracting parties define the temporal scope of application of the confidentiality obligation.<sup>6</sup> In that context, it is possible to distinguish between the clauses that stipulate the time limit for the duration of confidentiality obligation and the clauses in which confidentiality obligation is stipulated for an indefinite period of time. In most cases, confidentiality clauses specify a limited duration of confidentiality obligation. The moment when the aforementioned obligation comes into force and the moment when it expires depend on the specific circumstances of each case. Those could be: the moment in which the confidential information is made known to the other party, the moment of conclusion of the contract, the moment of expiry of the contract, a certain moment following the expiration of the contract or any other moment or point in time. In order to avoid situations that may lead to a dispute, the parties should define the moments limiting the duration of the confidentiality obligation in a way that can be objectively ascertained and proven (e.g. the moment of conclusion of the contract). Moreover, contracting parties should pay attention to

3 For example, Serbian Law on Companies defines the trade secret as any information whose disclosure to a third party could cause damage to the company, as well as any information which may have economic value because it is not generally known and is not readily available to third parties who could gain economic benefit from its use or disclosure, and which is protected by the company with appropriate safeguards aimed at maintaining its confidentiality. Information which is considered a trade secret can be production-related, technical, technological, financial or commercial information, a study, a research result, as well as a document, drawing, formula, object, method, procedure, notice or instruction of internal nature, etc. A trade secret is also any information defined as such under the law, other regulation or a company by-law. A company by-law may identify as trade secret only such information that complies with the requirements of the trade secret as provided in the Law. Furthermore, a company by-law may not define all information relating to the company's operations as trade secret (Art. 72 Par. 3-6).

4 For an overview of case law on this issue, see [1, p. 290].

5 This approach is also adopted in Serbian Law on Companies, which stipulates that the disclosure of privileged information shall not be deemed a breach of duty to maintain confidentiality if such disclosure is: obligatory under the law; necessary for the performance of business operations or protection of the company's interests; made to the competent authorities or general public with the sole purpose of calling attention to an offence punishable under the law (Art. 73).

6 Serbian Law on Companies envisages that the persons having special duties towards the company should abide by the confidentiality obligation for two years upon expiry of their contract, whilst allowing for a longer term if so provided under the Memorandum of Association, Articles of Association, the decision of the company or employment contract. However, the Law does not allow such term to exceed 5 years (Art. 72 Par. 1), which means that any contractual clause providing for a longer or unlimited duration of this duty would be subject to the sanction of nullity.



the potential existence of the rules of applicable law that limit the duration of the confidentiality obligation in an imperative way. For example, that could be the case with the rules pertaining to competition law. On the other hand, some confidentiality clauses provide for an indefinite duration of the confidentiality obligation. Namely, in order to protect confidential information in case of any kind of contract termination, the parties may stipulate that the confidentiality clause “survives” such termination. In these and similar cases, it is necessary to stipulate that the confidentiality obligation expires when the confidential information becomes publicly known. The validity of this clause should be assessed from the standpoint of mandatory rules of applicable law and general principles of the law of obligations [8, p. 241]. Finally, when the confidentiality clause does not regulate the issue of duration of confidentiality obligation whatsoever, it should be deemed that the parties opted for its indefinite duration.

*Sanctions for breach of the confidentiality obligation.* Confidentiality obligation may be breached in two ways: by unauthorised disclosure of confidential information to third parties and by unauthorised use of confidential information. The breach of confidentiality obligation entails liability for damage.<sup>7</sup> The valuation of damage for breach of confidentiality obligation in international business contracts represents a very complex question. Not only does such assessment require determination and proof of the value of damage sustained in each specific case (which is particularly difficult in practice, due to the nature of the obligation in question), but also a good command of applicable law, in particular of its rules governing the types of damage, the scope of recoverability, limitation, exclusion and exemption of liability, which are all issues in relation to which national legal systems may have different and sometimes even diverging solutions [10, pp. 468-479], [17, pp. 271-289], [16, pp. 95-133]. In order to avoid the aforementioned problems, the contracting parties in international business contracts sometimes stipulate a lump sum that is to be paid in case of breach

of confidentiality obligation. The payment of this sum is often secured by a bank guarantee. Nevertheless, having in mind that national legal systems may treat these issues in different ways, it is necessary to check the validity and legal effects of the aforementioned clauses from the standpoint of relevant rules of applicable law.

*Model contracts and model clauses.* Model contracts and model clauses made by international organisations may be considered desirable and recommendable solutions from an international standpoint. For these reasons, and having in mind the differences between national systems of contract law and the risks of drafting imprecise, unclear and contradicting contract clauses, these documents appear to be optimal solutions that should be taken into consideration when drafting international business contracts in general, and confidentiality clauses in particular. In that sense, International Chamber of Commerce (ICC) (<http://www.iccwbo.org>) was particularly active in preparing model contracts and model clauses. Among other documents, ICC has drafted the ICC Model Confidentiality Agreement.<sup>8</sup> Similarly, the International Trade Centre (ITC) (<http://www.intracen.org>) created a series of model contracts that take into account the increasing sophistication of international trade transactions and incorporate internationally recognised standards and best practices [9]. The clauses of these contracts include confidentiality clauses. For example, the ITC Model Contract for an International Corporate Joint Venture proposes the following confidentiality clause: “12.1 Each of the Parties shall at all times use all reasonable efforts to keep confidential (and to ensure that its employees and agents keep confidential) all commercial and technical information which it may acquire (i) in relation to the JVC or (ii) in relation to the clients, Business or affairs of the other party (or any member of its respective group). Neither party shall use or disclose any such information except with the consent of the other party or, in the case of information relating to the JVC, in the ordinary course of advancing the JVC’s Business. The restriction in this Article 12.1 shall not apply to any information that is: 12.1.1 Publicly available through no fault of that party;

<sup>7</sup> In case of a company employee, the sanctions provided by Serbian Law on Companies for a breach of confidentiality duty are indemnification and expulsion from company (Art. 74).

<sup>8</sup> <https://iccwbo.org/resources-for-business/model-contracts-clauses/confidentiality/>.

12.1.2 Already in the possession of that party prior to its disclosure without any obligation of confidentiality; or 12.1.3 required to be disclosed by that party pursuant to any law, stock exchange regulation or binding judgement, order or requirement of any court or other competent authority. 12.2 Each party shall use all its respective powers to ensure (so far as it is able) that the JVC and its officers, employees and agents observe a similar obligation of confidence in favour of the Parties to this contract. 12.3 The provisions of this Article 12 shall survive any termination of this contract.” [9, p. 29].

### Confidentiality of the dispute settlement regime

Practice shows that the preferred method of dispute settlement in international business contracts, including the ones where a state is one of the contracting parties, is arbitration. A recent survey of more than 1,000 respondents conducted by the experts from the School of Law at Queen Mary University of London shows that 48% of respondents would opt for arbitration as a method of resolution of cross-border business disputes, while 49% would opt for arbitration in conjunction with some other form of alternative dispute resolution (ADR), such as mediation [19, p. 5]. That makes 97% of respondents who show their preferences for arbitration, either alone or combined with another ADR method. On the other hand, only 1% of respondents would opt for cross-border litigation [19, p. 5].

Arbitration is perceived as better adapted to settling disputes arising out of international business transactions than litigation due to a number of specific features – it is seen as more flexible, more efficient, less costly, more neutral [11, pp. 458-459], [14, pp. 238-239] and, in particular, confidential [22, pp. 349-351]. The principle of confidentiality of arbitration, in broad sense, requires the parties to arbitration proceedings not to reveal any aspect or element of the arbitration proceedings or any information that could lead to identifying those aspects and elements to third parties (names of the parties to the dispute, content of the statement of claim and the answer to the statement of claim, applicable law, applicable procedural rules, place of arbitration, names of arbitrators, names of

witnesses and experts, etc.), including the existence of the dispute itself. It is often argued that the principle of confidentiality helps to achieve a very important aim for the business community – it preserves the reputation and the integrity of the parties as it keeps the information on their dispute out of the public eye. The above-mentioned Queen Mary Survey shows that 87% of respondents believe that confidentiality of international commercial arbitration is important, while 36% of them would place it among three most valuable characteristics of this dispute settlement method [19, p. 7].

Confidentiality of arbitral proceedings may be introduced in two ways: directly or indirectly. If confidentiality is introduced directly, the parties to an international business contract containing an arbitration clause agree therein on confidentiality of the proceedings and define the scope of information protected. That method is very similar to agreeing on confidentiality of information contained in or connected to the underlying contract. The indirect method of agreeing on confidentiality means that the arbitration clause itself is silent on the issue of confidentiality, but the choice of rules applicable to arbitration proceedings will indirectly influence the issue of confidentiality, since arbitration rules of major arbitral institutions normally contain provisions on confidentiality of the proceedings. For example, Article 22(3) of the ICC Arbitration Rules issued in 2017 prescribes that: “upon the request of any party, the arbitral tribunal may make orders concerning the confidentiality of the arbitration proceedings or of any other matters in connection with the arbitration and may take measures for protecting trade secrets and confidential information”. Article 30.1 of the 2014 Arbitration Rules of the London Court of International Arbitration states that: “the parties undertake as a general principle to keep confidential all awards in the arbitration, together with all materials in the arbitration created for the purpose of the arbitration and all other documents produced by another party in the proceedings not otherwise in the public domain, save and to the extent that disclosure may be required of a party by legal duty, to protect or pursue a legal right, or to enforce or challenge an award in legal proceedings before a state court or other legal authority”. A very recent 2018 version of the Arbitration Rules of the

German Arbitration Institute (DIS) provides in Article 44.1 that: “unless the parties agree otherwise, the parties and their outside counsel, the arbitrators, the DIS employees and any other person associated with the DIS who are involved in the arbitration shall not disclose to anyone any information concerning the arbitration, including in particular the existence of the arbitration, the names of the parties, the nature of the claim, the names of any witnesses or experts, any procedural orders or awards, and any evidence that is not publicly available”. As it can be seen from the provisions cited, they all give grounds for some form of confidentiality of arbitral proceedings, either by way of opting in (e.g. ICC Arbitration Rules), or by way of opting out (e.g. DIS Arbitration Rules).

However, despite the fact that confidentiality is a highly valued feature of international commercial arbitration, there are voices in favour of promotion of procedural transparency. These voices seem to be particularly numerous when one of the parties to international commercial arbitration is a state or an entity which may be linked to a state through the rules of attribution in public international law. The need for transparency may particularly emerge when arbitration is supposed to consider and review public policies and other measures of public interest taken by the state or when the value of the dispute is so high as to justify the public interest in the development and the outcome of arbitration proceedings.

The importance of the debate on the place of transparency in international arbitration proceedings where one of the parties is a state was recognized by the United Nations Commission on International Trade Law (UNCITRAL), which in 2010 entrusted one of its working groups with the task to develop appropriate legal standards for transparency in treaty-based investor-state arbitration. As it may be seen, UNCITRAL has decided to focus on a very precise type of international business disputes: the disputes between a foreign investor and the host state that arise out of the potential breach of international standards of investment protection enshrined in international investment treaties. The choice of the field where the principle of transparency is to be introduced seems to be justified by both types of main concerns regarding confidentiality that we have previously identified. Considering that the

state’s obligation to grant certain standards of treatment to foreign investments and to protect them accordingly stems from public international law<sup>9</sup> (we recall that UNCITRAL has limited its work to treaty-based investment disputes only), the arbitral tribunal, in order to reach a decision on the claim, must inevitably review some public policies and their application.

Additionally, the amount claimed in dispute is often very high – a study conducted by the European Commission a couple of years ago showed that the average amount claimed was \$622.6 million, while the average amount awarded was \$16.6 million [4, pp. 8-9]. Notwithstanding the striking difference between the average amount claimed and the average amount awarded, it can be concluded that the value of investment disputes is indeed high.

It should also be noted that the specialised procedural framework applicable to a large number of investment arbitrations, the one set by the International Centre for Settlement of Investment Disputes (ICSID), has somewhat reduced the ambit of the principle of confidentiality. Namely, the ICSID publishes the basic information on requests for arbitration and, under certain conditions, allows the submission of third-party briefs, as well as the participation of third parties in hearings [6, pp. 243-247].

The debate around transparency in treaty-based investor-state arbitration led to some specific results which can be seen as the beginning of the gradual emergence of the transparency principle in investment matters. This point will be further explored and developed in the following section of this paper.

### **Emergence of the principle of transparency in dispute settlement regime**

UNCITRAL has begun the mission of developing appropriate legal standards for transparency in treaty-based investor-state arbitration by drafting the specialized Rules on Transparency in Treaty-based Investor-State Arbitration, the Convention on Transparency in Treaty-based Investor-

<sup>9</sup> This is a general obligation of the host state with respect to the investors coming from the state with which the treaty has been concluded and it exists irrespective of whether or not the host state has entered into a particular contract with the investor.

State Arbitration (the Mauritius Convention) and by amending its Arbitration Rules.

*Rules on Transparency in Treaty-based Investor-State Arbitration.* UNCITRAL Transparency Rules represent a major step toward the shift of paradigm of confidentiality in treaty-based investor-state arbitration. Namely, the Transparency Rules set transparency, rather than confidentiality, as the default principle in arbitration proceedings to which they apply [6, p. 248]. The proceedings shall remain confidential only if there is an adequate agreement to that effect. Additionally, some information, such as confidential business information or the information the disclosure of which would impede law enforcement, shall nevertheless remain confidential by virtue of the transparency exception contained in Article 7 of the Transparency Rules.

The Transparency Rules provide for the disclosure of the basic information regarding the dispute. Pursuant to Article 2 of the Transparency Rules, this basic information includes: the names of the parties in dispute, the economic sector involved and the identification of the treaty under which the claim is brought. This set of information resembles, at least to a certain extent, the set of information on the dispute available under the ICSID framework. However, a significant difference between the ICSID system and the Transparency Rules exists in the field of public availability of hearings. While in the ICSID system the proceedings, as a matter of principle, remain confidential with a possibility for the tribunal to open them up for public subject to fulfilment of certain conditions, Article 6.1 of the Transparency Rules expressly provides that the hearings shall be public. This is an excellent example of the above-mentioned shift of paradigm and it represents a solution that would have been seen as fairly uncommon in the world of arbitration before the adoption of the Transparency Rules. Naturally, there are situations where the hearings shall nevertheless remain confidential. That would be the case where confidentiality of hearings is necessary to protect the integrity of the proceedings or the confidential information laid down in Article 7 of the Transparency Rules (Arts. 6.2 and 6.3). The Transparency Rules also regulate the issues of publication of documents (Art. 3), submissions of third parties (Art. 4) and the

so-called non-disputing Party to a treaty (Art. 5), which is in fact the investor's state of origin.

As it may be seen, the Transparency Rules represent a significant change in approach to the issue of confidentiality of arbitration arising out of commercial disputes to which one of the parties is a state [20, pp. 774-796]. It is perhaps precisely due to that fact that their drafters were rather cautious with respect to their applicability by default. Namely, the Transparency Rules will be applied by default only in disputes arising out of investment protection treaties concluded on or after 1 April 2014 and in case the parties have not excluded their application. However, if the drafters of the Rules have correctly assessed the need for enhanced transparency in arbitral proceedings where one party is a state, there should be room for a wider application of the Transparency Rules. That might be the case why UNCITRAL decided to go another step further and to draft the Convention on Transparency in Treaty-based Investor-State Arbitration (the Mauritius Convention) as well.

*The Mauritius Convention.* As stated in its Preamble, the Mauritius Convention, same as the Transparency Rules, was drafted with the aim of contributing to the establishment of a harmonised legal framework for a fair and efficient settlement of international investment disputes. However, an important obstacle to achieving that aim is the fact that the Transparency Rules (still) have a fairly limited potential scope of application. In an attempt to help to expand their applicability *ratione personae*, UNCITRAL has drafted the Mauritius Convention. The Convention entered into force on 18 October 2017, i.e. six months after the deposit of the third instrument of ratification, acceptance, approval or accession, as provided by Article 9.1 of the Convention. At the present moment, the Mauritius Convention has 5 State parties, whereas another 18 states have signed the Convention but have not yet become bound by it as they have not yet deposited the instruments of ratification, acceptance, approval or accession (Table 1).

The Mauritius Convention seeks to expand the scope of application of the Transparency Rules using two possible methods: bilateral and unilateral. The bilateral (or multilateral) way is defined in Article 2.1 and it means



**Table 1: Current status of the Mauritius Convention**

State	Signature	Ratification, accession, approval or acceptance	Entry into force
Australia	X		
Belgium	X		
Benin	X		
Bolivia	X		
Cameroon	X	X	X
Canada	X	X	X
Congo	X		
Finland	X		
France	X		
Gabon	X		
Gambia	X	X	X
Germany	X		
Iraq	X		
Italy	X		
Luxembourg	X		
Madagascar	X		
Mauritius	X	X	X
Netherlands	X		
Sweden	X		
Switzerland	X	X	X
Syria	X		
United Kingdom	X		
United States of America	X		

Source: Prepared on the basis of [23].

that the Transparency Rules shall apply to any treaty-based investor-state arbitration, whether or not initiated under the UNCITRAL Arbitration Rules, in which both the respondent state and the state of origin of the claimant are parties to the Mauritius Convention and have not made a reservation with respect to its application. The unilateral way is defined in Article 2.2 and it means that the Transparency Rules shall apply to any treaty-based investor-state arbitration, whether or not initiated under the UNCITRAL Arbitration Rules, in which the respondent state is a party to the Mauritius Convention that has not made a reservation with respect to its application, and the claimant agrees to the application of the Transparency Rules.

It should be noted that Articles 2.1 and 2.2 of the Mauritius Convention do not contain any limitations as to the procedural framework or the date of entry into force of the investment protection treaty that serves as the

basis for arbitration between the investor and the state. That means that the Convention may expand the scope of application of the Transparency Rules to a large number of treaties and arbitrations arising out of them. As far as the bilateral method is concerned, that potential is still far from being achieved, since only 5 States are parties to the Convention. However, as far as the unilateral method is concerned, that possibility is high even at the present moment, because the status of the investor's state of origin in the Convention does not count in the application of the Transparency Rules as long as the respondent state is a party to the Convention and the claimant (investor) agrees to the application of the Transparency Rules. As the number of parties to the Mauritius Convention keeps growing, one should expect multiplication of possible situations where the application of the Transparency Rules will be triggered by the Convention, either through the bilateral or the unilateral method. Therefore, it should be expected that the principle of transparency, at least in treaty-based investor-state arbitration, would eventually overpower the principle of confidentiality.

*Amendments to UNCITRAL Arbitration Rules.* UNCITRAL Arbitration Rules are widely used as a procedural framework for settling investor-state disputes in ad hoc arbitration. Therefore, a natural consequence of the adoption of the Transparency Rules was the creation of some kind of a link between the Transparency Rules and the Arbitration Rules. That link came in the form of amendment to the 2010 version of the Arbitration Rules. The amendment consists of the inclusion of a new paragraph 4 to Article 1 of the Arbitration Rules. That paragraph reads as follows: "For investor-state arbitration initiated pursuant to a treaty providing for the protection of investments or investors, these Rules include the UNCITRAL Rules on Transparency in Treaty-based Investor-State Arbitration ("Rules on Transparency"), subject to article 1 of the Rules on Transparency". That effectively means that the Transparency Rules will supplement the Arbitration Rules if arbitration is initiated pursuant to a treaty on investment protection concluded on or after 1 April 2014, unless the parties to that treaty have agreed otherwise, or if arbitration is initiated pursuant to a treaty on investment protection concluded before 1 April 2014 and the parties



to the arbitration or the parties to the treaty have agreed on the application of the Rules on Transparency.

## Conclusion

Confidentiality is an important feature of international business contracts. Its purpose is indeed manifold: it is used for the protection of trade secrets from unauthorised disclosure to third parties, as well as for the protection of the business reputation of parties in case of a dispute between them. As far as the substantive obligation of confidentiality is concerned, it may be established in several ways. First and foremost, it may be agreed upon by the parties to an international business contract, either in the form of a confidentiality clause or in the form of a confidentiality (non-disclosure) agreement. Second, the confidentiality obligation may stem from an express provision of a law or other general legal act. Finally, the confidentiality obligation may be derived from general principles of contract law. As far as the obligation of procedural confidentiality is concerned, it may be introduced by the agreement of the parties, an international treaty or the applicable procedural rules.

The fact that a state is a party to an international business contract does not change much in the legal regime of the substantive obligation of confidentiality. However, the regime of confidentiality of the dispute settlement procedure shows some differences with respect to situations where the international business contract is concluded between two “purely” business entities. Namely, in recent years, the principle of transparency has started to replace the principle of confidentiality, at least in a very specific type of disputes – treaty-based investor-state arbitration. Considering the peculiarities of this type of disputes, the members of UNCITRAL decided that it would be appropriate to give to these disputes a transparent, rather than confidential status. Having in mind that the legal texts produced by UNCITRAL are still quite recent, it is too early to make a critical assessment of such approach based on case law.

In any event, it may be concluded that the principle of confidentiality in international business contracts serves legitimate goals. However, since the importance of

confidentiality of some elements of the business relationship should be counterweighted against other considerations that a state must consider, such as legitimate public interest or the right to be granted access to publicly significant information, the confidentiality obligation should be most carefully drafted in such contractual relationships. It would be therefore highly recommendable that the parties agree on the scope of the confidentiality obligation, rather than to rely solely on the general legal framework. Thanks to the work of various international organisations and professional associations, parties can take advantage of different model clauses of confidentiality. This can greatly assist them when drafting their contracts, so that the risk of improper, inadequate or inefficient wording of confidentiality clauses and agreements is significantly reduced or hopefully completely eliminated, which is of the utmost importance for both contracting parties.

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# EXPECTATIONS AND LIMITATIONS OF ACTIVITY-BASED COSTING APPLICATION IN SMALL AND MEDIUM-SIZED ENTERPRISES

Očekivanja i ograničenja primene obračuna troškova  
po aktivnostima u malim i srednjim preduzećima

## Abstract

In the present study we examine the application of activity-based costing (ABC) in small and medium-sized enterprises (SMEs). We want to investigate the circumstances which determine whether ABC will improve performance and competitiveness of small and medium-sized enterprises. The main objective of our study is to determine the effects (expectations) and limitations of ABC application in small and medium-sized enterprises. In addition to other factors, the expected benefits and potential limitations are the key factors for future implementation of ABC and potential improvement of performance and competitiveness of small and medium-sized enterprises. The analysis is conducted on a sample of 33 small and medium-sized enterprises in Serbia. The study shows that the key benefits of ABC implementation are performance improvement and providing more accurate information. Also, one of the most important obstacles to wider application of ABC in small and medium-sized enterprises is the lack of professional knowledge and practical experience.

**Keywords:** *small and medium-sized enterprises, management, performance measurement, cost accounting, activity-based costing.*

## Sažetak

U ovoj studiji ispitujemo primenu obračuna troškova po aktivnostima (ABC) u malim i srednjim preduzećima (SMEs). Ključno pitanje je koji faktori utiču na to da li će ABC unaprediti performanse i konkurentnost malih i srednjih preduzeća. Cilj naše studije je da se identifikuju efekti (očekivanja) i ograničenja primene ABC u malim i srednjim preduzećima. Pored ostalih faktora, očekivane koristi i potencijalna ograničenja su ključni faktori implementacije ABC, potencijalnog unapređenja performansi i konkurentnosti malih i srednjih preduzeća. Analiza je sprovedena na uzorku od 33 preduzeća iz sektora malih i srednjih preduzeća Srbije. Studija je pokazala da unapređenje performansi i obezbeđenje tačnijih informacija predstavljaju ključne koristi od implementacije ABC. Takođe, jedan od ključnih ograničavajućih faktora šire primene ABC u sektoru malih i srednjih preduzeća predstavlja nedostatak profesionalnih znanja i praktičnih veština.

**Ključne reči:** *mala i srednja preduzeća, upravljanje, merenje performansi, računovodstvo troškova, obračun troškova po aktivnostima.*

## Introduction

Activity-based costing (ABC) was developed by American professors, Robert Kaplan and Robin Cooper during the 1980s. Kaplan and Cooper found that traditional cost accounting methods cannot accurately identify costs and determine the product cost, as they involve the use of inadequate drivers for allocating overhead costs, primarily direct labor hours or volume of activities. Traditional cost accounting provides insufficiently precise information about the product costs, which contribute to inadequate business management decisions and poor operating results of enterprises. Kaplan and Cooper saw the solution to this problem in ABC [15], [14]. ABC is based on the assumption that the cost objects initiate the realization of activities and activities consume resources and give rise to costs. ABC identifies several levels of cost causation, i.e. assesses costs in relation to the change in the volume of production, but also in relation to other factors that cause changes in costs (cost drivers). ABC increases the percentage of costs which are directly linked to individual cost objects, i.e. enables more accurate allocation of overhead costs. More precise and accurate information allows management to focus on business processes and performance that contribute to profit growth. ABC has been successfully implemented in large firms and has a potential to be applied in companies of all sizes. Previous research found that ABC can be the key for creating a competitive edge in small to medium-sized enterprises [3]. The focus of our study is implementation of ABC in the sector of small and medium-sized enterprises (SMEs) in Serbia.

SME sector is the backbone of growth and development of national economies. More than 95% of enterprises worldwide are SMEs, accounting for 67% share in employment and 52% share in value added [3]. SMEs are more innovative than larger companies and they develop and commercialize the majority of innovative products and services [9], [5]. In almost all developed countries, SMEs are the most efficient segment of the economy. They play a crucial role in furthering the growth, innovation and prosperity in developing economies. Developing countries face problems of high unemployment, low level of economic activity, lack of competition, and lack

of investment. SMEs can help developing countries in the transition process and it is necessary to have in mind that they are key drivers of economic development [10]. Whether developing economies are in a state of recovery or moving forward into the future, cost cutting is of crucial importance for them.

Having in mind the importance of SMEs, modern literature attempts to determine the factors that affect their performance [19] and highlights a large number of management tools that SMEs can use to achieve and maintain competitiveness, and achieve significant cost savings, operational efficiency, fast response to customer requirements, etc. Certain authors see ABC as a tool for improving performance, management and competitiveness of SMEs [27], [25], [21]. With theoretical arguments in its favor and evaluations in case studies and surveys around the world, ABC has come into focus of interest [39], [6], [42]. Growing awareness of the importance of SMEs has provided impetus for further investigation of the potential of ABC to help SMEs become more competitive.

ABC can help SMEs to increase efficiency, reduce costs, and strengthen innovation capacity by providing more accurate information on costs, better determination of selling prices and planning (effectively integrated into the budget process) [21]. Through better information support to enterprise management, ABC allows for more efficient management in creating and maintaining competitive advantage [12], [25]. Compared with large firms, SMEs are more exposed to problems of information asymmetry which imply obstacles in accessing external finance [41]. Hence, the creation of better information for management is a very important issue. The research conducted in Great Britain has shown that ABC provides better support to the process of making financial, operational, and strategic decisions and contributes to the improvement of competitiveness of enterprises [21]. Other research has also shown that ABC has significant potential to improve performance and competitiveness of SMEs [27].

ABC can support SMEs in gaining and maintaining a competitive position in global economy [18]. ABC and activity-based management (ABM) can improve the profitability of SMEs [25]. There is a significant link between performance improvement and application of ABC.



Performance improvement can be reflected in time, cost, and quality as key success factors. Some authors claim that the application of ABC has a moderate influence on time, a significant impact on quality, and substantial impact on costs [2]. ABC is beneficial as it increases the possibility of planning, control, and making the right decisions, but, on the other hand, presents a very expensive cost accounting system that requires a large number of details for proper functioning. This raises the question of cost-benefit analysis regarding the implementation of ABC, i.e. the issue of feasibility of its application in SMEs. Also it is necessary to keep in mind that the implementation of ABC in SMEs is not at a high level [25], [12].

General conclusion of the researchers who previously investigated this matter is that ABC is useful for SMEs and can help them to improve performance and competitiveness. Therefore, the key research question our paper will try to answer is what it depends on, while the main goal of our paper is to identify the expected benefits and limitations of applying ABC in SMEs. In addition to other factors, expected benefits and limitations are the key factors for future implementation of ABC, potential performance improvement and competitiveness of SMEs and we tried to determine what those factors are and what they depend on. For the purpose of providing answers to these questions, a survey was conducted on a sample of 33 small and medium-sized enterprises in Serbia. First, we shall try to identify the degree of respondents' familiarity with ABC and the level of ABC implementation in these enterprises. Then we shall analyze the performance of ABC and identify the motives for its implementation and expected benefits and, finally, we shall identify potential barriers to broader implementation of ABC in practice.

To the best of authors' knowledge, there has been no similar research in Serbia. We tried to present the most up-to-date information. In this regard, our study represents a novelty and could be of importance for theoreticians and practitioners dealing with the same matter. Our study contributes to the relevant literature in the areas of cost accounting, management accounting, performance management and decision-making in several ways. It also provides a starting point for researchers to conduct further research in the field of ABC implementation

in SMEs. Furthermore, it provides useful insights for practitioners interested in motives, effects and limitation of ABC implementation in an organization devoted to continuous performance improvement and strengthening of competitiveness.

The conducted analysis can contribute to wider application of ABC in SMEs in developing economies. Unlike other studies that deal with management accounting practices in developed and developing economies [11], our study focuses on a single developing country. Hence, our study fills the gap regarding the lack of empirical research into ABC in SMEs and especially the lack of empirical research on ABC in developing countries.

The paper consists of three parts. The first part presents the context analysis. It points to the basic characteristics of SMEs in Serbia and the level of their development. Furthermore, in accordance with the set goals, this section highlights the specifics of accounting regulatory framework in Serbia, especially in terms of cost accounting. At the same time, the previous and associated research on ABC is analyzed, in particular with regard to ABC application in enterprises in Serbia and other countries. The sample and methodology are discussed in the second part. The third part comprises the analysis of the research results and discussion about them.

## Background information

### SMEs in Serbia

In the European Union (EU), the term SMEs includes all enterprises that have fewer than 250 employees and meet at least one of the following two criteria: annual turnover not exceeding 50 million euros and the value of the annual balance sheet of not more than 43 million euros (Recommendation 2003/361/EC, 2003). Almost identical classification criteria have been adopted in Serbia, but with slightly different values. Medium-sized enterprises, for example, include all legal entities which do not exceed two of the following three conditions, namely: 250 employees, operating income of 35 million euros in dinar equivalent, and the average value of assets (annual balance sheet) of 17.5 million euros in dinar equivalent.



In the nonfinancial part of the EU economy, there were about 21.2 million enterprises operating in the SME sector, or about 99% of the total number of enterprises. SME sector of the EU generated a share of about 66.8% of total employment and accounted for 28% of the gross domestic product (GDP) of the EU [16], [10]. SMEs are very important in the OECD area, representing a major share of the total number of firms and accounting for more than 60% of total employment and 50% of total value added [35]. In Hungary, Czech Republic and Poland, SMEs account for 60% to 70% of all jobs and for about half of each country's GDP. In Romania, 600,000 SMEs stand for 99.6% of all companies, contributing with nearly 80% of GDP and accounting for approximately 60% of all employees [22], [38]. SMEs in Serbia cover about 99.9% of the total number of enterprises [36], [8] and two thirds of total labor force in the non-financial sector and contribute with about 35% in the formation of Serbian GDP [36]. Generally, the situation in Serbia does not differ significantly from other developing countries [1].

In terms of size, in the structure of Serbian SMEs, the majority are microenterprises and entrepreneurs, which account for about 95% of the total number of SMEs. The share of small business entities is 3%, and the medium-sized legal entities are the least in number, with the share of about 0.7%. The excessive fragmentation of SMEs is also indicated by the low average number of just 2.4 employees per business entity, making a weak starting point for improving competitiveness, achieving economies of scale, and entering new markets. For example, an average European business provides employment for 4 people, including the owner/manager. According to the organizational form, entrepreneurs are the largest in number, making about 70% of this sector, followed by limited liability companies with about 26% [36]. SMEs in Serbia are characterized by pronounced territorial disproportion. Measured by GDP per employee, the Belgrade region prevails, with all other regions lagging behind. Furthermore, SMEs in Serbia are characterized by unfavorable sectoral concentration, with absolute dominance of labor-intensive and service industries, especially wholesale and retail trade and manufacturing industry. Similarly to the situation in the EU, the majority of SMEs are concentrated in the following sectors: wholesale

and retail trade (28%), manufacturing industry (15%), services (26%), transport (10%), etc. [36]. When it comes to SMEs in developing countries, in terms of activity they are mostly engaged in retail trade or manufacturing [17]. Retail is mostly found in urban regions, while manufacturing can be found in either rural or urban centers. SMEs provide over 60% of total employment in manufacturing in most developing countries [7].

The level of competitiveness of Serbian SMEs significantly lags behind the EU average and the majority of comparable countries, which is indicated by a comparative analysis of qualitative performance indicators (employment per enterprise, turnover, GDP and profit per employee). This has been particularly pronounced since 2008, after the onset of the economic crisis. Encouraging the development of SMEs is one of the priorities of economic policy of Serbia. Small and medium-sized enterprises are considered a very important factor in the process of Serbian economy catching up with the developed market economies, as well as in the process of EU integration.

### ABC in practice

Different aspects of implementation and performance of ABC have been the subject matter of numerous studies. Researchers have paid special attention to its application in practice. In this regard, the results of studies in Serbia and the rest of the world have indicated much lower level of acceptance of ABC in practice than it was expected. In the early nineties, only around 10% of large enterprises in Great Britain applied the ABC system. In 1996, only 10.7% of Italian enterprises implemented ABC, whereas in 2005 this percentage was 17.9%. It was not until 2000 that Greece recorded 12.7% of enterprises that adopted ABC. Furthermore, in 2000, only 17.6% of enterprises in Germany decided to implement ABC [8]. In most cases, countries report a usage rate of the ABC method equal to or below 28%, specifically Japan [23], India [29], Estonia [20] and Finland [30]. The application of ABC in developing countries is far lower [32]. In Serbia, the situation is similar.

One of the first studies on implementation of ABC in Serbian enterprises was conducted in 2010. The sample included 121 enterprises of all sizes. The results showed

that less than 1/5 of respondents were fully familiar with ABC and 62% of respondents were not familiar with ABC whatsoever. Only 13% of the total number of surveyed enterprises used ABC actively [31]. In 2011, a study was conducted on a sample of 84 enterprises of all sizes (16.7% of small, 20.8% of medium-sized, and 62.5% of large enterprises). The results showed that as many as 62.5% of respondents were not familiar with ABC, while 80.5% were not familiar with Time-Driven ABC (TDABC) [43]. A group of authors conducted a study that included 45 enterprises [14]. The sample consisted of enterprises of all sizes as follows: 17.7% of large enterprises, 40% of medium-sized enterprises, and 42.22% of small enterprises. The results showed that less than 10% of respondents knew about the characteristics of the modern costing systems and applied some of them. Low average score regarding all modern costing systems, below 3 (on a scale of 1 to 5), indicates that respondents had very poor knowledge thereof. Respondents were least familiar with TDABC. As many as 44.74% of respondents assessed their degree of familiarity with TDABC with 1. On the other hand, respondents were most familiar with ABC (average score of 2.61 on a scale of 1 to 5).

Generally, the current situation in Serbia is characterized by a relatively low level of development of cost accounting. There are many reasons for that. Among other things, the role and importance of cost accounting are not understood, reducing this system to mere compliance with legal provisions. Also, accounting regulations do not provide for the obligation of cost accounting by cost center (it is only obligatory to evidence cost by cost objects). Only 60% of the analyzed enterprises applied cost accounting, while only 40% of them organized cost accounting by cost centers [28]. In practice, costs are directly transferred from financial accounting to cost objects, eliminating cost centers. What is more, the dynamics of this methodology is inadequate, resulting in frequent inefficiency in cost accounting. Additional features of cost accounting in enterprises in Serbia are dominant obsolescence of traditional costing systems, unfamiliarity with and non-application of modern costing systems. The level of implementation of modern costing systems is very low. Among contemporary costing systems, ABC

is the most common and the results of previous studies on implementation of ABC in Serbia point to a relatively low level of ABC in practice. Although small and medium-sized enterprises were included in some of the previously conducted research in Serbia, none of them had them in focus. Furthermore, no research into the influence of ABC on the management and performance of SMEs has been conducted in Serbia so far.

### Sample and methodology

Our study focuses on small and medium-sized enterprises (SMEs) in Serbia. The survey was conducted in the period July-September 2016. Enterprises were selected from the database of the National Agency for Regional Development, taking care to ensure equal participation of enterprises from all regions of Serbia. The survey was conducted through a questionnaire. One hundred questionnaires were sent out. The enterprises that did not return the questionnaire in the first round received it again and 33 enterprises responded to it.

The questionnaire consisted of three parts. The first part comprised 15 questions, pertaining to basic information about the enterprise and the respondents with the focus on cost accounting of the surveyed enterprises. In this regard, respondents were asked which costing system their enterprises applied. There were also questions about respondents' familiarity with ABC and intention to apply it in the future. Respondents gave answers by circling one or more options. The second part of the questionnaire focused on the study of expected performance, i.e. the analysis of the motives for implementation of ABC. The third part of the questionnaire focused on identifying the reasons for non-application of ABC in analyzed SMEs. In the second part of the questionnaire respondents were offered seven, and in the third part of the questionnaire six statements. They evaluated the significance of these statements using a five-point Likert scale (1 indicating the lowest level of agreement and 5 indicating the highest level of agreement with the given statement). In terms of methodology, descriptive statistics were calculated and statistical tests were conducted. Data analysis relied on the use of SPSS statistical package, version 20.1.0.

Enterprises from the sample were analyzed according to their core activity. The total number of analyzed enterprises included about 36% of production enterprises and as many service enterprises, about 21% of trading enterprises, while production and trade and service and trade enterprises participated with 3% each. Analysis of respondents was performed according to their gender, age, education, and job position. Women prevailed in the structure of respondents, with about 72%. All age groups were equally represented, except for the age group associated with the end of working life. In that age group, which included people over 55, there was only one respondent. The results of this analysis are shown in Table 1.

**Table 1: Structure of respondents by age**

Age groups	Total	%
Between 25 and 35	10	30.30%
Between 35 and 45	11	33.33%
Between 45 and 55	11	33.33%
Over 55	1	3.03%
Total	33	100

Source: Authors' calculation.

In terms of education, it was found that about 9% of respondents had a master's degree, 48% of respondents had a university degree, 15% of them had a college degree, and 27% completed secondary education. The participants in the survey were persons engaged in accounting and finance activities in the analyzed enterprises. Accountants prevailed with 54%, followed by heads of accounting departments with 27%, while there was the least number of financial managers, about 18%. The average number of employees in enterprises in the SME sector in Serbia is 2.4 which is very low. The dominant share of accountants in the structure of respondents confirms this data, as well as the fact that one employee in SMEs performs more than one job (acts as an accountant, business administrator, etc.). This result is below EU average which is 4. Low average number of employees per business entity makes a weak starting point for SMEs to improve competitiveness, achieve economies of scale, and enter new markets.

Furthermore, our aim was to determine the familiarity of respondents with ABC. In this regard, respondents were asked whether they were familiar with ABC, where their knowledge stemmed from (formal education, technical

literature, etc.), and whether they found it necessary to organize additional professional education on the subject of ABC. About 63% of respondents had knowledge about ABC (Pearson's chi-square test showed no statistically significant differences in responses between different groups of respondents, divided according to gender, age, qualifications, with respect to their familiarity with ABC). Researchers worldwide received slightly different results. For example, a study of Mexican SMEs shows that 66% of SMEs use traditional systems and that their employees do not have any knowledge of ABC. Only 34% of the sample was familiar with ABC [39]. A study of ABC in small and medium-sized Portuguese enterprises shows that the majority (59%) of the people responsible for managerial accounting is not aware of ABC [33]. The results of our study show a slightly higher level of respondents' knowledge regarding ABC. It should be emphasized that the level of ABC knowledge is measured according to respondents' subjective attitudes. We did not check the actual level of their knowledge. But the fact that more than 50% of respondents said that they gained basic knowledge of ABC within formal university education goes in favor of these results. However, as regards cost accounting, especially ABC, over 90% of respondents said that they needed additional training [34]. The key assumption in implementation of modern concepts (tools) in enterprises is the possession of adequate expert knowledge and skills associated with them. While the issue of implementation of modern cost accounting systems is certainly not the primary responsibility of professional accountants, it seems that one of the important preconditions for their application is the possession of adequate knowledge and skills. Employee training and managerial commitment are prerequisites for effective implementation of ABC [4].

The first segment of the research was aimed at determining the level of ABC implementation in analyzed SMEs. The results showed that more than 87% of the analyzed enterprises applied the traditional actual cost accounting system, while only 3% of them applied the standard costing system. As many as 93% of respondents said they did not apply ABC. However, about 60% of them said that they intended to implement ABC in the future. The results obtained in this study do not differ

significantly from the results of the previously conducted studies [33], [37], [23], [39], i.e. they confirm the low level of familiarity of accountants with ABC and very low level of ABC implementation in the analyzed SMEs.

## Empirical results

Having in mind the general aim of our study, the most important questions have been: what is the expected benefit and what is the most important limitation of ABC application? The second part of the research was aimed at testing respondents' attitudes regarding potential performance, i.e. the expected effects of ABC, and the possible motives for its application in the future. At the same time, this segment enabled a more detailed determination of respondents' level of familiarity with ABC. Respondents were offered a number of statements regarding the performance of ABC, whose significance they evaluated using a five-point Likert scale. Descriptive analysis of the data is given in Table 2.

**Table 2: Evaluation of the expected performance of ABC**

Statements	Mean	Std. deviation
Application of ABC improves the performance of enterprises.	3.39	1.19
Application of ABC provides accurate information used for more efficient measurement of the productivity of enterprises.	3.39	1.19
Application of ABC provides accurate information used for rational business decision-making by the enterprise management.	3.36	1.14
Application of ABC allows a more efficient identification of profitable products.	3.21	1.17
Application of ABC allows a more efficient identification of profitable customers.	3.18	1.13

Source: Authors' calculation.

The literature recognizes a number of potential benefits of ABC for SMEs. We focused on five of them (Table 2). The highest average score was given to the first two statements, based on which ABC contributes to the improvement of enterprise performance (3.39) and provides more accurate information in the area of productivity management and decision-making. Our results are in accordance with the results of other researchers [42]. ABC creates a more

accurate product cost [15], [14]. More precisely, creation of product cost allows for more efficient management of the production program and identification of profitable products. Our results show a surprisingly low level of ABC performance in this area. Similarly, respondents attached the lowest significance to the performance of ABC in identifying profitable customers. Theorists' attitudes, on the one hand, and the results of empirical research [14], on the other, show just the contrary. In fact, they point out that ABC has an outstanding performance in identifying profitable customers and products. The abovementioned speaks in favor of the previous conclusions about the low level of familiarity of respondents with ABC and the need for additional training in that area. Previous research also shows the existence of a positive relationship between the implementation of ABC and the performance of enterprises [4], [40]. But we should also have in mind that the research has demonstrated that the use of performance measures in SMEs is limited [24]. Performance measures are typically ad hoc and lack formal structure. It is evident that there are general problems in performance measuring in SMEs. Therefore, our findings are not surprising. There are significant opportunities to improve performance measurement process in SMEs.

It was especially interesting to determine whether there was a statistically significant difference in the above statements among the respondents who were familiar/unfamiliar with ABC, on the one hand, and those who intended/did not intend to implement ABC in the future, on the other. In both cases, there was a statistically significant difference in respondents' attitudes regarding the expected performance of ABC. We can conclude that the respondents who intended to apply ABC valued the expected performance, i.e. advantages of ABC, more highly than those who did not intend to apply ABC in the future. Answers of the respondents who said that they were familiar with ABC were almost identical. Further analysis rested on a nonparametric Mann-Whitney U test. This test showed that there was a statistically significant difference in attitudes between the two groups (in the first case, the Mann-Whitney U was 57.5, and in the second 54.50, with probability being  $p = 0.0009$  and  $p = 0.0004$ , respectively). Such results support our previous conclusions.



The third segment of the questionnaire aimed at identifying the obstacles to wider application of ABC in the analyzed SMEs. Respondents were given five statements, which they evaluated on a five-point Likert scale. Table 3 shows the descriptive statistical analysis of the variables that describe the obstacles to implementing ABC in the analyzed SMEs in Serbia.

**Table 3: Limitations to the application of ABC**

Statements	Mean	Std. deviation
Lack of practical experience on ABC	3.56	1.16
Management is satisfied with the current cost accounting	3.34	1.09
Lack of adequate resources for implementation of ABC	3.29	1.07
Lack of qualified accountants for implementation of ABC	3.17	1.23
For the enterprise, the costs of implementing ABC are greater than the benefits	2.63	0.89

Source: Authors' calculation.

According to respondents, the biggest obstacle to the introduction of ABC was the lack of practical experience and knowledge regarding this accounting system. Similar conclusions were reached by researchers around the world. The study dealing with the application of ABC in SMEs in Vietnam has shown that the most significant barriers to wider application are: lack of human resources, high costs, and complexity of the system [26]. The same issue has been in the focus of the study carried out in Portugal which identified a very low level of implementation of ABC. The most significant barrier to the application of ABC was seen in the low level of respondents' knowledge. As many as 59% of respondents said that they were not familiar with ABC [33]. The results in Romania showed that there was not enough adequate staff with specific and specialized knowledge, i.e. that there was insufficient knowledge of modern management techniques [22], [38].

Another obstacle to the implementation of ABC in the analyzed SMEs in Serbia lies in the fact that the management is satisfied with the current cost accounting system, i.e. the management does not provide support for the introduction of a new cost accounting system. A research conducted in Romania, in connection with the application of modern management tools (ABC, among

others) has shown that the management is not ready to change in as many as 67% of cases [22], [38].

Lack of adequate resources and qualified accountants for the implementation of ABC are among the reasons respondents estimated important for non-implementation of ABC. The results indicate that there is significant room for further improvement of knowledge of modern accounting methodology. The only way to do this is through continuous education of professional accountants, as well as managers in an enterprise. Educating managers is necessary for at least two reasons. The first lies in raising awareness about the importance and quality of information support for the decision-making process, especially about cost accounting based on the application of modern methodology. The second reason is the fact that without the management's initiative and support to education of accountants and implementation of modern costing systems, there is no room for improvement [34], [4].

Just like in the second segment of the study, the existence of a statistically significant difference was analyzed between the attitudes of the respondents who were familiar/unfamiliar with ABC, on the one hand, and those who had/did not have the intention to implement ABC in the future, on the other. The respondents who were familiar with ABC and those who intended to apply it in their enterprises rated the obstacles to the implementation of a new system with a lower average score than those respondents who were not familiar with the new system and who did not intend to implement it (these differences were not statistically significant).

## Conclusion

ABC is in the focus of researchers around the world [39], [6], [42]. Growing awareness of the importance of SMEs has provided the impetus for further investigation of the potential for ABC to help SMEs become competitive. ABC reduces costs, increases efficiency and strengthens innovation capacities due to creating more accurate information on the costs and through the provision of better information support to the decision-making process [3], [25], [12], [21], [18]. Generally, ABC is useful for SMEs and can be a tool for improving performance and creating



and maintaining competitiveness of SMEs. The question is what it depends on. Having in mind the importance of SMEs, especially for developing economies, our study tries to identify the extent to which ABC is used and the expected benefits and key limitations of ABC application.

The level of implementation of ABC in analyzed companies in Serbia does not correspond to the attained level of application in countries with the developed accounting profession. Our results indicate a relatively low level of development of the practice of cost accounting in the analyzed SMEs. The level of development of cost accounting has been viewed from the prism of implementation of modern accounting methodology, especially ABC. The results showed that more than 87% of the analyzed enterprises applied traditional cost accounting and as many as 93% of respondents said they did not apply ABC. The results obtained in this study do not differ significantly from the results of the previously conducted studies [33], [37], [23], [39], i.e. they confirm the low level of ABC implementation in SMEs.

It is surprising that the results showed that more than 60% of respondents possess knowledge of ABC. This is opposed to the results of a similar research which indicate a significantly lower level of knowledge of this kind of system [39], [33]. Also, more than 50% of respondents said that they gained basic knowledge of ABC within formal university education and over 90% of them said that additional training regarding ABC was necessary [34]. Human resources and management experience, among other important factors, have a positive impact on the performance of an enterprise [13]. These results are very important given the facts that employee training and managerial commitment are preconditions for effective implementation of ABC and that ABC implementation has an impact on performance of SMEs [4]. ABC has the potential to improve the performance of a company. Research shows a positive relationship between the implementation of this cost accounting system and the performance of enterprises [40]. However, there are many problems in the domain of SME performance measurement process that need to be solved.

Our study shows that the most important obstacle to the implementation of ABC was the lack of practical

experience and knowledge regarding this system [26], [33], [22], [38]. There are two more factors associated with this one: “the management is satisfied with the current cost accounting” and “lack of qualified accountants”. There is significant room for further improvement in the area of cost accounting education, both among accountants and among managers. Without the management’s initiative and support to education of accountants and managers, it is impossible to think about improvement in the cost accounting practice [34]. Hence, the management has a double responsibility: to support education processes and to support the implementation of innovative accounting techniques.

Our findings imply that researchers should direct their interest towards deeper understanding of the limiting factors of ABC implementation and towards discovering the manner to overcome them. They also imply that there is a need for further research on ABC implementation in transition and developing economies, especially in the area of the effects of ABC on performance of an enterprise. Furthermore, our findings suggest that SMEs need to improve their performance to fight strong competition, especially in developing countries. Practitioners and SMEs in developing countries should seriously consider the possibilities of using ABC and many research studies have seen ABC as a tool for creating and maintaining competitiveness. These findings are in line with the arguments of similar research. In general, improvement in the domain of cost accounting practices can provide initial impetus for strengthening SMEs, provided that adequate institutional factors of growth and development of the economy as a whole have been ensured. Therefore, strengthening the competitiveness of SMEs, in addition to action at the micro-level, requires comprehensive economic and political measures at a national level. We should point out that a single optimal solution does not exist. It is necessary to conduct a cost-benefit analysis and make the right business decision regarding the implementation of ABC.

The authors are aware of the possible limitations of this study. The focus of the research involved only SMEs in Serbia and the sample was relatively small. Hence, it should be pointed out that analysis of a larger sample might lead

to different results, i.e. a larger sample would allow making general conclusions about SMEs in Serbia. A more detailed statistical analysis also could not be conducted due to a small sample. Furthermore, respondents expressed their subjective position in relation to the given statements, and the researchers were not able to objectively determine the actual level of their knowledge. Nevertheless, we believe that our study offers useful insight into the field of ABC implementation in SMEs. Future research should certainly include a larger number of respondents and questions in the questionnaire with a view to conducting a more detailed analysis of the reasons for a relatively low level of development of cost accounting, and proposing measures for improvement in this sphere. Also, particular attention should be paid to the analysis of the impact of ABC on enterprise performance.

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