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Want to know why we publish so many articles on reforms in *Ekonomika preduzeća*? Because they are not a trivial endeavor. Just ask academics and ministers who tried to implement reforms. A lot can go wrong.

This issue is structured into three parts. The first part is dedicated to the new model of growth and related economic policy platform. In the lead paper *D. Vujović,* Minister of Finance, looks for the alignment of fiscal stability and growth with the special focus on political economy issues. He unveiled a number of assumptions and ideas from economic theory that anchor the only favorable solutions. Fresh thinking and sober hopes flow from what can be considered as the real cognoscenti approach to Serbia's economic reform in the future. In accompanying paper, *D. Djuričin* and *I. Vuksanović* try to answer – where do reforms stumble and how to pull back from the brink. They look into the most common misconceptions and obstacles to successful implementation of reforms and offer insight into how to overcome previous pitfalls by using new structural economics' policy platform with industrial policies as a core idea. *M. Labus* and *M. Labus* in their article deal with many of frequently discussed aspects of core economic policies and a way to transform fiscal stability into fiscal optimization. Based on an adequate econometric model, the authors tested IMF recommendations for CESEE countries. Interestingly, they found that not all recommended instruments are effective in the case of Serbia, at least not unconditionally. Many professionals from the field think that they present the better way. A similar subject, but from a slightly different perspective, is presented in the following paper. Namely, *P. Petrović,* Chairman of the Fiscal Council with two co-authors, *D. Brčarević* and *S. Minić,* writes about lessons from 2015 economic policy relevant for continuation of reforms. The authors describe damaging effect of investment squeeze, arguing that such a policy leads to unsustainable recovery. Inflation has been the hot water in Serbia for more than a quarter of the century. *N. Savić*, *G. Pitić* and *M. Nedeljković* enthusiastically defend the argument that the role of inflation targeting is unavoidable for maintaining macroeconomic stability.

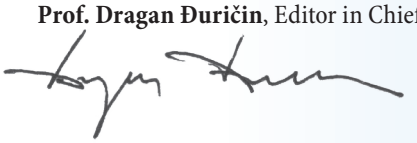
The second part addresses supporting policies to core policies, like regional, science and technology, health care and competition policies. A trio of authors, *E. Jakopin, J. Bajec* and *B. Paunović*, offer the vision of the local economic development and many interesting ideas how to manage it, particularly the role of entrepreneurship and specialization. Besides that, the authors identified key regional industrial branches in the context of regional specialization. A wonderful combination of representatives of government and professional services, *J. Antanasijević*, *N. Zelić*, and *I. Bošnjak* present a sobering vision referring to the

financing of local self-governments. The trio demonstrates that the inappropriate financing of public utilities and local institutions founded by local self-governments represents the ball and chain of their financial health. At the time when *The Financial Times* positions Belgrade at the eighth place in Europe in terms of the attractiveness for investment, the Mayor of the City of Belgrade, *S. Mali*, jointly with *B. Milosavljević,* analyzes a correlation between restructuring of public companies and investment activism on the local self-government level. *N. Savić, G. Pitić* and *A. Trbovich* argue that the fourth industrial revolution and disruptive innovations represent opportunity for Serbia, particularly in cyberspace technology part of emerging amalgams of virtual and physical technologies marked as smart, connected products. *D. Lončar* addresses the issue of effectiveness of the current model of financing in health care. The author argues that we are at the end of what has been the old system of health care. A trio of authors, *V. Vučković, S. Vučković* and *M. Stefanović,* dedicated their paper to the institutional setting needed for fair competition and fair business practices.

Finally, the last block of papers is dedicated to industrial policies in three sectors, retail, tourism, and insurance. A group of authors, *G. Petković, S. Lovreta*, *R. Pindžo* and *S. Pešić*, argue that for retailers the business environment becomes especially challenging because they will have to cope with both slowdown due to austerity measures and new agile competitors. As for the companies from tourism industry, no indicator points to concentration problem on Serbian tourism market indicating something that could be labeled as perfect competition. *V. Njegomir* and *D. Marković*, under the lead of *B. Marović*, the doyen from the field, are the authors of the last paper, but not the least in importance, dedicated towards analyzing the role of insurance in financing of economic development.

We hope that the ideas flowing across this issue lay the groundwork for genuine collaboration and improvements.

Prof. Dragan Đuričin, Editor in Chief



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SERBIA: FISCAL CONSOLIDATION – PROGRAM DESIGN AND POLITICAL ECONOMY ISSUES

Srbija: Fiskalna konsolidacija – definisanje programa i polit-ekonomska pitanja

Abstract

Fiscal consolidation in Serbia was built on broad-based expenditure cuts, better revenue performance, and related structural reforms and pro-growth policies. In 2015 the actual fiscal performance exceeded the original and revised deficit targets set in the IMF program. The final outcome was a deficit of 3.7 percent of GDP, a huge 2.9 percent improvement over 2014. The result contains a 2.5 percentage points of structural fiscal adjustment with 1.5 percentage points in permanent expenditure cuts and 1.0 percentage point in structural revenue improvements. This increases front loading and allows more fiscal space for the implementation of pending structural reforms.

The program had a beneficial impact on economic growth which turned out positive at 0.8 percent, 1.3 percentage points above IMF and IFI projections. With this performance Serbia may become a case of "expansionary austerity", which demonstrates that fiscal consolidation programs designed in line with sound principles and synchronized with key structural reforms and pro-growth policies can generate growth. Carefully selected expenditure cuts combined with pro-growth revenue collection efforts can have expansionary effect on growth even under the most difficult circumstances.

The political economy issues of fiscal consolidation and structural reforms gain increasing importance in the second year of the program, two months before the early parliamentary elections. Fresh thinking is needed to demonstrate that the completion of difficult reforms is a win-win for all, and almost everybody loses if reforms are stalled or abandoned.

Keywords: *fiscal consolidation, fiscal deficit, fiscal stimulus, public debt, structural reforms, austerity, contractionary fiscal policy, expansionary fiscal policy, economic growth, expenditure cutting measures, revenue enhancing measures*

Sažetak

Program fiskalne konsolidacije u Srbiji zasniva se na smanjenju rashoda, povećanju budžetskih prihoda i povezanim strukturnim reformama i politikama koje podržavaju ekonomski rast. Tokom 2015. godine ostvareni fiskalni rezultati prevazišli su originalne i revidirane ciljeve postavljene u MMF programu. Rezultirajući deficit od 3,7 posto BDP predstavlja veliko poboljšanje od 2,9 procentnih poena u odnosu na 2014. Ovaj rezultat sadrži strukturno poboljšanje deficita od 2,5 procentnih poena, od čega se 1,5 procentni poen odnosi na trajno smanjenje rashoda, a 1,0 procentni poen na strukturno povećanje prihoda. Ovim se povećava ostvarenje u prvoj godini i stvara dodatni prostor za realizaciju preostalih strukturnih reformi.

Program je dobro delovao na ekonomski rast koji je ostvaren sa +0,8 posto, 1,3 procentnih poena iznad projekcija MMF i drugih MFO. Sa ovakvim performansama Srbija može da postane primer tzv. „ekspanzivne štednje" koji pokazuje da programi fiskalne konsolidacije napravljeni na zdravim ekonomskim principima i sinhronizovani sa važnim strukturnim reformama i politikama mogu da generišu ekonomski rast. Pažljivo odmeravanje smanjenja rashoda kombinovano sa naporima za povećanje prihoda može da ima pozitivno dejstvo na rast čak i u najtežim uslovima.

Pitanja političke ekonomije programa fiskalne konsolidacije i strukturnih reformi dobijaju na značaju u drugoj godini programa, a posebno nekoliko meseci pred vanredne parlamentarne izbore. U tom kontekstu potrebno je kreativno razmišljati kako da se javnosti objasni da završetak teških i već započetih reformi predstavlja dobitnu kombinaciju za sve, dok gotovo svi gube ukoliko reforme budu zaustavljene ili napuštene.

Ključne reči: *fiskalna konsolidacija, fiskalni deficit, fiskalni stimulus, javni dug, strukturne reforme, štednja, restriktivna fiskalna politika, ekspanzivna fiskalna politika, ekonomski rast, mere za smanjivanje rashoda, mere za povećanje prihoda*

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Introduction – Prelude to fiscal consolidation: Creating political space for reform

The need for fiscal consolidation in Serbia became quite apparent in late 2011 as the public debt exceeded the 45 percent debt-to-GDP fiscal rule set in the Budget System Law. The debt level was projected to continue growing and reach 50 percent by the end of 2012. After accounting for local government debt, additional downside risks linked to state guarantees issued to public enterprises, and likely dinar depreciation, the Fiscal Council warned that an augmented debt-to-GDP ratio could easily be 5 percentage points higher (i.e. 55 percent at the end of 2012) and continue growing in the medium term. This trend could not be reversed in the medium run even under the most optimistic growth and fiscal projections: assuming 3 and 4 percent annual GDP in 2013 and 2014 respectively, and budget deficits fully aligned with fiscal rules (3.7 and 2.9 percent), the debt would continue to increase both in absolute Euro terms and as a share of GDP. After accounting for the effects of further dinar depreciation, Serbia would be set on a path to approach the Maastricht 60 percent criterion as early as at the end of 2013. And that actually happened: on December 31, 2013 debt represented 59.6 percent of GDP.

One-off factors and external shocks associated with the global financial crisis exacerbated the worsening debt situation but did not cause the problem. The real cause was the inherent structural disbalance between longer-run expenditure commitments (especially on pensions and public sector wages) and eroding revenue capacity adversely affected by the post-crisis recession and faltering performance of public sector companies.

Timely calls for an immediate fiscal consolidation program were not taken seriously. A precautionary IMF stand-by arrangement signed in late September 2011 did not have much ownership in the government. The completion of the first review was postponed as the draft 2012 budget deviated from the agreed fiscal program in the planned level of public debt (including government guarantees) and domestically-financed projects. IMF projected that true fiscal deficit, including the so called below the line items, would significantly exceed targeted levels and jeopardize debt sustainability in the absence of an effective and credible medium-term fiscal consolidation.

An explicitly stated concern that "fiscal consolidation is therefore an urgent priority" and an announcement that, despite a fiscal and debt crisis in the making, "IMF mission will return to Belgrade (only) in mid-2012 to discuss with the new government the steps needed to resume program reviews" effectively meant an early cancelation of the program in the absence of government ownership and commitment.

Although this irrevocably put Serbia on a non-sustainable medium run debt path, the news did not attract much (any) public attention captured by the ensuing political cycle centered on the parliamentary and presidential elections expected in May 2012. Actually, this and other burning macroeconomic and structural issues were put on a back-burner while the new government had to use all its efforts to resolve the backlog of pending issues and firmly put Serbia back on EU accession track in January 2014.

IMF repeated efforts (in September and November 2012, and March, July, October 2013) to resume fiscal consolidation efforts through a new program did not produce sufficient response in the government. As fiscal deficits persisted and debt levels continued to increase (EUR 20.5 billion or 60.9 percent of GDP at the end of first quarter 2014), fiscal consolidation and economic reforms became the leading issues in the parliamentary elections held on March 16, 2014. Alexander Vucic and Serbian Progressive Party received a strong political mandate to supplement the EU accession strategy with a sound fiscal consolidation and economic reform program.

Due to centennial floods in May 2014, only weeks after the government was appointed on April 27, 2014, and changes at the helm of the Ministry of Finance, the work on the design of the long-awaited program could not start till August 2014. Somewhat delayed start was fully compensated by an accelerated preparation pace. By mid-September the Prime Minister announced the government's intention to embark on a fiscal consolidation and economic reform program centered on expenditure cuts, better growth-friendly revenue performance, and three pillars of structural reforms: the resolution of state-

owned enterprises in distress, improved efficiency of public utility/infrastructure companies, and public sector rightsizing. The program was discussed with and fully supported by the top IMF management in early October 2014. IMF mission visited Belgrade within weeks. On November 20, 2014 a staff level agreement was reached on the content of the program and detailed measures included in the draft 2015 budget. Due to short preparation time, IMF Board approval of the program was scheduled for the second half of February 2015 to allow sufficient time for the implementation of the agreed policy measures and preparation of the initial restructuring underpinning structural reforms.

Today, 17 months after the initial implementation of public sector wage cuts and reductions of some pensions, and 14 months after the implementation of the full fiscal consolidation and economic reform program we have enough time distance and tangible results to evaluate. We will look both at design and performance, as well as the complex political economy issues that caused the initial 30-month delay in the adoption of the program and presently pose challenges in the continued implementation of critical structural reforms in public utility companies and in rightsizing the overall public sector.

In the next section we will discuss the key principles and approaches leading the design of the fiscal consolidation and structural reform program. Section three will review some of the main results of the program achieved thus far and our realistic economic growth, fiscal and debt expectations for 2016-2017 and beyond. Section four discusses the political economy issues of fiscal consolidation and structural reforms looming large two months before the early parliamentary elections expected to be called for end April. Last section concludes and draws lessons from Serbia mixed experience with economic reforms and successes of the fiscal consolidation.

The design of fiscal consolidation program

Fiscal consolidation defined: Approaches to fiscal consolidation

OECD Sources and Methods define fiscal consolidation as a policy aimed at reducing government deficits and debt accumulation. We prefer a more flexible definition in which fiscal consolidation is defined as a policy aimed at achieving sustainable levels of fiscal deficit and public debt.

The austerity approach to fiscal consolidation says that lower fiscal deficits can only be achieved through (preferably) lower expenditures and (possibly) higher revenues. Some authors (such as *Alesina* [1], [4]) even claim that austerity measures can in the end be expansionary as the positive longer-run effects outpace the short run contractionary effects, although this is not easily confirmed by empirical evidence [37]. The key mechanism through which public expenditure cuts lead to lower deficits is based on private sector investment response and the presence of complementing pro-growth measures.

Keynesians (see *Krugman* [41] and *Perotti* [44]) claim exactly the opposite: that fiscal deficits are best reduced through fiscal stimulus which combines higher expenditures (government spending) and lower taxes (revenues). Under certain assumptions (output gap, large multipliers, short-run) higher government spending can boost aggregate demand. In combination with lower tax rates this can lead to higher level of economic activity and GDP growth, which ultimately generates higher tax revenues, lower fiscal deficits, and lower public debt.

Keynesians also say that, assuming large multipliers, expenditure cuts would reduce aggregate demand and in combination with higher taxes push the economy into recession or even crises.

In real life situations these scholarly differences are less important. What really matters are the output responses to fiscal measures [5], [6] and private sector investment responses to government spending cuts and tax policy changes. It is important to note that the level of multipliers does not affect the timing and the speed of fiscal consolidation measures. But the change in the level of multipliers does [11].

The scope of fiscal consolidation programs ...

Predictably, good fiscal consolidation programs follow some common principles but must be custom tailored to the characteristics and needs of a country. *Blanchard's* Ten Commandments of Fiscal Consolidation [12] are clearly intended for advanced economies. Most of them are also

applicable in transition middle-income economies, but not all. More importantly, transition economies face additional challenges that need to be properly addressed within or in connection with fiscal consolidation program. Case in point are the necessary structural reforms of public sector companies, deep public administration reforms and development of missing market institutions, legal and regulatory framework.

The design and content of Serbia fiscal consolidation program ...

From thematic point of view, Serbia fiscal consolidation is embedded in a wider economic reform program which covers three related thematic areas:

1. Macro-monetary and macro-fiscal/public debt block with an objective of sustaining macro-price and exchange rate stability, reducing budget/fiscal deficits and public debt to sustainable levels;
2. Financial sector block with an objective of providing adequate business and consumer financing at competitive interest rates by cleaning the books of banks through asset quality review and comprehensive NPL resolution scheme; and
3. Growth enabling micro/structural block with an objective of improving legal and institutional aspects of business environment/investment climate, and advancing the three pillars of structural reforms: (a) resolving the status of companies in the portfolio of Privatization agency through privatization or bankruptcy; (b) improving the performance of public utility/infrastructure companies; and (c) reforming, modernizing and rightsizing the public sector including public administration and local government, military, police, health, education, social and other public services.

In each of the areas, some vital program elements rest on existing policy design and implementation mechanisms that continue to be used with little or no change. Best examples are monetary policy based on inflation targeting and managed foreign exchange float, the annual budget and the three-year fiscal strategy preparation process.

In other cases, policy design and implementation mechanism have been adapted, improved or changed to meet the program requirements. One such example are enhancements in the macro-fiscal policy block to secure expenditure cuts, and increased tax and non-tax revenues with neutral or positive impact on economic growth. More specifically: (a) the design and implementation of public expenditures, the necessary spending cuts, especially in the areas of large mandatory spending commitments on pensions and public sector wages, (b) better and more efficient tax administration, especially of VAT and excise taxes, to secure wider tax base and higher tax revenues based on existing tax rates, (c) smooth introduction of well targeted new tax instruments (such as electricity and additional fuel excise taxes), fees, and charges that would secure structural improvements in revenues and maintain a clear pro-growth orientation of the program.

Finally, new policy design and implementation mechanism have been and will continue to be created to: (a) better target social protection and social assistance programs; (b) enable and facilitate structural reforms through transparent, just, well designed, and properly funded voluntary separation, redundancy, rightsizing, early retirement and similar programs; (c) improve the design of subsidies in agriculture to meet the EU standards and achieve rural development objectives; and (d) develop more robust subsidies and incentive schemes to support direct investment, job creation, production, export growth and regional development.

In short, fiscal consolidation is both the lead and the centerpiece of the broader comprehensive economic reform program. Improved fiscal performance early in the program can only be sustained over time if structural reforms are properly planned, developed and funded. To do this, Serbia fiscal consolidation and economic reform program counts on close collaboration with and support from the World Bank, EBRD, EIB and other IFIs, bilateral donors as well as EU. Key examples are:

- The resolution of SOEs supported through two World Bank DPLs;
- Restructuring and improved performance of public utility/infrastructure companies supported by one or more World Bank DPLs and EBRD loans;
- Improved competitiveness through innovations, better labor market operations and improved policy

analysis supported by World Bank results-based funding loan;
- Public administration reform supported by World Bank program-for-results loan and EU sector budget support financing; and
- Numerous sector and thematic studies funded by bilateral donors and IFIs.

The initial results of the program

Fiscal balance developments

In this section we will highlight selectively some of the main results of the program achieved thus far with a clear objective to address the issues of program design, possible choices and outcomes.

Macro-monetary performance has been solid throughout this period: average inflation for 2015 was at 1.9 percent, down from 2.9 percent in 2014 and well below the 2.5% lower bound of the 4% inflation target. With few minor exceptions attributable largely to speculative behavior of domestic banks, the dinar-euro exchange rate has been very stable. In real terms the EUR/RSD period average exchange rate depreciated by 1 percent (compared to 1.2 percent in 2014).

Fiscal performance recorded a major improvement exceeding the original and revised deficit targets set in the IMF supported three-year precautionary program. In 2015, planned fiscal deficit of the general government was set at RSD 232 billion or 5.9 percent of GDP. Based on very good performance during the first six months, target deficit was revised down to RSD 160 billion (4.0 percent of GDP), while the actual outcome for the year was still below (RSD 149.1 billion or 3.7 percent of GDP). This is 2.9 percentage points below the deficit recorded in 2014, indicating a huge improvement both on the revenue and expenditure side (see Table 1 for details).

Furthermore, this result contains a permanent structural improvement of 2.5 percent or 62.5 percent out of the overall 4.0 percent total fiscal adjustment envisaged under the IMF program. Compared to the initial plan (50:25:25), this implies considerably stronger front loading (62.5:17.5:20.0) which allows more fiscal space for the implementation of difficult structural reforms in the next two years.

Table 1: Serbia – Improvement in fiscal deficit explained, in percent of GDP

	2015
TOTAL ADJUSTMENT IN THE FISCAL BALANCE	**2.9**
Total adjustment on the revenue side	**1.9**
Of which: changes with permanent structural effects	
Better revenue performance (VAT, excises, contributions)	1.0
Of which: changes with one-off effects	
Extra dividends and profits of public companies	0.8
Increases in other non-tax revenues	0.1
Total adjustment on the expenditure side*)	**1.0**
Of which: changes with permanent structural effects	
Pension reductions	0.5
Public sector wages reductions	1.0
Other expenditure cuts with effects on fiscal balance	
Interest payments	-0.4
*Subsidies***)*	0.4
Capital expenditures	-0.4
Assumed debts (late military pensions, Serbia-gas debts to NIS, agricultural subsidies, etc.) – change over 2014***)	-0.1

*) Positive number indicates reduction in expenditures i.e. positive fiscal impact.
**) Includes reductions/changes in all subsidies
***) Includes elimination of recapitalization of banks, and insurance companies.

Source: Ministry of Finance

The fiscal adjustment was spread evenly throughout the year as indicated in Figure 1. The improvements have been recorded in every single month. The December spike in expenditures and deficit remained albeit at a somewhat lower level (RSD 83.7 billion in 2015 versus RSD 88.4 billion in 2014). In both years, December seasonality was caused by three main factors: (1) weaknesses of budget planning and execution which, predictably, lead to bunching of payments late in the year to compensate for prior delays in both capital and current non-wage costs; (2) precautionary pressures to advance transfers for wages and pensions from early January to December; and, most importantly, (3) opportunistic but justified behavior to assume portions of pending debts and thus utilize the space earned through better fiscal performance during the year.

As shown in Figure 1, the first two factors amounted to RSD 14 billion for relocation of current expenditures and additional RSD 4 billion for capital. In 2015 the assumption of debts amounted to RSD 43 billion, more than half the December deficit and over 1 percent of GDP. In 2014 the assumption of old debts amounted to RSD 40.9 billion. Although no payments were made in 2014 or 2015 against the assumed debts, they are recorded in both the increased public debt and in the cash-based fiscal deficit. This departure from the cash-based fiscal accounting rules was introduced in 2012 at the request of the IMF to curb the scope for further public debt increases channeled substantially through the assumption of public company and bank debts. Despite possible methodological objections, this hybrid accrual-cash rule proved useful over the years and presently leads to opportunistic assumption of debts when the necessary fiscal space has been created.

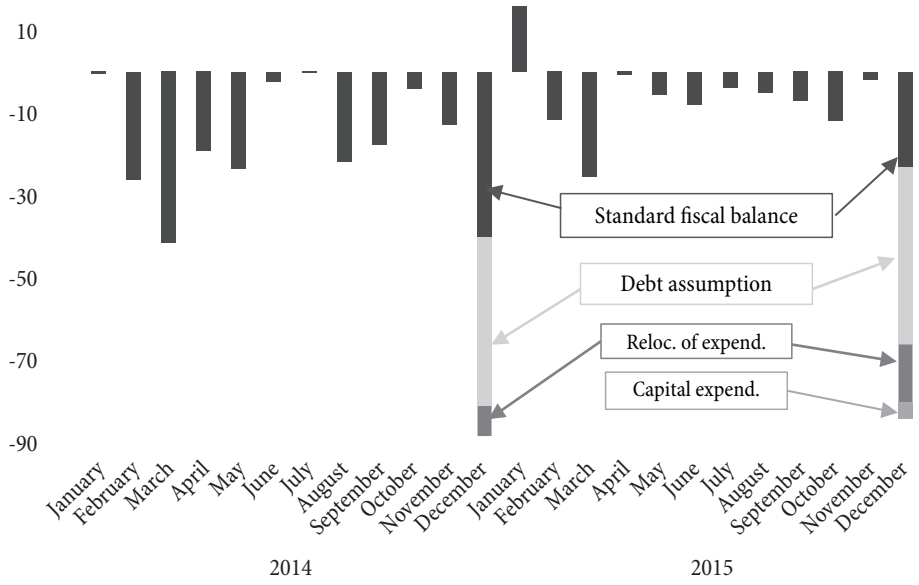
In short, fiscal consolidation was built both on broad-based expenditure cuts and better revenue performance. Out of 2.9 percent fiscal balance improvement over 2014, predominant part (2.5 percentage points or 86 percent of change) stems from permanent, structural improvements. In that, permanent expenditure cuts contribute 3/5 (1.5 percentage point) and structural revenue improvements 2/5 (1.0 percentage point).

Economic growth: How big was the recessionary impact of the program?

One of the major concerns of governments embarking on fiscal a consolidation program based on expenditure cuts was the potential recessionary impact. These concerns were exacerbated in the presence of global recessionary pressures, external shocks and multiple constraints to growth.

In Serbia, additional concerns regarding growth impact of a possible fiscal consolidation program came from the fact that brief economic expansion in 2013

Figure 1: Serbia – December seasonality explained, monthly fiscal balance 2014-2015



Source: Ministry of Finance

came to a large extent from the introduction of FIAT production and exports. Although car production and exports continued, additional effects on economic growth were negligible and recessionary pressures resumed in the first quarter of 2014. The prevailing perception was that fragile growth could not withstand an additional shock from fiscal consolidation.

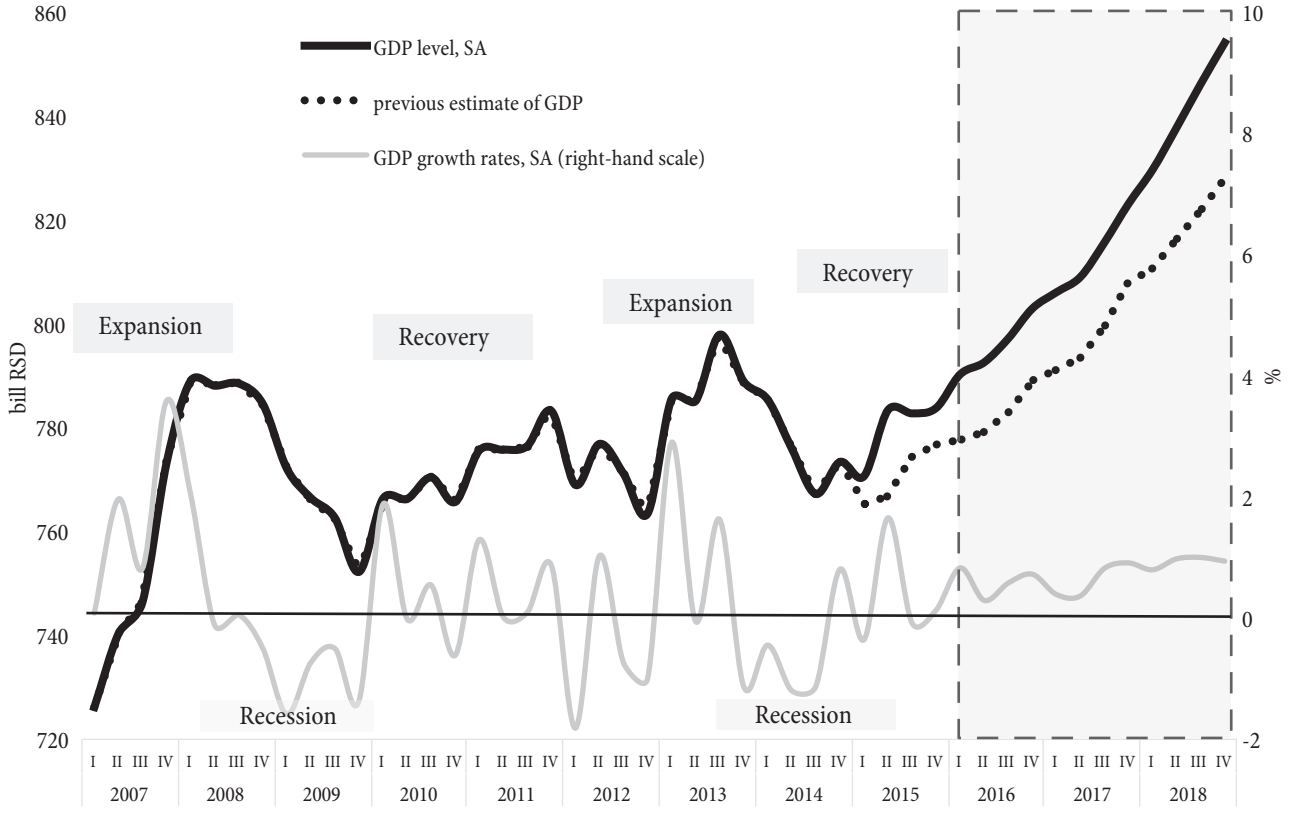
The negative impact of May 2014 floods on GDP growth demonstrated how fragile the un-restructured economy was and actually reversed the sentiments in favor of tough reforms that would ultimately create a more robust economy. It became apparent that the call for fiscal consolidation and economic reforms was not just an electoral pitch for more votes, but a sign of ownership and clear commitment to follow a difficult path out of decades-long economic decay.

The turning point came in the third quarter and the economy started recovering in late 2014-early 2015 (see Figure 2). Despite conservative projections from the IMF and other IFIs that growth would remain negative throughout 2015 (between -0.5 and -1.0 percent), the economy dipped out of recession and reached a positive 0.8 percent growth for the entire year.

It appears likely that growth recovery will continue throughout the 2016-2018 period covered by the latest Fiscal Strategy yielding a substantial difference in GDP and all related economic and welfare indicators. The difference is depicted by the area between the GDP levels predicted without the reform (dotted line) and with the reform (full line).

The case of Serbia may be getting close to what has been labeled as an "expansionary austerity" paradox. As explained by *Alesina* [1] and empirically demonstrated by *Alesina et al.* [4], when fiscal consolidation programs are designed in line with sound principles summarized by *Blanchard* & *Leigh* [11], [12], and synchronized with key structural reforms and pro-growth policies, they can generate growth. Carefully selected expenditure cuts combined with revenue collection efforts aimed at shadow economy described in Table 1 show that initial fiscal adjustment does not have to be recessionary even under the most difficult circumstances. An upward

Figure 2: Serbia GDP level and growth rates, quarterly data



Source: Statistical Office of Serbia, Ministry of Finance Staff Calculations

1.3 percent growth rate revision captures not only the "conservative buffer error" but also indicates that there are positive behavioral changes and responses to persistent and comprehensive reform effort.

Public debt and program consistency

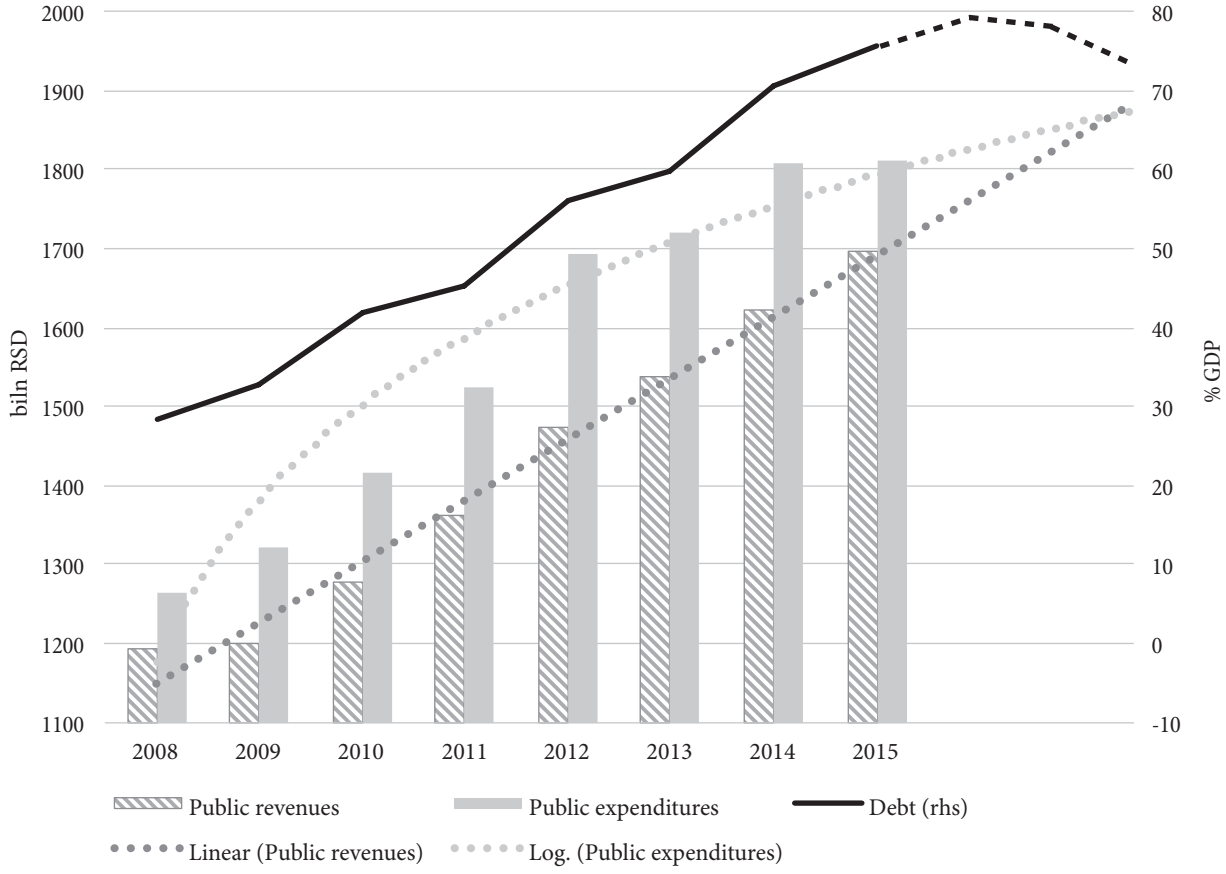
Stopping the growth of fiscal deficit and the buildup of public debt are the main reasons for embarking on a fiscal consolidation program. Achieving the sustainable levels of fiscal deficit and public debt are the desired outcomes of a well-designed fiscal consolidation program. Figure 3 summarizes the developments in these variables since 2008. Fiscal deficit levels followed an expansionary trend from 2008 until the introduction of the fiscal consolidation program. The level of public debt (expressed as current debt-to-GDP ratio) followed the same pattern. The reduction in fiscal deficit already achieved in 2015 (3.7 percent compared to 4.1 percent estimate from November 2015) could be the basis for a more ambitious convergence to a balanced budget by 2018 depicted in Figure 3.

Select political economy issues of the program

The political economy issues of fiscal consolidation and structural reforms are increasing in importance two months before the early parliamentary elections expected to be called for end April 2016. Complex political issues notwithstanding, Prime Minister Vucic will be seeking confirmation for the bald fiscal consolidation and economic reform program discussed in this paper. The initial support provided in an overwhelming victory in March 2014, yielding Serbian Progressive Party more than 50 percent of the seats in Parliament, will be again tested. This time, Mr. Vucic will be able to show clear results achieved thus far, credible promises for the coming four years, as well as demonstrate a firm rationale for continued efforts needed to meet future challenges and clear multiple hurdles on the road of EU integration internationally and successful fiscal consolidation at home.

This would be a demanding task even with full by-partisan political support as reform fatigue settles in

Figure 3: Serbia – Public revenues, public expenditures, and debt-to-GDP ratios



Source: Ministry of Finance, Public Debt Department, Ministry of Finance

and vulnerable groups are potentially a captive audience for manipulation based on unfounded promises. Greece is a clear example. The task becomes considerably more complicated in the presence of ill-intended, misinformed assaults on the rational content of the program and refusal to recognize the most obvious measurable results discussed in this paper. This section will briefly discuss some of the most obvious political economy issues that motivate this behavior. All recent public opinion polls show that these interest groups are not likely to upset the outcome of the elections, but they may well be strong enough to delay or stall the future progress in program implementation.

The cost of delayed fiscal consolidation and reform program

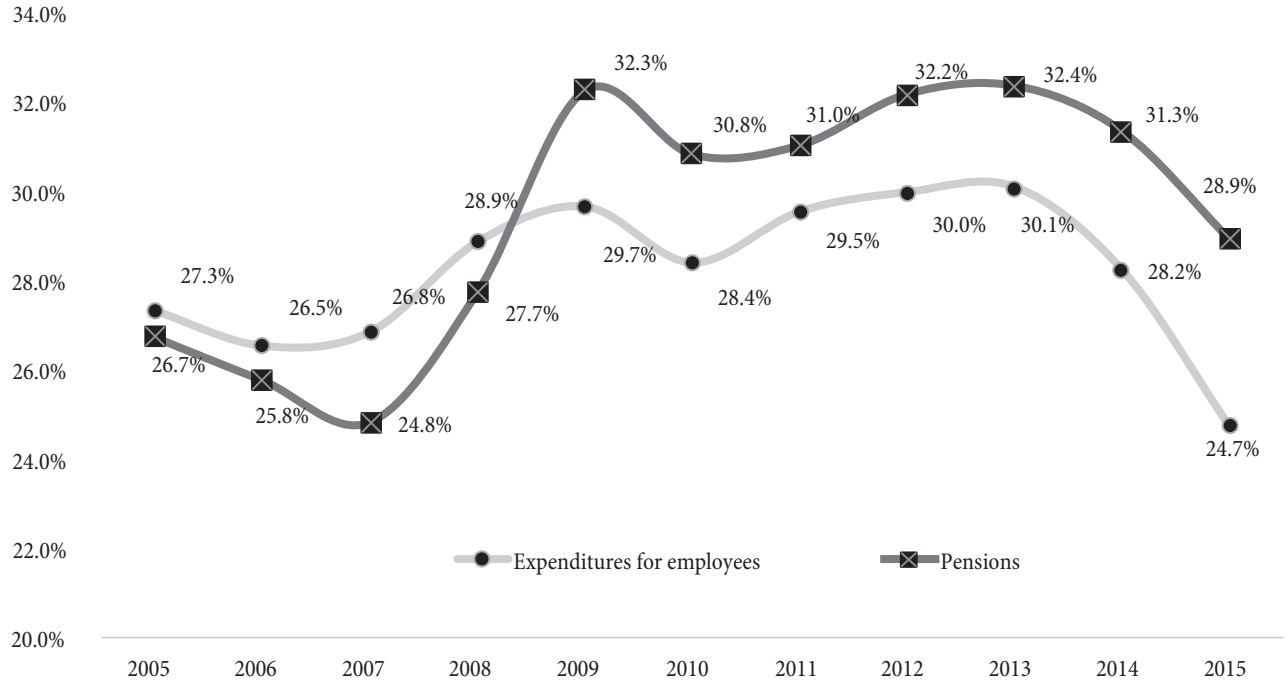
As already discussed in the introductory section, fiscal consolidation had been postponed, resisted and ultimately rejected in 2011 despite growing fiscal deficits and public debt. Much of the delay was inspired or driven by special interest groups with significant political influence. The discussion of old and the emergence of new interest groups in Serbia, their behavioral patterns, political alliances, and full political economy considerations goes beyond the scope of this paper. We will limit our discussion to few examples that clearly indicate deep fiscal consequences political economy issues have had in Serbia in the past ten years.

Two developments are particularly interesting.

The first is the political strengthening of pensioners during the transition process. In close alliance with the Socialist Party of Serbia, they have openly resisted some of the key market reforms including efficient and full privatizations, protection of property rights, the development of efficient market institutions, to mention just a few. More importantly, they used their special political position critical for forming majority coalitions, to effectively change the share of pension expenditures vis-à-vis public sector wages and as share of GDP. As clearly shown in Figure 4, the share of pensions in public revenues jumped from 27.7 in 2008 to 32.3 percent in 2009. This increased the combined share of pensions and public sector wages to 62.0 percent and generated unsustainable expenditure commitments which significantly contributed to increased deficits and public sector debt.

The second was an apparent need of the government to raise more financing than needed to cover the fiscal deficits. This happened in six out of nine years prior to 2014 (see Figure 5, years in which net financing – black full

Figure 4: Serbia – Share of public sector wages and pensions in revenues



Source: Ministry of Finance

line, exceeds fiscal deficit – dotted line). Again, political economy reasons were critical in understanding these developments but fiscal consequences on growing debt service charges, especially interest payments as Serbia faced quite unfavorable lending terms during that period.

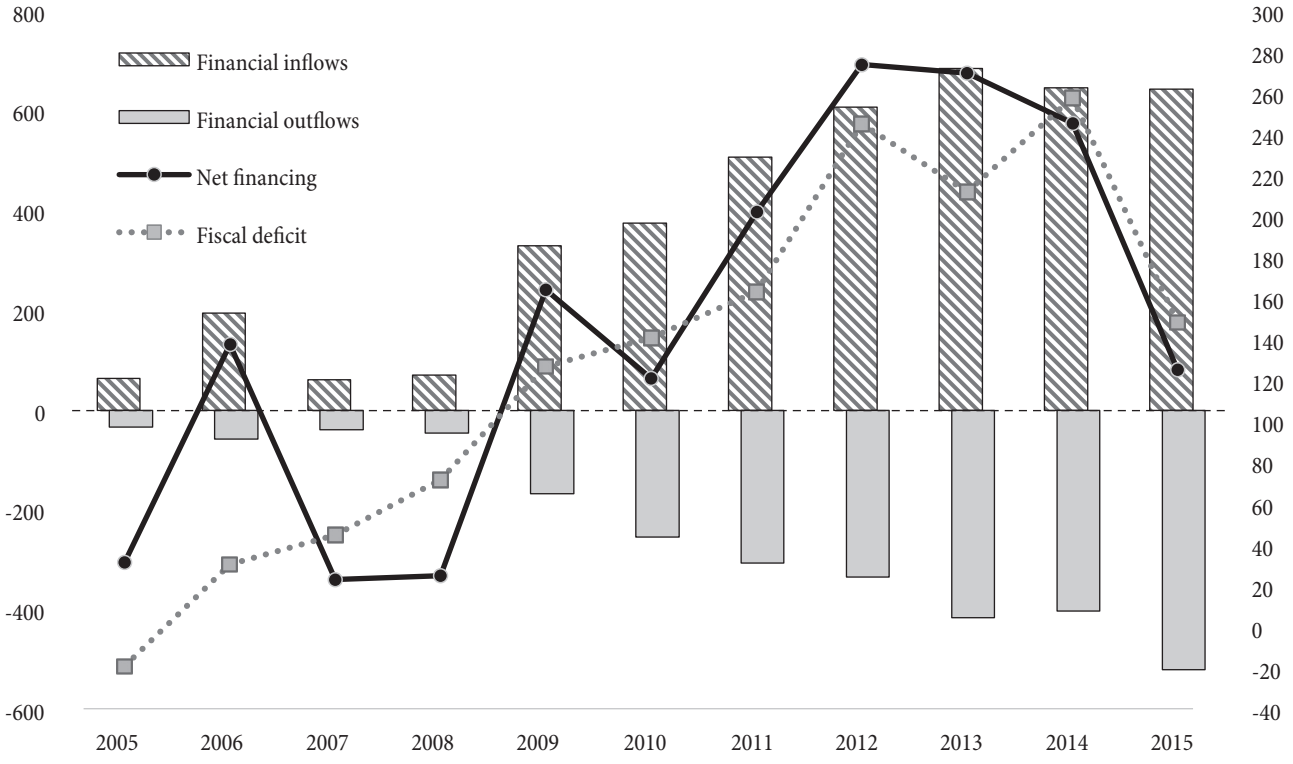
Present political economy issues can slow down structural reforms

At this stage, fiscal consolidation measures have already taken solid ground. The effects of measures on fiscal deficit, economic growth, and longer-term public debt dynamic have been established and, although important implementation risks remain, Serbia is moving towards achieving or exceeding the fiscal targets set for the three year IMF supported program.

The key implementation risks are now on advancing structural reforms in resolving the status of enterprises in the Privatization agency portfolio, improving management and performance of public sector utility/infrastructure companies, reforming and rightsizing the public sector, and resolving NPLs in the banking sector. And each faces considerable push-back and obstruction from both workers and old management in general, labor unions which appear to be considerably stronger and protective of their privileges in public companies with large number of employees and, often, excessive overemployment. Resistance increases exponentially as the deadlines for inevitable reforms, rightsizing and restructuring plans come closer. The process is surprisingly misguided and stuck in positional bargaining "armed" with threats to strike or worse. Principled negotiations focused on creating new jobs on a net basis rather than protecting old jobs are practically non-existent. Deeper political divides behind the scenes make the whole process even more difficult. Pre-election sensitivities make this impasse almost impossible to handle rationally and effectively.

Most importantly, the complex political economy issues based on one-sided perception of status-quo interests could be misused by opposing political blocks to elevate the stakes in ensuing political campaign at the longer-term expense of the country. The country badly needs fresh thinking about dynamic trade-offs where everybody wins in the medium run if reforms are completed, and almost everybody loses if reforms are stalled or abandoned.

Figure 5: Serbia – Financial flows, net financing, and fiscal deficit, in billion RSD



Source: Ministry of Finance

This should be the back-bone of pro-reform and pro-EU campaign in Serbia. One can only hope that Serbian polity will see or feel that other political, economic and social alternatives offered at this time are inferior.

Conclusion

Fiscal consolidation in Serbia was built on broad-based expenditure cuts, better revenue performance, and related structural reforms and pro-growth policies. In the first year of implementation the actual fiscal performance exceeded the original and revised deficit targets set in the IMF supported three-year precautionary program. The final outcome was a deficit of 3.7 percent of GDP, a huge 2.9 percent improvement over 6.6 percent deficit recorded in 2014.

This result contains an impressive structural deficit improvement of 2.5 percentage points or 62.5 percent out of the overall 4.0 percent total structural fiscal adjustment envisaged under the IMF program. The improvement was composed of 1.5 percentage points in permanent expenditure cuts and 1.0 percentage point in structural revenue improvements. This result also increases front-loading of the program from (50:25:25) the initial plan to (62.5:17.5:20.0) which allows more fiscal space for the implementation of difficult structural reforms in the next two years.

The program had a beneficial impact on economic growth. The economy bottomed-out in the third quarter and started recovering in late 2014-early 2015. Despite conservative projections of the IMF and other IFIs that growth would remain negative throughout 2015 (between -0.5 and -1.0 percent) the actual there was a positive 0.8 percent growth for the entire year. It appears likely that growth recovery will continue throughout the 2016-2018 period yielding a substantial difference in GDP and all related economic and welfare indicators.

With this performance Serbia may become a case of "expansionary austerity". As explained by *Alesina* [1] and *Alesina et al.* [4], fiscal consolidation programs designed in line with sound principles summarized by *Blanchard* & *Leigh* [11], [12] and synchronized with key structural reforms and pro-growth policies can generate growth. Carefully selected expenditure cuts combined with pro-growth revenue collection efforts can have expansionary effect on growth even under the most difficult circumstances. An upward 1.3 percent growth rate revision captures the "conservative buffer error" and indicates that there are positive behavioral changes and responses to persistent and comprehensive reform effort.

The political economy issues of fiscal consolidation and structural reforms are increasing in importance two months before the early parliamentary elections in which Premier Vucic seeks confirmation for the bald fiscal consolidation and economic reform program discussed in this paper. This time, he will be able to show clear results achieved thus far, convey credible promises for the coming four years and demonstrate a firm rationale for continued efforts needed to meet future challenges, clear multiple hurdles on the road of EU integration and successfully complete fiscal consolidation. This would be a demanding task in the absence of by-partisan political support as reform fatigue settles in and vulnerable groups are potentially a captive audience for manipulation.

The key implementation risks are now on advancing structural reforms by resolving the status of enterprises in the Privatization agency portfolio, improving management and performance of public sector utility/infrastructure companies, reforming and rightsizing the public sector, and resolving NPLs in the banking sector. And each faces considerable push-back and obstruction from labor unions, managers and other vested interest groups. Resistance increases exponentially as the deadlines for inevitable reforms, rightsizing and restructuring plans approach.

The resolution process is surprisingly misguided and stuck in positional bargaining. Deeper political divides threaten to further complicate the process. Fresh thinking is needed to demonstrate dynamic trade-offs where everybody wins in the medium run if reforms are completed, and almost everybody loses if reforms are stalled or abandoned. This should be the back-bone of pro-reform and pro-EU campaign in Serbia. One can only hope that Serbian polity will see or feel that other political, economic and social alternatives are inferior.

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THE FUTURE OF SERBIA AND HOW TO SURVIVE IT: CATCHING UP AND CONVERGENCE WITH THE EU

Budućnost Srbije i kako je preživeti – dostizanje i konvergencija sa EU

Abstract

Hypercompetition, sometimes referred to as "universal transformative global discontinuity", is the greatest challenge the mankind faces today. The key characteristics of this stage of development are: hiking up of risk stressors and disruptive innovations. Great volatility of global markets is a consequence of permanent shortening of life cycle of almost everything relevant to them (growth model concepts, geopolitical interests, regulations, business models, supply chains, technologies, products, etc.). Maybe more than ever in modern history, we live in a time of profound changes. New normality creates a significant impact on politics, economy, and society. From many perspectives, it is a pivotal moment for mankind.

The main attributes of this stage of development pertain to the vast impact of new normality coming from socio-political context, reflected in financialization, concentration of wealth, massive spillover effects of geopolitics on the economy (particularly on commodity prices), climate changes and security challenges, as well as the impact of technology development (this time inspired by the industrial revolution 4.0) on the growth model and economic policy platform. Addressing these challenges and discussing how national economies and their organizations can benefit from them is the main purpose of this paper.

Again, to survive and prosper, every economy needs to keep growing. Growth, sustainable and inclusive, should not be questioned at all. In new circumstances every national economy, large or small, developed or developing, mature or emerging, is looking for a new vision of growth model. But, it is not easy to make right (re)positioning *vis-à-vis* the leading trends and strategy of market makers. Change management (macro and micro) is a way to respond to main challenges in the age when speed is becoming the currency.

Change management is of critical importance for a small, impotent and out-of-tune economy with delay in transition and limited capacity to respond quickly and accurately to the universe of risk stressors. Serbia's economy is underdeveloped, with delay in transition, catching up and income convergence with developed economies from its surroundings. Vulnerability indicators and cross section analysis of macroeconomic data indicate the presence of many anomalies in the system. The main contradiction is deindustrialization which, combined with relatively high financialization, produces output gap, macro deficits, and growing indebtedness. Coming up with a new growth model that will put the economy in line with the future is not an easy endeavor when an economy is encumbered with serious structural imbalances from the past and risk stressors influencing its future position.

Having in mind the fact that right now the economy is not sustainable, the main challenge for Serbia is not its future, but how to survive it? Multipronged reform agenda is the way to escape from structural crisis and get adequate answers to leading trends in order to shift the economy to sustainable and inclusive growth trajectory. Discussing how Serbia's economy would benefit from right answers to previously raised question, is a very specific purpose of this paper.

The paper is organized into five parts, apart from conclusion. The first two sections are dedicated to principal drivers of change, new normality in socio-economic context and industrial revolution 4.0 affecting the new growth model and economic policy platform. The purpose of the third section is strategic audit of Serbia's economy at the end of 2015. The fourth part consists of a concise elaboration of the EU's major challenges, inspiring the reforms in Serbia, too. The fifth and sixth part provide an overview of currents stage of reforms and proposals for multipronged reforms considering the intersection of new context, economic fact sheets in Serbia and the EU and leading trends. The new industrialization is a core idea.

Keywords: *Serbia, new global normality, industrial revolution 4.0, multipronged reforms, new industrialization*

Sažetak

Hiperkonkurencija, koja se ponekad naziva i „univerzalni transformativni globalni diskontinuitet", predstavlja najveći izazov sa kojim se čovečanstvo trenutno suočava. Glavne karakteristike ove faze razvoja su: intenziviranje rizika stresa i uzurpirajuće inovacije. Velika volatilnost globalnih tržišta je posledica stalnog skraćivanja životnog ciklusa gotovo svih faktora koji su relevantni za njihovo funkcionisanje (ideje za model rasta, geopolitički interesi, regulativa, biznis modeli, lanci snabdevanja, tehnologije, proizvodi itd.). Možda više nego ikada u savremenoj istoriji, živimo u vremenu dubokih promena. Nova normalnost značajno utiče na politiku, ekonomiju i društvo. Iz različitih perspektiva posmatrano, u pitanju je preloman trenutak za čovečanstvo.

Glavne karakteristike ove faze razvoja su usko povezane sa jakim uticajem nove normalnosti u društveno-političkom kontekstu i ogledaju se u finansijalizaciji, koncentraciji bogatstva, masovnom prelivanju geopolitike na ekonomiju (posebno na cene osnovnih sirovina), klimatskim promenama i bezbednosnim rizicima, kao i uticaju tehnološkog razvoja (ovog puta podstaknutog četvrtom industrijskom revolucijom) na model rasta i platformu za vođenje ekonomske politike. Uočavanje ovih izazova i razmatranje na koji način bi nacionalne ekonomije i pojedinačne organizacije u okviru njih mogle da imaju koristi od njih, predstavlja glavni cilj ovog članka.

Za svaku ekonomiju i dalje važi da opstanak i prosperitet zavise od rasta. O potrebi za rastom, naravno održivim i inkluzivnim, se ne polemiše. U novim uslovima, svaka nacionalna ekonomija, velika ili mala, razvijena ili nerazvijena, zrela ili u razvoju, jeste u potrazi za novom vizijom modela rasta. Međutim, adekvatno (re)pozicioniranje u odnosu na vodeće trendove i strategije onih koji diktiraju promene nije lako postići. Upravljanje promenama (na makro i mikro nivou) je način da se odgovori na ključne izazove vremena u kome brzina postaje valuta.

Upravljanje promenama je od ključnog značaja za malu, nemoćnu i raštimovanu ekonomiju sa kašnjenjem u tranziciji i ograničenim kapacitetom za brzo i efikasno suočavanje sa univerzumom rizika. Ekonomija Srbije je nedovoljno razvijena i ispoljava zaostatak u procesima tranzicije, dostizanja performansi i konvergencije u pogledu dohotka sa razvijenim ekonomijama iz bliskog okruženja. Indikatori ranjivosti i unakrsna analiza makroekonomskih podataka ukazuju na prisustvo brojnih anomalija u sistemu. Najveću kontradikciju predstavlja deindustrijalizacija, koja zajedno sa relativno visokim stepenom finansijalizacije, dovodi do stvaranja autput gepa, makroekonomskih deficita i rasta zaduženosti. Nije lako uspostaviti model rasta koji će omogućiti prosperitet ekonomije u budućnosti u situaciji kada je ona opterećena teškim strukturnim neravnotežama iz prošlosti i faktorima rizika koji utiču na njenu buduću poziciju.

Imajući u vidu činjenicu da ekonomija trenutno nije održiva, najveći izazov za Srbiju nije njena budućnost, već kako je preživeti. Sprovođenje programa sveobuhvatnih reformi omogućava izlazak iz strukturne krize i adekvatno suočavanje sa vodećim trendovima, sve u cilju prevođenja ekonomije na putanju održivog i inkluzivnog rasta. Razmatranje na koji način bi Srbija mogla da ostvari koristi od pravih odgovora na prethodno postavljeno pitanje čini specifičan cilj ovog članka.

Članak se sastoji od pet delova, pored sažetka i zaključka. Prva dva dela posvećena su glavnim pokretačima promena, novoj normalnosti u društveno-političkom kontekstu i četvrtoj industrijskoj revoluciji, koji utiču na novi model rasta i platformu za vođenje ekonomskih politika. Cilj trećeg dela je revizija strategijske pozicije ekonomije Srbije na kraju 2015. godine. U četvrtom delu ukratko su elaborirani ključni izazovi za EU, koji takođe utiču na reforme u Srbiji. U petom i šestom delu izloženi su ocena sadašnjeg stanja reformi i predlog sveobuhvatnih reformi koje se nalaze u preseku novog konteksta, ekonomskih činjenica u Srbiji i EU i vodećih trendova razvoja. Nova industrijalizacija je ključna ideja.

Ključne reči: *Srbija, nova globalna normalnost, četvrta industrijska revolucija, sveobuhvatne reforme, nova industrijalizacija*

New normality in the global economy: Problems, causes and solutions

Since the start of the *Great Recession* in 2008, the world economy has dramatically changed. Many people think that the neoliberal economic model and associated policy platform are the principal root causes of it. The model was based on "4Us principle", in terms of *universal* deregulation (particularly capital market), *universal* privatization, *universal* cross-border integration, and *universal* implementation of policy tools (primarily, inflation targeting). Speculative bubbles, financial crises, growing debt and forced migration are main global consequences of the deep fractures of the system such as deindustrialization, finacialization, jobless growth and the like. A system full of structural imbalances is not ready to absorb successfully anti-crisis remedies like quantitative easing, negative interest rates and the like.

From a political point of view, the neoliberal model is extremely risky. Supremacy of the Wall Street over the Main Street is, actually, inequality by design. According to [21], the 62 richest people in the world own as much wealth as the poorest 3.6 billion. Through reinforcing the tendencies toward greater concentration of wealth, system actually contributes to the destruction of the middle class as a cornerstone of democracy. Moreover, the model leads to moral hazard and the supremacy of particular interests over the collective one. Not surprisingly, some influential intellectuals, like *D. Stockman* [26], marked this model as "the great deformation".

The neoliberal model pushed the global economy into a long and deep structural crisis, 2008-present. Actually, the global economy, and particularly its western part, is precariously balanced and shows signs of a fragile recovery. The main problem is growing debt. The third leg of the debt supercycle is not behind the global economy yet. In the post-crisis period, the increase in global debt is greater than the cumulative effect of global growth. Moreover, total global debt rose by USD 57 trillion from the end of 2007 to the 2Q 2014, reaching USD 199 trillion or 286% of global GDP [18, p. 15].

A respectable forecast [13] indicates that in 2016 the global economy is facing another year of growth rate lower than 4%, the rate needed for sustainable economic development. Precisely, forecasted growth rate for global economy is 2.7%, for Western Europe 1.8%, and for Eastern Europe, including Russia, 1.2%. Also, we cannot talk about inclusivity of growth considering that in the great majority of national economies unemployment rate stands at more than 5%.

Besides low inflation, the main features of global economy such as high unemployment, plunging asset and commodity prices, widespread currency weakness and higher US dollar denominated debt are not in tune with macroeconomic fundamentals required for sustainable growth.

When an economy does not function in an orderly manner, politics comes into the game. Politics usually keeps the existing system in place, both internally and externally. It is not easy to calculate precisely the economic consequences of some (geo)political events and processes. But, it is evident that a high correlation between the two does exist.

Wars, terrorism, refugee influx, and social unrest are only expressions of amplified influence of (geo) politics on market forces. These factors remind us of how hypercompetition, which is often, but not exclusively, connected with superpowers and coupled with the destruction of weak states, causes degradation of global security, trade and finance as well as cohesion between other states, but this time superpowers. When some political ideas, on the one hand, and myopic and wrong reactions to them, on the other, come to the fore, the political legitimacy of both might be called into question. This leads to a (geo) political crisis.

In a (geo)political crisis, tensions, media wars, economic sanctions, expansion of state-to-state trade and capital flows are typical manifestations of a new trend toward the deglobalization of world economy.

The world is moving to a multipolar political structure primarily due to a shift in the balance of economic power. There are many open issues in that process, not only as to who will represent the poles of influence in emerging multipolar structure, but also will there be a multipolar structure at all? The shift in the balance of power and, consequently, the emergence of power gap in economies and regions in which players of strategic game have overlapped and opposed interests are principal drivers of change in the global security landscape. Moreover, the implementation of new technologies in defense industry enables proxy wars and intensive engagement of client states in the realization of strategic interests of superpowers. Again, economics is a gismo science, leverage in the hands of politicians.

Growth and prosperity were proclaimed to be the main attributes of the model of neoliberal economy. On the contrary, it pushed the global economy on the path of regression. Moreover, this model, and particularly the measures released to stop its collapse, triggered a (geo) political crisis. Also, it is a crisis of legitimacy of key liberal market institutions (notably the stock exchange) and regulatory bodies (primarily the central bank, securities and exchange commission, and anti-monopoly commission). Due to the implementation of biased and myopic concepts and tools, vital democratic institutions have been manipulated. As a consequence, there are new phenomena such as strong pressure for redistribution (and control) of power and growing popularity of anti-establishment politicians.

In each crisis, economics holds power to find the solutions. In the search for a new model of growth and economic policy platform, a key question is: what is needed for the transformation of neoliberal economic system to a better one without a collapse? Today, there is an almost general consensus among mainstream economists that the last economic crisis cannot be overcome with "more market" measures and by adhering to the principles such

as capital market deregulation, securitization and total privatization or, by the way, the principles and measures that were direct causes of the crisis. When market forces fail, the government comes in to settle inherent structural imbalances.

A new perspective on the growth model and economic policy platform in the post-crisis period does not mean that what we have learned from the model of neoliberal economy is completely incorrect. Perhaps our knowledge is incomplete, particularly regarding the deregulation of capital market, the state's withdrawal from economy and technological progress.

In the post-crisis period, there is fundamental rethinking of the orthodox economic view based on neoliberal ideas of market fundamentalism and policy platform reduced only to core economic policies (monetary and fiscal), with an exclusive focus on inflation (low and stable). New structural economics promotes not only the role of the state in regulation, but also in economic activity. In the new model of growth, core macroeconomic policies combined with industrial policies create a comprehensive economic policy platform referred to as "heterodox". Industrial policies are crucial component of the new wisdom. Industrial policies could be used to correct either market failures or government failures. As *J. Stiglitz* pointed out, "the question is not whether any government should engage in industrial policies, but how to do it right" [25, p. 9]. In our previous papers [9], [10], [11] and [12], we discussed the heterodox approach more extensively.

The core idea of heterodox approach is the harmonization of industrial policies and core economic policies (monetary and fiscal, primarily). To simplify the concept, automatic stabilizers in the monetary and fiscal spheres should enable the functioning of core policies formulated for tradable sectors.

The new concept offers a solution for externalities, particularly coordination, institutional and innovation externalities. Coordination externality combines invisible hand of the market and visible hand of the state. Innovation externality enables infrastructure for creation and diffusion of disruptive innovations. Institutional externality proposes adjustments to institutional settings in accordance with the previous choices. When it comes to coordination externality, the government interventionism dominates the market as prevailing institutional choice in early stages of development, but its influence declines with the acceleration of development. Things look completely different when it comes to innovation externality. Namely, when an economy approaches technological frontiers, the role of government as a risk taker in technological development remains critical independently of the level of economic development. Today, there is a general recognition that without a strong integration of cyberspace technologies and physical systems based on leading edge technologies, no economy will be able to close the gap in development with technological frontiers. Emerging amalgams in the form of "smart, connected products" have the capacity to unleash a new era of industrialization. Smart, connected products have potential to reduce the problem of structural imbalances, particularly output gap and jobless recovery.

Industrial policies should have three focuses: economy as a whole (horizontal policies), tradable sectors (vertical policies), and sectors for opening new opportunities (disruptive innovations). Vertical policies are most suitable for late developers. Horizontal policies come with a higher level of development. Regardless of the level of development, all economies need policies that encourage the development of new, emerging sectors.

The new model of growth and associated policy platform should reboot the global economy and put it back on the path to sustainable and inclusive growth. Desired outcome should be a result of intelligent investment and social equity, along with the reduction of environmental risks.

In order to achieve previous, some things must be harmonized. Firstly, growth must be sustainable. Sustainability is a very fundamental concept in economics and business management. Even though sustainable growth in economics might be something very abstract and elusive, it is reasonable to follow the proposition of business management that sustainability is a consequence of the long-term competitiveness (from the company level to the national economy level), which in itself is a prerequisite for value creation. Secondly, growth must be inclusive, in terms of providing opportunities for all people and capability for

poverty eradication. Besides sustainability and inclusivity requirements, search for the new model of growth must respect one more theme. Namely, the growth must not be only against people, but also not against the nature. The concept of a circular economy is structured to reflect the previous requirements. There are many versions of this concept. One of them is a "blue economy" [22]. The Paris Agreement and success of COP21 climate talks [5] offer hope that sustainability of nature can be fully respected in the emerging model of growth.

Industrial revolution 4.0

Apart from new normality in socio-economic context, in each industrial revolution technology is the second key layer of change. The ability of human beings to invent technology is their defining characteristic [28]. Prevailing technology at each stage of development, such as ICT in the era of digitalization, has effects on the society as whole, going far beyond ICT industry [30].

Technology is enabler. Simultaneously, it offers opportunity and represents threat. The economy is always at the threshold of transformation driven by the confluence of emerging technologies. Many of them are disruptive by character in the sense of *C. Christensen* [3], [4]. Disruptive innovations have become a powerful part of modern competitiveness thinking. The concept explains a process whereby a new company with fewer resources but with cutting edge technology is able to successively challenge and destroy incumbent competitors.

Disruptive innovations are one of the factors influencing emergence of industrial revolution. According to *K. Schwab* [24], in the last three centuries the economy, after passing through three industrial revolutions, is on the brink of a new one. Industrial revolution 1.0, which started in 1784, used water and steam power to mechanize production by designing equipment for mechanical production. Industrial revolution 2.0, taking place in the period 1870-1969, used electric power for systems of mass production. In industrial revolution 3.0, beginning in 1969, electronics and information technology were used to automate and integrate different components of value chain. Industrial revolution 4.0 is building on the previous one. It is characterized by a fusion of technologies from ICT (mostly virtual) and other technologies (mostly physical) in the process of formation of cyber-physical systems.

In the first two industrial revolutions, scientific optimism backed up with production engineering was the main driving force behind productivity growth and output increase. In these periods the role of regulators was to discipline private entrepreneurs. During the first two industrial revolutions the core technologies were far more transformative than ICT technologies in industrial revolution 3.0. Namely, in the digital revolution the emergence of computer, internet and smart phone have failed to generate a sustained upturn in productivity and growth of output. This is best demonstrated by the case of the US economy. In the period 2006-15, total factor productivity growth, as a measure of innovativeness, in the US was only 0.3% per year. Digitalization neither increased productivity substantially nor did it create new jobs like previous industrial revolutions. Moreover, cost cutting exacerbates deflation tendencies, and investment mostly out of real economy reduces investment multiplier.

Finally yet importantly, this revolution contradictory affected social and political evolution. Namely, the new technology has reinforced tendency toward wealth concentration making "winners-takes-all" feasible.

Today we are on the verge of the new industrial revolution. The latest industrial revolution is driven by the breakthroughs in artificial intelligence, nanotechnology, 3-D printing, human genome, big molecules, and other cutting-edge areas of science. Intersections of innovations in the above mentioned fields with catalyst role of ICT could change life in unforeseen ways affecting every industry and sector. Particularly, it is by courtesy of cyberspace, that the fusion of technologies across the digital, physical and biological spheres becomes possible. For example, auto industry today is under the pressure of three new technologies: zero emission of CO2, autonomous driving, and connectivity.

The speed, scale and systemic nature of changes have the potential to greatly disrupt many incumbent businesses and industries. They have potential to transform almost all industries from real economy, financial sector, mobility, health care, and education. Sometimes a fusion of

technologies leads to rejuvenation of mature industry (e.g. automotive industry). Sometimes it brings breakthrough innovation. For example, breakthroughs in human genome open the space for life science (new diagnostic tools, pharmacy based on big molecules, robotic surgery, pro ageing, health tourism, and the like).

Emerging cyber-physical systems, just like a great part of digital technology as their predecessor, could have deflationary effect. Namely, the principal fear is that new amalgams of cyber-physical systems will destroy the current labor structure, making a large number of workforce obsolete due to redundancy, automation, or disintermediation. This time, new technology could hit white-collar jobs like a neutron bomb. If new technologies shake up the labor market, they could deepen the inequality problem. The impact of disruption will probably vary across industries. Financial services are expected to experience the greatest negative impact, followed by energy sector and health care. This loss could be partially offset by the creation of new jobs in more specialized job families like STEM (science, technology, engineering, and mathematics), particularly in fast growing industries such as ICT, life science, advisory services, and media. But, net effect on the labor force will probably be negative.

With a great level of confidence we can predict that in the near future intangibles, more than material assets, will represent a critical factor of production. But, principal beneficiaries of such structural change tend to be investors as providers of capital (intellectual and financial). There is real threat that net displacement of white-collar workers by emerging cyber-physical amalgams might exacerbate the spread between returns on capital and returns on labor and act as a new driver of income inequality. Despite the fact that the demand for highly skilled labor force will increase while the demand for low skilled workers will decrease, in industrial revolution 4.0 income inequality represents the greatest socio-economic concern.

From macroeconomic level there is a serious threat that new technology could be the main reason for income stagnation, or even decrease. If structural adjustments do not follow the right path, this is very likely. Anyhow, in these circumstances tensions not only between blue collar/low-pay and white collar/high-pay labor segments, but also tensions between white collar labor and investors might cause the breakdown of social cohesion. Model of growth in which "winner-takes-all" by limiting access to opportunities for the middle class cannot lead to sustainable and inclusive growth.

Job cuts trigger a negative domino effect of recessionary tendencies: fear of fear, demand squeeze, ever-growing unemployment, fiscal imbalance, etc. Namely, demand squeeze puts great pressure not only on businesses, but also on the government. When pressure is intensified, the government will have to cope with the consequences of stagnating output by new means, industrial policies for example.

Achievements from cyberspace technology like internet of things, big data and cloud computing will not change only business model of companies and structure of economy, but also the essence of humankind and its identity. Namely, breakthroughs occurring in life science redefine what is meant to be human by pushing back the current threshold of life span, health, cognition, and capabilities. They will compel us not only to redefine our moral and ethical boundaries, but also to make right justification in education, health care, pension plans, and related issues. In such environment education is an "industry" with a substantial lag behind the leading trends.

In addition, pluralistic interactive media are affecting politicians and opinion makers by giving them leverage. Unfortunately, they can be used to disseminate extremism and other form of wrong things, including lies and stupidity. Contamination of the social media with some explications could be counterproductive for democratic development and give rise to many social pathologies.

These trends raise the following question: could the social context support the changes in technology and economy in a situation where robots take over the world, virtual reality replaces normal relationships separating us from each other, and cyber-physical systems hit existing workforce? Devolution might be a possible consequence if we go too fast with industrial revolution 4.0 or in the wrong direction following exclusively the interests of already highly concentrated wealth.

But, there is also a possibility of an optimistic scenario because all of the previous projections do not

have to be necessarily the case. Like in the first two industrial revolutions, if emerging cyber-physical systems are mastered in the right way and massively and quickly diffused throughout economy, it will be the indicator that hopes should overcome fears and economy could pass through structural adjustments successfully. In an optimistic scenario, the new wave of disruptive innovations leads to supply side miracle, with long term improvements in efficiency and value creation through diversification.

On the supply side, many industries are seeing the introduction of new technologies that create entirely new ways of serving existing needs and significantly disrupt the existing industries. Disruption is coming from responsive competitors that, owing to the access to global digital platforms for R&D, marketing and logistics, can eliminate incumbents faster than ever by improving the value for money of delivered products and services.

On the demand side, some positive shifts are also occurring particularly toward clients' engagement in design, marketing, and logistics. Digital capabilities of products and services definitely increase their value. New ICT tools ensure that the costs of communication, transportation and trade decrease throughout the value chain. Particularly, big data and cloud computing dramatically reduce the costs of market intermediation by eliminating market asymmetries and providing a better understanding of consumer needs. This leads to the opening of new markets and bolsters up investment and growth. In that case, the rightsizing of labor force through outsourcing could open the space for diversification and entry into new high value added products and services. In the new context, the opportunity to raise the quality of life by integrating business and pleasure ("bleasure") could be regarded as a new business opportunity.

Innovations based on client expectations and product enhancements affect organization and management too. The shift from digitalization to innovation-based production is also forcing companies to reinvent themselves. New technologies make assets more durable and flexible, while data and knowledge (big data) are transforming the ways in which they are maintained. The emergence of big data, internet of things, cloud computing and new business model based on them, manifests itself in an organizational culture that builds upon the concept of learning organization and management style of so-called "change management".

At this point, we cannot foresee which scenario is likely to emerge. Fears that new technologies may further upset incumbent businesses, cut jobs, particularly in low level income countries, and trigger related social pathologies do not have to be addressed yet, as a matter of fact, but only to be a cause for worry.

Strategic audit of Serbia's economy fact sheet at the end of 2015

Despite a quarter century of reform experience, macroeconomic fact sheet is not encouraging. Namely, for a long time Serbia has been in self-fulfilling recession cycle leaving untouched three structural imbalances: output gap, macro deficits (current account and fiscal), and structural unemployment. To compensate funds lost due to continuous bleeding, the economy has been constantly increasing the level of debt.

In the period 1990-2000, the principal cause of regression was misunderstanding of geopolitical trends and, consequently, an inadequate positioning toward them. In the period 2001-08, misconceptions, experiments and fallacies in economic reforms led not only to unsustainable growth, but also to unsustainability of the previous reforms achievements. Typical examples include privatization and the capital market development. Misconceptions, fallacies and stop-and-go in the implementation of reforms created an impotent and out-of-tune economy. Deindustrialization during the whole period of transition is the major cause for the absence of strong growth dynamics.

The *Great Recession* 2008-present has additionally deepened old fractures of the system. It was a crisis within the crisis. Consequently, during the last seven years Serbia has not attained the pre-crisis level of GDP. At the beginning of 2016, Serbia ended up at an "unhappy" 7th place in Bloomberg's list of the most miserable economies [1]. But, the devil is not as black as he is painted, considering that Serbia ranks among the 63 relevant economies.

A deeper insight into fragilities of the system can be gathered based on vulnerability indicators. Vulnerability indicators throw the spotlight on the capacity of an

economy to reduce adverse effects caused by various stress factors. At the end of 2015, vulnerability of the economy is evident (see Table 1).

The output gap, as the difference of actual economic activity from its potential level, is the main long-term effect of sustained disequilibrium. Transitional output gap, as the level of output in the current year in constant prices compared to the 1989 level of output, portrayed as J-curve, has not significantly improved during the whole transition period and in 2015 still remains at a very high level (27.5%). Moreover, after 2008, there are three recession sub-cycles. Figure 1 shows the transitional output gap over the period 1990-2015, with the special focus on a crisis within the crisis during the *Great Recession* 2008-present.

As previously mentioned, long-lasting deindustrialization is the primary cause of transitional output gap. According to [23], in the period 1990-2010 industrial production shrank more than 60%, the share of industrial production in GDP fell from 31% to 15%, while number of industrial jobs declined from 1.03 million to 0.30 million. In 2015, the economy gradually strengthens, but the level of industrial production, which was slightly below the comparable level in 2008, indicates the current output gap.

In low-income developing countries, manufacturing, along with commodities, is the most important tradable sector. In addition, the expansion of tradable sectors is connected with investment multiplier effect. Manufacturing expansion is crucial for maintaining external liquidity in the short run as well as for balancing current account in the long run [10]. The recent empirical tests strongly confirm the previous position. According to [14], transitional economies that demonstrated the greatest convergence of GDP p.c. and, above all, the greatest resistance to the *Great Recession*, are actually the countries from the *Visegrad Group* (Czech Republic, Poland, Slovakia, Slovenia, and Hungary) that based their growth on investment in tradable sectors in the pre-crisis period.

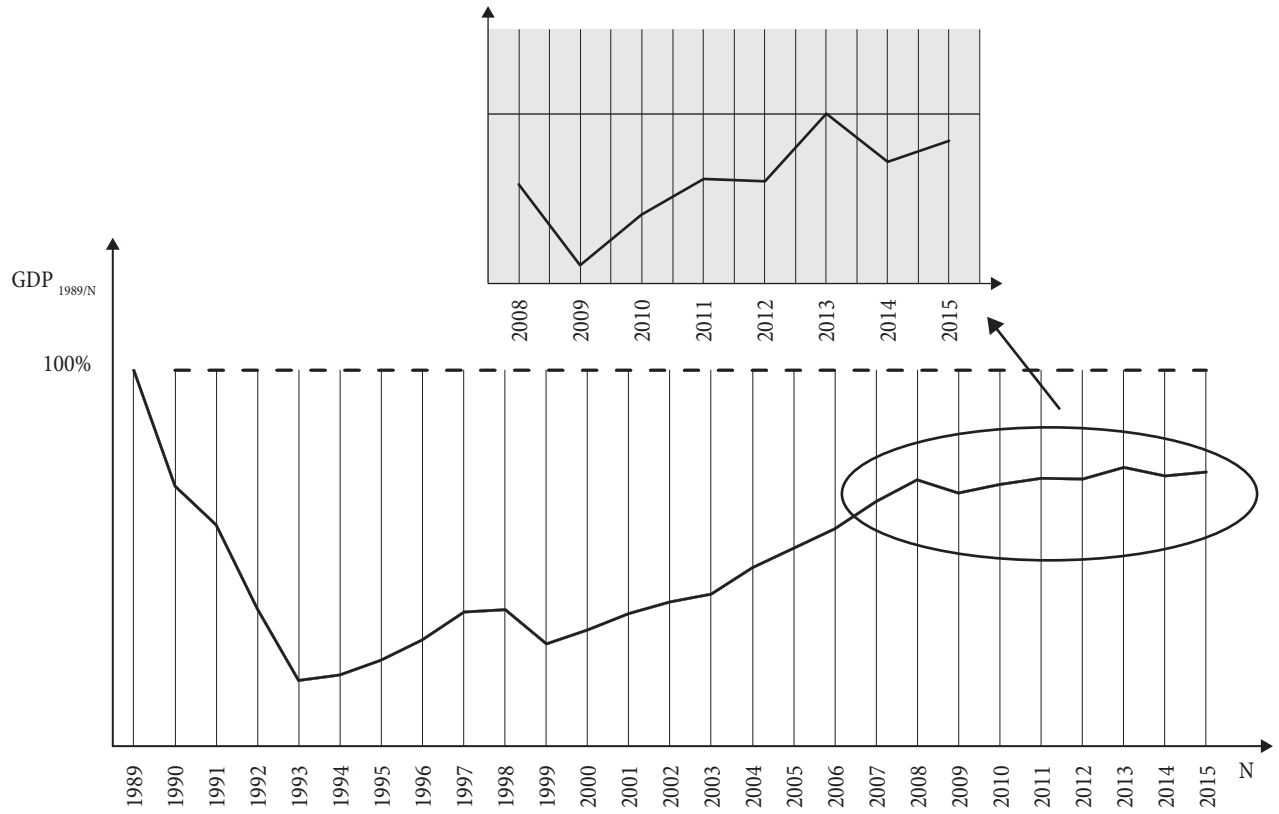
In high-income developed countries, a relatively small share of manufacturing in GDP formation is not so problematic because these economies have strong service sector and high capital market attractiveness. In that case, the export of services and capital inflow can help balancing current account deficits and keep the balance of payments reasonably balanced. Serbia does not have strong service sector and its capital market is thin and in degradation. Therefore, structural reforms toward

Table 1: Vulnerability indicators, 2015

Indicators	Value	Reference point	Type of vulnerability
Transitional output gap	27.5%	0%	
Okun index (inflation + unemployment)	19.5%	<12%	OPERATIONAL
Macro deficits	4.8%	<5%	
• Current account	4.1%	<3%	
• Consolidated budget deficit	1.4	>2	
Dependency ratio	38.8%	<20%	
Youth unemployment			
Indebtedness			FINANCIAL
• Public debt/GDP	76.6%	<45%	
• External debt/GDP	81.7%	<90%	
• External debt/Export	171.7%	<220%	
Non-performing loans	22.0%	<10%	
Credit rating			
• S&P	BB-/stable	rank > BB+	
• Fitch	B+/positive	rank > BB+	
• Moody's	B1/stable	rank > Ba1	
Export (goods)/GDP	36.5%	>50%	COMPETITIVENESS
Currency change (2015/2014)			
• Nominal depreciation	0.55%	<5%	
• Real depreciation	-0.79%	<0%	
Global Competitiveness Index	94th of 140	65-JIE average	
Corruption Perception Index	71th of 168	59-JIE average	
Ease of Doing Business	59st of 189	60-JIE average	
Economic Freedom Index	90th of 178	62-JIE average	

Source: National Bank of Serbia Statistics and authors' calculations

Figure 1: The transitional output gap



Source: World Bank Database and authors' calculation

strengthening tradable sectors are urgently needed to invigorate anemic growth potential.

In 2015, double macro deficits (current account and fiscal) are smaller than in the previous year, but they still persist. As far as current account deficit is concerned, the situation is slightly better than in the previous year due to export expansion and import decrease. A warning sign is the level of FDI, which is insufficient for balanced balance of payments. Sectoral allocation of investment (concentrated on financial sector, wholesale, and commercial real estate) is not adequate again. By contrast, in the emerging countries from CEE a large part of FDI went into manufacturing and infrastructure development.

Output gap is in correlation with high unemployment. In 2015, unemployment rate has dropped to 16.7%, but it is still high. Excessively high youth unemployment (39.0%) threatens to create the lost generation effect.

Another indicator of vulnerability is the ratio of economically active population to dependents. It stands at the level of 0.9. Unsustainably high level of dependents exerts strong pressure on the budget and has an adverse effect on the functioning of the state (pensions, health care, education, science, culture, etc.). A related problem is underdevelopment, particularly visible in state-owned enterprises and enterprises from the group "500+" in restructuring. Dependents and employees in state-owned enterprises in restructuring are not the driving forces of growth and, consequently, they are irrelevant for economic recovery. By contrast, these social groups are in focus of politics.

Growing indebtedness is another layer of vulnerability strongly correlated with the previous one. Public debt is increasing and approaching to 80% of GDP. Growing indebtedness is linked with credibility of the country in terms of the uncertainty of debt repayments. Credibility particularly depends on the difference between growth rate and interest rate. Since the growth rate (0.8%) is much below the interest rate level (hypothetically, the state could not repay debt from rising income), investors are in a risky position. For example, in 2015 the key policy rate was around 6.3% (year average), overnight repo rate was around 8.3% (year average), and average interest rate on euro-denominated loans issued in 2015 was 4.8%. The situation is particularly urgent in the state-owned banks

and insurance companies. Growing public debt and tacit liabilities due to state-guaranteed loans constantly jeopardize liquidity of the system (both macro and micro).

A new warning sign is coming from banking sector, indicating that significant volume of credits cannot be repaid. The level of non-performing loans approaches 23.0% of gross credits released. In the structure of private debt, retailing dominates corporate line. Structure of debt points to a quite opposite situation in comparison with transitional economies from CEE in which the private debt dominates the government one, and the company debt the household one.

Mostly due to the last mentioned indicators, the credit rating of Serbia is below investment grade. Concretely, according to the S&P rating, the credit rating is *BB-/stable* and according to Fitch *B+/tendency positive.*

The situation does not look very good when it comes to the last segment of vulnerability indicators, i.e. competitiveness indicators. In 2015, export/GDP was 36.5%. It means that the situation is slightly better than in the previous year (33.7%). Yet, it is not enough for sustainable growth (>50%) bearing in mind the fact that Serbia is low-income country with high foreign debt.

FX rate is important vulnerability factor, even though the changes in FX rate in 2015 are not significant. Namely, RSD depreciated nominally by 0.55% while in real terms it appreciated by 0.79%. But, it does not mean that currency stability is sustainable in the medium run. In the previous period RSD was significantly overvalued and this is one of the reasons for deficit in the current account. For example, cumulative CPI in the period 2002-13 was 198%, nominal devaluation of the RSD was 91.5%, which indicates that real appreciation of RSD was at the level of 20.4%. Interestingly, since the implementation of inflation targeting in 1H 2006, respective data is: 75% cumulative CPI, 32.2% nominal RSD devaluation, and 13.1% real RSD appreciation. Overvalued FX rate hits profitability of exporters, increases profitability of importers and hinders sustainability of current account.

Other vulnerability factors also reveal a low level of competitiveness. An exception to the rule is the World Bank's ease of doing business index. Namely, the World Bank has recently announced a significant improvement in the climate for investment and doing business (32 places change in rank, precisely). This leap is a consequence of tax reform and improvements in the ease of dealing with construction permits [8]. Such an improvement was an absolute must, considering the fact that in 2014 report Serbia found itself surrounded by the least developed African countries. In terms of tax payment, the amount of tax to earned profit has remained almost the same, but both the number of payments and the hours spent on tax payment activities have decreased. Although the duration and number of procedures have remained the same, the cost of providing construction permit has dropped from 25.7% to 3.6% of the warehouse value.

Other indicators of competitiveness, which are based on correspondent perception, are not so great. The corruption perception index [6] still looks like a high perceived level of corruption, even though Serbia has moved seven places upward in rank. However, this improvement should be taken with caution, since the country range dropped from 175 to 168 countries in 2015. Moreover, when we analyze the scores, not the ranks, the improvement was slight, only by one point. World Economic Forum [15] announced that the rank in competitiveness has not changed for Serbia (94th out of 140 countries). Macroeconomic environment, quality of institutions and market efficiency have turned out to be the major obstacles to the competitiveness improvement. Index of economic freedom for 2015 demonstrates that Serbia stands at undesirable last position in the segment of moderately free countries.

For competitiveness, geopolitical position is also of paramount importance. Serbia took one more step toward the EU accession. In December last year, the European Commission formally declared the opening of two chapters in the negotiation process. A new challenge is refugee crisis. Refugee influx not only increases social costs but also potentially jeopardizes the sustainability of rural areas, particularly near the country borders, impacting on geopolitical risk and speed of accession toward the EU.

The key macroeconomic indicators implicitly portray fundamentals of the system. The key macroeconomic indicators in the post-crisis period 2008-15 are presented in Table 2. The headline in 2015 is fiscal consolidation due to

Table 2: Macroeconomic indicators, 2008-15

Indicator	2008	2009	2010	2011	2012	2013	2014	Q1 2015	Q2 2015	Q3 2015
Real GDP growth, in %	5.4	-3.1	0.6	1.4	-1.0	2.6	-1.8	-1.8	0.9	2.2
CPI, in %	8.6	6.6	10.3	7.0	12.2	2.2	1.7	1.9	1.9	1.4
Unemployment, in %	13.6	16.1	19.2	23.0	23.9	22.1	19.4	19.2	17.9	16.7
Current account, in % of GDP	-21.1	-6.6	-6.8	-10.9	-11.6	-6.1	-6.0	-7.2	-3.2	-3.6
Budget deficit, in % of GDP	-1.7	-3.2	-3.4	-4.0	-5.9	-5.2	-6.3	-2.4	-0.5	-0.8
Public debt, in % of GDP	28.3	32.8	41.8	45.4	56.2	59.6	70.4	74.6	73.2	72.9
External debt, in % of GDP	62.3	72.7	79.0	72.2	80.9	75.1	77.4	81.3	81.1	80.3
FDI, net (=assets-liabilities)	2,486	2,068	1,133	3,320	753	1,298	1,236	337	441	509
FX rate (period average)	81.44	93.95	103.04	101.95	113.13	113.14	117.31	121.50	120.44	120.21

Source: National Bank of Serbia Statistics

austerity measures. During the first three quarters of 2015, fiscal deficit was held under control and at relatively low level. Concretely, budget deficit amounted to -2.4%, -0.5%, -0.8% for the Q1, Q2, and Q3, respectively. Unfortunately, in Q4, fiscal deficit escalated to the level of almost 10%. Consequently, yearly deficit is projected to be 4.1%, primarily due to the realization of tacit liabilities of the state and debt servicing. However, it is improvement in comparison to 6.3% fiscal deficit recorded in 2014.

Fiscal balance is one of the prerequisites for macroeconomic stability. By contrast, fiscal imbalances always jeopardize economic expectations, investments, and the future growth. A number of key macroeconomic indicators are doing pretty well. In 2015, the economy has reached price and currency stability. CPI y/y is 1.5%, and, as previously mentioned, RSD slightly nominally depreciated and really appreciated.

When it comes to growth, things seem to be a little bit better. Growth is in positive territory. In 2015, the economy gained some sluggish speed (y/y growth rate is 0.8%). After three contractions since 2008 (-3.1% in 2009, -1.0% in 2012, and -1.8% in 2014), the economy again started to recover. The principal driver of recovery is export growth. However, GDP has not yet reached its pre-crisis level.

Unfortunately, other macroeconomic indicators show a dual nature of Serbia's economic reality, the shining upside and dangerous downside. Sluggish growth is a consequence of the fact that the progress on the export side is insufficiently strong to offset depressed demand, partly due to austerity. Moreover, increase in manufacturing in private sector is followed by jobless recovery. Unfortunately, state sector is the largest contributor to GDP. State sector is inefficient, primarily due to human resource paradox (too many unproductive people and not enough people with adequate knowledge and skills). Paradoxically, state-owned companies come from the sectors with high potentials for sustainable growth and value creation, such as telecommunications, energy, agriculture, and infrastructure.

Failure to reform the state and public sector is the main cause of poor economic performance and threatens to turn the economy from the recovery trajectory. Public administration is large and inefficient. The same holds true for the public sector. Public expenditures of almost 40% of GDP exceed comparable levels in the EU and particularly in fast growing middle-income countries (in the range 12-20% of GDP). Fiscal pressures exacerbate under the legacy of large and inefficient public sector.

Fiscal consolidation squeezes capital expenditures (3.1% of GDP). Low level of investment is connected with high unemployment (17.3% in Q3 2015) and small contribution of industrial production to GDP (22%). A downward trend is visible, but a heated debate over the impact of the new sample from 2014 on the unemployment decrease is still present. When it comes to labor, things do not look promising. Quantity of labor force cannot be the principal driver of growth due to the absence of demographic rent. Birth rate is low (around 0.9% in 2014) and fertility rate is far below the sustainable level (1.42 compared to 2.1). Consequently, the average age is high (more than 43 years).

To conclude, despite fiscal consolidation, without structural reforms and adjustments in monetary system it

is impossible to convert macroeconomic stability measured by relatively balanced budget, price and currency stability into tangible and sustainable performance improvements.

Moreover, the country with public debt approaching to 80% of GDP is not a sovereign country in the fullest sense. It is in the hands of lenders. This is relevant for all countries, but particularly for small ones with a delay in economic development.

Impotent and out-of-tune economy has no core advantages, nothing that is strong enough to counter the gravitational pull of universal transformative global discontinuity. In addition, such an economy is not attractive to investors (particularly foreign) and thus unable to provide foreign direct investments as alternative source of macro deficits financing.

Contrary to Serbia's experience, after 1990 the EU enabled a great majority of CEE economies in transition to carry out multipronged reforms and achieve a robust growth in the context of low and stable inflation as a core benefit of the liberal economic policy platform. Owing to macro-fiscal and structural reforms, these economies turned from regression to progressive trajectory, catching up and attaining income convergence with the EU.

In the same period, 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. With confused geopolitical mission statement, wrong strategic goals and reform tools, it was impossible to achieve catch-up and conversion effect. Shocks for the economy are evident after recent understanding of unsustainability of previous reform achievements. Downside risk persists, maybe even increases, because old risk stressors due to previous structural imbalances largely remain and new risk stressors inspired by new global normality and industrial revolution 4.0 come to the fore.

Serbia has cumulative delay from sustainable and inclusive growth, and from the growth that respects sustainability of the nature. To meet the circular economy requirements, it is necessary to undertake tremendous investment in infrastructure, waste management as well as strategic adjustments in many industries with low rate of return (low attractiveness for private investors).

In a rapidly changing environment an economy with such performances is simply not sustainable. What Serbia disparately needs is multipronged reforms. The escape from crisis calls for adopting a very systematic approach, based on various macro-fiscal reforms in concert and guided by new industrialization as the core idea for structural reforms as well as related adjustments in monetary policy.

The EU at a tipping point

The EU is in some form of regression since the beginning of 21st century in terms of population and share in global GDP. Since 2008, the EU has been in positive transition from recession to prosperity, but with many hidden fractures on the road to recovery. The new normality entails quantitative easing and negative interest rate policy, on the one hand, and growing social costs due to refugee influx and terrorism, on the other. The previous factors reflect heightened downside risks.

Money printing of such magnitude, due to quantitative easing, has never been done before. Fresh money is being used predominantly for recapitalization of banks, state budget, and financing of mergers and acquisitions. Furthermore, the fact that net profit from the organizations with positive profitability is being used mainly for share repurchase and bonuses leads us to a conclusion that the EU economy crumbles mostly due to the absence of strong drivers of growth. Monetary expansion without strong drivers of growth leads to speculative bubbles. New bubbles combined with high financialization of the economy and growing concentration of wealth inhibit investments in real economy and job creation.

Jobless recovery means that the EU economy is, actually, in a fragile recovery mode. In 2015 growth rate (0.8%) slumped more than originally forecasted (1.6%). The forecast for 2016 is 1.8%, which is again bellow a sustainable growth rate (4%).

Slower growth in the EU is the major external risk to Serbia's recovery. Without a robust growth, expansionary monetary policy may trigger inflation and generate spillover effect from the Eurozone to the periphery of Europe, including Serbia.

Finally yet importantly, the great migration of people and terrorism agonize politicians and ordinary people in every corner of the Europe, influencing low economic expectations and growing risk aversion as well as social costs. In the most optimistic scenario, if refugees integrate into labor markets, the impact on GDP would be positive, but not significantly. However, there are many risks in the roadmap of implementation of this scenario.

Radical proposals for restructuring the EU, like Brexit and constitutional reform toward the three concentric circles of the EU, strongly challenge its functionality. Unfortunately, refugee influx has further deepened old fractures in relations between nations, including the fragile regions like the Western Balkans, increasing costs of EU mediation.

Where does Serbia stand in the quest for a new growth model?

Wrong privatization strategy and economic policy inspired exclusively by price control implemented via costly tool of inflation targeting provoked distortions in economic fundamentals (high cost of capital and really appreciated local currency). Before the *Great Recession*, such macroeconomic fundamentals shaped the performance of real economy. When demand was squeezed, highly indebted businesses were "under water" in terms of solvency. Losses, bankruptcy and downsizing provoked contraction in real economy as well as deterioration of capital adequacy in financial sector.

Profitability of the Serbian economy measured by ROE after 2008 is in negative territory, with the exception of 2011 [17]. *Malinić et al.* [16] identified 73.2% increase in cumulative losses in the in the period 2008-13. Additionally, declared net losses were higher than declared net income.

Energy is the largest sector of the real economy. A deeper insight into financial health of energy companies reveals an enduring legacy of operating inefficiency [27]. Combining previous with the magnitude of capital leads to negative yield. For example, despite a steady growth in revenues in the period 2008-14, the core company from the industry, Electric Power Industry of Serbia, recorded even negative operating profit (see Table 3). Moreover, in the years when ROI was in positive territory, it was not enough to compensate for high cost of capital.

Banks are in the crisis of profitability and liquidity, too. A diagnostic study financed by the IMF reveals that banking sector is depressed not only due to poor asset quality, but also due to a high level of non-performing loans. According to the World Bank [29], the share of non-performing loans in total gross loans amounts to 22.8%. According to the NBS, this share is a bit lower and accounts for 22%. The more disturbing fact is that the previous indicator is steadily getting worse year after year (from the level of 18.6% in 2012). Moreover, the adjustments on the equity side owing to erroneous practices from the past will additionally increase risk exposure in banking sector.

In 2014, the level of losses, particularly from the real economy, dramatically rose. In real economy, more than 30% of companies that submitted financial statements reported losses. Precisely, 31,402 loss-making companies reported EUR 4.40 billion loss. Table 4 provides a deeper insight into different aspects of the problem. In terms of the size of the company, the biggest share in total number of loss-making companies goes to micro companies (95.11%). Yet, the large companies, participating in total number of companies with only 0.35%, generated 44.57% of total loss. Yet, the biggest share of loss is declared by limited liability companies (57.69%). Situation is not encouraging regarding the origin of the loss-making companies, given

Table 3: Financial performance of Electric Power Industry of Serbia, 2008-14 (in RSD thousands)

	2008	2009	2010	2011	2012	2013	2014
Growth rate	20.32%	8.01%	8.50%	12.38%	-0.02%	21.04%	1.89%
Operating margin	-6.83%	7.23%	8.15%	6.16%	-3.07%	15.12%	15.14%
EBIT	-24,225,612	-12,473,804	-4,444,829	23,286,069	-47,704,062	45,956,303	69,212,978
Net cash flow	818,174	2,444,378	-2,608,072	-131,613	7,538,725	95,761,151	42,113,421
ROIC	-1.41%	1.67%	2.08%	1.74%	-0.40%	2.96%	3.03%

Source: CUBE Risk Management Solution and authors' calculation

that 88% of companies generating 77% of total loss are in the hands of local capitalists.

Losses erode equity and increase risk. In 2014, the share of loss in equity accounted for gravely risky level of 30%. Therefore, such a magnitude of losses is dangerous threat to fiscal balance and sustainable development. In addition, the lesson learned from the past is that there is no possibility to realize big foreign investments with small (and constantly squeezed) domestic capital base. The preliminary data for 2015 shows that situation is worsening. The level of debt is rising, notably in financial sector.

Changes in external environment also threaten Serbia's position because it renders investment in strategic adjustments less likely. In a time of profound changes new and rather unknown risks emerge in real time. On the other hand, the old well-known risks become even more interconnected. As a result of rising interconnectedness, global risks are internalized in new ways and their reach covers more economies, more institutions, and more people [30].

The beginning of the year is always a good time to consider the key risks with growing exposure. Risk universe at the beginning of 2016, according to WEF [31], is presented in Figure 2.

Figure 3 shows that the global economy faces two biggest risk stressors: climate change and forced migration. The last year was the warmest year on record, influencing hectic weather full of extremes throughout the planet. The number of displaced people around the world is 50% higher than after the WWII. The force of nature, as well as human activity, causes these destructions. Climate change and forced movements of people amplify geopolitical risk.

Inside the cluster of economic risks, the most important risks are dramatic fall in prices of all kinds of assets, structural changes in Chinese economy (from export driven to consumption driven economy) and consequent shift in global demand, particularly for commodity prices, along with growing recessionary pressure in the EU.

The lasting threats that bring along the myriad of risks are cybercrime and terrorism. Cyberspace is of rapidly growing importance as a source of risk due to the spillover of geopolitics into economy, wars, refugee influx, etc. In addition, massive digitization increases exposure to cybercrime, both in terms of probability of its occurrence and its potential impact. Discontent could also be intensified by the dynamics of information sharing typified by social media. More than 30% of the global population now uses social media platforms. That network is a platform for creation of unrealistic expectations and promotion of extreme ideologies and methods for their implementation, including terrorism.

What are the business options in the world of ever rising interconnected risks? Experts argue that investments

Table 4: Loss-making companies in 2014

Company	Nomber of loss-making co	Loss in mil. EUR	Share in total number	Share in total loss
Size				
• Micro	29,865	968	95.11%	21.90%
• SMEs	1,426	1,480	4.54%	33.48%
• Large	121	1,970	0.35%	44.57%
Legal form				
• Joint-stock	767	1,189	2.44%	26.90%
• Limited liability	25,732	2,550	81.94%	57.69%
• Public utilities	120	543	0.38%	12.29%
• State-owned	181	23	0.58%	0.52%
• Private	4,863	104	15.49%	2.35%
• Other	36	10	0.11%	0.23%
Ownership origin				
• Domestic	27,663	3,406	88.09%	77.06%
• Foreign	3,739	1,014	11.91%	22.94%

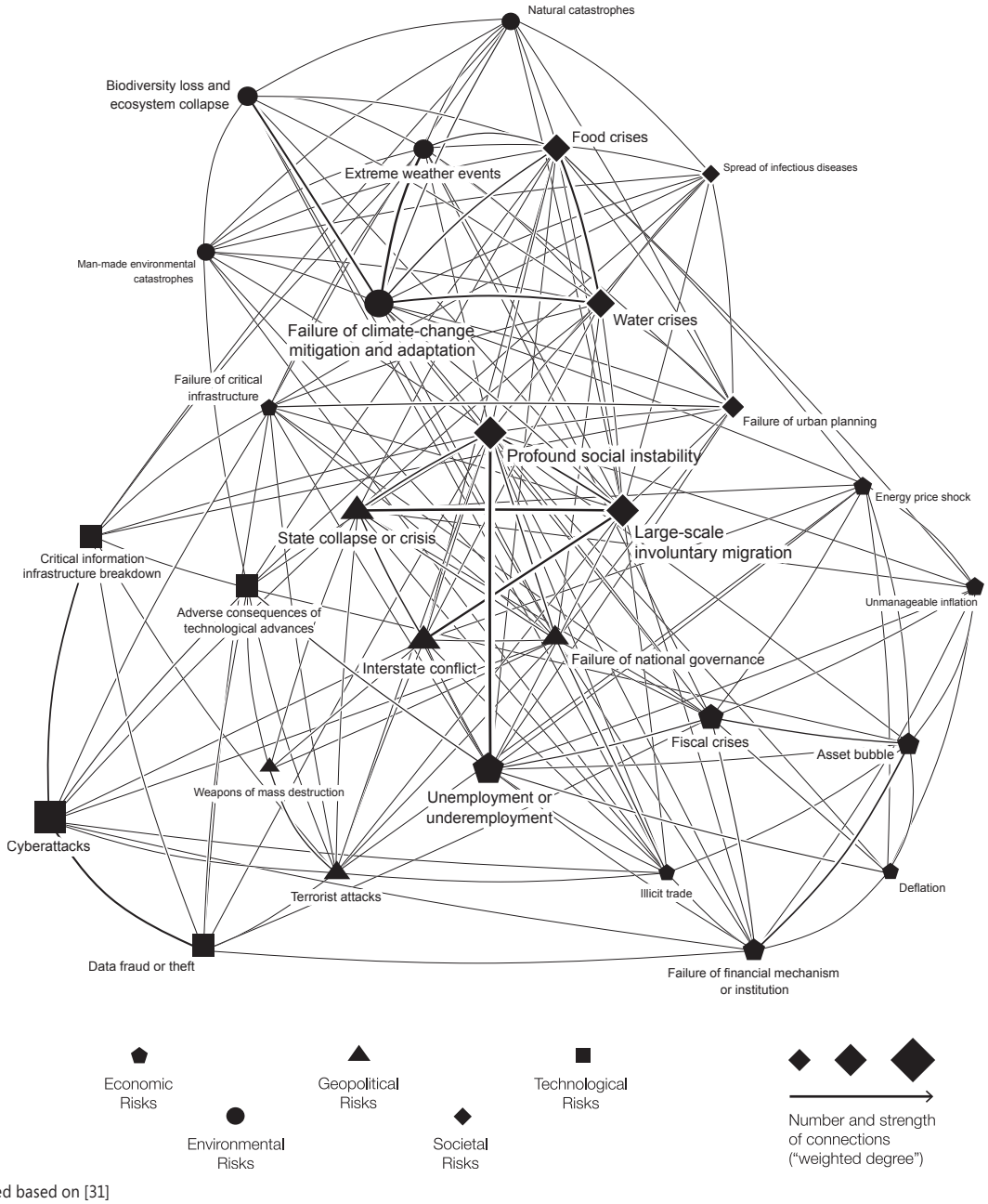
Source: CUBE Risk Management Solution and authors' calculation

in the circular economy (green technologies, renewable energy, etc.) and infrastructure have already risen to the top of the priority list [24]. The role of the state in those investments as regulator and investor is indispensable. This fact further amplifies the significance of a wise and well-directed industrial policy.

Key risks from the global universe are not evenly distributed. The EU, as Serbia's near environment, predominantly faces the risks of high indebtedness and forced migration as a result of crawling economic growth and becomes even more vulnerable to emerging risks in Asia, political conflicts and terrorism in the Middle East and energy price risk in the Far East.

Rapid advances in cyberspace technologies and their impact on economies and societies represent the source of risk *per se*, because they are challenging the competitiveness of the most viable competitors and their business models and hitting the labor force as neutron bomb. Without intelligent integration with physical systems, new ICT technologies can create deflationary pressures on economy. On the other hand, investment in ICT, sometimes in bizarre fields like games and space

Figure 2: Universe of risk stressors, 2016



Source: Adapted based on [31]

tourism, are irrelevant to sustainable and inclusive growth. Growth in consumption of such things, coupled with decline in generated revenues, leads to fall in output. Deflation combined with output gap is a dangerous combination.

How does a universe of risk stressors affect Serbia? The answer is: strongly and destructively. However, each national economy exists for a reason. Achieving the mission means transformation of Serbia's economy in pleasant place for investment and decent place for work and life. In the previous analysis we have learned a lot about what went wrong and what would be an adequate policy response to main internal and external challenges.

Earning power of almost all sectors in economy does not provide enough space for reinvestment of profit inspired by right repositioning towards leading trends in technology and market. In addition, the economy has not enough liquidity to service its debt and to cope with emerging risks factors due to new normality of global economy. When economic reforms are reduced on fiscal consolidation, business and monetary side of reforms stay in "wait and see" mode. Moreover, hard budget constraint on macro level is under the pressure of soft budget constraint on micro level (losses). Tacit liabilities and losses, along with repayment of the previous debt strongly attack fiscal balance as a major reform achievement in 2015 (precisely in first three quarters of 2015).

In strategizing about Serbia's future, the first proposition should be: system must be changed from the fundamentals. Formulation and implementation of strategy is not a trivial skill because in a rapidly changing environment full of risk stressors there is no blueprint for the model of growth that must reach not only sustainability and inclusivity, but also conservation of nature as universal policy tenets.

In import and debt dependent economy, high financialization is counterproductive to sustainable growth. The orthodoxies governing the economy are so entrenched that we need breakthroughs to implement paradigm change in the theory of growth and economic policy platform. What the government must do is to remove the stigma of redundancies from institutional setting in order to stimulate output increase and business development.

It is not controversial that fiscal consolidation is a step in the right direction. The first component of macro-fiscal reforms, macro reforms in terms of state reform, restructuring of state-owned enterprises and privatization of "500+" group of enterprises is almost untacked. The economy is heavily depressed with the legacy of large and inefficient state sector. A negative profitability of state-owned enterprises and financial intermediaries is the main threat to fiscal sustainability. Reconciliation of fiscal stability and growth by carrying out the restructuring of public sector is a great challenge the Ministry of Finance is facing, as demonstrated by the latest update of the Fiscal Strategy [19].

With a difficult external environment and a burden of negative consequences of the previous misconceptions, in the long run Serbia could expect, at best, a gradual economic recovery. The IMF projections are 1.5% for 2016 and 2.0% for 2017. The government forecast is a little bit more optimistic.

Nevertheless, the growth of such magnitude is not enough for catching up with peer countries as well as for achieving income convergence with the EU. To achieve income convergence with the EU, it means attaining compound average growth rate of 6% until 2030.

Is this feasible? Yes, and no. Maybe, yes. To make the impossible possible, Serbia needs political leaders with the vision for new geopolitical positioning of the country and skilled technocrats to accelerate and redirect growth and, by doing so, to reignite income convergence with the EU. This is, maybe, the main economic reason for premature elections in 2016.

Saying that a balanced budget is the greatest achievement of the current government is a subtle compliment without going too far. For sustainable growth, three perspectives should be in concert (see Figure 3). First macro-fiscal, second business, and third monetary. Those three perspectives are inextricably linked. If one fails, they all fail.

How can Serbia pull back from the brink?

Despite fiscal consolidation and significant improvement in macroeconomic fundamentals, in 2015 Serbia is still in self-fulfilling regression cycle. There are no strong drivers

of growth. It is a proof that the universal efficiency of the market is not applicable in a case of major macroeconomic imbalances like output gap. In such circumstances, market forces, particularly in financial sector, unleash recession fears instead of booming prospects. When monetary policy is focused exclusively on inflation (low and stable) instead of output gap (low and stable), and privatization is concentrated only on profit-making companies from the commercial part of state-owned enterprises as well as financial intermediaries, these measures are not sufficient for sustainable equilibrium. Without restructuring of natural monopolies and network technologies as well as loss making state-owned companies and in absence of adequate industrial policies for tradable sectors, such shallow reforms lead to the further deepening of old structural imbalances.

Regardless of the stage of economic development, strategic leadership is a prerequisite for the escape from the crisis. If you do not have a strategy, you are probably a victim of the inertia and context or a part of someone else's strategy. Interestingly, in the last 15 years, governments have released more than 130 strategies. None of them has been completed so far. The main reason for that is an erroneous core idea in transition.

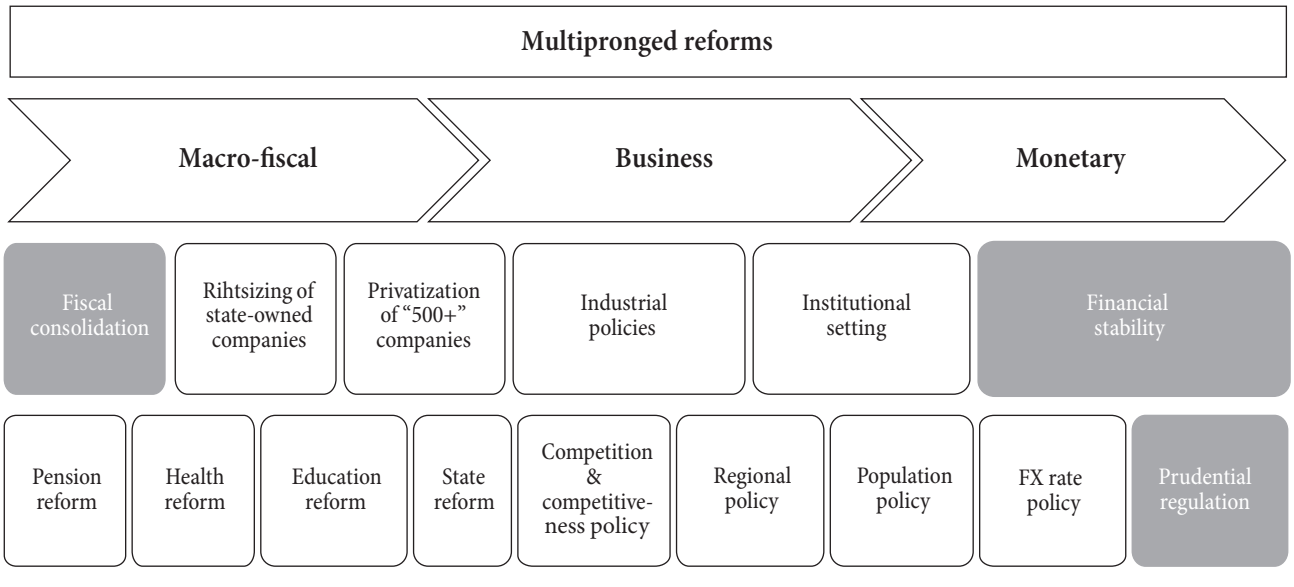
Paradoxically, the future of Serbia is not on the agenda. The cause for that is spillover of daily manifestations of structural imbalances. Previous analysis showed the great level of vulnerability of the economy. Moreover, today the future seems more uncertain than yesterday. It means that today surviving the future is more challenging. The main reasons are the emerging normality in socio-economic context and technological change, as we have already discussed.

In the time of radical structural changes, just sitting back and doing nothing is the greatest delusion, particularly for a small, impotent and out-of-tune economy with the delay in income convergence with the EU. What can political leaders in Serbia do with strategic leadership concerning the problems from the past and new global normality?

To escape a low growth debt trap Serbia's economy needs, more or less, a spectacular turnaround. In the age when the speed is a currency, today is the first day of the future. But, change does not come easily. Escape requires algorithmic thinking and harmonization of four big ideas at once.

1. *Geopolitical positioning.* Political leaders in Serbia must address geopolitical impact on economy instead of ignoring and covering it up. Buying the time when the state is in geopolitical stuck in the middle could be a dangerous fault line. Serbia is in the accession process to the EU, but moving on an elliptic trajectory. Serbia must find a sustainable balance between its own interests, on the one hand, and those of the EU on which it depends

Figure 3: Multipronged reforms



in numerous regards and towards which it is approaching, on the other. In order to do that, the political leadership must confront with major dilemmas and painful choices (Kosovo issue, refugees, etc.), and decide to decide. In order to do that, political leaders need to equip themselves with a broader perspective, expanded outlook and the will to settle open issues. The absolute must is achieving compatibility in institutional setting with the EU. In case of achieving previous strategic objective, the rhythm of geopolitical positioning goes to the backstage.

2. *Focus on relevant people.* Internally, Serbia must reorient itself toward people relevant for economic turnaround like technocrats, entrepreneurs and unemployed educated youngsters. Exclusive focus on social groups irrelevant for recovery like pensioners and employees in state sector is suicidal politicking. Populism never leads to sustainable economy. To do refocusing, Serbia must outdo itself. Land locked country should not be mindset blocked. Mindset is important, but mind setting is critical. In this process, the role of politicians is unavoidable. Spirit of conversation and battle of arguments between people with expertise and vision is a way to change Serbia. Selection of right people and spreading the spirit of optimism is political leader's primary obligation. Politicians always think that society changes faster than experts think it can.
3. *Multipronged reforms***.** In the following period, big bullet in economy will be a reconciliation of fiscal stability and growth through multipronged structural reforms. It is technocratic problem. In public finance, Serbia must continue with the policy of hard budget constraint, downsize public administration while reducing state footprint and eliminate the legacy of burdensome state-owned sector through restructuring and privatization. Public sector restructuring and corporate governance could help to get back state-owned companies from natural monopolies and network technologies on strategic course and enable them to operate with discipline and execute with excellence. Outsourcing of non-core businesses is reasonable restructuring alternative, particularly for the telecommunication business. In the business (or structural part) of reforms, the main priories are energizing reforms inspired by full compatibility of institutional setting with the EU and setting up industrial policies for tradable sectors as well related policies like competitiveness and competition policy, regional policy and population policy. By implementing industrial policies, Serbia will start new industrialization.
4. *New industrialization.* Objectives and initiatives for industrial policies should be in harmony with core economic policies (monetary and fiscal). If Serbia aims to continue with the austerity policy in public finance, industrial policies for tradable sectors should also be designed to prevent fiscal inflation. Monetary policy plays a supportive role in tradable sector expansion, by providing stability of the financial system and stable and competitive (means real) FX rate. Competitiveness improvement in tradable sectors is a key issue for industrial policies. Figure 4 shows the landscape of tradable sectors for industrial policies with three layers: policies enhancing comparative advantage, policies enhancing competitive advantage, and policies enhancing sustainable competitive advantage.

Each policy is designed to reach different strategic goals. With industrial policies in sectors with comparative advantage, it is possible to solve the problem of youngster's unemployment in underdeveloped regions, particularly in infrastructure, automotive, waste management and textile and fashion. As far as sectors with competitive advantage like energy, transport and logistic, and manufacturing are concerned, the focus should be on the financing side in order to keep pace with demand. The primary focus in industrial policies for sectors with permanent competitive advantage like ICT, organic food processing and health tourism should be to improve attractiveness of investment in these fields. Also, opening new frontiers for development requires coordinated approach

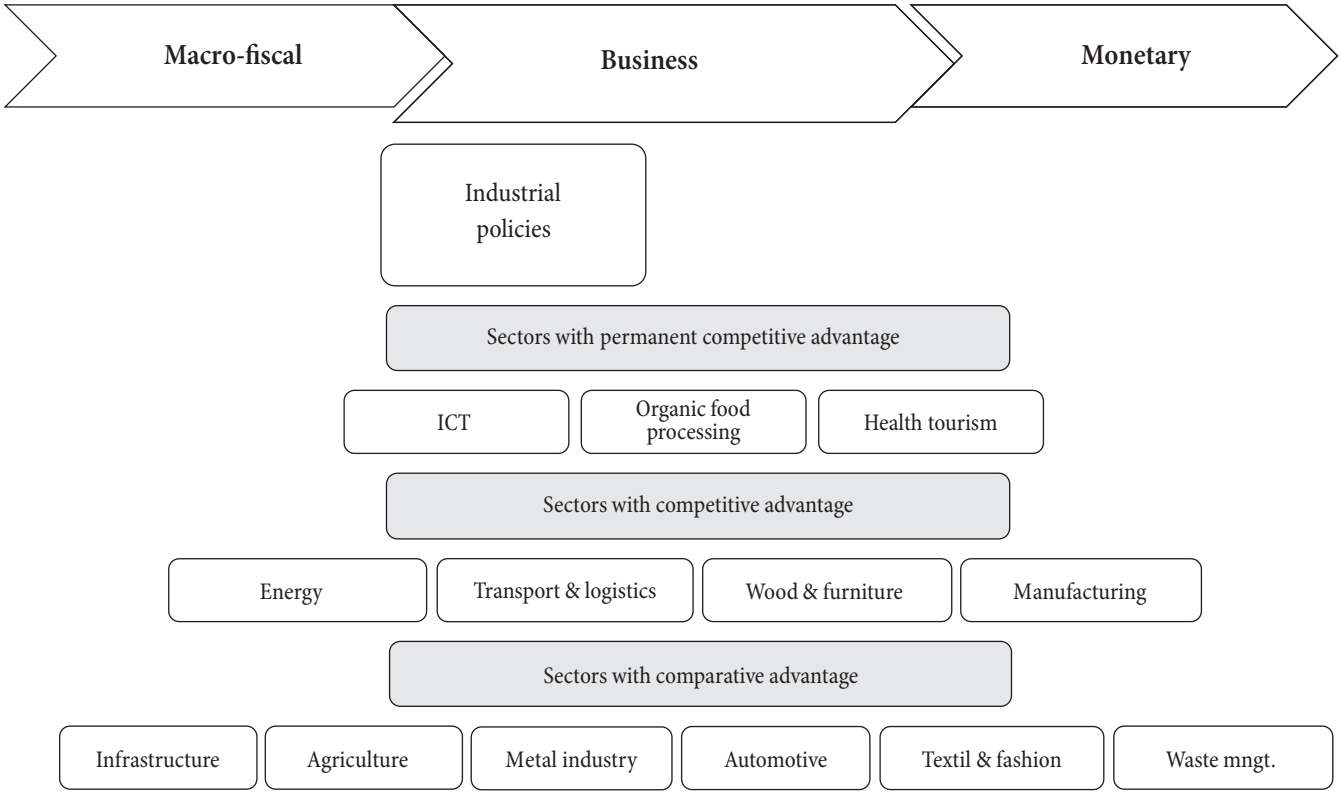
with science and education policies.

In the new industrialization, Serbia needs a clear definition of priorities. Top priorities include infrastructure and ICT. Infrastructure development is a matter of compatibility with the near environment, it is a cost of staying on the accession track. Model of financing and project management (in state hands) are critical components of industrial policy supporting infrastructure development. Debt financing through the loans of multinational organizations like WB and EBRD, building-operating-transferring and other versions of concessional financing, and public-private-partnership should be prevailing models of financing in that area.

ICT is top priority not only owing to its crucial role in this stage of development, but also because Serbia is endowed with increasing level of digital maturity and great diaspora. Mastering industrial revolution 4.0, with special emphasis on cyberspace technologies component, is possible with the capitalization of previous advantages. The purpose of this policy is to transform already existing comparative and competitive advantages in ICT into sustainable competitive advantage. This is, at the same time, an opportunity for making structural adjustments in real economy in accordance with challenges that industrial revolution 4.0 poses. In addition, penetration of export market niches is now possible thanks to the fact that consumers experience goes to omnichannel. Internet of things provides other advantages. Almost a billion of devices in the world are already connected. Internet of things allows companies to collect even more data and, by using those data, to create new values throughout value chain. The use of internet of things will be crucial in the analysis of big data. In addition, further development of this technology will create new methodological requests, and, in that way, new jobs, like big data experts and analysts. Virtual reality and digital experience revival is another challenge. Virtual reality has become more appropriate for mass production. It will become accessible on a large scale thanks to cheap open source tools, especially in the fields of marketing, communication, and human resource training.

Innovations are present in the financial sector too, and their wide spreading is further challenged by emerging concepts of cashless society and bitcoin.

Figure 4: Tradable sectors landscape for Serbia



Industrial policy for ICT to support the emergence of cyber-physical systems critical for rejuvenation of tradable sectors must provide the following measures: clusters capable for reinvention of business model of incumbent businesses, coordinated distribution of external funds for technological platforms development, easier access to finance for innovative SMEs, concessional financing, etc.

Conclusion

Struggling to escape from the middle income trap throughout transition in the early 1990s, Serbia actually entered into a new trap, transitional recession. Unlike the other CEE countries, Serbia did not successfully accomplishe transition, catch-up and income convergence with the EU. Namely, Serbia is still in transition. The *Great Recession* 2008-present only deepened old fractures of the system.

Import and debt dependent economy has no capacity to keep up with changes, nor to achieve sustainable and inclusive growth including the respect toward the nature as well. As a consequence, Serbia is on an elliptic trajectory *vis-à-vis* the EU, toward which it is approaching. Unfortunately, the EU is also on elliptic trajectory due to a dominance of *al à carte* approach (the fiscal union, the banking union, temporary leave of Greece, Brexit, the EU in three concentric cycles, Schengen free of movement agreement revision, economic sanctions for Russia, etc.). Harmonization of two elliptic trajectories is crucial challenge for political leaders in Serbia.

But, neither the burden of misconceptions before and during transition, nor the challenges of new normality in global economy could be a plausible alibi for doing nothing and referring to invisible hand of the market. For political leaders, the economy should be the center of interests. Annulation of the output gap calls for the implementation of a very systematic approach based on the various reforms in concert and guided by new industrialization by industrial policies as the core idea. Multipronged reforms in terms of macro-fiscal, business (or structural), and monetary reforms are a way to survive the future. In the quest for a new model of growth, Serbia does not need to pass through the previous historical phases of economic development and related economic policy model, particularly neoliberal capitalism. The new model of growth (sustainable, inclusive and with the respect toward the nature) and related heterodox policy platform are promising choices. New concept offers a solution for coordination and innovation externalities. Combination of invisible hand of the market and visible hand of the state is logical choice for an economy with structural imbalances. Innovation externality enables following of technological progress initiated by industrial revolution 4.0. Implementation of cutting-edge technologies in amalgams of cyber-space and physical technologies in tradable sectors by industrial policies is the imperative.

Reforms, like every non-evolutionary change of the system, are the consequence of visible hand of the state. However, change without an adequate strategic vision is not possible. Strategic vision should provide the transformation of handicaps into advantages in the process of geopolitical positioning of the country and redirecting the national economy towards a future that reflects its own capabilities, values, and strategic objectives. To do this, we must understand the causes of our strengths and weaknesses as well as new context affecting opportunities and threats of our future. Internal environment should not be ignored, but external environment is critical. There has never been a time of greater opportunities, or the one of greater potential threats. With special attention, we must follow a strategic vision when thinking about drivers of disruptive innovations from cyber-physical systems that substantially shape competitiveness, while simultaneously striving for growth (sustainable and inclusive) and conservation of nature.

We have learned from evolutionary biology that it is not the strongest of the species that survives, but the one that is most adaptable to change. In industrial revolution 4.0, adaptation means adequate speed. In the new environment, speedy fish has eaten other fishes before greater fish manages to do so. In new age, speed is the currency.

Despite macro-fiscal reforms, without structural reforms and adequate adjustments in monetary system, it is impossible to transfer macroeconomic stability, measured by relatively balanced budget, price, and currency stability into tangible and sustainable performance improvements.

Structural reforms by implementing industrial policies dedicated to tradable sectors are urgently needed to solve the growing losses in almost all sectors of economy as well as to invigorate anemic growth potential.

Today the main challenge for any economy is ICT capital and related drivers like quality of labor and innovativeness. In Serbia ICT is a sector with comparative and competitive advantage. Also, ICT has great potential for sustainable competitive advantage through rejuvenation of incumbent industries in real economy, as well as improvement of services, including itself. Despite the fact that ICT is a fully-fledged tradable sector (import substitution EUR 0.3 billion and export more than EUR 0.5 billion), there is no adequate vertical industrial policy in this field, nor horizontal policies in complementary fields like education and science. Instead of using industrial policy to offer indirectly greater economic power and aspirations to technocrats and youngsters from the field, by doing nothing, the state is letting them leave. As a consequence, Serbia misses socio-economic driver inspired by reforms mindset.

Debt servicing and balanced budget require annulation of the output gap through tradable sector expansion. In strategizing about Serbia's future there is no single shot. The big picture of the context, feasible vision for recovery, algorithmic thinking, and systematic approach in implementation reforms are crucial. Multipronged reforms are needed to stop regression and reignite catch up and income convergence with the EU. The EU-like institutional setting, business-friendly mindset of politicians, industrial policies for tradable sectors, vibrant system of education, science focused on most fertile areas for improvement, and sustainable health care are prerequisites for new investments, both in private and state sectors. The rest is "business as usual" story.

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FROM FISCAL CONSOLIDATION TO FISCAL OPTIMIZATION

Od fiskalnog prilagođavanja ka fiskalnoj optimizaciji

Abstract

The fiscal consolidation program in 2015 was a success. Despite this success, it is time to consider a switch away from the fiscal consolidation policy towards a fiscal optimization policy. By "fiscal optimization policy" we mean a proper design of fiscal instruments that might lead towards the maximum potential rate of GDP growth. Relying on a panel regression model for 76 countries, the IMF recommended some guidelines for such an optimal fiscal policy in its latest regional report on Central, Eastern, and Southeastern European (CESEE) countries.

In this paper we test the IMF's recommendations in a different analytical framework based on the QUEST_Serbia Dynamic Stochastic General Equilibrium (DSGE) model. We endogenize all fiscal revenue instruments, update macroeconomic data, and estimate the model's coefficients using Bayesian technique. We also develop a new analytical tool for the decomposition of Impulse Response Functions (IRF), which helps us to reduce complex dynamic non-linear general equilibrium relations to simpler linearized relations between endogenous variables and key state variables.

Our findings support a general IMF suggestion in the particular case of the Serbian economy for reducing fiscal duties on labor and capital inputs, as well as public consumption and transfer payments. We, however, do not support increasing VAT rates or expanding public investments unless some additional conditions are met.

Keywords: *fiscal consolidation, DSGE models, optimal taxation, IRF decomposition*

Sažetak

Program fiskalnog prilagođavanja uspešno je sproveden u 2015. Na osnovu postignutih rezultata sada je trenutak da se razmišlja o sledećoj fazi programa koja bi se odnosila na optimizaciju fiskalne politike. Pod pojmom "optimalne fiskalne politike" podrazumevamo takvo dizajniranje fiskalnih instrumenata koje bi omogućilo postizanje maksimalne stope rasta BDP. MMF je predložio okvire jedne takve politike u svojoj poslednjoj studiji o zemljama Centralne, Istočne i Jugoistočne Evrope.

Mi ćemo u ovom radu testirati navedene preporuke, ali u izmenjenom analitičkom okviru koji nam daje QUEST_Serbia Dynamic Stochastic General Equilibrium (DSGE) model. Model je tako modifikovan da su sve fiskalne varijable tretirane kao endogene veličine podložne stohastičkim šokovima i oceni parametara na osnovu Bajesove procedure za period Y2003Q1 do Y2015Q4. Dodatno, primenili smo novi analitički alat dekompozicije impulsnih funkcija koji nam omogućava da kompleksne dinamičke nelinearne odnose svedemo na jednostavniju formu linearnih veza između stejt varijabli i ostalih endogenih varijabli.

Naši rezultati podržavaju opšti stav MMF na primeru srpske ekonomije da smanjenje fiskalnog opterećenja na rad i kapital ima pozitivno dejstvo na rast, a da smanjenje fiskalnih transfera i državne potrošnje ima negativan, ali privremeni efekat na rast. Na drugoj strani, naši rezultati ne podržavaju podizanje stope PDV jer to negativno utiče na rast, a podržavaju povećanje javnih investicija samo pod određenim uslovima.

Ključne reči: *fiskalno prilagođavanje, DSGE modeli, optimalno oporezivanje, dekompozicija funkcije impulsnih odziva*

JEL CLASSIFICATION: C680, E620

Introduction

Fiscal and monetary policies have switched roles in 2015. Fiscal policy has been considered expansionary for years. Depending on the stage of the business cycle, it has been counter-cyclical or pro-cyclical, but always expansionary. During the period of high growth rates from 2003 until 2008, fiscal policy further stimulated GDP growth. Since the onset of the global recession, the Serbian economy has entered recession three times, and the fiscal policy has unsuccessfully attempted to improve growth prospects. The final outcome has been a persistent fiscal deficit and rising public debt. When the debt-to-GDP ratio reached the level of 70 percent in 2014, it was clear that such a policy was not sustainable any more. The program of fiscal consolidation was designed in 2015, and has been implemented so far with good results.

On the other hand, the monetary policy has never been counter-cyclical until the last year. Arguing that a lower fiscal deficit would provide room for the reduction of the repo interest rate, the National Bank of Serbia (NBS) turned to monetary easing in 2015. The IMF supported such a switch in the monetary policy. Up to that point, the NBS has been only concerned with price stabilization, for which goal it advocated the policy of high interest rates at any cost in terms of lost output.

As for the fiscal consolidation program, expectations were standard. Fiscal consolidation generally squeezes aggregate demand by depressing public and private consumption, which were the main driving force for growth in the Serbian economy. The Serbian government and IMF officially announced that GDP would drop by 0.5 percent. Unofficially, the Serbian government was hoping to achieve any positive growth rate no matter how low it would be**;** in fact, this happened. The Serbian economy grew in 2015 with the GDP growth rate between 0.5 and 0.7 percent.[1] This outcome does not imply that the standard theoretical implications of a fiscal consolidation program were challenged. Quite the opposite**;** as expected, a reduction in private and public consumption had a negative impact on aggregate demand and growth. However, a rise in exports and investment outperformed such negative shocks. As for the value-added side of GDP, the energy and mining sectors recovered from a drop caused by the flood in 2014, while manufacturing and construction resumed some growth. The overall effect on growth would have been even better if agriculture had not had a bad crop season. Public services and real estate also contributed to a slow-down in economic activity (which was not a surprise). Other productive sectors did not have much impact on growth.

This is all recent history. What can we expect in the near future? It is reasonable to assume that one-off factors of growth will not have permanent effects, and the program of fiscal consolidation will continue in one way or another. It is true that the severity of fiscal consolidation was somewhat eased in the fourth quarter of 2015, but the main components of the program are still in place. Public debt is stubbornly high, and might even increase since some hidden public debts have recently been discovered. It is hard to expect that public debt will bounce back in 2017. Equally true, high growth rates or growth rates over the average public borrowing cost will not spontaneously emerge. Therefore, another issue of high relevance is emerging; the long-lasting theoretical and empirical debate about the interdependence of fiscal policy instruments and long-term growth rates. More specifically the question is: is it possible to have higher growth in Serbia due to a better mix of fiscal instruments.

We have written this paper in order to provide an answer to this question. The paper is organized in the following way: the first part provides the empirical background for the analytical modeling of the link between fiscal instruments and growth in Serbia and CESEE. The second part explains how the QUEST_Serbia DSGE model is modified in order to endogenize fiscal revenue variables. In the third part our new analytical tool of decomposing IRFs is described, and used to analyze the complex role of transfer payments. In the fourth part this analysis is extended to other revenue and expenditure instruments. Finally, we conclude which IMF recommendations are

1 At the moment of writing, the fourth quarter of 2015 is not yet closed, so we need to forecast GDP performance. According to the forecast made for the value-added side of GDP, the growth rate in 2015 will be 0.7 percent. However, a similar forecast done for the final demand side of GDP is a little bit more pessimistic and expects 0.5 percent growth. The Ministry of Finance predicts growth of 0.8 percent. Nevertheless, it is a fact that the fiscal year 2015 ended with small but positive growth.

equally valid for Serbia as for other CESEE countries, and in which cases we need to be more cautious.

Empirical fiscal evidence

We now address the empirical relationships between GDP growth rates (y-o-y) and fiscal revenue and expenditure categories that are expressed as a percentage of GDP. The period of analysis encompasses three sub-periods that are of particular interest. The first sub-period starts with the first quarter of 2003 and ends at the fourth quarter of 2008. The Serbian economy in this period experienced impressive growth, which was, however, based on domestic demand financed through foreign loans. The second sub-period began with the first quarter of 2009, when the negative impacts of the global recession spilled over to the Serbian economy. Serbia faced a typical sudden stop crisis with broken lines of international financing. From that moment up to the last quarter of 2015, the Serbian economy has been in a depression, desperately trying to restructure the economy and adopt a new growth model based on exports and private investment. The third sub-period was in fact a part of the second period. It refers to the four quarters of 2015, and is marked as the period of fiscal consolidation. Therefore, we separate in Table 1 the four landmarked points of observation: 2003Q1, 2009Q1, 2014Q4 and 2015Q4.[2]

Data from the second and third columns in Table 1 indicate the reaction of the fiscal policy in Serbia to the spillover effects of the global recession on the country's economy. In the period between 2009Q1 and 2014Q4, the share of social security contributions (SSC) in GDP slightly increased by 0.2 percent, while fiscal proceeds from personal income tax (PIT) dropped by 0.8 percent. The net effect of these changes was negative, with the consequence that the fiscal burden on labor input somewhat lessened during the crisis. The same was true for corporate income tax (CIT), which represents a fiscal duty levied on capital with a decrease of 0.7 percent of GDP. These types of fiscal revenue are typically considered as distortive taxes. Data suggest that policy-makers in Serbia tried to reduce the tax burden on production factors in order to provide a better fiscal environment for fighting recession with a less distortive tax effect. The lost fiscal revenue was compensated by increasing indirect taxes on consumption, which are considered as non-distortive taxes. Proceeds from Value-Added Tax (VAT) increased by 0.4 percent of GDP, and excise duties by 1.5 percent. Tariffs were already low, but they dropped further by 1 percent of GDP due to the implementation of the Stabilization and Association Agreement with the EU. All in all, fiscal revenue increased in this period by a moderate 1.3 percent of GDP.

In the very same sub-period fiscal expenditure increased by more than 10 percent of GDP. All acting Serbian governments of that time intended to support the economic recovery through increasing capital expenditure by 1.4 percent of GDP, public consumption (goods and services) by 2.8 percent, and subsidies by 2.7 percent, while public salaries and wages increased by only 0.1 percent of GDP. On the other hand, transfer payments were reduced by 3.3

Table 1: General government revenue and expenditure as a percent of GDP

	2003Q1	2009Q1	2014Q4	2015Q4
Fiscal revenue				
SSC	9.0%	13.3%	13.1%	12.0%
VAT	10.1%	10.7%	11.1%	9.9%
Excise	4.1%	3.8%	5.3%	6.0%
Non-Tax	2.7%	4.5%	6.1%	5.2%
Tariffs	2.2%	1.8%	0.8%	0.8%
Others	1.5%	1.1%	1.6%	1.4%
CIT	0.9%	2.0%	1.3%	1.2%
PIT	5.1%	4.8%	4.0%	3.6%
Total	35.6%	42.0%	43.3%	40.1%
Fiscal expenditure				
Capex	1.9%	1.8%	3.2%	4.7%
Guaranties	0.0%	0.0%	1.1%	1.4%
Goods & Services	6.1%	5.5%	8.3%	7.0%
Interest payments	1.2%	0.9%	2.3%	2.7%
Repayments	0.1%	0.1%	4.2%	0.1%
Others	1.1%	0.5%	1.7%	1.0%
Subsidies	3.9%	1.7%	4.4%	4.9%
Transfer payments	16.7%	20.5%	17.2%	18.6%
Public wages	9.8%	10.9%	11.0%	10.0%
Total	40.8%	41.9%	53.4%	50.4%

2 Notice that these data are of quarterly frequency and include all seasonal effects. Corresponding annual data average out those seasonal effects, and are usually reported in other documents.

percent. The rising share of fiscal expenditure in GDP was treated as a key measure of an expansionary fiscal policy. However, the modest increase in fiscal revenue was not sufficient to cover the huge increase in fiscal expenditure. The governments embarked on borrowing abroad, which pushed up public debt to an unsustainable level.

The last sub-period is rather short, and it is still not over. In this period of fiscal consolidation fiscal revenue due to SSC and PIT proceeds was further reduced because of the shrinking fiscal base comprising of pension payments and the public wage bill. Fiscal consolidation additionally caused a reduction in public purchases of goods and services. As private consumption suffered as well, VAT revenue also declined. On the other side, transfer payments and subsidies increased last year even if budgetary support for the public pension scheme lessened. The burden of interest payments went up alongside capital expenditure, if we include called public guaranties in this fiscal category. As we already mentioned, the fiscal stance was eased in the fourth quarter of the fiscal year 2015.

In 2015 the IMF[5] provided an analysis of the connections between fiscal revenue and expenditure instruments on the one hand, and longer term GDP growth rates on the other, in CESEE countries.[3] Fiscal revenue and expenditure were corrected for a cyclical component. The econometric model was augmented with six control variables. The panel regression model was estimated using data for 76 countries (CESEE, advanced countries and Less Developed Countries) in the period between 1990 and 2014. Serbia was included in the panel data, but the period of fiscal consolidation was not. Additionally, dummy variables for two separate regions (advanced countries and CESEE) were included. The method of panel estimation was Ordinary Least Squares (OLS), with country and time fixed affects. We have reproduced estimated values of regression parameters in Table 2 in the column under the heading "CESEE" for CESEE countries as a group. The sign of these parameters (positive or negative) indicates underlying correlation (positive or negative) between GDP growth rates and corresponding categories of fiscal revenue and expenditure. In order to compare Serbia's position with the group of CESEE countries, we have calculated ordinary coefficients of correlation between GDP growth rates and shares of corresponding fiscal variables in GDP in Serbia for the period between Y2003Q1 and Y2015Q4. The coefficients of correlation obtained are shown in the column under heading the "Serbia".

A comparative analysis of Serbia's and CESEE's fiscal correlation pattern points in the following directions**:** corporate income taxes and social security contributions correlate negatively with growth in CESEE, as suggested by the theory. That correlation has been significant in CESEE countries. The corresponding signs of correlation were also negative in Serbia, but not significant for SSC. Negative correlation between growth and CIT in Serbia was significant at 1 percent.

Consumption taxes did not correlate significantly with growth in CESEE countries. By contrast, the correlation between VAT proceeds and tariffs in Serbia on the one hand, and growth on the other, was high, positive and highly significant. Interestingly, a similar correlation with respect to excise duties was also high and significant, but negative.

It is also interesting to note that personal income tax was not associated in a significant way with negative growth effects. In the CESEE countries the estimated coefficient was not significant, while in Serbia the coefficient of correlation was significant, but positive. Those empirical findings contradict theoretical expectations.

On the expenditure side, capital expenditure and public wages were positively associated with growth, but estimates of these coefficients were not significant. Public purchases of goods and services were negatively and significantly correlated with growth in CESEE countries, while in Serbia their negative correlation was not significant. Finally, another point of discrepancy is that transfer payments positively, but not significantly, contributed to growth in CESEE countries, while there was a significant and negative correlation between transfer payments and growth in Serbia.

3 Similar relations were empirically tested by *Kneller et al.* [6] for a panel of 22 OECD countries during 1970-95. They provided considerable evidence that distortionary taxation reduces growth, whilst non-distortionary taxation does not, and that productive government expenditure enhances growth, whilst non-productive expenditure does not. However, some combinations of these specific fiscal revenue and expenditure categories had ambiguous effects on growth.

On the basis of the above empirical and analytical findings the IMF recommended what a growth-oriented reform of fiscal revenue and expenditure in CESEE countries should do in order to achieve the highest possible GDP growth rates. This shift away from one type of revenue or expenditure toward another was suggested in the following way:

- Growth-oriented revenue reform in CESEE economies would shift the revenue base away from CIT and SSC toward consumption taxes, property taxes and PIT,
- Growth-oriented spending reform in CESEE would shift spending away from public consumption and transfers toward investment.

Serbia is one of the CESEE countries, and shares their destiny. We will test these recommendations in the third and fourth parts of this paper to particularly mark which recommendations apply equally to the Serbian economy. Before that, in the second part of the paper, we will outline our analytical framework.

Modeling fiscal revenue

Fiscal policy models based on an endogenous growth hypothesis were initiated by *Barro* [1] and extended by *Barro* and *Sala-i-Martin* [2], [3], [4] and *Mendoza et al.* [11]. They provided a realistic explanation of how fiscal policy can influence the steady-state growth rate, and traced transitional mechanisms toward this long-term growth path. Predictions from these models are derived by classifying elements of the fiscal policy into one of four categories: distortionary or non-distortionary fiscal revenue and productive or non-productive fiscal expenditure. Distortionary fiscal revenue is that which affects the investment decisions of economic agents, and hence deforms the steady-state rate of growth. Non-distortionary fiscal revenue does not affect saving-investment decisions and has no effects on the rate of growth. Government expenditure is differentiated according to whether it is included as a factor in the private production function or not. If it is, then it is classified as productive and hence has a direct positive effect upon the rate of growth. If it is not, then it is classified as unproductive expenditure and does not affect the steady-state rate of growth (see *Kneller et al.* [6] for a clear summary of this theoretical exposition).

Our analytical framework is based on DSGE models. In such models, however, a clear distinction between distortionary and non-distortionary taxation forms may not be made explicitly. For example, taxes on consumption

Table 2: Coefficients of correlation in Serbia and regression coefficients in CESEE

Shares in GDP	Serbia	CESEE	Shares in GDP	Serbia	CESEE
	Expenditure side			Revenue side	
Capex	0.060991	0.106	SSC	-0.178785	-0.646**
	[0.6805]			[0.224]	
Guarantees	-0.541632*		VAT	0.594455***	0.018
	[0.0001]			[0.0001]	
Goods	-0.170347	-0.858*	Excises	-0.620138***	
	[0.247]			[0.0001]	
Interest payment	-0.570495*		Non-Tax	-0.039672	-0.110
	[0.0001]			[0.7889]	
Liquidity cost	-0.123891		Tariffs	0.814471***	
	[0.4015]			[0.0001]	
Others	-0.239033	-0.082	Others	-0.742183***	0.501
	[0.1018]			[0.0001]	
Subsidies	0.167321		CIT	-0.385884***	-0.824**
	[0.2557]			[0.0068]	
Transfer payments	-0.5307***	0.207	PIT	0.787941***	0.086
	[0.0001]			[0.0001]	
Public wages	0.215417	0.115			
	[0.1414]				

***(**,*) indicates significance at 1 (5,10) percent, values within brackets [] show probability that |t=0|

are typically treated as non-distortionary. A consumption tax rate is considered as non-distortionary since it does not affect the investment decisions of firms. However, it does affect households' consumption choices over time. If the tax proceeds on consumption are expected to increase in the future, households will want to consume more now and less in the future, so consumption growth will be reduced as well as savings, and eventually saving-investment decisions will be affected. The opposite would be true if the tax proceeds on consumption were expected to decline in the future. Hence, claims that an increase in the VAT rate is non-distortionary with no negative effects on growth may not be correct. Such a claim has to be verified in each particular case before being recommended by policy-makers.

The basic structure of the QUEST_Serbia model follows *Ratto et al.* [13]. The model has been modified to the Serbian circumstances by *Labus* [7], and used for testing the fiscal consolidation package by *Labus & Labus* [8]. We will further modify the model in this paper in order to endogenize fiscal revenue categories. The main idea is to link fiscal revenue to business cycle conditions. This was not present in the original QUEST_Serbia model. The expenditure side indeed responded to an output gap, while the revenue side was modeled mostly in a way to reflect government fiscal policy stances. We now endogenize the revenue side as well, and make it correspond to the business cycle path.

Before we explain this modification of the model, let us rewrite the expenditure side. Government expenditure constitutes public purchases of consumer goods and services, government investments and transfer payments:

$$(1) \qquad EXP_t^G = C_t^G \cdot P_t^C + I_t^G \cdot P_t^C + TRAN_t$$

Government consumption is directly exposed to changing business cycle conditions. This is modeled by its temporary deviations around the long-term growth rates:[4]

$$(2) \qquad \Delta g_t^G = \tau_{lag}^G \, \Delta g_{t-1}^G + \tau_{adj}^G \cdot \Delta g_t^{G/Y} + \tau_{gap}^G \cdot \Delta g_t^{\tilde{y}} + \zeta_t^G$$

where $(\Delta g_t^G = g_t^G - g)$ is the deviation of the government consumption growth rate around the steady-state GDP growth rate, $\Delta g_t^{G/Y}$ is the deviation of the government consumption share in GDP from its target level. Parameter (τ_{lag}^G) indicates the level of inertia in the reaction process, while parameter (τ_{gap}^G) captures the delay with which the fiscal response to an output gap takes place. The remaining parameter (τ_{adj}^G) measures the speed of adjustment of temporary deviations to the target share of government consumption in GDP. Finally, the whole process is subject to permanent stochastic shocks (ζ_t^G).

The response of government investments to changing business conditions is formulated in a symmetric way:[5]

$$(3) \qquad \Delta g_t^{IG} = \Delta g_{t-1}^{IG} + \tau_{adj}^{IG} \cdot \Delta g_t^{IG/Y} + \tau_{gap}^{IG} \cdot \Delta g_t^{y} + \zeta_t^G$$

where $(\Delta g_t^{IG} = g_t^G - g - g^{TFP})$ is the deviation of the government investment growth rate around the steady-state GDP growth rate corrected for the embodied technological progress, $\Delta g_t^{IG/Y}$ stands for the deviation of the government investment share in GDP from its target level. No inertia is assumed in this process, while parameters (τ_{adj}^{IG}), and (τ_{gap}^{IG}) capture some delays in adjustment to the policy target and friction in responding to the output gap.

The transfer payment system acts as an automatic stabilizer in a business cycle by coupling the income of unemployed people and of pensioners with the actual realization of wage payments in the economy. We assume that the government regards the share of transfer payments to the wage bill (or alternatively to GDP) as a decision variable, and on top of that, it provides income for unemployed people:

$$(4) \qquad \frac{TRAN_t}{W_t L_t} = \left(\frac{TRAN}{WL}\right)_{target} + b \cdot (L0 - L_t) + \zeta_t^{TRAN}$$

4 The initial equation is: $g_t^G - g = \tau_{lag}^G (g_{t-1}^G - g) + \tau_{adj}^G \cdot \left[\ln\left(\frac{C_{t-1}^G \cdot P_{t-1}^C}{Y_{t-1} \cdot P_{t-1}}\right) - \ln\left(\frac{C^G}{Y}\right)_{target}\right] + \tau_{gap}^G \cdot [\ln(\tilde{y}_t) - \ln(\tilde{y}_{t-1})] + \zeta_t^G$, where $\left(\frac{C^G}{Y}_{target}\right)$ is the target share of government consumption in GDP.

5 $g_t^{IG} - g - g^{TFP} = (g_t^{IG} - g - g^{TFP}) + \tau_{adj}^{IG} \cdot \left[\ln\left(\frac{I_{t-1}^G \cdot P_{t-1}^C}{Y_{t-1} \cdot P_{t-1}}\right) - \ln\left(\frac{I^G}{Y}\right)_{target}\right] + \tau_{gap} \cdot [\ln(\tilde{y}_t) - \ln(\tilde{y}_{t-1})] + \zeta_t$ where $\left(\frac{I^G}{Y}_{target}\right)$ is the target share of government investment in GDP.

The target share of transfer payments to the wage bill is ($\left(\frac{TRAN}{WL}\right)_{target}$), the target labor participation rate is ($L0$), and parameter (b) measures the generosity of the social safety net. The whole process is subject to a stochastic shock (ζ_t^{TRAN}).

Let us now turn to the revenue side, where we made most of the adjustments. Government revenue (REV_t^G) is collected from taxes on labor income, including SSC, consumption, and profit, as well as from lump-sum taxes:

$$REV_t^G = (tax_t^W + tax_t^{SSC}) \cdot WL_t + tax_t^{VAT} P_t^C C_t + tax_t^{PF} i_t^K P_t^K K_t + tax_t^{LS} \quad (5)$$

PIT, SSC, VAT and tax on profit are linear and fixed by two components, proportional and progressive levies on the corresponding tax bases. The first component refers to the average rates set independently of business cycle conditions (τ_0^W, τ_0^{SSC}, τ_0^{VAT} and τ_0^{PF} respectively). The second component is the progressive tax rate that captures cycle fluctuations (τ_1^W, τ_1^{SSC}, τ_1^{VAT}, and τ_1^{PF} respectively). It serves as an automatic stabilizer during business fluctuations.

All taxes are derived in a similar way, as a first-order Taylor expansion around zero output gap. Hence, labor income tax is:

$$tax_t^W = \tau_0^W \cdot (1 + \tau_1^W \cdot \tilde{y}_t) + \zeta_t^W \quad (6)$$

In a similar way we model SSC, VAT and tax on profit:

$$tax_t^{SSC} = \tau_0^{SSC} \cdot (1 + \tau_1^{SSC} \cdot \tilde{y}_t) + \zeta_t^{SSC} \quad (7)$$

$$tax_t^{VAT} = \tau_0^{VAT} \cdot (1 + \tau_1^{VAT} \cdot \tilde{y}_t) + \zeta_t^{VAT} \quad (8)$$

$$tax_t^{PF} = \tau_0^{PF} \cdot (1 + \tau_1^{PF} \cdot \tilde{y}_t) + \zeta_t^{PF} \quad (9)$$

Tax revenue is uncertain since it depends on cyclical fluctuations and the efficiency of tax collection. Therefore, it is subject to stochastic shocks (ζ_t^W, ζ_t^{SSC}, ζ_t^{VAT}, ζ_t^{PF} respectively). Shocks are modeled as first-order autoregressive processes with zero mean and standard deviations set by the modeler. Their coefficients are estimated by using Bayesian technique. The empirical part of the model is based on time series of PIT, SSC, VAT and tax on profit for the period Y2003Q1 –Y2015Q4 [12].

Finally, a lump-sum tax is included in order to facilitate the government in controlling public debt. It approximates in an ordinary way the government's trial-and-error praxes to enforce the collection of one-off fiscal revenue from state-owned enterprises (SOEs) even if they run losses or are insolvent. In the model, the government sets the target share of public debt in GDP (B_{target}). If the realized share of public debt in GDP in the previous period is higher than the target debt-to-GDP ratio, the government will apply an additional tax rate (τ^B). Also, the government monitors the trend of debt-to-GDP ratio. If this ratio is increasing, meaning that the rate of its change is positive ($\Delta\left(\frac{B_t}{P_t Y_t}\right)$), the government will charge additional taxes at the rate (τ^{DEF}):

$$\Delta t_t^{LS} = \tau^B \left(\frac{B_{t-1}}{P_{t-1} Y_{t-1}} - B_{target}\right) + \tau^{DEF} \Delta\left(\frac{B_t}{P_t Y_t}\right) \quad (10)$$

As we already mentioned, this happens in theory. In reality, the government compares a desired level of public debt with the one actually realized, and accordingly enforces various temporary means of collecting non-tax revenue. Therefore, the burden of the lump-sum tax falls more on taxpayers than on consumers and their disposable income.

The share of fiscal deficit in GDP is defined as follows:

$$def_t^G = \frac{EXP_t^G - REV_t^G}{Y_t \cdot P_t} \quad (11)$$

The fiscal deficit adds up to the existing level of public debt. Right now we are not so much interested in fiscal deficit *per se* or public debt, but in analyzing how different fiscal instruments can support GDP growth. The reason is simple; public debt not only encompasses the contemporaneous fiscal deficit, but also includes interest payments for servicing the debt accumulated so far. If the rate of growth is higher than the cost of debt servicing, then the debt-to-GDP ratio will go down under the assumption of a balanced budget. Consequently, the risk of default will be lower.

We assume that the tax rates are constant over time, and are estimated through the process of Bayesian estimation. However, proceeds and expenditure are time-varying. The presence of the time-varying taxes and transfers modifies the representative household's budget constraints as well as firms' after-tax profit constraints. We need to augment the original equations of the model labels for fiscal revenue variables with a time subscript

(t). The form of equations however remains the same, and therefore there is no need to rewrite them at this point.

Policy simulation

We will simulate the impact of fiscal policy instruments on growth by using the IRFs of GDP growth rate to various permanent fiscal shocks. The period for simulation is extended to 20 quarters, which marks a mid-term growth span of five years. The size of shocks was the same in all simulation exercises, and is set to 0.01 (one percentage point). The resulting impulse responses can be separated into two groups. The first group comprises the IRFs of GDP growth rate to stochastic shocks of transfer payments and the government consumption growth rate. Those responses generate temporary oscillations in the growth rate around its steady state. After four to six periods these deviations die out and the GDP growth rate returns to the steady state.

On the opposite spectrum of reactions, there are permanent negative IRFs of GDP growth rate to stochastic shocks of increasing PIT, SSC, VAT (including excise duties) and CIT. A distinct case is reserved for the growth rate of government investments.

Let us first explain how transfer payments can impact GDP growth. For that purpose we have prepared Figure 1. The IMF has suggested a shift of fiscal spending away from transfer payments and toward investment. In this case we ignore investment, and check only what will happen if transfer payments are hit by a negative stochastic shock. Figure 1 comprises two types of the consequence. The solid line represents the IRF of growth to a transfer payments shock. Hatched bars, however, show how this line is obtained or what the driving forces behind the IRF path are. A reduction in transfer payments immediately depresses the GDP growth rate, which is the theoretically expected result because such a policy reduces households' disposable income and their private consumption. However, growth resumes rather quickly and returns to its steady-state level. How to explain this movement? For this we need to use a new analytical tool that we call the decomposition of IRFs, see *Labus & Labus* [9]. Hatched bars show how the decomposition works.

Namely, a DSGE model of rational expectations can be represented in general form by a set of first-order and equilibrium conditions:

$$\begin{gathered} E_t\{f(y_{t+1}, y_t, y_{t-1}, u_t)\} = 0 \\ E(u_t) = 0 \\ E(u_t \cdot u_t') = \Sigma_u \end{gathered} \tag{12}$$

E is the expectation operator, f are structural equations, y is a vector of endogenous variables, and u is a vector of stochastic shocks. The system of equations (12) comprises linear and non-linear first-order difference equations, with leads and lags, which have no explicit algebraic solution. The solution has to be numerically computed in the form of policy functions that relate all endogenous variables in the current period to the endogenous variables of the previous period, and current shocks. To be more precise, endogenous variables in the current period are to be expressed only as a function of state variables in the previous period and current shocks:

$$y_t = g(y_{t-1}, u_t) \tag{13}$$

The policy functions g are computed by linearizing the system (12) around the steady state ($\bar{y}$) using the first-order Taylor expansion and the certainty equivalence principle:

$$y_t = \bar{y} + g_y \cdot (y_{t-1} - \bar{y}) + g_u \cdot u_t \tag{14}$$

IRFs are directly calculated from the policy functions (14). One has to start from the initial value of variables given by the steady state and the initial shock to the variable of interest, and iterate as many times as the number of future periods chosen. The results are IRFs. During the iteration process, the policy functions (14) sum up the individual contributions of state variables and report the aggregate outcome, which is the IRF value for a given period. If one keeps track of this process, and extracts the individual contributions of state variables to the IRF value for each period of iteration, the results are their individual contributions to IRFs. The sum of individual contributions must be equal to the value of IRFs for each period of iteration.[6]

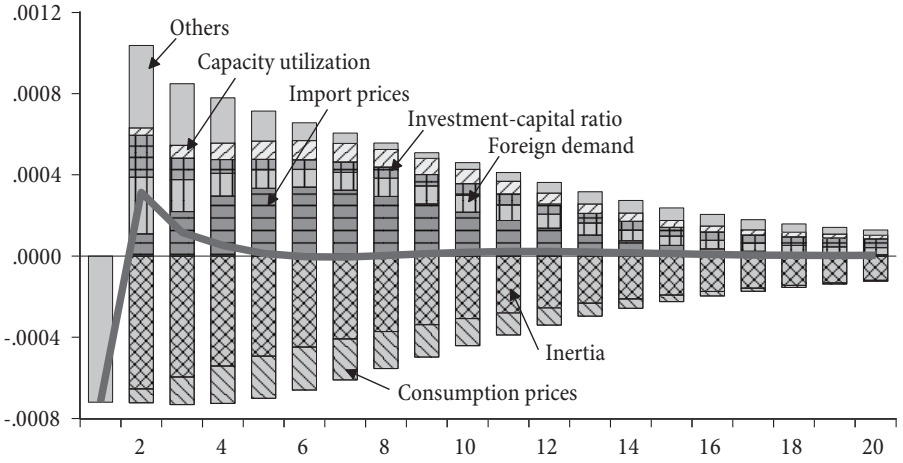
6 The whole process of computation is explained in our paper [9].

The columns of the matrix g_y contain the coefficients of the policy function for each endogenous variable with respect to its state variables at the point of the steady state solution. They reveal how much an endogenous variable reacts to, and swings around, the steady state for a unit change in the corresponding state variables. For that reason they can be considered as weights with which each state variable's IRF has to be multiplied to comprise the path of IRF for the related endogenous variable.

We present in Table 3 in column (2) the weights comprising the IRF of the GDP growth rate to a shock of transfer payments with respect to its key state variables.[7] We see that the first four state variables have positive impacts on the said IRF, while the remaining two key state variables have negative impacts. Next to that, we indicate in column (3) whether the paths of state variables are bellow or above the steady state. The path below the steady state is marked with a negative sign (-), while on the opposite side, the path above the steady state is marked with a positive sign (+). Finally, the product of the two signs from columns (2) and (3) is shown in column (4) under the heading "Sign of contribution". This indicates whether the corresponding state variable contributes positively or negatively to the IRF of the GDP growth rate to a shock of transfer payments. Information from these three columns in Table 3 helps us to understand the specific path of IRF in Figure 1. The solid line in this figure shows the cumulative IRF, which is not very informative *per se*, while the stacked bars with hatches portray the individual contributions of key state variables to this cumulative IRF. This explains visually how the IRF is compiled from various opposing factors in a general equilibrium framework. More precisely, it shows the general equilibrium effects of a fiscal policy instrument.

The individual impact of a fall of transfer payments on the GDP growth rate was negative and persistent throughout the entire period of adjustments. We have marked it with the label "Inertia" in Figure 1. This reveals diminishing contributions to the IRF, which are consistently negative. One state variable is the exchange rate. Its individual impact is not explicitly presented in Figure 2 since it is lower than the benchmark size, which separates the six most influential state variables from all the others.[8] However, after a reduction in transfer payments and private consumption, the nominal exchange rate increases (the real exchange rate depreciates) with the consequence of inflating import prices and shifting away from imports towards domestic production. That has an expenditure-switching effect that supports GDP growth. Other key state variables generated a similar effect. Capacity utilization, foreign demand (foreign output over domestic output) and investment-to-capital

Figure 1: Impulse response functions of GDP growth rate to a fall in transfer payments



7 It is the researcher's choice how many key state variables to choose for the analysis. We opted for six key state variables in this paper. We wrote code for the MATLAB irf_decomposition function, which facilitates easy manipulation of the number of key state variables.

8 The criterion for separation was the absolute size of the weights.

Table 3: Policy functions

	Transfer payments			VAT		
Logarithms of state variables	Weights	IRF path	Sign of contribution	Weights	IRF path	Sign of contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relative import price (-1)	0.721288	+	+	0.720633	-	-
Relative foreign output (-1)	0.387055	+	+	0.386647	+	+
Investment-capital ratio (-1)	0.172318	+	+			
Exchange rate (-1)				0.132876	-	-
Transfer payments shock (-1)	0.065484	-	-			
Capasity utilization (-1)	-0.167694	-	+	-0.16718	-	+
VAT shock (-1)				-0.04347	+	-
Relative domestic price (-1)	-0.970028	+	-	-0.96934	-	+
All others						

ratio supported growth.[9] On the opposite side, the relative consumption prices (consumer prices relative to the GDP deflator) depressed GDP growth. Increasing import prices created a feedback effect on domestic consumption prices and pushed them up. Domestic inflation did not support growth. Rather quickly, after four quarters, individual positive and negative impacts on the IRF canceled each other out, which paved the way for the GDP growth rate to return to its steady-state level. We emphasize the point that the negative effects of a transfer payment reduction on growth might be neutralized within a year through adjustments to the key state variables.

What is the lesson from this analysis for policy-makers? If they want to push up growth by increasing transfer payments, and consequently the private consumption of pensioners and unemployed people, that policy might have a short-lived positive effect. In a fiscal year's time its positive effects will evaporate, and end up with a higher fiscal deficit. Stimulating private consumption by expanding transfer payments might be politically opportune behavior, but not with sustainable positive effects on growth. General equilibrium analysis warns us that it might easily trigger adjustments in the exchange rate**,** with only negative consequences for growth. If the monetary authority intervenes to stabilize the exchange rate, that will further create distortions in the economy. On the other hand, a proposal for a reduction in transfer payments is highly unpopular. That is exactly what the IMF has suggested to CESEE counties, including Serbia. Our analysis supports this policy stance in a way**;** lower transfer payments, *ceteris paribus*, mean lower fiscal deficit and weaker pressure on already very high public debt. There is no question that lower transfer payments will initially have a negative effect on growth, but this effect is temporary and can be quickly absorbed by other adjustments.

The IMF's recommendations reconsidered

We provided in the previous chapter the basic analytical tool, within the framework of the QUEST_Serbia DSGE model, for testing the effects of various fiscal instruments on growth. Using the tool of decomposing IRFs we explained what one would expect to happen in the Serbian economy if transfer payments were reduced in order to improve the fiscal balance. That was one of the IMF's recommendations for CESEE countries facing fiscal constraints to growth. Now we turn to the remaining IMF recommendations on how to improve fiscal policy in order to achieve higher growth rates.

There is not only an IMF, but also a generally accepted, theoretical recommendation that expensive labor input is detrimental to sustained GDP growth. On the contrary, a flexible labor market plus low PIT is a standard reference in the literature on how fiscal policy can improve growth

9 In order to explain the IRF paths of the said state variables in more detail, we would need to compile explanatory tables similar to Table 3 for each of them, and trace the impact of the other state variables on them. However, that sort of analysis is beyond the scope of this paper. We simply note the fact that some state variables have a positive impact on IRFs, while the others have a negative impact.

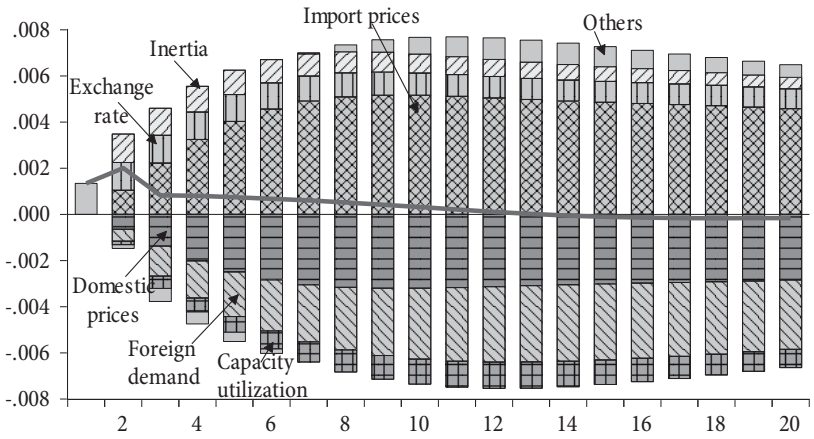
prospects. We have tested that proposal in our DSGE model. The results are presented in Figure 2.

Recalling data from Table 1, we notice that the tax burden of SSC in Serbia has an inverse "U" shape. Their share in GDP was 9.0 percent in 2003Q1. Since then, it increased to 13.3 percent at the onset of the global recession. Afterwards, the fiscal base has been shrinking remarkably. Consequently, tax proceeds have been going down even if the tax rate has increased. At the end of last year, their share fell to 12.0 percent. On the other hand, PIT has been steadily shrinking from 5.1 percent of GDP to 3.6 percent at the end of last year. This clearly shows a cyclical pattern, and may be considered as an automatic stabilizer in the business cycle. However, that role is not providing the dominant effect. Putting both fiscal charges together, one may conclude that fiscal duties on labor input are relatively high in Serbia.

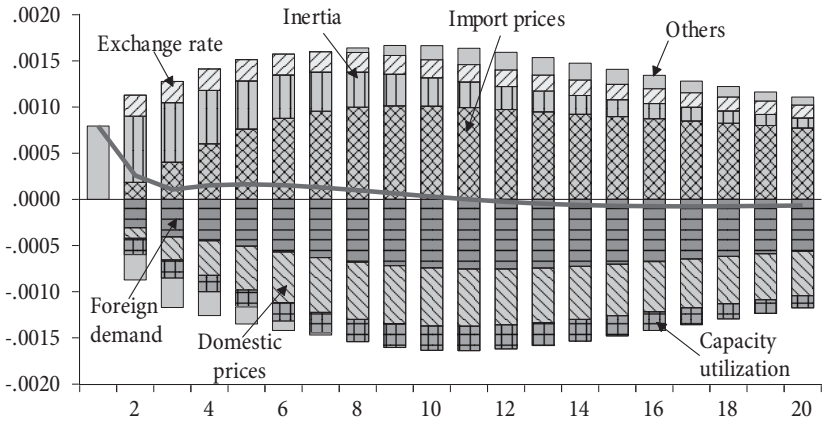
A reduction of fiscal charges on labor input is a desirable policy, but one that is hard to implement. One reason is high public debt. The other reason is institutional, and is related to the rule that governs the distribution of fiscal proceeds on labor input between the central government and local governments. Nevertheless, lower SSC and PIT have a positive effect on GDP growth rates. As Figure 2 depicts, the key state variables and the most important driving forces behind the IRFs are the same in both case. Their relative importance and the size of the impact is different, but the direction of their impacts is similar. Import prices and exchange rate push up the IRFs, while consumption prices, capacity utilization and foreign demand depress growth rates. The net effect is positive and lasts for three years. After the three-year period, the GDP growth rate loses the benefits of cheaper labor input, and returns to its steady-state value.

Figure 2: Decomposition of impulse response functions in the labor market

IRFs of GDP growth rate to a fall in PIT



IRFs of GDP growth rate to a fall in SSC



As far as the IMF's general recommendation for lowering fiscal duties on labor is concerned, our analysis supports it. We need additionally to notice that there are two related causes of this outcome. One is the relative price paths. Under the domestic and import price labels in Figure 2, we refer to the relative prices of consumer goods and imported goods to the GDP deflator. A change in the tax burden on labor automatically changes relative prices and reshapes the ratio between the domestic and foreign components of aggregate demand. The other factor is foreign demand. In our DSGE model this is represented as the ratio between foreign and domestic output. Changing the price of labor changes the competitiveness of the domestic economy, and the relative growth paths of the foreign and domestic economies**,** in favor of the domestic economy. A faster-growing domestic economy drives down the relative output ratio compared to the steady-state path, and surprisingly depresses the GDP growth rate.[10]

Let us now turn to government spending. The IMF recommends shifting away from government consumption toward government investment. We have simulated that recommendation with two separate scenarios. We allow in the first one for a negative shock to (stochastic fall in) government consumption, while in the second one for a positive shock to (stochastic rise in) government investment. The results are presented in Figure 3. After a negative shock to government consumption, the GDP growth rate started to swing around the steady state. For the initial six periods, the growth rate was below the steady state, while in the next six periods it outperformed the steady state. Finally, in the remaining time the growth rate was practically identical to its steady-state benchmark. One might conclude that a reduction in government consumption has a temporary negative effect on the growth rate of the economy. The inertia in reduced government purchases was persistently driving down the GDP growth rate. On the other hand, relative import prices were consistently compensating for the fall in public demand. Other state variables had a much more limited impact on the IRF cumulative effect.

10 The weight in the policy function is 0.3866, meaning that in the steady state higher the foreign-to-domestic output ratio positively contributes to GDP growth rate after a rise in PIT. A fall in PIT, conversely, generates a reduction in the GDP growth rate due to the impact of the relatively low foreign-to-domestic output ratio.

As far as government investments are concerned, we have to take a step back, and explain their role in the production process before we proceed. In order to avoid the problem of non-stationarity, production factors are defined in terms of their growth rates. Hence, the aggregate Cobb-Douglas production function has the following form:

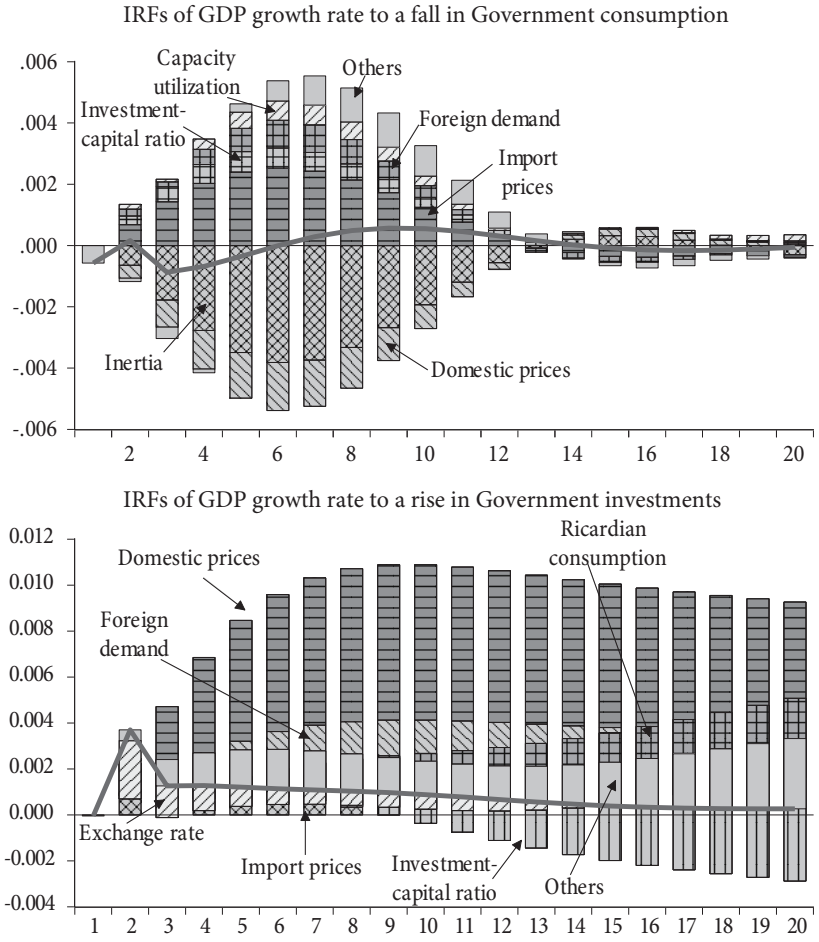
$$(15)\ g_t = (1-\alpha)\cdot(g_t^{K} + g_t^{UCAP}) + \alpha\cdot(g_t^{LFP} + g_t^{L}) + (1-\alpha_G)\cdot g_t^{GK}$$

where (g_t), (g_t^{K}), (g_t^{L}) and (g_t^{GK}) stand for the growth rates of GDP, private capital, labor and government capital, (g_t^{UCAP}) and (g_t^{LFP}) represent the rates of capacity utilization and labor-augmented technological progress. The coefficient alpha (α) is the elasticity of output with respect to labor, while the coefficient alpha (α_G) is the elasticity of output with respect to public capital. Government investments add up to accumulate the public capital stock. The growth rate of public capital is, therefore, equal to the growth rate of public investments. The role of public capital as a factor in the production function of the economy justifies the treatment of public investments as being "productive".

However, the question is how far public investments are productive. That depends on the value of coefficient alpha (α_G). It has to be lower than 1. Under the present settings of all other calibrated and estimated coefficients in the model, there is a threshold value of 0.97. For $0.97 < \alpha_G < 1$ IRF of GDP growth rate to a positive shock of government investments are above the steady-state growth rate. That means that an increase in government investments generates a speed-up of the GDP growth rate. For $0.97 < \alpha_G$ the corresponding IRF is below the steady-state growth rate. The GDP growth rate realized, under the same stimulus of public investments, increases at a slower pace compared to the steady-state growth rate. It seems that the more increasing returns to scale in the production function the less productive the reaction of the growth rate to public capital. Our point is that an increasing share of public investment in GDP does not generate higher GDP growth rates under any circumstances. Much of it depends on the productivity of the public capital. A policy call for more public investment is justified only if that investment is really used in a "productive" way. Otherwise, it might be misused as a hidden subsidy for inefficient SOEs.

The remaining IMF recommendations refer to the private capital and goods markets. In Figure 4 we present

Figure 3: Decomposition of impulse response functions in the government spending area



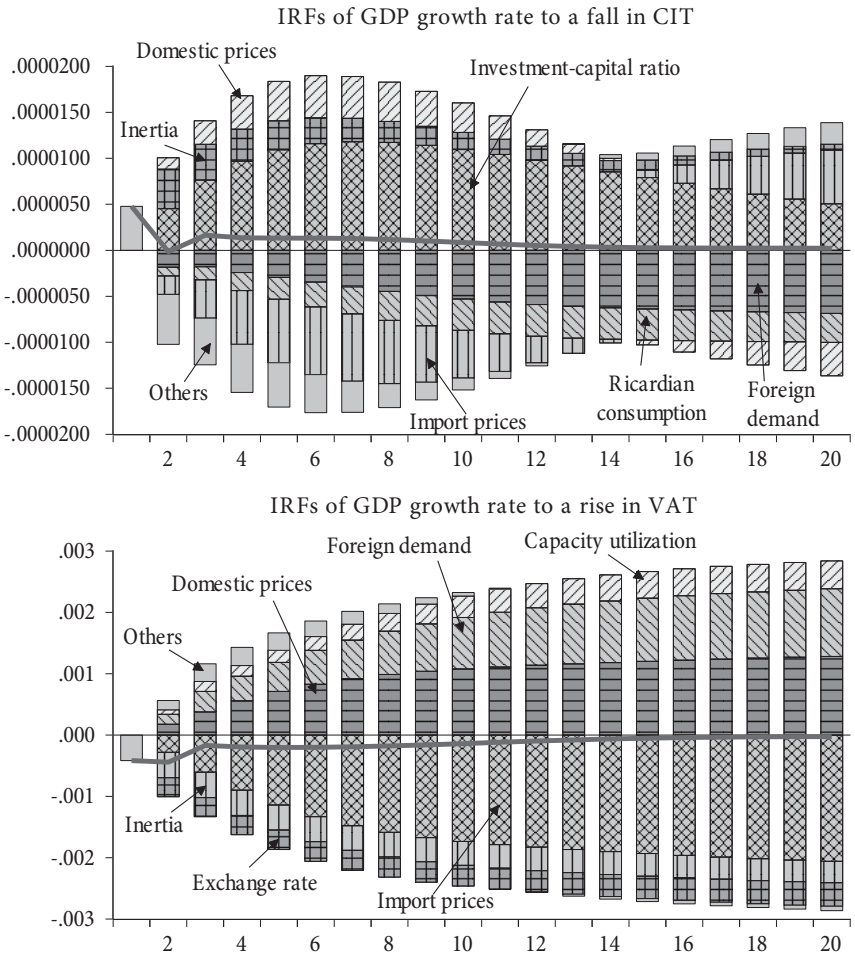
simulations performed under the assumption that CIT is reduced, while VAT rate (including excise duties) is increased, both for a unit of corresponding stochastic shocks. The IMF strongly argues for lowering CIT and considers such a tax as being highly distortive. On the other hand, the IMF suggests a shift away from direct taxation on production factors towards indirect taxes on consumption. In such a context, the IMF is not *a priori* against raising VAT rates if a country needs to finance a fiscal deficit.[11]

We do not argue whether VAT is distortive or not. The empirical studies reported in Table 2 are inconclusive regarding whether a higher VAT rater supports or reduces the GDP growth rate. However, our DSGE model shows that an increase in VAT rate will permanently penalize growth in Serbia. In order to explain this finding, let us return to information in Table 3. This time we refer to columns (5)–(7).

The main driving factors behind this negative impact are relative domestic and import prices coupled with the exchange rate effects. An increase in VAT rate inflates the nominal exchange rate, and consequently pushes up relative import prices. At the same time, relative domestic domestic prices go down. This is the QUEST_Serbia general equilibrium effect of a VAT increase on domestic consumption prices that may not be expected from other models. A higher price margin due to a higher tax rate on domestic was outperformed by the price drop due to decreasing consumption demand. Therefore in column (6) there is a negative sign at the cross point with the "relative domestic price" row. The similar negative sign is at the cross point with column (5), which reveals the steady-state weight of relative domestic prices. Hence, their product must be positive. All this simple means that a domestic price increase hurts GDP growth, while its drop

11 The IMF [5, p. 24] noted that "CESEE governments tend to raise a higher share of revenue from consumption taxes—i.e. value added tax (VAT) and excises—than their western European counterparts. By contrast, they raise less from direct taxes on personal (PIT) and corporate income (CIT)".

Figure 4: Decomposition of impulse response functions in capital and goods markets



supports higher growth. The situation with relative import prices is completely the opposite. They support growth in the steady state, but go down after a VAT shock, and therefore reduce the GDP rate. In the steady state, higher capacity utilization depresses growth, while improved foreign demand supports growth. After a VAT shock, both individual IRFs go up, which however generates the opposite effect on the GDP growth rate.

The impact of a lower CIT rate on growth is less controversial, and is fully in line with empirical findings and the IMF's recommendations. That means a lower tax on corporate income permanently increases GDP growth rate. As Figure 4 shows, the main factor behind this effect is the improved investment-to-capital ratio.

Conclusion

This paper is about the general guidelines that a reform-oriented government in Serbia should follow in order to refine the fiscal stabilization policy, with the aim to achieve the highest possible growth under fiscal constraints. It seems that compared to last year the prospects for growth are better for the next few years, but the expected growth rates are still below the ones this economy needs in order to make public debt sustainable in the future.

Guidelines have been proposed by the IMF for all CESEE countries, and were derived from theory and econometric studies. We have tested these recommendations in our QUEST_Serbia DSGE model. For that purpose we revised the model and made all fiscal revenue instruments endogenous and responsive to business cycle fluctuations. Additionally, we have proposed a new analytical tool decomposing IRFs, in order to better follow the propagation of shocks in a DSGE model.

We support the proposal that a further reduction of direct taxation on production factors would improve growth prospects in Serbia. Direct taxes include taxes on personal income, corporate income and SSC. On the other

hand, a reduction in transfer payments and government consumption may have temporary negative effects on growth, but not a permanent effect. The economy will adjust to this reduction after a year. The much-advocated increase in government investment is welcome under some conditions. That investment has to be productive and not represent hidden subsidies for SOEs. Finally, our findings do not support an increase in the VAT rate (including excise duties). We have demonstrated why this policy may have a counterproductive effect on growth in a permanent way.

We do not suggest in this paper any size of adjustments to the present tax rates. That clearly depends on the targeted path of the future fiscal deficit, which is a choice for the government. We also do not address the political economy consequences of reshaping fiscal policy. Some of the recommendations are beyond any theoretical doubt, but their implementation requires changes in the present institutional rules, which is never an easy political task.

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ECONOMIC RECOVERY, EMPLOYMENT AND FISCAL CONSOLIDATION: LESSONS FROM 2015 AND PROSPECTS FOR 2016 AND 2017

Privredni oporavak, zaposlenost i fiskalna konsolidacija - pouke iz 2015. i izgledi za 2016. i 2017. godinu

Abstract

Slow economic growth, excessive fiscal deficit accompanied with rising public debt as well as high unemployment, represent the main problems Serbian economy is facing. The economic recovery has started in 2015 after the 2014 recession. However, economic growth will still remain sluggish in the following years as resolving structural problems and investment increase (relative to GDP) will take some time to achieve. Lowering the fiscal deficit to 3.7% GDP in 2015 from 6.6% GDP in 2014 represents a good result. Nevertheless, further (and necessary) decrease of the deficit will present a challenge as appropriate measures were not adequately planed, while at the same time the needed reforms were not implemented. Additionally, there is a risk of incurring new fiscal costs as a result of a weak performance of public and state owned enterprises. The ongoing economic recovery demonstrates a negligible adverse impact of fiscal consolidation on economic growth. In the long run, fiscal consolidation has a positive effect on growth as it ensures macroeconomic stability needed for investment increase. Strong employment growth in the previous three years amid economic stagnation has not actually happened, and is a consequence of unreliable evaluation of labor market trends done by SORS. The Government is tasked with considerable challenges in 2016: to resist premature fiscal relaxation and concentrate efforts to improve the investment climate, as it leads to stronger growth and consequently rising employment.

Keywords: *economic recovery, investments, fiscal multiplier, employment, fiscal consolidation, fiscal deficit, public debt*

Sažetak

Nedovoljan privredni rast, preveliki fiskalni deficit uz brzo rastući javni dug i visoka nezaposlenost su najveći problemi ekonomije Srbije. Nakon recesije iz 2014, privredni oporavak je započeo u 2015. godini. Međutim, rast privrede još nekoliko godina će biti nizak, jer je potrebno nekoliko godina da se otklone postojeći strukturni problemi i poraste učešće investicija u BDP. Fiskalni deficit smanjen je u 2015. na 3,7% BDP sa 6,6% BDP iz 2014. godine, što je odličan rezultat. Ali dalje (neophodno) smanjivanje deficita će ići teško, jer nisu pripremljene dovoljno dobre mere, niti sprovedene sve potrebne reforme – a uz sve to postoji rizik novih fiskalnih troškova usled neuspešnog poslovanja javnih i državnih preduzeća. Započeti privredni oporavak u 2015. pokazuje da je negativan uticaj fiskalne konsolidacije na privredni rast u kratkom roku veoma mali. U dužem roku fiskalna konsolidacija povoljno utiče na privredni rast jer obezbeđuje makroekonomsku stabilnost, koja je jedan od preduslova za potrebni rast investicija. Snažan rast zaposlenosti u prethodne tri godine uz stagnaciju privredne aktivnost se, po svemu sudeći, nije ni desio već je posledica nepouzdanosti praćenja kretanje na tržištu rada od strane RZS. Vlada u 2016. i narednim godinama ima veliku odgovornost – u fiskalnom domenu, da ne dozvoli preuranjeno popuštanje restriktivnosti, a da za povećanje privrednog rasta i, posledično, zaposlenosti, uloži veće napore na unapređenju investicionog ambijenta.

Ključne reči: *ekonomski oporavak, investicije, fiskalni multiplikator, zaposlenost, fiskalna konsolidacija, fiskalni deficit, javni dug*

Introduction

Three largest structural problems of Serbian economy are: insufficient economic growth, excessive fiscal deficit with a fast-growing public debt and high unemployment. Last year, in 2015, certain improvements in these indicators have been observed. Economic activity has started recovering after the recession from 2014 and, according to the fist estimates, the GDP growth in 2015 amounted to 0.6%. The fiscal deficit was decreased to 3.7% of GDP from 6.6% of GDP in 2014. At the same time, unemployment decreased from quarter to quarter, according to the data from the Labour Force Survey (LFS), so that in the third quarter of 2015 (last available data) it was 17.3%, which is a 1.5 pp decrease in comparison to the same period last year. However, the observed improvements are insufficient (with regards to the unemployment decrease, there are doubts as to whether it actually even occurred) and they are still not firmly rooted. This is why there is a risk that the positive trends may grind to a halt after 2015 – i.e. that the fiscal deficit in the medium term may remain higher than 3.5% of GDP, economic growth may stay under 2% and unemployment may stagnate or increase. This is why the Government has such a great responsibility in 2016 – in the fiscal domain, it should not allow premature relaxation of the restrictions and give up on the unpopular and harsh measures; and in terms of economic growth and consequently, increase in employment, it should invests greater efforts in improving the business environment.

Serbian economic growth of 0.6% in 2015, as well as the expected growth of 1.8% in 2016, is slower in comparison to all other comparable countries of Central and Eastern Europe. Low economic growth is actually a somewhat lasting trait of economic trends in Serbia, being that ever since the first wave of the crisis ended (2010) until 2015, the average economic growth rate was only 0.3%. To establish a strong, sustainable economic growth, it is crucial to first establish and maintain a strong investment growth. There are two reasons why the increase in investments is necessary. *First*, because the share of investment in Serbian GDP in the entire post-crisis period was structurally very low and insufficient for establishing high economic growth rates. According to the latest EBRD analyses, there is a shortfall in investment in Serbia of about 7% of GDP, annually. *Second,* of all GDP components, only investment can increase relatively quickly and sustainably over the next few years, driving the growth of the entire GDP without disrupting the country's external balance or hazardously increasing public debt.

Investment is exactly the GDP component that kick-started economic recovery with its 10% growth in 2015, which is a good thing. It is also encouraging that investment growth in 2015 is widely spread, encompassing both domestic and foreign investment, showing in both civil engineering but also in the purchase of equipment, which may indicate that this is a more lasting trend, i.e. that Serbia may be departing from its stagnation of several years. However, the period in which this investment growth has taken place is very short (less than a year) and thus not completely convincing, and it should also be kept in mind that even with the growth of investment in 2015, its share in GDP in 2015 will increase only to about 18% of GDP which is still a record low share of investment in GDP in Central and Eastern Europe. This is why it is crucial that the Government continues to encourage this investment growth trend by its policies: 1) by continuing fiscal consolidation to reinforce macroeconomic stability; 2) by improving the investment environment (judiciary efficiency, accelerating permitting procedures, removing administrative and other barriers to investment, protection of competition, corruption prevention, completion of the privatization of the remaining state-owned enterprises, etc.), but also 3) to increase efficiency in implementing public investment which, in the short term, accelerates economic growth, but also incentivize greater private investment in the medium term. On the other hand, an analysis of the investment trends from 2010 to 2015 at a macro level fails to provide convincing arguments that the state subsidies for attracting certain investors have had a significant influence on a lasting increase in investment activities.

A relatively high economic growth (of over 4%) will not be sustainably achievable in Serbia in the upcoming two to three years, as it takes a significant restructuring of the domestic economy, during which it will be impossible to achieve high economic growth rates. The only correct path, or blueprint for a of high and sustainable growth

rates in Serbia is: increase in investment, then net export, then employment and private consumption, allowing state consumption to have a more significant growth only at the end. Preliminary analyses show that such a model of economic growth could allow for somewhat higher annual GDP growth (over 4%) from 2018 at the earliest, but it is even more likely that this will happen even later. Alternatives to this scenario, i.e. any skipping of the steps and premature increase in public and private consumption would be very dangerous and could only incur greater harm than good to the economic growth. This is also illustrated by the temporary episodes of increased public consumption that have taken place in the previous few years. Thus, in 2012, state consumption was significantly increased (real growth of about 2.5%), which, however, did not have a significant impact on GDP growth; but 2012 was also the year in which record public debt increase was noted, of about EUR 3 billion.

The economic recovery initiated in 2015, i.e. in the year in which some of the key measures of fiscal consolidation have been implemented (pension and public sector wage cut) indicates, quite convincingly, that fiscal consolidation did not have major adverse effects on economic activity. Discussions on the negative effects of fiscal consolidation on economic activity were a hot topic a year ago, especially on whether the pension and public sector wage cut was worthwhile. Numerous opponents of this policy claimed that it would lead into a deeper recession (than the one Serbian economy was already in) and that the expected deficit decrease would not occur either, being that tax revenues would decrease as the economic activity plummeted further. However, none of this happened. The fiscal deficit was strongly and permanently decreased by about 2.5% of GDP and, instead of the expected continued recession, economic activity started recovering. The most probable economic reasons for the relatively small adverse effect fiscal consolidation has had on Serbian economy (low fiscal multiplier) are: that Serbia is a small, open economy; not a developed country; with flexible currency exchange rate and inflation targeting; as well as high public debt, higher than the theoretical limit set in research (60% of GDP). Although the impact of fiscal consolidation on Serbian economic growth was mildly negative in the short term, its effect on economic activity in medium term is positive – the consolidation was probably one of the key factors that allowed for the observed growth of investment in 2015. Due to the great importance of fiscal consolidation for, high and sustainable economic growth in medium term, it needs to be continued in 2016 and 2017.

In the last three years, there has been an unusually strong growth in employment and drop in unemployment, while the economic activities have been stagnant. The number of employees has increased by about 20% from its lowest level in 2012 by the third quarter in 2015, while the unemployment rate dropped by about 10 pp in the same period. A more in-depth analysis shows, unfortunately, that it is not very likely that such favourable trends have actually occurred, i.e. that the fast growth of employment and drop of unemployment, registered from the end of 2012, are most likely the consequence of unreliable data of the SORS describing the labour market and not the true improvements in economy. The piece of data casting doubt on the official labour market trends is the fact that no country in Central and Eastern Europe has had an even similar growth in employment as Serbia in the last three years (although the majority have had a significantly higher GDP growth). In addition, the strong increase in the number of employees would have had to leave a clear mark on the economy of any country, and there is no such mark in Serbia: the GDP, which is most frequently correlated with employment rates (Okun's Law) has been practically stagnant since 2012; private consumption has dropped, although labour income is the largest individual item driving private consumption; while the fluctuations of contributions and income tax showed absolute inconsistency with the flows of formal employment rates from the Labour Survey. Another indication that the official labour market data is unreliable lies in the fact that immediately prior to the latest increase in employment, Serbia had a non-convincing episode of an enormous decrease in employment of 600,000 people – again not observed in other CEE countries, but also inconsistent with the fluctuations of all related macroeconomic indicators in Serbia. Analyses of indirect indicators of employment trends show that its actual increase in the last three years most likely amounted to only 1%.

The number of employees in Serbia will probably stagnate in the medium term (regardless of the indicators that the SORS will publish). In the upcoming two years, a relatively low economic growth is expected, so GDP could cumulatively grow by about 4% in 2016 and 2017. With the expected employment elasticity with regard to GDP, this would indicate a possible growth in employment of about 2%. However, it is already evident that the number of employees will decrease in the enterprises undergoing privatization, the fate of which is being settled at the moment, and there are significant layoffs announced for the "budget" sector and public enterprises. These layoffs will not have a great effect on the GDP, but will temporarily cause a mild decrease in overall employment. Taking all this into account, including the factors that will cause a mild increase in employment and those that will lead to a mild decrease in employment, it is most likely that the number of employees in 2018 will probably be equal to that from the end of 2015. And the answer to the question of whether there will be a stronger, more sustainable (and this time real) trend of employment increase from 2018, will depend primarily on whether the conditions for a fast, sustainable growth in economic activity will be met in the next two years, i.e. whether the Government will provide the conditions for a strong increase in investments by working on improving the investment environment and successfully implementing fiscal consolidation.

After several unsuccessful attempts to return Serbian public finances to a sustainable path in the period 2012-2014, a new three year fiscal consolidation programme was launched in 2015, supported by an arrangement with the IMF. In the first year of implementation, the results achieved exceeded the expectations – in 2015, the deficit was permanently decreased by almost 2.5% of the GDP (from 6.6% of GDP in 2014 to a little over 4% of GDP), with the largest part of the savings coming from the pension and public sector wage cut and from the increased tax revenue collection (mostly focused on the activities suppressing the bootlegging of oil derivatives and tobacco products). However, in order to stop the growth of public debt by 2017 (eliminating the immediate danger of a public debt crisis), the deficit needs to be permanently decreased to at least 2.7% of the GDP, meaning that additional permanent savings needed in 2016 and 2017 are about 1.5% of GDP. Being that the main austerity measures, such as pension and wage cuts in the public sector, have been exhausted already in 2015 - the remaining savings will have to rely on structural reforms. The problem is that in 2015 these structural reforms were overdue, and there is a great risk that they will not be fully implemented in 2016 and 2017 either.

It was planned that the main leverages for deficit decrease in 2016 and 2017 would be general government rationalization and pension and wage freeze. However, rationalization failed completely in 2015 and it will almost certainly not go according to plan in 2016 and 2017 either. Pensions and wages in the largest part of the public sector were unfrozen already at the beginning of 2016 and it is not very likely that they will not be increased in 2017 again. Due to the premature relaxation and insufficiently prepared measures, there is a significant risk that the structural deficit will remain at the level of 3.5% of GDP in the medium term, which is insufficient for the success of fiscal consolidation. Public debt would continue to increase over 80% of GDP, with a further increase in interest expenditures, and at certain point, public debt crisis would become inevitable – despite the indisputably good fiscal result in 2015.

In addition to all this, the danger from new budget expenses for public and state-owned enterprises has still not been eliminated – and this was the main reason for the failure of all previous attempts at the recovery of public finances. The first steps in resolving the issues of large state-owned enterprises (EPS, Zeleznice, Srbijagas), pertaining to their organisational changes, were made in 2015. However, the true test will come with the layoffs of a large number of redundant employees, increase in prices, collection improvement, etc., which has yet to take place in its full scope. Completion of the privatization process in the prescribed time frame (by mid-2016) will also present a great challenge. Looking at the number of enterprises, the majority have had their status resolved in 2015 – but these were smaller enterprises. In terms of the number of employees, two thirds of the original number are still employed by the enterprises still owned by the

state. The greatest problems pertain to the resolution of the status of those enterprises that are incurring losses but are classified among the strategically important enterprises (RTB Bor, Petrohemija, Resavica, etc.) as well as Zelezara Smederevo. At that, there are already some hints that the Government may opt for some transitional solutions that would be unsustainable in the long-term for many of them (predesigned restructuring programmes, their merger with public enterprises or the reversal of privatization), so the unsuccessful business operations of these companies may again become a direct (or indirect) budget expenditure in the future. On the other hand, a more efficient suppression of grey economy could provide important support to the initiated fiscal consolidation, but this would take systemic measures and a thorough reform of the Tax Administration.

The rest of the paper is organized as follows. In the next section we analyse recent macroeconomic trends and sustainability of the initiated recovery, investment growth and impact of fiscal consolidation on GDP. In the third section we are arguing against the credibility of official data on strong improvemnts in the Serbian labour market in recent years. In the fourth section we discuss the scope of recently implemented fiscal consolidation programme and the greatest challenges that lie ahead.

Economic trends: Sustainability of the initiated recovery, investment growth and the impact of fiscal consolidation on GDP

Is the investment growth in 2015 a hint that stagnation is about to end, after several years?

Serbia is one of the rare countries in Central and Eastern Europe that has not managed to establish and sustain economic recovery after the eruption of the world economic crisis (2008 and 2009) until 2015. Instead, temporary episodes of mild recovery were interrupted, as a rule, by new recessions – of which there were two in Serbia after the first crisis wave had passed. A consequence of such economic trends was that Serbia (along with Croatia and Slovenia) remained in the small group of CEE countries which have failed to reach the level of their economic activity from 2008, even after 2015 (see Table 1).

Table 1: Central and Eastern Europe – Cumulative GDP growth, 2008-2015

	GDP 2015/GDP 2008
Poland	123.6
Albania	118.5
Macedonia	115.3
Slovakia	111.0
Estonia	105.4
Montenegro	105.3
Czech Republic	103.7
Bosnia and Herzegovina	103.4
Lithuania	103.2
Romania	103.0
Bulgaria	102.4
Hungary	102.3
Latvia	100.0
Serbia	99.0
Slovenia	95.3
Croatia	88.2
Weighted average	110.2

Source: The author's calculations based on the data from IMF WEO database (October 2015 update)

From the second quarter of 2015, Serbia has again entered a period of economic recovery, which we analysed in more detail. The main question we attempted to answer was: can the initiated recovery be sustainable this time and thus represent a basis for further acceleration of economic activity in medium term, or is it just another episode of interim recovery, already seen in the period from 2010 to 2015? In addition, relying on the results of analyses of the trend and structure of the recovery that began in 2015, we have taken a preliminary look at the perspectives of economic growth in the upcoming years and provided a first assessment of the influence of fiscal consolidation on economic growth.

The analysis indicated three important findings: *first*, this time it may actually be possible that the economic growth from 2015 will be sustainable, as it is driven by a widespread investment growth (unlike the previous hints of growth), but that there are still many uncertainties that may jeopardize the initiated economic recovery; *second*, that 2016 and 2017 will not be years of dynamic economic growth and that such growth (exceeding 4%) can hardly be expected even in 2018, as it will take

several years to resolve the largest structural issues of the domestic economy and initiate a more significant, sustainable recovery in private consumption; and *third* that the fiscal consolidation process from 2015 had a very small negative impact on short-term deceleration of economic activity but that, all things considered, it had formed a good prerequisite for the gradual acceleration of economic growth in medium term. For this last reason, we emphasize the continuation of fiscal consolidation in the upcoming years as one of the important, or even crucial prerequisites for the establishment of a lasting economic recovery and its gradual acceleration, – which will represent a great challenge for the Government, as shall be seen in the third chapter of this paper.

While analysing economics activity, we have made a distinction between lasting and temporary trends. The majority of oscillations in economic activity during 2010-2015 period were caused by external factors: 1) drought in 2012 and 2015, caused a sharp temporary drop in agricultural activity in those years but consequently, it fuelled growth in the following years (expected again in 2016), as agricultural production returned to its usual level and 2) floods from 2014, which due to the coal mine flooding lead to a drastic temporary drop in electricity production during 2014 and consequently, an equally drastic recovery of the sector in 2015, when normal production of coal and electricity were reprised. Economic trends adjusted for temporary shocks are shown in the second column in Table 2.

The second column of Table 2 shows that from 2010 to 2015, if one-offs are excluded, economic activity was in a relatively stable stagnation – i.e. it achieved an almost negligible average annual growth of 0.3%. In addition, these "purified" growth rates in the observed period did not oscillate much from year to year (staying in a relatively narrow range of -1% in 2004 to 1.4% in 2011). We hence believe that economic stagnation is the lasting, structural trend of the national economy that has practically been present the whole time since the start of the first crisis wave in 2008 and 2009. The table also shows that no significant growth is expected in 2016 either – as a large part of the predicted 1.8% growth is a consequence of agricultural production recovery after a drought.

A somewhat more detailed analysis of Serbian GDP structure reveals that an insufficient level of investment since 2010 is the reason behind the economic stagnation. Its share in the GDP, which is well below 20% of GDP (average level of investment in the period 2010-2014 was 18.5% of GDP[1]) is insufficient to drive economic growth. In the period before the crisis (2003 to 2008), when the average GDP growth rate was about 5.5%[2], the ratio of investment to Serbian GDP was about 22%. In addition, in other comparable CEE countries showing, on average, significantly faster economic growth than Serbia, average investments in the period from 2010 to 2014 were 4 pp higher than in Serbia, i.e. 21.5% of GDP. In its *Transition Report* for 2015-16 [2], the EBRD provided a somewhat more precise quantification of the lack of investments in Serbia. According to this analysis, after the crisis, Serbia has shown a structural investment deficit of 7% of GDP, which is higher in comparison to the investment deficit present in other European economies in transition (see Figure 1). This data and analyses indirectly indicate that the investment climate in Serbia is significantly worse than that of the comparable CEE countries, as Serbia has been lagging behind them in terms of investment levels for quite a few years.

The very low level of investment is not the only reason why its strong growth is a key prerequisite for a lasting, sustainable departure of Serbian economy from stagnation. There is currently no other GDP component which could keep increasing sustainably for a number of years, directly driving the overall GDP growth in the medium term. Serbian GDP's structure is such that it is dominated by overconsumption (personal and state), the share of which in the GDP will have to be decreased in medium term, i.e. it is certain that consumption cannot serve as a sustainable engine of growth in the upcoming years. The actual room for a more permanent acceleration of economic activity,

1 With certain oscillations from time to time, the investment trend in Serbia was markedly decreasing, so that by 2014, the share of investments in the GDP dropped down to a mere 16.7% of the GDP, making Serbia the absolute negative record holder among all CEE countries (the next on the list, BH, showed a share of investment in the GDP of 18.3%).

2 We would like to emphasize that this economic growth rate would not be completely sustainable even if the world economic crisis had not occurred, as it was achieved with a large increase in external imbalance (the current account deficit exceeded 20% of GDP immediately prior to the crisis)

Table 2: GDP growth in Serbia excluding one-off factors, 2010-2016

	GDP growth (%)	GDP growth (%), excluding one-offs	Agriculture (contribution to GDP growth pp)	Floods (contribution to GDP growth pp)
2010	0.6	0.1	0.5	-
2011	1.4	1.4	0.1	-
2012	-1.0	0.5	-1.5	-
2013	2.6	0.5	2.1	-
2014	-1.8	-1.0	0.2	-1.1
2015	0.8	0.5	-0.8	1.1
2016*	1.8	1.1	0.8	-

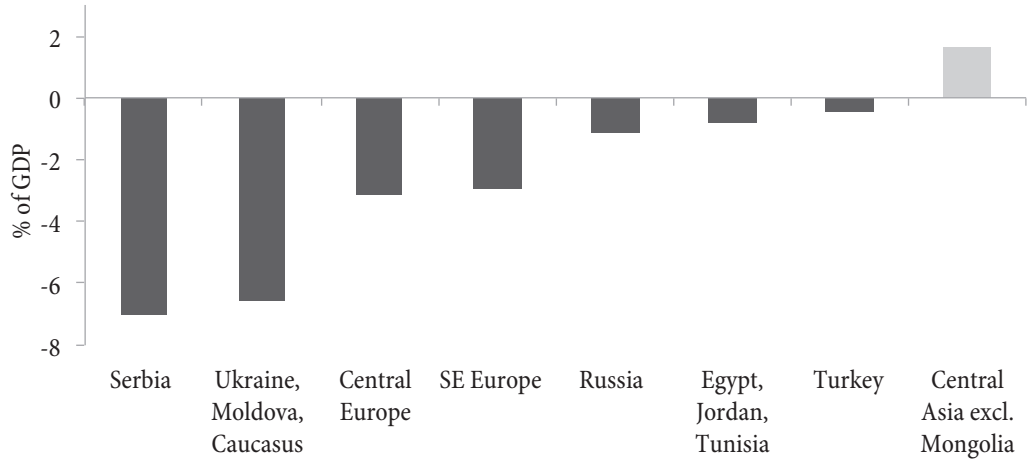
*Official forecast (used for the preparation of the budget and Fiscal strategy)
Source: The author's calculations based on the data from the Statistical Office of the Republic of Serbia

which would also mean the end to stagnation, lies in the growth of net export and investment, with investment being particularly important. This is because export growth based solely on the existing, unused capacities is possible only in a very limited time period; for economy to be able to rely on the growth of net export permanently, it would be necessary to first *invest* into new production capacities (aimed at the production of tradable goods).

Investment, therefore, has a twofold effect on GDP growth: in the short term, they increase demand and directly influence GDP growth and in the medium term, on the supply side, they increase capacities for production and net export growth. Therefore, once investments have increased, the next GDP component that should consequently show stronger growth is net export, which in turn would lead to a stronger growth in private sector employment and increases in private consumption, and only in the end, government consumption could increase as well. Actually this is the only possible order of events that would allow for a dynamic, sustainable growth in the excess of 4%, which due to the structure of Serbian GDP can only be achieved in practice when all, or at least three components of the GDP (investments, net export and personal consumption) show growth.

In 2015, investment showed a high growth of almost 10%, more than any other GDP component, which is good. However, this is still not a certain indication that Serbian economy is on its road to recovery and gradual establishment of sustainable, high growth. The period in which this investment growth has taken place was very short (less than a year) and thus the growth is not completely convincing. Moreover, it should also be kept in mind that even with the growth of investments in 2015, their share in the GDP will increase only to about 18.1% which is still the lowest share of investment in GDP in Central and Eastern Europe. However, we believe it is very important that this time (unlike the previous episodes of temporary, unsustainable investment growths after the crisis) the investment growth

Figure 1: Transition economies – Estimated investment surplus/shortfall



Source: [2]

is widely spread, encompassing both foreign and domestic investments, it is visible in construction sector but also in the purchase of equipment – fuelling hope that it is of a more permanent nature.

Construction activities, following a poor first quarter, show a high year on year growth in the second and third quarters, of about 15%. Growth of newly approved loans to businesses, coming from the domestic banking system, has started to pick up in the second half of the year. Domestic production of capital goods in 2015 increased by 3% in comparison to 2014, while the import of capital goods also increased by about 3% relative to the previous year. Foreign direct investments (FDIs) were very low until May 2015, even lower than the inadequate level from 2014. However, after May, FDIs accelerated strongly, so that by the end of November 2015, they not only reached their level from the period of January-November of the previous year, but exceeded it by almost 50% (i.e. about EUR 500 million). In addition, the growth of total investments in 2015 of almost 10% is primarily the consequence of the increase in private investments, as the state showed only a slight increase of its already low efficiency in execution of public investment.

Although it is still too early to discuss the causes of such a widely spread private investments increase in 2015, it is highly likely that it was strongly affected by the improved business environment in the previous year. Some reform laws have been adopted, such as Labour Law, Law on Planning and Development, there has been a global drop in interest rates, ECB opted for an expansive monetary policy, EU economies and economies of the countries in the region have started recovering, etc. Perhaps the crucial change in 2015, which, we believe, could have had an effect on the growing trend of investments during these two years is fiscal consolidation – as it is very difficult to expect investment growth in a country threatened by a public debt crisis.

We believe that all these factors constitute significant differences of the investment increase in 2015 compared to other episodes of their temporary growth, such as in 2011 and 2012, which is why we believe this trend could prove longer lasting and more sustainable. The temporary increase of investments in 2011 and 2012 was similar in its intensity to the one from 2015, but its structure was significantly different. The only branch in investments that showed a strong growth back then was the import of specific industrial machines (which increased by as much as 67% only in 2011, when compared to 2010, i.e. by EUR 336 million), while the growth of other types of investments was much lower – for example, civil engineering showed a cumulative decrease of about 4% in 2011 and 2012. Such trends show that the investment growth was not a general trend, distributed throughout the economy, but rather focused on just a few large companies (FIAT, NIS). When these two companies completed their investment cycle, the level of investments returned to its previous level and economic activity sunk back into recession at the end of 2013, and stayed in there until the new investment increase in 2015. It is interesting to note that the investments of FIAT and NIS were related to direct state interventions (subsidies and privatization).

The main conclusion of this part of the analysis would be that, due to positive and widely spread trends in investment flows, it is possible that the economic activity recovery begun in 2015 could be sustainable, i.e. represent a good base for further acceleration of economic growth and that unlike all the episodes in previous 6 years, the Serbian economy now truly has a chance to exit its long stagnation. This, however, has not yet been guaranteed, which is why the Government has a serious task of maintaining and encouraging this investment trend, i.e. strengthening macroeconomic stability by means of fiscal consolidation, resolving key issues due to which the investment environment in Serbia is poor (judicial efficiency, acceleration of permit procedures, elimination of administrative barriers to investments, protection of competition, prevention of corruption, etc.) but also to increasing efficiency in the implementation of public investments that stimulate economic growth in the short term, as well as encouraging higher investments from the private sector in the medium term. If the Government gives up on these policies, it is quite evident that the recovery initiated in 2015 will prove to be short lived. Another conclusion that could be drawn from this short analysis is that direct state interventions in attracting (and paying for) individual investors are probably not the optimal

model for a sustainable investment increase and economic recovery, as they are too focused, temporary and also come at a price that could question their justifiability; in addition, there were hints of certain abuses (firing, then rehiring the same employees).

Structural changes in the GDP: Prerequisite for its growth past 4%

We have described the blueprint for establishing a sustainable and dynamic economic growth in Serbia (first, by increasing investment, then net export, followed by private consumption and in the end, public consumption) and it is possible that we are now seeing the first outlines of this blueprint taking shape – which the Government should endorse and strengthen using the adequate policies. Knowing this, the next important question is: when is the earliest that, under ideal circumstances (good policies) a lasting economic growth of at least 4% could be achieved, allowing Serbian economy to converge to the more developed EU economies? The answer to this question is that it will take some time, as significant changes in the structure of Serbian economy first need to take place, during which it will not be possible to achieve high growth rates. This is why a relatively strong economic growth (over 4%) will not be possible in the upcoming two years (prior to 2018), but it is somewhat more likely that it will take place even later. The focus, once more, is on lasting and sustainable dynamic economic growth, because even if by some chance (by increasing public and private consumption) a relatively high GDP growth was to be achieved prior to 2018, such a growth would be temporary, or even very dangerous.

If, in the medium term, the investment growth continues at 5-10% per year (which is still not definite), due to the small share of investments in the GDP – which at the moment is well below 20% – this could only contribute 1.5% to the GDP increase. It is not very likely that net export could provide the additional annual 2.5 pp of GDP in the first years of recovery needed for the overall economic growth of 4%, as this would mean the decrease in trade deficit in a period of several years by about EUR 850 million per annum. Therefore, the prerequisite for GDP growth in excess of 4% is the growth of at least three out of four GDP components (investments, net export and public consumption). Even more precisely, for a high and permanent growth of Serbian GDP, it will take an increase in private consumption of at least 1.5% which would have to be preceded by several years of investment and net export increase. Being that such a change in GDP structure cannot occur prior to 2018, and likely not even in 2018, it provides the answer to the question of when is the earliest possible time to expect the first significant growth of Serbian economy. We emphasize, once more, that the alternatives to this scenario, i.e. any avoidance of the steps and early increase in public and private consumption would be very dangerous and could only incur greater harm than good to the economic growth. This is best illustrated by the temporary episodes of increased public consumption that have taken place in the previous few years. Thus, in 2012, state consumption was significantly increased (real growth of about 2.5%), which, however, did not have a significant impact on GDP growth; but 2012 was also the year in which record public debt increase was noted, of about EUR 3 billion.

Fiscal consolidation and economic growth lessons from 2015

Finally, the last topic of this preliminary analysis of main economic trends from 2015, which we are undertaking, is: what does 2015 say about the impact of fiscal consolidation on Serbian economic growth? Discussions of the negative effects of fiscal consolidation on economic activity were a hot topic a year ago, especially on the issue of whether the pension and public sector salary cut was worthwhile.[3] Numerous opponents of this policy claimed that it would lead into a deeper recession (than the one Serbian economy was already in) and that the expected deficit decrease would not occur either, with tax revenues decreasing as the economic activity plummeted further. However, none of this happened. The fiscal deficit was strongly and permanently reduced by about 2.5% of GDP and, instead of the expected recession, economic activity started recovering.

3 Authors of this paper also contributed to these discussions. One of the papers showing that fiscal consolidation was necessary and that its impact on economic activity was very small was published in this very journal two years ago, see [8].

A relatively small negative impact of fiscal consolidation on economic growth should not be a surprise, due to the specific traits of Serbian economy. Fiscal consolidation impact on the reduction of economic activity is measured by the fiscal multiplier, which is significantly lower – as expected – for Serbia than for more developed European countries. The reasons are: that Serbia is a small, open economy; not a developed country; has flexible currency exchange rate and inflation targeting; as well as high public debt, higher than the theoretical limit set in research (60% of GDP). On the other hand, the fiscal multiplier is somewhat larger in recession, in which Serbian economy was at the beginning of fiscal consolidation. Taking into consideration all the specific traits of Serbia and the economic cycle, it was expected that Serbian fiscal multiplier would be relatively low, 0.5 at most. This would mean that for 1% of GDP decrease in deficit, the economic growth would slow down by less than 0.5 pp in the short term. The somewhat better than expected economic results in 2015, support theoretical predictions of a low fiscal multiplier in Serbia and perhaps indicate that it is even lower than initially expected. Still, at the time being, more reliable and precise analyses of the impact of fiscal consolidation on economic growth are not yet possible as not all macroeconomic indicators for 2015 are yet available, and there needs to be a consideration of additional specific traits of the implemented fiscal consolidation, which can substantially modulate its impact on economic activity – since the fiscal multiplier is different for public revenue and public expenses, higher for public investments than other forms of public consumption, etc.

Although the fiscal consolidation has a lower, more limited negative impact on economic activity in Serbia in the short term, in the medium term it has a positive effect on economic growth. Fiscal consolidation was probably one of the more important factors that have allowed for the observed investment growth in 2015. In a country facing a realistic danger of public debt crisis and macroeconomic instability, strong increase in investments is not very likely, and it was fiscal consolidation that shifted Serbia away from this unfavourable scenario. This can be indirectly substantiated by the comparative analysis of FDI trends. Comparing FDI growth in Serbia and other comparable countries, we can see that it was Serbia that achieved the greatest FDI growth in 2015 compared to 2014. It is even more interesting that this FDI growth in Serbia took place only from the second half of the year, when first positive results of the fiscal consolidation became indisputable.

Fiscal consolidation is thus a good, probably even crucial, policy for the establishment of a sustainable, high economic growth in medium term – and it needs to continue in 2016 and 2017. This is because the only way to have a long-term investment growth, which is crucial for the establishment of a sustainable economic growth pattern, is to stop the increase in public debt and ensure public finance recovery. There are, however, numerous challenges and risks that can prevent the implementation of fiscal consolidation in the upcoming years, which could annul its indisputable good results from 2015, potentially jeopardizing the economic recovery in medium term. These risks and challenges will be analysed in more detail in the third chapter of this paper.

Strong employment growth in a stagnating economy: An illusion, after all

High unemployment is one of the greatest structural problems of Serbian economy. According to the latest available data, from the third quarter in 2015, the unemployment rate in the population of 15-64 was 17.3%, which is among the highest unemployment rates in Europe.[4] However, in the last two years, there has been an unusually strong growth in employment and drop in unemployment, while the economic activities have been stagnant. The number of employees has increased by about 20% from its lowest level in 2012 to the third quarter in 2015, while the unemployment rate dropped by about 10 pp in the same period. A more in-depth analysis shows, unfortunately, that it is not very likely that such favourable trends have actually occurred, i.e. that the fast growth of employment and drop of unemployment, registered from the end of 2012, are most likely the consequence of unreliable data of the Statistical Office of the Republic of Serbia (SORS)

4 Of 47 European countries for which data exist, only six have a higher unemployment rate than Serbia (Albania, Bosnia and Herzegovina, Croatia, Greece, Macedonia and Spain)

describing the labour market and not indicative of true improvements in economy.

The first information casting doubt on the official labour market trends is the fact that no country in Central and Eastern Europe has had an even similar growth in employment as Serbia in the last three years (although the majority have had a significantly higher GDP growth). However, this is not the only, or even the main argument showing that the positive labour market trends in the recent years are but a statistical illusion. The strong increase in the number of employees would have had to leave a clear mark on the economy of any country, and there is no such mark in Serbia: the GDP, which is most frequently correlated with employment rates (Okun's Law) has been practically stagnant since 2012; private consumption has dropped although income from work is the largest individual item driving private consumption; while the trends of income tax and contributions showed absolute inconsistency with the trends in formal employment rates from the Labour Force Survey (LFS). Finally, another indication that the official labour market data are unreliable lies in the fact that immediately prior to the latest increase in employment, Serbia had a non-convincing episode of an enormous decrease in employment in the period 2008-2012, again not observed in such intensity in other CEE countries, but also inconsistent with the trends of all related macroeconomic indicators in Serbia.

Table 3 shows the official data on the trends of employment and unemployment rates in Serbia since 2008. There are two distinct sub periods: *the first*, from 2008 to 2012, in which employment sharply decreased by about 600,000 people and unemployment rate went from 14.4% to 24.6%; and *the second*, from 2013 to 2015, in which employment grew significantly by over 330,000 people and the unemployment rate dropped down to 18.5%.[5] These data already stir doubts about their validity, being that the changes in the number of employees and unemployment rate are huge and macroeconomically unusual.

Table 3: Serbia – Number of employees and unemployment rate, 2008-2015[6]

	Number of employees	Unemployment rate (15-64)
2008	2,821,724	14.4
2009	2,616,437	16.9
2010	2,396,244	20.0
2011	2,253,209	23.6
2012	2,228,343	24.6
2013	2,310,718	23.0
2014	2,544,188	20.1
2015	2,558,426	18.5

Source: Statistical Office of the Republic of Serbia, LFS
Note: the data for 2015 represent the average of the first three quarters, for which the data is available

Although this paper primarily deals with the evaluation of the growing employment trend started in 2012, we will take a brief look at the period from 2008 to 2012, when unemployment showed a pronounced growth and employment a sharp drop (by almost 600,000 employees). Such a marked drop in the number of employees is problematic for several reasons. First of all, this is an enormous number of people. The fact that education, healthcare, army and police employ a total of 400,000 people can serve as a good illustration of just how many people had lost their jobs, according to the official statistics. A drop of employment by 600,000 people would have inevitably meant that Serbian economy was plummeting. In addition, a similar drop in employment during the crisis has not been recorded in any other CEE country – even though some have recorded a double-digit drop in GDP (in Serbia, the GDP drop in the period 2008-2012 amounted to 2.2%). To make matters even less convincing, the enormous employment decrease in Serbia did not take place across the board, i.e. it occurred practically exclusively in the private sector, as the public sector kept an almost unchanged number of employees.[7] One of the specific traits of Serbian economy is a greater

5 This is the average number of employees and average unemployment rate from the first three quarters of 2015. The last available data for Q3 in 2015 show that the number of employees in Serbia increased even further, to 2,615,221 and unemployment rate decreased to 17.3%. These last numbers were used in the introduction to this chapter to illustrate the magnitude of change on the labour market, where we compared them to the minimal number of employees of 2,157,618 and the highest unemployment rate (15-64) of 26.1% achieved in 2012.

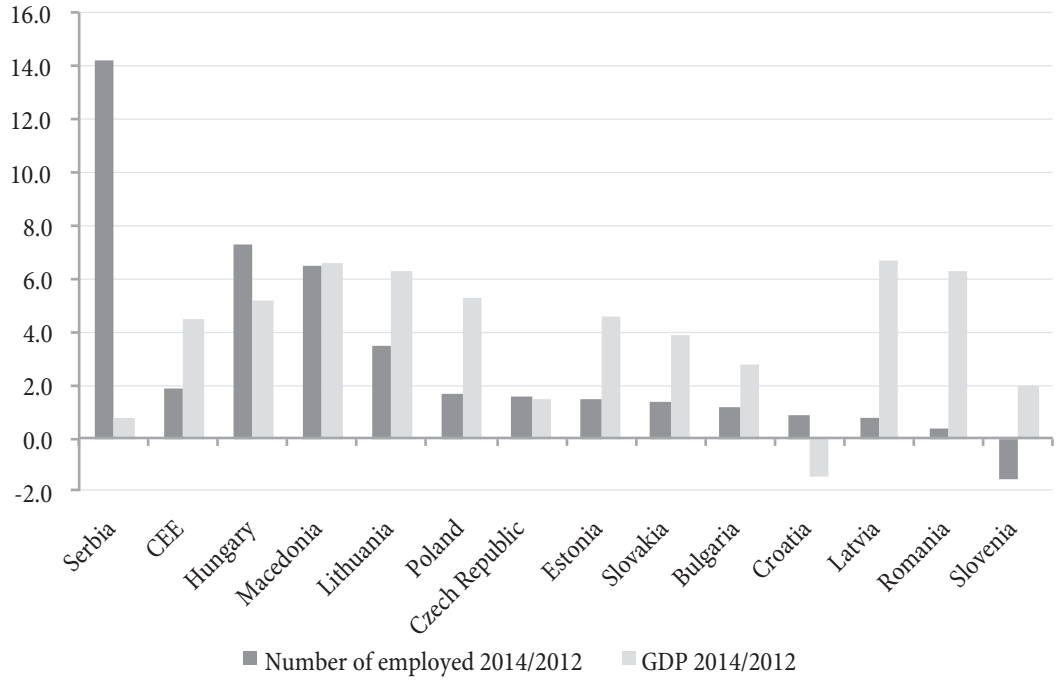
6 We chose to use total employment rate in the population over 15 years old as the indicator of overall employment trends, and for unemployment rate, the population from 15 to 64 years of age only, because these indicators allow for international comparability (unemployment rate) and a better correlation with the other related macroeconomic aggregates (overall employment).

7 This can easily be shown by the analysis of fiscal expenses for employees, financial reports of public enterprises and the portfolio of the Privatization Agency as well.

participation of the public sector in the overall economy, compared to other similar countries.[8] There are about 750,000 people working for the state (about 500,000 directly and about 250,000 more in public and state-owned enterprises). This means that the decrease in the number of people employed by about 600,000 had to have happened in a much smaller sample of about 2 million employees and not in the total number of 2.8 million employees which was the total tally in 2008, including the public sector. An attempt to provide an economic explanation of such unusual trends in the labour market [1] alleges the existence of superfluous employees as the Serbian economy undergoes a transition, meaning that the employment could drop more than production itself. However, even though it is likely that there are certain transition surpluses in the number of employees in Serbia, this can hardly account for the fact that the private sector, ten years from the beginning of the transition, laid off almost a third of its employees in the conditions of a not-so-deep recession – it is almost certain that these were actually grave errors in the estimates of employment numbers by the SORS. We are emphasizing the episode of employment decrease in Serbia from 2008 to 2012 to show that there is a systemic problem in SORS's monitoring of employment, which means that poor recording of trends in the previous three years would not be a precedent.

Figure 2 shows employment and GDP trends in Serbia and other Central and Eastern European countries for the period 2012-2014.[9] In this period, Serbia had by far the greatest employment growth of over 14%, which is twice as large as the next comparable country. At the same time, Serbian GDP was below average. By looking at the entire group of the countries (excluding Serbia), employment grew in CEE by 1.9% in the period 2012-2014, while the GDP increased by 4.5% (see Figure 2). This means that the elasticity of employment with respect to GDP in the CEE in the observed period amounted to 0.42, which is completely in line with theoretical expectations of employment elasticity, which is in the range of 0 to 1.[10] Employment elasticity by individual countries (excluding Serbia) shows certain discrepancies from this average elasticity. Thus, Slovenia had the smallest employment

Figure 2: Central and Eastern Europe – Employment and GDP growth, 2012-2014



Source: Eurostat
Note: no data available for Montenegro, Bosnia and Herzegovina and Albania

8 In transition countries of the CEE, the average share of the public sector in the GDP in 2010 was 27.5% and in Serbia it was 40%. Source: Structural change indicators, EBRD, 2010.

9 Comparable data at the annual level for 2015 have not been published yet, but the data from the first three quarters show that similar trends continue in 2015.

10 Employment elasticity shows the percentage of change in employment with 1% change in GDP.

Table 4: Serbia – Nominal growth of contributions and total wage bill, 2012-2015

Formal employment growth (2015/2012)	Average salary growth (2015/2012)	Nominal growth of wage bill (2015/2012)	Nominal growth of contributions (2015/2012)	Difference
12.1%	6.5%	19.3%	7.5%	12.8 pp

Source: SORS (Labour Force Survey), Ministry of Finance
Note: Contributions growth was adjusted for the change in the contributions rate in 2013

elasticity with respect to GDP found in CEE, in the amount of -0.8 (employment drop of -1.5% with GDP growth of 2%), while the greatest elasticity was observed in Hungary, amounting to 1.42 (employment growth of 7.3% with GDP increase of 5.2%). Empirical research shows that, in the short term, a certain departure from the theoretical boundaries of employment elasticity (0-1) is possible, so these results are completely expected. However, employment elasticity in Serbia amounts to 19.9 which is far outside the expected, and indeed, any possible range.

As was already mentioned, employment rate changes leave a distinct trace on the trends of other macroeconomic aggregates. An indicator directly dependant on employment trends is contribution collection, as the base for the collection of contributions is the total amount of salaries (wage bill) in formal economy (the number of formally employed multiplied by the average salary).[11] Contributions growth would therefore, by definition, have to be approximately equal to the growth in the total amount of salaries, i.e. the increase of the number of people formally employed and their salaries. However, this was not the case in Serbia. In Table 4, we showed the increase in total salaries and increase in contributions in the previous three years (2012-2015), showing a nominal growth in contributions of 7.5% while the nominal increase in total salaries, influenced by the great increase in the number of employees, amounted to as much as 19.3%. Seeing as how these two indicators should be nearly identical and the contributions collected represent an exact piece of information – the only possible explanation for the discrepancy lies in poor measurement of employment trends in the LFS.[12]

We shall now pay a little more attention to the data from Table 4. It can be observed that the increase in contributions collected corresponded, i.e. was slightly larger than the average salary increase. This indicates that formal employment increased by 0.95% in the period 2012-2015 and not by the (not very likely) 12.1% as indicated by the LFS. This result is especially interesting if we consider that the GDP increase in the period 2012-2015 amounted to 1.5%, as it would actually mean that the real formal employment in Serbia did grow in line with GDP trends, i.e. that employment elasticity in Serbia is approximately 0.65. This would be completely in line with economic theory and employment elasticity in all other countries of the CEE.

The explanation for the growth of total salaries in Serbia being faster than the trends of contributions collected that was offered was that this is partially the consequence of increase in the share of part-time labour in the overall employment [1]. The main problem with this explanation, however, is that the increase in the share of part-time employment would also simultaneously decrease the average salary. Thus the product of the number of employees and their average salary would not be able to accelerate "artificially" if the number of employees who were being paid less increased, thus making the total amount of salaries grow faster than the total contributions collected. On the contrary, the influence of the increase in the share of part-time employment on contributions trends would be exactly the opposite of the one described – it would lead to a faster, not slower growth in contributions in relation to the growth of total salaries. The Law prescribes the lowest salary base for contributions at 35% of the average salary,[13] regardless of the actual salary. This means that if the number of less paid jobs with part time employment increases, the contributions paid will be disproportionately larger – leading to a faster, not slower growth in contributions collected when compared to the trends of total salaries.

11 In this case, only the data on formal employment from the LFS are used, as those employed in the informal sector pay no contributions.

12 Nominal growth of the average salary is not suspicious as it is consistent with inflation and the decrease in salaries in the private sector in November 2014.

13 Law on Social Security Contributions

The second problem with this explanation is that the number of employees in part-time employment amounts to only 10% of the total number of employees, so even an extreme change in this parameter (with the necessary requirement of it acting in the direction opposite to the one it actually acts in) would not explain the difference of almost 13 pp between the contributions collected and the trends of total salaries.

The last discordant indicator we analyzed in detail, directly relating to the employment trends are private consumption trends. Real private consumption has decreased by 2.5% from 2012 to 2015. However, the largest individual component funding private consumption is the total amount of salaries, which showed a real growth of about 10% in the same period, according to the SORS data.[14] Other sources of funding private consumption (pensions, welfare, consumer loans, remittances, etc.) did not decrease nearly as much in the period of 2012-2015 to account for such a drop in overall consumption with such employment growth (some of these sources have even increased). Perhaps it is simpler to explain the discrepancy between consumption and the official data on employment trends by taking a step back from the standard economic indicators. According to the data from the LFS, the number of employees in a country with a total of 2.5 million employees has increased by about 330,000. Such a number of newly employed would have to have a significant effect on the increase in overall consumption in the country, which did not occur – instead of growing, consumption dropped. Finally, it is interesting to note that private consumption trends and the sources funding it imply that the employment most likely increased by about 1% in the period 2012-2015 (just as indicated by contributions trends) and not by more than 14%, indicated by the LFS.

In the end, we would like to point out that the data on the trends of the number of employees from the Labour Force Survey indicated that in 2015, the following sectors showed growth: state administration and defence, mandatory social insurance, education and healthcare; which encompass about 500,000 employees employed by the state and for which it is reliably known that their number actually decreased in 2015, rather than increased. The explanation offered by the SORS as to why LFS data for this sector show trends opposite to the real ones was that the data on employment by activity were unreliable by definition, due to small sample groups. This explanation, however, would only stand for relatively small sectors of up to several dozen thousands of employees, in which small changes in the estimation of the work force can make a difference in the trend, while not having a significant effect on the overall employment trend. This explanation, on the other hand, cannot be valid for a large entity comprising a total of about 500,000 employees, i.e. the errors in trend assessment on such a large sample show very clearly that the LFS data are unreliable and have to affect the total employment trends estimate. From the second half of 2015, SORS stopped publishing data on employment trends by individual activities.

Systemic issues in the official statistics of employment trends do not only hinder the more detailed structural analyses of important macroeconomic trends, but also create practical issues for economic policy which does not have at its disposal some of the most basic economic indicators - how many people are actually employed in Serbia and what are the actual trends on the labour market. Budget projections of contributions and income tax, as well as consumption projections in Serbia are still being developed without the inclusion of suspicious trends from the official labour statistics, which is the only solution possible at the moment, but it is not a good solution. Due to the great significance of reliable monitoring of trends in the labour market, the SORS should carefully reconsider the data from its employment statistics and revise the existing data series in line with the findings. There are hints that such processes are underway, being that in October 2015 there was a correction of the data from the LFS for 2014. This review, however, only brought the estimates of the number of employees from 2014 closer to those from 2015, but failed to correct the main issues in data quality from the Survey or to encompass the previous years, packed with inconsistencies.

14 Table 4 shows that the total amount of salaries of formally employed increased nominally by about 20% from 2012 to 2015, and as the growth of employment in informal economy was even faster, the total amount of salaries could only have grown even more. In the observed period, inflation was about 11%.

The actual employment trends will probably be stagnant in medium-term (until 2018), regardless of the indicators which will be published by the SORS. Namely, in the upcoming two years, a relatively low economic growth is expected. Cumulatively, the GDP could increase by about 4% in 2016 and 2017, which would then, with the standard employment elasticity, indicate a possible growth in employment of about 2%. However, it is already evident that the number of employees will decrease in the enterprises undergoing privatization, the fate of which is being decided at the moment, and there are significant layoffs announced for the general government sector and public enterprises. These layoffs will not have a great effect on the GDP, but will temporarily cause a mild decrease in overall employment. Taking all this into consideration, including the factors that will cause a mild increase in employment and those that will lead to a mild decrease in employment, it is most likely that the number of employees going into 2018 will probably be equal to that from the end of 2015. And the answer to the question of whether there will be a stronger, more sustainable (and this time real) trend of employment increase from 2018 will depend primarily on whether the next two years see the creation of conditions for a fast, sustainable growth in economic activity, i.e. on whether the requirements for a strong increase in investments are met.

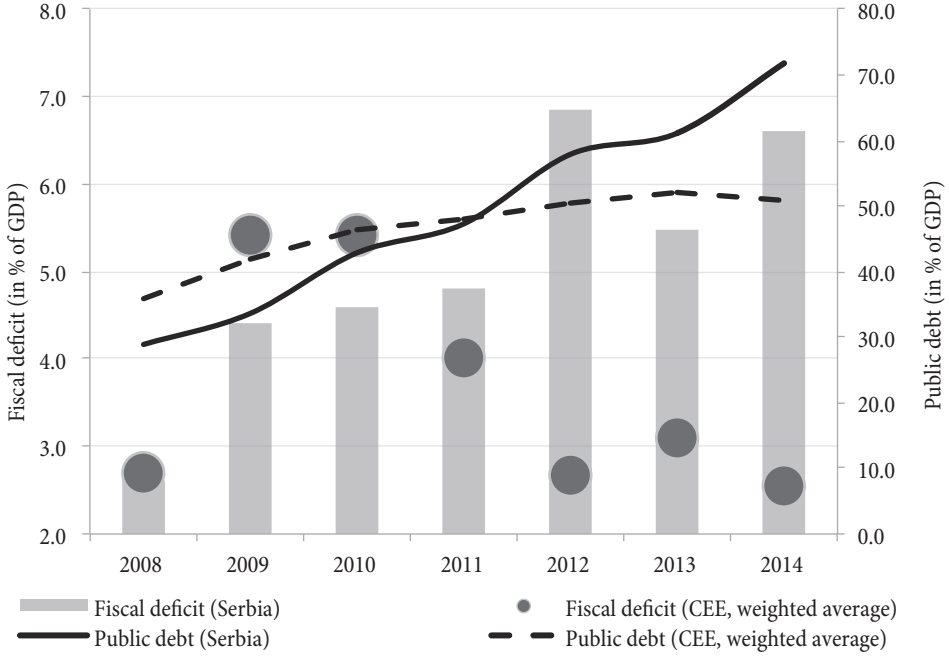
Jump-start of fiscal consolidation in 2015, but great challenges remain

After the world economic crisis broke out in autumn 2008, public finances in the majority of Central and Eastern European (CEE) countries found themselves facing similar problems – sharp deceleration of economic activity lead to a severe drop in public revenue, which in turn lead to an increase in fiscal deficit and accelerated public debt growth. Even though Serbia was no exception, its public finances proved to be somewhat more resilient in comparison to the region, in the early years after the crisis broke out (2009-2010). Figure 3 shows the fiscal deficit and public debt trends in Serbia and other CEE countries, clearly demonstrating that Serbian deficits were evidently smaller until 2010, with the level of debt also below the regional average (although also increasing). As a response to the strong deterioration of fiscal trends, many CEE countries started and successfully completed ambitious fiscal consolidations already in this period, halting the growth of public debt, while the average deficit in the region was decreased to below 3% of GDP by 2012. However, at first, there was no resolute response of the economic policy in Serbia to the public finance challenges brought on by the crisis. From the second half of 2012, there have been several attempts to reign in public debt and decrease the deficit by raising tax rates and limiting expenditures for salaries and pensions, but they proved unsuccessful. The austerity measures undertaken were insufficiently harsh to eliminate the existing structural imbalance between public revenue and expenditure and a high price was paid for the delays and neglect of the necessary reforms (primarily in state-owned enterprises). As a consequence, by the end of 2014, fiscal deficit had increased to 6.6% of GDP (the largest in CEE) and from a country with an average debt, Serbia became one of the most heavily indebted countries in the region – the public debt increased by the enormous 43 pp of GDP from 2008, reaching almost 72% of GDP.[15]

To prevent a potential public debt crisis, a new three-year fiscal consolidation programme was launched at the end of 2014, this time supported by an arrangement with the IMF. The main objective of this programme is to stop the growth of public debt in comparison to GDP by 2017, which will require a permanent fiscal deficit decrease by about 4 pp of GDP – from 6.6% in 2014, to about 2.7% of GDP. Even more importantly, successful implementation of the planned austerity measures and structural reforms should create the necessary preconditions for a more significant decrease of public debt in the long term, leading to a substantial recovery of Serbian public finances. The planned deficit of 2.7% of GDP in 2017 would stop further public debt growth, but this would only eliminate the immediate danger of a debt crisis. For a tangible reduction in public debt (which is necessary as a debt of almost 80% of GDP is very dangerous to countries such as Serbia in case of some new economic crisis in the future) the structural

15 In the observed period (2008-2014), a larger increase in public debt was only observed in Croatia (49% of GDP) and Slovenia (59% of GDP).

Figure 3: Fiscal deficit and public debt in Serbia and CEE countries, 2008-2014



Source: Author's calculations based on the data from IMF WEO database (October 2015 update) and Ministry of Finance of the Republic of Serbia

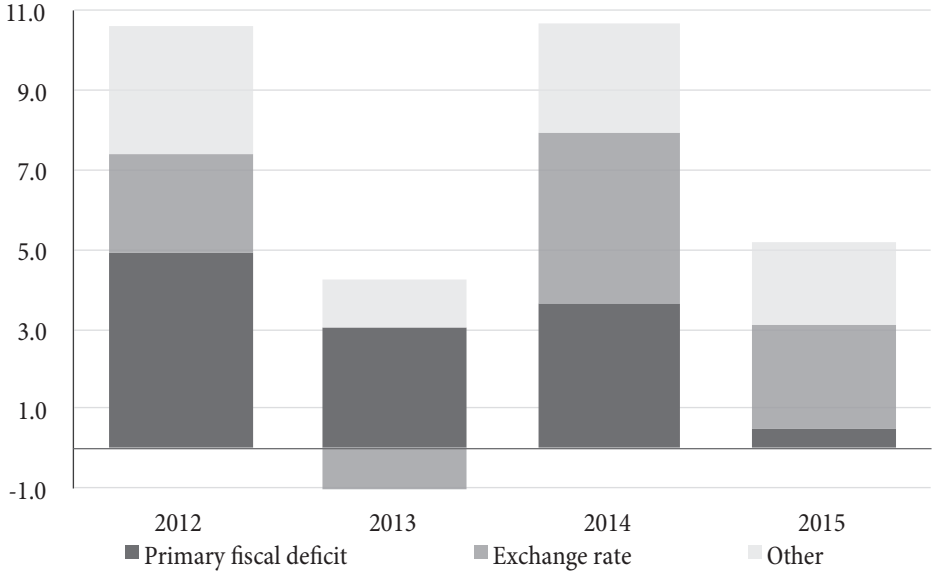
deficit would need to be eliminated completely, or at least brought below 1% of GDP. In this part of paper, we analysed the results achieved in the first year of implementation of this programme, in an attempt to answer the following questions: what is behind the deficit decrease in 2015, how far are we from the target and what are the greatest risks in 2016 and 2017 that could jeopardize the success of this fiscal consolidation attempt?

The first year of fiscal consolidation was relatively successful – the fiscal deficit was reduced to 3.7% of GDP in 2015, which is a strong decrease of about 2.9 pp of GDP in comparison to the previous year. Permanent savings achieved due to the cuts of pensions and salaries in the public sector at the end of the 2014, which are estimated to about 1.4% of GDP, are the most significant contributor to this indisputably good result. Improved tax revenue collection mostly due to the successfully implemented grey economy suppression measures brought additional savings, which we believe to be sustainable, of about 1% of GDP. However, the remaining deficit decrease (of about 0.5% of GDP) is the consequence of several one-offs, the impact of which has most likely been already used up in 2015, so we estimate that the "real" fiscal deficit of Serbia is somewhat larger, amounting to about 4.2% of GDP. This primarily pertains to unusually large payments from state-owned enterprises into the budget, on various grounds, and other sources of one-off increases in non-tax revenue in 2015 – which, by all indicators, will not be repeated to a similar degree in the following years.[16] In addition, the Government has been inefficient in implementing the announced policies (employment rationalisation in general government, privatization and realization of public investments), due to which capital expenditures amounted to less than was planned and the expenses of severance payments were delayed for 2016. We estimate that these one-offs temporarily improved the fiscal result in 2015 by about 1.5% of GDP. On the other hand, at the end of the year, several unplanned liabilities were undertaken (Srbijagas' debt to NIS, liabilities to military pensioners and arrears on agricultural subsidies), which increased the fiscal deficit by over 1% of GDP (RSD 43 billion).

Even though the takeover of these liabilities into the public debt in December 2015 is considered as a one-off expenditure of the budget, it is a fact that such expenses arise each year, again and again, and represent a chronic (structural) problem of Serbian public finance. The problems

16 Similar growth of non-tax revenue based on large transfers to the budget from the still unreformed public and state-owned enterprises would not be economically justifiable either and thus it cannot be a sustainable source of fiscal deficit decrease in medium term.

Figure 4: Contribution of individual factors to the public debt growth in % of GDP, 2012-2015



Source: Author's calculations

of state-owned enterprises and other entities had been "swept under the rug" for years, only to have their debt appear at one point as an unplanned expenditure for the budget. In this manner, in 2013 the unpaid liabilities of the Environment Protection Fund (RSD 5.5 billion) and liabilities of healthcare institutions (RSD 5 billion) were taken over. In 2014, the unplanned expenses practically exploded, reaching RSD 80 billion (over 2% of GDP): the guaranteed debt of public and state-owned enterprises accrued (about RSD 30 billion), costs of the failed banks amounted to about RSD 20 billion, over RSD 9 billion have been paid for the recapitalization of Postanska Stedionica and Dunav Osiguranje, and the unguaranteed debt of JAT of almost RSD 20 billion was also taken over. Such a strong growth of public expenditure to support the unreformed public sector completely annulled any savings achieved in the period 2012-2014 and made all previous attempts at consolidating Serbia's public finances pointless.

The initial fiscal consolidation plan (from the end of 2014) envisaged that the general government deficit should be decreased to about 3.7% of GDP only as late as in 2017, so at first glance it may seem that a three-year fiscal adjustment was successfully completed in a single year. This conclusion, however, is incorrect for several reasons. First of all, we have shown that some temporary factors have contributed to the deficit decrease of 2015, and once these are "cleaned out" we conclude that the deficit was, essentially, somewhat larger. Although significantly decreased, the fiscal deficit in Serbia is still too high and among the highest in Central and Eastern Europe. Even more importantly, a deficit of about 3.7% of GDP does not lead to a halt in public debt growth, as confirmed by the fact that in 2015 as well, the debt increased by quite a substantial 5.2 pp of GDP. A more detailed analysis of the public debt increase structure, however, confirms that an indisputably good result was still achieved in the first year of fiscal consolidation

In Figure 4, we emphasized the contribution of the primary fiscal deficit and the exchange rate movements to the increase of public debt in the period 2012-2015, while the impact of other macro-fiscal factors was shown collectively (real GDP increase, real interest rate, issue of guarantees, etc.). The primary deficit shows the impact of current fiscal policies on public debt increase (as it excludes the expenditures for interest rates, which are the consequence of past deficits) and the achieved fiscal result in 2015 shows, without a doubt, a significant improvement compared to the previous few years. We estimate that the primary deficit contribution to public debt increase in 2015 amounted to about 0.5 % of GDP, compared to the average 3.5 - 4% of GDP in the period 2012-2014. The analysis also shows that one of the greatest risks for sustainability of Serbia's public debt comes from an extremely unfavourable public debt currency structure, where almost 80% of the

liabilities are in foreign currencies (primarily euros and dollars). For several years, trends in foreign currency markets have had a strong impact on Serbian debt and the exchange rate risk will remain one of the greater structural challenges for national public finance in the future as well (for as long as the share of dinar liabilities remains relatively low). Among other factors affecting public debt in Serbia, the real interest rate is especially significant, i.e. the enormous budget expenditures for interest payments (reaching about 3.4% of GDP in 2015). This is the main reason why fiscal adjustments are easier to implement at lower level of debt – the greater the debt, the more drastic the austerity measures need to be to stop its growth (as the inevitable increase of expenses for interest rates has to be made up for).[17]

All in all, in 2015 a permanent decrease of the fiscal deficit of about 2.4% of GDP was achieved (of the planned 4% in a three-year period), meaning that additional savings of about 1.5% of GDP need to be made in 2016 and 2017 to achieve the target. Although it may seem that the largest part of the work has been completed in the first year (about 60% of the total adjustments planned), there are several reasons why the remainder of the fiscal consolidation will actually prove to be more challenging and consequently riskier. First of all, the largest budget savings in 2015 were made thanks to the cuts in public sector salaries exceeding RSD 25,000 by 10% and pensions (on average by 5%), which has now been used up. The second important source of permanent deficit decrease in 2015 is now mostly exhausted too: improved tax revenue collection was achieved practically without a Tax Administration reform, mostly thanks to increased control of production and trade of tobacco and oil derivatives. For additional increase in tax revenue collection (for which there certainly is room, considering the estimated scope of grey economy in Serbia of about 30% of GDP), systematic reform of the Tax Administration is necessary – which takes time. In other words, the fiscal consolidation in 2016 and 2017 must be based on savings from structural reforms, instead of individual measures providing large savings very quickly. However, the implementation of important structural reforms in 2015 did not go as planned and thus failed to set good foundations for the continuation of fiscal consolidation. This seriously jeopardizes the sustainability of the fiscal results achieved in 2015 (and partially reduces the success achieved in that year), but also all savings planned in the medium term as well.

The main leverage for permanent deficit decrease in 2016 and 2017 should have been employment rationalisation in general government, but according to all available indicators, the realization of the initial plan (downsizing by 75,000 or about 15% by 2017) and the expected savings will not even come close to the mark. Comparative analyses results show that the target set was too ambitious and difficult to achieve from the start. First of all, no CEE country managed to downsize their general government by 15% in a three-year period since the outbreak of the crisis, nor to reduce the expenditures for employees by 3.3 pp of GDP – which was the plan for Serbia.[18] In addition, if we look at the number of employees per 100 inhabitants, it turns out that Serbia with a little over 7 employees in general government per 100 inhabitants is actually at the CEE average. This unequivocally indicates that the general government in Serbia does not have 75,000 superfluous employees by any account, which provides additional support to the claim that the original plan was unrealistic. Through an independent analysis we came to the estimate that the final reach of employment rationalisation in Serbia most likely amounts to about 30,000-40,000 employees in general government, meaning that the possible savings in the medium term are about a half of what was planned. However, the fact that the targeted layoffs have not even started in 2015 indicates that even this reduced target will not be reached. It seems that even after more than a year of preparations, there is still no firm plan or sufficient

17 In this way, the fiscal consolidation measures that were used up in vein from 2012 to 2014 are not the only expense stemming from the lack of structural reforms in Serbia. The starting position at the beginning of a new three-year program of fiscal adjustment in 2015 was actually much worse – the public debt increased by about 15 pp of GDP in the meantime, and expenditures for interests almost doubled.

18 According to Eurostat data, the largest decreases in expenditures for employees were achieved by Lithuania and Romania (by 3 pp of GDP), Latvia (2.5% of GDP), Portugal (2.2% of GDP) and Estonia (1.5% of GDP) – but in a period of five years. In addition, it is important to note that in certain countries, a large part of this decrease in expenditures for employees can be explained by a sharp salary cut (even up to 30%) rather than by downsizing.

decisiveness to implement these measures, or to reform the largest public systems (education, healthcare, defence, etc.) that should follow through with this plan. This is substantiated by the fact that the newest deadlines for the final beginning of targeted layoffs have been moved, yet again (although it was announced that the number of employees in January 2016 will be decreased by 9,000 it did not take place).

The remaining planned austerity measures in 2016 and 2017 do not seem too credible at the moment either. The second most important fiscal consolidation measure in these two years should be the salary freeze in the public sector and the pension freeze, but this was partially given up on at the end of 2015. Even though the increase was modest, with the expectedly low inflation in 2016, practically none of the savings originally planned from the freeze will actually be made in this year – even if there are no new raises. However, the pressures on Government to repeat this to a certain extent in this year or in 2017 can only be larger. Another obvious risk is the planned decrease of agricultural subsidies, being that a similar plan in 2015 failed completely. Instead of a RSD 6 billion decrease, the actual liabilities for agricultural subsidies were RSD 10 billion higher than planned for in the budget – which, at the end of the year, was included into Serbian public debt. In order to achieve these savings, it has been envisaged that incentives by hectare in 2016 should be about a third of the usual incentives from the previous years. We estimate that such a radical turn in agricultural subsidy policies will very likely be severely tested in practice (due to possible pressures from agricultural producers on the Government), which is why it could easily transpire that the budgeted funds do not suffice.

Despite certain improvements, there has been no tangible progress in 2015 with regards to the reform of public and state-owned enterprises, so there is still danger that their business failures may lead to new expenditures for the budget. What's more, it is now fairly evident that Petrohemija's debt to NIS and the guaranteed debt of the RTB Bor will accrue in 2016 (a total of EUR 100 m, or 0.3% of GDP). The greatest success was that certain organisational changes had been implemented in EPS and Zeleznice (which were divided into four companies). However, the main problems of state-owned enterprises and the sources of their poor business performances – redundant employees, prices below market level, low debt collection, technical losses and many others – have not been resolved, not even close. A part of the improvements in 2015 stems from the external environment and is the consequence of the currently very low oil prices on the world market. This was reflected in Srbijagas' level of debt collection for the delivered gas, but not as a result of successful restructuring of its debtors (the petrochemical complex, Zelezara Smederevo and others), which is why this success is only temporary. A positive change in 2015 is the resolution of the status of companies undergoing privatization which has finally begun, although this process is unfolding much slower than planned (if we observe the number of employees still employed in these companies, about a third of the problems have been resolved). Even more importantly, there are still no permanent solutions for the most problematic companies (RTB Bor, Resavica, Petrohemija, Galenika, Simpo and others from the group of strategically important companies), which represent the highest potential fiscal risk. Their final status (privatization or bankruptcy) should be known by May 31, 2016 (when the state's protection of these companies from the creditors' claims will cease), but there are already indications of temporary solutions being planned for a large number of these companies, which are not sustainable in the long term. As an example, the deadline for the resolution of the status of RTB Bor will only be delayed, by all indicators available. There is a group of (unsuccessful) companies which are planned to be merged with larger state entities, so that their business operations would still essentially depend on the state (such as linking Resavica and EPS or merger of certain companies into the military industry), which can hardly constitute a sustainable solution.

Fiscal plans for 2016 and 2017 promise permanent savings of about 1.5% of GDP "on paper" and a deficit decrease to 2.7% of GDP, but our analyses show that there is a substantial risk that at least a half of the planned structural adjustments will not take place. Due to premature relaxation and insufficiently prepared measures, the fiscal deficit in Serbia could very easily stop at a permanent level of 3.5% of GDP (with small fluctuations from time to time)

– which is insufficient to halt the public debt growth and for successful fiscal consolidation. On the contrary, the public debt would continue to increase over 80% of GDP, with further increase in interest payments, which would mean that all the sacrifices from 2015 would have been in vain (again). Moreover, even if all the planned austerity measures in 2016 and 2017 were to be implemented consistently (which does not seem likely at the moment), that too could prove to be insufficient if a full control of business operations and the necessary reform of public and state-owned enterprises are not implemented. On the other hand, a more efficient suppression of grey economy could somewhat mitigate the existing fiscal risks, but not make up for the firm fiscal consolidation measures. Relevant analyses show that, in medium term, it is possible to achieve an increase in tax revenue collection in Serbia by about 0.8-1.1% of GDP, with systemic measures for the suppression of grey economy. In the first place, this means a thorough reform of the Tax Administration; the main obstacles for a more efficient work of this institution have already been recognized – the current organisational structure, which is not rational, needs to be improved, human capacities strengthened and a unified information system introduced.

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Japan Tobacco International in Serbia

JTI in figures

Japan Tobacco International is a member of the Japan Tobacco Group of Companies, one of the leading international tobacco manufacturers in the world. With headquarters in Geneva, Switzerland, and around **26,000** employees, JTI has operations in more than **120** countries. Since purchasing the Senta Tobacco Industry in 2006, JTI has invested almost **170** million dollars in Serbia, modernized the production facilities, and launched the production of cigarettes and their export into Montenegro, Bosnia and Herzegovina, Macedonia, Croatia and Albania, as well as the export of tobacco to EU. The value of the export at the end of 2015 was USD **174** million. It's estimated that JTI is the fourth largest tax payer in Serbia with contribution to the state budget of nearly **25** billion dinars in 2015. JTI is the largest tobacco producer in Serbia, it engages more than **380** tobacco growers and seasonal workers annually and employs more than **350** people in the West Balkan region.

Top global employer

Internationally and locally received awards confirm that JTI is considered to be one of the best employers in the world. Thanks to leadership and human resources management, corporate values, employee development, feedback and career planning, JTI is the only company in Serbia which received the prestigious international *Investors in People* certificate. Another international recognition arrived in 2016 from the Top Employers Institute, which awarded JTI in Serbia the Top Employer Global certificate in 2016 as part of the program which aims to recognize companies that provide their employees with the best conditions for personal and professional development on a global level.

Commitment to the local community

JTI is strategically oriented towards supporting the community it operates in. With the aim of continually contributing to improving its fellow citizens' lives, on both a local and national level, the company initiated and joined a number of projects in Belgrade and Senta, where the JTI factory is located. In collaboration with the Embassy of Japan, JTI has presented numerous Japanese artists in Serbia, such as Gocoo drummers, the traditional Japanese band Wariki, cellist Mineo Hayashi and many others. Years of commitment to numerous projects in the field of corporate philanthropy were recognized by the Trag foundation, which awarded JTI the prestigious Virtus award for 2015 for contribution to the local community in which the company operates.

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INFLATION TARGETING AND DISINFLATION IN SERBIA*, **

Inflaciono targetiranje i obaranje inflacije u Srbiji

Abstract

This paper provides a brief overview of the existing monetary policy strategies and their advantages and weaknesses. The analysis highlights the strengths of the flexible inflation targeting regime and its role in disinflation processes in countries with high inflation history. It then focuses on Serbia and discusses monetary policy instruments within the flexible inflation targeting regime which have spurred the stabilization of inflation at a low level over the past three years. In addition to prudent National Bank of Serbia (NBS) interest rate policy, the analysis suggests the role of: (i) significant improvement of NBS communication channels and transparency which enabled anchoring of inflation expectations; (ii) interventions on both segments of the foreign exchange market which reduced excessive daily exchange rate volatility and hence business conditions uncertainty with no impact on the long-term gradual depreciation trend; (iii) changes in the structure of open market operations which strengthened the market elements in liquidity operations and reduced excessive liquidity as well as changes in the reserve requirements policy which favored the long-term sources of external financing. We conclude with some challenges and opportunities for the monetary policy in the future.

Keywords: *inflation targeting, inflation expectations, monetary policy, forward guidance, policy rate*

Sažetak

Rad pruža kratak pregled postojećih strategija monetarne politike uključujući njihove prednosti i slabosti. U analizi je poseban naglasak stavljen na jake strane režima fleksibilnog ciljanja inflacije i njegove uloge u procesu obaranja inflacije u zemljama sa istorijom visoke inflacije. Posle toga fokus je pomeren na Srbiju i analizu instrumenata monetarne politike u okviru režima fleksibilnog ciljanja inflacije koji je stabilizovao inflaciju na niskom nivou tokom poslednje tri godine. Pored prudencijelne politike kamatnih stopa NBS, analiza ističe ulogu: (i) značajnog unapređenja komunikacionih kanala i transparentnosti NBS što je omogućilo usidravanje inflacionih očekivanja, (ii) intervencija na oba segmenta deviznog tržišta što je smanjilo preveliku dnevnu volatilnost i neizvesnost u uslovima poslovanja bez uticanja na dugoročni trend postepene depresijacije i (iii) promene u strukturi operacija na otvorenom tržištu koje su jačale tržišne elemente u operacijama likvidnosti i smanjivanja viška likvidnosti, kao i promene u politici obavezne rezerve koje su podsticale dugoročne izvore spoljnog finansiranja. Na kraju smo ukazali na neke izazove i mogućnosti pred kojima se nalazi monetarna politika.

Ključne reči: *ciljana inflacija, inflaciona očekivanja, monetarna politika, usmeravanje očekivanja (forward guidance), referentna kamatna stopa*

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Introduction

The health of the overall economy and society is closely related to the health of monetary system of every country. Experiences with high inflation in some countries, including Serbia with two hyperinflationary episodes, whereby the one occurring in 1993-94 had the form of classical hyperinflation (the second highest in economic history), has increased the awareness of social and economic costs of inflation.

As the phenomenon of an exorbitant change in the price level, inflation affects the crucial signal effect of prices in a market economy. This substantially aggravates the process of decision making by consumers, businesses, and the state, thus decreasing their efficiency. When an increase in prices endangers the signal function of prices, then the allocative function of prices – the essence of a market economy – is also affected. When prices remain without their allocative function, the basic preconditions for the functioning of a market economy disappear.

Economic theory has offered numerous research studies and findings of the costs imposed by inflation on society and citizens and how inflation can be brought under control. An increase in prices brings numerous elements of uncertainty that endangers economic growth and aggravates the planning of business decisions. At the same time, as a specific form of taxing market participants, including citizens and firms, as well as the state itself, inflation causes a massive redistribution of wealth and power in society. On the other hand, deflationary experiences suggest that deflation can as well have worsening disturbing effects on the business decisions of the market participants and consequently on economic growth. Thus, a consensus has been reached in economic theory and increasingly globally among economic policy makers that achieving price stability is extremely important and that low and stable inflation is the most important monetary policy (MP) goal since that is the best way to ensure sustainable economic development over the long term.

At one time, Nobel Prize laureates *Paul Samuelson* and *Robert Solow* [30] argued that work by *A. W. Phillips* [28], which became known as the Phillips curve, suggested that there was a long-run trade-off between unemployment and inflation. Such a view implied that economic policy makers had to choose between two concrete goals – inflation and unemployment – and decide how high an inflation rate would be acceptable to achieve a lower rate of unemployment (in their opinion, this was a classical trade-off). *Samuelson* & *Solow* even argued that the nonperfectionist goal of a 3% unemployment rate could be achieved at what they considered being not-too-high inflation rates of 4-5%. Their view was very influential, but it was of no use when the inflation rate in the United States and other industrialized countries rose to over 10% in the 1970s and not what they expected (4-5%). The United States plunged into an inflationary whirlpool, which is known in theory as the "Great Inflation." The trade-off suggested by *Samuelson* and *Solow* was strongly challenged by *Milton Friedman* [11] and *Edmund Phelps* [27], who independently argued that there was no long-run trade-off between inflation and unemployment; rather, the economy should gravitate toward some natural rate of unemployment, in the long run, no matter what the rate of inflation was. In other words, the long-run Phillips curve would probably be vertical while the efforts to lower the rate of unemployment below the natural rate would only result in higher inflation. The Friedman-Phelps natural rate hypothesis was immediately adopted and incorporated into numerous formal econometric models. Bearing in mind that a long-run Phillips curve trade-off led to the "Great Inflation" central banks (CBs) adopted the natural rate hypothesis or, in other words, that there was no long-run trade-off. Consequently, for conducting economic policy, it is essential not to have a long-run trade-off between inflation and employment. The countries with the highest inflation rates are also the ones with the highest money growth rate. This evidence led *Milton Friedman* [11, p. 39] to make his famous statement: "*Inflation is always and everywhere a monetary phenomenon.*"

The experience of the current crisis, known as the Great Recession (GR), suggests that financial stability is also needed for price and output stability. Before the GR, it was held that price and output stability provided the basis for financial stability. However, the success of CBs in stabilizing inflation and reducing business cycle fluctuations before 2007 ("Great Moderation") failed to

protect the economy from financial instability and plunging into the GR. Analyzing a series of crises and comparing them with the current one, *Carmen Reinhart* and *Kenneth S. Rogoff* [29] pointed out that crises are causing deep financial disruptions always had longer recovery periods, and unemployment was decreasing at a slower pace.

Therefore, over the last few years, CBs have been faced with two, equally important tasks: to achieve low and stable inflation, on one side, and to ensure financial stability, on the other. This paper will primarily deal with the first task, price stability, and where necessary the financial stability problem will also be addressed. Further research will also be geared toward financial stability.

Theoretical aspects of conducting MP strategy

We have seen that price stability is very crucial for the long-term health of an economy. According to *Frederic S. Mishkin* [20, p. 366], price stability can be defined as low and stable inflation. In the process of achieving price stability, MP uses nominal anchors (NA); those are nominal variables which link the price level with achieving price stability. The role of NA is to keep the defined nominal variable within a narrow range for the purpose of promoting price stability. To that end, an NA is a guide to low and stable inflation expectations. The key to MP success lies in defining a credible NA, which will ensure low and stable inflation over the medium and long term by anchoring inflation expectations.

The second reason for establishing an NA is that it can be an obstacle to emerging time-inconsistency problems (TIP) in which MP is conducted on a discretionary, day-by-day basis; if for example, the CB performs discretionary MP, which is more expansionary than expected by the market participants, inflation expectations will not increase. However, as soon as market participants realize that the CB conducts expansionary policy, inflation expectations will begin to rise, which will inevitably cause an increase in prices and wages. Therefore, it is recommended that the CB should not try to surprise the public with expansionary MP episodes because long-term inflation-related results will be better. However, if the CB conducts MP that will fall into the TIP trap, long-term outcomes will be poor.

In a technical sense, an NA enables a uniform price level determination, which is essential for achieving price stability, coupled with the lowering of inflation expectations. At the same time, the NA limits discretion and eliminates the TIP, which arises when politicians pursue short-term interests instead of long-term ones.

What MP strategies are now available to CBs and what are their crucial advantages and disadvantages?

Certain academic circles in the world advocate a return to the gold standard. To what extent this idea is now acceptable? Before World War I, the world economy functioned under the gold standard regime where the currencies of most countries were directly convertible into gold at fixed rates [20, pp. 433-434]. Under this regime, the value of the national currency is expressed in gold units and the state is obliged to buy and sell gold at a fixed price. In essence, the gold standard can be treated as a specific case of the fixed exchange rate, or as commodity price level targeting. It should be pointed out, however, that this is the most rigid monetary regime which is appropriate for fiduciary money. In essence, under this regime interest rates adjust to gold price changes. And when the question about the gold price is raised, the question of how to target the gold price instead of the prices of goods and services is raised as well.

Is the possible alternative a return to coins? By the nature of things, it is clear that under conditions of a globalized economy in which electronic deposit money is dominant, it is clear that such an alternative is impossible. Is it possible to return to the Bretton Woods system where the United States guarantees the conversion of its dollar into gold at a fixed price (but only to other countries)? This alternative is not suitable either because there is no direct relationship between gold stock and money supply. If CBs opt for the establishment of a direct relationship between high-powered money (Mh) and gold, then Mh will have to be 100% backed by gold. This means that CBs will be converted into a gold-based currency board with the unit of account (USD, EUR) defined regarding one fine ounce of gold. *Barry Eichengreen* [7], [8], [9] analyzed all problems and dilemmas associated with the gold standard, and he concluded that key problems of the gold standard include:

(i) Transactional problem – the total value of gold held by CBs in the world today amounts to about USD 1,300 billion while the global deposits of the banking system to over USD 60,000 billion;
(ii) Instability – such a system can generate very high gains to gold owners and on a global scale about 90% of gold is now privately owned; the question that imposes itself is how to determine the initial price of gold and how to transfer gold itself from one place to another, and
(iii) Credibility – the experience of the 1930s warns that demand-pull inflation will squeeze out the mentioned unit of gold weight over time.

If the gold standard is not a valid alternative for MP strategy to keep inflation low and stable under contemporary conditions, what NAs are then available? *Mishkin* [16], [18], [20] gives the following five alternatives:

(1) *Exchange rate targeting* (*ERT*) – As an NA, ERT has a long history and has proved effective in bringing down inflation quickly in those countries which could not ensure low and stable inflation, and the independence of their CBs (*Pranjul Bhandari* and *Jeffrey A. Frankel* [2]; *Mishkin*, [17], [19], [20]).

ERT can have two versions:

(i) "Soft pegs", which involve pegging that is not institutionalized; this means that it is highly susceptible to a speculative attack and currency crises, as shown by the experience of Latin America, East Asia, and Turkey – due to which this MP strategy was abandoned, and
(ii) "Hard pegs", which can rapidly break inflation psychology and stabilize the economy; this version is suitable for countries with weak political and monetary institutions, since it produces fast results; however, a sustainable stabilization policy of this ERT version implies – at least over the medium term – the conduct of a rigorous prudential supervision of the financial system and sustainable fiscal policy;

The crucial characteristics of ERT as MP strategy are:

(a) Information on achieving the goal are immediately evident, which makes it transparent;
(b) MP loses its independence since shocks from the country whose currency was used for anchoring are directly transmitted to the country in which targeting is implemented (among other things, through interest rates), and
(c) The loss of the possibility to respond to domestic shocks, which leaves the anchoring country susceptible to speculative attacks.

(2) *Monetary targeting* (*MT*) – Under this regime, the selected nominal variable is targeted. As a rule, it is one of the monetary aggregates M. Since ERT was not a favourable solution in many industrialized countries, they opted for the MT, primarily under the influence of *Milton Friedman*'s monetarism [11]. According to *Mishkin* [20] the crucial MT characteristics are:

(a) The main advantage of MT about ERT lies in the possibility that the CB adjusts MP to domestic problems; the CB selects the level of inflation, which can differ from that in other countries, and also enables a response to output fluctuations;
(b) Under the MT regime, like in the case of ER, information on the achievement of the goal is immediately evident, and
(c) On the other hand, the mentioned MT advantages depend directly on the fulfillment of a very specific precondition: (i) there must exist a reliable relationship between the goal variable (inflation or nominal income) and the targeted aggregate; the highest risk of this MP regime stems from the following: if the velocity of money is unstable, then this relationship is weak and the monetary aggregate will not send a reliable signal on the MP stance; this calls into question the ability of the MT regime to serve as the communication tool that increases MP transparency and makes the CB accountable to the public; in the 1990s MT was adopted in several countries, but the form of its implementation differed completely from M. Friedman's strategy based on the constant money supply growth rule; in the United States, Canada and the United Kingdom (UK) MT proved successful in inflation control; the implementation of this regime in Germany and Switzerland served as a communication method which is, in a way, similar to IT; all things considered, MT had a

limited success because the demand for money is unstable due to innovations in financial markets.

(3) *Inflation targeting* (*IT*) – Since the 1990s, IT has been gaining in significance (New Zealand, Canada, the UK, Sweden, Switzerland, Australia, Chile...) so that today it is implemented by nearly 30 countries (in an explicit form). This MP regime was especially popularized by *Frederick Mishkin* [17], [19], [20], *Lars E. O. Svensson* [31], [32], [33] and *Ben Bernanke* (2004) in some their works. The IT regime is characterized by the following five elements [20, pp. 371-372]:

(i) The public announcement of medium-term numerical inflation targets, including upper and lower tolerance bands;

(ii) An institutional commitment to a) price stability as the primary goal of monetary policy and b) the attainment of the inflation target;

(iii) An information inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate (ER), are used in decision making, coupled with the decreasing role of intermediary goals (like monetary growth):

(iv) Increased transparency of MP strategy through communication with the public and markets about plans, objectives, and decisions of the monetary authorities, and

(v) Increased accountability of CBs for attaining the inflation targets.

The fulfillment of all five IT preconditions points out that this MP regime is much more than just the public announcement of the numerical target for inflation over the medium term. As a medium-term MP strategy, by influencing three aspects of monetary policy – its constraints, objectives, and beliefs, it has several advantages over the mentioned alternatives (*Mishkin* [16], [17], [20], *Carl Walsh* [37]):

(a) In contrast to ERT, but similar to MT, IT enables MP to focus on the domestic situation and shocks in the domestic economy;

(b) IT has an advantage over MT because it is not linked to a stable relationship between money and inflation – in IT this relationship is not essential; rather, it uses all available information to determine the best set of MP instruments;

(c) IT is easily understandable to the general public and, thus, it is transparent – the explicit inflation target increases the accountability of CBs, thus reducing the probability of facing the temporal inconsistency problem; a medium-term numerical goal may not always be achieved, but there is an open possibility of responding to short-term shocks;

(d) Like ERT, IT is understandable to the public, and transparency (it is less probably that MT will be understandable to the public) increases the accountability of CBs; the increased accountability of CBs reduces the danger of temporal inconsistency. At the same time, by formally committing to a publicly announced target, IT could influence private sector inflation expectations and allow the CB to achieve some of the gains from an optimal commitment policy; and

(e) By aligning the public's expectations of the target inflation rates with the CB's goal, lower inflation could be achieved without a negative effect on real economic activity, that is, without an associated increase in output volatility.

The mainstay of IT, as MP strategy, is the announcement of a medium-term numerical target for inflation, in an institutional commitment to have price stability as the primary goal of MP. This NA includes a large amount of information and series of variables in decision making, which are not only monetary ones. The essential characteristic of IT is the increased transparency of MP strategy through communication with the public and the market concerning the plans and goals of MP makers, coupled with the increased accountability of CBs for attaining the inflation target.

Responding to the remarks that IT is a rigid regime with excessive focus on inflation, *Lars E. O. Svensson* [32] advocates introducing "flexible" IT with the target criterion which involves not only the projected path of the inflation rate but one or more other variables, such as a measure of the output gap, as well. In this way, the

problem of IT rigidity is eliminated, while a modern concept of IT is flexible.

In the countries that failed to keep IT within the desired limits, either due to the implementation of structural reforms or fiscal consolidation, so that IT is conducted on a phase-by-phase basis because MP failed to maintain the inflation target as the main objective, the MP sub-regime known as "Inflation Targeting Light" is applied (ITL, *Carare* & *Stone*, [4]). The most frequent cause of failure lied in the absence of a sufficiently strong fiscal position. ITL is often applied as a transitional solution for maintaining monetary stability until the implementation of structural reform, after which a flexible IT targeting regime is applied.

(4) *MP without an explicit NA* (*FED's "Just Do It" approach*) – This is the MP strategy conducted very successfully by the Fed since the 1980s. During that period, an implicit NA was used, not an explicit one, to (or "intending to") ensuring long-run inflation control. Also, this strategy involved forward-looking behavior, which consists of careful monitoring for signs of future inflation, coupled with so-called "preemptive strikes" against the threat of inflation. The forward-looking character of preemptive actions is in line with work of *Friedman* [11] who first pointed out that the effects of MP have very long time lags due to price inertia such that MP would need 12 months to have an effect on output and over 24 months on inflation. Since this regime has no explicit NA, it is known as a "Just Do It" approach. The regime is less transparent than IT and is susceptible to undesirable shocks. The key assumption for its success is a high CB credibility.

Faced with the problem of conducting MP during the GR, the FED abandoned an implicit NA on 25 January 2012 and de-facto switched to flexible IT [20, p. 380].

(5) *Nominal GDP targeting* (*NGT*) – Nominal GDP targeting as an NA was especially popularized in academic circles during the current crisis [2], but is not operatively conducted by any CB in the world. In essence, NGT can be reduced to an IT version in which the CB targets the growth of nominal GDP – NGDP (NGDP = real GDP x price level); for example, if the CB's IT is 2%, and the expected GDP growth 3%, it follows that the nominal goal is to achieve 5% NGDP growth. NGT has the elements of the IT regime because the targeted rate of NGDP growth is related to the chosen numerical target for inflation. NGT implies that the CB will respond to a slowdown in economic activity even if inflation is not declining; given the unchanged inflation rate, a decline in GDP will bring about a decline in NGDP, so that the monetary authorities are obliged to conduct an expansionary MP.

The motive for NGDP targeting in this literature is to achieve a credible monetary expansion and higher inflation rates, which are quite the opposite of the context that *Meade* [15] and *Tobin* [36] had in mind when they established NGT. This flexibility of NGT, as a practical way to achieve the goal of the day, be it monetary easing or tightening, and its focus on stabilizing demand are longstanding advantages.

The potential advantage of NGT is focusing not only on IT but also on real GDP; when real GDP growth is below the potential one, or IT is below the goal, it is necessary to conduct expansionary MP in order to increase aggregate demand, which can be very useful under conditions at a "zero-lower bound" rate.

The potential disadvantages of NGT are:

(a) The assumption for a successful implementation of NGT is a very reliable assessment of GDP growth, which can pose a problem; IT is strongly focused on inflation, which can cause excessive fluctuations in GDP (although this was more or less overcome under the flexible IT regime) – under the NGT regime, the nominal rate of GDP growth is targeted and not inflation (NGP growth contains an increase in prices /IT/ as well as NGDP growth); should real GDP decline, IT would automatically increase, which will result in lax MP; the most delicate issue is the rate of NGDP growth which will be announced. The GDP estimates are frequently changed. The data on prices (IT) are more frequent than NGDP data, and

(b) By its nature, NGT is much more difficult for communication with the public than IT; moreover, it can even be confusing (the IT concept is much better understood in the public, because the inflation rate is widely recognized by the public).

Looking at the survey of relevant literature, it can be concluded that under present conditions flexible IT emerges as a dominant MP strategy. An important element in conducting this strategy is the targeted level of inflation. In practice, all countries with IT opt for some medium level of the inflation target that is substantially above zero (New Zealand 1-3%, Canada, Sweden, Switzerland and the UK 2%, Australia, Iceland and Norway 2.5%, Poland 2.5±1%, the Czech Republic 2±1%, Israel 1-3%, Hungary 3±1%, Brazil 4.5±1%, Chile 3±1%, Thailand 0.5-3%, South Africa 3-6%, Mexico 3±1%, South Korea 3±1%, Romania 2.5±1%, Serbia 4±1.5%, Turkey 5±2%, Albania 3±1%...).

Why as a rule inflation is targeted at 2%, that is, much above 0%? *Mishkin* [20, pp. 382-383] argues that should inflation be targeted at a lower level, at 0.5%, for example, too low inflation can generate negative effects on the real sector and GDP, coupled with a serious threat of plunging into deflation, which could result in financial instability. Consequently, targeting 0% or 0.5% would certainly be very risky. Another problem is related to the threat of facing the zero-lower bound and liquidity trap problems. However, this threat is minimal at the target level of 2%. Analyzing price and wage stickiness *George Ackerloff* [1] points out that 2% IT leaves room for eliminating price and wage disparities. Experience has shown that maintaining the inflation target above 0% (but not too much above) over a longer period does not lead to the instability of inflation expectations or decline in CB credibility.

The controversial work of *Oliver Blanchard*, *Giovanni Dell'Ariccia*, and *Paolo Mauro* [3] advocated an increase in IT to at least 4%. What happens with the real interest rate (RIR = ir = i – πe) when the nominal interest rate (NIR) is 4%? Since the essence of a conventional MP is NIR management, when interest rates drop to 0%, the room of 4% allows wider maneuvering; consequently, what led Blanchard and his associates to advocate an increase in IT was the problem of zero-lower bound (ZLB) on the policy rate because the degree of limitation declines with an increase in the target. For example, the goal of 0%, would not be desirable because the RIR could not decline enough and remain an incentive for aggregate demand. This argument is theoretically sustainable, and an increase in IT has its advantages and its risks. However, the price of this solution is very high. Namely, the advantages of this solution exist only in combination with the ZLB problem, and those episodes are rare while the costs arising from distortions caused by a rise in inflation are enormous. Economic theory has taught us that it is much more difficult to stabilize inflation at the level of 4% than at the level of 2%, and when inflation increases above 2%, the public changes its expectations, and there is a growing suspicion that the CB credible goal is price stability – if it can be 4% then why it cannot be 6% or 8%. The previously mentioned US experience of the 1960s, coupled with the support of Nobel Prize laureates *Samuelson* & *Solow* to the tolerance of 4-5% inflation rates, ended in a dramatic increase in inflation, which could not be curbed anymore. Inflation increased to more than 10% in early 1980, which was followed by *Paul Volcker's* very expensive reigning in inflation. In this regard, Serbia's experiences are also very illustrative and warning at any moment.

The experience of industrialized countries has shown that flexible IT is MP strategy that achieves the best results regarding maintaining low and stable inflation. Flexible IT emphasizes the attainment of the goal over the medium term (2-3 years), which also enables the attainment of other goals over the short term such as, for example, output. Flexible IT strategy contains the defined rule on achieving price stability over the medium term but, within it, the CB has the discretion to respond to shocks, which is known in theory as "constrained discretion" in the commitment rules versus discretion. As a response to the problems brought by the Great Inflation, CBs achieved greater independence from the government, while becoming more transparent and accountable to a set of prespecified rules. This was the period known as the Great Moderation, the triumph of rules over discretion and the overcoming of TIP, which was followed by a consensus on the mandate of CBs: low and stable inflation. On the other hand, a number of emerging markets adopted IT in the period when their current inflation was above the long-run sustainable level and used strategy as the basic tool to increase their credibility, anchor inflation expectations and embark on the process of convergence towards stable and low inflation, Some countries (Israel, Chile, Mexico,

Peru) initiated the process when inflation was at a distinctly high level (15-45%), while a significant number of them had two-digit inflation at the beginning (such as the Czech Republic, Hungary, Colombia, and Serbia). In such situations, the introduction of a strict IT concept would have an uncertain effect on the reduction of inflation, coupled with potentially large negative effects on output. Therefore, most countries adopted a gradualist approach, implying a phased disinflation process, combined with the communication of the CB commitment to attaining the inflation target within a specified time-limit. The empirical experience of these countries (*Goncalves* & *Salles* [12], *Lin* & *Ye* [14], *de Mendonca* & *Souza* [5]) has shown that, after adopting the IT regime, emerging markets recorded a greater decline in the level of inflation and output volatility compared to non-IT countries during the same period.

Under the IT regime, CBs differ in terms of (i) a concrete inflation target (headline or core inflation / headline inflation, excluding more variable components of the adopted price index, such as food and energy/, with or without the inclusion of government-controlled prices); ii) the level and range of the inflation target; iii) the time horizon in which the target is attained (one year or longer, bearing in mind lags in the effects of monetary policy); iv) the type of accountability if the target is not met (in the disinflation process CBs usually have a stronger preference for overshooting the target range of inflation than for undershooting); (v) the existence of escape clauses (in the case of the defined significant external shocks /supply-side/ the goal is not binding). In conducting MP strategy, CBs can use different instruments. Under the IT regime, the primary role is played by the policy rate within open market operations (OMO) with an aim to directing price increases towards the targeted level. Depending on the characteristics of an economy, the additional instruments that are used include discount policy, reserve requirements (RR) policy, the interest rate on RR, interventions in the foreign exchange market, large-scale asset purchases and forward guidance (FG). The motivation for and experience with the choice of each element of MP's IT strategy and instruments requires a special analysis which is beyond the scope of this paper. In continuation, we will briefly focus on the role of FG under the IT regime, bearing in mind the relatively limited discussion about this MP instrument in domestic literature. In continuation, we will also analyze the recent inflation trends in Serbia.

The role of forward guidance

Forward guidance (FG) is the term used by CBs to communicate what their future MP will be. By using FG, CBs aim to influence the expectations of market participants and reduce uncertainty in markets. The underlying mechanism relies on the assumption (long-present in the literature) that the market participants' current behavior reflects their expectations about the future which itself depends on the expected path of the future interest rates and monetary policy stance.

FG about future policy settings, in the form of a published policy-rate path, has for many years been a natural part of normal MP for several CBs (the Reserve Bank of New Zealand and the Swedish Riksbank). Recently, the FED, the Bank of Canada, the ECB, and the Bank of England have used different forms of verbal FG to affect market expectations about future policy settings. The FG has been introduced by these CBs in the context of a binding lower bound for the policy rate [33]. It has been used as a way of implementing a more expansionary policy when the policy rate has been restricted by a lower bound. That kind of FG is a normal part of the policy and communication of these CBs. These CBs all pursue flexible IT in some form, meaning that the objective of the policy is to stabilize both IT around an announced inflation target and resource utilization around its long-run sustainable rate. In January 2012, FOMC of the FED (2012) adopted a very transparent flexible IT. *Svensson* [33] believes that there are good reasons why FG, in the form of publishing a policy-rate path, has become a normal part of flexible IT for several CBs.

Economists sometimes refer to two broad forms of FG: Delphic and Odyssian [13]. In the classic Delphic version of FG, the CB states its economic outlook without any further commitment. This form of FG tends to affect short-term interest rates. However, when the short-term rate has a natural floor at zero or is at the ZLB, a stronger

signal is needed from CBs to stimulate their economies. Odyssian FG at the zero bound involves trying to convince markets that once the economy eventually recovers the CB won't move interest rates straight away and will instead wait longer before responding to rising inflation and growth. This raises the disposable income of borrowers, encouraging more activity in the economy.

The main objective of FG thus is to steer not only short-term but also medium-term market expectations of the interest rates (i.e. affect the shape of the yield curve). By doing so, the monetary authorities strive to align better broader financial conditions with their macroeconomic scenario in order to deliver an appropriate level of monetary stimulus or restraint. FG in which the CB is obliged to keep the policy rate low for a longer period of time is thus another way of reducing long-term interest rates relative to short-term one and hence an RIR reduction for investments.

Inflation targeting in Serbia

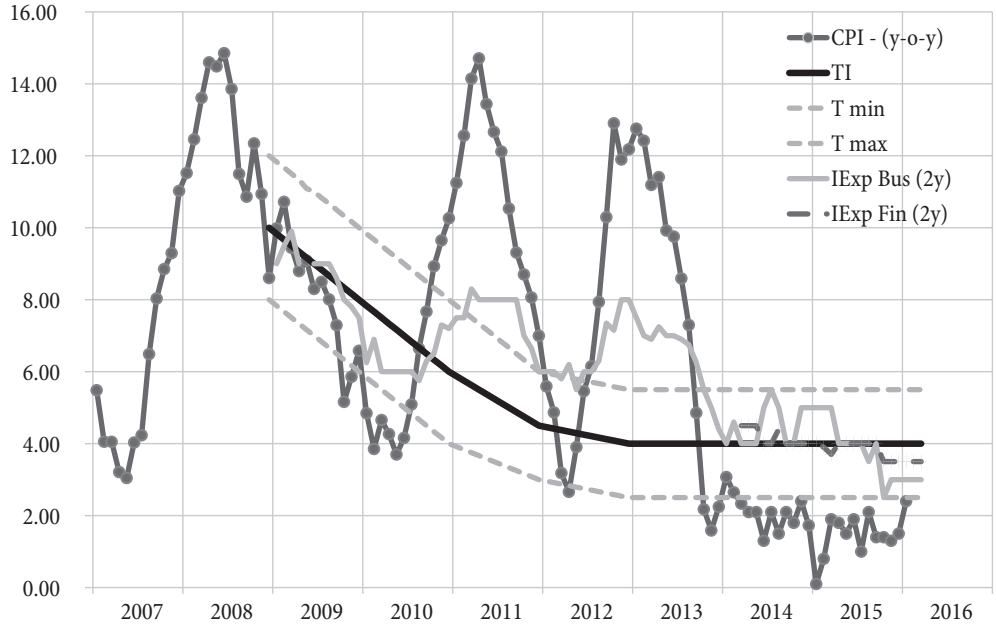
Serbia had bitter experience with inflation and the collapse of its national currency. The most severe case of that collapse occurred in 1993 when Serbia plunged into the second highest classical hyperinflation in human history, which ended in a complete destruction of the national currency, the dinar, in January 1994, when the "new dinar" was introduced. The experiences of that period are still present in businesses and among citizens due to which the issue of conducting MP in Serbia is very delicate. All market participants are very cautious. They have bitter experience so that their expectations quickly adjust to rational expectations.

Over the past 13 years, Serbia has applied different MP strategies, whereby de facto ERT (in some form) and IT (officially) have been dominant. An analysis of the specificity of introducing IT into Serbia has been prepared by *Dragutinović* [6]. The applied strategies included:

(i) January 2003 – September 2006: ERT regime coupled with crawling peg;
(ii) September 2006 – December 2008: ERT coupled with managed (dirty) float; and
(iii) January 2009 to present day: flexible IT.

Figure 1 shows inflation movements in Serbia since 2007 (CPI), the inflation target with the lower and upper limits (TI, Tmin, and Tmax) as well as movements in inflation expectations for next two years of business (IExp Bus) and financial sector (IExp Fin). One can observe a high volatility of the year-over-year inflation rate until 2013, its abrupt lowering in 2013 and, finally, its decline below the inflation target in October 2013 where it has remained to the present day.

Figure 1: Monthly inflation rate in Serbia (y-o-y, %)



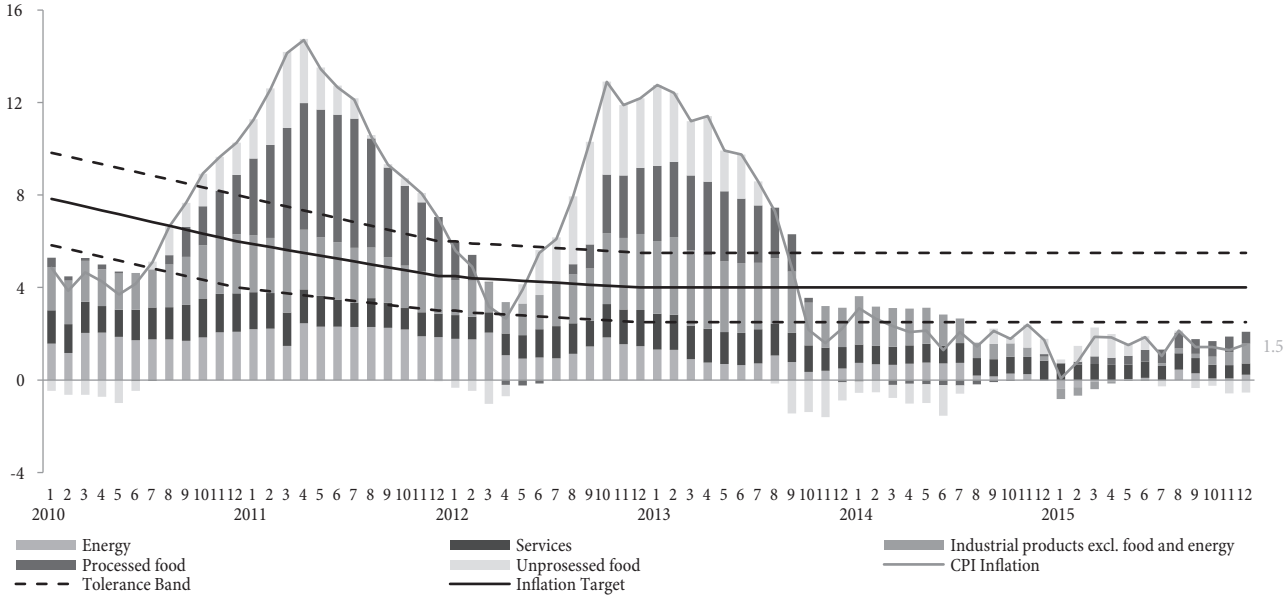
Source: Inflation Report – February 2016. National Bank of Serbia

Figure 2 shows the decomposition of inflation into its basic components over the past five years. The movements show that food prices display high volatility, which significantly contributed to the acceleration of inflation during 2011 and 2013, and whose effect diminished during the recent period. The decline in energy prices during 2014-15 influenced a fall in inflation while the contribution of the prices of industrial products (and, to a lesser degree, the prices of services) to overall inflation was significantly reduced after 2013. An analysis of the components of overall inflation shows that one part of the latest fall in inflation was associated with a global decline in the commodity and energy prices, as well as a lower domestic aggregate demand due to a fall in GDP in 2014 and the effects of the fiscal consolidation process. However, a significant part of disinflation movements is related to the policy conducted by the NBS in this period. In what way the NBS succeeded in curbing inflation and maintaining it at a stable and low level for 30 months already?

Since mid-2012, while keeping the MP strategy unchanged (flexible IT), the NBS has, in our opinion, applied MP instruments which, with typical time lags [11], had a disinflationary effect and spurred the stabilization of inflation at a low level from October 2013 to the present. *Tabaković* [34], [35] emphasizes the improvement of NBS communication channels and transparency, intervention on both segments of the foreign exchange market as well as changes in reserve requirements policy and the direction of open market operations.

(1) A significant improvement of NBS communication channels and transparency in line with the aforementioned characteristics of the flexible IT regime enabled the anchoring of inflation expectations. The inflation expectations of market participants have a direct impact on their business decisions and, thus, the price level over the short term. For the already mentioned reasons (the bitter experience and behaviour of market participants based on rational expectations) the anchoring of inflation expectations at a low level is a vital prerequisite for achieving price stability and increasing the efficiency and credibility of MP. The experience of other countries [32] points to the significance of the stabilization of inflation expectations and positive effects of increasing credibility in the first years of IT implementation and explains the primary orientation of NBS policy towards reducing inflation during the past period. The inflation expectations of the financial sector (the standard measure of expectations in literature) were declining from the end of 2012 (Figure 1) and stabilized at the level around the inflation target at the end

Figure 2: Decomposing monthly inflation (y-o-y, %)



Source: Inflation Report – February 2016. National Bank of Serbia

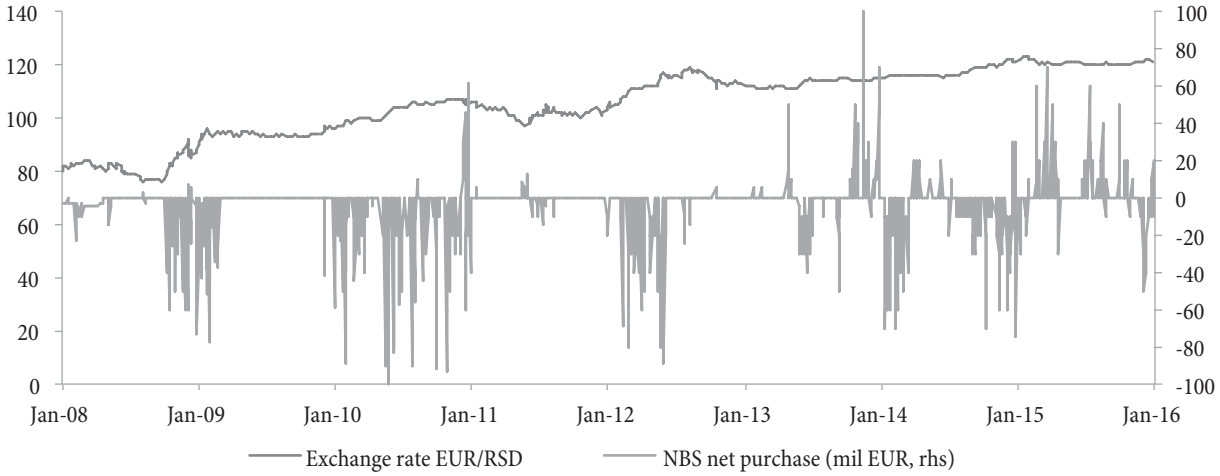
of 2013. At the moment inflation expectations for next two years are anchored below inflation target. The quantitative measures of the credibility of monetary policy based on the calculations by *Nedeljković*, *Savić*, & *Zildžović* [26] also point to improvement. The anchoring measure of NBS credibility (the extent to which inflation expectations do not react to temporary inflation shocks) has risen by 25% (from 0.52 in 2009 to 0.66 in 2015), while the level at which the inflation expectations are anchored (which can deviate from the official target) has fallen from 7.5% to 5.5% over the same period. According to the latest Inflation Expectation Survey of the NBS (January 2016) one-year ahead inflation expectations of corporates equalled 2.5%, entering the target tolerance band; household inflation expectations returned within the band from October 2014 and stabilized at 5%, inflation expectations of trade unions are at 3.15%; hence, mid-term term inflation expectations of all institutional sectors have been within the target tolerance band for almost a year. Inflation expectations thus appear to be anchored, and there are no major inflationary and disinflationary pressures.

(2) Intervention in both segments of the foreign exchange market – The NBS appears on the sell side and, much more aggressively than before, on the buy side of the interbank foreign exchange market with an aim to eliminate excessive daily oscillations, which contributed to the reduction of daily exchange rate fluctuations and more stable operating conditions for market participants. Although under the standard IT regime, the role of a nominal exchange rate is related to attaining the inflation target, the characteristics of the domestic economy – (i) a high level of deposit and credit euroization and thus the transmission of foreign exchange risk to credit risk; (ii) the low development level of the foreign exchange market and thus large influence of global capital movements on exchange rate volatility – are such that the exchange rate movements cannot be exclusively assessed in terms of inflation, but have much broader implications for maintaining macro-financial stability. On the other hand, the CB excessive reactions toward limiting exchange rate movements can create the perception of market participants that the exchange rate de facto serves as the nominal anchor which reduces the efficiency of IT strategy. The best practice to prevent such the problem is to ensure a clear CB communication and transparent policy of interventions to curb excessive exchange rate volatility without affecting the long-term trend, the policy that has been conducted by the NBS over the past three years. Figure 3 shows the daily movement of the dinar exchange rate vis-à-vis the euro and some interventions in the foreign exchange market (a positive amount: a net purchase of foreign exchange; a negative amount – a net sale of foreign exchange). It can be observed that exchange rate volatility has been reduced over the past three years, which is in large degree the result of NBS policy, intervening to a more significant extent in both directions compared to the previous period, thus preventing the current market trends from creating the self-fulfilling expectations of participants in a certain direction. On the other hand, interventions have not influenced a change in the long-term gradual depreciation trend.

(3) Changes in reserve requirements policy and the direction of open market operations: i) through different changes in the reserve requirements on short and long-term sources, long-term sources of financing have been stimulated and the share of short-term flows – more susceptible to external shocks – in total external sources of banks' assets have been reduced from 43.7% in January 2010 to 24.4% in December 2015; ii) through an increase in the share of foreign exchange reserve requirements, which is earmarked in dinars, and the change of the direction of REPO operations, the NBS has reduced excess dinar liquidity, thus lessening depreciation and inflationary pressures.

Apart from changing additional MP instruments, the basic MP instrument, the policy rate, was initially increased

Figure 3: Nominal exchange rate and NBS FX interventions

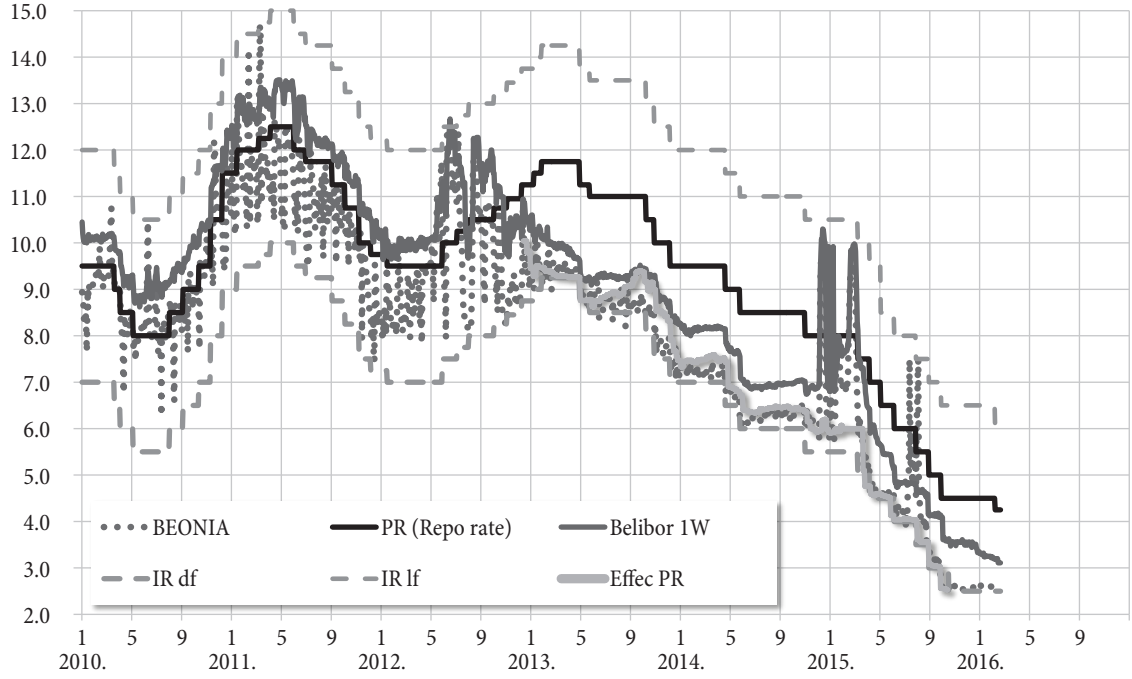


Source: National Bank of Serbia

from mid-2012 until February 2013, while in May 2013 there began a gradual relaxation of the policy rate (Figure 4, gray solid line), which was accelerated during 2015. Bearing in mind the necessity to create credibility and stabilize inflation in the first years of the IT application, as well as the need to maintain macroeconomic stability under conditions of external and fiscal policy shocks, a prudent interest rate policy conducted by the NBS in the previous period (with the expected time lag) had a positive impact on inflation stabilization and a decrease in inflation expectations.

Although interest rate policy was cautious, the effective interest rates in the money market (BEONIA and Belibor) have been lower than the policy rate by 1.5-2 pp since 2013. The reason lies in the fact in December 2012 the NBS also changed the method of performing open market operations, whereby auctions are conducted at the variable interest rate (effective policy rate, grey solid line), coupled with the limit on the amount of liquidity withdrawal, opposite to fixed policy rate in the previous period. This measure enabled the strengthening of the

Figure 4: Interest rate dynamics in Serbia (RSD), daily data, p.a. in %



Source: Inflation Report – February 2016. National Bank of Serbia

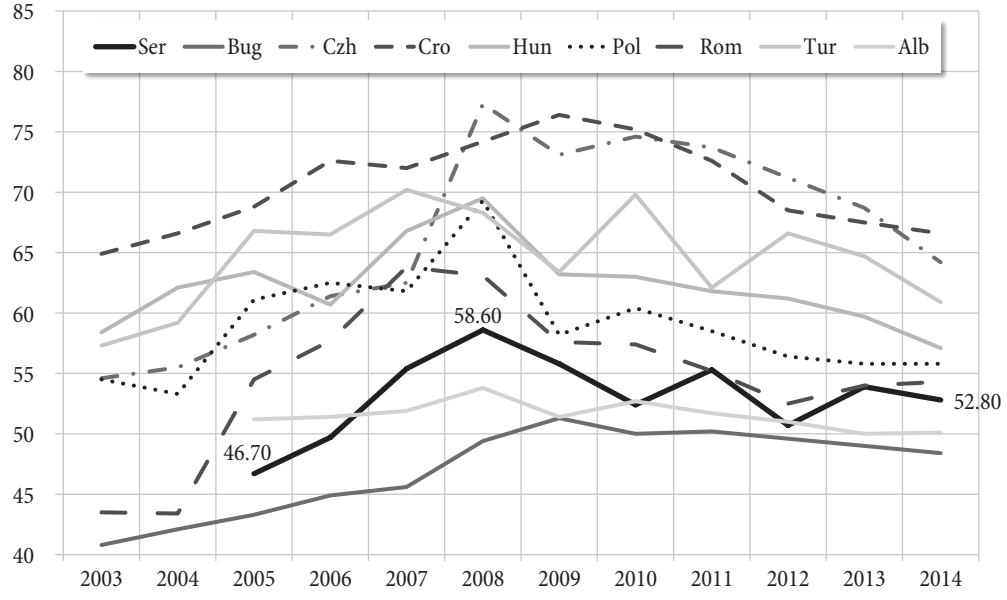
market elements through the bidding of commercial banks for the placement of available liquid assets with the NBS. This led to a decline in interest rates in the money market in the presence of excess dinar liquidity. In this way, the NBS acted proactively on reducing dinar carry trade attractiveness in the period of abundant global liquidity, thus reducing the potential volatility of the exchange rate, while accepting a certain level of the effective interest rate volatility. The higher volatility of the effective interest rate may reduce its signaling role in the MP transmission mechanism; however, the effective interest rate movements thus far did not display significant volatility and conveyed a clear trend signal.

Target inflation level and price disparities: The case of Serbia

In accordance with the Agreement on Inflation Targeting concluded between the NBS and the Government of the Republic of Serbia (adopted at the session of the Government of the Republic of Serbia on 19 December 2008) and the Memorandum of the National Bank of Serbia on Setting Inflation Targets for the Period 2009-2011 (adopted by the NBS Monetary Policy Committee meeting on 22 December 2008) (NBS, 2008), obliging the NBS to set the target inflation rates in cooperation with the Government – the Executive Board of the NBS set the target rate of overall inflation (with the permissible tolerance band), measured by the annual procentual change in the consumer price index for the period from January 2017 to December 2018 to the amount of 4%, with the permissible tolerance band of ±1.5 pp.

The fact that the inflation rate has remained below the lower tolerance band for over 20 months could signal that changes in the inflation target and/or adjustments in the tolerance band or the time horizon in which the target is attained may be warranted. In assessing the signal, one needs to take into account that a low level of inflation was significantly contributed by a decline in the prices of primary products in world markets, primarily a decline in the prices of oil and primary agricultural products and industrial raw materials, small increase in government-controlled prices in the domestic market and lower domestic aggregate demand over this period. The disappearance of these factors will bring about a gradual rise in inflation and return within the existing tolerance band. Other arguments in favor of maintaining the inflation target within the existing tolerance band are the expected price convergence process towards EU levels and the provision of wider room for MP maneuvering since there is no medium-term framework for the adjustment of government-controlled prices, as well as instability in the agricultural products market.

Figure 5: Degree of price convergency (EU28=100)



Source: Inflation Report – August 2015. National Bank of Serbia, p. 7

The price disparities in Serbian economy to EU price levels in fact have deepened during the GR. According to NBS Inflation Report [23, pp. 7-8], the price level in Serbia compared to the EU is now lower (52.8% level) than in 2008 (58.6%), which points to the deepening of price disparities (Figure 5). Divergence from the EU price level was also recorded in other countries in the region. Considered by the groups of products, the lower price convergence level was recorded in the case of products whose prices are government-controlled – the prices of energy products in the first place – whose level is about 44% of the EU price level (Figure 8). The next group of products includes alcoholic beverages and cigarettes 49% (Figure 9). The highest level of convergence was recorded in the case of clothing 93% (Figure 7) and food and non-alcoholic beverages 73% (Figure 6).

Such a price structure in the Serbian market also imposes the need to speed up an increase in government-controlled prices relative to an increase in the general price level and target inflation in the subsequent period in order to achieve convergence with the EU. Taking into account past trends, 5-8% annually increase in regulated price over 2016-18, coupled with their share of 20% in the consumer basket, could contribute to a rise in annual inflation by

Figure 6: Price convergency (EU 28=100) – Food

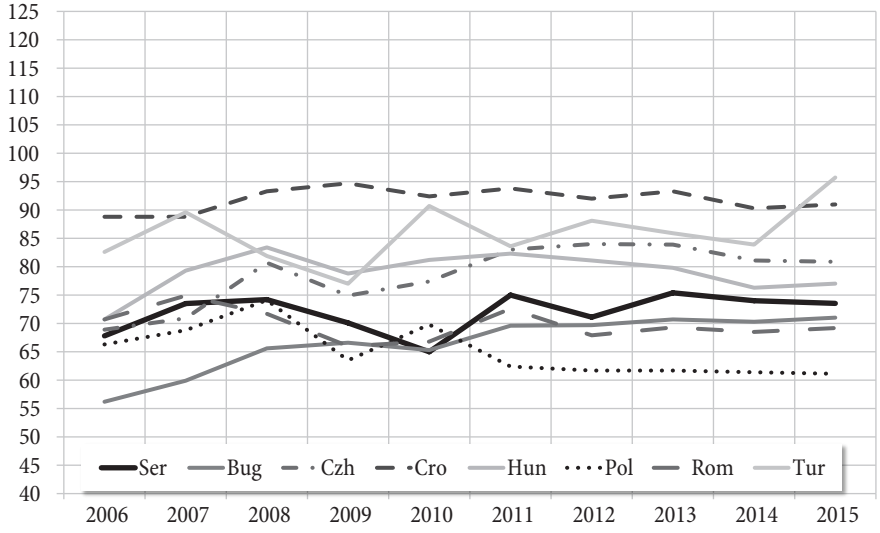
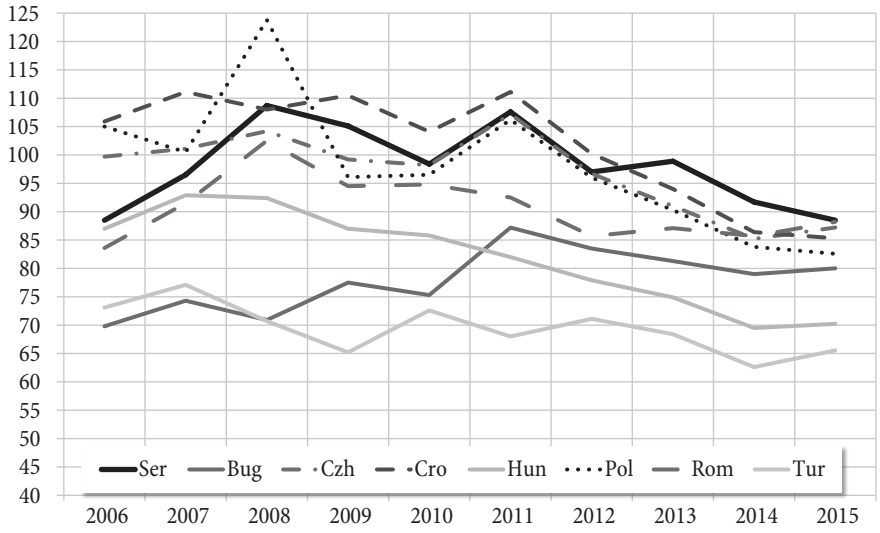


Figure 7: Price convergence (EU28=100) – Clothing



Source: Inflation Report – August 2015. National Bank of Serbia, p. 8

1-1.6 pp. In addition, higher GDP growth in Serbia relative to the Eurozone could, due to the Balassa-Samuelson effect, enhance the price convergence. For example, in the period 2005-2008, at the GDP growth rate of 5%, the price level increased from 46.7% to 58.6%. In its Memorandum [22], the NBS explains that inflation targets for 2017 and 2018 are set above the quantitative definition of price stability and inflation targets of advanced economies (2.0% or 2.5%) due to the assessment that the process of structural reforms and the liberalization of prices, i.e. nominal, real and structural convergence to the European Union, will not be completed by 2018. Serbia has no medium-term government-controlled price adjustment plan, which could influence an increase in inflation oscillations in the coming years and it would be good to adopt such a plan.

Overall, the cyclical drivers of low inflation over the past 20 months coupled with the price convergence process and uncertainty with respect to the pace of regulated prices adjustment imply that low inflation on its own does not provide a clear signal that changes in the inflation target and/or adjustments in the tolerance band or the time horizon in which the target is attained are required. Nevertheless, such options could be analyzed and implemented under the right conditions.

Figure 8: Price convergence (EU28=100) – Energy

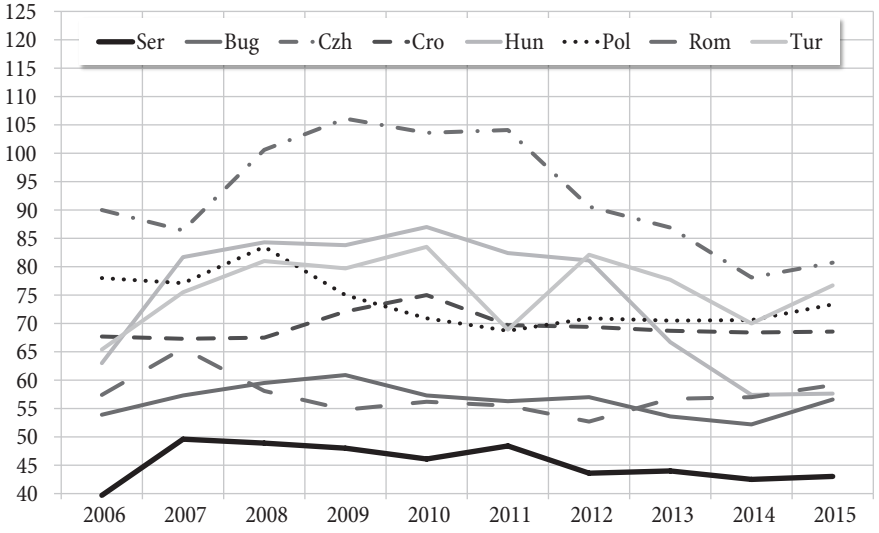
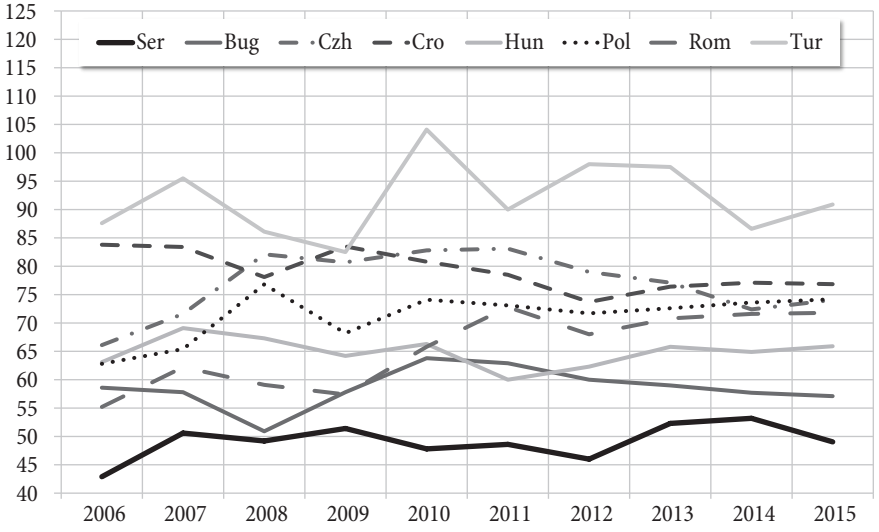


Figure 9: Price convergence (EU28=100) – Alcoholic beverages and cigarettes



Source: Inflation Report – August 2015. National Bank of Serbia, p. 8

Conclusions

This paper provided a brief overview of the existing monetary policy strategies and their advantages and weaknesses. The analysis suggests that flexible IT regime is MP strategy which achieves the best results in maintaining low and stable inflation in industrialized countries and speeding up the disinflation process in the countries with the historically high inflation levels. The crucial role in this process is played by an increasing disconnect between the past inflation and inflation expectations and the strengthening of the credibility of the CB.

The results of flexible IT implementation in Serbia and the use of the described MP instruments over the last three years suggest significant improvements in the key elements of the successful IT-led disinflation process:

a) Inflation is reduced to its sustainability zone which is, under the cyclical disinflation shocks, below the lower tolerance band, but still in the comfort zone (due to price disparities, etc.) and

b) Anchoring of inflation expectations – during 2014, the inflation expectations of all market participants were anchored for 12 months ahead and in 2015 for 24 months ahead, while the credibility measure of MP increased in the same period. Stable and well-anchored inflation expectations contribute to the greater credibility of the MP framework, which enables the CB to achieve the same degree of MP restrictiveness by a small increase in the policy rates, thus generating smaller negative effects on economic activity and vice versa. The necessity to build up sufficient credibility prompted NBS and other CBs from Central and Eastern Europe to focus on inflation. Fully anchored expectations around the target in perspective would allow greater IT flexibility and even implementation of some unconventional measures of MP to support economic recovery (as the Czech Republic has done during the post-2008 period).

The increase in NBS credibility and stabilization of inflation expectations could improve the effectiveness of the expectations channel of the monetary policy, known as Forward Guidance. As this channel is operating with a smaller lag compared to other transmission channels, this could induce greater flexibility in conducting MP in the future. Along this path, the crucial role will be played by the communication of MP measures and removal of structural inflation factors (agricultural and trade policy measures) to maintain the achieved stabilization (of both inflation and expectations) when the first price pressures are exerted.

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REGIONAL RESILIENCE: STRUCTURAL ANALYSIS, ENTREPRENEURSHIP AND SPECIALISATION

Regionalna otpornost – strukturna analiza, preduzetništvo i specijalizacija

Economic growth is the engine of the escape from poverty and material deprivation.
(Angus Deaton, winner of the Nobel Prize 2015)

Abstract

The recession did not affect all the regions with the same intensity, as some were more resilient than others. The differences in regional resilience, besides the labor market, have mostly reflected on regional branches of the manufacturing industry. Developed industrial branches within the manufacturing industry have been affected the most. In addition, key economic parameters (employment and value added) in the entrepreneurial sector decreased by 20%.

The in-depth research in the study is aiming in two directions: the testing of regional industrial resilience before and after the global recession and identifying of the key regional industrial branches in the context of regional specialization.

This study promotes a new methodological approach based on dynamic structural analysis of the manufacturing industry of Serbia. In addition, the research contribution of authors also encompasses the affirmation of new analytical instruments (two new composite indexes: RISI and Regional coefficient of successfulness of privatization).

The economic messages in this study are being targeted in several directions: regional resistance depends primarily on sectoral connections and endogenous regional resources, factors that increase regional resilience include technology, knowledge and innovation, and regional resistance is increased through the specialization of traditional branches of manufacturing industry. The economic transformation toward the entrepreneurial economy and dynamic company structures will be of crucial importance in the coming period.

Keywords: *regional resilience, regional effects of privatization, structural analysis, regional competitiveness, entrepreneurship, specialization of manufacturing industry*

Sažetak

Recesija nije podjednakom žestinom pogodila sve regione u Srbiji, neki regioni su bili otporniji od drugih. Razlike u regionalnoj otpornosti su se, pored tržišta rada, najviše odrazile u regionalnim granama prerađivačke industrije. Ekonomska kriza najviše je pogodila razvijene grane prerađivačke industrije. Pored toga, ključni ekonomski parametri (zaposlenost i novostvorena vrednost) su u preduzetničkom sektoru pali za 20%.

Dubinsko istraživanje regionalne otpornosti u Srbiji usmereno je u dva pravca: testiranje regionalne industrijske otpornosti pre i posle globalne recesije i identifikovanje ključnih regionalnih industrijskih grana u kontekstu regionalne specijalizacije.

U radu je promovisan i nov metodološki pristup baziran na dinamičkoj strukturnoj analizi prerađivačke industrije Srbije. Istraživački doprinos autora je i afirmacija novih analitičkih instrumenata (dva nova kompozitna indeksa: IRIS i Regionalni koeficijent uspešnosti privatizacije).

Ekonomske poruke u radu usmerene su u više pravaca: regionalna otpornost primarno zavisi od sektorske povezanosti i endogenih regionalnih resursa, regionalnu otpornost povećavaju faktori koje se odnose na tehnologiju, znanje i inovativni kapacitet, kao i da se regionalna otpornost povećava specijalizacijom tradicionalnih grana. U narednom periodu ključna će biti privredna transformacija ka preduzetničkoj ekonomiji i dinamičkim strukturama preduzeća.

Ključne reči: *regionalna otpornost, regionalni efekti privatizacije, strukturna analiza, regionalna konkurentnost, preduzetništvo, specijalizacija prerađivačke industrije*

Introduction

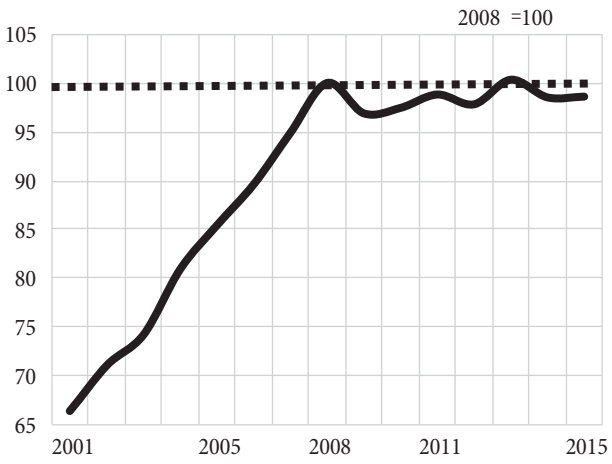
Cyclic movements are regularity in market economies. Therefore, in the following period we could expect cyclic disruptions both in Serbia and in the world market economy. The focus of economic policy is increasingly moving from short-term anti-crises policy towards structural policy. At the same time, the question of regional resilience now arises, which requires particular attention not only with the aim of carrying out the policy of employment and poverty reduction, but also with the aim of preventing possible future disturbances of decrease in demand and economic recession.

The global recession has not equally affected all regions in Serbia; some regions were more resilient than others. In some regions the unemployment significantly increased, while some other regions were more resilient and have not had a decline in unemployment. The regions in which the unemployment was low at the beginning of the crisis have been more hit than the regions in which the unemployment was high. Generally, there is a strong negative regional correlation between the unemployment before the crisis and the growth of unemployment. The effect of economic crisis on the regions with low unemployment was significantly stronger than on the regions with traditionally high unemployment. This has once again proved the economic rule that regional differences decrease in the period of recession.

The differences in regional resilience, besides the labor market [5], have mostly reflected on regional branches of the manufacturing industry [16], [4]. Developed industrial branches within the manufacturing industry have been affected the most.

The starting point hypothesis in this study is that regional resilience is the direct resultant of transitional processes, above all, of the privatization process. The in-depth research in the study is aiming in two directions: the testing of regional industrial resilience before and after the global recession and identifying of the key regional industrial branches in the context of regional specialization.

Figure 1: GDP trends



Source: Authors' calculations on the basis of the SORS data

Economic growth and structural changes in Serbia

The transformation of Serbian economy is characterized by a few key factors: (a) unfinished and slow structural changes, (b) permanent spending beyond one's means, and (c) high unemployment as a resultant of unfinished structural changes in the economy. The transitional growth model was based on the domestic demand, foreign capital inflow, and the growth of service sector. New transformational model of the development of a country calls for the reduction of irrational spending, bureaucracy and unnecessary expenditures of public sectors, and, at the same time, the increase in investment spending in order to stimulate the economic growth and employment, simultaneously providing social protection of socially handicapped classes [18].

In the period before the crises, 2001-2008, Serbian GDP grew at the average rate of 5.9%, but it was not sufficient to overcome a deep production gap from the nineties of the previous century (see Figure 1). A great credit for the GDP growth goes to the service sector which generated almost 60% of gross value added of the economy, with the average annual rate of 5.4%. Positive transitional trends were stopped in the period of the gravest crisis from 2009 to 2012. In the period after the crisis, 2009-2014, GDP recorded the average fall of -0.2%. After the great fall of -3.1% in 2009, the economic activity has had an unstable trend. The gross domestic product has not yet reached the level from the period before the crisis.

The effects of the global recession on the total area of South-East Europe (SEE) just confirmed the economic law that economic growth is not possible without continuous structural changes, i.e. "*structural changes are the central element of the development process and key element of the growth model*" (*Semën Abramovič Kuznec,* 1957). Macroeconomic imbalance of the SEE economy is, primarily, of structural character. The transformational models that were applied in the first decade of this century, after a decade of economic distortion and overdue pre-transitional start, did not make balance between a great amount of structural imbalance and systematic deformation, which had emerged vigorously under the influence of economic crisis. The consequences of an "*indebted economy*" model are manifested in all developmental dimensions, from demographic regression, industrial devastation, educational gap, to institutional underdevelopment (see Table 1). Positive signals of the application of the new model of economic growth, which is based on key structural reforms that were started last year, announce, despite the consequences of disastrous floods that affected economic sectors in 2014, higher economic growth in this year, and more importantly, sustainable economic growth in the years to come [17].

There are two crucial elements of the transformational model of economic growth in the previous period:

(1) Transitional model of economic growth was not based on structural changes in the manufacturing industry, but on the service sector expansion as well as on spending which each year constantly exceeded GDP by 15-20%, which was covered by import and, consequently, caused a large balance of payments deficit and unsustainable economic growth. Besides, the process of privatization and restructuring resulted in a high number of the unemployed. The initiated application of the new model of economic growth based on the industrial growth which is oriented to investments and export will contribute to the sustainability of economic growth.

The change of production structure (measured by indexes of structural changes, summarizing absolute differences of shares of sectors during the first and last year that were observed) took place intensively in the period

Table 1: Transitional macroeconomic balance of Serbia 2001-2015

Indicators	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Economic growth[1]	++	+	+	+++	++	+	++	+	-	+	+	-	+	-	+
Unemployment[2]	---	---	---	--	---	---	--	--	--	--	---	---	---	--	--
Life standard[3]	+	+++	++	++	+	++	+++	+	-	+	-	+	--	--	--
Industrial growth[4]	+	+	-	+++	+	++	++	+	-	+	+	-	+++	-	+++
Investments[5]	-	-	+	+	+	++	++	++	+	+	+	++	+	+	+
The privatization of large enterprises[6]	-	+	+	-	+	-	-	-	-	-	-	-	-	-	
Enterprise restructuring[7]	-	+	-	-	+	-	-	-	-	-	-	-	-	-	
Competition policy[8]	-	-	-	-	-	+	+	-	-	+	-	-	-	-	
Unit labor costs[9]			--	-	-	--	--	+	+	-	--	--	-	-	-
Inflation[10]	--	-	+	-	--	+	-	+	+	-	+	-	++	++	++
FDI[11]	-	-	+	-	+	+++	++	++	+	+	++	-	+	+	+
External debt[12]	---	-	-	-	--	--	--	--	--	--	--	---	--	--	---
The current account deficit[13]	-	+	-	--	-	-	---	---	-	-	--	--	-	-	-
Fiscal deficit/surplus[14]	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-

Legend:
[1] GDP growth: + less than 5%, ++ between 5-7%, +++ larger than 7%, - fall
[2] Unemployment rate: --- larger than 20%, -- larger than 15-20%
[3] Wages, real growth: +++ larger than 20%, ++ larger than 10-20%, + larger than 10%, - no growth, -- fall
[4] Industrial growth: - negative, + positive to 3%, ++ between 3-5%, +++ larger than 5%
[5] Investments in fixed assets (%GDP): - less than 15%, + 15-20%, ++ 20-25%
[6] The privatization of large enterprises (EBRD indicator): - without changes, + increase of 0.33
[7] Enterprise restructuring (EBRD indicator): without changes -, + increase of 0.33
[8] Competition policy (EBRD indicator): - without changes, + + increase of 0.33
[9] Unit labor costs: --- double-digit growth, -- growth 5-10%, - growth to 5%, + fall
[10] Inflation: -- more than 15%, - between 10-15%, + less than 10%, ++ below 5%
[11] FDI net: - less than $1bn, + between $1-2bn, ++ $2-3bn, +++ larger than $3bn
[12] External debt (%GDP): - to 60% GDP, -- 60-80% BDP, --- larger than 80% GDP
[13] Current account deficit: --- larger than 15% GDP, -- 10-15% GDP, - 5-10% GDP, + less than 5%
[14] Fiscal deficit/surplus: -deficit, - + surplus

2001-2005 when a decrease in the share of agriculture was recorded, but also the highest growth of services in GVA structure. Index measured by *the changes of employment structures* reached the highest value in the period of crisis.

Composite indicator of structural changes (see Figure 2), calculated as the average of the speed of structural changes of GVA and employment, indicates that, in the entire observed period from 2001 to 2014, the highest speed of changes was in the service sector, although the contribution of industry and construction industry should not be disregarded, primarily owing to the number of the employed in the years of economic crisis. In comparison with 2009, the number of the employed in the industry decreased by about 67 thousand, that is by 13.7%. A part of the dismissed employees was absorbed by the service sector (the number of the employed is higher by 0.4% compared to 2009).

(2) The speed of reforms – comparative analysis has shown that the economic growth was higher in those transitional economies in which reforms were carried out faster than in those with the strategy of gradual development. Transition indicator in Serbia remained at the level from 2010; therefore, the average mark of the progress in transition is unchanged [10].

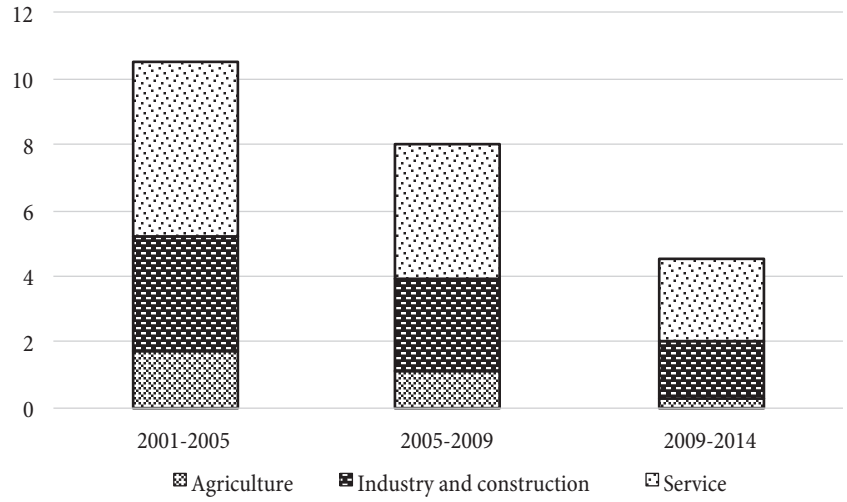
Structural reforms

The process of structural reforms in the economy has not been finished. In the period before the crisis until 2008, economic activity and the service sector recorded high average growth rates of 5.9% and 5.4% respectively, while both economic activity and services stagnated in the period 2009-2014. There was a negligible growth in the manufacturing sector before the economic crisis, and in the period after the crisis the growth was a bit more dynamic. However, that growth was not big enough to close a great gap formed in the structure of gross value added (GVA). The economic structure reflects in the aggregate level of productivity. The greatest contribution to the productivity in the period 2001-2014 was achieved in the service sector (60.5% in 2014; 5.3 structural points more than in 2001). The share of the industry in total productivity achieved in Serbia in 2014 declined by 2.8 structural points compared to 2001. The growth of labor productivity of Serbia (the ratio of GVA and employment) of 8.3% in the period 2009-2014 is a result of the employment decline (-5.2%), and not of the efficiency of economic structure.

The main indicators of foreign trade after 2011 indicate deficit decline, improvement in the ratio between export and import and the level of openness of the economy, owing to larger growth of export relative to import. However, insufficient growth of export activities and unfavorable structure of export when it comes to technological progress of exported products have not changed yet.

In the period before the crisis the service sector grew faster than the manufacturing sector, which caused a huge gap in the structure of GVA (see Table 2). The industry achieved a negligible growth and significantly decreased its share in total GVA, as well as the agriculture.

Figure 2: Composite indicator of structural changes



Source: Authors' calculations on the basis of the SORS data

Table 2: The sectoral structure of GVA

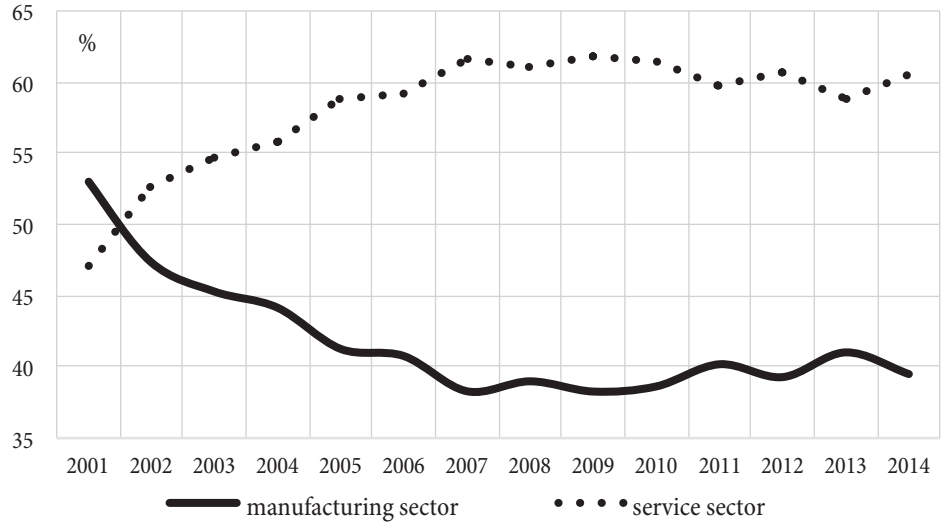
Economy	The average growth rate		Change of share in GVA	
	2001-2008	2009-2014	2001-2009	2009-2014
Agriculture	1.8	0.5	-10.4	0.1
Industry	0.7	0.8	-5.2	1.7
Manufacturing industry	0.3	2.0	-8.6	2.4
Construction	9.6	-3.9	1.0	-0.6
Services	5.3	-0.2	14.6	-1.2
Trade	13.6	-1.9	6.2	-0.2
Traffic	6.9	0.2	0.6	-0.4
Information-Communication	11.4	1.2	2.1	0.3
Finance-Insurance	12.1	-2.8	2.2	-0.7
Real estate	1.8	0.4	-1.1	0.0
Other services	2.1	-	4.6	-0.2

Source: Authors' calculations

However, in the period 2009-2014, these trends changed. The services were slightly stagnating after the fall in 2009, and their fall of -0.5 % was recorded in 2014. In the industry sector, in the period after the crisis, the growth rate gradually increased, but this trend was stopped in 2014. The fall of -7.1% was recorded, due to the consequences of floods that hit Serbia in May, which mostly affected the subsectors of mining and energy industry. The construction sector has not recovered after the great fall in 2009 and in the whole period it recorded the average fall rate of -3.9%.

The difference in the share of GVA of manufacturing and service sector in total GVA has been changing since 2001 when agriculture, industry and construction industry had a greater share than total services (see Figure 3). Ever since, in the period 2001-2008, there was a noticeable growth of service activities and increase in GVA share. In the manufacturing sector, on the contrary, there was a negligible growth of industry and agriculture compared to average economic growth of 5.9%, which had an influence on the decline in their share in new value creation. The service sector reached its maximum share in GVA of 61.7% in 2009, and manufacturing activities reached just 38.3%. After the crisis this ratio changed in favor of the manufacturing sector, due to low growth rates of the service sector and a bit more significant growth of industrial and agricultural sectors. This change would have been even more dynamic if there had not been a negative trend in the construction industry. However, one can only conclude that the manufacturing industry has not considerably recovered and improved its share in gross value added (at the beginning of transitional period the share of GVA made by the manufacturing industry accounted for 25% of total GVA, and in 2014 it was below 20%).

Figure 3: The structural gap in GVA



Source: Authors' calculations

The smallest gap between the manufacturing and service sector, in the period after the crisis, was recorded in 2013, but a big industrial decline in 2014 contributed to creating the difference which was in favor of services.

Comparative sectoral structure of GVA in the countries of our region shows that the sectoral structure of Serbian GVA is different because of a greater share of agriculture (only Macedonia and Montenegro are at a similar level) and due to a low share of services in gross value added (see Figure 4). Romanian economy stands out with its high share of industry and construction industry sectors and a very low share of service sector in total GVA, which is opposite to the tendencies in Montenegro, which has the lowest share of the industrial sector, and the largest share of services (like Croatia) amounting to about 70% of GVA, which is at EU-28 level.

Regional effects of privatization

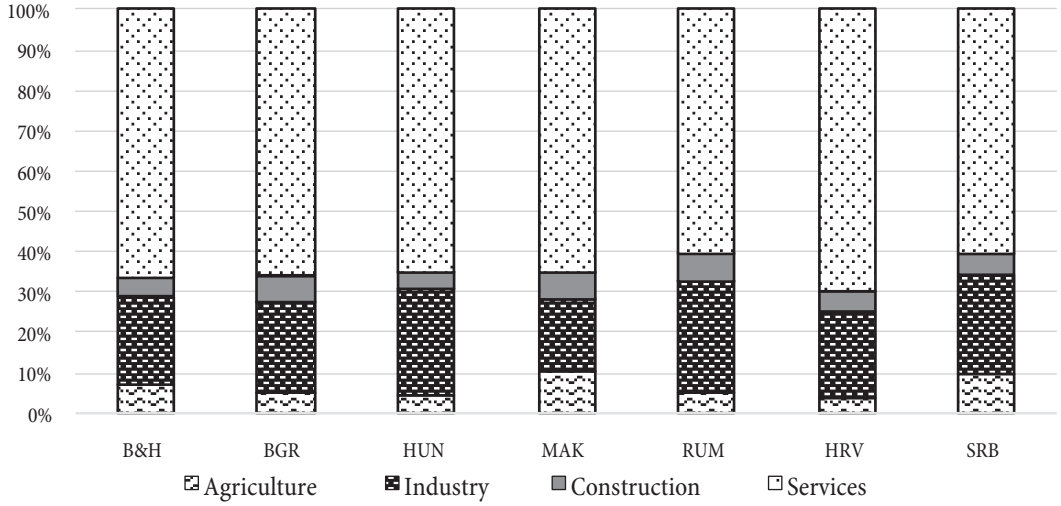
The process of privatization of the state capital in Serbia is in its final phase (the legal deadline was the end of 2015). The process of privatization of state-owned companies, the remainder of public companies of special interest, as well as of specific industry companies is yet to come. The privatization of 17 companies of strategic importance, as well as companies from the territory of AP Kosovo and Metohija is also yet to come.

The most attractive companies were sold at the very beginning of privatization process, during 2002 and 2003. The analysis of the effect of privatization takes some time. Namely, the analysis of the effects of cost consolidation takes a year, the analysis of the effects of privatization on productivity and reduction of labor costs takes from one to two years, while the analysis of the effects of privatization on gross value added takes a period longer than two years [25]. Generally, the biggest burden of privatization was carried by the employees in the manufacturing industry. The average annual decrease in the number of employees in manufacturing industry in the period 2001-2014 was 5.8% – from 604,054 employees in manufacturing industry in 2001 the number of employees dropped to 279,289 in 2014. Having in mind that about 4,000 companies were under the jurisdiction of the Privatization Agency, the assessment of the efficiency of privatization in Serbia in the period 2002-2015 could be summarized by the following facts:

- 2,389 companies were privatized, the income made by the privatization was EUR 2.6 billion and by the contracted investments EUR 1.0 billion (excluding 688 annulled privatizations done through bidding and auction procedures);
- The selling of the state capital was successfully finalized in 2/3 of companies – *coefficient of the successfulness of the privatization of Serbian companies is 60.1*%;
- More than 1,000 companies (about 27%) with the state capital went bankrupt;
- There are about 500 companies left to be privatized according to the new Law on Privatization.

Regional analysis of the privatization process in the period 2002-2015 shows (see Table 3 and Figure 5):

Figure 4: Comparative sectoral structure of GVA, 2014



Source: Authors' calculations

- The privatized companies are mostly from the territory of Belgrade and Backa region (1,060 companies or 45.3%), where the income made by privatization was EUR 1.2 billion (47.7%). In these regions there was the highest number of terminations (233 or 33.9%). The biggest share of annulled privatizations through bidding and auction procedures in the number of signed contracts was registered in Jablanica-Pcinja region (38.3%) and in Nis-Toplica-Pirot region (34.5%);
- Privatization was the most successful in North-Banat region, Middle-Banat and South-Banat district (more than 70% of companies were successfully sold through the privatization);
- The lowest coefficient of successfulness of privatization was in Pirot district (30.5%), Toplica (43.2%) and Bor districts (43.1%);
- The lowest share of terminated contracts in the total number of signed contracts (less than 15%) was in North-Banat, Middle-Banat and Branicevo districts;
- The worst coefficient of annulled privatization was in the south of Serbia – Pirot district (30.5%) and Jablanica district (44.5%).

Entrepreneurship and regional resilience

Current literature on entrepreneurship offers a good insight of how economic crisis influences the number and the structure of newly established companies. The results of empirical research indicate that, due to global financial crises, the number of registered companies has declined in most of the countries. Moreover, this decline is higher in developed countries and in countries where entrepreneurial sector is more dependent on financial institutions [19]. Besides that, the results of empirical research show that small- and medium-sized enterprises reduce the number of employees during the global financial crisis [7]. However,

Figure 5: Regional coefficient of successfulness of privatization 2002-2015

Source: Authors' calculations

Table 3: Regional balance of privatization in Serbia, 2002-2015

District	Number of privatized companies	Number of canceled	Non-privatized	% canceled	% success
Belgrade	600	115	157	16.1	64.6
Backa	460	118	60	20.4	67.7
Banat	309	73	48	19.1	66.6
Srem	79	29	16	26.9	61.7
Macva-Kolubara	131	35	18	21.1	56.0
Sumadija-Pomoravlje	103	33	27	24.3	54.5
Zlatibor-Moravica	167	60	21	26.4	57.2
Raska-Rasina	108	51	40	32.1	55.4
Podunavlje-Brancevo	96	20	24	17.2	56.1
Bor-Zajecar	70	32	15	31.4	45.2
Nis-Toplica-Pirot	129	68	31	34.5	43.6
Jablanica-Pcinja	87	54	28	38.3	46.3

Source: Authors' calculations on the basis of the AP data

according to the Global Entrepreneurship Monitor, there is no sharp change in entrepreneur's response to the global financial crises as regards the perception of business opportunities since the proportion of the entrepreneurs engaging in nascent ventures have not changed significantly. The literature devoted to exit of small independent firms highlights their vulnerability in terms of their liabilities or their resilience, which is understood as flexibility or adaptability. According to the hypothesis of small firm vulnerability, the exit rate is higher, whereas according to the hypothesis of small firm resilience, small firms are less affected by the crisis [8], [2].

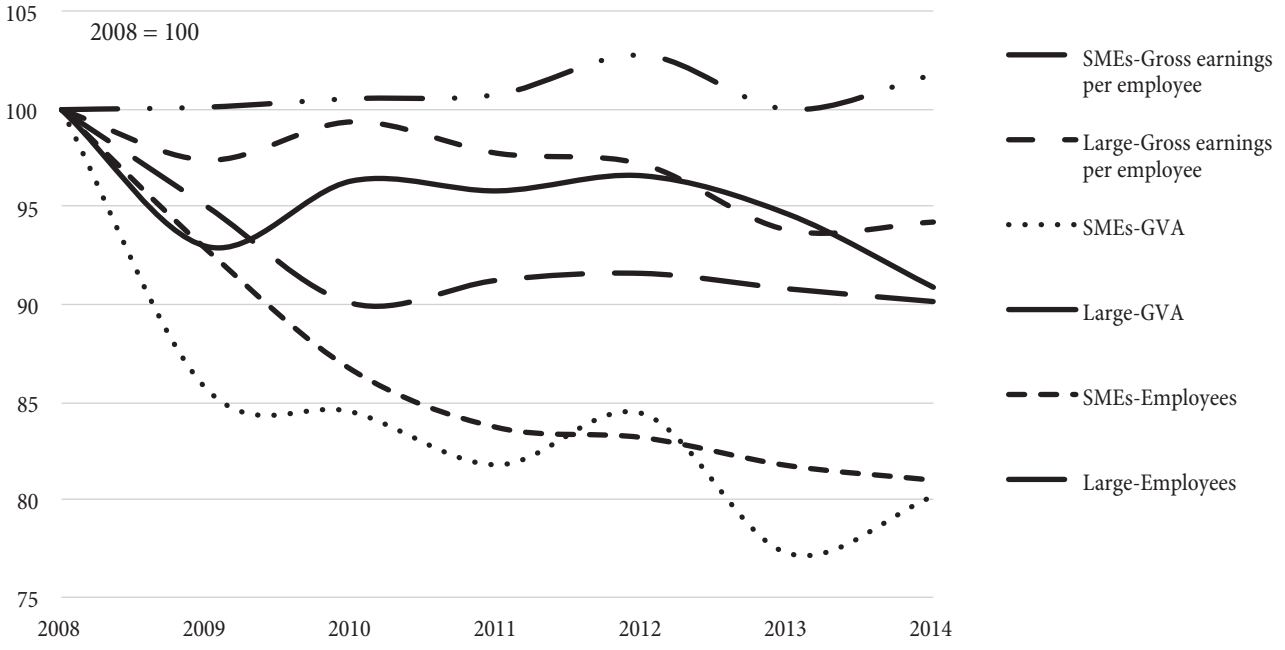
In Serbia the waves of recession have stopped the growth of entrepreneurship sector and positive trends in transitional recovery. Recession had the first negative effects on the decrease of employment and they later spread to the other segments of business efficiency and the level of investment activities of the entrepreneurship sector. Summary assessment for the period from 2008 to 2014 indicates that in 2014, the values of all the key efficiency indicators (turnover, GVA, profit) were lower in comparison to the ones at the beginning of recession (see Figure 6).

Business process analysis shows that the negative effects of recession are stronger in entrepreneurship sector than in large enterprises. For instance, in 2014 GVA decreased by 19.8% and employment decreased by 19% in the entrepreneurship sector. Due to intensive employment decline (by 16% in the economy and 9.8% in large enterprises) and since decrease of GVA (by 15.4% and 9.1%, respectively) the rest of the economy has achieved modest growth of productivity, but the low level of productivity is still the main characteristic of Serbian economy.

Growth of productivity in the entrepreneurship sector continued (it was stopped in 2013) due to an increase in GVA, especially in micro enterprises and entrepreneurs (by 10.2% and 4.5% respectively compared to 2013). The problem becomes more complex with the fact that, in this period, net income growth was not in accordance with productivity growth. However, entrepreneurship sector continually had a gross income below the economy average (88.2% in 2008 and 90.4% in 2014), whereas the incomes of large enterprises were always above the economy average (by 24.1% in 2008 and 17.7% in 2014).

This slow dynamic of the recovery from recession of the whole economy is more noticeable in small and medium-sized enterprises than in large enterprises. In comparison to 2013, real decrease of employment, turnover and GVA in large enterprises is considerably smaller than in small and medium-sized enterprises. Negative tendencies displayed

Figure 6: Resilience in entrepreneurial sector to external shocks



Source: Authors' calculations on the basis of the SORS data

in the level of development of the entrepreneurship sector are highly important because these enterprises (324,272) were heavily involved in forming the basic indicators of Serbian economic activity. The road to the recovery of economy is through structural reforms and without them the necessary economic growth will not be possible. What is needed for a more dynamic development of the entrepreneurship sector is a continuous improvement of business environment, starting with a more efficient conduct of structural reforms, rationalization of the oversized public sector, increase in financial discipline, etc. [19].

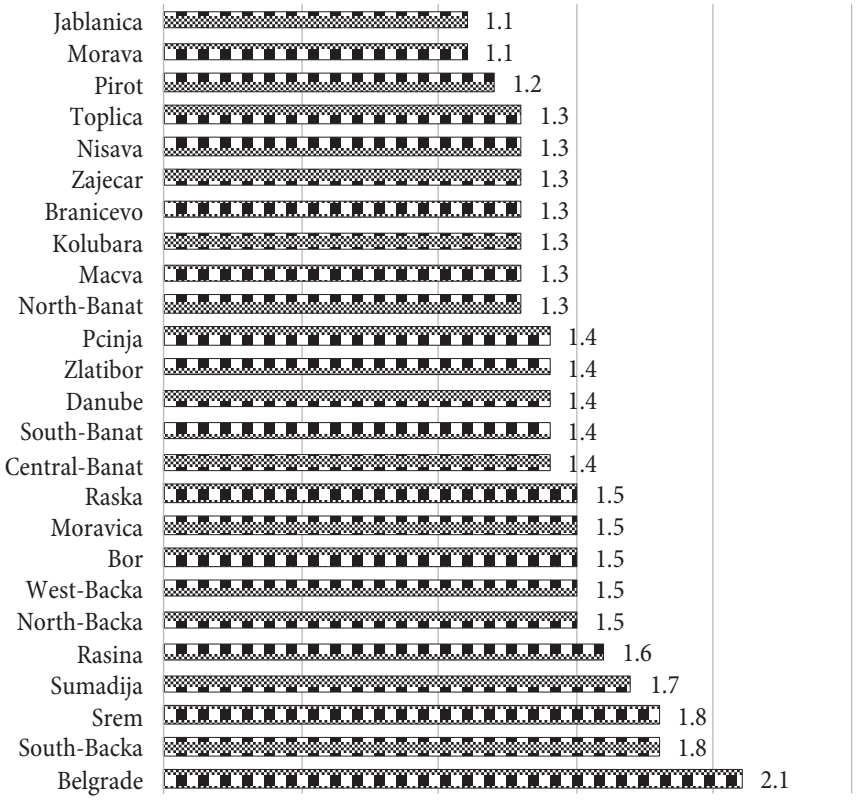
The most illustrative analysis of regional resilience in the entrepreneurship sector in the post-crisis period shows business demography through the relations of established and closed enterprises and stores (see Figure 7). Net effects of enterprises from 2008 to 2015 are considerably higher than the net effects of stores (the average net effects for enterprises in Serbia are 1.7 and almost no net effects for stores). Regional analysis shows extreme unevenness of the conditions for establishing new economic entities and the development of the existing ones (enterprises and entrepreneurs). The highest business dynamics from 2008 to 2015 was registered in the developed regions (Belgrade, South Backa, Srem and Sumadija). 38,130 enterprises were founded in Belgrade and 18,163 enterprises were closed down (net effect of 2.1). In this period, in North Backa region 2,537 enterprises were founded and 1,718 enterprises were closed down (net effect of 1.8) whereas in Jablanica region net effect of new enterprises was just 1.1 (861 new and 780 closed-down enterprises). The worst business conditions in the post-crisis period are in the least developed regions.

Regional specialization

Theoretical framework

Global recession has affected the creation of completely new regional production and organizational rules with the promotion of different forms of specialization in the foreground, primarily regional clusters. In theory, regional clusters could be defined as a regional institutional concentration of economic entities that have formed mutual horizontal and vertical relations [3], [6]. Marshall's Agglomeration Theory [24] offers the first theoretical

Figure 7: Regional business demography, 2008-2015



Source: Authors' calculations on the basis of the SBRA data

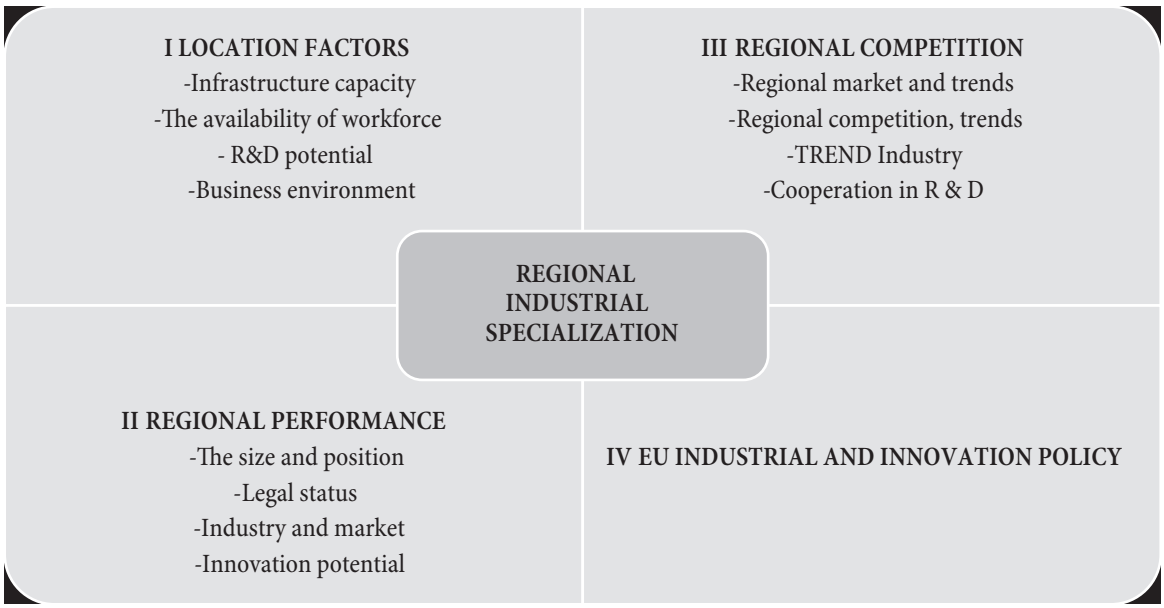
basics of regional specialization, more precisely in his reflections on *"the regional production systems in industrial districts."* Endogenous growth theory that is based on the multiplier effects and cumulative causation has had the greatest impact on expanding the theory of regional clusters [22]. At the end of the last century, economic geography deliberately excluded the social and institutional basics of regional specialization [15].

However, in the past decade there has been a real explosion of studies of social and institutional inveteracy of regional specialization [12], [13], [14].

The theoretical focus is still on the questions of why regional specialization appears, and why it disappears, as well as the question of why regional specialization is constantly reaching higher, more profitable levels or in other words the processes of regional specialization have a tendency to attract new institutions and enterprises. Besides typical economic performances such as regional GDP, employment and standard of living, scientists are more interested in the structural changes in regional specialization. Every regional specialization is a specific configuration which depends on the regional institutional and production factors, and industrial factors above all. Having in mind that the theoretical focus in the research of the structural changes is on regional specialization, i.e. clusters, a number of theoreticians are reaffirming the exogenous factors again (transport and production expenses). In the context of the above mentioned, the impact of direct foreign investment on regional specialization was studied in transitional countries [9]. Generally, regional specialization theoreticians, who base their opinions on the multiplier effects and cumulative causation, still have a dominant influence [29]. A number of theoreticians analyze the combination of both endogenous and exogenous factors [16]. Typical examples of this are many regional high-tech industry clusters (a combination of regional political and technological changes), regional knowledge clusters (a combination of highly qualified workforce and high technology influenced by FDI), regional SME clusters, regional clusters as a combination of the old and new technologies (regional ICT clusters in Scandinavian countries).

Regardless of the various forms of regional specialization (regional innovation clusters, regional industrial districts, MSP clusters, regional profit centers), the main terms are (see Figure 8): location factors, vertical and horizontal connections between the companies, interaction with the key educational and innovation institutions, openness and a quick adjustment to changes [29], [12]. Regional specialization increases regional competitiveness and enables local enterprises to enter new markets and gain a quicker access to new sources of finance. Through regional specialization, regional enterprises directly influence the rise in productivity of the whole region. Of course, the most important factor is the connection with the centers for scientific research.

Figure 8: Factors of regional industrial specialization



Various forms of regional specialization have made contribution to economic development and the European Union experiences in these cases have been very diverse [4], [5]. Many regions have valorized their comparative advantages through regional specialization [1]. Stimulation of the development of clusters in the European Union is mainly given through regional politics, entrepreneurship development policies, research and innovation policies as well as the conduct of different programmes such as: "The Competitiveness Innovation Programme", "7th Framework Programme", "Observatory of European SMEs", etc., which promote various regional specialization measures and activities. Today, almost 50% of the EU employees work in different types of regional specialization.

Methodological approach

The European Cluster Observatory, for regional competitiveness analysis, uses the methodology of three stars [11]. In a study of regional resilience and regional specialization authors have applied the new methodology. Applied regional industrial specialization methodology differs from the methodology that is used by the European Cluster Observatory because it explores not only employment dimension, but regional competitiveness dimension as well and, most importantly, it has dynamic approach – it takes into consideration structural changes in manufacturing industry before and after the global recession effects (2008 and 2013).

Methodological concept of defining Regional Industrial Specialization Index (RISI) is based on the dynamic economy analysis of regional branches of the manufacturing industry. RISI has two dimensions:

- *Regional resilience* which is measured by changes in employment in branches of the manufacturing industry in 2008 and 2013, using the following criteria:
  - Employment in a specific branch of industry must be higher or equal to 10% employment of the very branch at the national level;
  - Employment in a specific branch of industry must be higher or equal to 3% of total employment in the economy of the region.
- *Regional competitiveness* which is measured by changes of gross value added (GVA) in branches of manufacturing industry in 2008 and 2013, using the following criteria:
  - GVA in a specific branch of industry must be higher or equal to 10% GVA of the very branch at the national level;
  - GVA in a specific branch of industry must be higher or equal to 3% of total GVA of the economy of the region.
- *Regional specialization* has both dimensions, individual and collective. If the industrial branches of manufacturing industry fulfil the criteria of regional resilience, they get one star (*). If they fulfil the criteria of regional competitiveness, they get two stars (**). If they fulfil both criteria, they get three stars (***). In the case of Belgrade, due to specificity of the size and dominance of a large number of branches, a less strict criterion of a specific branch employment and GVA in the city economy has been applied.

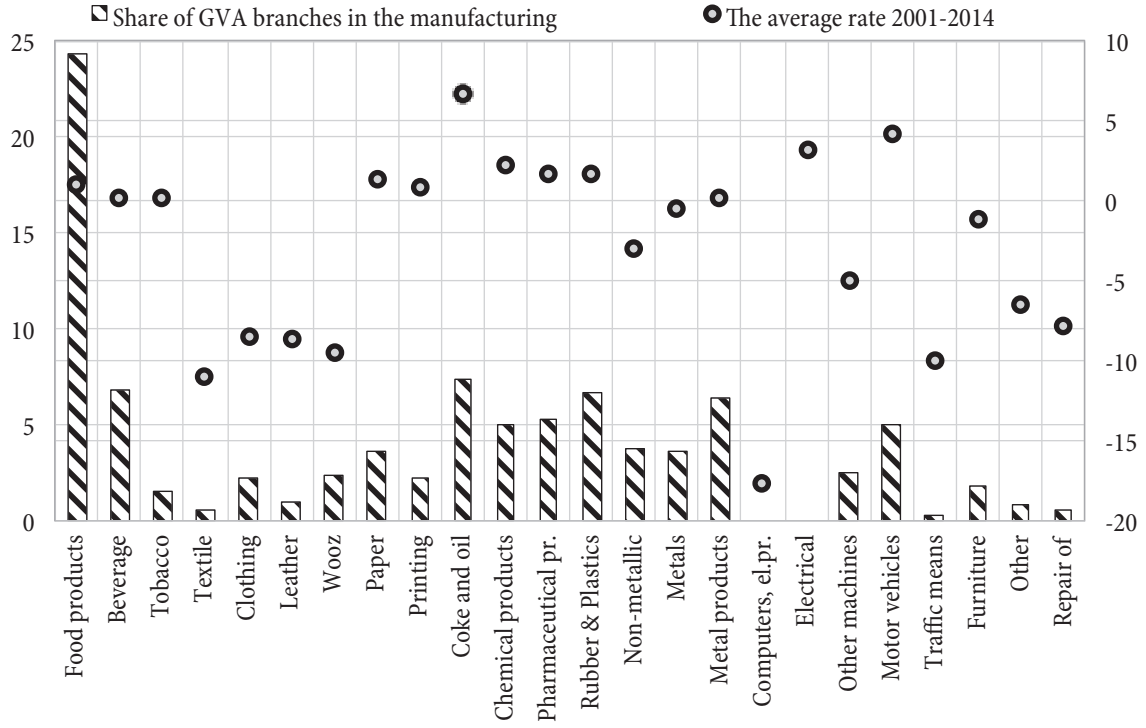
Regional areas (12) are formed by grouping the districts which are similar in their representative economic, demographic, social and spatial performances.

Research findings

Value added in manufacturing industry for the whole transitional period was modest. The average growth rate of manufacturing industry for the whole period from 2001 to 2014 was only 0.2% (see Figure 9). Transitional restructuring of manufacturing industry mainly came down to rationalization of the industry workforce, cutting the number of "redundancies". In the post-crisis period, Serbian manufacturing industry faced some additional challenges, namely in the period of 2009 to 2014 there were about 50,000 fewer employees in Serbian manufacturing industry.

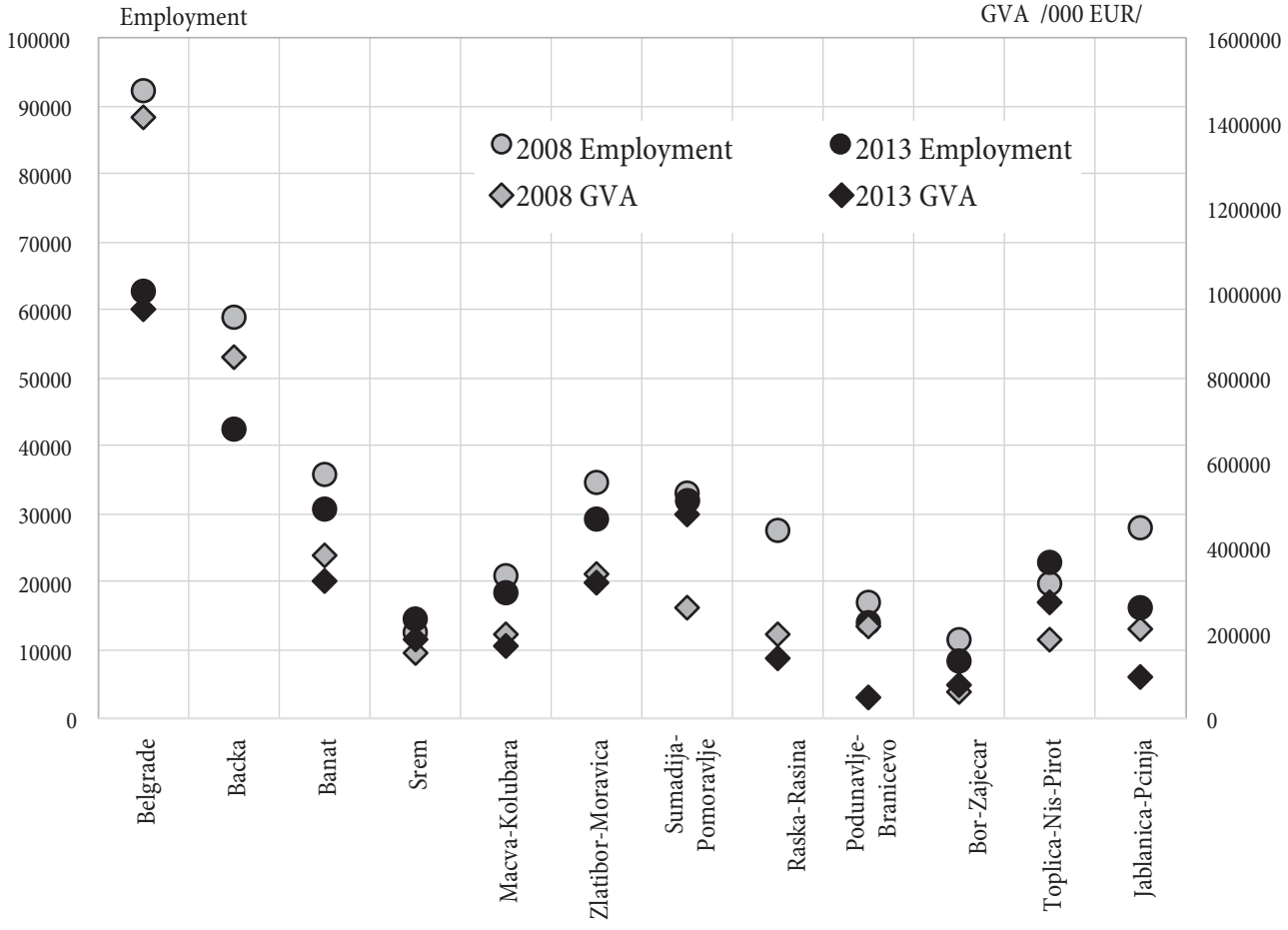
Industrial employment drastically decreased in the least industrially developed regional areas (see Figure 10): Jablanica-Pcinja (-43%) and Raska-Rasina (-33%), but it decreased in the most industrially developed regional areas as well, such as Belgrade (-30%) and Backa (-33%). The most drastic post-crisis decrease in value added in manufacturing industry was in the regional areas Jablanica-Pcinja (-54%) and Sumadija-Pomoravlje (-47%). Owing to direct foreign investment some regional areas proved to

Figure 9: The structure of manufacturing in Serbia



Source: Authors' calculations on the basis of the SBRA data

Figure 10: Regional balance of the manufacturing, 2008-2013



Source: Authors' calculations on the basis of the SBRA data

be more resilient, namely they increased the number of employees and GVA in manufacturing industry in that period. In regional area Srem the number of employees increased by 8% and GVA increased by 26% and in regional area Nis-Toplica-Pirot the number of employees increased by 17% and GVA increased by 45%.

However, given the circumstances some branches of industry proved to be more resilient than the others, and some branches of industry proved to be more competitive than the others (see Table 3 as well as Figures 11 and 12). Regional dynamic industry analysis took into consideration two time points: final statements of accounts of all enterprises were examined: 2008 (upper transitional point) and 2013 (time point 5 years after recession began).

Regional resilience – branches of industry with one *

- Regional areas with a higher regional privatization efficiency quotient have more resilient branches of industry;
- In the undeveloped regions, the traditional branches of industry preserved regional resilience;
- Resilient branches of the developed regions participated in their regional economy to a much lesser degree than resilient branches did in the undeveloped regions (see Table 4). For instance, a branch of industry – *Meat Processing and Preservation* in Backa makes 50% of the employment in Serbia in that branch, but only 3.3% in Backa itself. Contrary to this, in Jablanica-Pcinja region *Furniture industry* branch makes 13.1% of that region employment, whereas at the national level it makes 33.9% of the employment in Furniture industry branch.

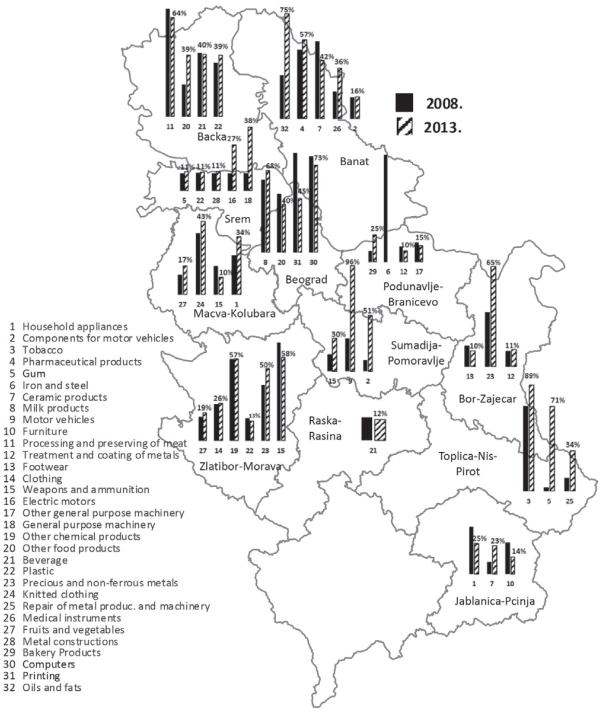
Regional competitiveness – branches of industry with two **

- There is a significant correlation between privatization efficiency quotient and competitive branches. Namely, regional areas with a higher regional privatization

Table 4: Resilience, competitive and specialized branches

	Manufacturing industries	Resilient	Competitive	Specialization
Beograd	Dairy products, Other food products	*	**	***
	Printing, Computers	*		*
Backa	Processing and preserving of meat, Plastic	*	**	***
	Other food products	*		*
	Beverage		**	**
Banat	Basic chemicals, Pharmaceutical products, Components for motor vehicles	*	**	***
	Oils and fats, Medical instruments		**	**
Srem	Gum, Plastic	*	**	***
	Metal constructions, Electric motors, General purpose machinery		*	*
Macva-Kolubara	Fruits and vegetables, Knitted clothing, Weapons and ammunition	*	**	***
	Footwear	*		*
	Household appliances		**	**
Zlatibor-Morava	Fruits and vegetables, Clothing, Other chemical products, Plastic, Precious and non-ferrous metals, Weapons and ammunition	*	**	***
	Motor vehicles	*		*
Sumadija-Pomoravlje	Weapons and ammunition, Motor vehicles, Components for motor vehicles	*	**	***
	Wire and cable equipment, Furniture	*		*
Raska-Rasina	Beverage	*	**	***
	Gum, Components for motor vehicles Other machines for special purposes, Other general purpose machinery	*		*
Podunavlje-Branicevo	Iron and steel, Treatment and coating of metals	*	**	***
	Bakery Products		**	**
Bor-Zajecar	Footwear, Precious and non-ferrous metals, Treatment and coating of metals	*	**	***
Toplica-Nis-Pirot	Tobacco, Repair of metal products and machinery	*	**	***
	Clothing	*		*
	Gum		**	**
Jablanica-Pcinja	Household appliances, Furniture	*	**	***
	Textile fibers, Footwear	*		*
	Ceramic products, Pharmaceutical products		**	**

Figure 11: Regional resilience – employment



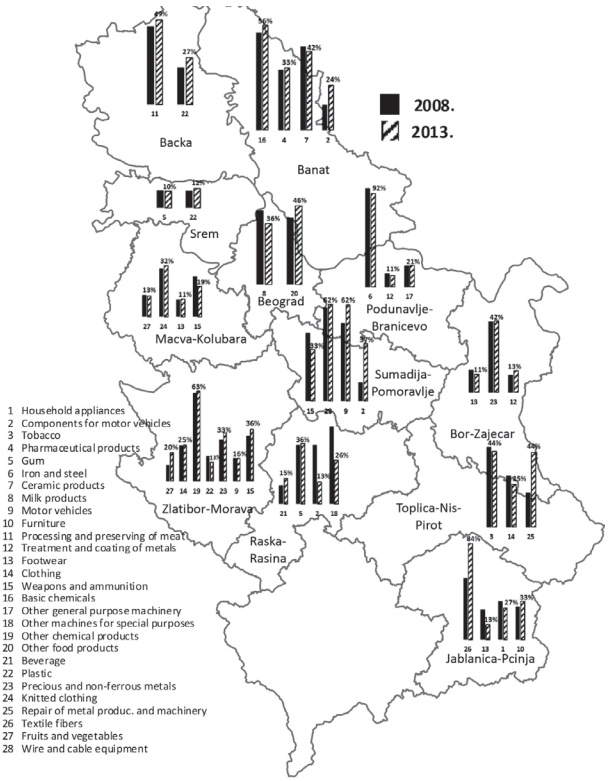
efficiency quotient have more resilient branches of industry;

- Owing to direct foreign investment and direct national incentive measures in some regional areas, positive structural changes were made in the economic structures of these areas. What increased and changed the structure of value added was expanding new production capacity of branches of industry of the following regional areas (see Table 4): Srem (*Metal constructions*, *Electric motors*, *General purpose machines*, *Tools and equipment for motor vehicles*), Toplica-Nis-Pirot (*Textile industry*, *Production of rubber-made products*, *Maintenance of metal products and machines*), Macva-Kolubara (*Household appliances*), Banat (*Medical device industry*), Bor-Zajecar (*Metal processing machines*), Podunavlje-Branicevo (*Bakery and pasta production*).

Regional specialization – branches of industry with three***

- Developed regional areas have a diversified industrial structure with a lower regional specialization;
- Undeveloped regional areas have a significantly higher degree of regional specialization;
- Regional specialization is under the strong influence of privatization efficiency quotient;

Figure 12: Regional competitiveness – GVA



- Dominance factor of a branch of industry (more than 3% of employment or GVA in the economy of the region) is more present in the undeveloped regions;
- Regional specialization is still greatly influenced by regional resilience of the traditional branches of industry;
- Regional specialization in developed regional areas is more competitive than the one in undeveloped regions (see Table 4). For instance, in 2008 *Meat industry* in Backa made EUR 74 million and in 2013 it made EUR 69 million, whereas in 2008 *Furniture industry* in Jablanica-Pcinja made GVA of EUR 26 million and only EUR 11 million in 2013.

Conclusion

"*If an economic activity is orientated only towards the area of one city, without connections with its wider environment, it certainly cannot reach the necessary level of efficiency, because this closed market is so small that it limits the level of specialization*"

A. Smith, The Wealth of Nations [p. 122]

In regional economy term *regional resilience* denotes resistance (elasticity, power of endurance) of regions to different types of shocks. The very concept of regional resilience became popular after the global recession. It encompasses a few phases: getting back to the balance, adaptation and recovery. The concept of regional resilience is trying to answer a question raised by various scientific disciplines (economics, sociology, etc.): Why do some regions succeed in overcoming the waves of recession and keep their life standards, while some others do not? Regional disproportions are a resultant of competitiveness factors. The factors of agglomeration, human capital and institutions are the primary factors. Structural economic changes in the region, as well as how different factors increase or decrease vulnerability of a region to external impacts, are in the focus of the research.

What promotes economic growth of region better – specialization or diversification of regions? Theoretical considerations are divided, while some theorists claim that regional diversification increases regional resilience [6], the others advocate the claim that traditional regional specialization may serve as a source of economic resilience [29]. Both groups agree on the following:

- Regional resilience mostly depends on sectoral connectedness [27], i.e. regional resilience is larger if there is a higher level of sectoral (branch) connectedness of economic structures;
- Regional resilience is increased by the factors which refer to technologies and knowledge, the share of new products and services, innovative capacity [5];
- Endogenous regional resources are primary factors which increase regional resilience – infrastructure, educational institutions, human capital, entrepreneurial capacity and financial capacity [6]. Increasingly important factor is 'entrepreneurial culture of regions' [30];
- Regional resilience increases by specialization of traditional branches, since they are less subject to external shocks [2];
- Resilient regions are those with institutional capacities capable of fast adaptation to the changed external circumstances and capable of alleviating the negative effects [13]. In the most developed economies the regions which have developed cooperation between public, private and non-profit sectors are the most resilient.

For a country in transition with clearly noticeable regional social-economic unevenness, such as Serbia, it is highly important to examine the resilience of a region. Regional policy and incentive mechanisms may be efficient only if they have regional performances during economic cycles. Institutional interventions do not have the same effects in different regions, that is why it is important to examine all factors of regional resilience. The recession did not affect all the regions with the same intensity, some were more resilient than others. The research had a goal to identify regional industrial capacities which could explain the specific performances of these regions.

The authors of the study have bridged the definition of economic region using Samuelson's 'law of one price' – it is an area in which the prices of production factors are integrated/similar. The research was carried out in 12 regional areas (NUTS III) in this context.

The main results of the dynamic research of regional industrial structures in Serbia in 2008 and 2013:

- Regional industrial resilience is a resultant of transitional processes in the industry of Serbia;
- In underdeveloped regional areas productivity has improved in labor-intensive branches, while there has been a significant productivity improvement in capital-intensive industrial branches in the developed regional areas;
- Regional resilience in poorer regional areas was based on traditional industrial branches;
- Regional diversification is significantly greater in developed regional areas. There has been a dispersal of the manufacturing sector which encompasses numerous production services;
- FDI has increased regional competitiveness of some regional areas thanks to the investments in branches with the greater share of value added;
- In developed regional areas there is a lower level of regional industrial specialization;
- Underdeveloped regional areas have an importantly higher level of specialization;

- Dominance factor of an industrial branch – more than 3% of employment or GVA in economy of a region – is more present in underdeveloped regional areas;
- Regional specialization is still under a considerably greater influence made by regional resilience of traditional industrial branches;
- Regional specialization in developed regional areas is more competitive than in underdeveloped regions.

Finally, the findings of the research of regional resilience impose the need for re-examining the existing institutions, policies and measures. Regional transformation orientated towards higher resilience increases by valorization of endogenous resources and mutual institutional performance of stimulating, educational, scientific-technological and innovative policy. The economic transformation oriented towards entrepreneurial economy and the structure of companies will be crucial in the following period [21]. Innovations and entrepreneurship are in the focus as generators of economic development. The traditional model of entrepreneurship is changing (economy of scales, traditional industrial branches, 'top-down' management). New entrepreneurs are not copies of big global companies, but the motivators of new innovative processes.

Specialization of the region in Serbia is now in the initial phase. Although there is an obvious influence of a multiplied effect which a country gets with economic specialization of the region, the incentive policy encounters numerous limitations, from unfinished structural changes in economy, absence of main economic infrastructure, undeveloped public-private dialogue and partnership between the government, economy and scientific and research institutions at a local, regional and national level.

Regional development of a country should be built on new foundations. Post-crisis problems of economic growth imposed new models of regional economic growth on the creators of economic policy. Regional economic growth depends primarily on the level of regional specialization, i.e. on the level of resilience and competitiveness of industrial branches which can be the generators of regional development. The recognition of such branches which stood test of time is a starting point of new regional policy of Serbia.

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SYSTEM OF FINANCING OF LOCAL SELF-GOVERNMENTS FOR THEIR SUSTAINABLE FUNCTIONING AND DEVELOPEMENT*

Sistem finansiranja lokalnih samouprava u cilju održivog funkcionisanja i razvoja

Abstract

In this paper we present the main features of the current system of financing of local self-governments (LSG) in Serbia and propose the principles and directions for its further improvements, given the current level of decentralization. For this purpose, we analyzed the current legal framework in the area of LSG jurisdiction on the one hand, and model of financing of LSGs, on the other. In addition to that, we tried to depict a financial position of LSGs and local public utility companies (LPUCs) using financial data for the period from 2011 to 2013, in order to design principles for systematic regulation of this area, the latter being of particular importance in the dominant context of fiscal consolidation policy. The general conclusions and recommendations point to the necessity to design such a concept of financing of LSGs which has a firm link between jurisdiction, i.e. type of public services provided by LSG level, and sources for financing of these jurisdictions/services – aligned in terms of quality and availability of these services with the objective possibilities. Analysis of the financial data indicates that there is relatively firm evidence in support of the conclusion that the main source of bad financial position of certain LSGs reflected in a high level of outstanding stock of payables to suppliers, lies in the inappropriate financing of public utilities and local institutions founded by LSGs.

Keywords: *local self-government units, model of financing*

Sažetak

U ovom članku predstavljamo osnovne karakteristike važećeg sistema finansiranja jedinica lokalne samouprave (JLS) u Srbiji i predlažemo principe i pravce za njegovo unapređenje pri sadašnjem stepenu decentralizacije vlasti. U ovom cilju, analiziramo aktuelni pravni okvir kojim su uređene nadležnosti, s jedne strane, i model finansiranja lokalne samouprave, s druge strane. Pored toga, pokušali smo da sagledamo finansijski položaj jedinica lokalne samouprave i lokalnih komunalnih preduzeća na osnovu finansijskih podataka za period od 2011 do 2013. godine, kako bismo predložili principe za sistemsko uređenje ove oblasti koji su naročito važni u kontekstu dominantne politike fiskalne konsolidacije. Osnovni zaključci i preporuke upućuju da je potrebno koncipirati takav model finansiranja JLS u kome postoji čvrsta veza između nadležnosti, odnosno vrste usluga u okviru JLS i izvora sredstava za finansiranje tih nadležnosti/usluga – na objektivno mogućem stepenu kvaliteta i dostupnosti različitih usluga. Analizom finansijskih podataka pokazujemo da postoje dosta uverljivi nalazi u prilog zaključku da uzrok lošeg finansijskog položaja JLS, koji se ogleda u visokom nivou nagomilanih neplaćenih obaveza, treba tražiti u neadekvatnim izvorima finansiranja lokalnih komunalnih preduzeća i lokalnih ustanova čiji su JLS osnivač.

Ključne reči: *jedinice lokalne samouprave, model finansiranja*

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Introduction: Jurisdiction and funding of local self-governments through the evolution of legal framework

Jurisdiction/tasks

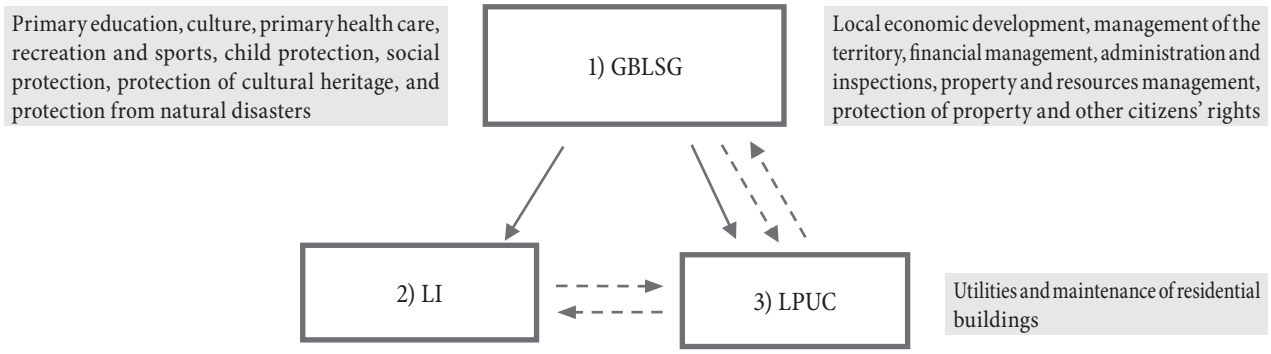
LSGs can be observed as a system consisting of three groups of entities, with their jurisdiction/tasks and mutual relationships, as conceptually coined in the report by *Zelić* [7]. Those groups of entities are: 1) governing bodies of the LSGs (GBLSG), 2) local institutions (LI), and 3) public utility companies (LPUCs) which are owned by the city or the municipality.

Local self-government bodies comprise the assembly, president of the municipality, municipal board and municipal administration. Regarding the jurisdiction, these bodies deal with the issues relating to local economic development, management of territory, administration, financial management and inspection, property and resources management, and protection of property rights as well as other rights of citizens. It relates to jurisdictions under items No.1-4, then 7-15, and 20-39 of Article 20, paragraph 1 of the Law on Local Self-Government ("Official Gazette of the RS", No. 129/2007 and 83/2014). Local institutions are founded by LSG with the aim to perform through them its jurisdictions in the area of basic human rights, as stipulated by the Constitution (Articles 68, 69, 71 and 73), which include: primary health care, primary education, sports, child care, social care, protection of cultural values and citizens' protection against natural disasters. These jurisdictions are prescribed under items No. 16-19 of Article 20, paragraph 1 of the Law on Local Self-Government. The third group of entities – local public utilities are primarily in charge of providing communal services (water purification and distribution, treatment and drainage of atmospheric and sewage waters, production and supply of steam and hot water, transport of commuters in midtown and from suburbs to midtown, waste management in cities and settlements, maintaining of landfill sites, management of open green market areas, parks, leisure areas and other public areas, public parking management, public street lighting, maintenance of cemeteries and burials, etc.), as well as maintenance of residential buildings. This is in line with the jurisdictions under items No. 5 and 6 of the mentioned Law article.

Schematic overview of the LSG system with the main jurisdictions and mutual relations between the groups of entities 1), 2) and 3) is presented in Figure 1. Full lines in Figure 1 represent ownership relationships between subjects from groups 1) GBLSG (and those subjects can be observed as LSGs in narrow terms), and subjects from groups 2) LI and 3) LPUC; ownership link implies the right of establishing governing bodies in LIs and LPUCs owing to capital link, which means that LSG (in narrow terms) invested, and can invest in the future into assets of LPUCs and LIs. Dashed lines represent the direction of selling products and services of LPUCs to other entities and, consequently, payment for such products and services. The services provided by LPUCs to LIs as legal entities – heating, water, waste disposal, etc. – are also provided to GBLSGs, which also pay to LPUCs for these services. Besides the described services, GBLSGs also pay LPUCs for those utility services "for which end-user/consumer cannot be established" (Article 27, the Law on Utilities). Such services are, for example, "maintenance of streets and roads" or "maintenance of green surfaces", which are all activities labelled as utilities by the Law (Article 2, the Law on Utilities), and therefore there are LPUCs established to provide such services. City or municipality pays to LPUC for the services provided to the citizens, i.e. pays in certain sense "in the name of citizens", by funds collected from them through invoicing of respective fees by LSG. Described mutual relationships are important for further analysis of the financial position and financing model for LSGs as a whole. Next to each group of entities in Figure 1, their main tasks/jurisdictions are listed in gray boxes.

With the described set of tasks/jurisdiction under the responsibility of LSGs, their share in overall consolidated government expenditure is 13.4% in 2014, representing about 6% of GDP [3]. Decentralization policy, led by the central level since 2001 when the share of local-level expenditures was around 3.8% of GDP, can be summarized in two dominant trends over the last 15-year period, as described in details by *Kmezić* & *Đulić* [3]. According to these two authors, the phase lasting from

Figure 1: Institutional framework for LSG operations



Source: [7]

2001 to 2008 was characterized by the strengthening of the roles of cities and municipalities, as well as of their fiscal autonomy exercised through continuous transfer of powers/jurisdictions and funds. During this period, two key pieces of legislation were adopted: the Law on Local Self-Government (in 2002 and 2007), which sets forth the general jurisdiction of LSG, and the Law on Local Self-Government Financing (in 2006) which defines the appropriate model of financing for specific jurisdictions on local self-government level. Also, during this period the current Constitution of the Republic of Serbia was adopted (in 2006). With LSG budget expenditures participating with 15.1% in total consolidated government expenditure and corresponding to 7.2% share in GDP, the highest level of fiscal decentralization was achieved in 2007. The other typical phase in the process of fiscal decentralization, as described by these two authors, is a "trend of fiscal centralization and pseudo-decentralization", which lasted from 2009 to 2015. This period was marked by inconsistent transfer of new mandates – and new liabilities, accordingly (often by Government decrees, Rulebook issued by Ministries, collective contracts, and even Government conclusions), with no appropriate provision of sources of financing for these new mandates. This phase is also marked by frequent ad hoc abolishment or modification in the level of revenue of LSG. All of that, as argued by the authors, "distorted the vertical balance established by the policy of government decentralization which existed until 2008."

Although, generally speaking, the level of government decentralization has been significantly increased since 2001, compared to other countries, Serbia rather belongs to countries with relatively low level of decentralization (see Table 1).

Current model of LSG financing

The current Law on Local Self-Government Financing formally dates back to 2006 (hereinafter: Law from 2006), but given the significance of its later amendments and supplements, and especially those from 2011 and 2012, the model of financing of LSGs which currently applies was finally shaped in 2012 (hereinafter: Law from 2012).

Although it is not so "sophisticated" compared to models in other countries, e.g. like the one in Slovenia, the financing model introduced in the Law from 2006 has its economic-financial logic and corresponds with the Law on Local Self-Government ("Official Gazette of the RS", No. 129/2007 and 83/2014), in a way that model of LSG financing secures funding for the provision of tasks that are in jurisdiction of LSG as stipulated by the Law on Local Self-Government.

The model was based on three categories of revenue (see Figure 2): own-source revenues, shared taxes, and

Table 1: Subnational government spending/revenue as a share of total government spending/revenue in 2001

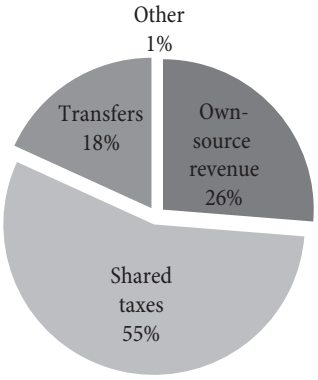
	Spending %	Revenue %
Greece	5.0	3.7
Portugal	12.8	8.3
France	18.6	13.1
Norway	38.8	20.3
United States	40.0	40.4
Denmark	57.8	34.6
OECD Average	32.2	21.9

Source: [2]

transfers (grants). Own-source revenues, for which the rates are determined by LSG (up to a certain upper limit set by respective national level regulation), consisted of: property tax, local administrative tax, environment protection fee and others. Shared revenues included: shared taxes among which the most important is income tax where 40% of collected taxes in the territory of specific LSG was assigned to the local level, as well as shared fees (for cars, the use of mineral resources, materials taken away from water streams, the use of forests and waters, etc.). Total transfers were composed of block transfers of 1.7% of GDP in total, functional transfer (in case of transfer of specific function to local level) and earmarked transfer in a narrow sense (for execution of specific tasks within the original or delegated jurisdiction of a LSG). The overall block transfer splits into transfer for equalization (it is about equalization of per capita revenue based on collected shared taxes), compensation transfer, transition transfer, and general transfer as the most significant transfer in the structure of total block transfer. Once calculated as a difference between total block transfer and its other components, the general transfer was allocated to LSGs in proportion to the number of inhabitants and other criteria regarding specific needs – based on the difference in territory area and different needs in terms of child care, primary and secondary education.

Although there was probably no explicit intention to change the original logic of the model, as the crisis significantly reflected on the fall in total revenues on the local level, first in 2009 and then in 2011 and 2012, its parameters were modified through the amendments to Law from 2006. With these amendments, the LSGs have got a significant rise in shared taxes. Instead of the previous 40%, LSG has received 80% from income tax of employees with residence in specific municipality or city, with the exception of the City of Belgrade, to which 70% of this tax has been assigned.

Figure 2: LSG Budget revenue structure in 2013



Source: [4]

The other change followed probably because in the described way, the revenues of municipalities and cities were significantly raised due to assigned taxes. By amendments in 2011, the transfers that LSGs receive from the Budget of the Republic of Serbia have been reduced. This reduction has affected transfer for equalization and general transfer.

Transfer reduction has been done through multiplying their amount, which would be obtained in accordance with the Law from 2006 by coefficient 0.5, 0.7, and 1 for LSGs from development groups I – IV (I – the most developed, IV – the least developed municipalities, measured by GDP per capita).

Since the City of Belgrade has received significant additional funds based on the increase in shared part of income tax – despite the fact that 70% of that tax is being assigned to Belgrade, and not 80% – Belgrade had no right to the mentioned transfers. The funds that would appertain to Belgrade through the model for calculation of transfers serve for *solidarity transfer*, introduced also in 2011. 10% of these solidarity funds belong to LSGs from 1st and 2nd group of development, and 30% and 50% to those from 3rd and 4th group. Distribution of solidarity funds that are granted to groups 1st – 4th of LSGs was regulated in 2012, by amendments to Law on Local Self-Government Financing.[1] Distribution of solidarity funds to LSGs has been regulated in a way (in a format of formula) that the funds which shall be granted to 1st – 4th groups shall be split between LSGs from a specific group proportionally to their level of development in relation to the development level of Belgrade. Therefore, "calculation unit" is LSG with its coefficient, which reflects its relative level of development, irrespective of its size measured by the number of inhabitants.

In this way, through previously described changed calculation of transfers – in all three cases by adding to

1 Later amendments to the Law have not substantially changed the existing model of LSG financing from 2012.

the system parameters that measure a development level, significant distortions occurred, and subsequently to that – illogicalities in the amounts of solidarity transfer per capita in specific LSG, and consequently in the amounts of total revenues per capita of LSG.

The average per capita budget revenues of all four groups of LSGs are quite balanced – but budget revenues per capita within one group are quite dispersed (see Table 2). Extreme discrepancies caused by the changes to the model of financing reflect in the fact that the highest per capita income has the underdeveloped municipality from 4th group, Crna Trava. Or, developed municipality from 1st group with the lowest income per capita in its group has a lower per capita budget income than average LSG revenue in any other development group.

Consequently, described changes in the system of transfers have produced a high dispersion of share of transfer in total revenue (see Table 3), and by that the dispersion of total revenues per capita as well as very illogical outcomes when development category of a specific LSG is concerned. Namely, the share of transfers in budget revenues and receipts varies a lot, both between (on average) and within development groups (dispersion of individual LSG characteristics). Also, it is quite difficult to capture a specific pattern, except that the underdeveloped municipalities are apparently having a higher share of transfers in revenues – or only on average. In these municipalities, the range of shares of transfers in total budget revenue is huge – from 27% to 81%, similarly to developed LSGs, but at the lower general level (from 5.9% to 22.3% for 1st development group, see Table 3).

In addition to the fact that essential logic of the model has been distorted, the model has not been either consistently implemented in the previous period. In fact, since 2009 it has been deviated in practice from the application of provisions of the Article 37 of the Law, by which the total funds of block transfer are to be determined on 1.7% of GDP, this level being probably set as empirically determined need for financing of specific jurisdiction in the area of basic human rights of LSGs in the first original definition of the model. From that year onwards, less than 1.7% of GDP has been transferred as block transfer, which is a consequence of the model logic disorder due to committed amendments.

In this way, the model, perhaps not as a primary goal of described changes, has received an element of regional development, although it cannot be seen consistently, bearing in mind the transfer dispersion even within specific categories of development. Regional development policy, however, should not use the instruments for LSG financing, its place is not in the model of financing the jurisdictions of LSG. In fact, mechanism for joint equalization, which in described model is envisaged through the transfer, has a role to protect all citizens and to provide them with a minimum of availability and quality of public services which are being guaranteed to them by the Constitution and other relevant laws, irrespective of LSG territory they live in, and in the same way not to discourage a LSG to collect taxes on its territory. The point is not in non-existence of regional development policy, but its review and design are necessary within an adequate development strategy and its implementation through adequate instruments, such as public investments financed by central level. For more details on this, see the fourth section.

In 2015 the Ministry of Finance has established a working group that has prepared a new model of LSG financing. Based on the working text of the draft Law on Local Self-Government that was subject of the public debate at the end of 2015, the intention is to return to the logic of the model from the Law from 2006 by correcting for its

Table 2: Per capita budget revenue in 2013; in RSD

LSG development group	Average	Lowest	Highest
I group (20 LSGs)	32,565	23,881	52,823
II group (34 LSGs)	28,363	19,243	80,080
III group (47 LSGs)	27,110	17,207	41,376
IV group (44 LSGs)	30,843	20,646	82,005

Source: MPALSG and PPS database

Table 3: Transfers as a percentage of total revenues and inflows in 2013

LSG development group	Average %	Lowest %	Highest %
I group (20 LSGs)	13.81	5.9	22.3
II group (34 LSGs)	25.33	9.5	65.9
III group (47 LSGs)	38.38	18.5	66.8
IV group (44 LSGs)	57.86	26.6	81.2

Source: MPALSG and PPS database

logical incoherences arisen from amendments from 2011 and 2012. Additionally, based on simulated effect of the new proposed model, whose summary results have been published in comments on the Draft Law by the Fiscal Council from December 21, 2015, it is obvious that the intention of the Ministry of Finance as an author of the draft law is to transfer the part of fiscal consolidation burden to LSG budgets, in the total amount of RSD 7-8 billion. It is clear that if the proposed solution comes into force, the higher haircut on total revenues will be experienced by less developed LSGs – the ones that experienced the biggest benefits from the amendments in 2011 and 2012.

However, although the forthcoming novelties would enhance the logic of financing model, for a sustainable functioning and development of LSGs it is, however, important to understand the overall system of jurisdiction and LSG financing, as well as all the needs regarding the functioning and development on the one hand, and realistic possibilities, i.e. sources of financing, on the other. In this respect, it is particularly useful to give an overview of the financial position of LSGs and the causes of financial problems of individual LSG under the financing model that is in place.

Analysis of the financial position and the identification of the structural reasons behind the poor financial position of some LSGs

An aggravating circumstance for unbiased overview and understanding of the LSGs' financial position is a lack of detailed and publicly available data. For the purpose of this analysis we will use the data collected by the Ministry of Public Administration and Local Self-Government and the Republic Secretariat for Public Policies from several sources (the Ministry of Finance, Treasury, directly from the local self-government units, and from the Serbian Business Registers Agency for data from financial statements of the public utility companies) for the period 2011-2013. An additional problem for analyzing the financial position of the LSGs is the fact that LSG budgets, i.e. revenues and expenditures are recorded based on cash principle while the outstanding debt (unpaid payables to suppliers) and uncollected receivables do not seem to be recorded in a systematic and consistent manner. The used database with the revenues and expenditures of individual LSGs during the observed period contains the data on balance sheet liabilities of individual LSGs as of December 31 of each of the three years. However, according to some State Audit Institution reports, it was evidenced that certain LSGs do not record all their liabilities, particularly those towards public enterprises – liabilities for electricity, heating, water supply, etc.[2], which additionally reduces the quality and credibility of the collected data. By 2013, DRI has audited only limited number of budget reports of LSGs.

General financial position of the LSGs

Local self-government units (LSGs) in Serbia did not have budget deficits in 2012 and 2013 if observed in an aggregate manner. The accumulated surplus of all LSGs in Serbia was RSD 4.94 billion in 2013[3]. However, this amount of the accumulated surplus is the result of a difference between the total surplus of RSD 6.01 billion and the deficit amount of RSD 1.07 billion in some municipalities and towns. In 2013 32 LSGs out of the 145 analyzed LSGs had a deficit, i.e. 22% of the total number. If observed in several consecutive years, the LSGs do not constantly have a deficit – which usually is the case when a country once has a deficit on a global level; afterwards, it takes a rather long period to reduce or eliminate a budget deficit by implementing relevant policies. As for the Serbian LSGs, they have "incidental" deficits – only six municipalities that had a deficit in 2013 also had it in 2012 – while other 22 municipalities had a deficit in 2012 when a total number of 28 LSGs had deficits. Both deficits and surpluses of the LSGs had specific meanings – an excess of funds, i.e. a surplus, represents unspent funds allocated for a current year, and it is often envisaged for a certain purpose in the following year in order to avoid a future deficit[4]. On the other

2 According to [5], during the audit of the 2012 final account of the Municipality of Smederevska Palanka, the State Audit Institution (SAI) found out that more than RSD 800 million of liabilities towards suppliers were not recorded (which was recorded subsequently to SAI mission). The same authors highlight that the SAI has reported their evidence that balance sheets do not often reflect realistic data about assets and liabilities.

3 The fact that the majority of data used in the analysis are from 2013, as the most recent available data, should not affect the conclusions and recommendations of the analysis since the main subject of the analysis – the model of jurisdictions and financing has not been modified since.

4 Sremska Mitrovica had a budget deficit in 2013 whereas in 2014 it had a budget surplus of RSD 46.7 million. Furthermore, Sremska Mitrovica did not have long-term debts in 2013 – but in 2015 it borrowed RSD 611.5 million, which it combined with a 2014 surplus amount of RSD 46.7 million for the purpose of funding the construction of infrastructure buildings.

hand, given the fact that the revenues and expenditures are recorded under the cash basis, thus the deficit too, the amount of a deficit is limited by the surplus carried over from the previous year or by borrowing capacity on the financial market or from banks, which is regulated under the Public Debt Law ("Official Gazette of the RS", No. 61/2005, 107/2009 and 78/2011) and is earmarked for funding capital investments.

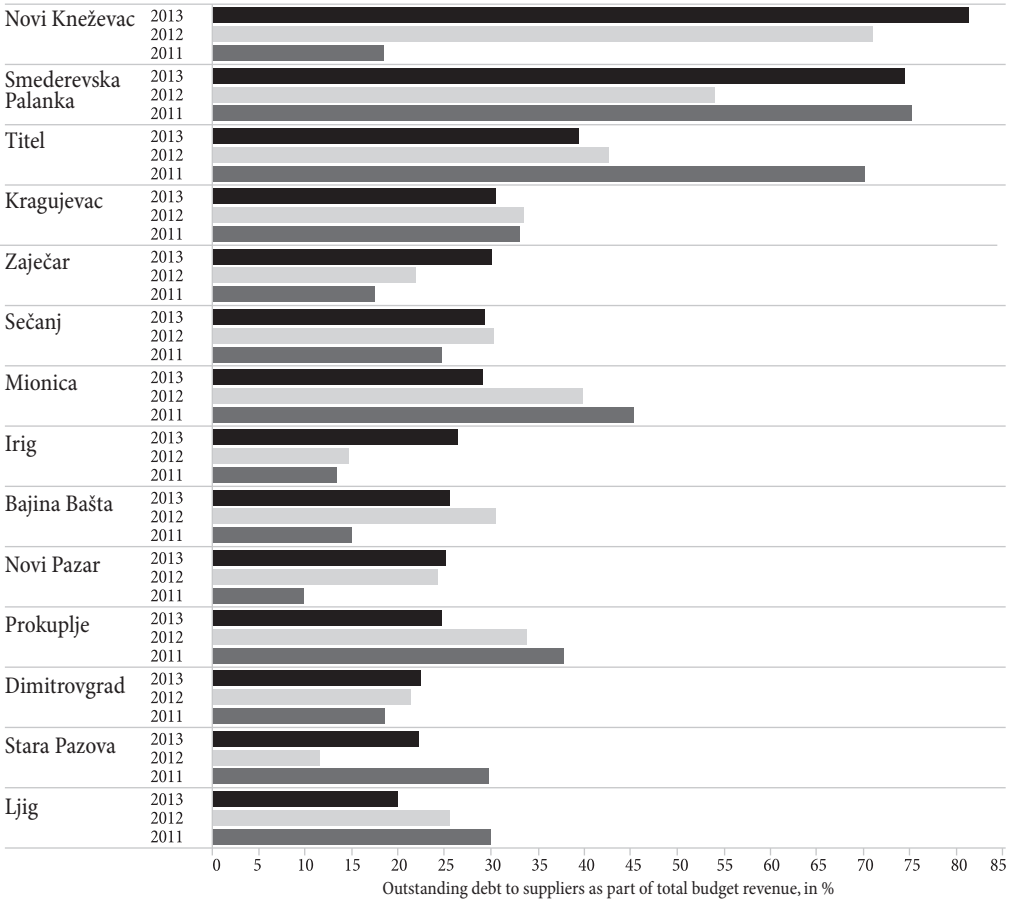
In relation to the aforementioned, long-term liabilities of the LSGs, which are mainly related to borrowing from financial institutions and by means of issuing municipal bonds (which is the case in only a few LSGs), are transparent and are not worryingly big.

However, an insight into the amount of the outstanding debt to the suppliers (which includes unpaid bills for electricity, heating, utilities, etc.) provides more information about the financial position of the LSGs. In case the amount of the outstanding debt is higher than the amount of available current revenues of the LSGs, it is accumulated and gradually becomes a burden on the LSG budget and is further carried over to insolvency of business entities.

The debt to suppliers is not that high on average. However, in approximately 10% of all LSGs outstanding debts to suppliers are 20% of the total revenues and higher (see Figure 3), in some cases even 80%, representing a significant burden on the overall budget. What is more problematic is accrued liabilities that are carried over year in year out since it is obviously impossible to discharge them from the current revenues in the following year. Such debts of the LSGs certainly generate consequential insolvency of the relevant companies/suppliers.

Another relevant characteristic of the LSGs' financial position is a high share of subsidies in total expenditures at approximately 15% on aggregate level, out of which the largest part (12% of the total expenditures) refers to the subsidies granted to local public utilities. Combining the data about the absolute amount of the subsidies from the budgets of certain LSGs and the data about "other revenues"

Figure 3: Outstanding debt to suppliers as part of total budget revenue of LSG, 2011-2013



Source: MPALSG and PPS database

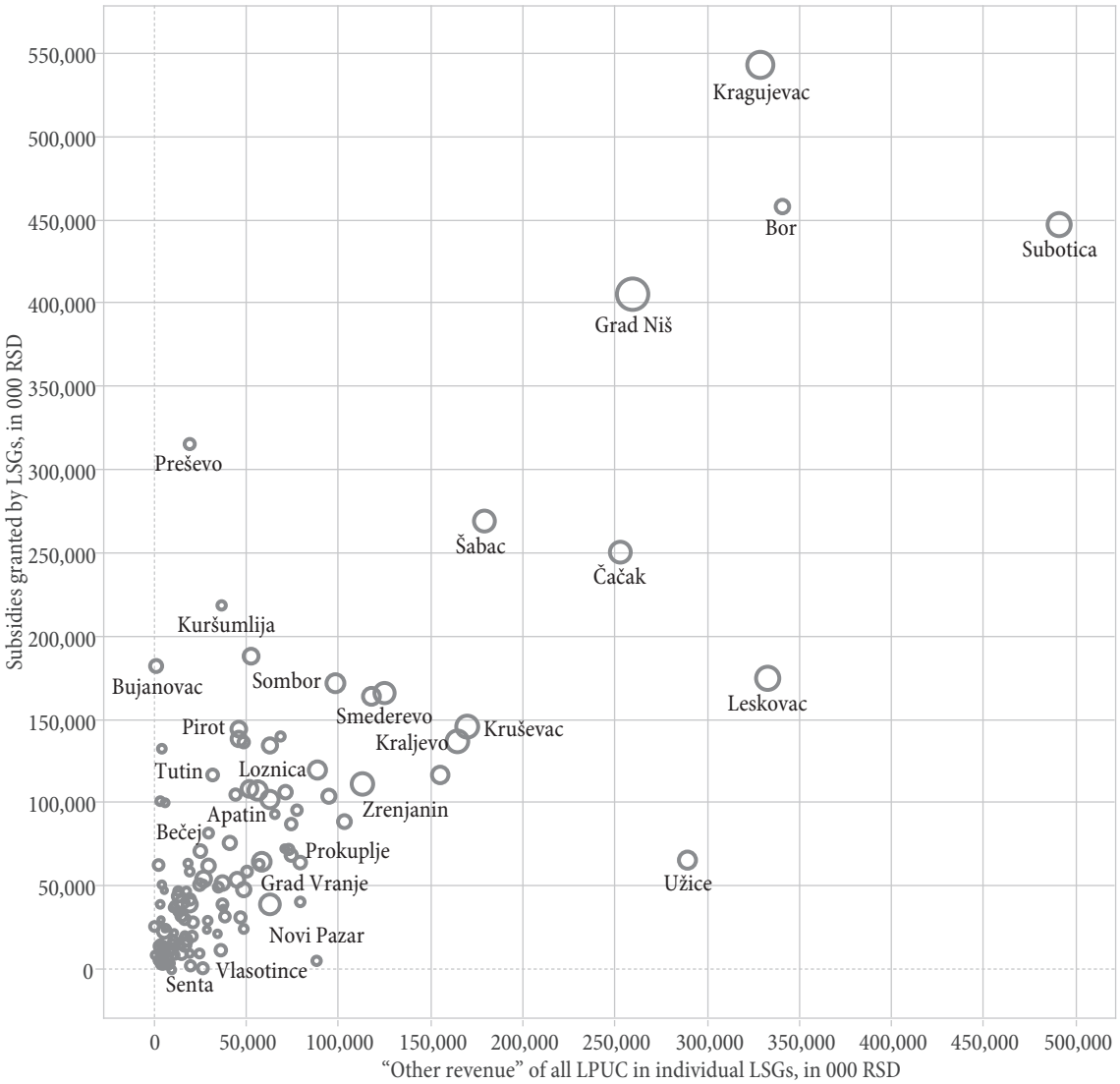
of the public utilities (the position from the profit and loss account of individual public utilities which records the revenues from the received subsidies) on an aggregate level for all public utilities in an individual LSG (see Figure 4), it can be clearly seen that subsidies granted by LSGs are largely directed to public utilities.

In relation to the abovementioned, although a further analysis of statistical significance of another finding is needed to make such a conclusion – it appears that those LSGs whose revenues are burdened with the subsidies granted to the local public utilities have the relatively largest outstanding debt to the suppliers, measured using a ratio between the debt to the suppliers and total revenue of an individual LSG (see Figure 5).

Additionally, capital expenditures, which are particularly relevant from the point of view of LSG development, when observed during five consecutive years from 2009 to 2013, their proportion in the total expenditures of the LSGs declines to the level of 16% (see Figure 6). Given the volatility of the share of those expenditures, they seem to have been rather set as a "residual" of the available funds than according to the needs for capital investments.

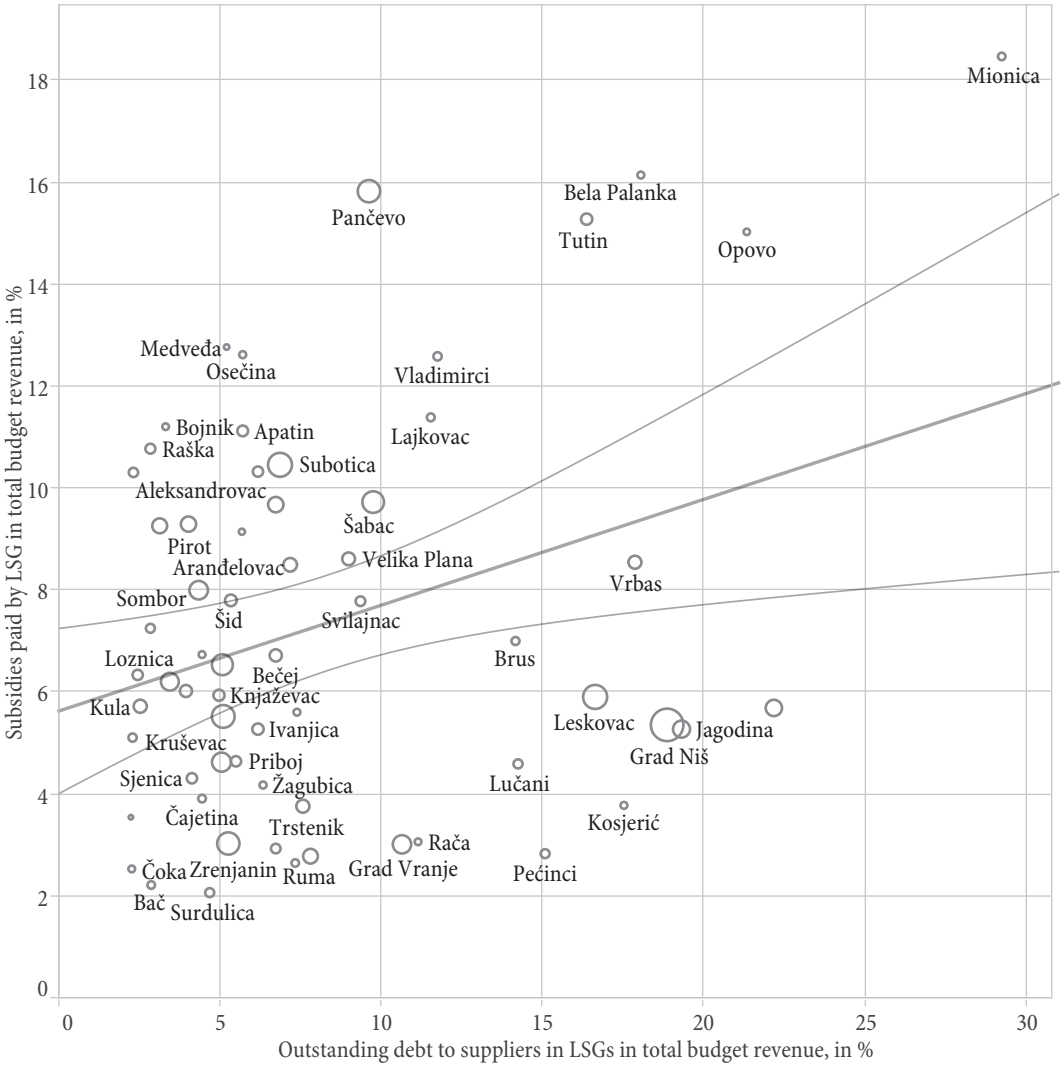
When we observe the revenue side of the LSGs budget, we can conclude that cities and municipalities do not collect own-source revenues proportionately to their economic strength, which might be the result of their significant reliance on the transfers in the overall revenue structure. Roughly measured by gross per capita

Figure 4: Subsidies granted by LSGs and "Other revenue" of all LPUC in individual LSGs in 2013*



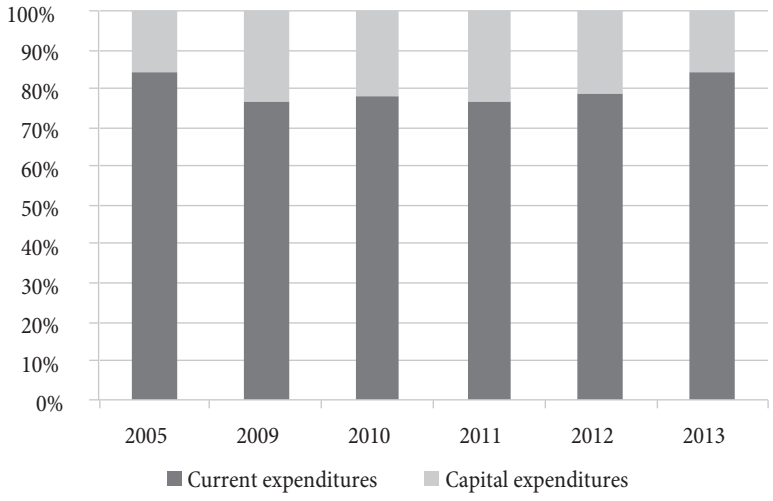
Source: MPALSG and PPS database; *Note: the size of the circle corresponds to number of inhabitants

Figure 5: Subsidies and outstanding debt to suppliers in LSGs in 2013*



Source: MPALSG and PPS database, *Notes: the outliers are excluded from the dataset; the size of the circle corresponds to the number of inhabitants

Figure 6: Current and capital expenditures of LSGs, in % of total

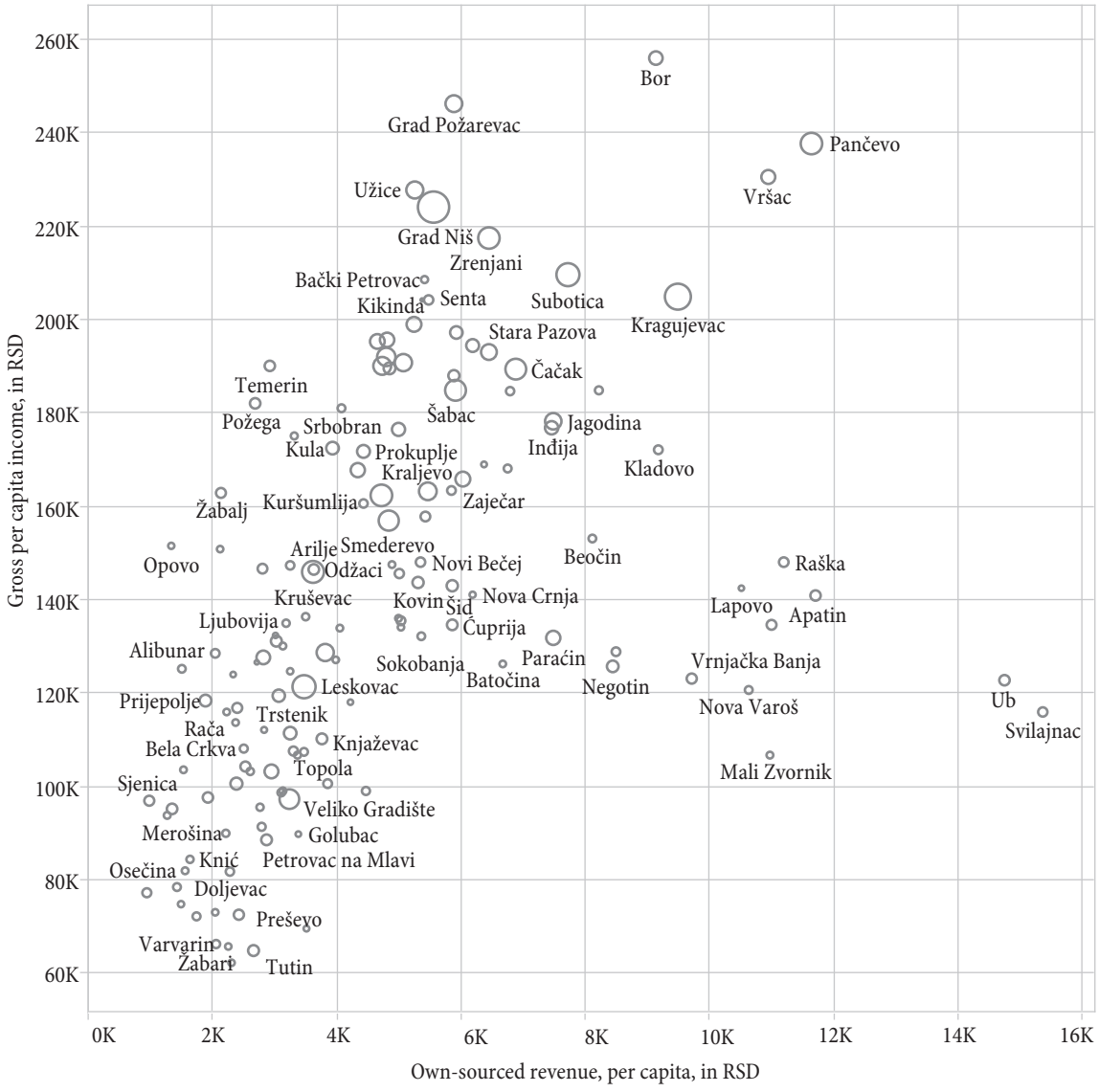


Source: [4].

income, many, relatively developed LSGs generate rather small own-source revenue per capita (see Figure 7): e.g. the city of Niš, Užice, Požarevac, etc.

In addition to the aforementioned, it should be noted here that there is significant room to improve the LSGs' management efficiency. Namely, the fact that a surplus was generated in those municipalities where there is a need for a larger scope and better quality of public services given they are of a lower level of social development (see Figure 8) indicates that there are difficulties in developing and implementing specific programs and projects. Furthermore, the conclusions of an empirical research of the authors *Radulović* & *Dragutinović* [6] also point to significant room to improve efficiency of a large number of LSGs. According to an efficiency analysis using the SFA (Stochastic frontier analysis) method, which boils down to the comparison of the ratio between inputs (budget expenditures) and outputs (measured using indicators of the scope and quality of the provided services) for individual LSGs, these authors measured that an "average" LSG in Serbia generates an output at 23% bigger costs than the "best" LSGs in terms of the ratio between the inputs and outputs. Moreover, when analyzing the efficiency of managing revenues and expenditures of the LSGs, the aggravating circumstance of uncertainty about revenues and liabilities (competences) should be taken into consideration bearing in mind

Figure 7: Fiscal effort in collecting own-source revenues*



Source: MPALSG and PPS database, *Note: the size of the circle corresponds to number of inhabitants

frequent changes in the previous period (described in the first section), which alone aggravates a planned approach and makes it difficult for the management itself to be independent of management capacities.

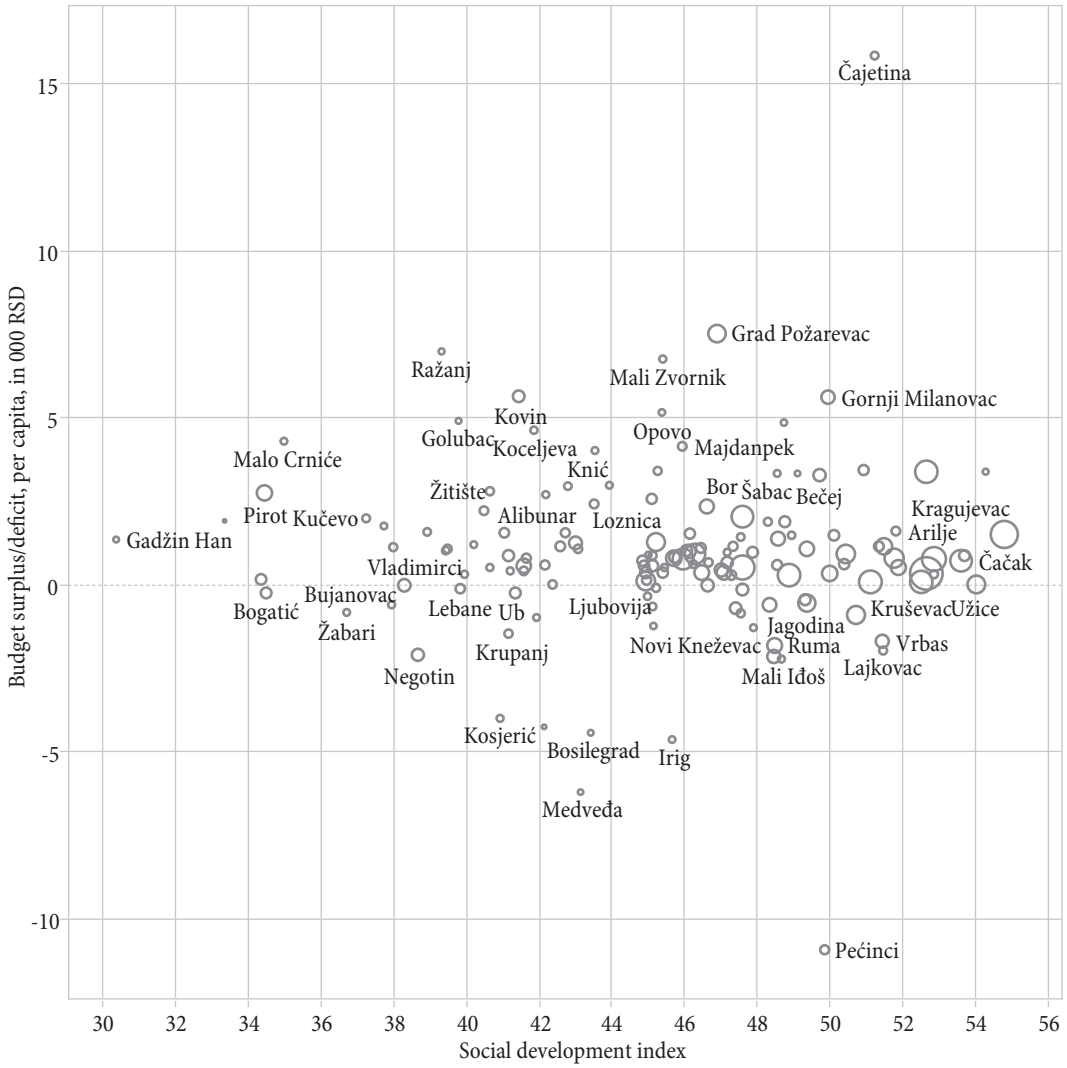
The causes of poor financial performance of LPUC

Almost all local public utility companies (LPUC) in Serbia, which are owned by cities and municipalities, have monopoly position. And these are not so called natural monopolies operating in sectors where it would be irrational to have more market players (water supply and waste water management, railroad and trolley traffic or long distance heating), but existing LPUCs in all public services and utilities are the sole providers of respective services on the territory of a LSG.

Above stated fact suggests that all PCUs always have the market secured, i.e. guaranteed sale of their products and services. Therefore, it can be concluded that when a LPUC generates operating loss, that loss is not the result of decreasing demand but can only be the result of (a) low sales prices and/or (b) high operating expenses.

(a) Determination of prices of public service and utilities is within the jurisdiction of the owners of LPUC, i.e. LSGs themselves – and not the market. For decades authorities in almost all LSGs have been trying not to increase the prices of public services and utilities – both

Figure 8: Budget execution and level of economic development*



Source: MPALSG and PPS Database; SIPRU; *Note: the size of the circle corresponds to number of inhabitants
*Social Development Index has been developed by the Social Inclusion and Poverty Reduction Unit (SIPRU). In order to optimally capture all determinants of social development, i.e. the quality of life in LSGs, the Index includes 41 indicators in nine areas: demography, economic activity, education, social welfare, housing conditions, social participation and vulnerable groups and human rights.

when low prices were inherited by the previous local government or when prices should be increased due to increasing price of inputs, or inflation. This is the first cause of losses generated by large number of LPUCs.

(b) High (unjustifiable) operating expenses can be the consequence of changes in the management of LPUCs after each change in local governments, sometimes even more often than once in four years. Each optimization of LPUC's expenses directly tackles the interests of the employees, either through downsizing with an aim to decrease labor costs, or by insisting that in their work employees take care of other operating expenses. There is always the resistance of employees in implementation of each of the two measures aimed at enhancing productivity and profitability, which often results in management giving up on any measures. As an alternative, the management is more willing to ask for increase in prices for LPUCs – when they hit the second barrier listed under (a). It also sometimes occurs that the director of certain LPUC manages to significantly reduce employee expenses and other operating expenses during his mandate, and that the following director gradually returns to previous state. (The procedure of the selection of LPUC directors envisaged by the new Law on Public Companies ("Official Gazette of RS", No. 119/2012, 116/2013 – authentic interpretation and 44/2014) in principle promised changes in this area. However, even in that new procedure – application, submission of program of operations etc., in most of the cases same directors were re-elected.)

Apart from the two most important reasons behind poor performance and indebtedness of the LPUC as mentioned above under (a) and (b), an objective reason should be also taken into consideration, under (c). Namely, providing of public services and utilities, and LPUCs who provide them, date back to few decades ago. Current level of development of Serbia, measured by GDP per capita, is at some 70% of its level from few decades ago. Additionally, social changes occurred since then, due to which the standard of living worsened as much as 30% for some citizens. Due to this fact some categories of citizens, significant in numbers, who could previously afford to pay full economic price of utilities, cannot afford to do so now.

The LPUCs compensate their disproportionately big expenditures, i.e. a lack of operating income, with subsidies (recorded under the "Other revenues" item in the Profit and Loss Account) that they receive from the LSGs, as illustrated in Figure 9. In that way, their negative operating income, in case of a loss, is inducing a higher expenditures in a particular municipilaty or city.

Some issues in financing of local institutions (LIs)

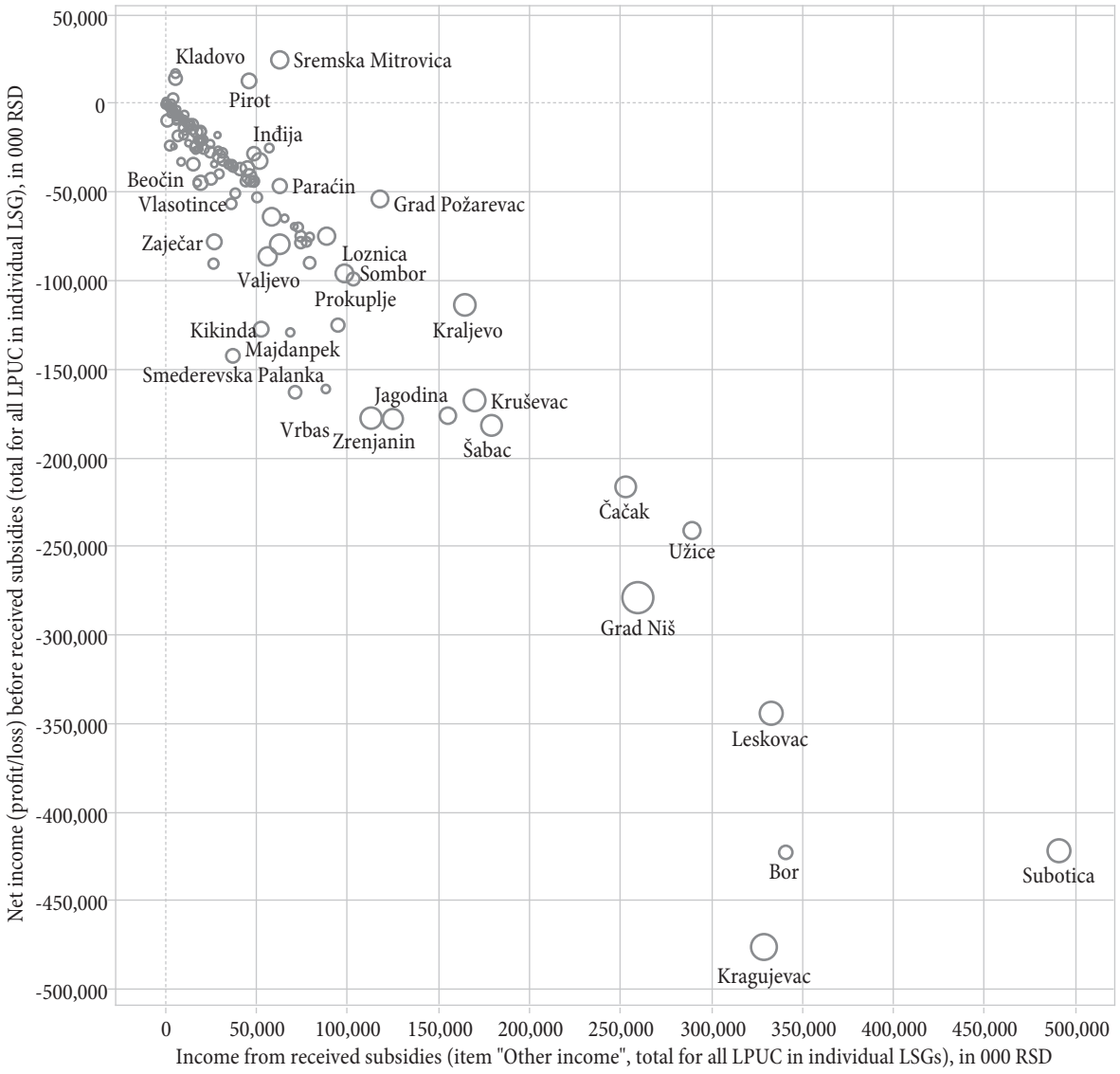
As described in the first section, LSGs are exercising several important competences in the field of basic human rights guaranteed by the Constitution in the field of education, social protection, culture, sports and recreation, health and protection against natural disasters, through the local institutions that they founded. About 31% of the total expenditures were used in practice in the previous period to exercise these functions, according to the evidence based on LSG expenditures breakdown by functional classification (see Figure 10).

Although we do not dispose with detailed financial data on operations of individual institutions for this analysis, for the sake of an integral approach in formulating recommendations in the third and fourth section, it is important to point out here a few facts typical for operations of local institutions and consider them in the model of LSG funding.

First of all, the functions of LIs are in the field of public policy, defined by its nature at the central government level, through strategies and programs for development of education, health, culture, social policy and policy of reduction of risk of catastrophes caused by natural disasters. Not all of these public policies are clearly defined through corresponding documents in Serbia, and even where the document do exist, the clear mandate of the part of the system which is under the competence of LSGs is not always defined comprehensively, as well as its objectives and direction for development.

In relation to the aforementioned, the system of financing of LIs is not clearly defined either. The LIs are mostly funded through transfers and grants by LSGs. However, some LIs, depending on the nature of their activities, have their own revenues or at least they are in the position to generate them (through provision of

Figure 9: Net income (profit/loss) before received subsidies (total for all LPUC in individual LSG) and income from received subsidies, 2013*

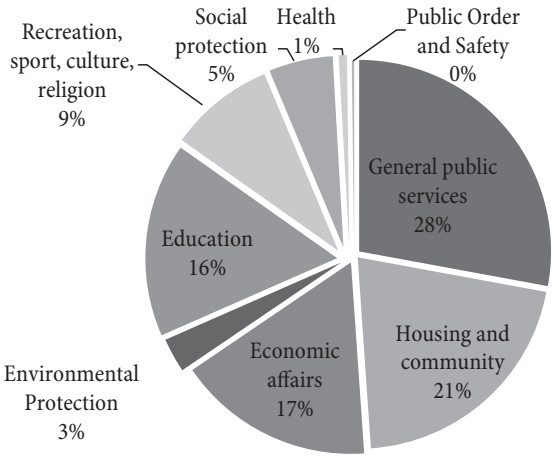


Source: MPALSG and PPS database; *Note: the size of the circle corresponds to number of inhabitants

services, renting of property, participation in projects, etc.) Still, the policy is not clear in those situations either – which is the desired extent to which a LI should strive to generate their own revenues and how much flexibility that approach offers them in order to stay motivated to be competitive and possibly reduce the burden for the state budget.

Besides all these challenges, regulations and reforms that apply to public administration in a narrow sense (the operations of which are mostly administrative in nature), frequently apply to LIs as well, although their operations are far more specific. The last is largely limiting their flexibility in terms of creating more of their own income. On the other

Figure 10: Functional breakdown of LSGs expenditures, 2013



Source: [4]

hand, a precondition to sustain a decentralized approach in the field of public policies of national significance, is to establish mechanisms for the result-based management in the context of a broader national policy in each of the concerned policy areas. These governance mechanisms are at a same time flexible and with appropriate elements for supervision and coordination.

All the above stated indicates that there should be a funding system which is adjusted to nature of operations and specificities of LIs.

Recommendations regarding financing of sustainable operations and development of LSGs

The concept of integral model of funding of LSGs that takes into account sustainability and development

Based on the presented features of the present model of funding of LSGs, as well as the financial aspect of functioning of the whole system of institutions exercising decentralized competences, a funding model providing appropriate sources for all the competences, both for current functioning and the development needs, should be established.

Within the proposed model, presented in Figure 11, system (of sources) of funding of LSGs should be established on the basis of the following three revenue categories:

(1) Permanent own revenues (own-source and shared taxes, including a mechanism of mutualized equalization)
(2) Sector-specific transfers (block / non-earmarked grants)
(3) Earmarked – project transfers

Permanent own revenues (1) would include all the sources of revenue that LSGs may permanently count on, regardless of the level of authority at which they are administered and set, meaning that they would include all types of the existing "own-source revenues" and all types of the existing "shared taxes".

Sector-specific transfers (2) would be non-earmarked (block transfers)[5], as the transferred funds would be used by LSGs to perform functions in certain sectors of public policy, particularly the ones of a broader social importance, and they would freely dispose of the actual funds, within the given framework. These sector-specific mandated consuming about 31% of total expenditure, as presented in the second section, are: Public order and security, Health, Recreation, Sports, culture and religion, Education and Social protection, and this should correspond to the percentage share of this type of transfers in revenues. Corresponding relative level to such percentage share was stipulated by the Law of 2006, as 1.7% of GDP. However, it has not been applied in practice. The procedure for implementation of the new system of funding of LSGs would naturally consist of periodical identification of needs of every LSG (or corresponding LIs) for funding of the listed 5 functions according to corresponding characteristics of municipalities and towns (population, area, etc. – like the method for allocation of the general transfer in the Law from 2012). In such a designed model, unlike in the one currently in force, there would be no risk for the local institutions (LIs) to stay short of necessary funds for provision of their functioning and required for meeting the defined objectives of a corresponding public policy. In such a way, an equal treatment of citizens in meeting the basic needs would be provided.

The remaining 70% of revenue would be used by LSGs for exercising all other functions/jurisdictions in line with available resources, except for the functions in the field of utility services provided through LPUC, as described in the first section. This means that it would be sufficient to share about 50% of collected income taxes between the central to the local level, relying on the registered income structure in the observed period (2012, 2013).

Generally speaking, the above drafted system of LSG financing would be stimulating for LSGs, as they would tend to maximize permanent own revenues that are not earmarked. At the same time, the transfers that LSGs would receive would be allocated for providing public service in certain sectors, in which the rights are guaranteed by the Constitution, and LSGs would freely use total amounts of these transfers within the given sectors.

Considering LPUCs, revenues for current operations should be provided on the market, i.e. by charging for services. As elaborated in the first chapter of the section two, almost all LPUCs in all LSGs are monopolies – and

5 This is in line with the European Charter on Local Self-Government (1985)

not only natural monopolies but monopolies in the sense that LPUCs are the sole providers of utility services within LSGs. Such monopolies should have prices prescribed in a way that they *allow* LPUCs to generate revenues sufficient to cover: (1) *justifiable* operating expenses, (2) depreciation charges and (3) adequate return on assets. Regulated/approved *price is, by definition, determined by dividing approved annual revenues by annually provided/sold services/goods*. [6]

Justifiable operating expenses include 1) cost of material, fuel and energy, 2) costs of salaries and other employee related expenses, 3) cost of production services, 4) transportation expenses, 5) maintenance expenses etc. Those expenses, which LPUCs should document and justify, should be verified by the regulator of the prices, where one of the best verification approaches is benchmarking to the expenses of other comparable local utility companies, both in the country and in the region (*benchmarking*).

Other elements of approved revenues, OP, and consequently approved prices of products/services – depreciation charges and return on employed assets – are relatively straightforward to determine. However, in order to determine justifiable depreciation charges updated valuation of assets used by LPUC needs to be available. Given that recent valuations are not available in majority of LPUCs, asset valuations would need to be performed. Finally, the third product/service price component, i.e. return on employed assets that would be allowed to be generated by LPUC could be easily determined in professional and technical senses, but the magnitude of the return could also be the policy issue.

In order to finally introduce LPUCs into the regime of standard business operations – for which all conditions are currently met (because such companies received their assets and are incorporated) – and in order to allow LSGs only narrow space for deviation from economic principles in their policies relating to LPUCs, it would be useful to determine an appropriate institution with a required expertise to be responsible for approving the prices for all LPUCs, through application of previously described model.

The same applies to LIs, where the fact that LSGs would receive funds through *sector-specific transfer* for their financing would secure their liquidity.

As presented in Figure 11, the overall development, in all the fields of LSGs, should be funded by:

(1) Available LSG funds, or the surplus after the current expenditures are covered,
(2) Public Private Partnership agreements (PPP),
(3) Independent investments of private capital,
(4) Investments by the Republic, in the form of co-financing of projects (earmarked/project transfers) with LSGs, or independently, through investments in the context of regional development policy,
(5) Issuing debt by LSGs.

Related to the source of funds (3) one should keep in mind that the Law on utilities allows that utility services are performed by private companies as well, with the exception that in natural monopolies (waterworks, trolley traffic) the utility company cannot be majority owned by the private capital.

Capital investments, or investments in development, would be funded by the LSG budget (1) only when the LSG generates a current budget surplus, and by borrowing (5), only in exceptional cases. LSGs that generate a surplus in current budget (current expenditure for LIs and LPUCs excluded), could be offered a stimulating co-funding grant for using the surplus for financing capital investment project, in a certain percentage of total investment. In such a way, LSGs would have incentive to generate a surplus of own-source revenue over the (above defined) current expenditures. As a result, the proposed new system of LSG financing would enable balanced and sustainable public finances on the local level of government.

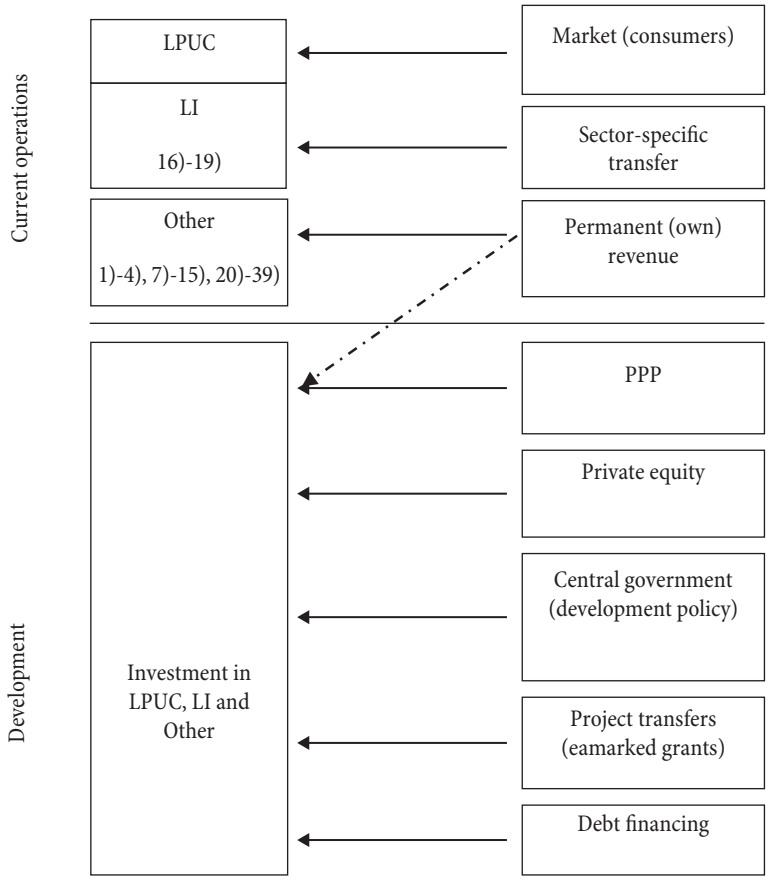
Apart from investing the surplus of own funds, development in LSGs should be funded by Public Private Partnerships (PPP) and independent investments of private

6 Approved revenues are calculated according to the following formula:

$$OPt = OOTt + TAt + ASt \times sAS \quad (1)$$

where:
t – regulatory period,
OPt – approved revenue from providing specific utility services during regulatory period,
OOTt – justifiable operating expenses related to conducting specific utility services during regulatory period,
TAt – depreciation charge for assets employed in conducting specific utility services during regulatory period,
ASt – assets employed in conducting specific utility services during regulatory period,
sAS – return on employed assets (%).

Figure 11: Schematic presentation of the new model of LSG financing



capital, far more than it has been funded so far. Finally, development of infrastructure and all other investments aimed at attracting investors to local economy, particularly in underdeveloped LSGs, should be funded through projects funded from the central level under the regional development policy (earmarked / project transfers).

Application of PPPs as a means of financing development of LSGs needs to be further elaborated. This manner of financing is regulated by the Law on public private partnerships and concessions ("Official Gazette RS", No. 88/2011), and similar laws before the current one was adopted. However, completed PPP projects are very rare in Serbia and represent insignificant portion of total financing. The conclusion that can be derived based on the analysis of mandatory procedure for finalizing PPP contract in line with the law, and based on many cases where interest of both public and private investors existed but the projects were never formalized, is that procedure is long and complex. In addition, there is *no single state institution* which would service the partners in preparation and realization of PPPs until contract is signed.

The procedure is long because, in line with the Law, a number of subjects are involved in the process until the PPP contract is signed, where those subjects review documents relevant for PPP project two times – the first time they review "proposed PPP project", and second time they review draft PPP contract. The most important document for PPP project is "project proposal", which in essence needs to be a good *feasibility* study. It would be sufficient that such a study – the preparation of which can be organized by public partner, while the Law allows the private partner to do so as well – is analyzed by the competent team of experts, so that selection of private partner can be initiated through public procurement process. After this, contract would be negotiated and signed with the selected private partner, which in majority of cases could be straightforward incorporation agreement with two stakeholders – public and private one. This would shorten and simplify the whole procedure.

In the proposed, simplified procedure for PPP (requiring change in the Law) all the tasks related to organizing drafting of "project/study proposal", preparation of a public call for selection of a private partner and organizing the conclusion of agreement with that partner – should *be performed by a single government institution* with an appropriate level of competence. It would be sufficient that public and potential private partner apply to the institution with the PPP idea. The institution would then perform all activities until signing of the PPP contract – similar to activities of the Privatization agency.

With affirmation of PPPs in the utility business, this form of investment may be spread to the activities of LIs. There may be a private partner, upon obtaining for example land as LSG share in a joint PPP enterprise, to construct a sports facility, facility for culture, kindergarten, etc., and lease that kind of facility to a LI. PPP arrangements in this area are also possible in a way that a private partner builds a facility, transfers it to a LI, and a LSG repays for the facility over a long-term; in these cases, a PPP actually means lending to a LSG, which is usually the only way to have a facility constructed at all.

In the above described manner, all 39 functions/competences of LSGs could be appropriately and sustainably funded within the new funding model, in the manner presented in Figure 11. This means that in the future, the system would not generate deficits from current operations of LSGs by induced debt generation from failure to regularly pay to suppliers.

Concluding remarks

In considering the optimal model of financing of LSGs, it is necessary to distinguish between the consideration of this topic in the strict sense and of several parallel topics in the field of other public policies that are associated with the financing of LSGs but should not have the effect on the concept of the model itself. At the same time, the model should form a logical whole but should also be flexible to allow the implementation of other policies without disrupting the performance of basic functions, i.e. local self-governments' provision of public services and access to rights to citizens and economic operators. The related topics include fiscal consolidation, policies to improve the business environment (business conditions), regional development policy, social policy, public administration reform, including several major topics in the field of public financial management reforms.

Fiscal consolidation has been a dominant macroeconomic policy since 2013, when after several years of alleviating the effects of the crisis through fiscal expansion, Serbia's public debt rose to about 70% of GDP and its fiscal deficit to almost 6.8% of GDP. The necessary savings in public spending are achieved through a series of measures, primarily by reducing expenditures. In these circumstances, it is normal that a part of the burden of fiscal consolidation is transferred to LSGs by cutting their budgets. However, these savings should not be achieved by introducing distortions in the system of financing but by making necessary adjustments to the lower level of expenditures through: (a) reducing the scope and quality of services provided by LSGs in accordance with the priorities (i.e. reducing first the services that are not on the list of basic human rights), and (b) improving the efficiency of LSGs, which would mean better/more efficient use of available budget.

The policy of improving the business environment is necessary in Serbia, where economic operators and citizens are still burdened with numerous complicated and unnecessary procedures that incur a specific transaction cost expressed through unnecessary spent time and various charges related to these procedures. In the context of improving the business environment, a lot of effective measures were introduced in the past period, such as regulatory guillotine, introduction of electronic tax payment, one-stop shop for business registration (APR) and other. However, some initiatives for the improvement of business environment resulted in the abolition of fees or charges for the services actually provided by the public sector or for the use of public resources. These reckless measures have led to the erosion of financing models. Thus the model loses its economic logic and in the long run compromises the public interest since there are no adequate sources or level of financing for performing the functions of public interest. For example the fee on overutilization of local roads and water charges has been abolished. For the above-described reasons, we should not confuse the policy

of improving the business environment, where attention is paid primarily to the simplicity of procedures and the number of individual payments and related transaction costs, with the model of financing that requires that the appropriate scope and quality of public services should be adequately financed, which means that it is impossible to avoid the related expenses paid by an economic operator or citizen, but it is possible to maximally simplify the procedure of payment.

By regulating the fee system in the economically consistent manner, it is possible to mobilize additional sources of LSG revenues - their coverage and level. Regardless of the logic of presented model, there are many cases in the existing legal framework where the use of public goods is either not charged or not charged sufficiently (for example water charges).

Serbia still lacks a consistent policy on regional development in terms of clear objectives, strategies and appropriate instruments. The 2010 Law on Regional Development defines the instruments i.e. measures and incentives and their sources of funding. In general, the regional development is financed mainly through the projects at the level of central government (partly through international development assistance). In accordance with this setting, there is no need to have the elements of regional development in the part of the model related to the current operation. This model, however, should include an income equalization mechanism to protect all citizens.

In the context of LSG financing, social policy comes to the forefront particularly in the field of billing LPUC services. In fact, due to the still unresolved centralization of information on social assistance by beneficiary, the social policy is often reflected in lower than justified prices of utility services or in tolerating the non-payment of utility service bills. This undermines the sustainability of LPUCs' business operations and their management of economic resources and operations.[7] It is true that certain categories of citizens/households are unable to pay the full "*justified*" price of utility products/services. This, however, does not mean that these prices should be kept below the *justified* level. This approach to the prices of LPUC products/services results, among other things, in subsidizing also the richest citizens/households (of which has been written for decades in Serbia) – while on the other hand, LSGs must subsidize LPUCs from their budgets. The approach should be reversed - socially vulnerable citizens/households should be subsidized to be able to pay the *justified* price of utility products/services, thus avoiding the need to subsidize LPUCs.

Furthermore, the public administration reform envisages significant efforts to improve the management capacity and professionalization of administration, which is an important factor for improving the efficiency of LSGs, i.e. for achieving a better performance while using the same resources as a result of better planning, management, financial decisions, coordination etc. This process is important for improving the coordination of central and local governments, as well as for improving governance and consequently the financial situation at the local level through strengthening human resources, processes, mechanisms and instruments of governance.

Within the broader context of public administration reform, the Public Funds Management Reform Programme is of particular importance, along with all the measures to be implemented in that context.

The Law on Deadlines for the Settlement of Financial Liabilities, as amended in 2015, provides for recording the outstanding financial liabilities in commercial transactions of all direct and indirect budget users in the system of the Ministry of Finance, Treasury Administration (*RINO* system). It is an important step towards correcting deficiencies in the cash budget accounting where expenditures are recorded only at the time of payment rather than when incurred. Further reform in this area should go towards introducing the accrual accounting system in public finances. In addition, the official forms for balance sheet reports of budget users are not methodologically consistent so that there is room for significant improvement of the Rulebook on preparation, assembly and submitting of financial reports of the users of budgetary funds ("Official Gazette of RS", No. 18/2015), in this regard.

Further, in order to encourage LSGs to improve the quality of life and business environment, it is important

7 Write-offs of uncollectible receivables are additionally discouraging for those individuals/entities who are regular payers and create the effect of moral hazard.

to have publicly available database including indicators on financing (inputs) and performance of local authorities, local institutions and utility companies (outputs and outcomes). By publishing comparative data, individual LSGs are encouraged to reduce local tax burden, to ensure a better business environment, which means that they are able to operate in a more efficient way. This approach strengthens the role of citizens and their oversight over the operations and results of local administration.

For the purpose of settling the debts of LSGs who have found themselves in an unsustainable financial situation, which has not been systematically regulated, a special law could be drafted and adopted, whose (working) title could be the "Law on Financial Adjustment of Local Self-governments". A similar law was passed in Hungary, and although it was not applied very often, it proved to be useful, at least because it influenced the municipal authorities to be prudent in spending budget funds. This is because they lose financial autonomy in case of bankruptcy (the bankruptcy trustee represents them for the duration of bankruptcy procedure), and particularly because the initiation of bankruptcy procedure means that the current local government loses its political reputation. In case of Serbia, such a law would not have to provide for a bankruptcy procedure for the LSGs that are unable to settle their obligations and it would be enough to prescribe a debt regulating procedure (out of court?) that would be similar (in everything else) to the existing procedure of preparation, adoption and implementation of a pre-pack reorganization plan. The procedure of such LSG debt settling would have the same positive effects as the above-mentioned pre-pack reorganization plans when applied to indebted LPUCs (immediately, as this is legally possible). An additional advantage of legally regulating a "pre-pack reorganization plan" applicable to LSGs would be (similar to enabling bankruptcy of LSGs in Hungary) that mere existence of such a law and the announcement of the initiation of "financial adjustment" procedure, etc. would discourage local authorities in excessive spending of budget funds. A positive effect could also be expected in the sense that the possible application of this law would stimulate the local government to maximize the use of the fiscal potential of municipality/city in order to collect as much revenues as possible.

Finally, the new decentralization strategy is being considered for the forthcoming period. Being essentially a political decision, the issues of decentralization of government and fiscal decentralization are beyond the scope of this paper, even though it has certain impact on financing. Whatever be the policy in this area, regardless of the degree of decentralization, the idea of this paper is to highlight that also at the current level of decentralization, the system of decentralized government has two (currently non-existing) characteristics, important for achieving the efficient functioning of the system as a whole. Firstly, it is important to institutionalize and strengthen the mechanisms for coordination between the central and local governments in the adoption and implementation of public policies and regulations. The current lack of institutional coordination mechanisms creates a number of problems, which are reflected in the business environment (unviable regulations are adopted, etc.) and in the long run will have consequences on the development of individual regions and of economy and society as a whole. Secondly, in order to make good use of the undoubtedly positive aspects of decentralization, it is necessary to establish appropriate priorities and standards for using budgetary funds by LSGs in the best interest of citizens to avoid the situations where LSGs prioritize investment in entertainment facilities while some basic needs such as drinking water quality, safety, etc. remain unfulfilled.

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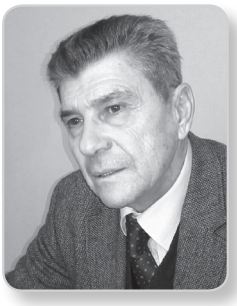

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Siniša Mali
The City of Belgrade

Borko Milosavljavić
The City of Belgrade

REFORM OF PUBLIC ENTERPRISES IN BELGRADE AS THE PLATFORM FOR INVESTMENT ACTIVISM

Reforma javnih preduzeća u Beogradu kao podloga investicionog aktivizma

Abstract

Continued comprehensive reform of the public system has positioned Belgrade, within a short timeframe of two years, as an attractive investment destination in the region and beyond. Public enterprises have been transformed into stable commercial entities, which perform their activities efficiently, becoming increasingly attractive holders of investment activity, both through self-financed projects and the model of public-private partnership. From the phase when it had experienced aggregate loss of approximately RSD 2 billion in 2013, the public sector of the City entered the phase in which it generated the profit of RSD 2 billion in 2015.

Out of the total of 31 enterprises founded by the City of Belgrade, 29 of them had positive business results in 2015. This fact has led to the increased investment potential of the enterprises, primarily through the attraction of foreign capital and establishing of certain types of public-private partnerships. During 2015, there were a great number of proposals initiated directly by private partners. There was a successful public-private partnership in the field of public transportation, and the procedure for management of the biggest landfill in South East Europe, Vinca landfill, was initiated.

Keywords: *reform of public enterprises, investments, public-private partnership*

Sažetak

Nastavak sveobuhvatne reforme javnog sistema je u kratkom periodu od oko 2 godine doprineo pozicioniranju Beograda kao privlačne investicione destinacije u regionu, a i šire. Javna preduzeća transformisana su u stabilne privredne subjekte, koji efikasno obavljaju delatnost za koju su osnovana i postaju sve atraktivniji nosioci investicione aktivnosti, kako kroz projekte koje sama finansiraju, tako i kroz model javno-privatnog partnerstva. Javni sektor Grada je iz faze generisanja sumarnog minusa od skoro 2 milijarde u 2013. godini ušao u fazu generisanja dobiti od preko 2 milijarde dinara u 2015. godini.

Od ukupno 31 preduzeća u kojima je Grad Beograd osnivač, u njih 29 ostvaren je pozitivan poslovni rezultat u 2015. godini. Ova činjenica otvara sve veći investicioni potencijal preduzeća, pre svega u pogledu privlačenja privatnog kapitala i ulaska u određeni vid javno-privatnog partnerstva. Veliki broj samoinicijativnih predloga od strane privatnih partnera podnet je tokom 2015. godine. Uspešno je realizovano javno-privatno partnerstvo u oblasti javnog prevoza, a započet je postupak za uređenje najveće deponije u jugoistočnoj Evropi, deponije „Vinča".

Ključne reči: *reforma javnih preduzeća, investicije, javno-privatno partnerstvo*

Introduction

Quality of services provided by the utility system has direct effect on the quality of everyday life: heating, maintenance, water supply, drainage of sewage and waste waters, landscaping, and public transportation. Utility system of every big city essentially determines the quality of life in that city. Thus, the companies which perform these activities are extremely significant. In Belgrade, they are owned by the City. Considering their significance and ownership structure, the efficiency of their activities presents the significant parameter.

There is a firm belief that the public sector is generally inefficient, that it only generates losses, and the entities owned by it cannot perform their main functions with positive financial effects.

This paper provides the overview of the significant improvement in restructuring of the public sector of the City, accomplished in the previous two years, where, through establishing of clear mechanisms for control of public enterprises, and introduction of corporate governance, public enterprises have been transformed into stable commercial entities. At the same time, they have become a significant investment potential of the City.

The first segment of the paper contains an overview of undertaken systematic and operational measures in the field of restructuring. The second part of the paper offers the overview of the financial effects of restructuring of the public sector of the City as a whole. The third part is an overview of investment potentials provided by the public sector of the City of Belgrade.

Measures in the reform of public enterprises

Reform of public enterprises is based on establishing of the clear principle that the City of Belgrade, as the founder of public enterprises, needs to perform its basic function, i.e. to control these enterprises.

The primary goal of public enterprises and public utilities is to provide quality services in the field they were established for, where the principle of effective operations must always be present as corrective mechanism in order to avoid unnecessary costs under the pretence that public function is performed.

The reform of public enterprises was undertaken through institutional, financial and organizational restructuring.

Institutional restructuring

The key organizational units have been identified within the city administration which continuously monitor and control public enterprises: Pricing Administration and relevant secretariats. Relevant secretariats have a dominant role in monitoring and supervision of the scope and quality of implementation of adopted business programs, while the Pricing Administration monitors the financial segment, payment of incomes and number of employees. The data showing the performance of enterprises are collected weekly (general data, financial data, as well as open issues – current problems in operations of enterprises).

The introduction of these measures has marked the adoption of a proactive approach to city administration and demonstrated the example of public administration management. Furthermore, the system of continuous control and monitoring was established, and at the same time the support given by the founder to public enterprises.

Order for preparation of draft business program in 2015 was sent by the founder on September 1. The first drafts of the business program were delivered to the City Assembly on October 15. The first round of control of those delivered programs was undertaken by relevant secretariats and the Pricing Administration. Based on the initial suggestions and comments, the enterprises delivered revised draft programs to the Committee consisting of the Assistant to the Mayor, secretary of the relevant secretariat, and project manager from the Pricing Administration, representative of internal audit and representative of budget inspection. Each segment in the business program was controlled, both balance items and each individual item in the public procurement plan. Such verified business program was sent to the City Assembly for adoption. This is how the system of preventive control was introduced.

The services of Internal Audit or Budget Inspection were divided and were given the position of independent institutions. Unlike other sectors of city administration,

which experienced decrease in the number of employees, there was hiring of new staff in these institutions during the previous year, with the goal of strengthening their capacities in order to be able to perform the functions assigned to them.

Organizational restructuring

In the last two years, the City of Belgrade has decreased the number of employees in the public enterprises by 3,200 as follows: 1,800 permanent employees and 1,500 employees with the contract for temporary – occasional works and based on other contractual relations. This cut was made on two bases: certain number of people retired, while certain number of enterprises implemented the social programs. Organizational restructuring is not characterized only by the decrease of the number of employees, but also by the change of internal organization and systematization in each enterprise.

The City of Belgrade started the initiative for adoption of the new Rules on organization and systematization of jobs on the level of all PEs and PUCs. The instructions were issued that new organizational structures and systematizations of work positions should be rational and in compliance with the new Labour Law. Through uniform naming of possible organizational units (Sector – the biggest organizational unit, Line or Service, and, in the end, Department – the lowest organizational unit) and defining the minimum number of employees which can constitute the smallest organizational unit (recommendations is a minimum of 5 employees), and the framework for deepening of organizational structures in PEs and PUCs is narrowed down.

Furthermore, in cooperation with the management of enterprises, the analysis of sectoral dispersion of organization scheme was performed, and based on it the recommendations were given for merging or closing of certain sectors. This led to horizontal rationalization without disturbance of operational functioning of work. Total of 695 organizational units were closed, and out of it 117 sectors, 76 lines, 199 services, 283 departments.

The consequence of above described circumstances is a decrease of the number of managerial staff, i.e. their distribution to operational level, which contributes to increased number of available employees, and on the other hand the saving through decreased incomes. This also led to the termination of positions of advisors, coordinators and assistant directors in all PEs and PUCs, as well as the introduction of Financial Management and Control (FMC) in all PEs and PUCs. There was a decrease of the total of 1,061 managerial positions.

Financial restructuring

Financial restructuring of public enterprises was primarily based on rationalization of costs. The analyses of balance sheet items showed that, in 2013, the costs not directly related to the core activities were unjustifiably high. In addition, many costs were "overblown" through implementation of public procurements that were not rational and optimal. For the purpose of such rationalization, the following measures were taken:

- Legal services were cancelled, which, on annual level, made for the saving of RSD 33 million. Namely, in 2013, public enterprises paid the legal offices the amount of RSD 33 million for legal services provided, and, at the same time, all these enterprises had their own departments for legal affairs in their organizational structures, while the City of Belgrade even has its own Public Prosecutor's Office.
- Vehicles identified as surplus were sold – 263 vehicles. Projected savings only for the cost of fuel, insurance, registration and spare parts are approximately RSD 108 million annually.
- PR and consulting services not directly related to the core activities were cancelled.
- Decision to establish a Service for Centralized Public Procurement and Procurement Control has initiated a process of public procurement centralization for certain number of goods and services (goods: stationery, hygiene equipment and supplies, paper products, provisions, vehicles, energy, computers and computer equipment, furniture, and services: cleaning of facilities, physical and technical security, maintenance and repair of computers and computer equipment, printing services, disinfection and pest control services), which accounted for the savings of over EUR 2 million in 2015.

- Besides the monitoring of formal implementation of public procurement procedures and implementation of centralized public procurement at the Public Procurement Agency, the City has also introduced a special Department of the Budget Inspection to work on the analysis of vital needs for public procurement. None of the enterprises can start a public procurement procedure before informing this department and providing a clear justification for that. Special attention is paid to the need for consolidation of public procurements for the purpose of initiation of an open procedure and elimination of small value procurements and procurements through purchase orders, where there is a significantly higher possibility for potential misuse.

Establishing of social dialogue

The City of Belgrade signed a special collective agreement on the city level with the representative unions, as well as individual collective agreements on the level of each enterprise. For the first time, all public enterprises and public utility companies founded by the City of Belgrade have signed individual collective agreements. This is the right example of establishing of a social dialogue, and of agreeing on the minimum common values needed, especially in the times of implementation of reform processes. New collective agreement protects the employees' rights, working conditions, as well as union organizing, while at the same time it recognizes the City's difficult economic situation.

The City of Belgrade established the Social and Economic Council (SEC), where, together with the employers' and unions' representatives, it analyzes and gives recommendations to the executive bodies of both the City and the Republic about any relevant questions and areas.

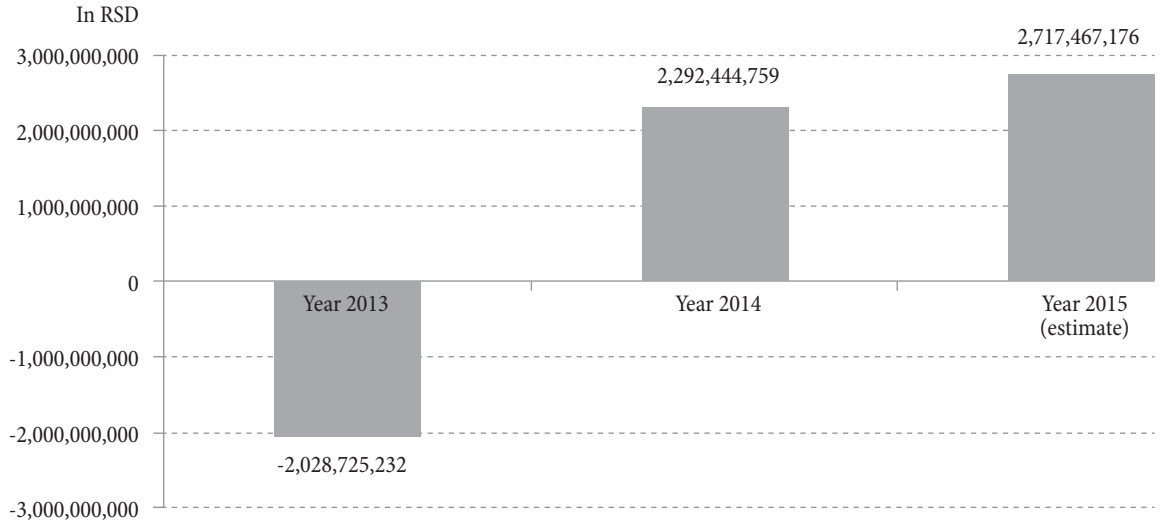
Results achieved in restructuring of public enterprises

Net profit and number of employees

In 2015, the system of public enterprises, public utility companies and LLCs had positive business results and made a total net profit of RSD 2,717,467,176**,** which is, compared to the previous year, an increase of 18.5%, and compared to 2013, an increase of RSD 4,746,192,408 (see Figure 1). There are obvious further effects of the business-financial consolidation of the complete public sector which began at the end of 2013.

Total negative result for the period as stated in the financial reports of the enterprises equals RSD 741 million and is the result of transfer of the founder's share in the share capital of JSC "Veletrznica" (Wholesale Market) to the City of Belgrade free of charge. Value of the transferred founder's share of JSC "Veletrznica" was RSD 900 million

Figure 1: Profit of PE, PUC and LLC founded by the City of Belgrade



Source: Balance sheet data for public enterprises
Note: In 2015, PUC "Gradske pijace" (Belgrade City Markets) made a business profit of RSD148 million (about 3 times more than in 2014).

for 40% of the founder's share, so with this transfer, the City of Belgrade acquired 100% ownership of JSC "Veletrznica".

In the total public sector results for 2015, two enterprises made an estimated net profit of over RSD 500 million, and those two were PUC "Beogradske elektrane" (Belgrade Power Stations) with approximately RSD 2,500,000,000 and PUC "Parking servis" (Parking Service) with approximately RSD 736,619,000.

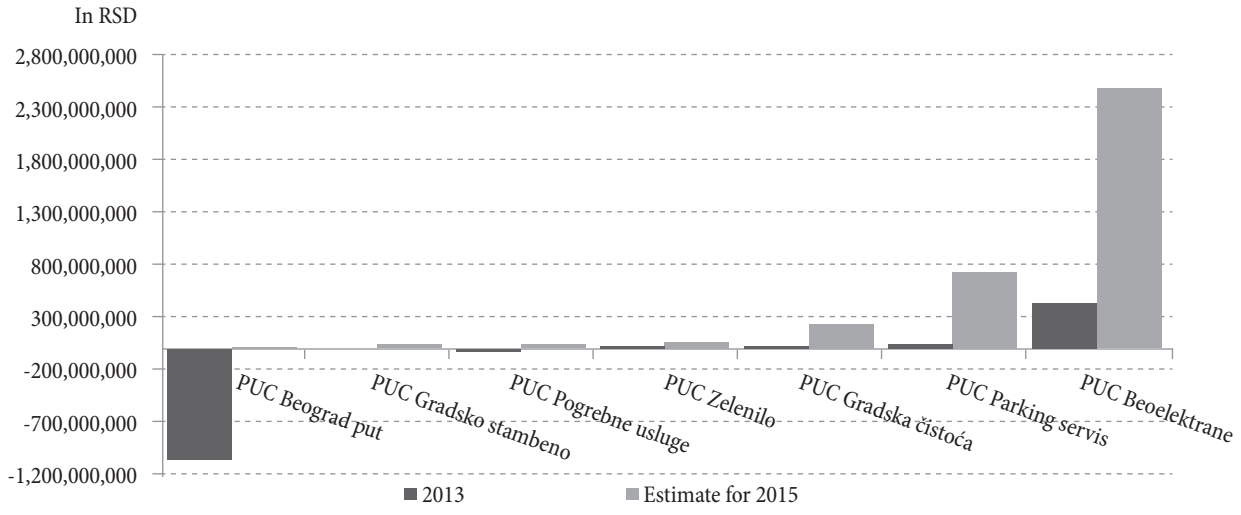
The biggest positive improvement as compared to 2013 (see Figure 2) was made by PUC "Parking servis" and PUC "Beograd-put" (Belgrade Roads). Parking Service increased its profit for RSD 686 million, that is, over 14 times, while Belgrade Roads achieved increase of over one billion RSD. It should be noted that the change in business results of all these public enterprises was not due to the change of prices, since none of the enterprises increased prices of their services for more than 5% adjusted for inflation. With certain number of enterprises, prices of some of the services were even reduced.

The only two enterprises which had business losses in 2015 were PE "Sava Centar" and "GSP Beograd" (City Transportation Company). The problem with these two enterprises is of systemic nature. Restructuring measures implemented in 29 enterprises which were successfully restructured, were also implemented in these two enterprises, but the nature of the problem was different. The problem with GSP is with its profit, because, more than any other enterprise, it is affected by the social policies (pensioners, university students, high-school students, socially-deprived persons, persons with disabilities). A big problem is also the "ticket purchase boycott". On the other hand, 75% of the total costs are labour and fuel costs. These components cannot be drastically reduced since any such reduction would mean deterioration of the quality of service (less buses, less drivers, and therefore more crowded transportation system). The first step in solving of this problem has already been made. New tariff system has been introduced and increase in ticket payment collection and income is to be expected in 2016. As an illustration, in 1994, the number of monthly public transportation tickets sold was 637 thousand; in 2004, it was 355 thousand; while in 2015, the average sale of monthly tickets was 104 thousand.

As for the "Sava Centar", the cause of the problem is high cost of energy, since this facility was not built in line with energy-efficiency principles, as well as inefficient management in previous years when the level of congress activities was lower. In order for this enterprise to secure the organization of any significant congress, preparations must start several years in advance. A solution for restructuring of this enterprise is searching for a partner and creation of some sort of a "joint venture".

The plan is to complete the reform of public enterprises in 2016, where all 31 legal entities founded by the City of Belgrade would achieve positive business results.

Figure 2: Comparative review of profits in 2013 and estimated profits in 2015 – 7 enterprises with the best trends



Source: Balance sheet data for public enterprises

During 2015, as a part of the overall reorganization and rationalization, the measures were taken to reduce the surplus administration, and therefore, the number of permanent employees was reduced by 1,791, which is a reduction of approximately 9.3% compared to 2013. In addition, there was a rationalization in the segment of employees engaged in temporary or short-term activities, as well as employees with other types of contracts, where the numbers were reduced by 1,500.

This way, the City of Belgrade has prepared for the introduction of the Law on Maximum Number of Employees, because it has implemented necessary reform processes without waiting for the adoption of this Law. In 2015, the City of Belgrade did not have the number of employees above the number defined by the aforementioned Law (see Figure 3).

The total business results of the City of Belgrade's public system, also including the institutions are presented in Table 1. It shows the change in net profit between 2013 and 2015, as well as the number of permanent employees at the end of those years.

Investment potential of public enterprises

The reform of public enterprises conducted in the past two years has resulted in public enterprises becoming more stable economic entities. By eliminating unnecessary costs and introducing corporate governance, a great investment potential has been created in two directions: investing in projects from enterprises' own profits and attracting investments through public-private partnerships.

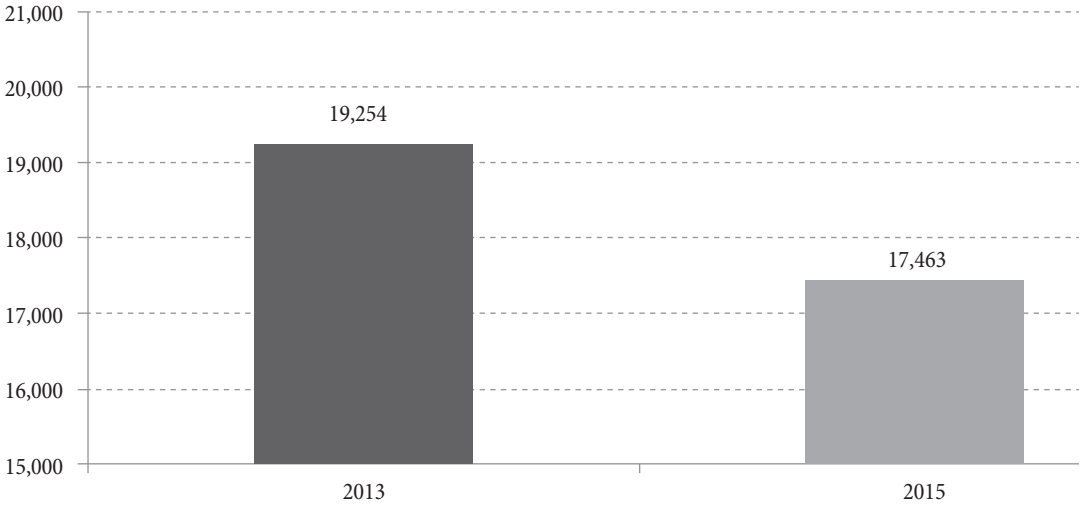
Development projects that shall be financed from the own funds of PE and PUC, the City budget and certain forms of external financing

Development projects that shall be financed by own resources of public enterprises have been identified in the programmes of operations of all public enterprises for 2016. Projects include the overall improvement of life of citizens, city beautification, advancement of the overall content, sports and recreational and tourist offer of Belgrade.

Some of the projects are as follows:

- *Reconstruction of Obilicev venac garage and construction of a garage at Students' Square*. With the aim of improving the parking facilities in downtown, it is necessary to upgrade existing capacities, but also build new underground garages in order to reduce traffic congestion, reduce emissions of harmful gases and address the concerns of tenants.
- *Reconstruction of markets*. Operational plan for 2016 envisages the reconstruction phase for all markets in the City of Belgrade. With a view to some markets, settling the property legal situation is on the agenda, however, there are markets where design and construction are under way.
- *Infrastructure landscaping around Ada Ciganlija* is one of the priorities and includes arranging transport

Figure 3: Number of permanent employees in PE, PUC and LLC founded by the City of Belgrade



Source: Official records of public enterprises

Table 1: General overview of the effects of restructuring of the public sector in the City of Belgrade

EN	Name of enterprise	Net profit				Number of employees according to personnel records		
		2013	EUR	Assessment for 2015	EUR	2013	2015	Difference
1	PUC "Beogradske elektrane" (Belgrade Power Stations)	439,763,000	*3,835,964*	2,500,000,000	*20,554,799*	2,206	1,936	270
2	PUC "Parking Servis" (Parking Service)	49,585,000	*432,520*	736,619,000	*6,056,422*	653	620	33
3	PE "Gradska cistoca" (City Waste Disposal)	33,371,000	*291,089*	249,625,000	*2,052,397*	1,826	1,618	208
4	PUC "Infostan" (Combined Utilities Billing Company)	43,311,841	*377,800*	295,579,000	*2,430,227*	162	153	9
5	Veletržnica JSC	65,533,000	*571,631*	58,202,000	*478,532*	42	38	4
6	PUC "Gradsko stambeno" (City Housing Services)	5,773,000	*50,357*	49,534,000	*407,265*	220	207	13
7	PUC "Javno osvetljenje" (Public Lighting)	4,515,000	*39,383*	31,769,000	*261,202*	171	154	17
8	PUC "Pogrebne usluge" (Funeral Services)	1,462,000	*12,753*	51,571,000	*424,013*	457	404	53
9	PE "Ada Ciganlija"	-3,998,000	*-34,874*	676,000	*5,558*	33	55	-22
10	Elektroizgradnja Ltd.	7,123,000	*62,132*	22,719,000	*186,794*	172	155	17
11	PUC "Beogradski vodovod i kanalizacija" (Belgrade Waterworks and Sewerage)	5,873,000	*51,229*	15,470,000	*127,193*	2,470	2,228	242
12	PE "Beogradska tvrdjava" (Belgrade Fortress)	895,000	*7,807*	9,928,000	*81,627*	17	14	3
13	PE "Beogradvode"	-129,358,000	*-1,128,364*	39,203,000	*322,324*	172	159	13
14	PE "Direkcija za gradjevinsko zemljiste i izgradnju Beograda" (Belgrade Land Development Public Agency)	0	*0*	0	*0*	286	268	18
15	PE "Urbanisticki zavod" (Urban Planning Institute)	-87,125,000	*-759,974*	7,785,000	*64,008*	144	137	7
16	PUC "Beograd-put"	-1,046,582,000	*-9,129,124*	23,272,000	*191,341*	1,291	1,104	187
17	PUC "Zelenilo Beograd" (Belgrade City Parks)	37,144,000	*324,000*	69,978,176	*575,355*	1,181	1,104	77
18	PUC "Gradske pijace" (City Markets)	1,297,000	*11,313*	148,062,000	*1,217,354*	206	178	28
19	Beo Zoo Vrt (Belgrade Zoo)	8,991,000	*78,427*	10,684,000	*87,843*	46	39	7
20	Kombank Arena	11,501,604	*100,326*	491,000	*4,037*	36	39	-3
21	PE "Hipodrum Beograd" (Belgrade Hippodrome)	168,000	*1,465*	122,000	*1,003*	15	12	3
Overall PEs and LTDs (with net profit)		**-550,756,555**	**-4,804,139**	**4,321,289,176**	**35,529,292**	**11,806**	**10,622**	**1,184**
22	GSP "Beograd" (City Transportation Company)	-1,393,683,000	*-12,156,817*	-1,451,724,000	*-11,935,958*	5,740	5,278	462
23	PE "Sava Centar"	-84,284,000	*-735,192*	-152,098,000	*-1,250,538*	130	120	10
Total PEs (with negative results)		**-1,477,967,000**	**-12,892,009**	**-1,603,822,000**	**-13,186,495**	**5,870**	**5,398**	**472**
Overall PEs and LTDs		**-2,028,723,555**	**-17,696,148**	**2,717,467,176**	**22,342,796**	**17,676**	**16,020**	**1,656**
24	SRC Tasmajdan	-34,190,000	*-298,232*	10,450,000	*85,919*	124	89	35
25	SRC Pionirski grad	-199,000	*-1,736*	192,000	*1,579*	13	10	3
26	City Centre for Physical Culture - DIF	-13,819,000	*-120,540*	-3,837,000	*-31,548*	48	38	10
Overall sports centres		**-48,208,000**	**-420,509**	**6,805,000**	**55,950**	**185**	**137**	**48**
Total PEs and LTDs and sports centres		**-2,076,931,555**	**-18,116,657**	**2,724,272,176**	**22,398,746**	**17,861**	**16,157**	**1,704**
27	Apoteka Beograd (Belgrade Pharmacy)	1,706,096,000	*14,881,933*	806,000,000	*6,626,867*	1,030	971	59
28	VI "Veterina Beograd"	123,183,000	*1,074,501*	247,000	*2,031*	202	184	18
29	Tourist Organization of Belgrade	-327,000	*-2,852*	269,000	*2,212*	35	35	0
30	Institute for Biocides and Environmental Medicine	0	*0*	0	*0*	49	59	-10
31	City Institute of Expertise	188,000	*1,640*	2,084,000	*17,134*	77	57	20
Overall establishments and institutions		**1,829,140,000**	**15,955,221**	**808,600,000**	**6,648,244**	**1,393**	**1,306**	**87**
O V E R A L L:		**-247,791,555**	**-2,161,436**	**3,532,872,176**	**29,046,991**	**19,254**	**17,463**	**1,791**

Source: Official records of public enterprises

infrastructure, construction of waterworks and sewage, partial expansion of roads, construction of garages and new access roads. This excursion place that has up to 300,000 visitors on the hottest days shall provide better services and greatly facilitate internal communication in the field of tourism capacities.

The fact that about 30% of the city's population is still not connected to the sewage system makes solving this problem a priority. The City of Belgrade has made a clear Strategy for building needed water and sewage infrastructure in the next 10 years, i.e. by 2025. Belgrade's system is divided into several subsystems, and only the central one, which covers about 85% of the territory of the city, has a sufficiently developed and distributed faecal and rain sewage network. The investment in primary and secondary facilities, including the missing section of the main sewer collector "Interceptor", amounts to about EUR 575 million. The adopted strategy defines projects by the year in which they shall be implemented, as well as the exact sources of funding. PUC "Waterworks and Sewerage" and Belgrade Land Development Public Agency operational plans for 2016 incorporate the first year of the strategy.

Development projects that are financed through the model of public-private partnerships

As stable economic entities that operate positively, public enterprises in Belgrade have become very attractive for financing specific projects through the model of public-private partnerships. Some potential projects include:

- *Remediation and rehabilitation of the city landfill in Vinca and construction of plants for the production of electricity and heat from waste* – One of the most pressing environmental problems of the city is the inadequate storage of all types of waste on the territory of Belgrade. In order to convert a decade-long problem into a lucrative opportunity, a pre-qualification tender was successfully implemented in 2015; namely, 5 qualified potential partners have qualified for the next phase, i.e. the competitive dialogue. The final partner shall be selected during 2016, when the execution of the project is expected to commence. The project shall include the closure and rehabilitation of the existing landfill, the construction of facilities for treatment and disposal of waste, construction of cogeneration plants for the production of electricity and thermal energy and so-forth. The investment amounts to approximately EUR 250 million, and given the complexity of the project, construction shall last several years.
- *Construction of a water and heat pipeline between "TENT" and TO "Novi Beograd"* – The project includes the construction of approximately 30 km of hot water pipelines for the supply of residual hot water from the thermal power station in Obrenovac to the district heating system in Belgrade, which would be used as a renewable source to provide between 600 and 800 MW of thermal energy. According to preliminary calculations, the city's needs for natural gas would in this way be reduced by about 40%. Construction requires about EUR 190 million, while many foreign companies have already expressed interest in participating in its realization.
- *Construction of a waste water treatment plant* – At this moment, Belgrade releases all waste water, effluent and rain water into its rivers and thereby is creating a general environmental hazard and also directly threatening fresh water reserves located along the river. The project includes the phased construction of four waste water treatment plants, spread across the city to ensure that all waste water is sent via a dispersed collector system for treatment. In addition to the main plant in Veliko selo, worth about EUR 177 million, there are plans to construct another 3 smaller plants, in Krnjaca, Batajnica and Ostruznica, valued at EUR 15, 17 and 8 million, respectively. Besides solving the core problem for the city, the project also positions Belgrade on the map of ecologically clean cities that provide hundred percent waste water treatments. Projects are defined according to the aforementioned development strategy of the water supply and sewerage system up to 2025.
- *Construction of underground garages* – Resolving long-term problems caused by the lack of parking spaces due to inadequate planning in recent decades creates an attractive business opportunity for

experienced companies in the field of infrastructure construction. The public garage network plan envisages 16 underground garages in the wider area of the city; the first 5 garages shall be offered for construction and management to potential partners as soon as 2016. The investment amounts to approximately EUR 40 million and shall be implemented in cooperation with the EBRD.

- *Renovation and upgrading of the public lighting system in suburban municipalities* – The public lighting system, especially in the peripheral areas of the city, requires significant investments for replacing existing mercury lamps and installation of new lighting in dark areas of the city. For now, 6 projects have been prepared for 6 municipalities; the investment amounts to approximately EUR 80 million. Amendments to the legislation are under way in order to ensure conditions for the realization of these projects according to the "ESCO" model, i.e. financing through savings achieved on energy bills.

Development infrastructure projects of the City of Belgrade

Stability of public enterprises and reforms implemented at the level of the city budget are the basis for investment activities related to large city infrastructure projects, which are largely financed through the Belgrade Land Development Public Agency. Some of them are as follows:

1) Drawing Belgrade closer to the river and development of rail infrastructure:

- *The completion of Belgrade's railway junction* – The project represents the completion of Belgrade's railway junction, which was initiated in the seventies of the last century. With the objective of relieving the central part of the city for real estate development, it is necessary to relocate the existing main railway station. So far about EUR 1.3 billion has been invested and it is still necessary to complete the main station building and construct subsidiary and loading stations dispersed around the perimeter of the city. An investment of EUR 26 million involving the construction of all the new main station's platforms that ensures smooth train traffic on the principle of a circulating station and transport for 8 million passengers per year was completed in January 2016. The station was designed as a future hub for 50 million passengers annually.
- *Train station "New Belgrade"* – With the relocation of infrastructure from the centre, it is necessary to restore the existing "New Belgrade" station and adapt it to the needs of the central business core in that part of town. The significance of this station derives from its position, as well as from the upcoming relocation of the main bus station to the same locality, which creates a synergy of two modes of transport and unifies the largest transportation centre in the capital. The station is also circulating and shall be located within a large new office complex "Blok 42-43".
- *"Belgrade Waterfront"* – In cooperation with partners from the United Arab Emirates, the City has launched the long-awaited project of drawing the centre closer to the shores of the river. About 90 hectares of land in the primary urban zone is being opened with the relocation of the aforementioned stations. In September 2015, parallel to this process, began the construction of the first residential building area covering an area of 68,000 m2. More than EUR 3 billion shall be invested in these construction works, as follows: 5,700 apartments, 600 hotel rooms, 120,000 m2 of office space and a 170 m tower.

An entirely new transport network, with several boulevards, integrated public transport, railroad, as well as new parks, squares, museums, and so forth, have been designed along these buildings. The project "Belgrade Waterfront" has returned the city to the global map of real estate investments, and so far a significant interest has been shown for participation in the project and for purchase.

2) Construction and improvement of road infrastructure**:**

- *Outer Highway Tangent (SMT*) – The project involves the construction of several new sections, as well as the adaptation of existing ones in order to close the traffic ring around the city and achieve better communication between citizens and businessmen. A section of the SMT covering 21 km, including a new bridge over the Danube River (Zemun-Borca), connects the municipalities of Zemun and Palilula

and over half a million people since late 2015, as well as several planned economic zones with newly formed free zones. The total value of the work already completed on the northern section is approximately EUR 200 million. The extreme significance of the project is the relocation of freight and transit traffic from the city centre and the opening of the most attractive parts of Belgrade for renovation and construction.

- *Inner Ring Road (UMT)* – One of the largest investments in improving the city's traffic infrastructure is the construction of the Semi Ring Road, which directs traffic around the centre. Until now, parts of the project have been completed, including the Ada Bridge. The rest of the Semi Ring Road requires the construction of several tunnels in highly populated areas of the city, more bridges and interchanges. The next section in plan is "Topcider" tunnel – an investment worth about EUR 50 million – which shall be realized according to a similar arrangement as the aforementioned segments of the SMT.
- *Reconstruction of the city's major roads* – Upon completion of the reconstruction of Vojvode Stepe Street, the complete reconstruction of one of the major arteries and main entrances to the city from the northeast of the country, Ruzveltova Street, shall be prepared. The project involves the complete reconstruction of road and tram infrastructure by 2017; the planned investment is around EUR 12.5 million.

  Another important project that shall be implemented in 2016 is the reconstruction of one of the largest transport hubs in the city, Slavija Square towards the Boulevard of Liberation (Bulevar oslobodjenja). The investment worth about EUR 35 million involves solving intersections that include vehicle, trolley, tram and bus traffic. A large fountain shall be built in order to embellish the central part of the square.
- *A new main bus terminal* – The new main bus station relocates intercity and international bus traffic from the city centre to a location that is well connected infrastructure-wise with all parts of the city. As part of the relocation process, a smaller station located at Autokomanda has been envisaged. The winning design foresees the construction of about 82,000 m2 of business-commercial space under the auspices of the station complex. Planning documentation that shall present, among others, the amount of investments is currently being drafted. The station itself provides a developed business model to any attractive future investor, especially taking into account the importance of bus transportation in the Serbian and Balkan market.

Concluding remarks

The past two years in the City of Belgrade marked the process of business and financial consolidation at both the city budget level, as well as at the level of public enterprises and public utility companies. Work on the preparation and activation of a large number of development projects was conducted simultaneously.

In early 2014, the financial situation at the level of the city budget and public utility companies was as follows:

- Total liabilities at the city level amounted to EUR 1,118,716,459,
- Due and outstanding liabilities in the amount of RSD 14 billion,
- Government deficit of 20.25%,
- Bloated and inefficient public sector,
- The absence of basic control and monitoring mechanisms of the founder – the City – in relation to public enterprises it has established.

The main problem of the previous period was that the City did not conduct the basic role of founder, which is control and monitoring of the work of public enterprises. In order to solve the aforementioned, the City established, as the first and basic measure, control and monitoring of the work of the public sector and insisted on the respect for the principle of efficient operations in the management of public companies. In just two years, this approach advanced the overall performance of the public sector. The public sector, which generated aggregate loss of nearly RSD 2 billion in 2013, generated a profit of more than RSD 2 billion in 2015. Of a total of 31enterprises founded by the

City of Belgrade, 29 of them achieved positive business results in 2015.

With the reform of the public sector, public enterprises have become stable businesses that operate effectively. The performance of their activities maintains communal function in the city, but also simultaneously achieves a positive business result. Therefore, public enterprises are becoming the basis for a strong investment potential in two directions:

- Through projects financed by public enterprises from their own funds, the City budget and the Land Development Public Agency;
- Through projects financed according to public-private partnership, given that the city and its public enterprises are now attractive partners for private capital.

In order to seriously prepare for attracting investors, Belgrade has prepared a "Guide for Investors", which compiles in one place all the resources at its disposal, with a clear specification of projects that already exist. The guide identifies three key pillars to attract investors: the process of public-private partnerships, greenfield investments and privatization. The total value of all projects that have been developed or are in the development phase is over EUR 10 billion.

The biggest project that has been initiated in the previous period is "Belgrade Waterfront", which has started to fulfil the idea of drawing the city closer to the river. Settling the property and legal status, spatial planning and expropriation are just some of the activities that preceded the start of construction. Furthermore, the first contract on public-private partnership was signed in 2015 in the field of public transport, while a procedure was initiated and pre-qualification tender completed for the project of arranging "Vinca" landfill worth over EUR 250 million.

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Siniša Mali

is the Mayor of Belgrade, the city of almost two million citizens, where he has initiated a comprehensive financial consolidation programme and creation of more favourable business environment for investors. He obtained his Bachelor's and Master's degrees from the University of Belgrade, Faculty of Economics, and completed his MBA studies at Washington University in St. Louis, Department of Finances. In 2013, he defended his PhD thesis at the Faculty of Organisational Sciences of the University of Belgrade. Prior to his appointment as the Mayor, he served as Special Adviser for economic and financial affairs to the Prime Minister of the Republic of Serbia, Mr Aleksandar Vučić. Before that he was financial advisor and consultant in private practice, where he specialised himself in transactions in the field of company purchase and sale, financial consulting, financial restructuring and business consolidation in private and public enterprises. In 2001, he was appointed the Assistant Minister for Privatisation. Later he worked as the director of the Tender Privatisation Centre at the Privatisation Agency of the Republic of Serbia. Before that he had worked at the Deloitte Central Europe and Credit Suisse First Boston at Mergers & Acquisitions Group in New York. He served on the boards of directors of several organizations including FIAT Automobiles Serbia, Commercial Bank, and Clinical Centre of Serbia. In addition to his position of the Mayor of the City of Belgrade, Mr. Mali also serves as the President of the Air Serbia Supervisory Board. He is a holder of the title of Chartered Financial Analyst (CFA).

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completed the postgraduate studies at the Faculty of Economics in Belgrade, earning a master's degree in Business and Financial Management. Currently, he is working on his doctoral thesis, researching "Inflation targeting: advantages, disadvantages and application in Serbia." Prior to his appointment as the Deputy Mayor, he was Head of the Sector of Price Administration for Prices, of the City of Belgrade. He has more than ten years of work experience. He worked on many national and international projects as a manager or a team member, applying the various kinds of internationally recognized methodologies. He published several papers in relevant scientific journals. He excelled his financial skills while working at "EKI Revision" company, by completing the audit of over thirty financial reports and by developing numerous business and financial Due Diligence reports. Mr. Milosavljević expanded his interest in macroeconomics at the Institute of Economics, specializing in monitoring and analysis of macroeconomic indicators, as well as creating applied macroeconomic and feasibility studies, development strategies, etc. As one of the best students of the Faculty of Economics, he gained his first work experience with the Ministry of Economy. Later on, he confirmed the qualifications to work in the state administration by passing the state exam. He is fluent in English.

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SMART, CONNECTED PRODUCTS AS A NEW COMPETITIVE ADVANTAGE: CHALLENGES FOR SERBIA*

Pametni povezani proizvodi kao nova konkurentska prednost – izazovi za Srbiju

Abstract

The current debate among scholars of innovation and competitiveness centres on the concept of smart connected products (SCP). In this review article, we attempt to engage Serbia in this global debate by explaining the core concepts and arguments, building on previous research, and demonstrating how the developments in Serbia's ICT sector exemplify the new theory. We present the cases of three companies engaged in the production of SCPs, namely Schneider Electric DMS NS, Strawberry Energy, and Bitgear. Whilst the bulk of the IT production and exports volume in Serbia can be ascribed to outsourced, general software programming, these case studies are evidence of future potential of SCP (or Internet of Things) development. For more companies to specialise and successfully compete at the global level, additional, principally foreign investment in the sector is required. The key limitation here, in addition to the deficiencies in the business climate, is the availability of quality human resources, which calls for increased public funding of education in the relevant ICT skills, a more comprehensive reform of research and innovation infrastructure and gearing publicly available funding for innovation principally via institutions like the Innovation Fund, which is functioning based on best international practices.

Keywords: *innovations, competitiveness, smart connected products, Internet of Things, ICT, Serbia*

Sažetak

Aktuelna akademska rasprava u oblasti inovacija i konkurentnosti posebno se bavi pojmom pametnih povezanih proizvoda (PPP). U ovom preglednom radu nastojimo da uključimo Srbiju u ovu globalnu debatu, objašnjavajući glavne koncepte i argumente, nadovezujući se na prethodna istraživanja i pokazujući kako razvoj sektora IKT u Srbiji predstavlja primer primene ove teorije u praksi. Predstavljamo slučajeve tri preduzeća koja prave PPP, a to su *Schneider Electric DMS NS, Strawberry Energy* i *Bitgear.* Iako većina proizvodnje i izvoza IT može da se pripiše podugovaranju i standardnom programiranju, ovi slučajevi ukazuju na potencijal razvoja PPP (odnosno proizvoda koje se nazivaju i Internet stvari). Da bi se više preduzeća usavršilo i uspešno takmčilo u svetu, potrebne su dodatne, primarno strane investicije u ovaj sektor. Ključno ograničenje, pored nedostataka poslovne klime, predstavlja ograničena ponuda kvalitetnih kadrova, što zahteva veća ulaganja države u obrazovanje u kompetencijama koje su potrebne sektoru IKT, sveobuhvatnu reformu infrastrukture za istraživanje i inovacije, i usmeravanje javnih sredstava za inovacije kroz institucije poput Inovacionog fonda, koji prati najbolje međunarodne prakse.

Ključne reči: *inovacije, konkurentnost, pametni povezani proizvodi, Internet stvari, IKT, Srbija*

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Introduction: Innovation as key driver of competitiveness and economic development

The current debate among scholars of innovation and competitiveness centres on the concept of smart connected products (SCP). In this review article, we attempt to engage Serbia in this global debate by explaining the core concepts and arguments, building on previous research, and demonstrating how the developments in Serbia's ICT sector exemplify the new theory.

The period of financial and wider global economic crisis that emerged in 2008 has brought a new focus in economic literature relating to the significance of microeconomic factors as enablers of sustainable economic growth. A consensus has emerged in relation to innovation representing a critical factor in accelerating economic development [22], [3], [4]. Continuing our research on advancing Serbia's competitiveness by employing industry clusters and creative industries, and the relevant innovation processes as engines of development [31], based on Porter's competitiveness model [9], we hereby turn to Christensen's theory of disruptive innovations [2]. A disruptive innovation, according to *Christensen et al.*, is an innovation that helps create a new market and value network, and that eventually disrupts the existing market and value network replacing earlier technologies (in a period ranging from a few years or decades). The term is used in business and technology literature to describe innovations that improve products and services in ways not expected by the market (e.g. by creating different positions for consumers in new markets or by lowering prices in existing markets).

In contrast to disruptive innovation, a sustaining innovation does not create new markets or value networks, but rather enhances the value of existing markets and networks, enabling firms to compete against each other's sustaining improvements. Sustaining innovations may be either discontinuous (i.e. transformational or revolutionary) or continuous (i.e. evolutionary). According to Christensen's theory the three enablers of disruptive innovation are: (i) simplification of technology, (ii) business model innovation (simplified solutions for interested customers) and (iii) embedding solutions into a new value network (customers, distribution, suppliers). A disruptive (or empowering) innovation creates a base for new employment. A sustaining innovation is highly significant but, due to its nature, does not generate new employment. Such innovations render a good product better. When customers buy the new product with sustained innovation, they usually no longer purchase the old product.

To ensure a full understanding of disruptive innovations, *Christensen et al.* have outlined the elements that are required to describe a certain innovation as disruptive [5, pp. 48-50]:

(i) Disruption is a process: common mistakes include failing to view disruption as a gradual process (may lead incumbents to ignore significant threats) and blindly accepting the "Disrupt or be disrupted" mantra (may lead incumbents to jeopardize their core business as they try to defend against disruptive competitors); almost all innovations, be their disruptive or not, start as small experiments, and disrupters focus on a successful business model, and not just the product;

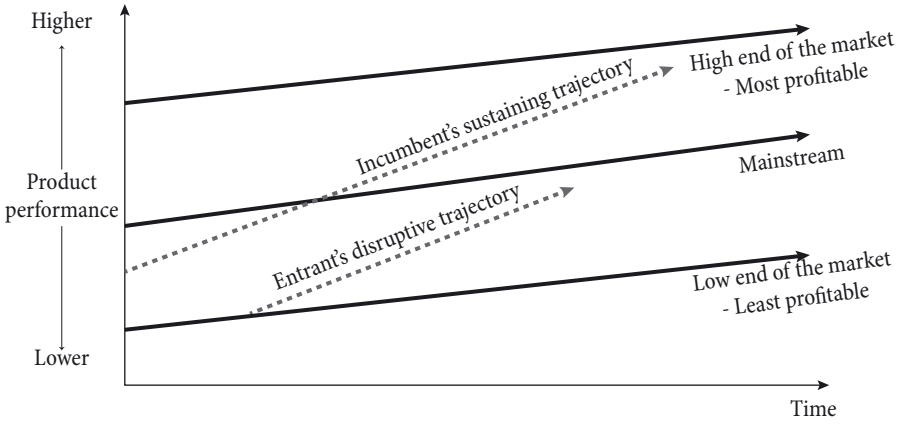
(ii) Disrupters establish business models that are significantly different from those of incumbents, as exemplified by Apple's sustaining innovation in 2007 in the smartphone market whereby the phone replaced certain functions of a computer;

(iii) Not all disruptive innovations succeed;

(iv) The mantra "Disrupt or be disrupted" may be misleading; incumbent companies should react to disruption but not by dismantling a profitable business – instead they should strengthen relationships with core customers by investing in sustaining innovations.

Christensen, *Raynor* & *Donald* [5, p. 49] explain that disrupters often start at the low end of underserved customers and then migrate to the mainstream market. Figure 1 illustrates the concept of disruptive innovation by projecting two innovation trajectories: the first, indicating product performance (shown as dotted lines) illustrates how products improve over time and the second, representing customer demand (shown as solid lines) depicts customers' willingness to pay for performance. When incumbent companies introduce higher quality

Figure 1: Innovation trajectories



Source: [5]

products (upper dotted line) to satisfy the high end of the market (where profitability is highest), they tend to exceed the needs of low-end customers and many mainstream customers, opening up the market for entrants in that market segment. Entrants on a disruptive trajectory (lower dotted line) improve performance and thereby challenge the incumbents, moving upmarket.

Florida [12, p. 21] further accentuates human creativity as the key determinant of economic activity. Creativity has become a value as the principle generator of new technologies, new industries and new wealth. *Florida* has identified a new economic class, *a creative class* that will dominate the economic and cultural life of this century just as the working class dominated in the early 20th century and the service class over the past decades. Although the creative class is not as massive in numbers like the service class, it is an agent of growth and change in the economy and society. *Florida* [14] argues that the current crisis is more than a financial or economic crisis, founded on a deep structural divide between productive and innovative capacities of the emergent knowledge-based creative economies, on one hand, and the outmoded institutions, economic and social structures and geographic forms of the old industrial age, on the other hand. *Potts* [27] also calls creative industries the main agent of economic modernization. The primary economic value of creative industries lies in the affirmation and expansion of innovation during economic evolution, emphasizing the importance of creative clusters and innovations and confirming Porter's concept of linking agglomeration and innovation [21], [23]. Just as factories were the primary economic institutions in the industrial era, schools and universities are becoming the primary economic institutions in the era of innovation. As *Florida* [13] points out, the highest paid workers today are those who belong to the creative class.

In a recently published article, *Martin*, *Florida* & *others* [18] have linked Michael Porter's industrial cluster theory to Richard Florida's occupational approach of creative and routine workers in order to gain a better understanding of the process of economic development. In combining these two approaches, they have identified four major industrial-occupational categories: creative-in-traded, creative-in-local, routine-in-traded and routine-in-local clusters. They found that economic development is positively related to employment in the creative-in-traded category.

New competitive advantage based on smart connected products (SCPs)

Porter & *Heppelmann* [25] have argued that there have been three waves of Information Technology (IT)-driven competition, which radically reshaped competition in the past 50 years. The first wave of IT development, during the 1960s and 1970s, automated individual activities in the value chain, ranging from order processing and bill payment to computer-aided design and manufacturing resource planning. The rise of the Internet marks the second wave of IT-driven transformation in the 1980s and

1990s. The Internet enabled coordination and integration across individual activities, market actors and it increased the potential geographic reach. The first two waves gave rise to immense productivity gains and growth across the economy. Nonetheless, while the value chain was transformed, products themselves were relatively unaffected. Now, in the third wave, IT is becoming an integral part of the product. The smart, connected products (SCPs) have been enabled by vast technological improvements in processing power, device size and design, as well as ubiquitous wireless connectivity. These products are transcending industry boundaries, disrupting value chains, altering industry structure, which raises a new set of strategic choices for competitors and facilitates further innovation, and hence economic growth.

The SCPs are often also described under the umbrella of another concept, "Internet of Things (IoT)", defined as "a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies" by the International Telecommunications Union Global Standards Initiative on Internet of Things [15]. IoT implies network of physical objects – devices, vehicles, buildings and other items, which are embedded with electronics, software, sensors, and network connectivity that enable these objects to collect and exchange data. It is both a method to ensure a higher productivity and a vision with technological and societal implications. *Kevin Ashton*, co-founder of Auto-ID Center, initially coined the term, during a presentation made at Procter & Gamble in 1999 (Ashton, 2009), at the time linking frequency identification (RFID) to the Internet to improve business models. Development of the concept and business model grounded upon what are today known as smart devices, has been facilitated by both scholars and entrepreneurs, staring as early as 1982 at Carnegie Mellon University, and evolving further in 1990s (see [37], [28]).

Porter & *Heppelmann* [25] have taken the IoT concept further and discussed it in the light of strategic decision-making process with the aim of achieving and maintaining market competitiveness. They ascribe three core elements to smart connected products that are essentially enabled by IoT:

(i) physical components comprise the mechanical and electrical parts of product;
(ii) "smart" components comprise the sensors, microprocessors, data storage, controls, software, and, typically, an embedded operating system and enhanced user interface;
(iii) connectivity components comprise the ports, antennae, and protocols enabling wired or wireless connections with the product.

Importantly, connectivity serves a dual purpose: (i) exchanging information between the product and its operating environment, its maker, its users, and other products and systems and (ii) enabling some functions of the product to exist outside the physical device [25].

Porter [24] has famously argued that in any industry, competition is driven by following five competitive forces: the bargaining power of buyers, the nature and intensity of the rivalry among existing competitors, the threat of new entrants, the threat of substitute products or services, and the bargaining power of suppliers. The composition and strength of these forces collectively determine the nature of industry competition and the average profitability for incumbent competitors. Industry structure changes when new technology, customer needs, or other factors shift these five forces. SCPs shift many industries in a way that may be even more palpable than the previous wave of Internet-enabled services, and the greatest effect may be in manufacturing. *Porter* & *Heppelmann* [26] define the following effects of SCPs, described within the five competitive forces model framework:

(i) Bargaining power of buyers – SCPs dramatically expand opportunities for product differentiation, moving competition away from price alone; obtained data how customers actually use the products enhances a company's ability to segment customers, customize products, set prices to better capture value, and extend value-added services; SCPs serve to mitigate or reduce buyers' bargaining power;
(ii) Rivalry among competitors – SCPs have the potential to shift rivalry, opening up numerous new avenues for differentiation and value-added services; these products also create opportunities to

broaden the value proposition, to include valuable data and enhanced service offerings; offsetting this shift in rivalry away from price is the migration of the cost structure of SCPs toward higher fixed costs and lower variable costs;

(iii) Threat of new entrants – New entrants in a smart, connected world face significant new obstacles, starting with the high fixed costs of more-complex product design, embedded technology, and multiple layers of new IT infrastructure; broadening product definitions can raise barriers to entrants even higher;

(iv) Threat of substitutes – SCPs can offer superior performance, customization, and customer value relative to traditional substitute products, reducing substitution threats and improving industry growth and profitability. However, in many industries these products create new types of substitution threats, such as wider product capabilities that subsume conventional products.

(v) Bargaining power of suppliers – SCPs are shaking up traditional supplier relationships and redistributing bargaining power; SCPs ultimately can function with complete autonomy, with human operators merely monitoring performance, the fleet or the system, rather than individual units.

In product development SCPs require a fundamental rethinking of design: product development shifts from largely mechanical engineering to true interdisciplinary systems engineering. In manufacturing, these products create new production requirements and opportunities, going beyond the production of the physical object, primarily because a functioning of SCP requires a remote (cloud-based) system. This in turn affects organisational structure of companies. In a seminal article, *Jay W. Lorsch* and *Paul R. Lawrence* [17] had argued that every organisational structure must combine two basic elements: differentiation and integration. In this model, different tasks, such as sales and engineering, need to be "differentiated," or organized into distinct units, which need to be coordinated and aligned. Now *Porter* & *Heppelmann* [26] affirm that the classical model a manufacturing business as one that is divided into functional units with substantial autonomy (Research and Development – R&D, manufacturing, logistics, sales, marketing, after-sale service, finance, and IT) is no longer valid. With the emergence of SCPs, the need to coordinate across product design, cloud operation, service improvement, and customer engagement is continuous and never ends, even after the sale. In addition, as these authors argue, completely new and critical functions emerge – for instance, to manage an increased quantity and diversity of data, as well as the new open-ended customer relationships. At the broadest level, the rich data and real-time feedback from SCPs challenge the traditional centralized command-and-control model of management in favour of distributed but highly integrated choices and continuous improvement. The continued coexistence of the new and the old business models complicates organisational structures and certainly calls for additional managerial attention to redesigning the organisational structure and reshaping the traditional business offering.

Innovations as an indicator and an enabler of competitiveness in Serbia

Serbia strives to attain the stage described by Porter innovation-driven growth [22] in order to bridge the development gap, namely by fostering creative industries and market enablers, including a business-enabling environment, quality higher education and entrepreneurship culture (see [29], [31], [29] and [30]). The innovation activity in Serbia is here analysed by using the two relevant international databases, the Global Competitiveness Report (GCR) produced by the World Economic Forum – WEF [34], [35], [36] and the Global Innovation Index (GII) produced by Cornell University, INSEAD and WIPO [6], [7], [8]. While GCR studies the innovation infrastructure as an important factor for enhancing competitiveness, GII reviews the innovation inputs and outputs.

To set the wider regional context for innovation activity assessment, the principle competitiveness indicators are presented in Table 1. Countries that stand out as leaders in competitiveness in Central and East Europe (CEE) in 2015 are Estonia and Czech Republic, and among the South-eastern European countries (SEE) these are Romania and Bulgaria.

Table 1: Competitiveness and innovation activity in CEE (GCI and GII rankings)

Country	GDPpcPPP 2014	GCI – rank		GII – rank	
		2014	2015	2014	2015
		CEE			
Estonia	45	29	30	24	23
Czech Republic	37	37	31	26	24
Slovenia	35	70	59	28	28
Latvia	53	42	44	34	33
Hungary	51	60	63	35	35
Slovakia	41	75	67	37	36
Lithuania	47	41	36	39	38
Poland	49	43	41	45	46
Average CEE	45	50	46	34	33
		SEE			
Croatia	57	77	77	42	40
Bulgaria	69	54	54	44	39
Romania	74	63	53	55	54
Montenegro	81	67	70	59	41
FYR Macedonia	88	63	60	60	56
Serbia	83	94	94	67	63
Bosnia & Herzegovina	100	87	111	81	79
Albania	95	97	93	94	87
Average SEE	81	75	77	63	58

Note: calculated by authors.
Source: GCI – WEF [35], GII – [7], [8]

All CEE and SEE countries are ranked in 2014 and 2015 more highly in terms of innovation than in terms of GDPpc PPP. In addition, the positions of all countries (except Poland, Lithuania and Romania) are better in the GII than in the GCR in 2015. The presented data demonstrates that both the CEE and SEE countries, including Serbia, have underused potential for commercialising innovation, which could enable improved competitiveness in the future, and hence a higher standard of living.

Table 2 features the two key GCI-evaluated determinants of competitiveness – macroeconomic and microeconomic (NBE – national business environment and SCOS – sophistication of company operations and strategy). Data show microeconomic determinant of competitiveness in Serbia to be at a lower level than its macroeconomic determinant. A key generator behind the deterioration of the microeconomic determinant of competitiveness is SCOS (Sophistication of company operations and strategy), which dropped from 106th in 2008 to 129th place in 2014 and 121st place in 2015. The second cause for deterioration of microeconomic determinant is the quality of NBE, which dropped from 85th to 102nd and then 96th place, respectively.

While the attained rankings are likely to improve in the next period, especially the business environment based on reforms such as introduction of electronic construction permitting in January 2016, they certainly evidence the importance of both professional management practices and a business-enabling environment for a country's competitiveness, and ultimately for fostering entrepreneurship and innovation activity.

Consequently, it is strategically important that Serbia bases its reindustrialisation process on strengthening the innovation activity, since the latter provides a basis for knowledge-intensive creative industries that are deemed essential for accelerated GDP growth and a shift to a higher stage of overall competitiveness and economic development.

Table 2: Macroeconomic and microeconomic determinants of competitiveness (GCI subrankings)

	Macroeconomic competitiveness			Microeconomic competitiveness			NBE			SCOS		
	2008	2014	2015	2008	2014	2015	2008	2014	2015	2008	2014	2015
Serbia	74	91	84	88	106	101	85	102	96	106	129	121
Bosnia & Herzegovina	84	58	85	106	90	107	103	90	106	121	93	114
Romania	78	89	75	70	81	75	68	79	74	79	87	80
Bulgaria	81	78	85	80	85	78	75	81	75	102	98	89
Macedonia, FYR	70	69	63	88	66	63	85	62	58	103	80	85
Montenegro	50	50	67	72	71	76	69	69	72	85	85	91
Albania	88	76	78	100	86	82	98	88	81	108	86	85
Croatia	66	74	75	67	79	78	68	77	77	62	83	86
SEE	74	75	77	84	82	83	81	80	80	96	93	94

Source: Authors' recalculations based on [22]. Rank versus 144 countries [34], [35], [36]

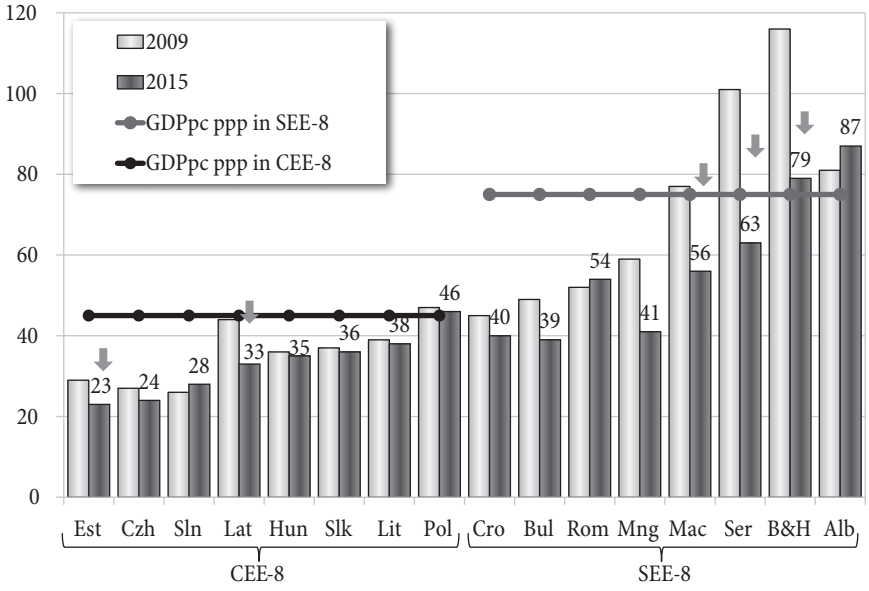
The here analysed Global Innovation Index [8] relies on two sub-indices – (i) the Innovation Input Sub-Index which consists of five input pillars capturing elements of the national economy that enable innovative activities (institutions, human capital and research, infrastructure, market sophistication, and business sophistication; and (ii) the Innovation Output Sub-Index, which is based on innovative activities within the economy (knowledge and technology outputs and creative outputs). The overall GII score is calculated as the simple average of the Input and Output Sub-Indices, and the Innovation Efficiency Ratio, which is the ratio of the Output Sub-Index over the Input Sub-Index, displaying the innovation output a given country obtains for its inputs. GII for 2014 includes 143 economies with 81 indicators, representing 92.9% of the world's population and 98.3% of the world's GDP (in current USD).

Figure 2 presents the country GII rankings [6], [8]. Three SEE countries, Serbia, Bosnia and Herzegovina and Macedonia, have all achieved significant progress but are still at the lower end of the region's performance in terms of effective innovation output.

Figure 3 illuminates the state of the innovation infrastructure of Serbia based on aggregate data collected by the World Economic Forum. The larger the shaded area, the better the country is ranked. Strikingly, this indicates that Serbia's innovation infrastructure had been better developed in 2008 than in 2012 or 2015. Alarmingly, in two of the indicators, "Country capacity to retain talent", and "Country capacity to attract talent" (previously integrated under one heading of "Brain drain"), Serbia is at the bottom of the world rankings (140th and 139th position out of 144 countries, respectively). For two additional rankings, "Quality of management schools" and "Quality of the educational system", Serbia is positioned beyond 110th place. At the same time, Serbia scores considerably well for "Tertiary education enrolment rate", "Quality of math and science education", "Utility patents per million population" and "Quality of scientific research institutions". Nonetheless, the indicator measuring the quality of scientific research institutions has deteriorated over time, implying that Serbia has been losing its competitive advantage due to either decreasing quality, and/or other countries undertaking a more substantial effort to enhance the quality of research.

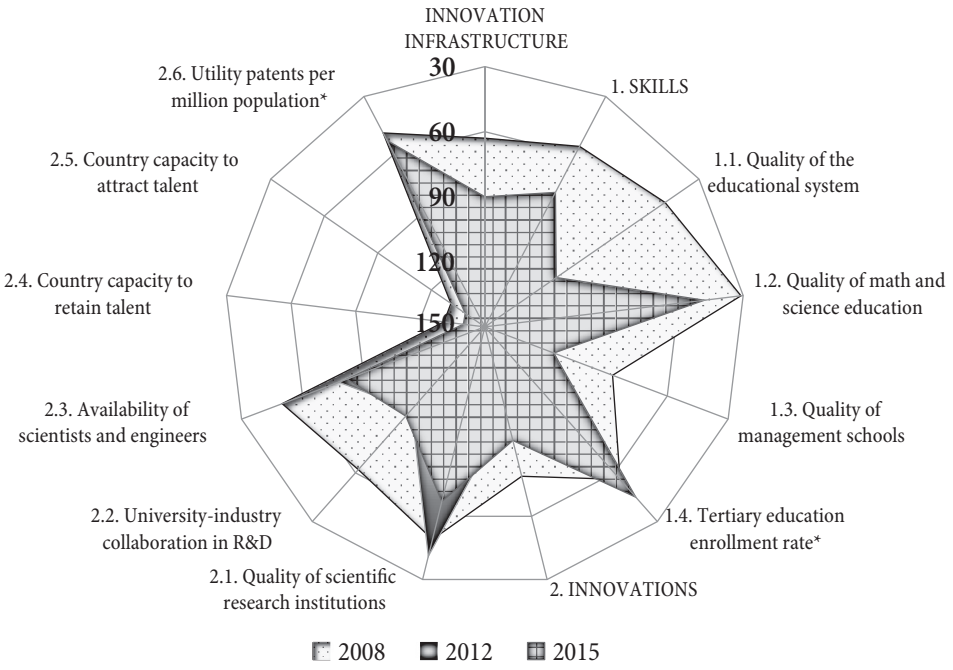
Figure 4 is showing the effectiveness of GII outputs based on the available inputs in a country. The results in 2015 are weaker compared to 2012, especially when assessing the "Knowledge & technology output" and the "Creative outputs". Outputs relating to "Innovation institutions", "Human capital and research" and "Innovation infrastructure" are showing improvement over time. In contrast, meager results have been achieved in outputs relating

Figure 2: Global innovation index rankings



Source: Cornell University, INSEAD and WIPO, The Global Innovation Index 2009/2010 and 2015.

Figure 3: Innovation infrastructure in Serbia



Source: WEF [34], [35], [36]

to "Business sophistication" and "Market sophistication" indicating weak linkages between the education system and research institutions on one hand, and the business sector, on the other hand.

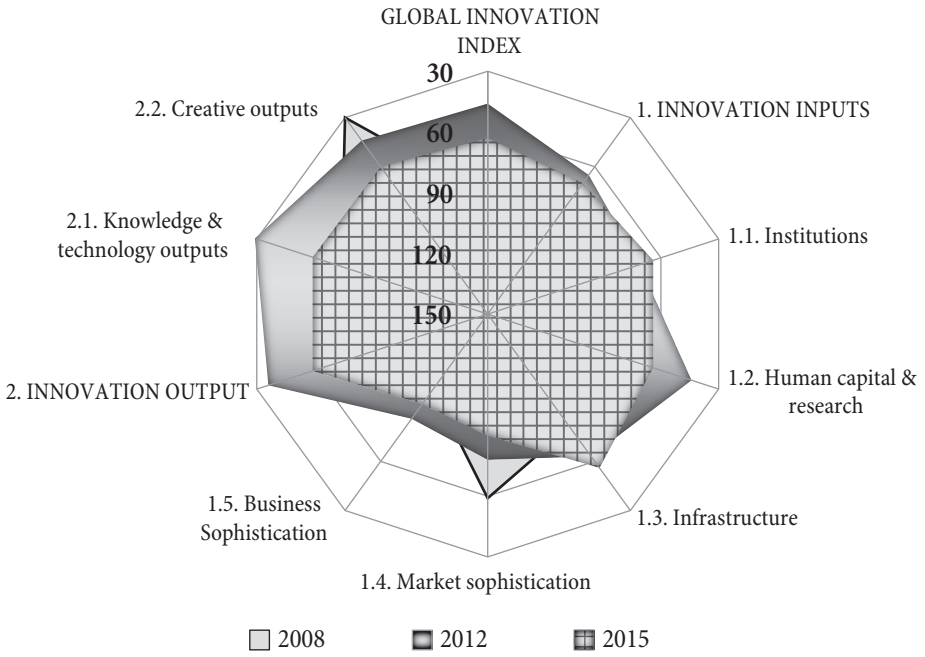
According to previously presented research by *Savić*, *Pitić* & *Trbovich* [29], [31] based on Porter's competitiveness model and affirmed by assessment of 2015 GCI, Serbia is currently at the investment-driven stage, with further development conditioned upon new investments in increased productivity of goods and services. At the same time, although Serbia has reached this second of three stages of development as described by *Porter* and evaluated by the World Economic Forum, it has done so without a sufficiently developed infrastructure (roads, railways, ports and the like) or administrative infrastructure (weak rule of law, public administration, prevalence of corruption, etc.), and with poor basic human capital.

As a consequence, Serbia has a relatively low competitiveness as 94th of 144 countries in 2014 and 2015. On the other hand, Serbia has considerable results in several of the competitiveness elements, including elementary education, primary health care and part of telecommunications infrastructure. Therefore, Serbia should commit to resolutely completing the outstanding tasks ascribed to first stages of development, including development of physical and institutional infrastructure, and at the same time focus on improving the quality of human capital to advance further on the development path. Serbia particularly needs to reinforce the elements of competitiveness linked to innovation infrastructure (skills and innovations), which will enable it to ultimately shift to the most advanced innovation-driven stage of competitiveness. More specifically, Serbia should enhance the quality of scientific research institutions, strengthening the university-industry R&D collaboration (evidenced in increased number of patents, technology-based companies and other indicators of commercialising innovation) and the country's overall capacity to retain and to attract talent. Both the business sector and the government play a role in providing impetus to these processes.

Fine-tuning of the European Union's innovation policy

The European Union, recognising the crucial role of innovation in economic development and responding to what it calls 'innovation emergency' of lower R&D spending compared to other developing countries, namely USA and Japan, and researchers moving to countries where conditions are more favourable, has formulated

Figure 4: Global Innovation Index



Source: [6], [7], [8]

the Innovation union policy to render research more integrated and efficient. The EU policy-makers estimate that reaching the target of investing 3% of EU GDP in R&D by 2020 could create 3.7 million jobs and increase annual GDP by EUR 795 billion by 2025.[1]

The EU plays special emphasis on the Information Communication Technologies (ICT), since this sector represents 4.8% of the European economy, and generates 25% of total business expenditure in Research and Development (R&D), with investments in ICT accounting for 50% of all European productivity growth. As a result, the EU investments in ICT are due to increase by about 25% under Horizon 2020 compared to FP7, which was the previous framework EU programme for scientific projects.[2] In reviewing the overall EU and member countries research and innovation performance, the most recent European Commission report [11] reveals that there is still insufficient funding, slow institutional reform and untapped potential in linking business to education and stimulating innovations. These challenges are only magnified in Serbia where lower level of economic development further limits opportunities and enhances resistance to reform.

To strengthen the EU policy in innovation, the EU Research Commissioner *Carlos Moedas* has recently announced plans to establish the European Innovation Council in addition to the existing European Research Committee and counteract the trend of technologies developed in Europe commercialized elsewhere [16].

In Serbia, the Draft Strategy for Science and Technology Development 2016-2020: Research for Innovation [10] has a strong focus on innovation and supporting science based on excellence and relevance as the two key criteria, which would render the sector more effective in the future if the financing and overall institutional reform is gradually implemented, as envisaged by the document. Based on positive results since inception in 2011, the Republic of Serbia Innovation Fund could be an important vehicle in strengthening links between the education and research sectors, one hand, and the business sector, on the other hand, as proposed by the review of Serbia's international competitiveness presented above. Business incubators, university technology transfer offices and curricula reform also play an important role as building blocks of innovation that need to rest on advancements in general physical and institutional infrastructure and rule of law that all contribute to a functioning, stimulating business environment.

1 Available at http://ec.europa.eu/research/innovation-union

2 Available at https://ec.europa.eu/programmes/horizon2020

Development of smart connected products in Serbia

As a country that has not yet reached the innovation-driven stage of development, Serbia is seldom a country of origin for smart connected products. Nonetheless, there are some positive signals indicating future potential. Most specifically, Serbia's ICT sector exports, while still relatively small in volume on a global scale, are exhibiting constant growth, especially when it comes to export of computer and information services i.e. software development, a key element of SCPs. In 2013, Serbian ICT industry ranked 40th globally in terms of value of exported software, while the overall industry was ranked as 79th [32, p. 9].

Figure 5 presents export growth, year-on-year from 2007 to 2014, with the rate of growth dropping with the emergence of the Global financial crisis in 2008 but nonetheless not breaking the growth pattern.

Since the change of regime in 2000 and renewed economic activity, Serbia has developed specific IT skills in embedded systems development and application development, both in the entertainment industry and in tailor-made applications development.

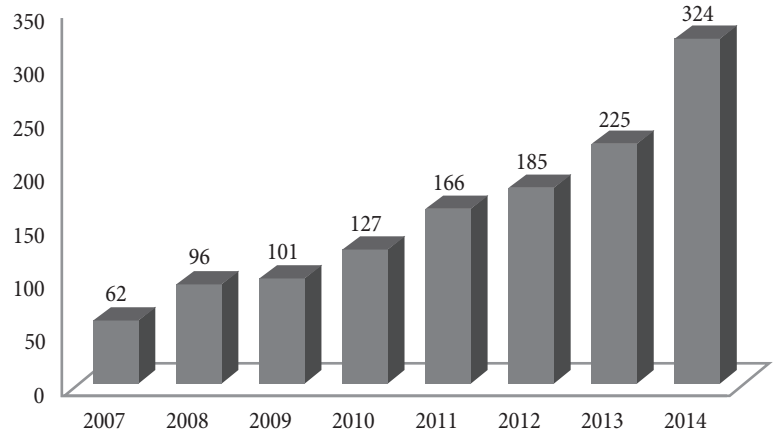
One of the principle limitations to ICT development relates to human resources. There has been a significant brain drain of specialists that started in 1990s and is continuing today with best students studying abroad and usually staying there to work after their studies. Education capacities are deemed to be relatively good at a global level, particularly at technical faculties at the University of Belgrade and Novi Sad and the overall English proficiency in the country, but there are an insufficient number of trained programmers, especially specialists, to draw further foreign investment in the sector. As a result, the ICT sector is growing based on outsourcing of more general programming and shared business services, at a rate that is conditioned upon the human capital availability.

The capacity for research and development in Serbia is also quite limited. In addition to university research laboratories, the most important ICT research centre is the Institute Mihajlo Pupin, which has certain capacities in the embedded design industries. Otherwise R&D occurs at the company level, and all of these research efforts are generally at a small scale.

The telecommunications market is the most developed segment of the ICT in Serbia. This market can be defined as mature and dominated by large companies (three mobile operators, and two major cable operators), with the average annual growth rate of the Serbian telecommunications segment revenues in the period 2005-2011 at around 9.5%. [33, updated by authors, p. 2]. This telecommunications market has been further strengthened by the KKR investment fund acquisition of a regional cable and Internet provider (SBB/Telemach) in partnership with the European Bank for Reconstruction and Development (EBRD) as a minority shareholder in 2013, and the NCR opening of a global centre in Belgrade in 2012.

In the IT area, there are several major industry players, with Microsoft's fifth development centre worldwide opened back in 2005 in Serbia, Asseco, one of the IT leaders in CEE acquiring a Serbian banking software development company in 2008 and currently employing over 500 engineers. Serbian-owned Comtrade as one of the largest

Figure 5: Serbia's IT service exports



Source: Serbian Chamber of Commerce

IT companies in CEE with over 1,000 engineers on 16 locations globally, local company DMS producing the top global software solution for energy distribution entering a joint venture with Telvent, now Schneider Electric and employing over 1000 experts, Bitgear and HTec named Deloitte's second and third fastest growing technology company in Central and Eastern Europe, respectively, and Nordeus as a leading and award-winning European game developer (officially the best European gaming start-up of 2011), followed by Elpix Entertainment, Cofa games, GTECH, and other software development companies that are gaining international traction [32]. Other ICT multinationals are also present on Serbia's IT market (Adobe, Oracle, Google, Hewlett Packard, SAP, IBM, Siemens, Cisco, Ericsson, etc.) but mainly as wholesalers, although some are outsourcing certain services to Serbian IT companies.

Several Serbian companies are successful in producing smart connected products (products under the Internet of Things umbrella), and three examples will be presented here. For instance, Schneider Electric DMS NS Ltd engages in research, development and engineering in the field of the electrical power engineering management software. Their main product, ADMS Software encompasses a variety of analytical functions for calculation and optimization of the electrical distribution utilities operation and provides the tools necessary for efficient monitoring, managing and design of distribution systems. This software tool enables utilities to obtain high-quality information about their power distribution network, efficiently design and develop distribution facilities, optimize resources and reduce operation costs, raise the utility profitability and improve both availability and quality of electricity for customers. The product developed by Schneider Electric DMS NS Ltd. has transformed the energy management system and it is today deployed in 156 Control Centers in 72 Utilities worldwide, supplying 90.4 million customers.[3]

The second example is Strawberry Energy, a small innovative company that produces smart urban devices, namely public solar-power based charging stations for portable devices, providing people with energy, connectivity and local information in public spaces. While this company is just starting to gain revenue, including orders from United Kingdom and other destinations, its potential has already been recognized and they pride themselves with many awards, including a prize by the Institute for Sustainability in partnership with the Mayor of London's Office, and supported by EIT Digital, 2015, First place in the Public Consumption Reduction category at the European Union's Sustainable Energy Week 2011 in Brussels, and Winner of the Verge Accelerate competition, in the organization of GreenBiz Group in San Francisco, 2014.[4]

The third example is one of Bitgear, another awarded high technology company that specialises in modern electronics, digital communications and signal processing technologies that are based on motion sensors and web software. In addition to providing solutions to other businesses that are either components or integrally created smart connected products, Bitgear develops its own smart connected products and platforms. This is an interesting example of enhancing the services business model, with the company aiming to achieve non-linear growth as an innovation driven enterprise investing at least 20% of resources in own R&D. One of the systems that Bitgear licenses is based on "wearable" technology that enables an interactive relationship with the elderly, children and pets, enhancing security and health habits. Another system is the "car sharing" hardware and software platform, which enables users to book a car for a short period of time and unlock it using their mobile phone. An interesting example of a connected product developed by Bitgear for other businesses is a wearable device for monitoring domestic livestock animals, which is mounted on the tail of an animal and, on the basis of tail movement, determines the stage at which calving will occur. The device sends an SMS with a short description of any significant events, enabling the farmer to react in a timely manner in case of any problems, without having to constantly supervise and visit animals. This is especially effective when animals are in a remote location (Interview with Dejan Dramicanin, Bitgear CEO, held in February 2016).

In conclusion, whilst the bulk of the IT production and exports volume in Serbia can be ascribed to outsourced,

3 For more, see Official Company Internet Presentation, available at http://www.schneider-electric-dms.com/

4 For more, see Official Company Internet Presentation, available at http://senergy.rs/

general software programming, examples of several companies presented here is evidence of future potential for smart connected products (or Internet of Things) development. For more companies to specialise and successfully compete at the global level, additional, principally foreign investment in the sector is required. The key limitation here, in addition to the deficiencies in the business climate presented in the more comprehensive evaluation of Serbia's competitiveness above, is the availability of quality human resources, which calls for increased public funding of education in the relevant ICT skills, shifting resources away from funding education for competences where the market is demonstrating high unemployment levels. Furthermore, we wish to reiterate the recommendations related to reform of research and innovation infrastructure and gearing publicly available funding for innovation principally via institutions like the Innovation Fund, which is functioning based on best international practices. Previous experience with subsidising companies based on less transparent and less competitive criteria has shown that such policies inevitably result in market distortion and unfair competition, and should thus be replaced with smart innovation policies.

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INDICATORS OF DEVELOPMENT OF THE HEALTH SYSTEM OF SERBIA AND THE EFFECTIVENESS OF THE CURRENT ECONOMIC MODEL IN HEALTH CARE

Indikatori razvijenosti zdravstvenog sistema Srbije i efektivnost aktuelnog ekonomskog modela u zdravstvu

Abstract

The subject of this analysis is the health system of Serbia. After consulting relevant sources, we present the indicators of health of the Serbian population and other parameters of development of the health system of Serbia. Special focus is on the analysis of the current economic model in the health sector in Serbia, primarily in terms of the method for creating public budget, its amount and structure of spending. Based on this analysis, the author presents a number of recommendations for improving the efficiency of spending public money. Some of the substantiated recommendations are as follows: transfer the savings from generic to innovative medicines, correct the list of services in the basic package of health insurance by the NHIF, give greater attention to the collection of contributions for health insurance, change the management model of the healthcare institutions, rationalization of non-medical staff, improving the transparency of public procurement, introduction of an integrated IT system, greater investment in prevention and primary care, more active use of special contracts which would enable the NHIF to more easily control spending of money for drugs, restructuring of Galenika through quality strategic partnerships and the integration of private and public health systems.

Keywords: *population health, health system, health economic model*

Sažetak

Predmet analize je zdravstveni sistem Srbije. Konsultovanjem objektivnih izvora prikazani su indikatori zdravlja stanovništva Srbije i drugi parametri razvijenosti zdravstvenog sistema Srbije. Poseban fokus rada je analiza aktuelnog ekonomskog modela u zdravstvenom sektoru Srbije, pre svega u pogledu načina kreiranja javnog budžeta, njegove visine i strukture trošenja sredstava. Na bazi te analize autor je izveo čitav niz preporuka za poboljšanje efektivnosti trošenja javnog novca. Neke od argumentovanih preporuka su sledeće: preliti uštede sa generičkih lekova na inovativne lekove, korigovati listu usluga u osnovnom paketu zdravstvenog osiguranja RFZO, dati veći značaj pitanju naplate doprinosa za zdravstveno osiguranje, promeniti model upravljanja zdravstvenim institucijama, racionalizacija nemedicinskog osoblja, podizanje transparentnosti javnih nabavki, uvođenje integralnog IT sistema, veće ulaganje u prevenciju i primarnu zaštitu, aktivnije korišćenje specijalnih ugovora kojima bi RFZO lakše kontrolisao potrošnju novca za lekove, restrukturiranje Galenike kroz kvalitetna strateška partnerstva i integracija privatnog i javnog zdravstva.

Ključne reči: *zdravlje stanovništva, zdravstveni sistem, ekonomski zdravstveni model*

Introductory remarks

This paper deals with the health system of Serbia, i.e. the indicators of its development, from the perspective of the state of health of the Serbian population and from the perspective of the effectiveness of spending money. The aim of the detailed analysis of individual indicators, which are derived from relevant sources, is not to criticize the decision makers in the health system of Serbia, but to point out the negative gaps in relation to best practice and to provide suggestions regarding possible improvements, especially in the area of effectiveness of managing limited financial resources.

To put it simply, the health sector in Serbia can be viewed through the health system (public and private system of treating patients) and the pharmaceutical system. The health system of Serbia employs some 130,000 workers. The largest number is employed in health institutions, primarily in the 70 state hospitals [16]. There are about 1,200 private medical entities in Serbia, out of which 60 are hospitals. They employ over 3,700 doctors, accounting for about 10% of the total number of doctors in the health sector in Serbia. The pharmaceutical sector in Serbia consists of domestic and multinational pharmaceutical companies, 300 drug wholesalers and the network of tens of thousands of pharmacies. It is estimated that the total pharmaceutical market is worth about EUR 600 million.

This paper is divided into four parts. The first part analyzes the indicators of population health as a basic measure of success of any national health system. The analysis is complemented by specific parameters of development of the Serbian health system, this from the perspective of the relevant researchers and evaluators, such as EHCI, GCI, Bloomberg, IMS and Ipsos. The second part scans the current economic model in the health system of Serbia. Especially, we analyzed the amount and structure of the budget of the health insurance Fund, as well as the cash flow in the so-called private flows, in the form of supplementary health insurance and out-of-pocket spending. Based on the analysis in the second part, the third part, as the key part of this paper, endeavors to provide specific recommendations for improving the current economic model in the health sector in Serbia. The final, fourth part gives important conclusions of analysis and shows all the specific recommendations and the arguments of the author in one place, in a summarized form.

The indicators of population health and the development of health system in Serbia

Indicators of population health represent a common denominator of the parameter of development of the health system of a country and the health culture of its inhabitants. Below we analyze these indicators from the perspective of different relevant sources: Euro Health Consumer Index (EHCI), Global Competitiveness Index (GCI), Bloomberg, IMS Report, Globocan Report and IPSOS report.

Euro Health Consumer Index – EHCI

EHCI analyzes the parameters of development of health systems in 36 countries in Europe [3]. On the basis of a large number of criteria, EHCI runs the score of each state on a scale from 0 to 1,000 points. All the criteria are grouped into six categories: 1. Patient right and information, 2. Accessibility (in terms of waiting times for treatment), 3. Outcomes, 4. Range and reach of services provided, 5. Prevention, and 6. Pharmaceuticals. Generally speaking, the result of the analysis is not to provide a ranking of countries, but to identify gaps in the development of national health systems and indicate possible ways of filling negative gaps. The report for 2014 points to several general conclusions.

The overall indicators of the health system of Europe are getting better, regardless of the restrictive measures due to budget savings in health care in most countries. For example, the degree of cure (life extension) for heart disease, stroke and cancer is increasing. In addition, infant mortality is in constant decline.

In most countries, the rights of patients are in the focus of the regulatory framework, and functional approach to patient's medical record has become the standard. Travelling for the purpose of treatment is supported by the EU directive, so that through the mobility

of patients effective treatment is provided. Overall, the results of medical treatment are constantly improving, although there is evidence of increased restrictiveness of the introduction of new drugs, primarily due to the aforementioned budgetary restrictions.

The gap in the level of development of health systems of European countries is increasing. Nine of the most developed countries of Western Europe are allocated at the top with a score higher than 800 points. In this group we could include Austria, France and Sweden, with the score slightly lower than 800 points. Compared to the 12 leading countries a significant gap is formed in the rest of the set, as evidenced by Figure 1.

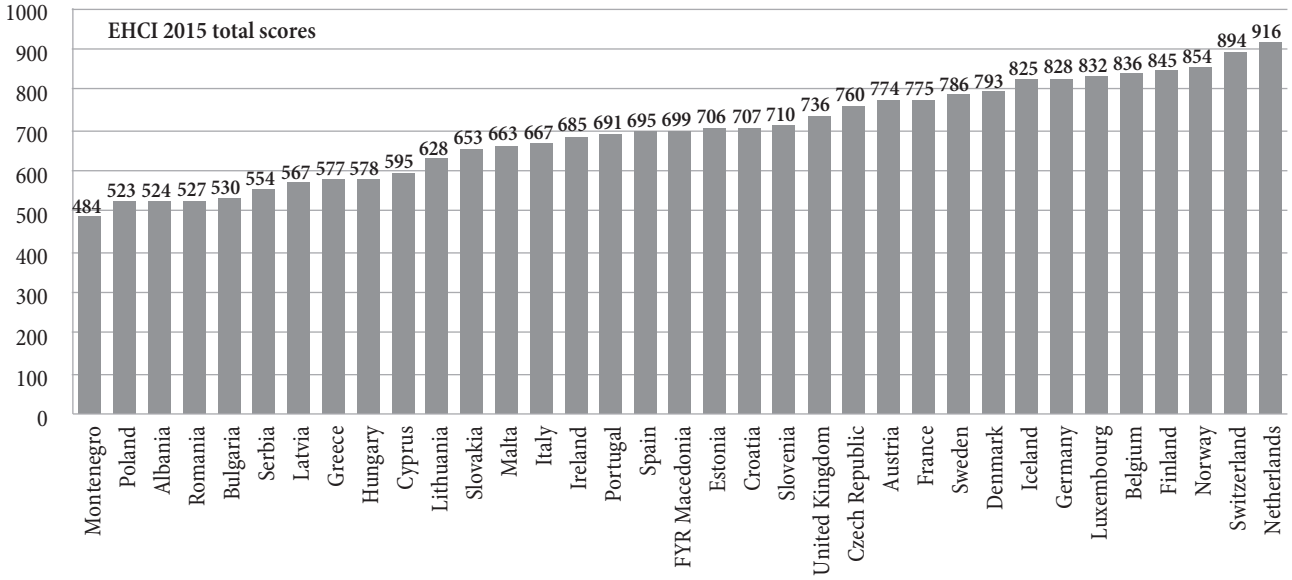
Some countries have made significant progress, taking into account much lower benefits at PPP (purchasing power parity) per capita. This is primarily the Czech Republic, Estonia and Macedonia. For example, Macedonia has made an incredible jump from 27th to 18th place, mainly thanks to the huge reduction of waiting lists as a result of the introduction of the electronic scheduling of interventions in real time. Also, Macedonia has highly successfully integrated public and private health sectors.

Serbia occupies 30th place with a total of 554 points out of 1,000 points, which is up 3 ranks and 81 points since 2014. In 2015, Serbia has overtaken Albania, Poland, Romania and Bulgaria. However, it still has a long way to catch up with more developed EU states.

The EHCI points to several negative phenomena in the health system of Serbia. These are: inadequate IT support (e.g. no e-prescriptions), poor access to the system of treatment and long waiting times, adverse outcomes of treatment (cancer survival, stroke deaths), overemphasis of hospital care (probably due to long waiting by hospitalized patients for a check-up), poor prevention mechanisms, low range of services provided, and pharmaceuticals (number of innovative drugs, e.g. novel cancer drugs deployment rate). A significant number of parameters in all 6 categories are still in the red zone. For example, the indicators related to oncology, as a therapeutic area, are dramatically low. More than 50% of patients waiting for chemotherapy wait longer than 21 days, the CT scan is waited upon for longer than 21 days, the cancer survival rate is less than 50%. More broadly, particularly concerning are the results of treatment outcome (category Outcomes), where Serbia is rated among three worst overall.

Certain improvements of rank are evident, mainly in the area of access to doctors in primary health care 24/7, in the presentation of data on the effectiveness of therapy, and in the area of combating corruption (a special adviser to the Minister was delegated to lead the organization Doctors Against Corruption). Overall, there is much room for improvement of the health system, as evidenced by the following illustration of the position of Serbia (see Table 1).

Figure 1: Euro Health Consumer Index Ranking



Source: [3]

Table 1: The structure of Euro Health Net Consumer Index (EHCI) of the Republic of Serbia for 2014

Subdiscipline	Indicator	Serbia
1. Patient rights and information	1.1. Healthcare law based on Patient's Rights	√
	1.2. Patient organizations involved in decision making	-
	1.3. No-fault malpractice insurance	-
	1.4. Right to second opinion	√
	1.5. Access to own medical record	√
	1.6. Registry of bona fide doctors	√
	1.7. Web or 24/7 telephone HC info with interactivity	√
	1.8. Cross-border care seeking financed from home	n.ap
	1.9. Provider catalogue with quality ranking	x
	1.10. EPR penetration	x
	1.11. Patient's access to online booking of appointments	x
	1.12. E-prescriptions	x
	Subdiscipline weighted score	*104*
2. Accessibility (waiting times for treatment)	2.1. Family doctor same day access	√
	2.2. Direct access to specialist	-
	2.3. Major elective surgery < 90 days	x
	2.4. Cancer therapy < 21 days	x
	2.5. CT scan < 7 days	x
	2.6. A&E waiting times	√
	Subdiscipline weighted score	*138*
3. Outcomes	3.1. Decrease of CVD deaths	x
	3.2. Decrease of stroke deaths	-
	3.3. Infant deaths	-
	3.4. Cancer survival	x
	3.5. Preventable years of life lost	x
	3.6. MRSA infections	x
	3.7. Abortion rates	-
	3.8. Depression	-
	Subdiscipline weighted score	*125*
4. Range and reach of services provided	4.1. Equity of healthcare systems	x
	4.2. Cataract operations per 100 000 age 65+	x
	4.3. Kidney transplants per million population	x
	4.4. Is dental care included in the public healthcare offering?	-
	4.5. Informal payments to doctors	x
	4.6. Long term care for the elderly	x
	4.7. % of dialysis done outside of clinic	-
	4.8. Caesarean sections	-
	Subdiscipline weighted score	*69*
5. Prevention	5.1. Infant 8-disease vaccination	-
	5.2. Blood pressure	x
	5.3. Smoking prevention	x
	5.4. Alcohol	-
	5.5. Physical activity	√
	5.6. HPV vaccination	x
	5.7. Traffic deaths	-
	Subdiscipline weighted score	*71*
6. Pharmaceuticals	6.1. Rx subsidy	x
	6.2. Layman-adapted pharmacopoeia	√
	6.3. Novel cancer drugs deployment rate	x
	6.4. Access to new drugs (time to subsidy)	n.a.
	6.5. Arthritis drugs	x
	6.6. Metformin use	n.a.
	6.7. Antibiotics/capita	-
	Subdiscipline weighted score	*48*
	Total score	*554*
	Rank	*30*

Source: [3, p. 25]

GCI and Bloomberg

The Global Competitiveness Index (GCI) measures the competitiveness of a national economy based on over 400 competitiveness factors, which are located in the 12 pillars of competitiveness, which again comprise three sub-annexes, which eventually provide a summary index value on a scale from 1 to 7 [2]. According to the WEF report for 2014 [19], Serbia according to the level of overall competitiveness occupies 94th place out of 144 countries in the sample. According to the pillars of health and primary education, Serbia occupies 68th place, which is not all that bad. A more detailed description of the structure factors of competitiveness within this pillar is given in Table 2.

According to the Bloomberg survey [1], which is based on parameters similar to the WEF survey, Serbia is ranked 74th out of 145 countries on the list of the healthiest countries in the world. The list is established by each country with a population over one million getting health assessment based on factors such as life expectancy and health risk factors, such as the proportion of smokers among young people, the number of people with high cholesterol as well as the level of vaccination. The first place on the list of the healthiest countries is occupied by Singapore, followed by Italy, Australia, Switzerland and Japan. While Serbia is placed in the middle of the list, countries from the region are better placed, so that Slovenia ranked 25th, Bosnia and Herzegovina 34th, Croatia 36th and Macedonia 43nd. Serbia, according to this ranking, has the poorest health status of the population, when compared to other countries of the former Yugoslavia.

IMS and Globocan report

These reports summarize the parameters of cancer incidence and cancer mortality for all countries of the world [6], [22]. According to the cancer incidence Serbia is in the 18th place in Europe with 270 incidences of cancer per 100,000 of population (see Table 3). What is even more worrisome is cancer mortality, according to which Serbia is at the infamous second place in Europe, with 148 deaths per 100,000 of population (see Table 3). The crossing of these two parameters leads to the conclusion that to the treatment of cancer we must devote much more attention in the future given that the mortality rate is higher than 50%. This disappointing result is not only a consequence of an inadequate system of treating cancer, but also of the absence of health culture of the population of Serbia and irregular health scanning, as well as poor primary care. For example, the mammograms donated by the government of Japan stood unused for years, because we did not have enough "trained personnel" for their activation. Also, one should not ignore the fact that the population of Serbia is aging and that the share of the population older than 65 years stands at 18.5%, and that the projection says that in 2030 the participation of the oldest segment of the population will be 23.6% [14].

Such data become even more significant when one looks at the ranking list of countries according to the rate of death from cardiovascular disease. Serbia is unfortunately in the first place in Europe with 775 deaths per 100,000 inhabitants.

Table 2: The structure of the fourth pillar of the GCI index

4th pillar: Health and primary education		
4.01 Malaria cases/ 100,000 pop.*	M.F.	n/a
4.02 Business impact of malaria	N/Appl	n/a
4.03. Tuberculosis cases/100,000 pop.*	23.0	50.0
4.04 Business impact of tuberculosis	6.4	31.0
4.05 HIV prevalence, % adult pop.*	0.1	1.0
4.06 Business impact of HIV/AIDS	6.5	14.0
4.07 Infant mortality, deaths/1,000 llive births*	5.7	37.0
4.08 Life expectancy, years *	75.2	52.0
4.09 Quality of primary education	3.8	78.0
4.10 Primary education enrollment, net %	91.4	94.0

Source: [20, p. 329]

Table 3: Cancer incidence and cancer mortality in Europe

	Cancer Incidence in Europe			Cancer Mortality in Europe	
1	Denmark	338.1	1	Hungary	152.1
2	France	324.6	2	Serbia	147.8
3	Belgium	321.1	3	FYR Macedonia	141.6
4	Norway	318.3	4	Montenegro	139.0
5	Ireland	307.9	5	Croatia	136.7
6	The Netherlands	304.8	6	Poland	131.0
7	Slovenia	296.3	7	Lithuania	129.0
8	Czech Republic	293.8	8	Latvia	128.8
9	Switzerland	287.0	9	Romania	127.1
10	Hungary	285.4	10	Slovakia	125.8
11	Iceland	284.3	11	Slovenia	125.4
12	Germany	283.8	12	Denmark	124.9
13	Luxembourg	280.3	13	Russian Fed.	122.5
14	Italy	278.6	14	Czech Republic	121.7
15	Slovakia	276.9	15	Belarus	120.6
16	United Kingdom	272.9	16	Bulgaria	120.5
17	Sweden	270.0	17	Republic of Moldova	120.3
18	Serbia	269.7	18	The Netherlands	117.0
19	Croatia	266.9	19	Belgium	116.2
20	Finland	256.8	20	Ukraine	113.9
21	Austria	254.1	21	Albania	112.4
22	Lithuania	251.9	22	United Kingdon	110.0
23	Spain	249.0	23	Ireland	108.4
24	Latvia	246.8	24	France	107.9
25	Portugal	246.2	25	Estonia	104.6
26	Malta	242.9	26	Austria	103.5
27	Estonia	242.8	27	Italy	101.8
28	FYR Macedonia	239.3	28	Germany	100.8
29	Montenegro	238.3	29	Norway	99.3
30	Bulgaria	234.8	30	Portugal	99.0
31	Poland	229.6	31	Greece	98.6
32	Romania	224.2	32	Spain	98.1
33	Belarus	218.7	33	Luxembourg	96.9
34	Cyprus	204.7	34	Bosnia Herz.	95.1
35	Russian Fed.	204.3	35	Switzerland	92.5
36	Republic of Moldova	194.1	36	Sweden	92.2
37	Ukraine	192.9	37	Malta	89.5
38	Albania	178.3	38	Iceland	87.7
39	Greece	163.0	39	Finland	86.1
40	Bosnia and Herzegovina	161.1	40	Cyprus	78.4

Source: [22]

Devastating statistics on mortality rates certainly have to do with the general level of health services provided to the population. One of the indicators taken into account under this criterion is the number of doctors per 100,000 inhabitants in a country. In Serbia in 2011 there were 272 doctors in the aforementioned relation. That year, only four countries had a fewer number of doctors compared to Serbia, namely Poland (217.5), Italy (236.9), Slovenia (243.9) and Britain (271.2). It is quite interesting that in all these countries there are fewer or significantly fewer deaths from diseases that can be rehabilitated. Another indicator that is often used to reflect the capacity of the health system is the number of available beds for hospitalization per 100,000 inhabitants. According to this parameter, Serbia with 565 beds per 100,000 of population would occupy the 14th place among the EU member states. According to this calculation, 15 of the EU countries have fewer beds available in hospitals, yet in all these countries the nation's health statistics present better results than in our country.

IPSOS Report

The main objective of this research in 2013 was to obtain – through a survey of population in Serbia, i.e. through self-assessment – a description of the health status of the population, both at the national level and at the level of four statistical regions (Vojvodina, Belgrade, Sumadija and Western Serbia, Southern and East Serbia) [7]. The basis of the research is the need to provide information on how people perceive their health, the extent to which they use health care and how they take care of their health by adopting certain lifestyles or relying on preventive and other health services. In order to achieve the main goal of the research, the following specific objectives were identified: identification of major health problems, description of the health status and health needs of the population, estimate of the prevalence and distribution of health data, analysis of social inequalities in health and access to health services, study of the degree of utilization of health care and its determinants, as well as forecast of possible trends in health status of the population.

A large number of the citizens of Serbia (57.8%) perceive their overall health as very good and good. 26.6% of the population perceive their health as average, while 15.6% of citizens perceive their health as poor or very poor. Residents of Belgrade most often describe their health positively (61.7%), and residents of Southern and Eastern Serbia (52.5%) most rarely. Also, men have a more positive image of their own health than women: 64.5% of men rated their state of health as good or very good, while no more than 51.5% of women did the same. In line with expectations, self-assessment of health status is associated with the age of the individual: as one gets older, he is more likely to assess his health as bad or very bad.

40% of citizens of Serbia reported a long-term illness or health problems. It is characteristic that the incidence of long-term diseases and health problems is greatest among the citizens of the poorest categories. As many as 50.5% of the poorest citizens report the existence of the above symptoms, while improving of material conditions reduces the frequency of symptoms. In terms of residence, long-term health problems are somewhat more common among residents of Southern and Eastern Serbia (43.6%) and Vojvodina (40.8%), and less frequent among residents of Belgrade (36.9%). Also, a higher incidence of long-term illnesses or health problems was observed among females (45.1%) compared to males (34.6%).

It is indeed useful to take a look at indicators of mental health of the population of Serbia. Slightly more than half of the adult population in Serbia in the period of four weeks before surveying was confronted with tension or stress. Everyday pressure and stress were most often reported by people between 45 and 54 years of age (66.6%), females (61.5%), as well as residents of Southern and Eastern Serbia (62.9%). However, the majority of the population in Serbia does not suffer from depression (95.9%), while the emergence of depressive symptoms is associated with the age of the citizens: the older the person, the greater the incidence of depressive symptoms.

The level of health culture of the population can be measured by the rate of preventive examinations. The coverage of the population vaccinated against flu was 3%. If we consider the population aged 65 and over, vaccination coverage against flu was 8.7%, and among the population of this age group most highly educated persons were vaccinated (16.3%) together with citizens belonging to the richest group (13%). The percentage of the population which had

their blood pressure taken by a health professional more than five years ago or have not had it taken ever reached 12.7%. Measuring of cholesterol more than five years ago or never at all was recorded by 17.6% of the population, while the same frequency of measuring of blood glucose was found in 17.3% of the population. It is characteristic that it was mostly men who reported that they never had experienced the mentioned measurement by health care workers, or not in the last five years. In the last three years, 7.6% of those aged between 50 and 74 years carried out a test to the naked eye invisible blood in the stool, while 7.4% of the population in this age group had undertaken a colonoscopy in the past ten years.

Recent changes to the "Regulations on the content and scope of the right to health care" [11] in December 2012, significantly limited the ability of preventive health care of certain categories of the population. Based on these regulations, citizens of both sexes aged between 23 and 35 are entitled to a routine physical examination at the expense of the health insurance Fund only once in five years. Those older than 35, as a somewhat more risky category, can request routine inspection every two years. One gets the impression that only the sick and risk groups are in a position to make full use of the system of (preventive) health care. Denial of preventive examinations for the most vital and healthiest part of the population is indeed a paradox of a kind, as preventive treatment and regular controls are intended for them in the first place, and should serve to detect disease symptoms in time, in order for healing to be faster, more efficient and cheaper.

Another way to measure the level of health culture is (not) respecting health risks. Among adults in Serbia who are aware that their own behavior, such as lack of exercise, lack of fruit and vegetables in the diet and smoking, causes the risk of getting heart and blood vessels, as much as 91% practice undesirable behavior. Similarly, among those who are aware of the risk of developing lung diseases 71.4% are smokers and persons with risk factors for developing lung disease.

As far as access to the health care system is concerned, the results are presented below. In the period of one year before the examination 18.2% of Serbia did not receive medical care, although they had a need for it. According to the respondents, the need for health care was mostly unrealized in Vojvodina (22.6%) and Belgrade (22.8%), and less frequently in the Southern and Eastern Serbia (17%) and Sumadija and Western Serbia (11.4%). The long wait for medical care is more often a problem in comparison with the inability to get to health care due to the distance (16.6% of Serbian citizens did not realize the need for medical care due to waiting too long on the appointment or visit, while 5.7% of the population specified problems with transport to the health care system as the main obstacle). In addition to the limitations caused by the long wait or a long distance, financial reasons were an obstacle for the realization of the need for health care. One in four people in Serbia had a need for health care in the past year, which did not materialize due to financial barriers (24.8%). Lack of financial resources is an obstacle to avail of dental care.

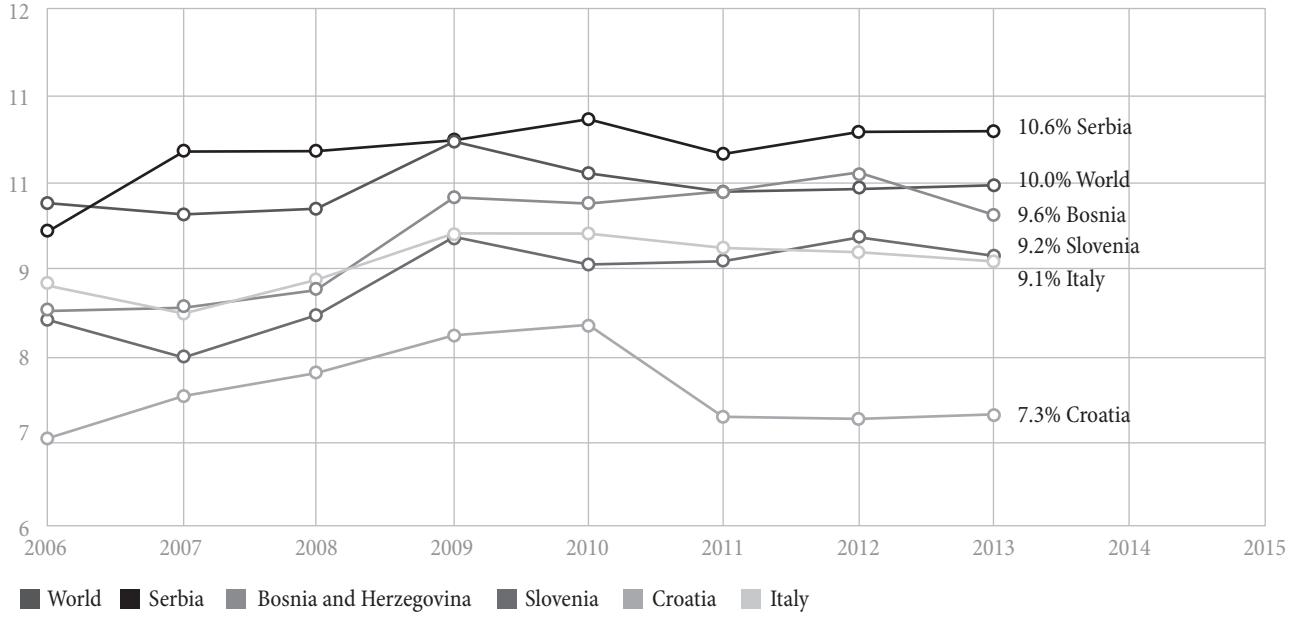
By private health service somewhat more inhabitants of Serbia (64.6%) are satisfied, compared to those satisfied by the national service (53.7%). Citizens belonging to the lowest education stratum are more likely to identify themselves as satisfied with the national service (61.5%) compared with mid-educated (51.4%) and highly educated residents (47.4%).

The current economic health model of Serbia

The total share of health care costs in Serbia's GDP is 10.6% and in terms of this indicator Serbia excels compared to the world average, as well as the neighboring countries, such as Bosnia and Herzegovina, Slovenia, Italy and Croatian (see Figure 2).

However, only 60% of total healthcare costs are related to public sources, which means that 40% of the costs (treatment, drugs) are covered by private sources of money (private insurance plus out-of-pocket payments), which is significantly more than in all neighboring countries (see Figure 3). 80% of private funds are being spent in private institutions and 20% in public institutions (various forms of citizen participation). When it comes to public funds, over 90% are directed to public institutions, and less than 10% at private institutions (covered by the NHIF of costs for services from the list of the Ministry of Health: dialysis, hyperbaric chamber and artificial insemination).

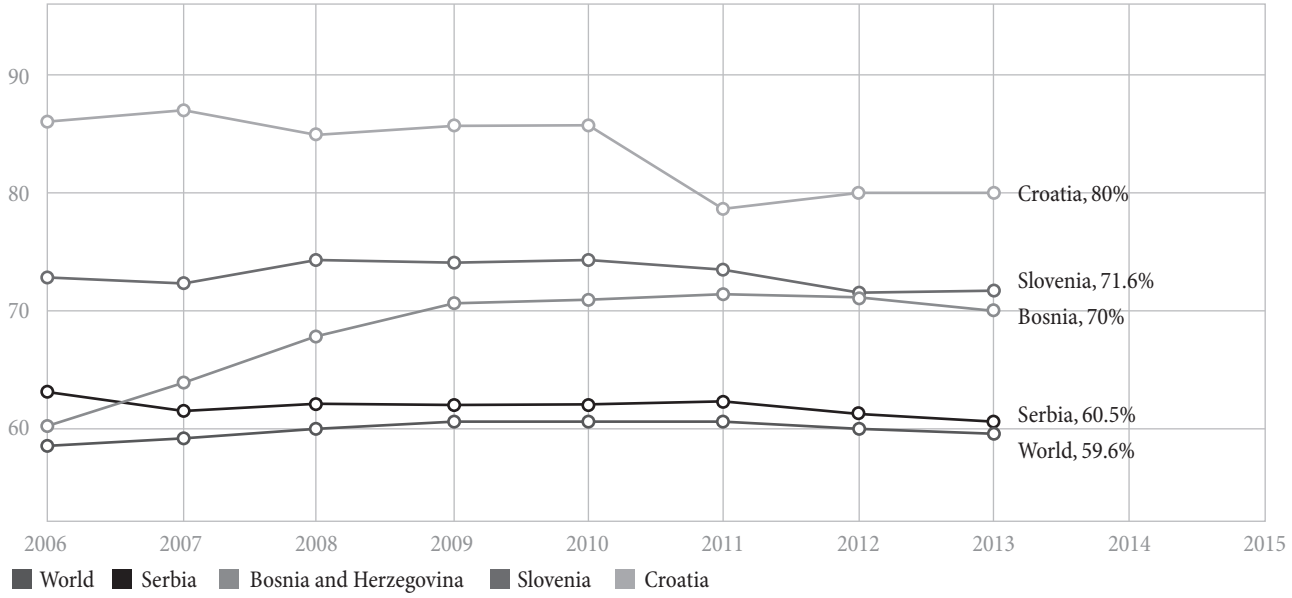
Figure 2: The share of total health care costs in the GDP of the selected sample of countries



Source: [18]

There is no clear insight into the structure of spending private money. On the basis of a bottom-up budget it will be difficult to reach the amount of money presented by the National Health Account (40% of total costs means EUR 1.4 billion). However, we should not overlook the fact that a significant proportion of private health care (institutions, clinics, pharmacies) operates as gray and black economy. There are estimates that say that 60% of dental offices in Serbia operate illegally. What we do know is that a total of 30,000 Serbian citizens bought a policy of voluntary health insurance, which leads to the conclusion that most of the spending of private money (over 90%) is in the form of out-of-pocket spending. This money is mainly spent on OTC drugs and private health services (about 30% of people either temporarily or permanently use the services of private medical practice). The issue of private voluntary health insurance is yet another issue. In short, the number of the insured is not great, due to

Figure 3: The share of public spending in total health care costs



Source: [18]

the low purchasing power of the population, but also due to wrong perception that only the richest can afford it. Although the share of voluntary health insurance in Serbian market is still low in comparison with developed European countries, it has recorded stable growth over several years as a result of increasing awareness of this product with the insured on the Serbian market, more favorable tax treatment of these services, but also better offers by insurance companies.

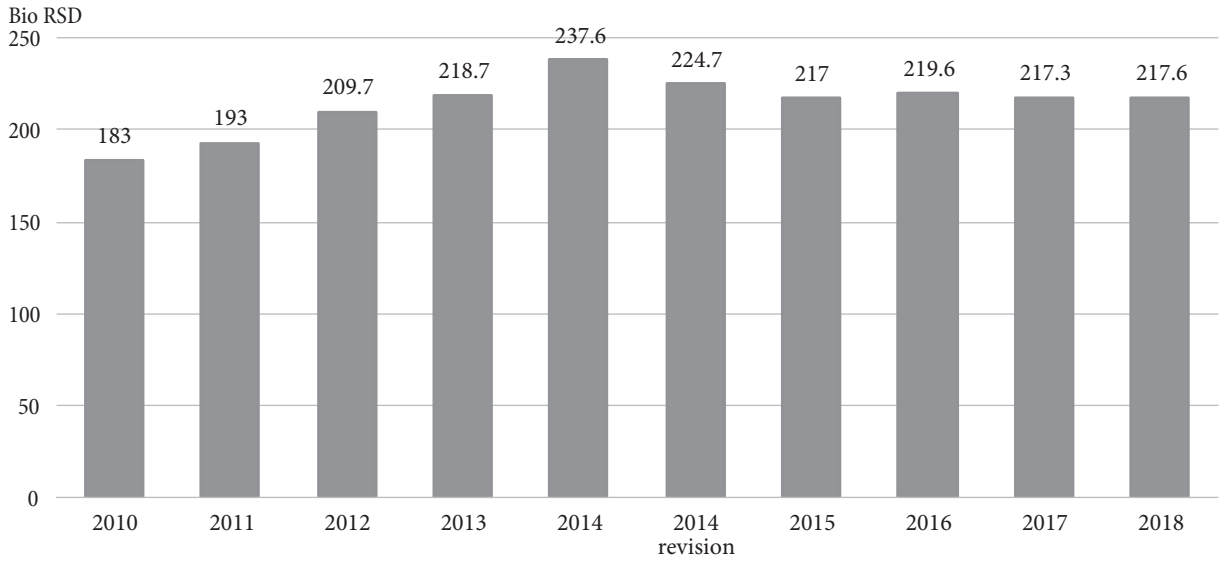
If we now focus on the 60% of public funds, we come to the key institution that deals with the allocation of public resources in health, the Health Insurance Fund. Responsibilities of the NHIF are quite clear and prescribed by the Law on Health Insurance. The Ministry of Health is the one to set the policy in the field of health systems, and all the other participants in the health system implement policies of the Ministry. The NHIF is a social insurance organization vested with funds of compulsory health insurance in order to grant the right to health care to insured persons in the scope and content prescribed by the established regulations. To this end, the NHIF passes certain bylaws.

The vast majority (95%) of the Serbian population has public health insurance, which is funded from compulsory health insurance. HIF is responsible for financial management in the health system. Military insured have a separate treatment, which is funded by the Ministry of Defense, and considering the cost of EUR 520 pc can be considered privileged. The total absolute amount of the budget of the NHIF is shown in Figure 4.

There is an evident decline in the budget in 2015 compared to 2014, due to a reduction in the mandatory health insurance from 12.3 to 10.3%. This reduction lowered the financial potential of NHIF by as much as RSD 15 billion, which were essentially diverted into the pension fund. We should not lose sight of the fact that the average salary in Serbia is low (low base for application of the rate), as well as the fact that a large number of employers register their workers applying the minimum wage in order to minimize the payment of contributions. The NHIF financial plan for 2016 predicts a similar budget as in 2015, at the level of close to RSD 220 billion [13]. It should also be emphasized that changing the Regulations on the prices of medicines [9] made significant savings in the budget of the NHIF, but unfortunately they were not diverted into the expansion of the list of innovative medicines and therapies, but through certain financial gymnastics by the Ministry of Finance the money was diverted to other holes in the state budget, under the pretext that the HIF had not sufficiently fought to keep the savings for themselves.

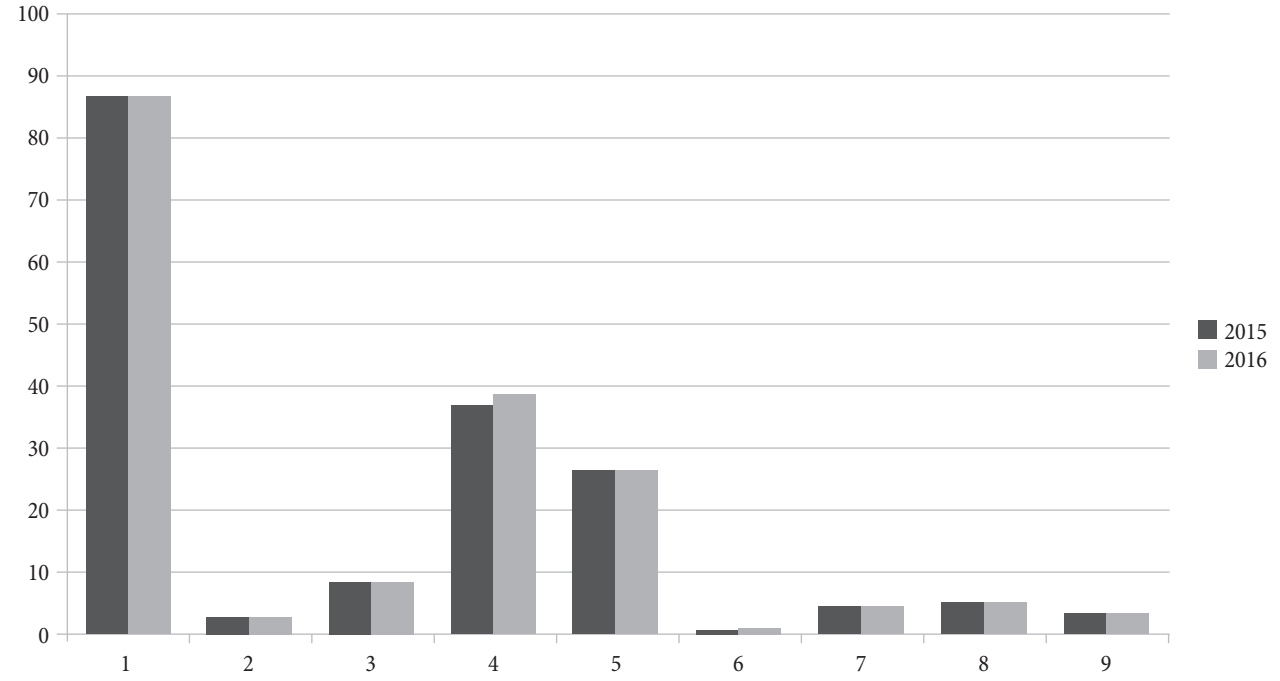
When study in detail the structure of the budget of the NHIF (see Figure 5) we come to the following conclusions. By far the largest part of the budget of the NHIF refers to

Figure 4: The budget of the National Health Insurance Fund



Source: Ministry of Health of the Republic of Serbia

Figure 5: The structure of the budget of the National Health Insurance Fund



Source: [13]

wages and salaries of employees in the health sector (RSD 87 billion or over 45% of the total budget). Medicines and medical devices for healthcare facilities amount to RSD 38 billion (17%) and prescription medications amount to RSD 26 billion (12%). The rest of the budget is directed to items with a much smaller participation, namely: energy for healthcare facilities, medicines for the treatment of rare diseases, material for dialysis, dental services and medical supplies.

When it comes to public health spending for prescription drugs (Rx) it is estimated that EUR 60 pc (out of EUR 250 pc that are spent on health care from public sources) is spent on prescription drugs (Rx) in pharmacies and health institutions, which is significantly less than in other countries in Europe and in terms of this indicator Serbia is last in Europe. This means that 1.6% of GDP is spent on prescription drugs.

It might be interesting, for example, to compare some indicators for Serbia and Bulgaria, countries of similar size and financial strength (see Table 4).

What is evident is that Serbia, regardless of the smaller GDP, invests EUR 200 million more in public health care. On the other hand, investing in medicines is by EUR 110 million less than in Bulgaria. If further we look at the number of innovative drugs, which are shouldered by the state, and those that have been registered since 2007, we come to the conclusion that Bulgaria has registered seven times more innovative medicines than Serbia.

The conclusions on the introduction of new drugs in Serbia are even more devastating, if we look at the

Table 4: Economic health indicators, Serbia vs Bulgaria

	Bulgaria	Serbia
Population (million)	7.3	7.2
GDP 2013 (billion EUR, World Bank)	39.9	33.5
HC Budget (billion EUR, IMS)	1.7	1.9
Drug Budget (million EUR, IMS)	440	330
Drug Budget as % of HC Budget (IMS)	26	17
Reimbursed new innovative drugs (registered after 2007; IMS)	83	12

Source: [5]

benchmark with comparator countries: Italy, Slovenia and Croatian (see Figure 6).

Possible trajectory of improving economic health model in Serbia

All the above illustrations open a very important issue of the efficiency of the NHIF budget. It is obvious that Serbia is not falling behind in absolute and relative investment in health care, but the question remains as to how the mass of available money is spent. It is evident that over 45% of this money goes to salaries, with as many as 25% of the total number of employed being non-medical staff. We have also seen that 40% of health care is covered independently from private individuals, mostly out-of-pocket, which causes serious discontent with the insured and raises direct or indirect abstinence in regard to the payment of mandatory health insurance.

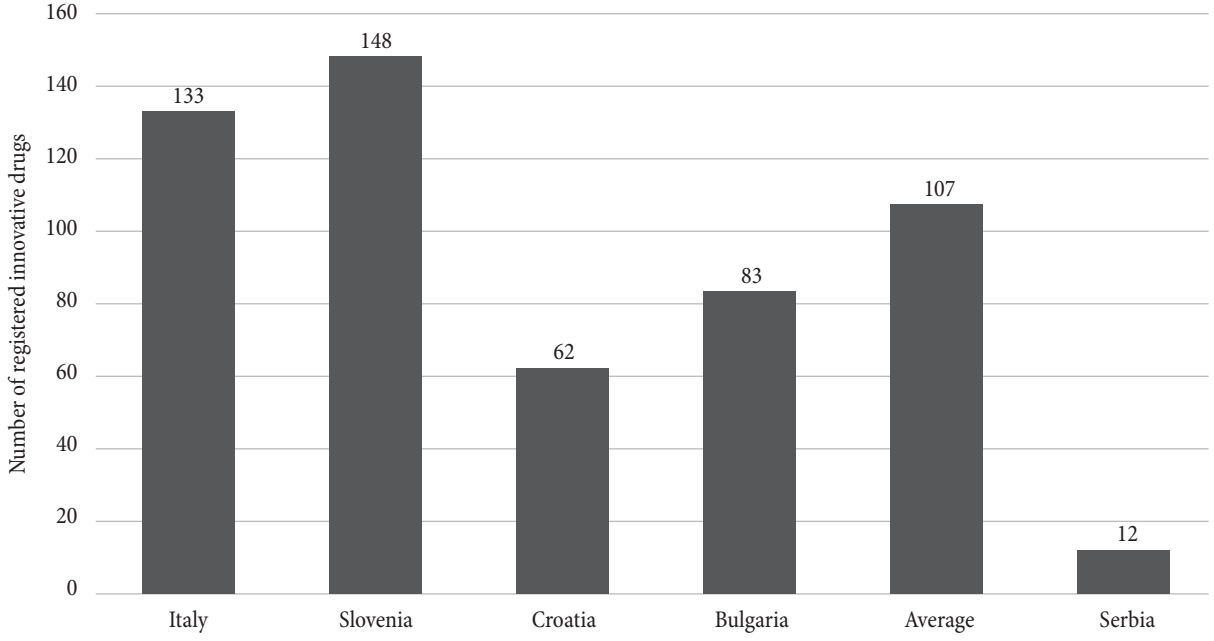
Further, it has been observed that an inadequate share of the budget is spent on innovative therapies and drugs, which directly affects the life expectancy of the citizens of Serbia. There are numerous relevant studies that prove a correlation between the number of available innovative medicines and life expectancy of the population of the state [8].

A good indicator of neglect of the importance of innovative medicines is the fact that millions of savings in spending money on generic drugs (as a result of the introduction of the new Regulations on drug prices by the NHIF) have not in any way spilled over into the realm of the introduction of innovative drugs and reduction of the participation of the insured for the purchase of medicines. Not only had the savings on generic drugs not been diverted into the segment of innovative medicines and reduction of participation, but the total budget for drugs in 2015 was decreased by RSD 4 billion compared to 2014. Another indicator of neglect of this area is the fact that the NHIF does not allow the possibility of transferring savings from one list of medicines onto another. In the last five years no innovative medicine has made it to the primary list.

It is necessary that we also point out the fact that the alleged bad decisions have often been beyond the scope of the NHIF and the Ministry of Health. For example, we should praise the good decisions by the NHIF in the area of generic drugs' price reductions and in implementing centralized public procurement for B and C list (drugs used in medical centers, hospitals, clinical centers, and in all health facilities except pharmacy)

A source of better use of money might very well prove to be a partial correction of the Bismarckian model

Figure 6: Activism in the field of introducing innovative medicines



Source: [5]

of health insurance. It is a model of health insurance that is based on the principle of non-profit and solidarity between all insured persons. Serbian model is based on the idea that the state, through the NHIF, provides complete health care of insured persons in the basic package. In a growing number of other countries the state actively promotes the development of voluntary health insurance, where the basic package is covered by the Fund and for any additional services it is necessary to either activate the insurance policy or pay out of pocket. All over the world it is very rare to have a possibility that a patient has full health care within the basic package that amounts to no more than 10.3% of his earnings that are low in the first place and unrealistically expressed by most employers. This is a significant reserve for increasing the absolute amount of the contribution and at the same time better use of the available money for the services that are really needed by most policyholders. Perhaps here lies the possibility of introducing beneficial changes in the Health Insurance Act, and this is currently being worked on.

Regarding the participation, a patient in Serbia does not pay for, at least he is not supposed to pay, anything while under treatment in any state medical institution, which means that all health care costs, according to regulations, must be covered by the health institution. The patient only participates in drugs with RSD 50 per pack for A List medicinal products (the poor and especially vulnerable groups are exempt from this payment), and he pays a certain amount as percentage participation for A1 List drugs. This participation of the patient for medication (co-payment) has been for years around 20% compared to the total expenditures for prescription drugs. For medical-technical aids the NHIF provides certain amount of money for each standard accessory that is the right of the insured, and if the patient wants to have something more expensive than the standard he must cover the difference. Further, the NHIF compensates sick leaves longer than one month, spa treatments, rehabilitation and many other services, all within the package of compulsory health insurance [11]. It would be useful indeed to reconsider, once again, the services that are included in the basic package of health insurance, because there lies the opportunity for rational spending of limited sums of money.

Considerable scope for more effective management of public funds in healthcare lies in changing the model of managing health care institutions. The people who run health institutions usually lack the adequate level of knowledge in the field of health management. Essentially, most of the NHIF money is at the disposal of directors of healthcare institutions, who – following the logic of "parochial mentality" – only want more money for their institutions, thus overlooking the possibilities for optimization of spending within their institutions. Perhaps it does make sense for NHIF to frequently use its legal possibility to control spending purposes of individual medical institutions. It should be noted that the NHIF now regularly pays all obligations towards the institutions and the payment period is reduced to 60 days (once we used to have a 6 months delay).

The issue of rationalization of non-medical staff has been hotly debated the last 10 years, but not much has been done in the field. It is estimated that 25% of the total number of employees in the health sector are non-medical staff, which is two and a half times higher than the ratio defined by standards. This year the plan is to accurately determine redundant workers in the non-medical area. For instance, outsourcing of non-core activities, such as cleaning and security, can prove to be the right way, because in a number of health centers this system gave excellent results in both financial terms and in terms of raising the quality of services.

Better control of public procurement is a huge source of savings. Here we do not promote further pressure on prices, but better control of the process (the transparency of the process). The law on public procurement favors price as parameter, which overall might not be a better option, because this way we favor ineffective cheap medicines and poor medical devices (for example, the case of MOZEC company that sold inferior cardiac medical devices).

A reserve also lies in the improvement of IT systems and planning, reporting and control of cash flows, primarily in the health care institutions. It is hard to believe that even after nine years from the start of the computerization of the health system and EUR 20 million spent, the project is still not completed. This means that there is no single database at one place, health facilities are not yet networked,

there are no electronic medical records yet and we cannot issue electronic prescriptions. To illustrate, in 2015 alone Macedonia saved as much as EUR 7 million due to the introduction of electronic prescriptions.

Possibilities for saving, and not at the expense of the quality of service, lie in aggressive investing in prevention and primary health care (for example, by bringing back obligatory annual medical examinations, which would be covered by the state). This would significantly reduce expensive treatments. Perhaps osteoporosis is a good example. Through prevention and education we could significantly reduce the costs of subsequent treatment (e.g. installation of artificial hips).

Most definitely certain reserve can be found in the restructuring of the list of prescription drugs, with the idea of reallocating limited sums of money onto effective therapy. Also, in this context, one should not forget the possibility that the NHIF signs an agreement with pharmaceutical companies to divide the risk (there are four forms of contract provided for in the Regulations [9]: risk sharing, cost sharing, value and volume cap). This way the cost of medicines would be under stricter control.

Broadly speaking, the reserves in the public sector lie in the restructuring of Galenika that makes an interesting strategic partner for several multinational pharmaceutical companies. This would strengthen the pharmaceutical private sector, provide a chance for Galenika to perform business restructuring and at the same time help increase employment and value of the company as a key objective for the country.

The integration of public and private sectors would enable rationalization of the number of facilities and staff (especially non-medical) and raise the efficacy of treatment. The current model is such that private practice is not integrated into the health insurance system. The patient pays all out of pocket at very high prices. Only dialysis and hyperbaric chamber are included in the health insurance system.

There are several arguments in favor of the integration of private and public sector. First, life expectancy is getting longer, the number of patients suffering from chronic non-infectious and malignant disease has increased causing frequent visits to doctors, and the medical staff capacity in state health care is scarce. Second, for doctors work in the private and public sectors would get separated providing better control of working hours and the effect, by setting the standards. Abuse of position is widespread, where doctors are doing a sloppy job in the public sector and use their position to develop private businesses. This is bad because this doctors' work still has to be done, and it decrease the quality of services for patients in the public sector. Third, this would increase the availability of modern equipment to the general patient population, given that currently half the MRIs and a third of all scanners are in private practices. Fourth, it would increase the capacity of the health system to deal with prevention, through systematic check-ups, which would educate patients and raise the level of early detection of disease, and thus the level of healing. All this would, overall, reduce the costs of the system. The very fact that private treatment is most developed in pediatrics, gynecology and general medicine clearly shows us the areas with most problems in the public sector. Fifth, the private sector could in a part significantly relieve the public sector and reduce waiting lists. Sixth, this would enable easier employment of a large number of doctors and medical staff, and would reduce the economic tensions between top doctors, because private sector would be in a position to engage them. Seventh, the functioning of integration on the example of the three above-mentioned services is a good example of how the private sector can support the public sector. The state has felt the need to provide quality additional service, it determined a fair price and the private sector provides quality service there. Finally, certain analyzes suggest that the cost of standardized services as per ABC logic (Activity Based Costing) would be lower in private in relation to the national health institutions. This statement is yet to be verified through application of a quality economic model.

Essentially, the private sector should be integrated into the system of the NHIF, in order to meet the logical principle that "money follows the patient". This, with 10% of the salaries going for health services, and still very often patients are forced to pay for treatment and medication from their own pockets, more and more insured raise the issue whether it makes sense to pay at all.

The basis for integration should be accurate scanning of the private sector, i.e. keeping precise records of all health services, the number and type of staff, number and structure of the services they provide, premises and equipment at their disposal. This would be the basis for the creation of a network of private healthcare providers. Further, an important step for integration would be a modification of discriminatory regulations that impede the work of the private health sector.

There are two possible models of integration. The first model means breaking the monopoly of the NHIF. The citizens would have the ability to choose which health insurance they want (both service package and insurance company). The state could determine the proportion that goes to the NHIF for the basic package of services, and over the remaining percentage health care companies should compete on the basis of the best offer and best price. The Bismarck model is based on the full solidarity of citizens and is not sustainable in a country where the number of pensioners and employees is about equal, and previously it was 4 to 1 in favor of employees. The second model means that all contributions continue to be directed only to the NHIF, and the state should determine more precisely in which segments it require assistance by the private sector. Cost of services (for each DRG) should be determined and the private sector be given the opportunity to provide a broad package of services and be paid for that by the NHIF. Of course, it would be useful that prior to this the government makes a precise epidemiological map of Serbia, compare this map with capacities in the public sector, and define gaps between the needs of the insured and the capacity of the public health system. This way we would precisely identify the segments of services where the private sector can help. Whichever model the government chooses, it is necessary to make a budget impact analysis of this model of integration.

Conclusion

This paper deals with the health system of Serbia, i.e. with indicators of its development from the perspective of the state of health of the Serbian population and from the perspective of the effectiveness of spending money. The aim of the study is to propose possible improvements of the health system, especially in the segment of effectiveness of managing limited financial resources.

The first part of this paper analyzes indicators of population health as a basic starting point of any health system. The analysis is complemented by specific parameters of development of the Serbian health system and from the perspective of the relevant researchers and evaluators, such as EHCI, GCI, Bloomberg, IMS and Ipsos. For instance, by EHCI, Serbia occupies 33rd place in Europe out of 36 countries, according to the degree of development of the health system. EHCI points to several negative phenomena in the Serbian health care system, such as: lack of awareness of patients, poor access to the system of treatment, adverse outcomes of treatment, mortality in infants, overemphasis of hospital care, long waiting lists, low level of development of the IT system, non-integrated state and private sectors, etc. Certain improvements have been noted in the area of access to doctors in primary health care, in the presentation of data on the effectiveness of therapy, as well as with the fight against corruption. Essentially, EHCI and other relevant sources indicate specific areas of improving the health care system and, unfortunately, there are many such areas.

As for the parameters of population health, the indicators are even more devastating. The IMS report and Globocan report show that Serbia is second in Europe in terms of cancer mortality and first in mortality from cardiovascular diseases. This disappointing result is not only an outcome of inadequate treatment system, but also of the absence of health culture of Serbian population and poor preventive care.

The total share of health care costs in Serbia's GDP is 10.6% and in terms of this indicator Serbia excels compared to the world average, as well as in comparison with the neighboring countries, such as Bosnia and Herzegovina, Slovenia, Italy and Croatia. However, only 60% of total health care costs are related to public sources, while 40% of the cost of treatment and medicine are covered by private sources of money, which is significantly more than in all neighboring countries. The vast majority of the population of Serbia has a public health insurance funded from compulsory health insurance. There is an evident

decline in the budget in 2015, compared to 2014, due to a reduction in the mandatory health insurance from 12.3% to 10.3%. This reduction lowered the financial potential of the NHIF by as much as RSD 15 billion.

When we look in detail at the structure of the budget of the NHIF, we first note that the largest part of the budget of the NHIF refers to wages and salaries of employees in the health sector. Insufficient percentage of the NHIF budget is focused on drugs, of which negligibly small part to innovative medicines. In Serbia in the last five years none of the innovative drugs has made it to the list of the NHIF.

The author entertains the issue of whether the same amount of money in health care can be better managed. This paper provides several arguments in favor of a positive answer to this question.

It is obvious that Serbia is not falling behind in absolute and relative investment in health, but the problem lies in the fact that the structure of spending is inadequate. For instance, budget spending on innovative therapies and medicines is insufficient. A good indicator of neglect of the importance of innovative medicines is the fact that millions of savings in spending money on generic drugs (as a result of the introduction of the new Regulations on drug prices by the NHIF) have not in any way spilled over into the realm of the introduction of innovative drugs and reduced participation of the insured for the purchase of medicines. Not only savings on generic drugs have not been diverted into the segment of innovative medicines and reduced participation, but the total budget for drugs in 2015 was reduced by RSD 4 billion compared to 2014. Therefore, it is recommended that savings on generics spill over into the introduction of more new innovative drugs to the list of medicines. Improvements can be achieved only by introducing the possibility for savings from one list to translate onto another.

Another source of better use of money is a partial correction of the Bismarckian model of health insurance. Numerous other countries are actively working on the development of voluntary health insurance, where the basic package is cover by the fund, and for any additional services it is necessary either to activate the insurance policy or pay out of pocket. It is recommended to consider the list of services in the basic package and to identify opportunities for rationalization.

A considerable scope for more effective management of public funds in health care lies in changing the model of managing health care institutions for a better control of spending money and of the implementation of public procurement and rationalization of non-medical staff. It is recommended that people who run medical institutions master basic knowledge of health management.

Poor IT system makes it difficult to control the flow of money and prevents making significant savings on the introduction of electronic documents. It is recommended that the Ministry of Health accelerate the realization of the project of introduction of integrated IT systems in the health sector in Serbia.

The scope for savings lies in a stronger focus on prevention of aggressive investment in primary health care, through focusing on mandatory annual medical examinations, which would be covered by the state.

The reserves can certainly be found in the restructuring list of prescription drugs, with the idea of reallocation of limited sums of money to more effective therapies. There is a possibility, which has so far not been used, that the NHIF signs agreements with pharmaceutical companies to divide risk and cost, and to define the maximum value or quantity of drugs. This would put the cost of drugs under stronger control of the NHIF.

Within the pharmaceutical public sector significant room for savings lies in Galenika, which makes an interesting strategic target for some form of PPP. Quality strategic partnership would enable the modernization of the company and its financial stability, and it would enhance the company's value in the market.

The emphasis was placed on reserve in the system that can be activated through the integration of private and public sectors. The integration of public and private sectors would enable the rationalization of the number of facilities and staff and raise the efficacy of treatment. This paper presents the specific arguments in favor of this.

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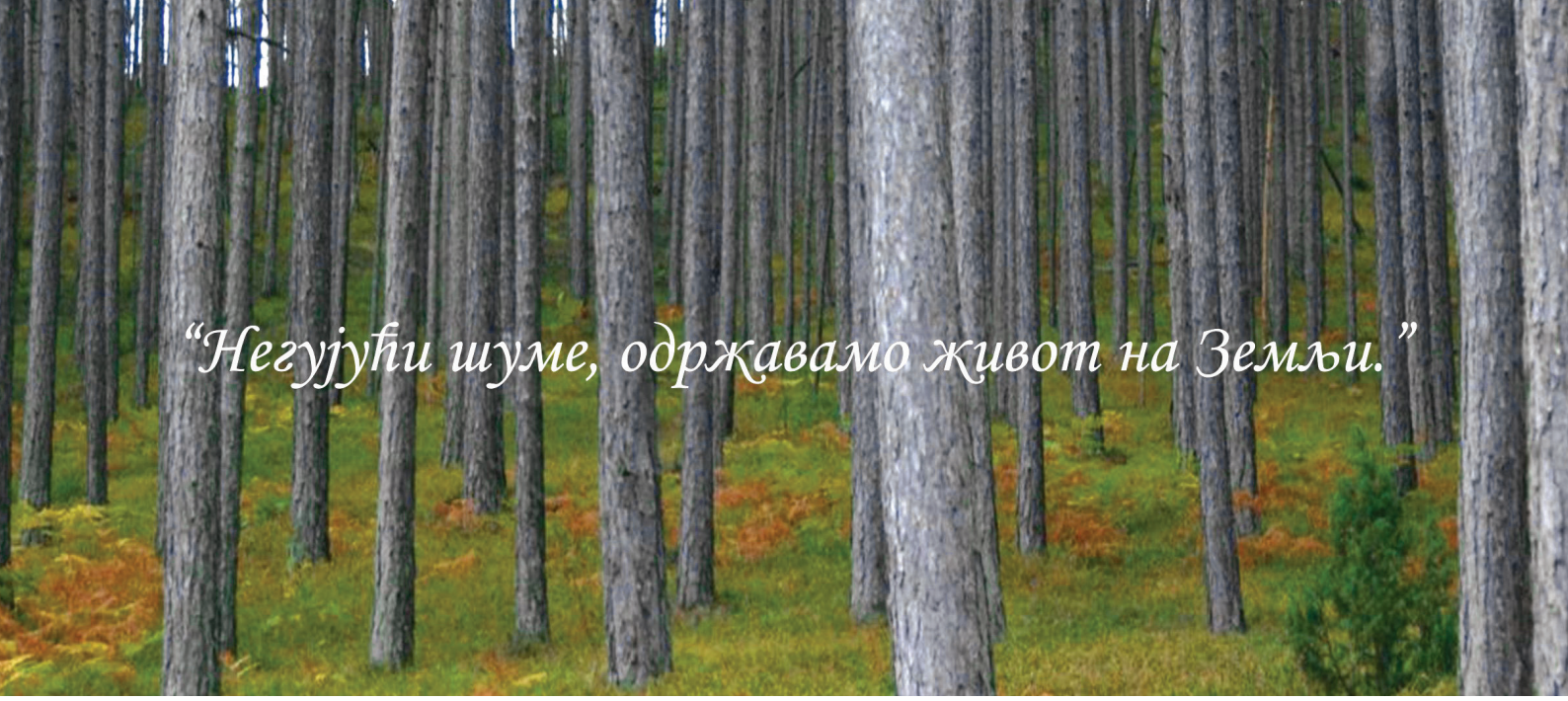

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LAWS AND INSTITUTIONS FOR FAIR COMPETITION AND FAIR BUSINESS PRACTICES

Zakoni i institucije za lojalnu konkurenciju i ravnopravne uslove privređivanja

Abstract

In addition to the preservation of macroeconomic stability in the short and long term, an equally important task – and the one that will gain importance in the future – is to build an appropriate business environment. One of the important elements in this process is the suppression of unfair competition. Unfair competition is perceived as one of the greatest market limitations in Serbia. In addition to grey economy, it includes false and offensive claims about the competition, sale of goods featuring elements that mislead the consumer, divulgement of business secrets, false advertising, boycott of the competition in the form of failure to enter into or execute contracts. We will point out the existing "hard" and "soft" regulatory framework in our practice in this field: "black" and "white" lists of the Tax Administration, different ministries and consumer associations, Code of Ethics of the Chamber of Commerce, provisions of the Law on Obligations, Law on Inspection Oversight, Law on Tax Proceedings and Tax Administration, Law on Trade, Law on Protection of Business Secrets, Law on Advertising, and Law on Protection of Intellectual Property Rights.

Keywords: *fair competition, fair business practice, white and black lists, code of ethics, inspection oversight*

Sažetak

Pored očuvanja makroekonomske stabilnosti na kratak i duži rok, jednako važan zadatak – i u budućnosti sve bitniji – jeste izgradnja odgovarajućeg privrednog ambijenta. Jedan od važnih elemenata u tom procesu jeste borba protiv nelojalne konkurencije. Nepoštena tržišna utakmica se u Srbiji percipira kao jedno od najvećih tržišnih ograničenja. Pored sive ekonomije, to su i iznošenja neistinitih i uvredljivih tvrdnji o konkurentu, prodaja robe s elementima kojima se stvara zabuna kod potrošača, odavanje poslovne tajne, nepošteno reklamiranje, bojkot konkurenta u vidu nezaključenja ili neizvršenja ugovora. Ukazujemo na "meke" i "tvrde" regulatorne okvire koji postoje u našoj praksi u ovoj oblasti: "bele" i "crne" liste Poreske uprave, različitih ministarstva i udruženja potrošača, etički kodeks Privredne komore, odredbe zakona o obligacionim odnosima, inspekcijskom nadzoru, poreskom postupku i poreskoj administraciji, trgovini, zaštiti poslovne tajne, oglašavanju, pravnoj zaštiti intelektualne svojine.

Ključne reči: *lojalna konkurencija, dobra poslovna praksa, bele i crne liste, etički kodeks, inspekcijski nadzor*

Introduction

Serbian economic policy, encompassed and controlled by the arrangement with the International Monetary Fund, covers four areas. These are: fiscal policy, monetary policy, financial sector and structural reforms. The focus is mostly on macro issues, especially the country's fiscal performances – which is understandable, having in mind the great risks to macroeconomic stability stemming from accumulated budget imbalance. Changes in the economic system which determines business practices take a back seat. There is frequent talk of "developing a healthy environment", but it remains limited to general statements and clichés. As a contribution to better understanding of this topic, this article will look at the less visible, but nevertheless important regulatory reform of competition and business environment. Specifically, we will investigate the changes undertaken, as well as those that still need to be implemented in the field of unfair competition and equal business conditions.

Unfair competition (distortion of competition)

The term "unfair competition" is frequently used in colloquial speech to denote different forms of unfair behavior on the market – from unfair competition in the sense in which the word is used in economic science (narrower sense), through abuse of a dominant market position, grey economy, business fraud, excessive import of certain goods, to default on commercial debt, which comprises unfair competition in a broader sense. However, it is also noticeable that the expression, when used in everyday speech, is now increasingly being used in the narrower sense.

Unfair competition – distortion of competition – pertains to deceiving and unfair business practice, which is contrary to good business practice, professional standards and rules of business ethics, and which causes, or could cause, damage to the competition, as well as to consumers and employees. By prescribing and identifying unfair competition activities, economic, business, trading and intellectual property rights and interests of businesses are safeguarded as well as the rights and interests of consumers – users of goods and services supplied by businesses, as well as employees in the economic sector.

Through their business operations, businesses – traders create the recognition of goods and services they sell or provide, making their quality, as well as their own business name and reputation (*goodwill*) recognizable. In other words, they create their business identity. By doing business, in addition to material assets, they also acquire industrial property rights (trademark, patent, business secret, licenses, etc.) as well as non-patented technical knowledge and experience – the know-how. By expanding their businesses, enterprises expand their network of clients – consumers and their employee base, creating and strengthening mutual trust. The way they compete among themselves on the market drives product quality improvements, as well as technological, organizational, process, financial and other types of innovation. Development and growth bring greater success to businesses. However, when the businesses – competitors on the market – use unfair practices when competing on the market, such behaviors are forbidden and sanctioned. Unfair competition disrupts good business practices, relationships between companies and interpersonal relationships, business reputation is injured, market relations and business plans distorted, trust of customers and employees breached, there is economic damage, disputes arise, costs increase, existing investments are destabilized and the future ones jeopardized and public income decreases.

Unfair competition actions comprise a wide set of deceitful and unfair business practices, including examples such as:

- Making untruthful and offensive claims about the competition and revealing information about the competition or their goods or services, other circumstances and elements pertaining thereto, which are aimed at disrupting the reputation and business operations, belittling and discrediting the said competitor (defamation);
- Sale of goods with the marks, information or form such that they create a justifiable confusion among consumers about the source, quality and other properties of goods – including concealing flaws,

trademark breach, patent protection breach, brand name breach, etc.

- Acquiring, using and revealing confidential business information without the consent of its holder in order to obstruct their market position;
- Promising or giving gifts of significant value, material or other benefits to other competitors, aimed at providing the giver with an advantage over the competition;
- Dishonest, untruthful and confusing advertising, which creates or can create confusion on the market, which leads or can lead a certain seller into a favorable position, as well as advertising fictitious sale or fictitious discount for goods, or similar activities, which mislead or can mislead the consumer with regards to prices;
- Boycott of a certain competitor, in the form of unjustified avoidance of entering into or executing a contract with said competitor, which can cause damage to the competitor, and especially in order to lead them into an inferior position on the market.

Unfair competition activities additionally comprise other forms of dishonest behavior on the market, such as coercion or unlawful encouragement of employees to end their employment with one and take employment with another, competitor employer; coercion or unlawful encouragement of businesses to end their business arrangements with their business partner and establish a business relationship with another competitor business partner; unfair import of goods and services; industrial espionage; business bribery; different forms of damage incurred in business operations.

What is key for the suppression of unfair competition, which has especially negative consequences for micro, small and medium enterprises that are the most numerous types of businesses, is an efficient and thorough law enforcement by public and private institutions – inspections, judiciary, business associations and companies.

Relevant research results

Research of the National Agency for Regional Development from 2013 [4] shows that 34% of the SMEs rank unfair competition quite high, as third on the list of market limitations. Similarly, in the research of the National Agency for Regional Development from 2011 [6], the surveyed SMEs ranked unfair competition as third on the list of limitations preventing a greater market reach.

Grey economy, as one of key elements of unfair market competition (unfair competition), still presents a threat to Serbian economy. As many as 59% of the respondents to the Survey of 1000 businesses (from 2015), conducted annually by the USAID's Business Enabling Project, state that the grey economy has an adverse effect on their business operations. The results of the research conducted by the National Alliance for Local Economic Development (NALED) within the USAID's Project for enhancement of competitiveness [5] show that 56% of the surveyed businesses rank their competitors' grey zone businesses very high, as second on the list of factors that burden their businesses the most.

A study of the Foundation for the Advancement of Economics (FREN) and USAID Business Enabling Project [1] show that grey economy in Serbia amounts to 30% of the GDP. For example, Bulgaria is at the same level as Serbia, Romania is better than Serbia by a few percentage points, while in Slovenia, the grey economy's share is 23.5% of the GDP, in Hungary, 22,5%; Czech Republic 16%, Slovakia 15.5%, Germany 12.3%, and Austria 7.6%.

However, research also shows an encouraging trend in terms of inspections, especially thanks to the Law on Inspection Oversight, the implementation of which started on July 30, 2015, with regards to the part pertaining to inspections of unregistered business entities. Thus, the research by NALED and USAID from December 2015 shows that, in comparison to the last year, there has been a significantly smaller number of businesses (less than a third) that have objections to the work of inspectors, while as many as 70% have no objections. The annual survey of the USAID Project for Business Enabling also shows an increase in trust in the work of inspections: compared to last year, in 2015, the number of businesses which believe that inspections efficiently protect them from unfair competition has increased by 6 percentage points (from 30% to 36%). From the moment the Law on Inspection Oversight came into effect, the number of newly registered businesses with the Serbian Business Registers

Agency (SBRA) has increased significantly, which shows a transition from the "invisible" to the "visible" business flows (see Figure 1).

Regulation of protection measures and unfair competition risk management

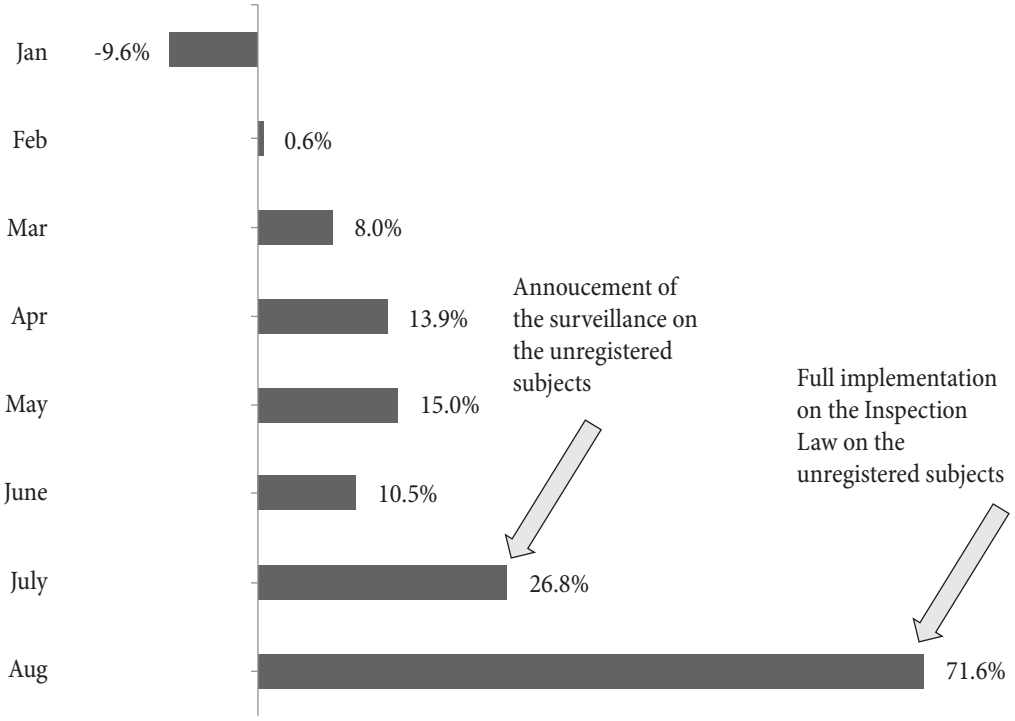
Regulation of unfair competition is autonomous and imperative (legislation) – the so-called soft and hard law. Protection measures and measures of unfair competition risk management differ, depending on its form, intensity and consequences. Depending on the criteria, they can be classified as internal and external, as well as voluntary, inspection (administrative) and judicial. Insight into the nature and effects of these measures shows that the lines of distinction between them are blurred, so it is difficult to strictly classify some of the measures into the first, second or third group.

There is a wide scope of such measures, including: "white" and "black" business lists; compliance programs; temporary measures prohibiting potentially damaging activities; out-of-court damage settlement; judicial compensation for damage; publishing the verdict at the expense of the defendant (financial consequences and consequences for the reputation); prohibition of further unfair competition activities; judicial penalties; temporary or permanent prohibition of operation, prohibition of trade in goods, prohibition of performance of certain services, confiscation of goods (withdrawal of goods from the market and product recall), destruction of confiscated goods, closing down, etc. related measures in the form of orders, prohibitions and seizures, protective measures and security measures (issued in both administrative and court proceedings); revoking of licences and other types of public consent, concessions, public incentives and other rights or benefits; measures issued by courts of honor in chambers of commerce and professional chambers; prescription and penalization of certain acts as offences – criminal, economic offences or misdemeanors.

"White" and "black" lists

One of the mechanisms of unfair competition regulation, protection and risk management comprises "white" and "black" lists of businesses, which attract considerable public attention. "White" business lists are lists of companies and other business entities which show the strongest

Figure 1: Growth of newly registered entrepreneurs in 2015 (in comparison with the same month in 2014, in %)



Source: SBRA

adherence to provisions of laws and bylaws, good business practices and professional and ethical standards. On the other end of the spectrum, those who adhere the least to these provisions and rules are "blacklisted". "White" and "black" business lists are compiled by business associations, international development and financial institutions and organizations, state bodies, companies, banks and non-governmental organizations, as well as media outlets. Their preparation stems from the laws or other legislation, or from the acts of autonomous and "soft" law, i.e. decisions of companies themselves and general acts of business associations.

The purpose of "white" lists is to provide incentives to companies doing business in line with regulatory and ethical rules and standards to continue to do so, as well as to continue improving their business practices in that respect. In that sense, laws and other legislation, or other general acts, can prescribe additional rights, benefits and advantages to a "whitelisted" business, such as advantage or certain additional ("extra") points upon the conclusion of new contracts, exemption from a part of certain obligations, etc. "Whitelists" have a positive effect on business reputation of a company and send a signal to the company's existing and potential business partners, financiers and investors that this is a company with a low business risk and that there are strong arguments supporting the expectation of its fair and honest behavior in future cooperation as well. Therefore, "whitelists" enhance business performances of a company and indirectly lead to an increase of its profits.

On the other hand, the purpose of "blacklists" is to identify those companies breaching such rules and standards, in which there is corporate liability for irregular and unfair practices and to deny them certain rights, advantages and benefits, as a preventive act, i.e. to prevent their continuation of malicious and damaging practices, or to decrease the probability of potential damage. This pertains primarily to the conclusion of future contracts, undertaking rights and liabilities and initiation of legal action. The reason for a company to be "blacklisted", depending on the type of the list and its direct purpose, the entity compiling it and the legal source it stems from, can be based in a final court decision or a legally binding administrative act or temporary prohibition of business activities, final/legally binding arbitration decision or court of honor decision, but also proven or evident breach of business, professional and moral standards and business ethics. The incentive to compile "blacklists" based on proven or evident breach of business, professional and moral standards is frequently inspired by the fact that court proceedings are, as a rule, long and there is a need to take certain measures to prevent probable or possible damages. Contrary to the "whitelists", "blacklists" have a negative effect on business reputation of a company and send a signal to the company's existing and potential business partners, financiers and investors that this is an "uncertain ground", a "slippery slope", finally leading to a decrease in business prospects and financial losses, and in some cases even into the company's bankruptcy.

"Blacklists" encourage companies to establish and improve their own internal monitoring and control systems as well as anti-corruption mechanisms, which are important to keep the company off the "blacklists" and thus prevent the related damaging consequences. In addition, existing and potential business partners, financiers and investors in "blacklisted" companies are encouraged to conduct thorough business, legal and technical assessments of these companies (i.e. due diligence), to develop a system of acquiring business information and to implement corporate security measures. In this sense, the Company Law prescribes that the activities of internal monitoring specifically encompass: control of compliance of the company's business practices with the law, other legislation and company acts, monitoring accounting policies and financial reporting, verification of risk management policy implementation, monitoring of compliance of the organization and activities of the company with the corporate management code and valuation of company policies and processes, as well as proposals for their improvement. Code of corporate management defines internal monitoring as a general term for inspection, examination and assessment of the compliance of operations, processes and procedures including all types and forms of control measures and activities established and implemented by the management, with the aim of achieving confidence in the business system, reliability of the bases for decision making, possibility

of early recognition of potential loss hazards and timely implementation of measures for their neutralization or mitigation. The most common forms of internal monitoring in application are: internal control, internal control system, risk management, controlling, compliance control, checks in line with the requirements of different management systems, inspections, liquidity and asset management, internal audit, special controls and others. In terms of corporative anti-corruption mechanisms, larger companies have a practice of preparing and implementing corporative integrity plans, among others.

International financial and development institutions have defined reasons for blacklisting companies in five categories, namely:

1) Corrupt practices
2) Fraudulent practices
3) Coercive practices
4) Collusive practices
5) Obstructive practices

Other reasons for "blacklisting" included in regulations and practice pertain to a lack of compliance with environmental, health and safety and consumer protection rules. International financial and development institutions have concluded an agreement on mutual recognition and enforcement of decisions on exclusion of companies from business cooperation, i.e. withholding the right to business cooperation (so-called cross-exclusion). European Union institutions also have a practice of blacklisting (see Table 1).

Numerous EU countries have developed their own blacklisting mechanisms, as well as mechanisms of exclusion of unconscious companies from the market (Austria, Cypress, Czech Republic, Denmark, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia, Spain, Sweden, United Kingdom, etc.). Such mechanisms are also in use outside of the EU (USA, Japan, Brazil and other countries).

Speaking of positive practices in surrounding countries, the example of Montenegrin Tax Administration should be pointed out. The Tax Administration of Montenegro publishes the "White list" – a list of tax payers in which the largest degree of fiscal discipline, compliance with tax legislation and meeting tax obligations has been observed. Criteria for the selection of taxpayers to be included in this list are that their tax calculations and tax returns are submitted regularly, that they meet their tax obligations regularly and that during inspections (tax control) no significant irregularities are found that would indicate any type of irregular business practice. Each taxpayer included in the white list can be considered a taxpayer who meets their tax obligations regularly.

In terms of national legislation, the Law on Tax Procedure and Tax Administration prescribes that the Tax Administration shall publish on their official webpage, every quarter, with the balance determined on the last day of each quarter, the name, TIN and amount of taxpayers' tax debt, namely, legal entities with the tax debt in the amount of or exceeding RSD 20,000,000 and enterpreneurs with the tax debt in the amount of or exceeding RSD 5,000,000, which does not constitute a breach of confidentiality obligations. The Tax Administration uses this authorization and fulfils this obligation in practice, publishing the lists of the largest tax debtors on their official webpage. The Law on Public Procurement prescribes negative references and the list of a bidder's negative references. The Ministry of Civil Engineering, Traffic and Infrastructure, in cooperation with the Ministry of Labour, Employment, Veteran and Social Issues – Inspectorate for Labour and other ministries, had compiled and published, at the end of 2014, black and white lists of businesses and other organisations operating

Table 1: The European Commission blacklistings in recent years

	Basis of exclusion, with reference to the EU financial regulation	Number
Art 106(1) a	Bankruptcy and analogous situations	348
Art 106(1) d	Non-payment of social security contributions or taxes	3
Art 106(1) e	Fraud, corruption, involvement in criminal organization, money laundering – definitive judgment	6
Art 106(1) c	Guilty of grave professional misconduct	1
Art 106(1) c	Guilty of grave professional misconduct	1
		359

Source: The European Commission's Directorate General for the Budget on 18 October 2013

in the field of design, construction and monitoring of traffic and other infrastrucure. The purpose of these lists is to bring order to the civil engineering market and assist the companies in complying with the rules, to protect employees and other workers and ensure the partnership of the state institutions with credible companies. Certain consumers' associations – organizations for the protection of consumer rights have compiled and published "white" and "black" lists of sellers, those who comply the most with the legislative requirements and other legislation regulating consumer protection, i.e. who accept the justified complaints of the consumers and the organizations that protect them ("white" lists) and those who do not engage in such practices ("black lists"). Breach of business ethics and unfair competition, which may represent reasons for autonomous "white" and "black" lists by business associations and companies are regulated by the Business Ethics Code and the Law on Commerce.

Legislation ("hard law")

The Law of Obligations sets the legal grounds for conscientious and fair market practices in its principles and other provisions. The Law on Inspection Oversight is the "umbrella" legal framework for the reduction of unfair competition, especially in its part pertaining to the prevention and suppression of activities of unregistered businesses and inspection measures issued against them. The Law on Tax Procedure and Tax Administration regulates the activities of the tax inspection in the field of tax control of persons engaging in unregistered or undeclared activities. Law on Commerce prescribes, in more detail, the prohibition of unfair competition, measures to be undertaken by market inspection and judicial protection from unfair competition. This Law also regulates prohibited speculation and prohibition of pyramid schemes, as well as inspection measures against a person without the legal status of a seller (unregistered business entity).

The Law on Business Secret Protection regulates legal protection of business secrets from all unfair competition activities. The Company Law prescribes that the name of a company cannot be identical to the name of another company and that it must be different from the name of another legal person so that it does not lead to any identity confusion with regards to the other company. The Law on Advertisement prescribes that an advertising message must be true, complete and specific, in line with the law, good business practices of fair competition and professional ethics. Fair competition is also protected by intellectual property laws. Thus, Law on Trademarks prescribes that a symbol cannot be protected as a trademark, among other things, regardless of the goods or services it pertains to, if it is a reproduction, imitation, translation or transliteration of a registered trademark of another entity or any part thereof, which is known, without a doubt, among market participants in the Republic of Serbia as a high reputation mark (renowned trademark), if by using such a mark there would be unfair gains from the reputation of the renowned trademark, or if its distinctive character, or reputation, would be damaged. The Law on Industrial Design Protection prescribes that the holder of industrial design rights cannot forbid a third person from, among other things, multiplication with the purpose of teaching or quoting, as long as such activities are in line with fair competition practices and do not represent an unjustified danger to the normal use of industrial design, as well as that it is clearly stated where the industrial design was taken from. The Foreign Trade Law contains certain measures of protection from unfair competition in a broader sense, envisaging that the Government can prescribe anti-dumping measures, compensatory measures and measures for the protection from excessive import.

The newly adopted Law on Central Record of Temporary Restrictions of Rights of Persons Registered at the Business Registers Agency defines the establishment, contents, grounds for entry and the method of keeping these records of persons for whom a temporary restriction of rights has come into force based on an act from a competent body. Temporary restriction of rights from this Law is a restriction that yields, as its legal consequence, a temporary inability for the person in question to acquire or enforce a right or register a function in a business entity or legal entity, to perform business activities or dispose of financial assets. The grounds for temporary restrictions comprise the following measures: prohibitions, restrictions or security measures for the performance of a

registered business activity or operations, prohibition of disposal of financial assets, prohibition of performance of duties or practice of a profession for the responsible person in the legal entity or entrepreneur, prohibitions or limitations of disposal of shares or other restrictions in line with the legislation regulating the legal position of companies, measures stipulated in legislation regulating the tax procedure and tax administration, measures issued in the procedures from the competence of inspections, measures of revoking authorizations, licenses, permits, approvals, concessions, subsidies, incentives or other rights prescribed by separate laws, as well as other measures in line with the law.

To resolve the issue of the "phoenix" companies – companies founded so that the assets of indebted companies could be transferred to them, while the debt remains in the "old", indebted company, leaving the indebted company as an "empty shell" with no assets to settle the creditors' claims, what is needed is a consistent and uniform application, by the courts, of legal institutes of refutation of the debtor's legal actions (both in case of a bankruptcy and outside of it) and piercing the corporate veil, as well as the provisions of the Law on Obligations, according to which a person to which certain property of a natural or legal person, or a part thereof, is transferred on the grounds of a contract is responsible for the debt pertaining to the said property, or part thereof, in addition to the previous holder and in solidarity with them, up to the amount equal to the value of its assets.

"Soft law"

Unfair competition is not only prohibited by law, or by imperative legislation, but also by "soft law". This primarily pertains to the Code of Ethics adopted by Chambers of Commerce and professional chambers, as well as other business associations. A code of business ethics, adopted by the Chamber of Commerce of Serbia, features a set of provisions advocating free and fair competition, being that the provision of a fair market competition is one of the key requirements of business ethics. Hence, the Code of Business Ethics prohibits unfair, dishonest and unethical forms of competition and market practices, including diverse forms of unfair competition.

Institutions of protection and unfair competition risk management

Inspections

The Law on Inspection Oversight prescribes that inspection oversight is a task of the state administration, the contents and definitions of which are determined by the Law regulating state administration operations, performed by state administration bodies, autonomous province bodies and local government bodies, with the objective to ensure legality and security of business operations, either though preventive action or through measures issued as well as to prevent or eliminate harmful consequences to the goods, rights and interests protected by Law and other legislations. This Law prescribes key points of contemporary inspection oversight affecting fair market competition – risk assessment, preventive action, inspection coordination and suppression of activities of unregistered businesses.

Risk assessment is the pivot point of planning and implementation of inspection oversight. Analysis and risk management have long been known and applied in the financial and commercial sector, and step by step, they are entering into public administration; first, by the nature of things and tasks being performed, in the field of oversight and control (internal and external audit, inspection, expert oversight, etc.). Inspection oversight is based on risk assessment and proportional to the estimated risk, so that the risk is adequately managed. Risk assessment is a part of risk analysis, also comprising risk management.

In order to achieve the objectives of inspection oversight, the inspection is obliged to act preventively. Preventive action is one of the means to achieve the goals of inspection oversight and it starts with the preventive action of the inspection. Just like there is prevention (prevention of development, acquisition and communication of illness) and cure (treatment of patients) in medicine, in inspection oversight as well there is prevention (prevention of breach of law and damages) and correction (elimination of the already established illegal activity and damage). There is a "classical" understanding of inspection oversight, which is performed primarily in a reactive manner – the inspection reacts once damage is incurred, i.e. regulations

breached, it finds the responsible parties and sanctions them. The inspection will always have, in its toolbox of tasks and authorizations, those that are corrective and coercive (repressive) in character, but it is more worthwhile if the inspection is proactive and shifts its focus to prevention, awareness raising, providing expert assistance, monitoring and analysis of the situation in the field, oversight planning, so that damage is prevented and market and citizens protected, and so that it encourages business and economic development.

Monitoring and analysis in the field of oversight and risk assessment directly related to preventive activities make for a preemptive control mechanism that can reduce the number of accidents and their severity (an incident is a circumstance or event pertaining to the determination of direct or indirect hazard presenting a direct risk for the protected good, e.g. human health. If an incident occurs in reality, it is called an accident). Regulators, businesses and inspection should particularly strive, through comprehensive and advanced preventive action, to reduce the scope and probability of possible harmful consequences and so efficiently manage public risks and protect, in practice, the goods, rights and services protected by law and other legislations. It is far more effective and less expensive to act preemptively and prevent the occurrence of illegal activities and their harmful consequences, which have not yet occurred but for which there is a probability, or a possibility that they might, than to react only once they do occur ("prevention is better than cure"). It is especially effective to implement preventive activities at the very beginning, when there are early signs and hints at a probability of harmful consequences, thus thwarting them. This also pertains to those subject to oversight, for whom investments into prevention are cheaper that paying high claims once damages are incurred and they have to repair the damage (e.g. machines in disrepair, business premises destroyed, etc.) and bearing other costs incurred by the harmful consequences.

This Law also prescribes the measures to be issued to an entity subject to oversight (inspection measures) which serve to manage public risks, and their proportionality. The principle of proportionality demands that the measure be simultaneously fitting and necessary, i.e. legal and purposeful (meaningful). Proper implementation of this principle allows for an adequate use of discretionary assessment authorization in inspection oversight and legal predictability. Proportionality means fairness with regards to public administration and the subject of regulation and, in inspection oversight, links directly to risk assessment and risk management. Measures that the inspection issues need have to be proportional to the objective they are aimed at, i.e. they need to be a proportional response to risk – harmful consequence and the probability of its occurrence – and to provide an adequate and necessary level of protection. At the same time, the request to have these measures corresponds to the economic strength of the business, or any other entity to which they are issued, so that it is not unduly burdened and its operation, business and conduct of activities thus unjustly jeopardized as well as its survival on the market in the long run, or even wider, having a significant impact on the lives of their families, employees and suppliers. The purpose is to achieve a balance between regulatory and inspection intervention, protection of public interest and the rights being limited.

Courts of honor

Courts of honor in chambers of commerce and professional chambers decide on the infringements of good business practices, unethical behavior on the market, breach of professional duty and reputation and breach of professional standards and norms, including unfair competition. These courts take "hard" law and "soft" law as legal bases for action and prescription of measures. A special place is held by the Court of Honor at the Serbian Chamber of Commerce, as an independent, autonomous body, ascertaining responsibility and prescribing measures for breach of business ethics and good business practices, in line with the Law on Chambers of Commerce. Court of honor decides in proceedings against companies, entrepreneurs and other members of the Chamber, on breaches of good business practices and business ethics committed in mutual business relations and in foreign trade, as well as breaches disrupting the market unity or accomplishing monopolistic activities in the said market.

The Court of Honor can issue the following measures for breach of business ethics and good business practices:

public reprimand with publication at the Chamber Steering Committee, public reprimand published in one daily journal, public reprimand published in several daily journals. In addition to these measures, the Court of Honor can also issue protective measures: prohibition of participation in the work of Chamber bodies, prohibition of participation at fairs and exhibitions, temporary prohibition of business operations in foreign trade, prohibition of independent performance of entrepreneurial activities for a certain time, as well as deletion of the timetable, i.e. the scheduled departures of a transporter, company or entrepreneur, performing the activity of public transportation. The Court of Honor informs the competent state bodies on the protective measure issued, to provide for its implementation. In addition to these measures, the Court of Honor will issue other measures, placed among its competence by the Law.

Criminal, commercial and misdemeanor courts

Unfair competition activities, in a broader sense, constitute parts of various criminal offences, prescribed in the Criminal Code, including the abuse of position of a responsible person, abuse of authorizations in business, defamation and damage to credit rating, divulgement of business secrets, misleading buyers and tax evasion, as well as other criminal tax offences prescribed in the Law on Tax Procedure and Tax Administration. Introduction of a separate criminal offence, business fraud, is proposed, as well as redefining of tax evasion, to include not only the hidden official income, but also the income from illicit flows.

Sanctions issued by courts for criminal and other penal offences in business should have a preventive effect on the decrease in number of abuse cases in business and so contribute to fair competition and improved liquidity of businesses. This is why there is a need for greater use of protective measures and security measures of prohibition of performing a function, profession, tasks, activities and duties in criminal, misdemeanor and economic offence cases for acts committed against the economy, as prescribed in the Criminal Code, Law on Bankruptcy, Company Law, Law on Capital Market and other laws in the field of business and finance.

Conclusion

Unfair competition or unfair market game is perceived as one of the greatest market limitations in Serbia. Unfair competition disrupts good business practices, relationships between companies and interpersonal relationships, business reputation is injured, market relations and business plans distorted, trust of customers and employees breached, there is economic damage, disputes arise, costs increase, existing investments are destabilized and the future ones jeopardized and public income decreases. Unfair competition can take many forms. In addition to grey economy, these include making false and offensive claims about the competition, sale of goods featuring elements that mislead the consumer, divulgement of business secrets, dishonest advertising, boycott of the competition in the form of failure to enter into or execute contracts.

One of the mechanisms of regulation, protection and risk management pertaining to unfair competition comprises "white" and "black" lists of businesses. International practice recognizes the reasons of categorizing businesses into two lists, and these are: corrupt practices, fraudulent practices, coercive practices, collusive practices and obstructive practices. In our practice, Tax Administration publishes data on the tax debt of the largest debtors quarterly, the Law on Public Procurement prescribes negative references for bidders, the Ministry of Civil Engineering has published black and white lists of businesses at the end of 2014 and some consumer associations have published lists of traders. A code of business ethics, adopted by the Chamber of Commerce of Serbia, features a set of provisions advocating free and fair competition, being that the provision of a fair market competition is one of the key requirements of business ethics. In terms of "hard" law, there are several Laws regulating the field of unfair competition. These are Laws on Obligations, on Inspection Oversight, on Tax Procedure and Tax Administration, on Trade, on the Protection of Business Secrets, on Advertising, on Trademarks, on Legal Protection of Industrial Design.

In the previous year, progress in inspection oversight has been visible. Trust in inspections is growing, as well as satisfaction among businesses with their work and the number of newly registered businesses. Regulators,

businesses and inspections should strive to decrease the scope and probability of damaging consequences through preventive actions. The Court of Honor at the Serbian Chamber of Commerce is a significant body, as an independent, autonomous body, determining responsibility and prescribing measures for breach of business ethics and good business practices. Activities representing unfair competition constitute parts of various criminal offences: abuse of position of a responsible person, abuse of authorizations in business, defamation and damage to credit rating, divulgement of business secrets, misleading the consumer and tax evasion. Introduction of a separate criminal offence, business fraud, is proposed, as well as redefining of tax evasion, to include not only the hidden official income, but also the income from illicit flows.

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EVALUATING THE CONCENTRATION IN SERBIAN TOURISM AND FMCG RETAIL SECTOR

Analiza koncentracije u sektoru turizma i maloprodaje robe široke potrošnje u Srbiji

Abstract

Protection of competition is one of the key areas in market policy and strategy of development of one sector in national economy. From time to time, particularly when noticeable M&A activities occur, in Serbian economy emerged the question of excessive concentration. This paper analyze two markets: retail FMCG market and tourism middlemen market (tour operators and retail agencies). The first one can be considered to represent the most important part of retail sector and the second one is the only part of tourism industry where competition might be threatened due to excessive concentration. In the beginning of this paper, both sectors were analyzed and the market ambience and trends were presented. In the later sections, eight standard measures of concentration were analyzed in order to answer the question: "Is there reason to worry about excessive concentration?" Calculated results are to be discussed taking into account actual standards and recommendations of the EU Commission.

Keywords: *retail, FMCG, tourism, concentration, market policy, competition protection*

Sažetak

Zaštita konkurencije je jedno od ključnih područja tržišne politike i strategije razvoja jednog sektora u nacionalnoj ekonomiji. S vremena na vreme, posebno kada dođe do primetnih aktivnosti spajanja i pripajanja, u srpskoj privredi se pojavi pitanje prevelike koncentracije. U ovom radu analiziraju se dva tržišta: tržište maloprodaje robe široke potrošnje i tržište turističkih posrednika (turoperatora i maloprodajnih turističkih agencija). Za prvo tržište se može smatrati da predstavlja najvažniji deo maloprodajnog sektora, a drugo je jedini deo turističke industrije gde bi mogla da bude ugrožena konkurencija usled povećane koncentracije. Na početku ovog rada, oba sektora su analizirana i predstavljeni su tržišni ambijenti i razvojni trendovi. U kasnijim delovima rada, osam standardnih mera koncentracije analizirano je kako bi se odgovorilo na pitanje: „Ima li razloga za brigu oko prevelike koncentracije?" Izračunati rezultati su raspravljani uzimajući u obzir aktuelne standarde i preporuke Evropske komisije.

Ključne reči: *maloprodaja, roba široke potrošnje, turizam, koncentracija, tržišna politika, zaštita konkurencije*

Tourism industry trends

Tourism is a growing industry, globally and in the long term. The number of international arrivals, overnights, tourism revenues and many other indicators of the business activity show dynamic growth [18].

Southern and Mediterranean Region (which encompasses Western Balkans countries including Serbia) and Central and Eastern Europe belong to the group of the most dynamic areas if the tourism economic indicators are analyzed: number of arrivals and revenues prove it.

Tourism is a resilient industry, continuing to grow even during the period of economic crisis. The year 2015 denotes 6th consecutive in the sequence of years characterized by the above-average growth. International arrivals were increasing by 4% or more every year since the post-crisis year of 2010 [19]. It was recorded 1,184 million of international arrivals, meaning 4.4% increase compared to the previous year and that was above the expectations. Demand was strong, but destinations recorded mixed results due to exchange rate fluctuations, drop in the prices of oil and other commodities as well as increased safety and security concerns. This growth in 2015 fit in a trend projected for the period 2010-2020 with the average rate of growth +3.8% [15]. Southern and Mediterranean Region and Central and Eastern Europe are among the leading parts of the world, showing the growth of 5% and 6%, respectively. The appreciation of the US dollar stimulated outbound travel from USA. The true beneficiaries were Caribbean, Central American area and Oceania, recording 7% growth [19]. International air departures increased by 3% in 2015, with most solid results from May to December (+4%) [19]. Current economic scenario remains relatively volatile with economic growth gradually picking up in advanced economies (+5% in 2015) contrasting with a slowdowns in emerging ones (+4% in 2015).

It is considered that tourism has promising future, as well. It is expected to reach the number of 1.8 billion of international tourists by 2030. International tourism trends are positive but, some inbound tourism indicators are warning, particularly considering underdeveloped economies. So, European indicators of inbound tourism for 2014 and 2015 show growth rate of 2.7% and 2.5% on average, but the same indicators for non-EU countries are -3.8% (2014) and -1.8 in 2015 [3, p. 8]. This means that non-EU tourism sector in underdeveloped countries must rely on international guests, having in mind that domestic demand is decreasing.

Tourism industry seems to have not so important macroeconomic impact on overall economy. However, the figures reveal something different. The combined direct, indirect and induced[1] contribution of tourism to the world GDP is between 9-10% GDP [18]. Furthermore, 1 of 11 job positions in the world economy is connected with tourism and travel industry. Tourism is very important in the European economy, as well. Direct contribution of the tourism industry to the European GDP was something around USD 2,000 billion, which is 2 times more than automobile industry that generates around USD 1,000 billion (despite the giants like BMW, WV or PSA group). It is also 30% more than European chemical industry, which generates USD 1,500 billion [14]. Travel and Tourism industry contributes to the European GDP more than mining and even more than the whole sector of education. The similar conclusion is if the job structure is analyzed. Tourism and Travel sector generates around 100 million jobs in Europe, comparing with less than 20 million in auto industry or around 20 million in chemical industry. Even financial services, which are one of the most important sectors in European economy, generate around 80 million job positions.

Tourism participates with 30% in global export of services and around 6% in total world export of goods and services [16]. It amounts the fantastic USD 1,245 billion earned in international tourism business enlarged for USD 221 billion coming from international passenger transport (a total of USD 1.5 trillion). International tourism exchange recorded real growth rate of 3.7% in 2014, compared with the volume in 2013. The most successful regions were Northern Europe, Southern and Mediterranean Europe (5%), but also, North-East Asia, South Asia, Caribbean and the Middle East (before war conflicts). Preliminary data for 2015 have been reported for 132 countries: 93 reported growth in earnings (71%), compared with the

1 For explanation of terms used, see [22]

same period in 2014. Even 33 of 93 recorded growth in double digits (25%), while 39 (29%) posted declines [19].

Tourism has always been considered not only as an economic sector, but also, like sport or a culture, as a very credible vehicle of marketing and political messages. OECD report on the financial support (Overall Development Assistance – ODA) directed towards developing countries confirms this. Tourism receives 0.09% of total support directed to all countries, i.e. around 1% of the financial support directed to the developing countries [17].

That was why the countries in the region are very interested in tourism as the sector that should improve the competitiveness of the national economies in the region. Some of the countries in the region are among top performs in European tourism: Croatia recorded arrivals increase of 9% in 2015 while Serbia had 11.2% in the same period [3, p. 4]. For the first time since 2007, Serbia recorded a larger increase in number of domestic tourist arrivals (+12.2%) in comparison with foreign tourists (+10.1). Increase of tourism may be considered as a result of the implementation of the former strategy of tourism development, adopted in 2006, which created the need for strategy audit and further improvement [12]. The implementation of development strategy called for many changes in the economic and legal environment, particularly in the areas of the consumer protection [11]. Based on the recommendations of the previously adopted strategic documents as well as on positive experience of more developed tourism countries and following recent market trends, the Government of Serbia has taken several measures in 2015. In order to improve the competitiveness of Serbian tourist product, some tax incentives maintained like reduced VAT – 10% for accommodation, despite the overall pressure on fiscal system. On monetary side, incentive scheme by awarding vouchers for domestic tourists was introduced, giving immediate results. Further visa liberalization, reorganization of the winter-school holidays and some other measures are expected to bring results in the near future.

Still, there is a question if there is a real need to take further steps in the other very important area of market policy, i.e. competition protection. Tourism industry consists of three main sub-sectors: hospitality industry, agencies (tour operators and retailers) and transport. Since transport sector is highly regulated and concentration in hospitality sector is very low, the analysis that follows will be focused on tour operators and retailers, and the level of concentration in this sector.

Trade and retail sector trends

Key indicators of the trade industry in Serbia are pointing out the trend of significant decrease in the capacities volume and business activities level. This drop, particularly in retail sector, is visible from 2008. In the sections that follow, trends in several retail indicators will be presented.

There is an obvious trend of decreasing number of stores in the Republic of Serbia from 2008 to 2013. In the reporting period, the number of stores has fallen by 19%, from 100,233 to 81,200. This data shows that a retail sale in Serbia is slowly diverted, and that there is a trend toward the closure of small, traditional retail outlets. These stores are not able to withstand the competition of larger formats, primarily supermarkets and hypermarkets. Other factors have also affected the disappearance of small, traditional retail outlets such as a decline in retail sales, reduced purchasing power of the population, as well as one-year limitation of margins for basic foodstuffs and others. These processes are especially noticeable in the retail market of fast moving consumer goods in the period from 2003 to 2012. Although still dominated by small shops, the share of modern retail formats in the reporting period increased. From 2003 to 2012, the share of modern formats (hypermarkets, supermarkets and cash and carry objects) increased from 17% to 34% in fast moving consumer goods. Participation of small shops in turnover is significantly reduced during the reporting period, from 71% to 51.5% [5].

In the period 2007-2013 number of employees in the retail sector in Serbia dropped by 28.3%. It was due to a decreasing number of outlets, but also the use of more efficient retail formats that are more productive. Decline in employment was greater than the drop in turnover in EUR in retail (16.7%), so that there has been a productivity growth in the retail Serbia.

Business activity in the retail, measured by turnover has dropped significantly since 2008 (see Table 1). Turnover in 2013 was almost a quarter less than the turnover in 2008, measured in constant prices. The decrease in turnover at constant prices constantly lasted five years, with some mitigation in 2010, so that the turnover in 2010 amounted to only 97.9% of turnover in 2007, at current, and only 76.3% of turnover in 2007 at constant prices. However, sales in non-specialized stores did not follow the decrease in the value of total turnover in retail trade since 2009. In the period from 2009 to 2012, the maximum value of turnover has been achieved in 2011. Turnover in non-specialized stores in 2012 was slightly less than turnover in 2009, while the turnover in the overall retail sales in 2009 amounted to only 87.85% of turnover in 2012.

Retail sales per capita at current prices in EUR dropped significantly in the reporting period (-14.2%). This drop indicates the impact of the economic crisis on the living standard of citizens, influencing consequently the retailers of Serbia. Then, this fall in demand generated an intensification of competitive struggle.

Derived indicators point to a process of concentration of the retail network, an increase in the size of stores and, consequently, to a significant increase in productivity. Number of people per store increased from 76.4 to 88.2 in the reporting period as a result of reducing the number of objects. Number of employees per store was significantly reduced (14.6%) in the reporting period despite the fact that there was an expansion of larger formats in the market, which again suggests that, the retail struggle for productivity growth.

Judging by the number of inhabitants per store, the retail sector in Serbia is underdeveloped. Fragmentation of trade in Serbia can be illustrated by the number of people per store. Although this indicator recorded a significant growth in the five-year period in Serbia (reaching 85), it is still, in 2012, significantly lower than in most EU countries (most people per store has Ireland, i.e. 222). Only Greece (61), Cyprus (67) and Portugal (72) have fewer inhabitants per store from Serbia. Those are usually the countries that have traditionally fragmented trade. Germany (188) France (208) and United Kingdom (221) have two and a half times the number of inhabitants per retail object. The main reason is that in these countries the average store is significantly larger and these markets are dominated by a large modern retail formats.

In the period from 2009 to 2012, the average sales area per capita in 32 European countries rose by 5.08% and amounted to 1,089 m2 per capita. The highest growth of 28% was achieved in the market of Latvia, while the area of the shops decreased in Greece, Cyprus and Poland. The reduction of the retail area in these countries is primarily a result of the financial and economic crisis effects on the reducing turnover in retail trade and the withdrawal of some retail chains from the market.

For the purposes of the previous Strategy of the Trade Development in the Republic of Serbia, adopted in 2008, the estimate of the retail space in 2007 was performed and the result was 4,240 thousand m2. Thus, the estimated shop area in m2 per capita would be 0.58 m2. Assuming that the annual growth in the Republic of Serbia was at the average level 32 European countries (1.27% annually), a new estimate in m2 of sales area per capita in 2012 amounted to 0.62 m2. Thus, the estimated shopping area still puts Serbia at the end of the European countries list, with the countries of comparable retail level, like Romania.

Serbia lacks larger formats, especially hypermarkets and supermarkets, mostly in its countryside. In the structure of turnover by retail formats, there has been a

Table 1: Turnover in retail sector by activities, in EUR million

	2008	2009	2010	2011	2012	2013
Non specialized stores	4,282	3,096	2,908	3,435	3,046	-
Specialized stores food, drink, tobacco	1,743	597	558	489	438	-
Motor vehicles, motorcycles, spare parts, accessories	2,863	3,655	3,584	2,683	2,505	-
Other	6,236	2,678	1,976	2,352	2,196	-
Retail trade – total	15,125	12,035	11,929	10,970	10,573	10,642

Source: Calculated according to data from Statistical Office of the Republic of Serbia

rise in the share of modern retail formats in European countries. Since 2009, when the average was 66.8%, in 2012 it reached the level of 70.4%. According to the already cited reports which were made by the consulting firms Kantar and GFK [5], the largest share of modern retail formats (supermarkets, hypermarkets and discount stores) in fast moving consumer goods had Germany with 91.7%, while France and Portugal had almost 86% and the United Kingdom 82.8%. The lowest participation of modern formats was recorded in Serbia in 2012, and it was at the level of only 27.9%, followed by Bulgaria with 40.1% and Romania with 48%, which is a significantly higher level.

Serbia is considerably lagging behind EU countries when it comes to retail sales per capita. In 2013 turnover per capita in the EU was, on average, EUR 5,424 and in Serbia only EUR 1,485. Even in Bulgaria and Romania, retail sales were slightly higher than in Serbia (EUR 1,584 and 1,635, respectively). Retailers in Serbia in their stores serve customers which, compared to customers in the EU, are buying significantly less. As the competitive battle in the retail in Serbia is growing ever stronger, the environment is becoming less favorable to small retailers.

Some indicators point to some decreasing gaps between the Serbian retail and retail of EU countries. Despite the economic crisis that hit Serbia and that significantly affected the retail sales, the average size of the object increases. Self-service formats captured their rightful place in the structure of the retail network, increasing retail productivity. Of course, there is much more to be done in order to have a modern trade.

Trends in the development of retail in Serbia are basically favorable but changes are evidently slowed. Changes lead to a reduction of the gap between the Serbian retail sector compared to EU retailers although the pace is very slow. The slowdown in the process was impacted by the adverse macroeconomic conditions, in particular through the reduction of demand and the slowdown in the pace of retail development. The application of modern technologies in Serbian retail sector is not satisfactory. E-commerce is very modestly developed. Some retail formats are not even present in Serbian market, like big "category killers" (supermarket of toys, furniture, fashion goods, etc.), mainly because of the land use problems. Furthermore, legal framework for omni-channel retailing is quite hostile causing problem if somebody would like for example, to pay in one channel (online) and receive from other (store) and return to third (franchise store under the same banner). These and other obstacles prevent more aggressive development of retail sector.

However, retail is still one of the most advanced sectors of the Serbian economy. Along with this, the expected large investments in modern distribution centers were essentially lacking in recent years. Therefore, it is realistic to expect in the future significant investment in the development of both the wholesale and also retail network. In the future it is also realistic to expect the long-awaited investment by famous retail chains Lidl and Ikea.

Concentration in tourism sector

This chapter of the paper has been intended to provide statistical and empirical analysis of the Serbian travel agencies industry over the period from 2009 to 2014. The main sources of financial and other numerical data have been gathered from the Serbian Business Registers Agency. The structure of the research is based on a clear definition of the examined industry with specified product and geographical boundaries. Afterward, it will describe the market participants, their revenues and market shares (see Table 2). Furthermore, calculation of the concentration ratios will be presented, showing the change over time period from 2009 to 2014.

According to the International and Serbian Standard Industrial Classification of All Economic Activities, travel agency and tour operator activities include the activities of agencies, primarily engaged in selling travel, tour operators, transportation and accommodation services to the general public and commercial clients as well as the activity of arranging and assembling tours that are sold through travel agencies or directly by agents, such as tour operators. This description can be found under section 791 of the above-mentioned Classification. As the relevant market, in geographical terms, the whole territory of the Republic of Serbia is considered. Although most market participants are registered on the territory

Table 2: Operating revenues (turnover) and number of tourist (travel) agencies

	2009	2010	2011	2012	2013	2014
Operating revenues in 000 RSD	4,014,418	4,850,900	5,107,347	6,060,449	6,596,810	8,013,828
Operating revenues in 000 EUR	42,729	47,076	50,096	53,572	58,308	68,316
Number of tourist agencies*	537	537	526	525	522	515

* N.B. Tourism entities are generated from the Business Register on the basis of the codes of the core activities 7911 – activities of travel agencies.
Source: Serbian Business Registers Agency

of Belgrade, beneficiaries are from the entire territory of the Republic of Serbia.

In the observed period, there is a correlation between the turnover increase and decrease the number of tourist agencies. These results indicate that the process of concentration gradually changes the structure of tourism market. In the period from 2009 to 2014, turnover increased by 60%, while the number of travel agencies decreased by 4%.

The next point on which this paper is going to focus is the measures of concentration and competition in the tourism industry. Concentration measures (indicators) will be calculated taking into account the definitions as shown in Table 3.

These indicators are used in their standard, usually used form, so that they can be compared with the similar results from other markets. The full list of registered agencies was taken into calculation, including 515 active enterprises with recorded business activity in 2014 (of total number of 646 enterprises present in the register). The trends in various concentration measures during the period 2009-2014 are shown in Table 4.

Based on all indicators, it can be concluded that the market is poorly concentrated, i.e. it can still be considered as a fairly competitive market. When analyzing the same sector, in the UK is used CR5 indicator which measures concentration based on the market share of the five largest of companies in the industry. US analysts always use the share of the four largest companies in the industry. However, there is no rule about the number of companies that are observed in the concentration ratio.

If this indicator is used as the official parameter, the number of companies that are included in the calculation is determined by official state agency or commission. These differences can lead to problems of comparability. *Scherer & Ross* considered that if the CR4 value is greater than 60%, it is considered to have a strong oligopoly, while the CR4 value ratios between 40% and 60% indicate an oligopoly,

Table 3: Features of concentration measure

Concentration measure	Formula	Ratio range	Typical features
Concentration ratio	$CRn = \sum_{i=1}^{N} S_i$	0 < CRn = 1	Only takes into account large agencies
HHI	$HHI = \sum_{i=1}^{N} S_i^2$	1/n = HHI = 1	Considers all agencies, sensitive to entry of new ones
Rosenbluth Index	$R = \frac{1}{\sum_{i=1}^{N} S_i (2i - 1)}$	1/n = R = 1	Emphasizes the importance of the absolute number of agencies
Gini Coefficient	$G = 1 - \sum_{i=1}^{N} S_i \frac{(2i - 1)}{N}$	0 < G = 1	Accounts for all agencies in the market, shows inequality in the distribution
Comprehensive Industrial Concentration Index (CCI)	$S_1 + \sum_{i=2}^{N} S_i^2 (2 - S_i)$	0< CCI =1	Emphasizes the importance of market leader
Entropy Coefficient	$\sum_{i=1}^{N} S_i \log_e (\frac{1}{S_i})$	0 = EH = log n	Emphasizes the importance of small enterprises

Source: Adapted from [7], [2], [9]

Table 4: Trends in concentration indicators in Serbian travel agencies industry

	2009	2010	2011	2012	2013	2014
CR4	15.34%	17.47%	16.32%	23.28%	22.32%	28.52%
CR5	17.75%	20.15%	18.83%	26.11%	25.47%	32.45%
CR8	24.26%	26.41%	24.92%	32.31%	32.14%	41.32%
CR10	28.12%	30.03%	28.68%	35.62%	35.97%	45.63%
HHI	135.23	145.51	135.00	270.56	215.24	297.09
Rosenbluth Index	0.007	0.008	0.008	0.009	0.009	0.011
Gini coefficient	0.75	0.76	0.75	0.78	0.78	0.82
CCI	0.08	0.08	0.07	0.15	0.15	0.14
Entropy coefficient	5.05	5.00	5.03	4.77	4.80	4.52
Entropy coefficient limit value	6.29	6.29	6.27	6.26	6.26	6.24

while a value below 40% can be considers as competition [13]. The Serbian market of travel agencies, as measured by the standards of those authors, is a truly competitive market during all years of observation. However, a very visible upward trend of concentration in the observed period should be pointed out. Several forces induced these changes in this period. Some agencies emerged as the result of FDI and came at the top of the list. Some other merged or acquired other competitors. Also, some of them went out of the business due to bad results, leaving their market share to the competitors.

The Serbian Competition Law does recognize the implementation of the Herfindahl-Hirschman Index (HHI), as it represents not only a reliable indicator of the concentration level, but also the indicator of changes in the relevant market. HHI is the sum of squared market shares for all industry competitors. The fall of the HHI index level generally indicates a loss of power and increased price competition. Conversely, increase of it, implies the opposite effect. It represents a convex function of market shares and is therefore sensitive to inequality, which occurs in case of large differences in the size of the companies.

According to the Guidelines of the European Commission, it is considered that the markets to 1000 points are poorly concentrated market, from 1,000 to 2,000 points moderately concentrated, with over 2,000 points highly concentrated markets. However, the Commission does not always strictly adhere to standards proclaimed, but takes into account the specifics of each case (primarily local and regional markets) [6]. The US Department of Justice and the Federal Trade Commission generally consider markets where the HHI is less than 1,000 to be a competitive marketplace, where the HHI is between 1,500 and 2,500 points to be moderately concentrated, and markets in which the HHI is in excess of 2,500 points to be highly concentrated [20].

The *Herfindahl* Hirschman Index also shows an increasing trend during the observed period. The maximum value reached in 2014 (297), while the minimum value was in 2009 (135). Considering these values, it can be concluded that the tourist agencies market structure is quite competitive. Market structure is not even close to a moderately concentrated market.

The use of the rankings of companies as weights for the calculation of the index, starting with the smallest, makes the index unlike *CRn* sensitive to changes in the distribution of the companies by size [2]. Rosenbluth Index in all years indicates poorly concentrations. Rosenbluth Index underlines the importance of the absolute number of enterprises in determining the level of concentration. The value of this index means that this is the market with low entry barriers. Given the characteristics of the indicator, Rosenbluth Index is suitable to be also used in the industries with a few companies.

Gini coefficient in the observed period shows a tendency to increase. The maximum value is observed in the last year (0.82). The high value of the Gini index indicates a highly concentrated market, which is in contrast with other indicators. In fact, the Gini index shows that there is a small group of travel agencies with larger market share and a very large group of competitors with significantly smaller market share. Gini coefficient value confirms

the inequality in the market share distribution among competing travel agencies.

The values of Comprehensive Industrial Concentration Index reconfirm that the market of tourist agencies is poorly concentrated. Also, there is no considerable market leader on this market. Larger values of CCI index in the last three years are the result of the growth of the emerging market leaders. The largest share of leading agency (13.17%) was observed in 2012, while the least market share was in 2011 (4.76%). These variations warn that market structure is not stable and that competition is fierce with the strong impact on the market position of the agencies.

The higher entropy value means the higher degree of competitiveness. The entropy value has been decreasing over time, hence indicating a decreasing level of competition in the tourism sector. However, the value of this ratio in all the years is so close to the maximum value, meaning that the market of tourist agencies is very poorly concentrated. This market can be, again, considered as unstable from the point of travel agencies. The users of their services are free to choose and do not have costs when changing travel agencies.

TUI and Thomas Cook dominate the European tour operators market. Together in 2013, Europe's two leading leisure travel groups had combined market shares of over 50% in major source markets such as the UK, Scandinavia, the Netherlands and Belgium and more than 30% of the German market, being well ahead of other major tour operators [4]. The market share of German tour operators is presented in Table 5.

These data confirm the hypothesis of a mildly concentrated market in Serbia. In Serbian market in 2014, even the top 10 travel agencies and tour operators did not reach 50% market share (45.63%). One of the explanations for such a small level of concentration is, actually, a very small tourist market in Serbia, which does not attract big competitors. That is why market leaders are either local tour operators or more and more, tour operators from the key destinations of Serbian travelers: Turkey, Greece, Russia and even Tunisia. These competitors are not the most prominent competitors, meaning that Serbian tourist market is not served at the already top available level.

Table 5: List of top eight tour operators in Germany

Tour operator	Market share
TUI	16.90%
Thomas Cook	13.20%
DER Touristik	12.40%
FTI Group	8.10%
Alltours	5.60%
Alda Cruises	5.00%
Schauinsland-Reisen	3.70%
Small operators overall	35.00%

Source: [4]

Concentration on the retail FMCG market

Intensification of competition is a prerequisite for the development and formation of the modern structure of trade. The processes of trading companies' concentration and growth of market power in Serbia have intensified, especially in the retail market of fast moving consumer goods, that is, in retail trade in non-specialized stores with food, beverages and tobacco. In trade, particularly in retail, over the past two decades, there have been significant changes in the operations of companies from the European Union and Serbia. These changes have had a direct impact on market structure and the intensity of competition. Although the process of concentration is a general trend in European countries, market structure significantly differs primarily in the retail market of fast moving goods.

One of the important changes that happened recently is the shift of the power in marketing channels. In recent years, retailing sector is under strong pressure from concentrated manufacturers, suffering from decreasing of profitability. Trend from 2008, presented in Figure 1, indicates a sharp fall in operating profits, where in one dollar in 2008, retailers participated with only USD 0.31, while producers share was USD 0.69 [8].

Market pressure from the concentrated manufacturers can be considered as the response to the intense concentration in retail sector in former decades. Additional pressure is coming from the demand side. Consumers are even better equipped and able to search for the best price, the most convenient way to purchase chosen product, and to find the most comfortable place to be served. That is

why retailers are increasingly forced to invest in loyalty schemes and CRM strategies [1] and to invest in Big Data solutions [21] in order to profile customers and keep them from switching to another source of supply.

The market share of the five largest retailers of fast moving products in 24 European countries ranges from 26.55% in Poland to 82.25% in Norway, according to data for 2012. The level of concentration in the EU is still growing. However, in some countries with the highest levels of concentration, the process has reached its peak, while in some countries the concentration level has even started to fall slightly. In the period from 2009 to 2012, the average market share of the five largest retailers of fast moving products on the European market rose from 58.99% in 2009 to 60.23% in 2012. This phenomenon is especially pronounced in those countries where the level of concentration is lower than average. It is reasonable to assume that this pursuit of concentration will continue in the future, calling for more careful monitoring by the authorities in charge of market competition protection.

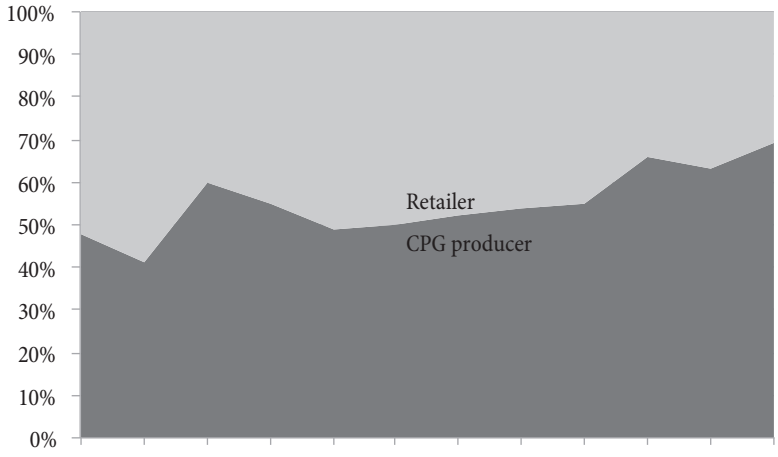
The market share of the five largest retailers of fast moving products in the Republic of Serbia in 2012 amounted to 56.23% and it is close to the European average. However, this conclusion should be interpreted with caution. Specifically, the relevant market of fast moving products in the Republic of Serbia consists of a large number of companies, but the share of modern retail formats is among the lowest in Europe. More than half of the turnover is achieved through small shops including independent shops. It is therefore necessary, in addition to index of concentration, to compare the value of Herfindahl-Hirschman index.

The values of the HHI index in 2012 in the EU countries vary from 1,170 in Italy up to 3,395 in Finland. In Finland, in addition, there was a high increase in the HHI in the period from 2004 to 2012 (4%). However, the differences are increasing at fastest pace in low-concentrated Polish (8.4%) and Czech Republic (5.1%) retail market. The largest increase in price competition accompanied with a decline of the HHI was recorded in Cyprus (-9.7%), Slovenia (-5.6%) and Bulgaria (-5.3%).

The retail market of fast moving consumer goods (FMCG) in Serbia is characterized by a very moderate level of concentration, taking into account the value of the Herfindahl-Hirschman index. On the basis of the Guidelines of the European Commission, it can be concluded that the market of modern retail in 27 European countries is moderately and/or highly concentrated. Until 2010, according to the European Commission, the retail FMCG market in the Republic of Serbia was considered to be very little concentrated. Looking at the data from 2012 up to now, the market can be considered as a moderately concentrated.

The main reason for the large increase in the HHI index in the Republic of Serbia was the significant growth of the market share of the largest retailers in 2012, given that the HHI index is very sensitive to the leading companies in the market. The average value of the HHI Index in 2012 for selected European countries was at the level of 2,159 points. Then, it can be concluded that the HHI value

Figure 1: Operating profit pool for consumer packaged goods



Source: [8]

in the Republic of Serbia (1,256 points) is far below the average. In the future, we should expect a continuation of the process of concentration, and accordingly, further increase of this indicator.

However, low level of the HHI in the Republic of Serbia certainly does not mean that the intensity of the competition is significantly higher, comparing with the majority of the EU countries. Top three retailers on the Serbian FMCG market, in 2012 realized market share of 48%. Then, in 2014 *Mercator* and *Agrokor (Idea)* merged. As a result, only two market leaders remained, keeping the similar market power as the three retailers before. High power distance between two leading retailers and the remaining followers actually does not ensure high level of competition. Sometimes, this cannot be noticed, looking at the customer treatment. But, if the treatment of the vendors would be taken into account, particularly the terms of trade, buying power of big retailers can be seen easily [10].

Serbian FMCG retail market is moderately concentrated, with slow but permanent striving of the big players to enlarge. In this moment, it can still be expected that customers will benefit of the joined, more efficient and better organized retailers. As a consequence of the competition, all big retailers are investing in logistics, IT, own label and even in food production and processing. Looking from that point of view, customers still could be considered as the beneficiaries of the merger and acquisition processes. The side that is squeezed by these processes is consisting of vendors. Future attention of the state authorities, therefore, should be focused on the supplier-retailer relationship, since the retailer-customer relationship still cannot generate some significant economic and social problems.

Conclusion

Both tourism and trade industries in the Serbian economy are waiting for new strategic documents that should encompass their development in the next five-year period. In the previous period, a lot of discussions have taken place about the competition and consumer protection. This paper was designed as the contribution to better understanding of the protection of competition on both markets.

When speaking about tourism, focus was on the tour operators and retail tourism agencies. Analysis has shown that no indicator points to concentration problem on Serbian tourism market. Very slow tendency of concentration can be identified from the HHI. However, the level of competition can almost be considered as a state of perfect competition. What is to be monitored on this market, as the advice to the authorities, is the impact and way of doing things in online transactions. These types of transactions sometimes remain invisible for the authorities and are out of range for the traditional instruments of market regulation. That is why traditional businesses, like agencies and hotels, sometimes do not understand the impact of the competition that is coming from the web competitors and sometimes complain about unfair competition. On average, more than one-third of all hotel rooms in Europe are nowadays bought online and this market share is growing rapidly. Online travel agencies, online review sites and (meta)search engines have converged more and more from the consumer's prospective. A rather new phenomenon, the co-called peer-to-peer platforms have popped up as strong competitors to the traditional market players. The number of relevant market intermediaries has recorded declining tendency.

As for retail market, the focus of this paper was on the FMCG sub-market, which obviously is one of the most important parts of the whole retail sector. Looking at eight standard indicators of market concentration on this market, it is possible to come to very similar conclusion that the retail FMCG market in Serbia has just recently become moderately concentrated, measured by the standards of EU Commission. Several mergers and acquisitions, performed in last five years actually pushed some of the indicators (CI5 and HHI) over the line that indicates the state of perfect competition. However, even on this market, regulating authorities need not to worry too much about retailer-customer relationship. What can be pointed out as the possible area of conflict is the supplier-retailer relationship, particularly the pattern of big retailers' behavior concerning the terms of trade.

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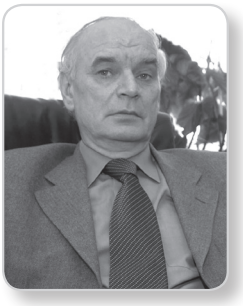

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INSURANCE AS A SOURCE OF FINANCIAL RESOURCES FOR ECONOMIC DEVELOPMENT

Osiguranje kao izvor sredstava za finansiranje ekonomskog razvoja

Abstract

The key function of insurance companies is to offer the indirect protection to policyholders and business of financial intermediation, that is institutional investing. The objective of insurance companies in their role as institutional investors is to achieve additional liquidity on financial market, maximise profit with an acceptable level of investment risk, collect small, fragmented amounts of free capital from policyholders and put it in the function of economic growth and development. The aim of the research done in this paper is to briefly but comprehensively present the role of insurance companies as institutional investors, to point out the importance that insurance has in economy and society and provide the necessary information and theoretical foundation for the adoption of policies and regulations, whose ultimate aim is to support the achievement of sustainable economic growth as well as sustainable and highly profitable growth of insurance companies. In order to achieve the stated objective, we analyze steps, goals and investment risks of insurers, theoretical overview and empirical experience in managing investment portfolios of insurance companies.

Keywords: *insurance companies, investments, portfolio, management, Serbia*

Sažetak

Ključna uloga osiguravajućih društava jeste obezbeđenje posredne ekonomske zaštite i obavljanje poslova finansijskog posredovanja, odnosno institucionalnog investiranja. Cilj osiguravajućih društava kao institucionalnih investitora je da obezbede dodatnu likvidnost na finansijskom tržištu, maksimiziraju profit uz prihvatljiv nivo investicionog rizika te prikupe sitan, slobodan kapital i stave ga u funkciju privrednog rasta i razvoja. Namera istraživanja sprovedenog u ovom radu je da sažeto prikaže celovitost uloge osiguravajućih društava kao institucionalnih investitora, da ukaže na značaj koji osiguranje ima u privredi i društvu i omogući neophodnu informisanost i teorijsku utemeljenost za usvajanje politika i regulativa čiji je krajnji cilj podrška ostvarenju održivog ekonomskog rasta, kao i održivog i visoko profitabilnog rasta osiguravajućih društava. U nameri da postignemo navedeni cilj analiziramo korake, ciljeve i rizike investiranja osiguravača, teorijski pregled i empirijska iskustva u upravljanju investicionim portfeljima osiguravajućih društava.

Ključne reči: *osiguravajuća društva, investicije, portfolio, menadžment, Srbija*

Introduction

The key role of insurance has always been that through the formation of risk communities, communities of individuals endangered by same risk, provide protection against risks that threaten individuals' property and lives. The primary function of insurance in the modern economy is precisely the function of protection and preservation of assets. In the field of protection against risks the one of the key roles of insurance is to preserve the financial health of small and medium-sized enterprises. Security of individuals, but more importantly, the security of sustainable survival and development of small and medium-sized enterprises is an important element that contributes not only to economic development but also to political stability of any country. However, reserve management in the context of limitation of exposure to risks on the one hand and the search for investment returns in the financial markets on the other, is a basic prerequisite for optimisation of performances of insurance companies and a key step in their risk management. Income from investments enable insurance companies to better manage the risks undertaken from their policyholders and on the basis of the generated revenue from investments to offer a lower premium and become more competitive in the market. So, in addition to direct benefits in terms of protection against the risk, there are many other benefits of insurance.

Thanks to the existence of insurance cover individuals will not have to have access to a relatively large reserve funds, but these funds they can use more profitable. Individuals can use these funds for investments in financial markets, thus indirectly contributing to the development of the financial markets. Insurance allows individuals to own their own property and have a positive impact on the increased amount of purchases, thus indirectly it stimulates economic activity, as consumption is the main driver of economic growth and development. Insurance benefits economy directly through the profits of insurance companies and employment, both within the insurance sector and beyond. In Europe, for example, the insurance sector was represented by 5357 companies that were directly employing 940,000 people in 2013 [1]. Insurance companies have achieved EUR 1,117 billion in gross written premium. Only in the UK the insurance industry employed about 314,400 people in 2014 [8] and in the US in 2013 there was 6086 companies employing 2.4 million people [7]. In the UK insurance companies have directly contributed to the growth of the gross domestic product for GBP 25 billion and paid taxes in the amount of GBP 11.8 billion. In the US, insurance and support activities accounted for 2.5% of gross domestic product. Insurance companies indirectly employ about one million agents, insurance brokers and financial intermediaries. Also, the insurance industry indirectly affects the greater employment within all of companies with which insurance companies cooperate such as companies that provide services in the field of information technology [1].

The growing institutionalisation of financial savings combined with the growing importance of the role of pension and investment funds and insurance companies, represents the most important change in the financial markets in recent times. In fact, since the mid-twentieth century insurance companies are becoming more common in the financial markets as institutional investors. The degree of institutionalisation of financial savings and the role of insurance companies varies from country to country. It is particularly pronounced in developed countries such as US, UK, Germany and others. In these countries insurance companies mobilise massive resources and have an important role in financial markets. The investment function of insurance and reinsurance companies is enabled by the fact that premiums are collected in advance and can be invested until the need for claims payment arises. In this way, insurance and reinsurance companies are an important element of the structure of the financial system. Adequate attention must be given to insurers' importance and their functions in the role of institutional investors and to the structure of investment portfolios, either life or non-life insurance companies.

The role of insurance companies as institutional investors also varies from country to country. Insurance companies have been the largest institutional investors in the European Union for years. For example, in 2013 the total volume of investments of insurance companies was over EUR 85,27 billion, which represents roughly 59% of the total gross domestic product of all the countries of

the European Union together [6]. Insurance companies in Europe have about 25% of all government bonds issued by member states of the European Union, about 21% of all European corporate bonds as well as a significant part of all quoted shares and assets such as infrastructure [6]. Also, insurance companies in Europe, according to data from 2011, owned about 11% of bank debt in the Eurozone, 24% of the public debt of the EU countries, 18% of the total shares and 14 mortgage bonds. Also, insurance companies invested in infrastructure projects around EUR 11.7 billion in direct loans to small and medium enterprises in the amount of about EUR 14.1 billion and private shares (shares that are not quoted on the stock exchange) in the amount of about EUR 18.9 billion. Insurance companies from Europe manage around 12% of the total global financial assets. About 62% of the total investments of insurance companies from the European Union belong to the insurance companies from the UK, France and Germany [1]. Figure 1 shows the share of insurers and other institutional investors in Europe in 2011.

The intention of the research done in this paper is to briefly show the role of insurance companies as institutional investors, to point out the importance that insurance has in the economy and society and to provide the necessary information and theoretical merits for adopting policies and regulations whose ultimate aim is to support the achievement of sustainable economic growth as well as sustainable and highly profitable growth of insurance companies. In order to achieve the stated objective we analysed the steps, objectives and risks of insurers' investments, we present the theoretical review and empirical experience in managing investment portfolios of insurance companies.

Steps, objectives and risks of insurers' investments

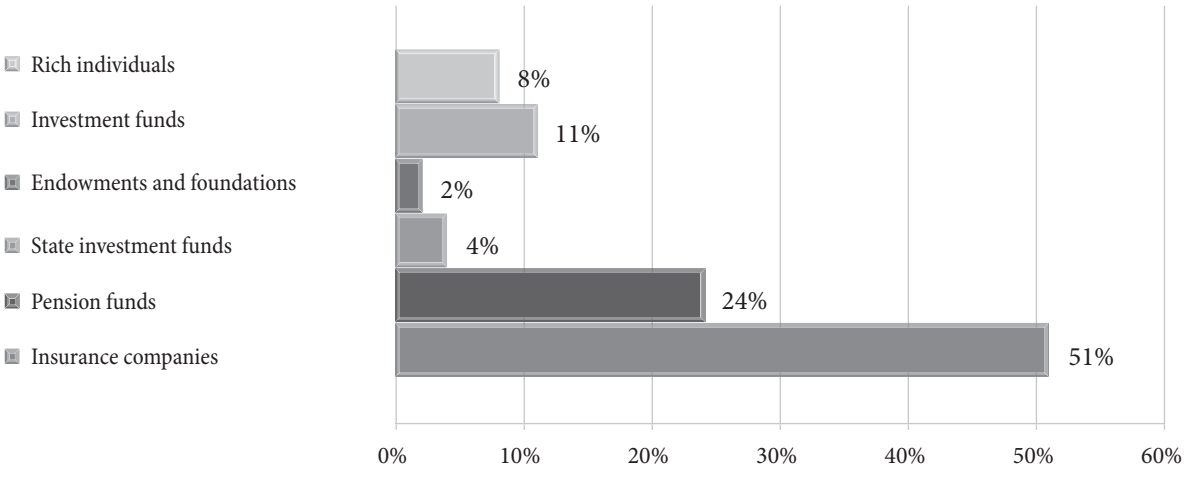
Investment management of insurance companies should include the following five steps:

The first step in the process of investment management is to set investment targets that the insurance company needs to achieve. The primary investment objective is to provide the optimal balance between risk and return, and on this basis to create value and ensure security for insurance companies, their shareholders, policyholders and the economy as a whole.

The second step is to define the investment policy in order to achieve the set investment goals. Setting policy begins with the conception of funds allocation in the main asset classes or capital markets products. The basic classes are the shares, fixed income securities, real estate and foreign securities.

The third step is to select the investment management portfolio strategy that specifies the chosen investment policy and strives to achieve goals. Portfolio strategies can be classified into active, passive and mixed (including elements of active and passive strategies). The expectations for factors that are expected to have an overriding influence

Figure 1: Insurance companies are the largest institutional investor in the EU



Source: [4, p. 12]

on the performance of certain asset classes are essential for all active strategies. Passive strategies include minimal expectations and the most popular of them is the indexing strategy. The aim is to replicate the performance of the leading index in the market. Indexing is mainly used for shares and its application to fixed income securities is of a recent date. Structural portfolio strategies are used for fixed income securities. These strategies can structure the portfolio so as to obtain the performance of one of leading benchmarks.

When portfolio strategy approach is selected, insurance company approaches to selection of assets that will be included in the portfolio. The optimal portfolio is the one that provides the highest yield at a given level of risk or the lowest risk for a given level of return.

The last step of the process of investment management is the measurement and evaluation of investment performance. In addition to the basic principles of the business of insurance companies, there are four basic principles of investing that insurance companies must respect when making investment decisions: 1) maximising the rate of return on invested assets, 2) maximising investment security, 3) the balance of investments with the obligations of the insurance company, and 4) satisfaction of the regulatory requirements (in essence, the maintenance of solvency).

Investment activities of insurance companies represent a significant source of their income, especially in developed countries. For example, a long-standing practice in the US insurance market is the achievement of negative results from insurance operations, i.e. the realisation of the unfavourable combined ratios. In such circumstances, insurance companies profit is based on the profitability in their investments. Yields on investments of insurance companies include interests and dividends and a capital gain or loss, which is the difference between the buying and the selling value of investments. As indicators of the profitability from insurers' investments they use the share of investment profit in the premium earned and share of the investment profit in the average invested assets.

The ratio of investment is an indicator that measures the share of the return on investment in the premium earned. It is calculated as follows:

$$(1)\quad \text{The ratio of investment} = \frac{\text{The investment return}}{\text{Premium earned}}$$

This indicator is used by non-life insurance companies in order to obtain the ratio of investment return to earned premium. This indicator shows the efficiency of the investment policy applied by the insurance company.

Life insurance companies in order to measure the profitability of investments use the following ratio:

$$(2)\quad \text{The ratio of investment of life insurers} = \frac{\text{The investment return}}{\text{The ratio of investment of life insurers}}$$

This indicator shows the efficiency of investment policy applied by life insurance company.

All risks in the money and capital markets can be divided into two groups [2]:

1. Risks that have market and economic nature (economic conjuncture, market conditions, instability, technical advances, credit, foreign exchange and monetary policy, trade policy, the degree of social control, business relations, etc.) and
2. Risks that have speculative character (large and unexpected fluctuations caused by stock exchange speculations).

Risks in the financial markets involve a number of risks, including interest rate risks, exchange rate risks, futures risks, inadequate financial regulation, the risks of money transfer and payments, the risks of false information and pure speculation, currency restrictions and currency controls, etc. The most common and also the basic forms of risks are [2]:

1. Financial risk is the primary risk for all financial instruments. Commonly it is referred to as credit risk, and is linked to the non-performance of credit obligations, either in whole, or in part. The loss can be total or partial. Financial risk of investments in shares occurs in the form of poor results of the company that issued the shares, so there is a risk that investor will not realise dividends. Investors are particularly sensitive to the degree of risk, so there are specialized agencies that determine

the rating of securities.

2. Liquidity risk arises when a financial instrument cannot be sold before the final maturity date, when the instrument cannot be converted into cash. The degree of liquidity is determined by the relationship between the maximum expected price and the market price that could be obtained by selling in a relatively short period of time. Uncertainty regarding the selling price and easiness of transformation into liquid form (money) directly affects the liquidity risk.
3. The risk of purchasing power is related to the business conditions in the financial market when there is a higher rate of inflation. This risk is present in a lot of long-term securities with a fixed interest rate. The real interest rate then falls significantly below nominal.
4. The price risk is directly related to the market value of financial instruments that is affected by changes in interest rates and exchange rate changes.

Portfolio management of insurance companies

Basically portfolio management is the selection of the type of assets in which insurance companies will invest. Placements of insurance companies may be varied but they are never in just one form of assets. The investments can be with fixed or variable yields, in financial or real assets, long-term or short-term, more or less liquid. In addition, the maturity structure of investments is conditioned by the function and purpose of the technical provisions of insurance companies (see Table 1). It is necessary to answer the question of where to place financial resources to achieve the set goals of investment. In order to give an answer to the question of constructing an investment portfolio it is necessary to have knowledge of the basic elements that determine a decision, such as: interest rate, yield and risk.

Investing in any form of assets is motivated by the logic of capital, that is the need of capital to be increased. However, the return may or may not be achieved. There is, therefore, the uncertainty of the outcome of investments that can manifest itself with more results, whose variability can be measurable. This is about investment risk. Any investment implies the conditionality between return and risk. Based on the expected return and risk (yield adjusted by the level of uncertainty) investor can adequately compare the available alternatives. The expected yield represents the equivalent of the average yield adjusted to the probability of its realisation: Expected return , where R_i – possible income and p_i – the probability that income will be realised. Investment risk is measured by the standard deviation of future returns relative to the expected return on investment. If the standard deviation is zero, then the investment is without risk. Investors seek to achieve maximum yield at a given level of risk or minimal risk with a given level of return. If there are different investment yields but also a selection of different risk investment alternatives will depend on the preferences of investors.

Modern portfolio theory was established by *Harry Markowitz* in 1952. Portfolio theory explores how investors with different risk aversion construct portfolios in order

Table 1: Insurers' investment strategies are determined by characteristics of their liabilities (reserves)

Type of obligation	In billion EUR (in 2011)	Durability of obligations	Demanded liquidity	Target return	Typical investment strategy
Non-life	890	Typically, 1-5 years	Medium, no redemption value	No guaranteed return	Short-term investments, liquid
Life insurance, insurer takes investment risk	2820	Typically, > 8 years	Low, insurance interruption is charged	Frequent investment guarantees	Long-term investments, orientation on high returns
Life insurance, inured takes investment risk	1670	Typically, 5-8 years	High, insured can switch funds and insured amount is paid	Returns based on chosen fund	Flexible investments, based on return maximisation that depends on insured's investment risk tolerance

Source: [4, p. 14]

to optimise expected returns for a given level of market risk. Theory proves the benefits of diversification. The aim of creating a portfolio is the minimisation of risk through diversification of investments. The essence of the portfolio is precisely to diversify risk and reduce the overall risk to the insurance company as an investor. By creating a portfolio combining two or more elements, the individual returns and risks are compensated so that the risk of the portfolio is less than the risk of each element.

When creating a portfolio there are numerous possible combinations of different assets. It is necessary to have all the data on yields of certain types of investments as well as on their risks (which are expressed through the measure of the standard deviation). Portfolio theory defines a mathematical model for the selection of shares that should be making the basket [3]. The most important result stemming from the portfolio theory is that by constructing a portfolio of shares investor can reduce the risk and still keep the weighted average rate of return on individual securities. For these reasons, it is possible that an investor, institutional or individual, determines the group of securities that contribute to the formation of portfolio that suits best to the investor's attitude towards risk.

The most effective risk reduction is achieved when selected securities are not correlated. If it is possible, it would be best to choose securities that are negatively correlated. By increasing the number of shares that are not correlated the level of risk of the entire portfolio is reduced when it contains 20 different shares, when virtually all risk specific to a particular share is eliminated [3]. Portfolio management includes the pricing of risk, or determining how much the risk of investment in the market portfolio produces returns relative to risk-free elements of the portfolio as well as which combination of elements (risk and non-risk) creates optimum yield in relation to the total (market) risk of the portfolio. Numerous models have been developed, such as the CAPM (capital asset pricing model) and APT (arbitrage pricing theory).

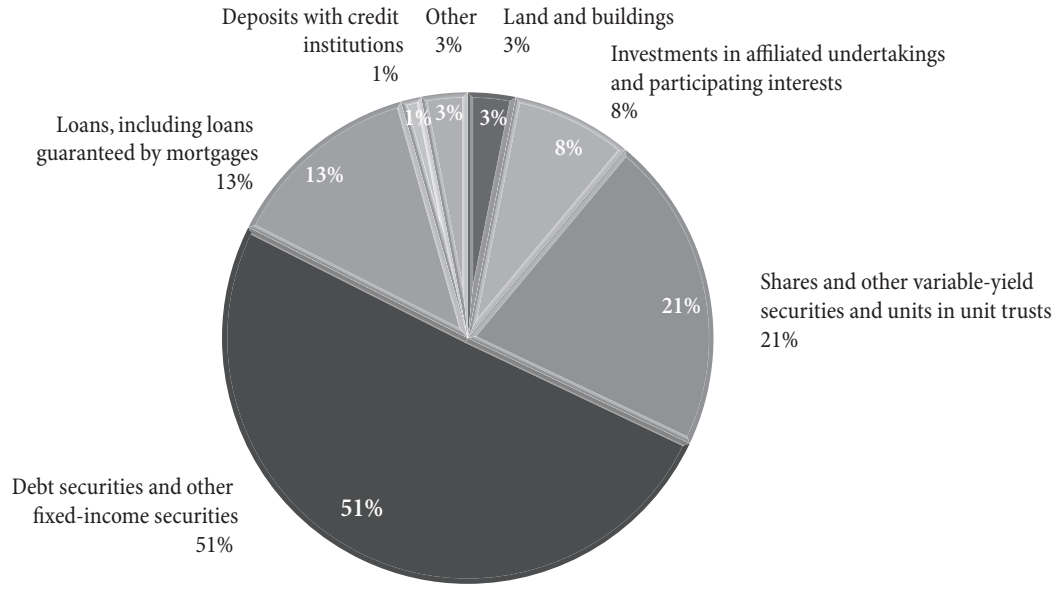
European insurers' portfolio investment structure is presented in Figure 2.

The figure shows that the insurance companies in Europe mostly invested in bonds, other debt securities, shares and other securities with variable yields.

Characteristics of investment portfolios of non-life insurance companies

Non-life insurance is divided into property and liability insurance. The main characteristic of non-life insurance is that the occurrence of the insured event is less predictable in relation to life insurance. The lower predictability of occurrence of the insured event results in lower insurance provisions available for investments and accordingly the ways of investing these reserves are different from the

Figure 2: The structure of investments of insurance companies in Europe in 2012



Source: [5]

patterns of life insurers. The risks are greater in money terms than in life insurance. Also, the risks of non-life insurance are not independent but are usually correlated, for example, in large natural disasters that results in a high concentration of risk.

Another important difference between non-life and life insurance that impacts insurers' investments is the duration of insurance contracts. The most of non-life insurance policies are issued for a period of one year. This results with assets dominated by cash and investments. In their portfolios bonds and common shares are the most present securities. The structure of investments of non-life insurers in the United States in the period from 2004 to 2013 is presented in Table 2.

In the structure of investments of non-life insurance companies in the US the domination of investments in bonds and shares is obvious. The investments in bonds and shares throughout the whole observed period account for around 80% of total investments.

The investment strategies of insurance companies in Slovenia are relatively liberal when compared to other countries in the region of former Yugoslavia. We believe that the reason for liberal investment policy of non-life insurance companies is in Slovenia Insurance Act [12] and high-quality of risk management. The structure of investments of non-life insurance companies in Slovenia is shown in Table 3.

The structure of the investment portfolios of non-life insurers in Slovenia, in the period from 2004 to 2013, shows the relative conservatism. Over 50% of total investments are investments in government securities and debt securities, that is, in securities with zero or relatively

Table 2: The structure of investments of non-life insurance companies in the USA during the period 2004-2013

	2004	2005	2007	2008	2009	2010	2011	2012	2013
Bonds	**67.18%**	68.38%	65.95%	68.38%	68.82%	66.39%	67.26%	65.34%	62.55%
Shares	**19.44%**	18.33%	19.19%	16.60%	18.04%	17.17%	17.80%	19.16%	22.14%
Preferred	1.47%	1.01%	1.52%	1.80%	1.50%	1.34%	0.87%	0.86%	0.78%
Ordinary	17.98%	17.32%	17.66%	14.80%	16.54%	15.84%	16.94%	18.30%	21.36%
Mortgages	**0.30%**	**0.29%**	**0.39%**	**0.44%**	**0.36%**	**0.32%**	**0.37%**	**0.41%**	**0.54%**
First liens	0.29%	0.28%	0.37%	0.41%	0.33%	0.30%	0.36%	0.39%	0.53%
Other than first liens	0.01%	0.01%	0.02%	0.03%	0.02%	0.02%	0.02%	0.02%	0.01%
Real estate	**0.89%**	**0.83%**	**0.79%**	**0.86%**	**0.81%**	**0.74%**	**0.77%**	**0.75%**	**0.67%**
Properties occupied by company	0.74%	0.70%	0.66%	0.74%	0.70%	0.65%	0.66%	0.65%	0.57%
Properties held for income production	0.10%	0.09%	0.09%	0.10%	0.09%	0.08%	0.09%	0.09%	0.08%
Properties held for sale	0.04%	0.04%	0.04%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%
Cash, cash equivalent and short-term investments	**8.57%**	**8.11%**	**7.09%**	**8.00%**	**6.96%**	**6.53%**	**5.41%**	**5.95%**	**5.65%**
Derivatives	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**0.05%**	**0.05%**	**0.04%**	**0.04%**
Other invested assets	**3.62%**	**4.06%**	**6.59%**	**5.72%**	**5.01%**	**8.80%**	**8.34%**	**8.35%**	**8.41%**

Source: Insurance Information Institute

Table 3: The structure of investment portfolio of non-life insurance companies in Slovenia during the period 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Government securities	30.60%	37.60%	38.70%	33.40%	26.10%	27.60%	26.80%	25.20%	30.40%	33.30%
Real estate	3.70%	3.20%	1.50%	1.50%	2.60%	2.70%	2.50%	2.10%	2.30%	2.20%
Loans	2.60%	1.50%	1.40%	1.60%	1.40%	2.10%	2.10%	3.10%	2.00%	1.90%
Debt securities	17.60%	17.50%	19.70%	24.10%	22.10%	17.80%	20.90%	24.20%	27.10%	28.80%
Shares	19.40%	16.50%	20.00%	20.60%	15.00%	13.60%	12.80%	10.60%	9.30%	7.90%
Bank deposits	15.20%	13.60%	9.70%	7.20%	8.10%	11.30%	13.30%	16.20%	10.30%	6.50%
Other investments	10.90%	10.20%	9.00%	11.60%	24.70%	24.90%	21.60%	18.60%	18.60%	19.40%

Source: Insurance Supervision Agency

low risk. However, if compared with the investments of non-life insurance companies in other countries of the former Yugoslavia, it is notable that Slovenian insurers invested more in shares in the first half of the period. Certainly, there has been a downward trend in the share of shares in the structure of the investment portfolio during the second half of the observed period.

Transactions in financial markets in Croatia are realised within the framework of a regulated market in this country – the stock exchange in the capital Zagreb. Securities traded on the Zagreb Stock Exchange are shares, bonds, rights and commercial papers. Investment activities of insurance companies are regulated by the Insurance Act [10] which was adopted in 2015 and which entered into force in January 2016. This law regulates the different investment of technical reserves that were not regulated in the observed period. The structure of investments of insurance companies is shown in Table 4.

The structure of the investment portfolio of non-life insurance companies in Croatia shows the conservatism of investment due to the high share of real estate and deposits. However, during the period there has been a growth in the share of investments in securities while reducing investments in deposits and especially in real estate. The greater prudence in investments appears only in 2008.

Investments of insurance companies in Serbia are regulated by the Insurance Act [11] as well as by the Decision on investment of insurance provisions [9]. Table 5 shows the structure of investments of non-life insurance companies in Serbia during the period from 2004 to 2013.

Investment structure of non-life insurance companies in Serbia shows a high share of bank deposits. This type of investment is considered to be low risk, but also a form of investment with minimal returns. It is common when insurance companies do not have more convenient and profitable alternative. Also, there is conservatism in investments shown in the continued growth of investments in government securities. In addition, there is an unusual high proportion of cash in the portfolios.

Characteristics of investment portfolios of life insurance companies

Life insurance companies' available resources for investments are gained from the sale of life insurance policies, which have insurance and savings elements. In developed economies,

Table 4: The structure of investment portfolio of non-life insurers in Croatia during the period 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Securities	25.50%	26.50%	30.40%	34.60%	27.90%	34.50%	38.70%	40.90%	42.50%	46.60%
Deposits	14.80%	19.60%	16.60%	18.00%	20.90%	16.00%	16.90%	14.70%	15.80%	12.60%
Real estate	30.30%	27.50%	20.50%	14.40%	16.40%	15.00%	16.80%	15.90%	15.30%	15.30%
Equity and investment fund shares	n.a.	n.a.	9.40%	11.20%	6.10%	7.80%	8.80%	6.40%	8.50%	8.50%
Loans	12.20%	9.50%	8.00%	7.80%	14.30%	13.30%	8.20%	7.40%	4.70%	5.60%
Other	17.20%	16.90%	15.10%	14.00%	14.40%	13.40%	10.60%	14.80%	13.20%	13.20%

Source: Croatian Agency for Supervision of Financial Services

Table 5: The structure of investment portfolio of non-life insurers in Serbia during the period 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bank deposits	n.a.	13.00%	28.00%	27.00%	30.00%	27.00%	32.00%	29.00%	21.00%	19.70%
Cash	n.a.	n.a.	n.a.	n.a.	20.00%	21.00%	14.00%	12.00%	13.90%	14.50%
Premium receivables that are not due for payment	n.a.	n.a.	n.a.	n.a.	12.00%	10.00%	9.00%	10.00%	7.10%	6.30%
State securities	n.a.	n.a.	14.00%	10.00%	10.00%	16.00%	24.00%	29.00%	35.60%	38.90%
Shares	n.a.	n.a.	17.00%	20.00%	7.00%	8.00%	6.00%	3.00%	n.a.	n.a.
Real estate	n.a.	30.00%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Others	n.a.	57.00%	41.00%	43.00%	21.00%	18.00%	15.00%	17.00%	22.40%	20.60%

Source: National Bank of Serbia

in addition to classic life insurance new products of life insurance with investments have been developed. Life insurance companies in the United States (and in other developed insurance markets) have two parts in their balance sheets. One is the main account and the other part belongs to separate accounts. Separated accounts are based on the allocation of provisions where policyholders bear the investment risk. Regulations regarding the restriction of investments are directed to the main account and the investments from this account are limited.

A key feature of life insurance is its long-term nature. On the basis of the concluded life insurance contracts (which are rarely concluded for periods of less than 10 years) the mathematical provisions are formed. Mathematical provisions are the source of long-term funds for long-term investments. They represent the funds of highest quality. The structure of investments of life insurers in the United States in the period from 2004 to 2013 shows Table 6.

Table shows that life insurers invested primarily in bonds during the observed period. During the entire period, investments in bonds exceeded 70% of total investments. Mortgage loans have a significantly higher share of investments in relation to the non-life insurers in the United States during the same period.

The structure of investments of the life insurance companies in Slovenia during the period from 2004 to 2013 is displayed in Table 7.

Investment structure of life insurance companies in Slovenia in the observed period shows a high conservatism of investments in early period, when the portfolio was

Table 6: The structure of investment portfolio of life insurers in the USA during the period 2004-2013

	2004	2005	2007	2008	2009	2010	2011	2012	2013
Bonds	**75.88%**	**76.61%**	**73.26%**	**71.27%**	**74.62%**	**75.93%**	**75.34%**	**74.65%**	**74.70%**
Shares	**3.68%**	**3.52%**	**4.78%**	**3.79%**	**2.37%**	**2.41%**	**2.33%**	**2.29%**	**2.31%**
Preferred	1.20%	0.91%	2.22%	2.12%	0.38%	0.28%	0.24%	0.23%	0.24%
Ordinary	2.47%	2.61%	2.56%	1.68%	1.99%	2.12%	2.09%	2.06%	2.07%
Mortgages	**9.85%**	**9.87%**	**10.67%**	**10.87%**	**10.28%**	**9.61%**	**9.61%**	**9.85%**	**10.14%**
First liens	9.81%	9.83%	10.60%	10.79%	10.19%	9.55%	9.56%	9.78%	10.05%
Other than first liens	0.04%	0.05%	0.07%	0.08%	0.09%	0.07%	0.06%	0.07%	0.09%
Real estate	**0.72%**	**0.68%**	**0.66%**	**0.67%**	**0.63%**	**0.62%**	**0.61%**	**0.63%**	**0.64%**
Properties occupied by company	0.22%	0.19%	0.20%	0.20%	0.20%	0.18%	0.17%	0.16%	0.16%
Properties held for income production	0.46%	0.46%	0.43%	0.46%	0.42%	0.43%	0.13%	0.45%	0.46%
Properties held for sale	0.05%	0.03%	0.03%	0.01%	0.01%	0.01%	0.01%	0.02%	0.03%
Cash, cash equivalent and short-term investments.	**2.76%**	**2.21%**	**2.68%**	**4.86%**	**4.00%**	**2.98%**	**2.97%**	**3.13%**	**2.72%**
Derivatives	**3.91%**	**3.80%**	**3.84%**	**3.92%**	**3.91%**	**3.86%**	**3.75%**	**3.74%**	**3.69%**
Other invested assets	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**0.68%**	**1.32%**	**1.22%**	**1.09%**
Bonds	**3.20%**	**3.31%**	**4.11%**	**4.62%**	**4.82%**	**4.53%**	**4.07%**	**4.49%**	**4.71%**

Source: Insurance Information Institute

Table 7: The structure of investment portfolio of life insurers in Slovenia during the period 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
State securities	50.10%	46.10%	43.40%	34.30%	38.10%	37.10%	33.90%	30.80%	32.90%	33.40%
Real estate	0.10%	0.20%	0.10%	0.10%	0.30%	0.30%	0.60%	0.70%	0.70%	0.80%
Loans	1.00%	0.80%	0.40%	0.30%	0.50%	1.70%	1.60%	1.60%	1.40%	1.40%
Debt securities	26.40%	27.70%	28.30%	30.50%	32.30%	26.70%	26.30%	26.80%	25.80%	26.20%
Shares	12.50%	16.80%	22.50%	28.50%	21.30%	26.70%	29.40%	29.10%	31.50%	32.30%
Bank deposits	9.70%	35.20%	4.70%	5.60%	6.40%	6.00%	7.10%	9.50%	6.30%	4.60%
Others	0.30%	0.20%	0.60%	0.70%	1.10%	1.50%	1.10%	1.50%	1.40%	1.30%

Source: Insurance Supervision Agency

dominated by government securities and debt securities. There is continuation of conservatism during the period. End of period is characterised by significant growth of participation of shares and a decline of the share of government securities. This trend reflects the search for profitable opportunities in relation to low-risk investments in securities. The structure of investments of life insurers in Croatia in the period from 2004 to 2013 is shown in Table 8.

The structure of the investment portfolios of life insurers in Croatia shows a high prudence in investment of mathematical provisions. In fact, throughout the period the structure of the investment portfolio of life insurance companies in Croatia is dominated by securities of the Republic of Croatia and Croatian Bank for Reconstruction and Development, therefore low-risk securities with stable but relatively low yields. Also, deposits have a significant share. Equity investments have low share in total investments. The structure of investments of life insurance companies in Serbia in the period from 2004 to 2013 is presented in Table 9.

The structure of the investment portfolio of life insurance companies in Serbia is similar to the structure of investments of life insurance companies in Croatia. The basis of similarity is the dominance of investments of mathematical provisions in government securities, whose share in the structure of the investment portfolio at the end of the period reached almost 90%. The share of bank deposits is relatively high during the period and especially in 2008, 2009 and 2010, the years after the financial crisis.

Conclusion

The relevance of the theme arises from the fact that in emerging economies all potential development opportunities of insurance have not yet been sufficiently exploited. Insurance is particularly important for these countries in the area of long-term economic performance, supply of accumulated funds for long-term financing of economic development and an efficient allocation of economic resources. The need to accumulate financial savings in order to support economic growth through the mechanism of insurance, in conditions of limited capital stocks, excessive current balance deficit and external debt, for the countries of region of the former Yugoslavia is becoming increasingly important. The economic growth of Serbia (as well as of

Table 8: The structure of investment portfolio of life insurers in Croatia during the period 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Securities of the Republic of Croatia and Croatian Bank for Reconstruction and Development	77.60%	75.00%	65.70%	65.50%	68.40%	72.90%	75.90%	79.30	79.70%	83.40%
Deposits	10.20%	11.80%	15.60%	18.00%	20.20%	14.80%	10.60%	8.50%	7.90%	6.10%
Real estate	6.20%	4.50%	5.10%	2.50%	2.00%	1.50%	4.90%	2.90%	3.10%	4.30%
Equity and investment fund shares	n.a.	n.a.	8.30%	8.90%	3.90%	4.50%	2.90%	2.90%	3.10%	3.10%
Others	6.00%	8.70%	5.30%	5.10%	5.50%	6.30%	5.80%	6.40%	6.20%	3.10%

Source: Croatian Agency for Supervision of Financial Services

Table 9: The structure of investment portfolio of life insurers in Serbia during the period 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bank deposits	n.a.	n.a.	16.00%	12.00%	19.00%	20.00%	30.00%	12.00	7.80%	5.20%
Cash	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Receivables	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
State securities	n.a.	n.a.	n.a.	n.a.	71.00%	72.00%	59.00%	82.00%	85.70%	88.50%
Shares	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Other securities	n.a.	33.00%	57.00%	69.00%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bonds traded on a stock market	n.a.	30.00%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Others	n.a.	37.00%	27.00%	19.00%	10.00%	8.00%	11.00%	6.00%	6.50%	6.30%

Source: National Bank of Serbia

other countries in the region) in the previous period, even during the eighties when the self-managed economic system was not able to maintain some kind of economic growth, was financed on the basis of foreign borrowing in the form of loans from private or international financial institutions. Although during the first decade of the new millennium economic growth was financed by the inflows of FDI, according to representatives of the World Bank and leading local politicians it is not realistic to expect such developments in the future. The focus must be directed towards the improvement of the competitiveness of the domestic economy, export promotion, public sector reform and support of the most propulsive sectors and companies. As institutional investors, insurance companies can have the greatest influence on these changes.

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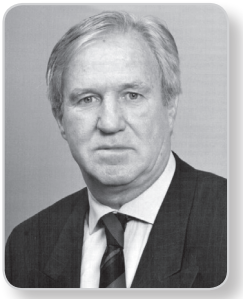

Boris Marović

was born in Le Havre, France. He graduated at the Faculty of Economics in Subotica, where he obtained his master's and PhD degree in the field of insurance market. He began to acquire his rich experience in ZOIL osiguranje, where he worked as an Associate Director of vehicle insurance. He was an Assistant Director General of Insurance company "Novi Sad" (1980), Director General of Vojvodina RE (1985), Deputy Director General of Dunav RE, Director of Main Branch of Vojvidina RE (1991-1995), Assistant General Manager of DDOR Novi Sad and Director of Reinsurance of Novi Sad RE (1995). He was Chairman of the Board of DDOR Novi Sad from 2004 to 2006. He passed all academic ranks from Assistant Professor to Full Professor at the Faculty of Economics, University of Novi Sad and held the title of Full Professor of the Faculty of Technical Sciences in Novi Sad. Prof. Marović taught at the undergraduate and graduate studies at the Faculty of Economics, University of Novi Sad, Faculty of Engineering and the Faculty of Business in Services in Novi Sad, Faculty of Economics in Podgorica, Nis, Kragujevac, Belgrade and the BK University. According to the Decision of the Federal Secretariat for Research and Development in 2001 he was appointed as an expert on insurance, transportation and shipping. He was President of the Association of Economists of Vojvodina, the Serbian Association of Economists (two terms) and President of the Association of Economists of Serbia and Montenegro. He was the Coordinator for master/graduate and doctoral studies at the Faculty of Technical Sciences in Novi Sad. Currently he teaches at the University of Banja Luka, Faculty of Economics. He is a member of the Presidency of the Serbian Association of Economists and member of the Board of Directors of Association of insurance and reinsurance companies of former Yugoslavia. He is also Editor in Chief of Svet osiguranje, insurance magazine. He is the only author of 11 and co-author 19 books and over 150 scientific papers in the field of insurance, transportation and shipping. He lives and works in Novi Sad.

Vladimir Njegomir

was born in Novi Sad in 1977. He earned his master's and doctoral degrees in the field of risk management and insurance. He was awarded as the best student of the generation at the Faculty of Economics in Subotica. After completion of graduate studies within the stipulated time, he was employed as an Economic Analyst in a software company based in London, where he worked for nine years as business analyst, specialized in the insurance business analyses. Also, he worked as an Adviser in the department for strategic planning, corporate governance and business analysis at company Dunav osiguranje. In 2016, he was appointed Associated Professor at the Faculty of Law and Business Studies in Novi Sad, where he teaches Insurance, Risk Management in Insurance, and Entrepreneurship. He participated in six projects and 22 scientific conferences at home and abroad. He is the sole author of two books, co-author of four books and author or co-author over 140 scientific papers in the field of risk management, insurance and reinsurance, both at home and abroad. He published in journals such as The Geneva Papers on Risk and Insurance – Issues and Practice, Transformations in Business & Economics, Economic Thought and Practice, Economic Research, Economic Annals and Economics of Agriculture. He speaks English. He lives and works in Novi Sad.

Dragan Marković

was born in Pula. He graduated from the Faculty of Traffic and Transport Engineering, University of Belgrade. He earned his master's and PhD degree from the Faculty of Technical Sciences, University of Novi Sad. The theme of his master thesis was: "The importance and function of management in risk management in the regulation of losses in insurance". The PhD thesis was: "Implication of climatic changes on catastrophe losses in insurance". In his career he held various positions: Officer at JP PTT "Srbija", Assistant Director of working unit "Novi Sad" of JP PTT "Srbija", Director of the Centre for cable distribution system at JP PTT "Srbija", Manager for transport at "Pivara Čelarevo" a.d., Director of main branch "Autoosiguranje" Beograd in DDOR "Novi Sad" a.d.o., Manager of main branch "Beograd" at DDOR Novi Sad a.d.o., and Regional Director at DDOR "Novi Sad" a.d.o. Currently he holds the position of General Director of "Triglav osiguranje" a.d.o. Beograd. He is author and co-author of seven papers in the field of climatic changes and catastrophic events. He is married. He speaks English. He lives and works in Belgrade.

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