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GOING FORWARD: PUBLIC SECTOR REFORMS AND LOCKING IN BALANCED BUDGET IN SERBIA

Kako dalje – reforme javnog sektora i „zaključavanje" uravnoteženog budžeta u Srbiji

Abstract

From an enormous fiscal deficit in 2014 (6.6% of GDP, i.e. 2.2 bn euros), Serbia practically reached a structurally balanced budget in 2017. However, indisputable achievements aside, the implemented fiscal consolidation has numerous weaknesses (absence of reforms, greater reliance on revenues than on savings). This is why public finances in Serbia, regardless of its excellent, balanced budget, are still not completely well ordered, nor are they growth-promoting; this is where Serbia is seriously lagging behind other comparable Central and Eastern European countries. Looking forward, the most important fiscal policy objective, which would prevent any future risks and allow for faster economic growth, is to have a balanced budget become the "new normal" in the upcoming five to seven years. In addition, the key shortcomings of the current fiscal policy have to be corrected, i.e. necessary public sector reforms have to be implemented and business climate improved (most of all, the rule of law). In the second part of the paper, we analyse, again, the reliability of official data on the unusually high employment growth in Serbia, occurring, allegedly, with low GDP growth, using 2012-2017 data. The length of the available data series allows us to consider the issue with greater reliability. By using comparative and other analyses, we demonstrate that there are still indisputable issues with the official statistical monitoring of employment trends, i.e. that the Labour Force Survey is still unreliable.

Keywords: *fiscal consolidation, fiscal policy, public debt, credit rating, economic growth, employment, LFS*

Sažetak

Srbija je od ogromnog fiskalnog deficita u 2014. (6,6% BDP-a, odnosno 2,2 mlrd evra) stigla u 2017. do strukturno izbalansiranog budžeta. Međutim, sprovedena fiskalna konsolidacija osim nespornih dostignuća ima i brojne slabosti (izostanak reformi, veće oslanjanje na povećanje prihoda nego na uštede). Zbog toga javne finansije Srbije i pored odličnog, izbalansiranog, budžeta još uvek nisu potpuno uređene, niti podsticajno utiču na privredni rast po kom Srbija znatno zaostaje za drugim uporedivim zemljama Centralne i Istočne Evrope (CIE). Gledajući unapred, najvažniji cilj fiskalne politike koji bi predupredio buduće rizike i omogućio ubrzanje privrednog rasta jeste da izbalansirani fiskalni rezultat postane nova normalnost u narednih pet do sedam godina. Ali uz to, potrebno je i da se isprave ključni nedostaci dosadašnje fiskalne politike, odnosno da se sprovedu neophodne reforme javnog sektora i unapredi poslovni ambijent (pre svega vladavina prava). U drugom delu rada na seriji podataka od 2012. do 2017. ponovo analiziramo pouzdanost zvaničnih podataka o neuobičajeno visokom rastu zaposlenosti u Srbiji do kog navodno dolazi uz nizak rast BDP-a. Dužina raspoložive serije podataka omogućava da se ovo pitanje sada razmotri sa još većom pouzdanošću. Komparativnim i drugim analizama pokazujemo da nesumnjivo postoje problemi u zvaničnom statističkom praćenju kretanja zaposlenosti, odnosno da Anketa o radnoj snazi još uvek nije pouzdana.

Ključne reči: *fiskalna konsolidacija, fiskalna politika, javni dug, kreditni rejting, privredni rast, zaposlenost, ARS*

Introduction and main findings

In this paper, we analyse the results of fiscal consolidation (2015-2017) to map out, through its undisputed achievements, but also its numerous weaknesses, the future course for a fiscal policy that would prevent fiscal risks and boost economic growth. In the second part of the paper, we examine the unusually high employment growth in Serbia (still indicated by the official data), which is allegedly happening alongside a low growth of GDP. We demonstrate that there are still issues with the official statistical monitoring of employment trends.

From an enormous fiscal deficit in 2014 (6.6% of GDP or 2.2 bn euros), Serbia practically reached a structurally balanced budget in 2017. In addition to that, the fiscal adjustment in the 2015-2017 period is comparable to the well-known examples of ambitious and successful fiscal consolidations implemented by the Baltic countries and Romania after the global economic crisis had erupted in late 2008. However, Serbian fiscal consolidation had some specific characteristics with important implications for the sustainability of the results achieved so far, as well as for future economic growth. Namely, indisputably good fiscal results in Serbia have not come only as a consequence of the planned austerity measures and reforms (reforms have almost entirely failed), but are largely the result of unforeseen circumstances that were reflected primarily in a strong increase of public revenues.

The initial fiscal consolidation plan from 2014 envisaged that the general government deficit in 2017 would be decreased to 3.8% of GDP, i.e. to the amount of about 1.4 bn euros. Even though it may seem easily achievable from this perspective (knowing that Serbia reached a balanced budget in 2017), it was quite an ambitious task at the time. The plan to reduce deficit by almost 3 p.p. of GDP was based on enormous savings on public expenditures, of about 7% of GDP (about 2.5 bn euros), as it was expected that the unfavourable trends, which led to a growth of deficit until 2014, would continue in the upcoming years. First of all, an additional decrease of the public revenue share in GDP of about 2.5% (900 million euros) was expected in the 2015-2017 period, as well as an increase of expenditures on interest on the public debt of 1% of GDP (350 million euros).

However, instead of decreasing by 900 million Euros, public revenues increased by 1 bn Euroand interest payments fell by 75 million Euro(instead of rising by 350 million Euros). These two sources alone led to over 2.3 bn Euroin unplanned "savings", which practically allowed the fiscal consolidation in Serbia to be successful. Even though credit for these unplanned improvements should partially be given to the Government (e.g. suppression of grey economy, primarily in the excise product market), the majority of these fiscal improvements came from outside, as a consequence of favourable external factors (global drop in oil and gas prices, decrease in interest rates in Europe and a stronger economic recovery of the EU with which Serbia is strongly connected through its export and FDIs). These factors had an impact on fiscal over-performance as they led to an unexpected increase in the tax-abundant private (personal) consumption [14], increase in export and profitability of real economy (including the profitability of the largest state-owned loss-makers like Srbijagas) and also accounted for a sizeable reduction in interest payments on public debt.

On the other hand, the initially planned austerity measures were reduced practically only to a cut in pensions and salaries in the public sector. The reduction was essential, not just due to savings of over 500 million euro per annum which were crucial for avoiding a fiscal crisis, but also because the pensions and salaries in the public sector were brought down close to a level that the Serbian economy can finance in the long run. The majority of other austerity measures (some of which were unrealistically planed from the start, e.g. general government downsizing) just never happened. The more critical issue is that the planned reform of the public sector was not implemented (public enterprises, local governments, privatisation of SOEs, increase in public investments, education, healthcare, etc.). Due to a lack of reforms, fiscal policy in Serbia is still not fully sustainable, despite the excellent balanced budget result, nor is it appropriate for fostering economic growth, which is where Serbia is significantly lagging behind other comparable Central and Eastern European (CEE) countries.

Looking forward, the undisputed and most important objective of the fiscal policy in the years to come is to "lock in" the good fiscal result achieved, i.e. to have a balanced budget as the "new normal" in the upcoming five to seven years. There are at least three important reasons for this:

First, Serbian public finances are still fragile as the public debt remains too high (currently at over 60% of GDP). For countries like Serbia, the upper limit of sustainable public debt is about 50% of GDP, and anything beyond that is in the zone of increased risk. If some new global or regional recession (which will inevitably happen sooner or later) hit Serbia with public debt over 50%, it could easily lead to a serious fiscal crisis followed by a major drop in the living standard of the population. Just a few years ago, Serbia barely escaped such a crisis (by cutting pensions and salaries in the public sector), and now it is important to prevent the possibility of such a threat reemerging, by decreasing the excessive public debt. To get the public debt below 50% of GDP, the budget must be kept approximately balanced (deficit of up to 0.5% of GDP) for at least another five years.

- Second, there are still substantial internal fiscal risks that could jeopardise Serbian public finances, which means that the fiscal policy must be particularly cautious. These risks come mostly from the unreformed public sector (primarily public and state-owned enterprises), numerous court proceedings before domestic and international courts initiated by different creditors (Bor Copper Mines and Mytilineos, former employees of the socially-owned enterprises and so on), but also from postponing the abolition of temporary fiscal consolidation measures (e.g. progressive pension cut), which have to be repealed as soon as possible.
- Third, in an economy like the Serbian one, with a high public debt and non-investment (junk) rating, a balanced budget should spur economic growth in the medium term. Stimulating demand by increasing government consumption, as sometimes advocated, would provide just temporary boost and not sustainable growth. Thus, in the post-crisis period (after 2009), economic growth in Serbia was at its lowest precisely in the years when the budget deficit was at its highest (2014 and 2012). Besides, there is compelling evidence that the main cause of the 2014[1] recession in Serbia was the unsustainable fiscal policy – i.e. the excessive public consumption and fast-growing public debt, leading to an imminent danger of a public debt crisis. We will examine the effects of the fiscal policy on economic growth in Serbia in greater detail below.

Economic growth in Serbia has been at a structurally (permanently) low level ever since the end of the first wave of the crisis in 2009, lagging significantly behind the growth of other comparable CEE countries. This gap additionally widened in 2017. According to the latest data from SORS, Serbian GDP growth in 2017 amounted to a mere 1.8%, while at the same time other CEE countries experienced average GDP growth of over 4.5%. Low economic growth in Serbia in 2017 partially resulted from drought and poor management of EPS – electric power company (which led to a drastic drop in the production of this company in the first half of 2017). However, even if it had not been for these factors, GDP growth in Serbia would have been about 2.8%, still almost 2 p.p. lower than the average performance of other CEE economies. The reasons for the deficient economic growth in Serbia, spanning several years, have already been examined in Petrović et al. (2017), pointing to lagging investments compared to CEE countries. Hence, hereinafter, we will focus on the fiscal policy measures that could have a decisive impact on investment growth in time to come, thus laying foundation for high and sustainable economic growth in Serbia.

Maintaining a balanced budget in the medium to long term, as already mentioned before, is a critical policy for spurring investments and, consequently, economic growth. Namely, despite the improvement in credit rating in the last several years, all rating agencies are still awarding Serbia a relatively unfavourable grade (non-investment "speculative" level). Unlike Serbia, most CEE countries, including some in our immediate surroundings (Hungary, Bulgaria and Romania), have already attained the "investment level". This is why the economies of these

1 The recession in 2014 occurred only in Serbia and was not regional, unlike the one from 2012.

countries can take out loans and invest under far better conditions than the Serbian economy. Improvement of Serbian credit rating is directly linked to sustainable fiscal policy and a decrease in the excessive public debt. This is demonstrated by the evolution of Serbia's risk premium: at the beginning of fiscal consolidation it was by 150 b.p. higher than CEE average, while in 2017, this gap was reduced to about 30 b.p. Currently, Serbia has two to three additional steps to take to reach the investment level, which requires a balanced budget in the medium to long term and a steady decline in public debt. After fiscal improvements in the previous three years, this is now feasible and presents a rare opportunity that should not be missed.

Restructuring of public enterprises and privatisation of SOEs have two-fold importance for public finances and economic growth. First, these companies still represent a fiscal risk, and, secondly, they are not investing sufficiently and are thus impeding economic growth, instead of boosting it. Among public enterprises, the most critical issue is the restructuring of EPS (which has been postponed for years). The energy sector needs a sharp increase in investments in the upcoming years of which EPS, burdened by numerous problems in its performance, is not capable at the moment. State-owned enterprises, like RTB Bor and Petrohemija, are currently not making losses, due to favourable circumstances in the international market, but they too need enormous investments if they are to operate sustainably (and to increase the overall economic growth in Serbia). Neither the Government nor these enterprises have the funds for these investments (and the Government should not be the one making them, anyway); this is why it is essential that these enterprises find a partner who can invest, i.e. that they are privatised in 2018.

Public investments, reaching mere 3% of GDP in Serbia, are insufficient and are not contributing sufficiently to economic growth. The lack of investments in local infrastructure should be particularly emphasised, as their low level has a direct negative impact on the quality of life in Serbia (irregular landfills, low-quality drinking water, insufficiently developed sewer network, lack of wastewater treatment, etc.). Moreover, Serbia is investing far less in education and healthcare than comparable countries. The planned level of investments in road and railroad infrastructure in the upcoming years is, in general, satisfactory (but their implementation should be monitored, as the implementation in the previous years was quite inefficient).

Probably the most important measure for increasing investments and boosting economic growth in Serbia is the improvement of the business climate and, within it, the rule of law. The most significant lack of investments in Serbia has been found in the group of small and medium enterprises [15]. For them to invest more, the efficient legal system is the decisive factor (as larger enterprises and foreign investors can cope with legal issues more easily). However, on the relevant competitiveness lists (WEF, World Bank), as well as within specific research looking exclusively into this field (World Justice Project), Serbia has received by far the lowest marks for the indicators of the rule of law. Significant progress that Serbia has achieved on competitiveness lists (WEF, World Bank) in the previous years has come as a consequence of a tangible improvement in macroeconomic stability (fiscal consolidation) and some specific indicators (construction permit procedure), while the rule of law indicators have seen no particular progress (Serbia is even dropping on the World Justice Project list). This segment of the business climate is, to our belief, the main reason why there has not been a significant increase in investments in recent years, despite the visible improvement of Serbia's ranking on general competitiveness lists.

In all this, Government's initiative to support the development of the ICT sector is positive, but that alone cannot be sufficient. This segment of economy is highly productive, and its development would allow Serbia to keep a larger share of young ICT experts in the country. However, the ICT's share in Serbian GDP is too small to enable it to have a profound effect on the total GDP growth. According to SORS's data, ICT (without telecommunications) contributes 1.8%to Serbian GDP and accounts for 3.8% of the overall export (source: National Bank of Serbia). This is why even a strong increase in this activity in the upcoming years could not have a significant impact on the overall economic growth. Furthermore, this sector is already destined for success in Serbia even without

Government's intervention, as it has seen an average production growth of 15% per year and stable export growth of 30% per year in the last five years. It is uncertain by how much this growth can be further accelerated with economic policy measures. If the Government were to succeed in its intentions and additionally accelerate the growth in this sector from 15% to, say, 25%, this would translate into acceleration in the growth of GDP of about 0.2 p.p. In other words, for the necessary acceleration of GDP growth rate of 1.5 to 2 p.p. (to CEE country average), priority still lies in the reform of the public sector and improvement of the business climate, primarily in the field of the rule of law.

In the second part of the paper, we take another look at GDP trends but from a different angle, analysing the impact of GDP on employment growth in Serbia and other CEE countries. We thus contribute additionally to the discussion on the reliability of the Labour Force Survey (LFS), which shows an extremely high, but unlikely employment growth in Serbia since 2012. The length of the available data series (2012-2017) allows us now to reexamine this issue more reliably. We hope that the findings offered will conclude the two-year discussion on this topic and that they will allow for the quality of the LFS data to be improved to the level of the countries comparable to Serbia. This part of the paper can also be read independently from the remainder of the text, as it comes with its own summary, listing the key results of the conducted research.

Fiscal consolidation in Serbia 2015-2017: It's smoother sailing with the wind in your sails

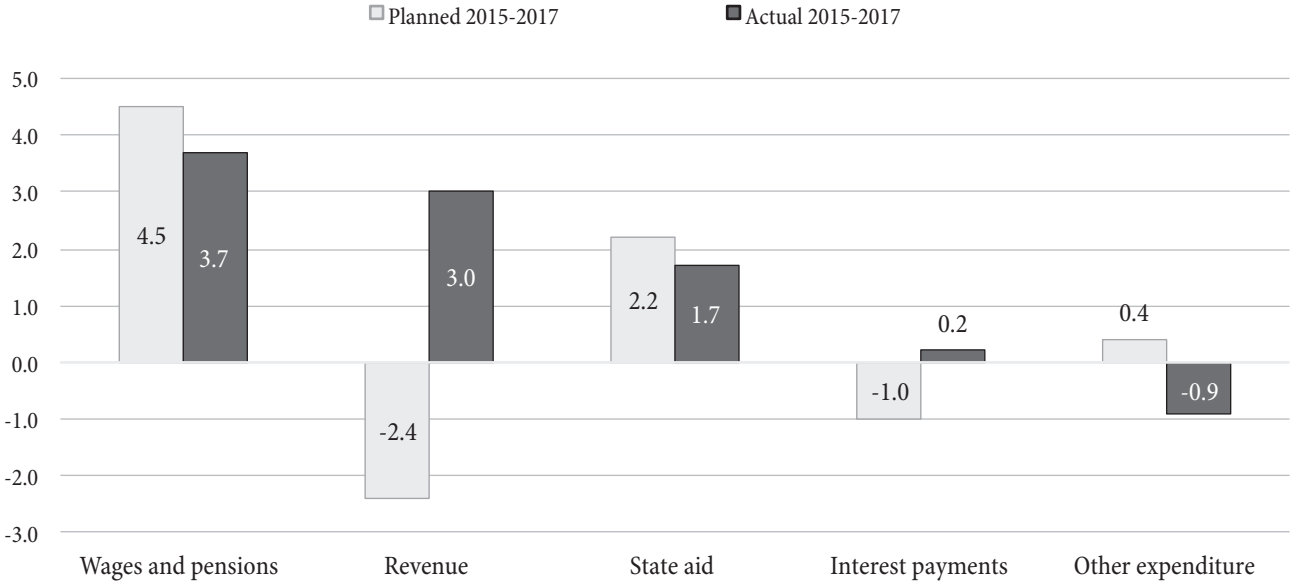
At the end of 2014, the Government of the Republic of Serbia entered a three-year fiscal consolidation programme as a part of a stand-by arrangement with the IMF to prevent the impending public finance crisis. At the same time, comprehensive reforms were expected to decrease fiscal risks in the future and set the wheels of the failing Serbian economy in motion. Despite certain doubts as to the credibility of envisaged austerity measures, which were later confirmed, and significant problems with the implementation of the planned reforms, as this arrangement draws to a close it is clear that the fiscal consolidation results have far exceeded expectations. In just three years, from an enormous fiscal deficit in 2014 (6.6 % of GDP or almost 2.2 bn Euros) Serbia practically reached a structurally balanced budget in 2017. In this respect, Serbian fiscal adjustment episode in the 2015-2017 period is entirely comparable to textbook examples of ambitious and successful fiscal consolidations of the Baltic countries and Romania following the World Economic Crisis in the autumn of 2008.

Firstly, we analyse the impressive fiscal over-performance in the 2015-2017 period compared to the plan from the end of 2014, as we believe that a thorough analysis of the discrepancy between the two bears important implications for the fiscal policy in the upcoming years. We have shown that the undisputedly good fiscal results are not grounded in the initially planned economic policies, but in some unforeseen circumstances, such as the robust growth of public revenues and a somewhat faster economic recovery. As a consequence, the structure of the achieved fiscal adjustment is quite different from the original plan, but also from the experiences of the aforementioned countries of the Central and Eastern Europe and their fiscal adjustments in the 2009-2013 period. This outcome opens up a critical question of sustainability of the accomplished results since the predominant standpoint in literature is that revenue-based fiscal consolidations are more likely to end up in failure in the long run. In the second part of this chapter, we consider the options for fiscal policy in this new reality in which the fiscal deficit has been reduced to a level sustainable in the long term, in which Serbia is no longer threatened by an imminent danger of a public debt crisis, but in which public finances are still facing significant risks. We are convinced that the recommendations we have offered have very few alternatives if the desire is to definitively "lock in" the excellent fiscal results from the 2015-2017 period and to firmly set the public finances on a sustainable path in the long run.

The plan vs the outcome: Strong revenue over-performance made all the difference

To answer why fiscal trends in the 2015-2017 period significantly exceeded expectations, let us first take a

Figure 1: Contributions to deficit decrease in 2015-2017: planned vs actual (in p.p. of GDP)



Source: Authors' calculations based on [8] and the data from the Ministry of Finance.

brief look at the original fiscal consolidation plan. The plan promised a permanent fiscal deficit decrease from the then estimated 7.5% of GDP in 2014 to 3.8% of GDP in 2017, i.e. a significant structural adjustment of 3.7 p.p. of GDP (over 1.3 bn Euros).[2] To achieve the set objective, the Government estimated that the permanent savings on public expenditure of enormous 7 p.p. of GDP (about 2.6 bn Euros) are needed. It is clear that such an ambitious adjustment would be impossible without correcting the most substantial fiscal imbalances, so the austerity measures were rightfully aimed at decreasing the disproportionally large expenditures on the wage and pension bill (compared to the country's economic power) and various forms of state aid (compared to similar countries). Thus, already at the end of 2014, salaries in the public sector were reduced by 10% across the board and pensions were reduced progressively (to cut the overall expenditures on pensions by 5%) with the intention to keep the salaries and pensions frozen until 2017. On top of that, expenditures on salaries also needed to be significantly reduced through a planned general government downsizing by 5% per year (by 75,000 employees in total). In total, these austerity measures should have allowed for the fiscal deficit to be decreased by 4.5 p.p. of GDP (over 1.6 bn Euros). The major part of the remaining fiscal deficit decline (2.2 p.p. of GDP or about 800 million Euros) was to be provided through cuts in different forms of state aid, namely a decrease in agricultural subsidies and subsidies for public service broadcasters, and limited guarantees for loans of public and state-owned enterprises.[3] The initially envisaged fiscal adjustment strategy is shown in Figure 1, while the details of individual austerity measures can be found in [8, pp. 10-21].

It is important to notice that the planned savings on the expenditure side of the budget were much larger than the targeted fiscal deficit decrease, because of an expected drop in public revenues compared to GDP and the projected increase in interest payments from 2015 through 2017. Namely, the programme envisaged a fall in public revenues by 2.4 p.p. of GDP (almost 900 million Euros) by 2017, due to a lower tax base growth compared to the nominal GDP growth. On the other hand, it was

2 To simplify this presentation, we used the actual average exchange rate in 2017 to express the planned and achieved fiscal adjustment in Euros, which is significantly different to the level assumed in IMF (2015). Since the GDP envisaged back then and the nominal GDP realised in 2017 differ very little, the planned fiscal adjustment, expressed as a percentage of GDP, was taken from [8], Tables 5a and 5b.

3 These measures should have led to a permanent fiscal deficit decrease by about 0.8 p.p. of GDP. The remaining savings of about 1.4 p.p. of GDP actually relied on some of the one-off expenditures from 2014 not repeating in the period from 2015 to 2017. As a reminder, these were expenditures for covering the losses of the failed Univerzal Banka and PBB (20 bn dinars), payment of the debt of JAT to its suppliers (20 bn dinars), additional capitalisation of Poštanska Štedionica and Dunav Osiguranje (9 bn dinars), as well as a budget loan to Srbijagas in the amount of about 9 bn dinars.

expected that the public debt and average interest rates for loans taken out by the government would rise, which should have increased interest payments by 1 p.p. of GDP (350 million Euros). If these trends were to materialise, they would increase the fiscal deficit, which is why their contributions to the planned deficit reduction are shown as negative in Figure 1.

Although a considerable part of the planned savings was achieved in the end, implementation of specific austerity measures still fell short of the mark. This is especially true for the planned reduction in the wage bill, of as much as 30% in real terms, which seemed as an unlikely and economically disputable plan from the beginning. First of all, the general government downsizing did not even come close to its desired results. Deadlines for the completion of sectoral analyses that would serve as a base for targeted downsizing (in those instances where it would be justified) were pushed back several times. Consequentially, even three years later this process is still unfolding in a non-selective manner, almost exclusively thanks to the retirement of employees with limited replacement (at a 5:1 rate). As a final result, the number of permanent employees in general government (including local public enterprises) was decreased by about 28,600 by September 2017, while the number of employees with short-term contracts increased by about 16,200 in the same period. It means that the net effect on the total employment trend in the general government was far smaller than the planned downsizing by 75,000 employees, leading to smaller savings. Besides, at the beginning of 2016 and 2017, salaries in some parts of the public sector and pensions were increased, contrary to the original plan of keeping them frozen; this caused the savings from the real reduction of these expenditures to come under the mark as well. It is important to note that, when it comes to expenditures on pensions, the unachieved savings were made up for by a drop in the number of pensioners, because the 2014 pension system reform had a greater impact than was expected.[4] As shown in Figure 1, these inconsistencies in the implementation of the original fiscal consolidation plan had an impact on permanent savings on expenditures on the wage and pension bill, which came under the envisaged target by 0.8 p.p. of GDP (about 300 million Euros).

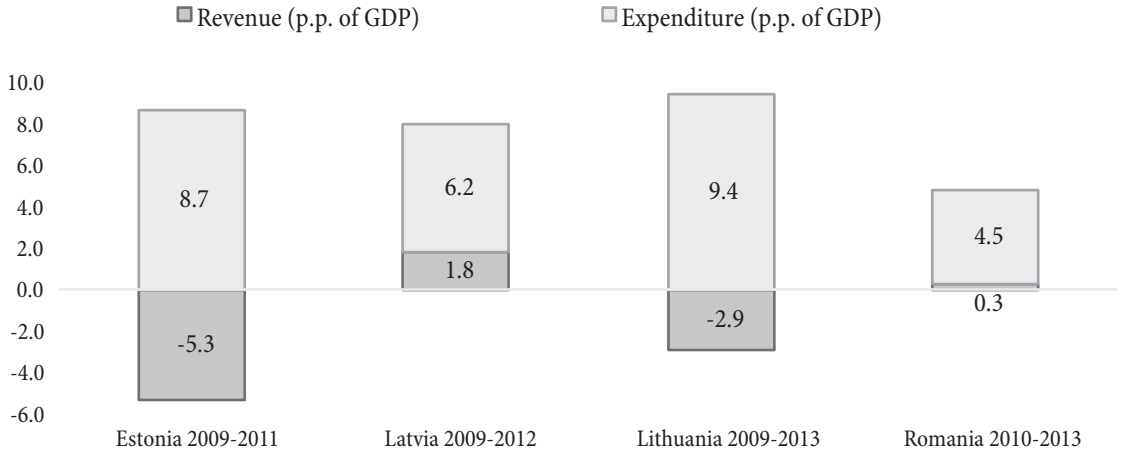
If we were to stop at primary expenditures (without interest payments which are not under direct Government control) and look only at the results of the initially planned austerity measures, it would be clear that Serbia would have been stuck at the fiscal deficit level of 4-5% of GDP. Public debt would have continued rising unstoppably, which would de facto mark the failure of the fiscal consolidation. What happened is that the fiscal trends in 2015-2017 were significantly better than was envisaged, practically in the absence of any additional austerity measures and despite the moderate fiscal relaxation during 2016 and 2017. The scale of this improvement is best illustrated by Figure 2, showing that the fiscal deficit in 2017 was by about 5 p.p. of GDP (about 1.9 bn Euros) lower than planned, while the public debt was lower than initially forecasted by over 15 p.p. of GDP (5.7 bn Euros).[5] A mere glance at Figure 1 unequivocally indicates that the answer to the question of why the fiscal results were so much better than expected lies in the strong public revenue over-performance. Instead of the envisaged drop of 2.4 p.p. of GDP (almost 900 million Euros), public revenues increased, compared to 2014, by 3 p.p. of GDP or by over 1bn Euros, which thoroughly explains the fiscal deficit decrease exceeding the plan. A more detailed analysis allowed us to identify the three main reasons behind this unplanned revenue increase, based on both domestic factors and very favourable international conditions. These are improvement in the macroeconomic environment, more efficient tax collection and grey economy suppression (including a few small revenue-enhancing changes to the tax policy) and several one-off factors that temporarily increased public revenues in 2017.

The largest contribution to the unexpected growth of public revenues in the 2015-2017 period (about 700 million Euros) can be attributed to higher economic growth than

4 In mid-2014, a decision on gradual increase of retirement age for women was issued; also actuarial penalties were introduced to de-stimulate early retirement. These changes should have improved the sustainability of the Serbian pension system, limiting the inflow of new pensioners. However, the first effects were far greater than was expected, since the overall number of pensioners has been dropping steadily since 2015.

5 The impressive public debt decrease is partly owed to a strong appreciation of dinar compared to euro and USD during 2017, which is discussed in more detail in this chapter.

Figure 2: Fiscal balance and public debt 2014-2017: planned vs actual (in % of GDP)



Source: Authors' calculations based on the data from the Ministry of Finance and [8].

the programme envisaged. In line with that, the trends in the labour market also surpassed original expectations, so that practically three-quarters of the overall increase in public revenues under the influence of macroeconomic factors came from the increased collection of social security contributions and personal income tax. The remainder of the unforeseen increase comes from higher VAT and customs duty revenues, due to a stronger recovery of private consumption. According to Mauro and Villafuerte [12], the differences between macroeconomic forecasts and actual economic trends represent one of the most common causes of (positive or negative) discrepancies between fiscal results and fiscal consolidation plans. Thus, the real question that needs answering is – what is behind these macroeconomic improvements that generated the surprising public revenue growth?

We estimate that, to some extent, they came as a result of the fiscal consolidation itself, which contributed to lowering the country risk premium and to a drop in lending interest rates, both for the Government and the economy, which in turn spurred economic growth. However, what seems indisputable at this point is that it was, in large part, a positive external shock. Namely, a set of favourable international economic conditions has proven to be very beneficial for macroeconomic trends in Serbia and the remainder of Central and Eastern Europe in recent years. Investigating drivers of economic growth in CEE countries in the 2015-2016 period, in Petrović et al. [14], we demonstrated that a significant share of the unexpected acceleration of economic activity in the region (including Serbia) in the observed period could be explained by the positive effects of external factors. Here we emphasise the most important ones, such as the decrease in commodity prices (especially oil and gas), low interest rates in Europe and increase in demand for export from these countries, due to a stronger recovery of the Eurozone and the CEE region itself. Furthermore, this wave of favourable international macroeconomic conditions is obviously still going strong. In 2017, many countries in the region continued scoring record high GDP growth rates in the post-crisis period; however, Serbia is not among them.

The second source of the unexpected, yet structural increase of public revenues lies in the more efficient tax collection (about 500 million Euros), which is further reinforced by some minor tax measures introduced during the programme (about 100 million Euros).[6] Increase in public revenues due to grey economy suppression is a positive domestic fiscal shock, reflected in the increase in VAT and excise revenue collection, which surpasses the levels that could have been expected based on the tax base trends. Even though the widespread occurrence of informal (grey) economy in Serbia is a well-known fact, as is the large potential for tax revenue growth if it were to be suppressed, the achieved result came as a surprise – as it was obtained with the existing (already insufficient) capacities of the Tax Administration. Despite

6 At the start of 2016, excise on oil derivatives was increased, to compensate, to a degree, for the salaries and pensions expenditure increase in that year. Also, several modifications have been made in the calculation of the property tax base, which led to a rise of these revenues as well.

many operational issues of this institution (insufficient number of tax inspectors, unfavourable age distribution of staff, poor analytical capacities, obsolete information systems and organisational structure, etc.), it seems that the Tax Administration nevertheless managed to make a significant improvement in the collection of VAT through tighter controls and ad hoc (sometimes repressive) measures in the field. Also, it can be observed that a stricter control has been established over the excise products market, especially oil derivatives market. It is worth noting that some local governments have managed to improve their property tax collection significantly, which has led to a substantial increase in these revenues, which are the local governments' own revenues.

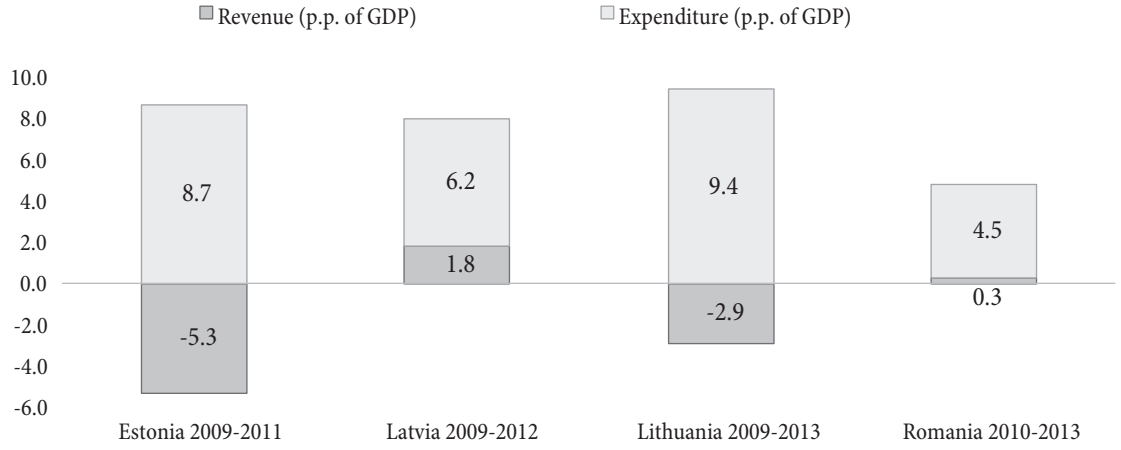
The remaining unplanned increase of public revenues in 2017 (about 600 million Euros) was achieved thanks to several temporary factors. Almost a half of this amount comes from the unusually high revenue from corporate income tax, due to increased profitability of the processing industry in 2016, while the increase in EPS's profit and the high amount of profit tax this company paid partially stems from a change in its accounting methodology. We estimate that in the upcoming years, it should be expected that the revenues from corporate income tax will return to their long-term average value (somewhat over 2% of GDP), which is why we see their increase in 2017 as a one-off improvement. Exceptional one-off payments of non-tax revenues have been a characteristic trait of the fiscal consolidation in 2015-2017 since the start, and 2017 is no exception. Thus, about 30 bn dinars of specific non-tax revenues went into the central government budget (payment from the National Bank of Serbia, profit of public enterprises and other sources) and an additional 10bn dinars went to the budgets of local governments (primarily from payments of local public enterprises). Bearing in mind that these sources of public revenue increase are, by their very nature, unique (one-offs), they need to be excluded when calculating the structural fiscal result which is the real measure of the fiscal consolidation success in the 2015-2017 period. Starting from the official surplus in the general government budget of 1.2 % of GDP (about 450 million Euros) in the last year, by excluding one-offs we can easily conclude that the permanent fiscal deficit level, going into 2018, amounted to about 0.5% of GDP (about 150 million Euros). This is an extraordinary result, bearing in mind that only three years ago, in 2014, Serbia had the highest fiscal deficit in Europe of 6.6% of GDP (almost 2.2 bn Euros).

In the end, we emphasise that the implementation of the fiscal consolidation in 2015-2017 was unexpectedly supported by a significantly slower growth of interest payments than expected. Instead of the forecasted increase by 1 p.p. of GDP (about 350 million Euros), these budget expenses in 2017 were somewhat lower than in 2014 (by about 0.2 p.p. of GDP). The better-than-planned fiscal trends and a reduced need for new government borrowing, as well as a sharp drop in interest rates applied to loans taken out by the Government in recent years, certainly contributed to this result. In part, it is a consequence of the omnipresent trend of decreasing interest rates in Europe, due to the expansionary monetary policy of the ECB; however, we believe that some domestic factors contributed to this as well. The potential link between fiscal consolidation (and macroeconomic stabilisation in general) and the trends of interest rates in Serbia in the observed period we have analysed in more detail in the section about fiscal policy in 2018 and beyond.

Fiscal adjustment was not implemented the way it had been planned – how sustainable is it?

The presented results of fiscal consolidation in Serbia in the 2015-2017 period can briefly be summarised as follows: although some planned measures for a permanent expenditure decrease failed to yield desired results, the strong growth of public revenues allowed the outcome to exceed the plan overwhelmingly. This means that, contrary to original intentions of achieving the fiscal adjustment almost exclusively on the expenditure side of the budget, practically a half of the structural savings came from the revenue side of the budget. Researchers who followed a similar approach in analysing fiscal adjustment episodes by comparing the results achieved to original plans [12] found several examples where public revenues somewhat unexpectedly "saved" fiscal consolidations in the period preceding the World Economic Crisis. However, such a

Figure 3: Contributions to deficit decrease in Baltic countries and Romania (in p.p. of GDP)



Source: Authors' calculations based on the data from Eurostat.

major improvement in fiscal trends thanks to unplanned public revenue growth, like the one that took place in Serbia, is truly rare. The same conclusion can be reached if we look at several successful fiscal consolidations in Central and Eastern Europe in the 2009-2013 period. Without exception, the largest share of fiscal adjustments was achieved by a permanent reduction of public expenditures and approximating them to the level of general government revenues (see Figure 3). Of course, this does not mean that these countries had not envisaged any tax policy measures, but these were usually only sufficient to maintain the level of public revenues in the conditions of a deep recession.[7]

There is a widespread consensus in literature that fiscal consolidations primarily based on structural reductions in public expenditures provide longer lasting results. For instance, Alesina and Ardagna [1], [2], as well as [9], show that the fiscal consolidations that were successful in the long term and had a lower adverse effect on economic growth were the ones based on measures for public expenditure cuts, compared to those aimed at increasing public revenues. A part of the explanation lies in the fact that public revenues often increased during fiscal consolidation due to favourable influences of the economic cycle - when the macroeconomic trend deteriorated, they diminished, leading to an increase in fiscal deficit and annulment of the previously achieved results. Besides, it turned out that a decrease in all types of public expenditures correlated positively with the ultimate success of fiscal consolidation, except the cuts in capital expenditures. The results of this and similar studies contributed to the initial design of the fiscal consolidation in Serbia in 2015-2017 (as did the fiscal adjustments implemented in the Baltic countries and Romania), steering the austerity measures mostly towards a decrease of the largest public expenditures. However, reality turned out quite differently than the plan. Does this mean that the sustainability of the undisputedly good fiscal trends in recent years is in jeopardy? Not necessarily. The Government has a nice opportunity to translate this (partly temporary) success into a permanent state of Serbian public finances, under the currently favourable international circumstances. This will require adhering to a responsible fiscal policy for at least five years, as well as a far greater commitment to the implementation of unfinished reforms, which will be discussed in more detail in the last section of this chapter.

To conclude this section, let us take a look at another striking difference between the fiscal consolidation episodes in Serbia and the comparable Central and Eastern European countries. Faced with unfavourable international and domestic economic movements, economic policy makers in the Baltic countries and Romania were, as a rule, faced with the insufficiency of their envisaged austerity measures needed for achieving the objectives set and with the recurring dilemma – what else could be saved on? On the other hand, after the initial and necessary sacrifice in the form of salary and pension cuts, it seems that the fiscal adjustment in Serbia was enforced without much further effort. All the

7 Measures for increasing public revenues in the original plan for fiscal consolidation in the Baltic countries and Romania should have allowed, on average, 20-30% of structural fiscal adjustment [5].

quantitative objectives were met quite comfortably, with additional fiscal space to repay some old debts, such as debts of Srbijagas and Petrohemija to NIS, liabilities to military pensioners and others. The key difference lies in the fact that Serbia implemented its fiscal consolidation in very favourable international conditions – economic recovery of the Eurozone, the accommodative monetary policy of the ECB and declining interest rates, drop in fuel prices, recent depreciation of the dollar – to list just a few. Bearing in mind that all these external factors made it much easier to implement the fiscal consolidation in the 2015-2017 period, does it mean that it was a good thing to postpone the efforts devoted to getting Serbian public finances in order until "better times"? We are convinced that the answer is negative. The fact that the public debt reached a very high level in the meantime and that it will take at least another five years to bring it down to a safer level is just one part of the explanation. The far more important point is that, in postponing serious fiscal consolidation and eradication of numerous structural imbalances in the economy, for the time being, Serbia has missed the opportunity to achieve much higher economic growth in the light of supportive international economic trends – unlike the majority of CEE countries.[8]

Fiscal policy in 2018 and beyond: Achieved results can, and should, be "locked in"

On the basis of good fiscal performance over the recent years, Serbia is entering 2018 and beyond with a new primary objective in its fiscal policy. An almost balanced budget was already achieved in 2017, therefore there is no need for further fiscal tightening, but it is of crucial importance to preserve the achieved result in the longer term. The good news is that this can be accomplished even with a carefully measured increase of public expenditures and/or decrease in the tax burden on economy. Namely, pensions and salaries in the general government have come sufficiently close to a level sustainable in the long run, which Serbian economy can finance (11% of GDP and 8% of GDP), which is why their expansion in line with the growth of nominal GDP (by 5-7% per year) is now possible. An additional advantage from maintaining the current course of fiscal policy would be reflected in an automatic decrease in expenditures on interests, due to the declining public debt (by about 0.6 p.p. of GDP in the medium term) and a gradual disappearance of expenditures on called guarantees (de facto subsidies). Decreasing these non-productive budget expenditures would open fiscal space that could be used for much better purpose, for instance, for the urgently needed increase in public investments. If favourable fiscal trends and budget surpluses continue in the upcoming years, there are several good ways to use the excess funds in the budget: a relaxation of labour tax burden could be considered, additional investments made in public and local infrastructure, or the public debt decreased at a higher rate. These are all well-documented ways in which the fiscal policy could provide an effective incentive to economic growth in the medium and long run. The budget for 2018, the last one prepared by the Government within the existing arrangement with the IMF, is essentially aligned with these recommendations and represents a step in the right direction.

The main reason the fiscal results achieved in 2017 need to be "locked in" and the reason excessive fiscal policy relaxation in the upcoming period would be harmful and dangerous lie in the level of public debt which is still high. In 2016, public debt growth was stopped, while in 2017, a very sharp decrease in debt of about 10 p.p. of GDP was achieved – from 73% to 62.4% of GDP. The last year's result should not create an illusion that the problem of Serbia's over-indebtedness could be resolved overnight since it was achieved largely with enormous (and, to an extent, certainly temporary) support from favourable exchange rates dynamics. We estimate that the strong appreciation of dinar, compared to euro – and especially compared to dollar – contributed to the public debt reduction by slightly over 6 p.p. of GDP.[9] Despite this unexpected help, public

8 In the period from 2012 to 2017, Serbia marked a cumulative GDP growth of mere 6%. In the same period, the average cumulative GDP growth in the Central and Eastern European countries was almost three times higher, at over 17% (see Table 2 in the second part of this paper).

9 In 2017, dinar saw nominal appreciation of 4% compared to euro and about 15% compared to dollar. Appreciation of the real exchange rate of dinar was even more pronounced, since Serbia saw higher inflation than the Eurozone and the USA.

debt exceeding 60% of GDP is still too high, and the only way to permanently reduce it to a safer level is to keep low fiscal deficits over a somewhat longer period. Preservation of a balanced budget would allow for a sustainable public debt decrease by about 2.5 p.p. of GDP annually, which means it would take at least five years to bring the public debt down to a more prudent level of about 50% of GDP (in 2023). If this is not done now, there is danger that Serbia will not be prepared for some future crisis, which will certainly come in the long term. A new recession and consequential decrease in public revenues would lead to a new growth of the fiscal deficit with inevitable and very negative consequences for the economy. Unlike the crisis in 2008, which came when Serbian public debt was below 30% of GDP (leaving it at the level of about 75% of GDP), even a smaller shock would suffice to take us from the current level of debt up to a debt exceeding 80% of GDP and, very probably, landing us in a fiscal crisis.

Avoidance of a potential crisis is perhaps the most obvious, but is not the only argument firmly supporting the position that a low fiscal deficit and a steady decrease in public debt must remain a priority of the economic policy in the upcoming years. Namely, an expanding number of empirical studies, e.g. Chudik et al. [4], have confirmed, quite convincingly, that there is a negative correlation between the public debt path and economic growth in the long term. While the growth of fiscal deficit funded by an increase of public debt can have some positive impact on GDP growth in the short term, it eventually leads to crowding out of private sector investments (due to higher country risk premium and interest rates) and reduces the economic growth in the long term. In Serbia's case, the opposite situation is far more interesting at this moment. Chudik et al. (2017) showed that even countries with a high public debt (as Serbia, with its debt exceeding 60% of GDP, indeed is) could achieve growth rates almost equal to those of comparable countries in a better fiscal position – if the public debt is firmly on a downward path. It seems that financial markets pay more attention to the public debt trend than to its level and that a declining public debt is a sufficient signal for lowering country risk premium and interest rates, yielding a positive effect on investment, private consumption and economic growth in general.

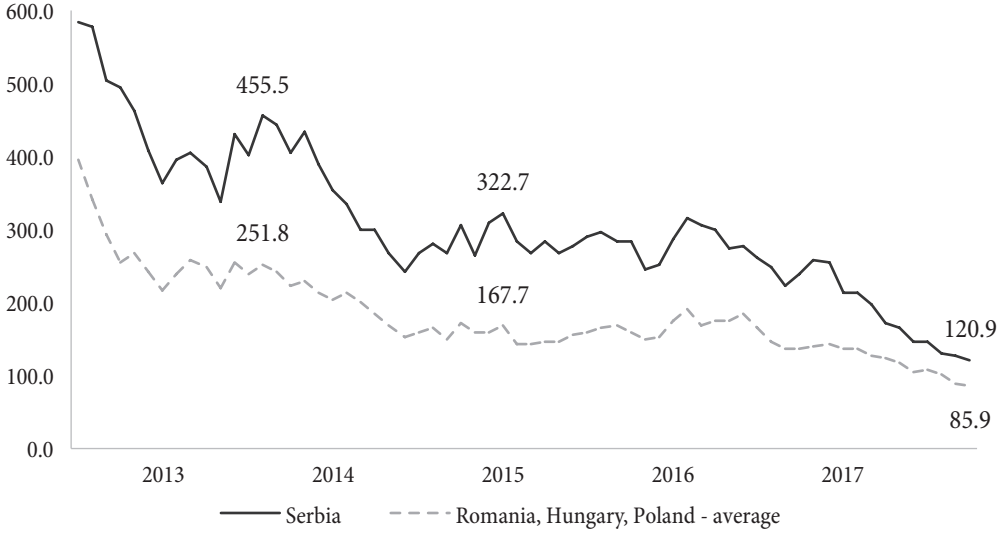
Certain data show that perhaps this is what happened in Serbia as a result of a successful fiscal adjustment and placement of the public debt on a downward path from 2016. As we have shown in Figure 4, in recent years there has been a rapid drop of the risk premium for Serbia (as measured by the EMBI), from almost 600 b.p in mid-2012 to a little over 100 b.p. at the end of 2017. In large part, this improvement can be explained by a general fall in risk aversion, since similar trends have been observed practically in all CESEE countries, regardless of their domestic economic policies.[10] To correct for this common trend and isolate the impact of fiscal consolidation and macroeconomic stabilisation in Serbia on risk premium trends, we examined the magnitude of the relative decrease compared to comparable countries. The risk premium for Serbia in mid-2013 exceeded the average of selected CEE countries by about 200 b.p., at the beginning of fiscal consolidation in 2015 by about 150 b.p. and now, following a successful fiscal consolidation implementation, the difference has fallen to mere 30-40 b.p. Positive effects of these trends are reflected in a substantial decrease in interest rates for loans taken out by the government in the 2015-2017 period. At the beginning, we noted that this was one of the factors that were important for arresting growth of interest payments from the budget. Particular significance of improvement in external financial conditions lies in the fact that the National Bank of Serbia has been given room for additional relaxation of the monetary policy, which would allow for the recovery of the credit activity in corporate and household sectors, as further support for economic recovery.

The claim that the implemented fiscal consolidation contributed to the reduction of the country risk premium is strengthened by the Serbian credit rating trend which has been continually upgraded by all relevant agencies since 2015.[11] According to the credit agencies Standard and Poor's and Fitch Ratings, Serbia reached a BB rating

10 We estimate that the vital contribution to a general trend of decreasing interest rates in Central, Eastern and Southeastern Europe came from the launch of the quantitative easing programme by the European Central Bank in March 2015.

11 For instance, Standard and Poor's has upgraded Serbia's credit rating three times since the beginning of fiscal consolidation: from BB- with a negative outlook to the current BB with stable outlook.

Figure 4: Trends in EMBI for Serbia and selected CEE countries, 2012-2017



Source: JP Morgan.

Table 1: Credit ratings of Serbia and neighbouring countries in 2017

Country	Grade	Standard and Poor's		Fitch Ratings		Moody's Investors Service	
Hungary	Investment	BBB-	Positive	BBB-	Positive	Baa3	Stable
Bulgaria	Investment	BBB-	Stable	BBB	Stable	Baa2	Stable
Romania	Investment	BBB-	Stable	BBB-	Stable	Baa3	Stable
Croatia	Speculative	BB	Positive	BB+	Stable	Ba2	Stable
Serbia	Speculative	BB	Stable	BB	Stable	Ba3	Stable

Source: Standard and Poor's, Fitch Ratings, Moody's Investors Service.

with a stable outlook in 2017, while Moody's Investors Service gave Serbia a Ba3 rating with a stable outlook. However, it is important to note that despite the upgrade in the credit rating in recent years, all agencies still rate Serbia fairly unfavourably, giving it a non-investment (speculative) grade. In other words, this would mean that Serbia is seen as a country capable of meeting its financial obligations, but the credit risk is higher due to a pronounced risk of deterioration in the business climate and macroeconomic environment. To be classified together with the countries awarded the investment grade, depending on the rating agency, Serbia has to make two or three decisive steps. This would allow it to catch up with the countries in its immediate neighbourhood, which have already achieved this (Romania and Bulgaria), as well as with Croatia, that is just on the brink of the investment grade rank (see Table 1). We believe that the fiscal policy in 2018 and beyond could provide significant assistance in overcoming the remaining hurdles. A precondition for this is to maintain the approximately balanced budget in the long term, continue with the decisive decrease of public debt and resolve several critical issues that will remain unresolved once the arrangement with the IMF expires, representing a major fiscal risk and an obstacle to faster economic growth.

The most important reform challenges on the path to sustainable, growth-boosting public finances

Fiscal consolidation has only partially improved the structure of public expenditures, by decreasing the expenses on pensions and salaries; public investments remained at an insufficient level (about 3% of GDP). In this respect, Serbia is visibly lagging behind comparable CEE countries, which usually spend about 4% of their GDPs on capital expenditures; in the periods when they were building their major road and railroad infrastructure (which is where Serbia is at today), the figure would often reach 6% of GDP. Investments in major road and railroad infrastructural projects, which are usually given the most

prominent place in the public eye, are probably the only type of public investments that could be said to be close to a satisfactory level at this point, although even in this regard plans were often executed inefficiently in the past. The matter of concern is actually the fact that there are numerous and vital fields in which the government should be investing, but those have been completely neglected for years. The most striking example is environment protection, which was assessed as "completely incompatible with the EU acquis" during the check of domestic legislation compliance with the EU standards (the so-called "screening"), as part of the EU negotiations process (Chapter 27). This conclusion comes as no surprise at all, considering the current devastating situation. For instance, only 25% of solid waste is disposed of in line with the EU standards, there are over 3,500 wild landfills of which many endanger watercourses, wastewater is not being treated even in the biggest cities (Belgrade, Novi Sad, Niš), Serbia holds the negative European record in the lowest percentage of households connected to the sewers, etc. Our rough estimate is that Serbia will need annual investments of about 1.5% of GDP (about 600 million Euros) in the field of environmental protection to achieve compliance with the EU legislation, instead of the 80 million euro invested at the moment. A necessary increase of investments in healthcare and education should be added to this sum, as they too are only at one-third of CEE average. An increase of public investments to the level of about 5% of GDP per year would be sufficient for Serbia to resolve these burning issues and foster economic growth, and that can be achieved within the framework of the primary fiscal policy objective – maintaining a balanced budget.

Probably the most urgent task for the Government is permanent regulation of the pension system, as it currently rests on temporary measures introduced at the beginning of fiscal consolidation. Even though we have assumed that the progressive cut of above-average pensions at the end of 2014 would lead to permanent savings, the truth is that this austerity measure has been legally defined as temporary. We believe that the decrease of expenditures on pensions was indeed necessary for the situation in which Serbia was threatened by an imminent danger of a public debt crisis. However, the fact is that this measure disrupted the regular structure of the pension system, in which the amounts of pensions paid out should depend on the amount of contributions previously paid in. In developing the 2018 budget, it transpired that the technically simple task of returning to a regular pension system presented a major political challenge, even though the economic circumstances allowed it. At the end of 2017, it was clear that the public debt crisis was avoided, that the expenditures on pensions were close to a level that would be sustainable in the long run (11% of GDP), and most importantly, there was fiscal space for (at least a partial) annulment of the temporary measure. However, this good opportunity was missed. The Government decided to use this fiscal space for a linear increase of all pensions by 5%. Bearing in mind that, from 2018 onward, the arguments that were used to justify the temporary cut in above-average pensions no longer stand, this decision puts Serbian public finances at a new fiscal risk, due to the possibility that the decrease of pensions without proper legal grounds would have to be repaid in future.[12] It is still not too late to prevent major damages, but the Government would have to opt for a way out of this temporary measure immediately. At the same time, it is necessary to bring the pension system back to the framework of predictable and regular indexation of pensions, in line with a formula that would take into consideration the demographic trends (aging population) and the system's long-term financial sustainability.

The reform of general government employment was also based on a temporary measure while wage system reform has been delayed for quite some time, which needs to change if Serbia wants to have a public administration that complies with the requirements of modern economy. The approach to general government downsizing through an attrition rule (which should have been a temporary measure) failed to bring about the planned savings and only exacerbated the already unfavourable employment structure. Some crucial parts of the public sector have been facing a lack of professional staff for quite some time (lack of medical staff and doctors, teachers, tax inspectors, etc.) while others have been burdened by a surplus of non-productive employees (e.g. local administration and

12 The potential cost would amount to about 200 million euros per year, starting from 2018.

non-medical staff in the healthcare system). Wage system reform in general government has also seen very modest progress, confined to legislative solutions for individual sectors that have yet to come into force, while the original plan was to have the entire process completed by the end of 2015. Instead of regulating the wage system so that employees with identical/similar jobs in different sectors of the general government would have comparable salaries ("equal pay for equal work"), the system was rendered even more chaotic in 2018.[13] If the Government truly wants to resolve these issues without further delays, it can do so already in 2018. The temporary employment ban should be lifted and sectoral analyses finally completed (the initial deadline expired in mid-2016) to provide a sound basis for efficient general government downsizing. In addition, the process of adopting legislation that would regulate the wage system in the remaining sectors of the general government (state administration, police, military and public agencies) needs to be accelerated, to avoid ad hoc salary increases when drafting the 2019 budget and to initiate the strenuous process of establishing a more just system of valuing work in the public sector.

The story of failing public and state-owned enterprises is far from over, which is why their problems and their poor performance still represent one of the greatest risks for Serbian public finances. Except for a few positive examples,[14] substantial reforms have barely begun. Namely, about 150, mostly unsuccessful, state-owned enterprises undergoing privatisation still employ a workforce of about 50,000 people. It's a fact that some of the problematic companies from this group (such as RTB Bor and Petrohemija) are not making losses at the moment, due to a favourable market situation (low price of oil and gas, high price of copper). However, market circumstances could quickly change, which would inevitably revert these unreformed enterprises to major loss-makers and a burden on the public finances. Even these favourable market circumstances could not help some companies, such as Azotara and Resavica; they continue to perform badly and accumulate debt. It seems that at this point, twenty years since the beginning of privatisation in Serbia, the time has finally come to ascertain whether these enterprises have a future in the market and investors interested in them, or if they should be allowed to go bankrupt.

The largest domestic enterprise, EPS, can serve as an excellent example of just how poorly Serbia is managing its vital resources. Due to poor management, this company marked a steep drop in production in 2017, significantly lowering the overall economic growth, instead of acting as the engine driving it, with its profit and investments. However, reforms that would turn EPS into a profitable enterprise keep being postponed. For instance, instead of adopting a systematisation of the workforce and downsizing employment based on the surpluses found, the downsizing is implemented through voluntary and nonselective retirement of employees who already meet the criteria for retirement (with generous severance payments). The largest individual expenditure of this enterprise (wage bill) has significantly grown since 2014 instead of being decreased, in line with the Government's decision to reduce salaries in public enterprises by 10%. Practically, the only tangible improvement EPS has made so far is the increase of the previously low tariff for electricity for households, which has been raised in three stages since 2015, by a total of about 11%.[15] Perhaps the most defeating fact is that EPS's investments have been lower than its depreciation for years – and even so, the enterprise's debt has doubled since 2009. Insufficient investments in the energy sector is a problem that extends beyond the mere issue of EPS's performance, as it can become a serious obstacle to dynamic economic growth in the future.

Poor local public finance management is another major fiscal issue that Serbia has not given enough attention for years; it is not even mentioned in the Government's latest medium-term reform plans. Budgets of numerous cities and municipalities in Serbia are unsustainable, and the performance of local public enterprises and other institutions managed by the local governments is weak.

13 In 2018, the Government (seemingly arbitrarily) increased salaries in a nonlinear fashion by 5% or 10% in different general government sectors, deepening the existing imbalances in the wage system.

14 For the time being, it seems that the planned reforms are advancing nicely in Železnice Srbije; out of the large state-owned enterprises, sustainable solutions have been found for Železara Smederevo and recently for Galenika.

15 The remaining increase in electricity price of 7.5% is attributed to the excise and has gone into the budget.

As a consequence, debts of cities and municipalities and their enterprises have reached an amount of 800 million Euros, to which arrears on matured liabilities (defaults) of about 300 million euro should be added. Accumulated fiscal problems of local governments are not just a severe risk to the country's public finance, but they also impede economic growth and directly contribute to a drop in the quality of life for their citizens. Following the conclusions of Fiscal Council [6], we would like to draw attention to the three essential reform tasks for the regulation of local public finances in the medium term. First, the budgeting process at the local level should be regulated (including the financial consolidation of the cities and municipalities that are already facing crises, such as Kragujevac, Smederevska Palanka or Niš) and a predictable and objective systematic framework for financing local governments should be adopted. Second, the structure of local public expenditures is inadequate – investments are too low, and subsidies to local public enterprises are too generous. Improvement of the structure of expenditures at the local level in the upcoming period would, therefore, comprise a substantial increase of investments in local infrastructure, which can be funded to a large extent by a decrease in subsidies. However, for this to happen, it is also necessary to establish the third pillar of reform which encompasses concrete measures for resolving accumulated operational issues of (mostly) unsuccessful local public enterprises.

Tax Administration modernisation is an example of another reform that was the subject of considerable discussion from the beginning of the arrangement with the IMF, but that never went further than the adoption of an action plan (December 2017) for the implementation of the Tax Administration Transformation Programme from June 2015. It is a fact that the new management succeeded to stabilise the operations of the Tax Administration from 2015 through 2017, to increase the collection rate for tax revenues and suppress the grey economy down to the level from 2012.[16] The significance of the more efficient tax revenue collection for the success of fiscal consolidation was promptly recognised, but it seems that it was not a sufficient motivator to truly begin resolving substantial issues faced by the Tax Administration, of which some have been known for a decade now. The list is quite comprehensive: a nonrational network of 178 offices, the absence of a modern and comprehensive IT system for monitoring taxpayers and risk analysis, inadequate structure and professional profiles of employees, too many non-tax related (auxiliary) functions, obsolete business practices, etc. The plan from 2015 recognises these problems and offers solutions, but a U-turn in its implementation is necessary, which would lead to multiple benefits. Reinforcing the capacities of the Tax Administration could bring additional public revenues from informal economy suppression in the upcoming years, which would also strengthen the improvement in tax revenue collection already achieved in the 2015-2017 period. A modern and professional Tax Administration would contribute to the advancement of conditions for doing business in Serbia, which is one of its roles that is frequently neglected. Namely, it is an institution tasked with ensuring consistent implementation of tax legislation and a fair market race for all the participants in the market, which is of enormous importance for competitiveness and attractiveness of Serbian economy for investments.

16 Due to problems with Tax Administration management and the absence of a systemic approach to its reform, in 2013 and for the most part of 2014, there was a drastic increase in informal economy in Serbia and a sharp drop in tax revenue collection [7, p. 44].

Surge in employment with sluggish GDP growth: Reliability of the LFS in Serbia re-examined

Introduction and Main findings

In the previous papers, Petrović et al. [13] and Petrović et al. [15], we questioned the findings of the Labour Force Survey (LFS) suggesting a high growth of employment and a sharp drop in unemployment since 2012 in Serbia, with almost stagnant GDP. In the meantime, new data for 2016 and 2017 arrived, and additional studies on the subject, [10] and [11], have been published. This provides us with an opportunity to revisit this issue and take a more thorough look at the reliability of the Labour Force Survey (LFS) while checking the validity of the previous arguments, using new data series that are long enough, i.e. spanning the period from 2012 to 2017. The primary purpose of the research presented in this chapter

is to encourage the Statistical Office of the Republic of Serbia (SORS) to improve the statistical monitoring of employment in Serbia. If the quality of data in the LFS was to be increased to the level of comparable countries, the Survey could play an extremely significant role in providing relevant information for economic analysis of the labour market in Serbia, i.e. provide the cornerstone for the appropriate economic policies in this field.

In the first section below, using new, extended data set, we show that all the arguments pointing to the low reliability of the Labour Force Survey, that we presented two years ago, still stand. First, alleged strong employment growth in Serbia since 2012 is in sharp contrast with the slow-growing GDP. This is contrary to elementary economic theory and is not happening in any other comparable country. Second, high employment growth since 2012 is not in line with the trends of macroeconomic aggregates strongly related to employment – living standards and the collection of compulsory social insurance contributions.

The connection between employment and GDP is elementary and has been empirically proven innumerable times. According to this fundamental economic relation, GDP growth is the sum of employment growth and productivity growth. Economists often illustrate the relationship between employment and GDP in an abbreviated manner, using employment elasticity (employment growth divided by GDP growth), which generally ranges from zero to one (as employment grows slower than GDP, the difference being productivity growth).

However, according to the LFS data, in the 2012-2017 period, Serbia significantly diverged from these basic economic relations, casting doubts over the credibility of the published data. According to the LFS, from 2012 to 2017 employment increased by over 19% and GDP growth was about 6%, indicating a drop in productivity of about 13%.[17] Unlike Serbia, all other comparable Central and Eastern European (CEE) countries experienced, in the same period, an expected slower growth of employment compared to GDP growth. Employment growth in CEE countries from 2012 to 2017 amounted to 6.1% with GDP growth of 17.1% (indicating a rise in productivity of about 11%). Also, employment elasticities of all CEE countries except Serbia, in the 2012-2017 period, conformed to theoretical expectations ranging from zero to one (on average, 0.3), while in Serbia elasticity scored 3.2 according to the LFS data (Table 2).

Strong employment growth of almost 20% in the previous five years (according to the LFS) has not left any mark on any other macroeconomic aggregate closely related to employment growth. The living standard of the population has hardly increased since 2012, even though private (personal) consumption of Serbian citizens is funded, in large part, from labour income. According to the SORS's data, private consumption in Serbia grew in real terms (i.e. inflation adjusted) by a mere 1.3% cumulatively from 2012 to 2017, which doesn't even remotely support the data on high employment growth from the LFS.

Another direct indication of LFS unreliability lies in the trends of the collection of social security contributions. The increase in contributions would have to be almost identical to the growth of the wage bill (number of employed persons multiplied by the average salary) for the formally employed persons paying contributions. However, social security contributions increased in real terms by only 3.7% in the 2012-2017 period, which is not even close to alignment with the formal employment growth of 13.4% according to the LFS, with the real wages (adjusted for inflation) remaining approximately the same in the observed period. This obvious discrepancy shows that the LFS data are not even remotely correct.

In the following section, we reconsider the arguments in [3], [10] and [11] put forward in defence of LFS reliability. Using the latest available data set, we shall first look at the paper by Arandarenko et al. [3], which offers some hypothetical explanations for the coexistence of high employment growth with stagnant or low-growing GDP. According to these freak hypotheses, which the authors themselves claim to be unusual, employment growth that is significantly faster than GDP growth is possible if the increase in employment rests on low-productive jobs or part-time jobs. Empirical evidence, however, clearly rejects these hypotheses.

The part-time work explanation can be illustrated by an example where one employee, working a full day

17 Since the LFS for the fourth quarter has not yet been published, employment growth in 2017 is approximated using the year-on-year growth in the first three quarters.

of 8 working hours, is replaced, at the same job, by two employees working 4 hours each. In this case, the number of employees would double, but the number of total working hours and GDP would remain unchanged. So, if the LFS were to show that the number of working hours was fluctuating independently from the high employment growth, i.e. that it was either stagnating or growing as slowly as GDP, this could, in theory, explain why the strong employment growth in Serbia had no impact on output.

However, the data for Serbia refute this hypothesis. The number of persons employed on a full-time basis since 2012, according to the LFS, has grown over two times faster than GDP,[18] and the number of part-time employees has increased even more rapidly. With the fast growth of both full-time and part-time employees, it is impossible that the number of total working hours in Serbia has been increasing only as slowly as GDP. This conclusion is explicitly confirmed by the study of Kovačević and Pantelić [10] which provides a direct calculation of the total working hours in Serbia from a comparable data series from the LFS, from 2014 to 2016. It shows that the growth of the total number of working hours was extraordinarily high and closely related to the high employment growth (with a correlation coefficient of 0.7). The total number of working hours in Serbia, according to the said data set, climbed even somewhat faster than the number of employees in the period from 2014 to 2016, growing three times faster than GDP (Figure 7).[19]

Similarly, the new data sets also reject the second hypothesis, i.e. that the growth in jobs with low productivity explains the employment increase of almost 20% with low GDP growth. According to Arandarenko et al. (2016), such trends could occur due to an increase of low-quality (low-productivity) jobs with little impact on output. This hypothesis, however, would have to imply some other rather unusual developments: 1) that in the previous five years there had been no increase of overall productivity in economy at all (such outcome would be very unusual, since in periods spanning several years, productivity usually grows due to technological advances, market competition, etc.) and 2) that in the 2012-2017 period there was practically no increase in "normal" employment directly linked to output growth, but only in the low-productivity jobs. The first requirement is unlikely and contrary to the real wages growth in the private sector that are related to productivity growth, while the second is directly refuted by the data from the LFS.

Namely, out of the total increase in the number of employed persons by a little over 440,000 since 2012, 180,000 were informally employed persons performing low-productivity jobs, while 260,000 represent the rise in standard, formal employment. In other words, marginal informal employment in the 2012-2017 period did show a strong growth of about 47% according to the LFS data, but in the same period, the productive, formal employment grew twice as fast as GDP, by 13.4%.[20] The growth of formal employment remains in the double digits (10.8%) even if we exclude some of the less productive subcategories which show a (suspiciously) high growth, such as formal employment in agriculture. Since the more productive part of employment also grew much faster than GDP, the high growth of the low-quality, informal employment and employment in agriculture (if they even occurred)[21] cannot explain the discrepancy between the employment growth and the GDP growth.

Having tested the freak hypotheses using the new data set from 2012 to 2017, in the remainder of this text we move on to examine the results of the latest research by Kovačević et al. [11]. The authors have attempted to prove the reliability of the LFS empirically, i.e. to show 1) that the disconnection between the employment and GDP trends, suggested by the LFS in Serbia, also occur in many other European countries; 2) that the employment trend in Serbia is in line with the movements of private consumption and social security contributions and 3) that the LFS data corresponds to the administrative

18 According to the LFS data, over 85% of employees in Serbia work full time.

19 The authors intended to show quite the opposite, i.e. that the total number of working hours in Serbia fluctuated independently from employment growth. However, they failed to recognise that the data indicated the complete opposite of their hypothesis (Figures 6 and 7).

20 Due to a larger share, the 13% growth of high-quality jobs has a far more significant impact on the increase in overall employment (by 260,000 employees) than the growth of informal employment of 47% (by 180,000).

21 The plausibility of the data from the LFS that show that the formal employment growth in agriculture, as well as the growth of informal employment in the last five years, has amounted to almost 50% is very questionable. In this study, with so many other convincing indicators of unreliability of the LFS, we will not discuss this matter further.

data on employment trends from the Central Registry of Compulsory Social Insurance (CRCSI). However, each of these attempts either contains a severe error or has been misinterpreted – and in most cases, both. When considered thoroughly, these analyses also firmly indicate that there is something wrong with the data from the LFS.

We first examined the proposal of Kovačević et al. (2017) that the lack of correlation between employment and GDP observed in Serbia is also present in other European countries. The authors attempted to demonstrate this by presenting numerous examples of European countries in which employment elasticity (employment growth rate divided by GDP growth rate) fell well outside of the theoretically expected range between 0 and 1. Each of these examples, however, comprises severe oversights or has been misinterpreted, i.e. none of them demonstrates the lack of correlation between the employment and production trends similar to that in Serbia.

The conclusion of Kovačević et al. (2017) that Luxembourg (in the 2008-2010 period) and Romania (2009-2011) showed extremely high employment elasticities is a direct consequence of an oversight. Namely, for these two countries, there is a clear warning on Eurostat that in those exact periods there are breaks in time series regarding employment, which means they should not be used (Figure 11). Ironically, by looking for similarities with the Serbian example, Kovačević et al. (2017) stumbled upon these two countries, with breaks in time series for employment. This just confirms how strange the LFS data for Serbia actually is. Example of Spain is another good illustration of why there is something wrong with employment data in Serbia. In the period from 2008 to 2013, Spain showed employment elasticity outside of the theoretical range of zero to one, as the country experienced a protracted recession.[22] However, even then employment in Spain almost perfectly followed the GDP trends, with a correlation coefficient of 0.9 (Figure 9). Unlike Spain, according to the LFS data, employment and production show a systemically divergent trend in Serbia (Figure 10). Finally, examples like Hungary (2010-2012) where employment grew by about 2.5% in two years with a GDP growth of less than 0.1% perhaps mathematically yield extremely high employment elasticities (2.5 divided by 0.1), but they are utterly incomparable to Serbia (had the GDP growth in Hungary been zero, employment elasticity would have been infinite). An even more important point is that, unlike Serbia and like Spain, Hungary showed a systemically high correlation of employment and GDP growths, about 0.7.

We proceed to examining the next hypothesis of Kovačević et al. (2017) that the LFS data showing high employment growth is consistent with the collected social security contributions, as well as with the trends in private consumption. These incorrect conclusions, however, stem from irrelevant analyses which, in addition, are packed with mistakes. We will first demonstrate the main errors the authors made analysing employment and social security contributions (SSC) trends:

- First, the choice of indicators to calculate the growth of SSC is, to put it mildly, strange. Kovačević et al. (2017) are not looking at the total SSC, but just at the contributions for unemployment. These particular contributions, however, comprise less than 5% of the total sum of SSC. Over 95% of collected social security contributions in Serbia come from pension and healthcare insurance, which have been unjustifiably excluded from this analysis.
- Second, the study [11] looks at only one year, 2015, when employment according to the LFS had by far the lowest (and the most reasonable) growth in the previous five years. The claim that the data on social security contributions for 2016 was not available to the authors is incorrect. The Ministry of Finance regularly publishes data on SSC on its website, on a monthly basis. Besides, the information on the public revenues collection is regularly reported on by the media and the Government representatives frequently present them to the public, as well.
- Third, data on the growth of unemployment contributions in 2015 is incorrect. The increase of

22 From Q3 2008 to Q4 2013, Spain showed an average drop in GDP of 1.7% and a drop in employment of 3.3%, which resulted in an average employment elasticity of 2. However, such trends are entirely reasonable for the periods of prolonged recession. Namely, even at that time, employment grew slower than GDP (by the growth of productivity, in the amount of 1.6% annually); the elasticity was only "strange" because both employment growth and GDP growth were temporarily negative. As soon as Spain came out of recession, employment elasticity automatically returned to the theoretical bracket 0-1 (Figure 9).

these contributions in 2015 was not 109.9 million dinars, but 155 million dinars. Furthermore, even if 109.9 was the correct figure, it would still not represent a 1.4% growth, as Kovačević et al. (2017) mistakenly claim. In Serbia, the annual amount of collected unemployment insurance contributions is around 20 bn dinars, so their hypothetical increase by 109.9 million could only represent a growth of about 0.5%.

- Fourth, it is incorrectly claimed that the change in the rate of individual insurance contributions presents an obstacle for the calculation of growth rates of these revenues. The correction for the amended rates is a trivial calculation.
- Fifth, contribution collection should not be directly compared to employment growth, but rather to the wage bill growth for those formally employed (the number of employees paying contributions multiplied by their average salary). This is why the explanation of Kovačević et al. (2017) that the contribution collection is not keeping up with employment growth due to salary cuts in the public sector and due to salary cuts resulting from amendments to the Labour Law, is irrelevant. These changes are taken into account automatically when the data on employment growth is multiplied by the average salary increase, which is an inescapable step in the correct procedure.

Due to the mistakes stated above, in this section, we demonstrated in detail the correct calculation of the social security contribution trends and the trends of the respective tax base. When this calculation is applied correctly, it transpires that the cumulative real growth of the SSC collected in the 2012-2017 period was 3.7% and that the wage bill, which is the corresponding tax base, has increased (according to the LFS) by over 10% in real terms. This result is a clear indication that the data published in the LFS are unreliable.

In their analysis of private consumption trends [11], Kovačević et al. (2017) make similar mistakes as in the case of social security contributions. For instance, private consumption was incorrectly approximated using retail turnover growth. Retail constitutes only a minor part of private consumption, since citizens also spend their money on utility bills, culture, education, recreation, occasionally eat out, visit cafes, travel, shop at markets, etc. It is unclear why private consumption was approximated in the first place when the SORS publishes a ready-to-use data on this indicator in its regular quarterly reports. Private consumption is one of the most important macroeconomic aggregates used by international institutions (IMF, European Commission, World Bank and others) in almost all economic reports on Serbia, taken directly from the SORS. It is bizarre that the Director of SORS (Kovačević) refuses to use this data in his studies, opting instead to approximate it using an incorrect indicator. The overall real growth of private consumption in the 2012-2017 period amounted to a mere 1.3%. This does not even remotely fit in with the LFS data on employment growth of almost 20%, since the consumption of population is largely funded precisely from the income earned by labour.

Finally, we examined how Kovačević et al. (2017) show that the data from the LFS align with the administrative data on employment growth from the Central Registry of Compulsory Social Insurance (CRCSI), again finding numerous mistakes. According to them, the growth of formal employment excluding agriculture (LFS) was almost identical, from 2012 through 2016, to the growth of the comparable registered employment, agriculture excluded (CRCSI). Both employment categories allegedly increased by about 100,000 in the said period. However, there are two major issues with this result:

- First, the analysis itself is quite questionable since SORS introduced CRCSI as the source for data on registered employment in 2015. This means that CRCSI data presented for the period before 2015 are not in fact derived from this administrative source, but are themselves estimates of the SORS.[23] Therefore, the majority of this analysis actually boils down to a comparison of the LFS data to other estimates of the SORS and not with the actual administrative data on employment. Even more interesting is the fact that the LFS itself was used as one of the sources for estimating administrative employment before 2015.

23 There is even a noticeable change in trend in the data series for 2015, after the transfer from estimates to actual administrative data.

Thus, it turns out that in this analysis the LFS is being compared to itself, yielding an overlap of data.

- Second, the analysis [11] also comprises significant errors. Namely, the number of employees excluding agriculture from CRCSI in 2016 erroneously includes over 33,000 farmers employed in agriculture (as sector of economic activity by NACE). Since these employees were not included in the CRCSI data for 2012, the calculated increase in the number of employees in the period from 2012 to 2016 is incorrect. When this mistake is fixed, it can be seen that, according to the CRCSI, the number of employed persons increased by 62,400 and not 96,000, which is 40% less than the comparable data from the LFS present (growth by 103,000 employed persons). Similar trends continue in 2017, in which the number of employees according to the LFS grew by over 30,000 employees more than the CRCSI data show. Therefore, even this analysis (with its numerous shortcomings) would still indicate that the LFS has been systematically overestimating the employment growth, had Kovačević et al. (2017) used the correct data.

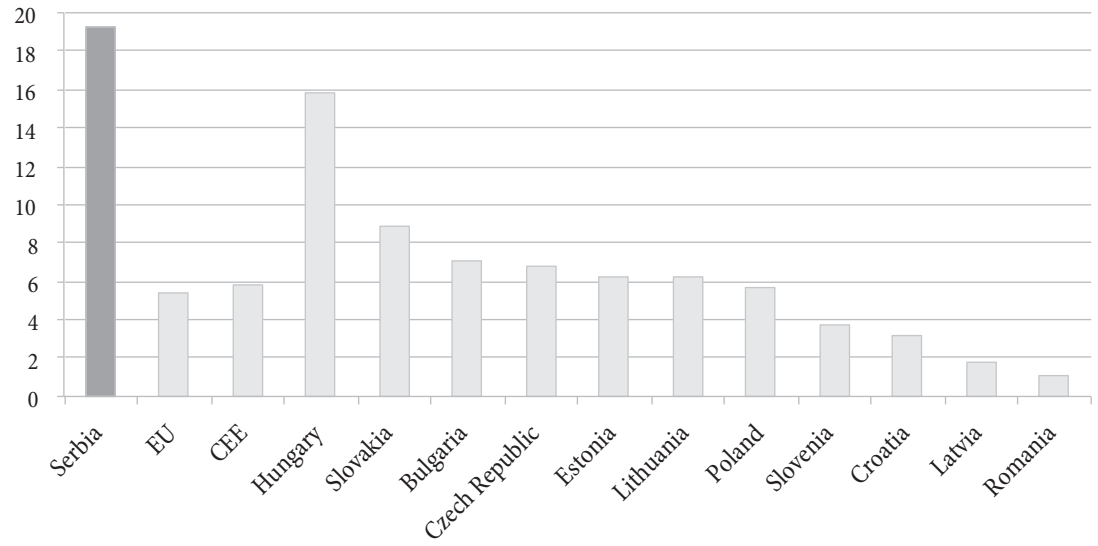
High employment growth with no production growth: A long-lasting illusion

Even though it scored the lowest economic growth in Central and Eastern Europe in the 2012-2017 period, of about 6%, Serbia holds the absolute European record in employment growth as measured in the Labour Force Survey. From 2012 and ending in Q3 2017, the number of employed persons in Serbia increased, according to official data, by about 450 thousand, i.e. by 19.3%. In other CEE countries, employment growth in the same period was on average 5.9%, i.e. 13.4 p.p. lower than in Serbia. Employment growth per CEE countries from 2012 to 2017 is presented in Figure 5.

Employment growth that is drastically faster (according to the LFS data) than the GDP growth in the last five years is a trend observed only in Serbia. In other comparable CEE countries, the evolution of employment and GDP was the opposite, i.e. the average employment growth of 5.9% in the 2012-2017 period was accomplished with a three times higher average GDP growth of 17.1%. Looking at the data for individual countries, no CEE country except Serbia showed employment increase at a faster rate than GDP growth from 2012 to 2017. Thus, for example, in Hungary, where employment growth of 15.8% was also rather high, the highest after Serbia, the GDP growth was even higher, reaching 16.7%. Such results for CEE countries are in line with the theoretical expectations of employment growth being somewhat lower than the GDP growth in the long term, by the increase of labour productivity.

In Table 2, along with the growth of employment and GDP, we have presented an additional indicator by individual countries – employment elasticity to GDP.

Figure 5: Employment growth in Serbia and other CEE countries, 2012-2017



Source: Eurostat and SORS, employment growth in 2017 shows the y-o-y growth in the first three quarters, for which the data is available.

Table 2: Serbia and other CEE countries, employment and GDP growth and employment elasticity, 2012-2017

	Employment growth	GDP growth	Employment elasticity to GDP
Serbia	19.3	6.1	3.2
EU	5.4	8.6	0.6
CEE	5.9	17.1	0.3
Bulgaria	7.0	14.2	0.5
Czech Republic	6.8	14.8	0.5
Estonia	6.3	14.2	0.4
Croatia	3.2	8.0	0.4
Latvia	1.8	14.9	0.1
Lithuania	6.2	16.1	0.4
Hungary	15.8	16.7	0.9
Poland	5.7	17.0	0.3
Romania	1.0	24.5	0.0
Slovenia	3.7	12.5	0.3
Slovakia	8.8	15.7	0.6

Source: Eurostat and SORS, employment growth and GDP growth in 2017 show the y-o-y growth in the first three quarters, for which the data is available.

Employment elasticity represents the percentage change in total employment with a GDP increase of 1%, and it should range from 0 to 1 in the long term, except in some extraordinary circumstances. For instance, employment elasticity of 0.3% (which is the CEE average in the observed period) would mean that for each percent of GDP growth, employment grew by 0.3%. Unlike all other comparable countries, in which employment elasticity in the period from 2012 to 2017 ranged precisely from 0 to 1 (Table 2), in Serbia, this elasticity amounted to 3.2. This means that employment grew over three times faster than GDP, i.e. cumulatively, as much as over 13 p.p. more than the economic growth.

We observed the disparity between the low GDP growth and the official data on high employment increase in Serbia several years ago when we decided to analyse it in more detail. The results of these analyses were reported in two of our papers, [13] and [15]. As a reminder, we demonstrated back then (as we did now, again) that extremely favourable trends in Serbian labour market since 2012 are not in line with the low GDP growth. There we also showed that nothing similar is happening in any other comparable country and that the high employment growth has no connection whatsoever with the trends in other Serbian macroeconomic indicators, which would have to be closely economically correlated with it (private consumption and revenues from social security contributions). Enormous discrepancies between the LFS data and all other related indicators (GDP, SSC, private consumption) indicated that the data from the Survey were probably not correct, i.e. that the LFS was not, for the time being, accurately monitoring the trends in the labour market in Serbia.

All the inconsistencies of the LFS data we pointed out back then still stand. For example, even with employment growth of almost 20% (according to the LFS), private consumption adjusted for inflation increased by a mere 1.3% in the 2012-2017 period. Private consumption in Serbia is largely funded by the income the population earns from their labour, which is why it is difficult to believe that employment growth of about 20% has left practically no trace on the increase in consumer spending. Even more directly and precisely, increase in social security contributions would have to be almost identical to the growth of the wage bill (number of employed persons multiplied by the average salary) for the formally employed persons. However, social security contributions increased by only 3.7% in real terms from 2012 through 2017, which is not even remotely aligned with the growth of formal employment of 13.4% according to the LFS and the drop in average real wages of 1% in the observed period.

From freak hypotheses to data that refute them

Arandarenko et al. (2016) attempted to challenge the findings on the lack of reliability of the LFS. In [3], they presented unlikely hypotheses according to which the sharp employment growth in Serbia could be possible without an increase in GDP. In addition to that, they also presented several methodological remarks that should have challenged the results of the analysis of Petrović et al. (2016a).

However, when the offered hypotheses were tested using the data for Serbia [15], it turned out that neither of them could even remotely explain the unusual high employment growth since 2012. Besides, the methodological objections were irrelevant, as they had no impact on the conclusions on the low reliability of the LFS. We will now briefly test, using the new data and new research, whether

the theoretical explanations of the high employment growth rate with the low GDP growth were confirmed in reality.

The hypothetical explanation offered for the much higher growth of employment than of GDP included an increase in low-quality and part-time jobs [3]. However, for this to be a plausible explanation for the overall employment growth of almost 20% with a GDP growth of 6%, the changes in employment structure would have to be so extreme that they would be difficult to imagine, even in theory. To provide a simple illustration of the magnitude of changes needed, we can think of two stylized examples. First one would mean that there was no technological or any other progress in a five-year period that would lead to overall productivity growth in economy, and that the 450,000 new jobs, which were created since 2012 according to the LFS, had the average working hours of 2 hours per day. Or, the second example, with the same conditions as in the first, in which only 1/3 of the workload of existing jobs were being performed, during an average working day with regular hours, in all jobs created since 2012. These examples are extremely simplified and can be combined in numerous ways, but they show, in essence, that the conditions for a high employment growth rate, three times faster than the growth of GDP, would be quite extreme. Namely, they show that the growth of regular jobs is limited by the low GDP growth rate (i.e. that it would be stagnating or even dropping), that there would be no usual growth in productivity of economy[24] and that almost entire employment growth would rest on very unusual, low-quality, part-time jobs.

However, the data for Serbia indicate that the high employment growth is not even remotely limited to the increase in low-productive or part-time employment. For instance, the number of employees in low-productive informal employment, according to the LFS, increased from 2012 to 2017 by about 180,000, but the number of employees in the productive formal sector increased even more, by about 260,000.[25] In other words, the growth of regular, formal employment did not just fail to lag behind the GDP growth, but it even grew twice as fast as GDP. Also, other most productive categories of employment also grew several times faster than GDP (employees with university degrees, full-time employment, etc.). Therefore, if the answer to the first question of why GDP was growing three times slower than employment was that the informal, low-quality employment showed a strong growth, the natural second question would be: How is, then, standard, formal employment also growing twice as fast as GDP, according to the LFS? It is true that not all jobs are created equal, some have a larger and some a smaller impact on GDP growth. Still, as long as both low and high-productivity employment were growing much faster than GDP, the hypothetical explanation of the disconnection between employment and GDP lying in the increase of low-quality work does not stand up to scrutiny.

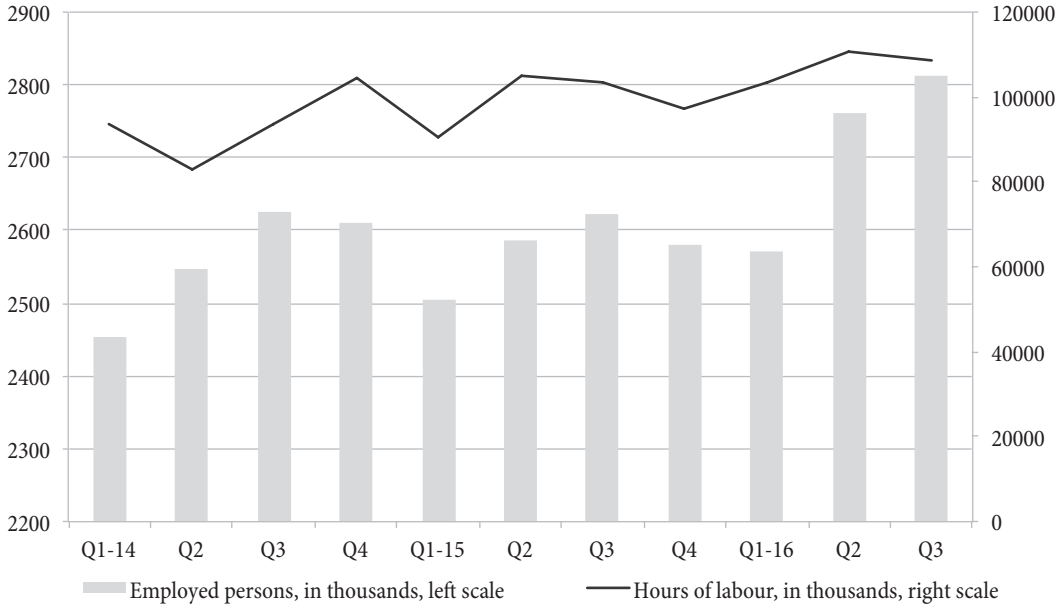
The unrealistic hypotheses which could, in theory, explain high employment growth without GDP growth are refuted from another angle, by the results of the research by Kovačević and Pantelić (2017). Namely, hypothetical employment growth not accompanied by GDP growth is possible in a situation in which the total number of working hours does not increase along with employment growth. To illustrate this, let us imagine the simplest example of one employee, working a full-time working day of 8 hours, being replaced, in the same job, by two employees working half-time (4 hours). In this case, the number of employees would double, but the number of total working hours and GDP would remain unchanged. We rejected this hypothesis as an explanation for employment growth that by far exceeds the GDP growth in Serbia, by pointing out that, according to the LFS, the number of employees in both full-time and part-time categories was growing much faster than GDP. Bearing that in mind, the total number of working hours cannot stagnate, or increase as slowly as GDP.

Kovačević and Pantelić (2017) refuted this hypothesis even more directly, by looking at the actual total number of working hours in Serbia. It is interesting, however, that they did this entirely unintentionally while trying to show that the total quantity of working hours in Serbia did not increase along with the employment growth. Here is what Kovačević and Pantelić [10] say: "...the total number of

24 These conditions are not even aligned with the growth of real wages in the private sector of about 3% in the 2012-2017 period.

25 Going a little further in detail, the number of the formally employed, excluding agriculture, increased by almost 200,000.

Figure 6: "Independent" trends of surveyed employment and working hours, in thousands



Source: [10].

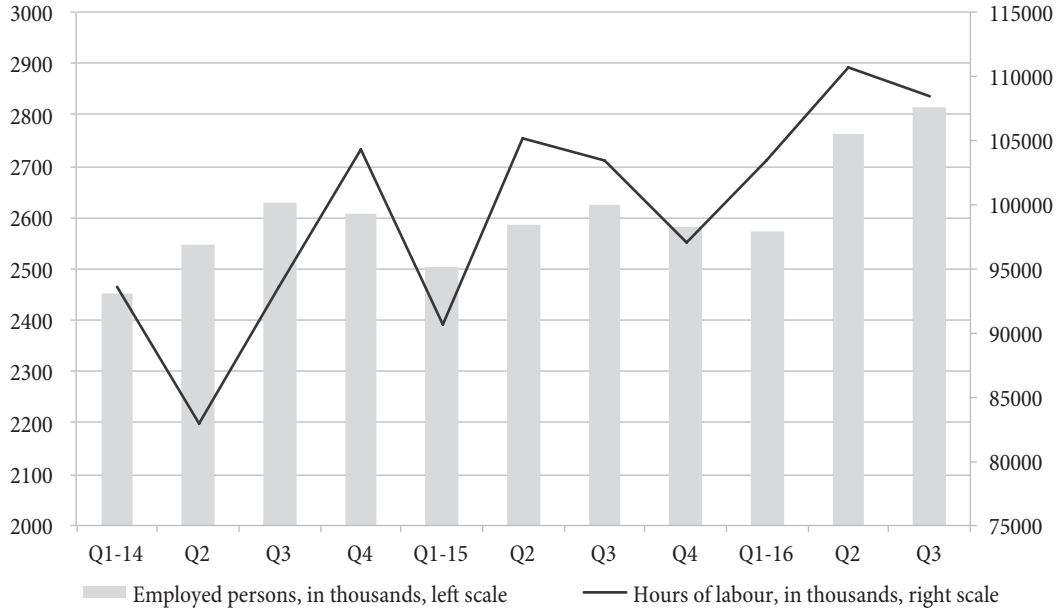
working hours is still changing independently from the employment growth." We are presenting the figure from their work in its original form (Figure 6).

Even though it may seem, at first glance, that the total number of working hours (the plotted line in the Figure) and employment (bars) change independently, we get that impression only because the data for the two indicators are presented in a misleading graph (improperly scaled). The left axis, that shows the number of employees, has been adjusted to a short interval from 2,200 to 2,900, while the right axis, that shows working hours, starts at 0 and ends at 120,000. When the axes are readjusted to a correct, comparable scale (Figure 7), it becomes evident that the same data is showing something entirely opposite – that the total amount of working hours increased to a similar degree as employment. If you still do not believe your own eyes (Figure 7), here is the calculated correlation coefficient of the two indicators that confirms this: 0.7.

It is even more interesting that the total number of working hours in the observed period, according to the LFS, actually grew even somewhat faster than employment, not slower. This is completely contrary to the hypothesis that GDP grew slower than employment because the increase of the total number of working hours was not as fast as employment growth. Employment growth from Q1 2014 to Q3 2016 amounted to about 15% while the total number of working hours increased by about 16%. To exclude any potential seasonal impacts, we compared the data for Q3 2106 with the data for Q3 2014 – and again, the growth of the total number of working hours amounted to 16% (real GDP growth, in the same period, amounted to a mere 5%).

We will now take a brief look at the two methodological objections to our calculations, presented by Arandarenko et al. (2016) which we find important, testing them using the new data. The first objection is that in our previous research we failed to take into consideration that one part of employment growth after 2012 came as a result of the data revision in 2014 by SORS, by which the total number of employees in that year increased by about 120,000. However, even a correction such as that one would still not make a difference in our conclusions. For example, if we consider the revised data from 2014, the number of employees increased by 19.3% in the 2012-2017 period, according to the LFS (to avoid any nonproductive discussions on the subject, this is the data we will use in the present analysis). Without this correction stemming from the SORS's revision, employment growth in the 2012-2017 period would be even higher, reaching about 25%. Of course, employment growth of 19.3%, just like the one of 25%, is utterly disparate from the GDP growth of 6.1%, as well as from other indicators that would have to be strongly related to employment.

Figure 7: Trends of the surveyed employment and the total number of working hours (correct scale), 2012-2014



Source: [10].

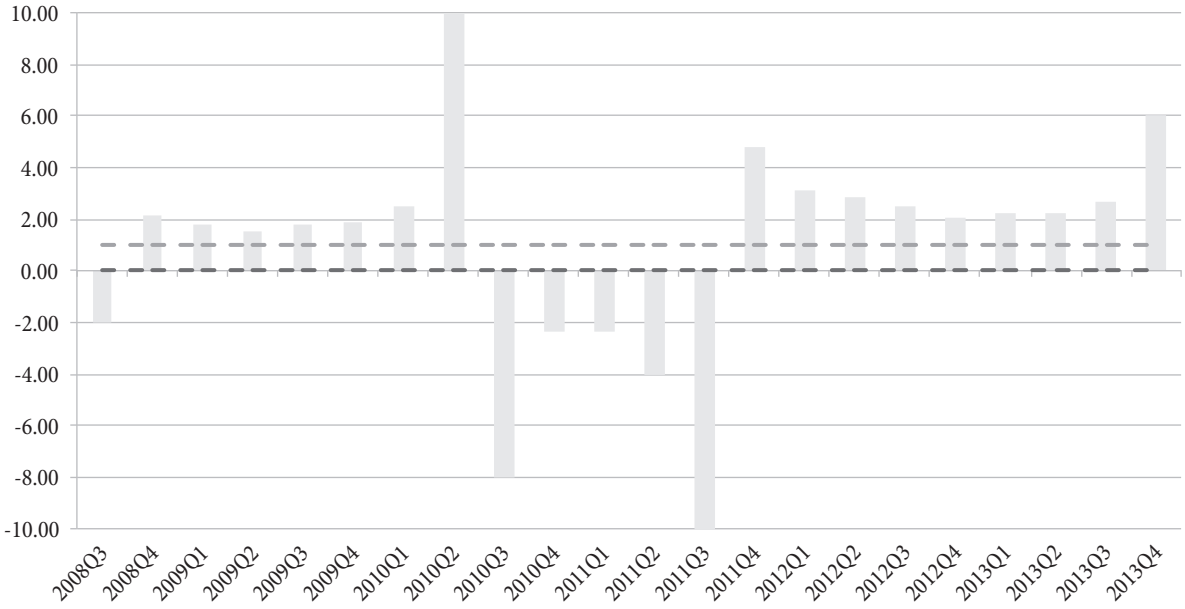
The second seemingly significant methodological objection was that the data on the average wage from the RAD survey could not be used for the calculation of the wage bill for formal employment as a tax base for social security contributions (average salary multiplied by the number of persons formally employed). Namely, the scope of RAD and the scope of formal employment from the LFS do not completely overlap (the overlap is "only" 80%). Thus, we additionally analysed the trends of salaries and employment in those professions in which the RAD survey does not overlap with the formal LFS employment (military, police, formal employment in agriculture, etc.) and came to the unrefutable conclusion that the difference between the trends in SSC collection and the wage bill for formal salaries of over 10 percentage points cannot even remotely be explained by this methodological objection. Finally, the SORS, which will soon change its average wage calculation to be based on the Tax Administration data, has declared that the average wages calculated by using the old method and the new method are very similar.

After the analyses of the freak hypotheses that Arandarenko, Kovačević and others [3],[10] have used in an attempt to justify the high employment growth in the absence of GDP growth, we will now look at the empirical research trying to prove that the LFS data are reliable. In the paper we analysed, Kovačević et al. (2017) attempted to empirically prove the following: 1) that the disconnection between employment and GDP trends also occurs in other European countries, 2) that the employment trend in Serbia is in line with the trends of private consumption and contributions and 3) that the LFS data correlate with the administrative data on employment trends from the Central Registry of Compulsory Social Insurance (CRCSI). However, each of these analyses either contains a severe error, or has been misinterpreted – and in most cases, both. When they are considered objectively, even these analyses also firmly indicate that there is something wrong with the data from the LFS.

How can it be shown that high employment growth is hardly possible without GDP growth: On employment elasticities

Kovačević et al. (2017) attempted to prove that the discrepancy between employment and GDP trends, such as those in Serbia, are possible because, allegedly, there is empirical evidence of the same occurrence in other European countries as well (Section 4: Employment elasticity and "inconceivable" disconnection between employment and GDP) [11]. However, all that the authors have actually managed to prove in this chapter speaks exactly the opposite – that there is no European country

Figure 8: Employment elasticity in Spain, 2008Q3 - 2013Q4



Source: [11, p. 347].

that has seen such a strong employment growth without GDP growth that Serbia has experienced.

Before diving into analysis of this research, it is worth noting that we have already shown, in Table 2, that from 2012 to 2017, Serbia completely diverged from all other comparable CEE countries by its disparate trends of employment and GDP. Namely, all CEE countries, except Serbia, had consistent trends of employment and GDP growth in the same period (with employment elasticities ranging between 0 and 1). However, Kovačević et al. (2017) expanded their data set to other European countries, such as Spain and Luxembourg, for which a valid question arises whether they can even be compared to Serbia. Furthermore, they are looking at a far longer period. Still, even with such a widely-cast net, they still failed to find a single example that would be similar to the Serbian case.

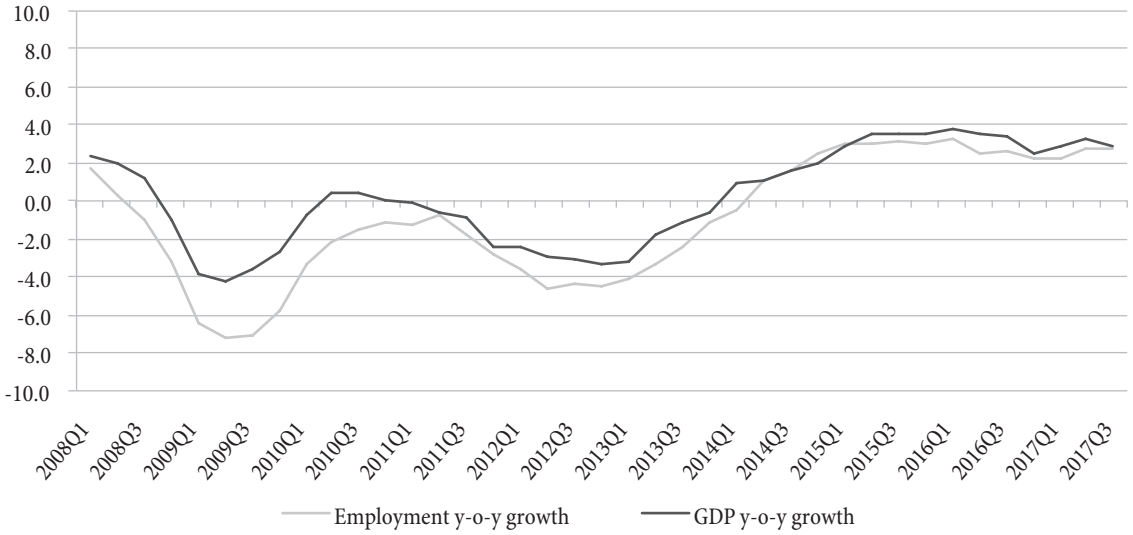
Spain is the first country that is mistakenly claimed to be similar to Serbia, in its discrepancy between employment growth and production growth. Kovačević et al. (2017) noted that in Spain, employment elasticity remained outside of the theoretically expected range of 0 to 1 in all quarters from Q3 2008 to Q4 2013. We are presenting these results in Figure 8 which was originally shown in [11].

It is not common to observe the link between employment and GDP through the data on employment elasticity on an unstable, quarterly level – which is what Kovačević et al. (2017) do. However, this very data set, when considered carefully, irrefutably shows (contrary to their intentions) that the trends of employment and GDP in Spain are extremely well correlated. As we have pointed out, employment elasticity is derived from employment trend and GDP trend. Therefore, instead of elasticity, which is an indirect indicator, let us consider the direct quarterly data on employment growth and GDP growth in Spain (y-o-y), from 2008 to 2017 (Figure 9).[26]

Figure 9 shows that there is an almost perfect correlation between employment growth and GDP growth in Spain. The correlation coefficient between the two indicators is 0.97 and, due to systematically somewhat slower growth of employment compared to GDP, Spain also experienced

26 In their analysis of employment elasticity in Spain [11], Kovačević et al. use seasonally and calendar-adjusted year-on-year quarterly employment and GDP growth, taken from Spanish national accounts developed using ESA 95 methodology, that has not been in use for quite a while now. However, analyses like these do not require seasonal adjustment followed by y-o-y comparison (y-o-y comparison already takes seasonality into account), using data on employment outside of the LFS, especially not if data is obtained using old methodologies. The differences between the regular y-o-y indices from the LFS that we use and this data set are insignificant. However, this example serves as a good illustration of the perpetual propensity of Kovačević et al. to unduly complicate the relatively simple, long-explored relations between employment and GDP.

Figure 9: Spain: employment and GDP growth, y-o-y, 2008-2017



Source: Eurostat, [namq_10_gdp], [lfsq_egan].

the expected increase in labour productivity. In the period especially emphasised by Kovačević et al. (2017), Q3 2008 to Q4 2013, the quarterly employment elasticities really did remain outside of the 0 to 1 range, but this was due to a prolonged recession,[27] while the link between the trends of employment and GDP remained at an impressive level of 0.9 even at that time. Let us now consider Figure 10 and what employment and GDP trends look like in Serbia, according to the LFS.

Let us prevent any of the typical (irrelevant) methodological objections: the year-on-year employment growth in 2014 is calculated, just like in [11], using unrevised data for 2014, while for the year-on-year growth in 2015 the revised data for 2014 were used. Also, we are aware that prior to 2014, the LFS was performed twice a year and not quarterly, as well as that one of the surveys (in 2011) was conducted in November and not in October. But if the researchers who claim that the LFS in Serbia is reliable still see nothing strange in the data for Serbia when comparing Figure 9 and Figure 10, we have lost all hope that any additional explanations may be of any assistance to them.[28] We note that it was Kovačević et al. (2017), not us, who chose Spain as evidence that the disparate employment and GDP trends occurred in other countries too.

After using Spain as an example to convincingly illustrate, contrary to their original intentions, all the logical inconsistencies in the LFS data on employment trends in Serbia, Kovačević et al. (2017) moved on to a systemic analysis of employment elasticity in 33 European countries in two-year periods (Table 3). Out of about 200 possible episodes, five were selected and presented with the idea that they would be comparable to unusual employment and GDP trends in Serbia. Table 3 is here presented in its original form, from [11].

Table 3: Highest employment elasticities in Europe by two-year subperiods

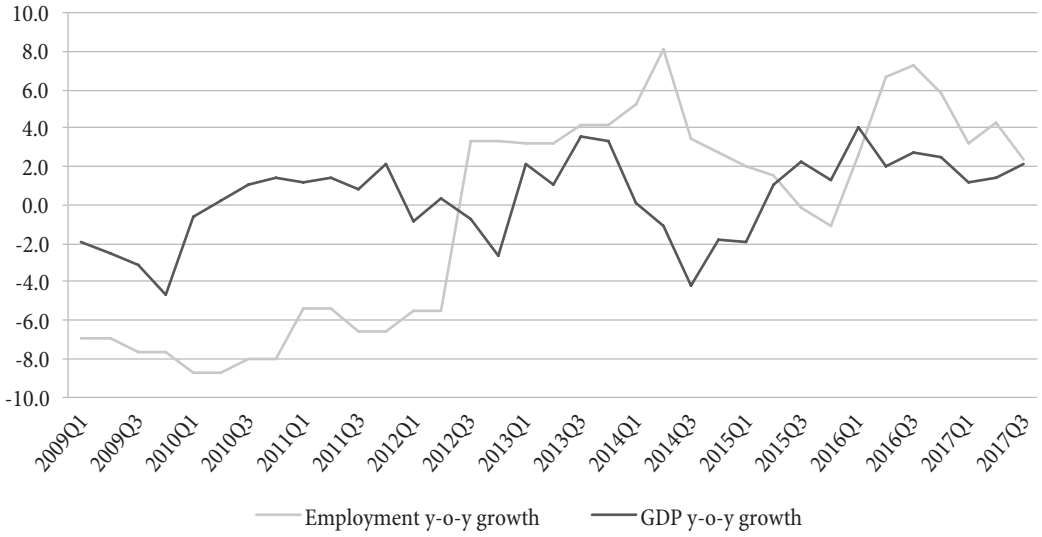
	08-10	09-11	10-12	11-13	12-14	14-16*
EU 28	1.34	-0.35	-0.28	2.1	0.38	0.63
Luxembourg	31.56					
Romania		-29.35				
Hungary			24.61	7.36		
Serbia	6.08	-6.84	-19.99	1.74	12.39	1.76
Cyprus						
Greece						-15.04

Source: [11, p. 348].

27 From Q3 2008 to Q4 2013, Spain showed an average drop in GDP of 1.7% and a drop in employment of 3.3%, which resulted in employment elasticity outside of the theoretical range from 0 to 1 (on average it was 2). However, such trends are normal for periods of prolonged recession. Productivity increased in these five years, as expected (on average 1.6% per year). Due to the increase in productivity, employment increased slower than GDP, which is also expected. Elasticity, therefore, is only "strange" because GDP growth was negative. As soon as Spain came out of recession, employment elasticity automatically returned to the theoretical bracket 0-1 (Figure 9). The correlation between employment and GDP was never lost, as the Serbian example shows.

28 If there is any doubt that the semiannual data for Serbia before 2014 is not completely comparable, it is possible to look solely at the quarterly data from 2014 onwards and compare them to Spain.

Figure 10: Serbia: employment and GDP growth, y-o-y, 2009-2017



Source: SORS.

We looked a little deeper into these, at first glance, extreme episodes of the disconnection between employment and GDP trends. The analysis shows that none of these episodes is even remotely comparable to what is happening in Serbia (according to the LFS data). Before we begin, we would like to express certain extent of reserve as to the analysis of Cyprus, as this country is only mentioned in the table by Kovačević et al. (2017), with no data entered.

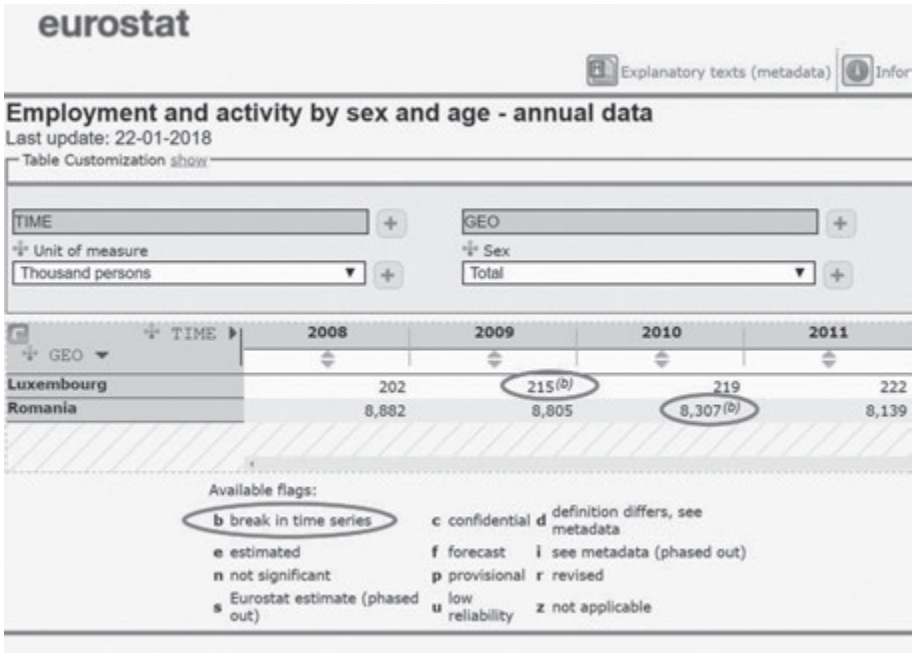
High employment elasticities in Luxembourg and Romania are easy to explain. As soon as data sets for these countries are opened on Eurostat, there is a clear warning that the data series for employment in these countries have a methodological break in 2009 and 2010, respectively – precisely the years in which Kovačević et al. (2017) found their elasticities to be strange. Due to a break in time series, the calculated elasticities for Luxembourg and Romania are worthless. Ironically, Kovačević et al. (2017) are quite persistent in their efforts to find methodological objections to our studies while they use data that is clearly indicated as incomparable (Figure 11). By looking for similarities with the Serbian example, Kovačević et al. (2017) stumbled upon these two countries with breaks in time series for employment, which just confirms how strange the LFS data for Serbia actually is.

This leaves us with two other countries, Hungary and Greece, with three episodes of extreme divergence of employment elasticities from the theoretical range of 0 to 1 (Table 3). For these countries, we divided employment elasticities into employment growth and GDP growth, as was the case earlier with Spain (Figure 9).[29] This allows us to see that, regardless of high elasticities, at no point in time did Greece or Hungary achieve even a half of Serbia's 8.7% employment growth in the 2012-2014 period. High elasticities in Greece and Hungary are a consequence of dividing moderate employment growth with GDP growth that is close to zero, and not of a strong increase in employment with low growth of GDP (as is the case in Serbia). For example, the largest elasticity in Table 3 of about 25 (Hungary 2010-2012) is the consequence of employment growth of just 2.5% with GDP growth under 0.1%. Had Hungarian GDP growth been 0, elasticity would have been infinite.

Additional research showed that there is no disconnection in Hungary and Greece between GDP and employment trends like there is in Serbia. For these two countries, we looked at the statistical connection between the growth of GDP and employment. This additional analysis has shown that in Greece and Hungary, the trends of employment and GDP show an extremely strong systemic link – like the one in Spain and completely unlike the one in Serbia. Correlation coefficients of employment (from the LFS) and GDP in the 2008-2017 period were 0.85 for Greece and 0.7 for Hungary. And the "correlation"

29 We failed to reconstruct the data used in [11] for calculating employment elasticity with complete precision. Hence, in the data source, we shall leave the exact table codes we used, from Eurostat.

Figure 11: Luxembourg and Romania: break in employment time series



Source: Eurostat, [lfsi_emp_a].

Table 4: Hungary, Greece and Serbia: employment and real GDP growth rates (in %)

		08-10	09-11	10-12	11-13	12-14	14-16
Hungary	Employment growth			2.5	3.7		
	GDP growth			0.1	0.4		
Serbia	Employment growth	-12.7	-13.9	-7.0	2.6	8.7	6.3
	GDP growth	-2.5	2.0	0.4	1.5	0.7	3.6
Greece	Employment growth						3.7
	GDP growth						-0.5

Source: Authors' calculations based on the data from Eurostat, [lfsi_emp_a], [nama_10_gdp].

between employment and GDP trends in Serbia is best illustrated by Figure 10.

In addition, we have observed that Kovačević et al. (2017), when claiming that employment growth does not necessarily have to follow GDP growth, fail to differentiate between the long-known phenomenon of GDP growth through an increase in productivity and the absence of employment growth (jobless growth)[30] and the entirely opposite trend allegedly occurring in Serbia. For instance, it is completely normal for GDP to grow by 1% with a drop in employment of 2% even though elasticity, in that case, amounts to -2, outside of the theoretical range 0-1. This, in fact, just implies a very common growth in productivity of 3%, which is why this elasticity would not indicate that there was something off with the data. However, a high growth of employment with a minimal growth of GDP, which has been observed in Serbia since 2012, does not only result in employment elasticity outside of the theoretical range, but also indicates a highly unlikely long-term steep drop in productivity and a complete absence of correlation between GDP and employment trends (Figure 10), which makes it practically impossible.

Where to look for data: On compulsory social security contributions

In this section of the paper, we will analyse the observed disconnection between employment growth and contributions collection, with some reference to the findings of Kovačević et al. (2017). Already in the abstract of [11], there is an

30 Something similar is, for example, happening in Romania at the moment.

erroneous claim that the high employment growth noted by the LFS since 2012 was in line with the increase in compulsory social insurance contributions collection. The text that follows "proves it" in the paragraph we present here without corrections.

"However, we continue monitoring the SSC trends and our findings, based on the available series of data (we still do not have access to 2016 data), suggest the increase in revenues from payroll tax by 1% (RSD 1.078 million) and from contributions for unemployment insurance by 1.4% (RSD 109.9 million) in 2015 compared to 2014. Here, we ignored the impact of amendments to the Labour Law in the middle of 2014 on salaries and salary reduction in the public sector at the end of 2014. Due to a change in the composition of SSC in 2014, we avoided measuring the increase of revenue in 2014/2015 period. As we do not have access to SSC revenue data for 2016, we are leaving it to Petrović et al. to confirm our hypothesis that SSC revenue growth in 2012-2016 period (taking into account the effects of the amendment to the Labour Law, reduction of salaries in public sector and change in the composition of SSC) was even more moderate than registered employment growth in the same period" [11, p. 350].

Thus, Kovačević et al. (2017) have not even attempted to prove that the high employment growth from 2012 according to the LFS was in line with the collected compulsory social security contributions (even though their abstract claims that this is indisputable). Instead, they have left the burden of proving their erroneous hypothesis to us. In this paper, the correct finding has already been presented – the real growth of collected contributions in the 2012-2017 period amounted to mere 3.7%, while the real growth of the wage bill in formal economy (approximate tax base for the collection of contributions) grew by over 10% in the same period (according to the LFS). This, contrary to what Kovačević et al. (2017) may believe, is not even close to representing correlated trends. Hence, for educational purposes, we will demonstrate how this is calculated and which data is used.

First, the data on collected social insurance contributions are published regularly, on a monthly basis, on the website of the Ministry of Finance. Representatives of the Government and the Ministry of Finance often present this data in public and the media report on them regularly. It is incomprehensible why Kovačević et al. (2017) would claim that the data on the collected contributions for 2016 is not available. This is why we will provide a link where this "unavailable" data on the contributions collected, on a monthly and annual level, since 2005, can be found, including not only 2016, but also 2017: http://www.mfin.gov.rs/pages/article.php?id=13526.

In addition, for the analysis of trends of the compulsory social security contributions collected (even for a single year), it is exactly the data on the collected compulsory social security contributions that should be used, and not the payroll tax and contributions for unemployment insurance, as stated in [11]. Compulsory social insurance contributions comprise contributions for (1) pension insurance, (2) health insurance and (3) unemployment insurance. Over 95% of the total amount of contributions are covered by pension and healthcare insurance. It remains unclear why Kovačević et al. (2017) opted to exclude these and only follow the unemployment insurance, which comprises less than 5% of the overall contributions and payroll tax (with payroll tax not being a contribution, at all).

Had Kovačević et al. (2017) correctly followed all collected contributions in total, and not just the unemployment insurance contributions, they would have automatically resolved another "issue" they had: "... Due to a change in the composition of SSC in 2014, we avoided measuring the increase of revenue in 2014/2015 period" [11, p. 350], because, when you look at the total and not individual contribution components, the change in their composition becomes irrelevant.[31]

Further, the data used in the analysis are incorrect. Contributions for unemployment insurance did not grow by 109.9 million dinars in 2015 [11], but by 155 million dinars. Also, even if 109.9 was the correct figure, it would still not represent 1.4% growth, like Kovačević et al. (2017) mistakenly claim. In Serbia, around 20 bn dinars are collected each year for unemployment insurance, so

31 As a side note, a change in the rate of individual contribution component should never present an analytical problem, i.e. an excuse for the lack of analyses. But, the claims of Kovačević et al. (2017) have long since stopped surprising us.

their hypothetical increase by 109.9 million could only represent growth of about 0.5%.

If the mistakes in Kovačević et al. (2017) are corrected and accurate and relevant data are taken from the website of the Ministry of Finance, the real growth of contributions in the 2012-2017 period can very easily be calculated. Of course, in doing so, one should note that in 2013 there was a decrease in the income tax rate from 12% to 10% and an increase in contributions for pension insurance from 22% to 24%. This change led to an increase in the total contributions rate by slightly over 5%, which is why the total growth of contributions in the 2012-2017 period must be corrected by somewhat over 5 p.p. compared to the original data. This procedure leads us to the precise calculation of the real growth of contributions in the 2012-2017 period of 3.7%.

We can now look at the LFS to see what it says about the growth of the contributions base. We will use the data on formal employment growth from the LFS to calculate the contributions base (employees paying contributions), as well as the data on the growth of the average wage from employment statistics (RAD survey).[32] Trivial as it may seem, we obviously have to emphasise that the contributions base is not the number of employees, but the total wage bill (the number of persons formally employed multiplied by the average wage). Hence, the warning of Kovačević et al. (2017), that we should consider the decrease of salaries arising from amendments to the Labour Law and from the cut of salaries in the public sector when calculating the discrepancy between the contributions collected and employment growth from the LFS, is pointless. These changes are automatically encompassed by the changes in average wage.

Thus, according to the LFS data, formal employment growth in the 2012-2017 period amounted to 13.4% and the real wages dropped by 1%. This is why the real wage bill of the formally employed (contributions base) approximately increased by 12.4% in the same period in which the contributions increased by 3.7% in real terms. We can now go into a little more detail. For instance, we can divide the formal employment trend (LFS) into the formal employment trend excluding agriculture (growth of 10.8% in the 2012-2017 period) and formal employment trend in agriculture (growth of over 40%). This allows us to see, directly, that the LFS is indisputably inaccurate in tracking formal employment excluding agriculture (the wage bill growth is inconsistent with the contributions growth), but also that its largest issues lie in monitoring formal employment in agriculture. Namely, while formal employment in agriculture, according to the LFS, has recorded a growth of over 40%, the contributions paid from agriculture have not only failed to show a similar high growth but have been decreasing since 2012 in nominal terms. Also, the number of registered agricultural holdings, published by the Treasury (MoF), does not show an even remotely similar growth as the growth of the formally employed farmers. These are not entirely comparable data sets, but they show quite clearly that there are no indications of such intense change in this employment sector as the LFS would have us believe.

It is also important to note that the administrative data on the contributions growth in the amount of 3.7% (with a real decrease in average wage of 1%) implies a growth of formal employment of 4.7% in the period from 2012 to 2017. This implied growth of formal employment seems a lot more reasonable than the three times higher growth of formal employment indicated by the LFS. Namely, the growth of formal employment of 4.7% would be in line with the GDP growth of about 6%, as it would indicate employment elasticity of approximately 0.75 and the expected productivity growth in Serbia in the last five years.

How to pick the proper indicators: On private consumption and the disparity between the LFS and administrative employment records

In this section, we will consider two additional erroneous analyses of Kovačević et al. (2017): 1) the analysis of increase in private consumption and its alleged correlation with the high employment growth rate, according to the LFS

32 In our previous paper [15], we showed that the methodological objection made by Arandarenko et al. (2016), that the average salary from the RAD survey cannot be used for the calculation of the average wage of the formally employed, was irrelevant. In addition, there are no indications that the measurement of the average wage is unreliable, i.e. that the disconnection between the wage bill and collected contributions is due to unreliable measuring of the average wage (that would imply a real drop in wages in the amount of around 10% that statistics failed to measure, which is highly unlikely).

and 2) analysis of the alleged correlation between the LFS and administrative employment data.

Since listing all oversights for the first topic would take too long (longer than for the contributions), we will select only one mistake, but perhaps the most bizarre one. Namely, Kovačević et al. measure private consumption by retail turnover [11, p. 351]. First, private consumption is not the same as retail turnover. Households spend a significant share of their funds on bills for housing and public utilities, culture, education, recreation, on occasional dinners in restaurants or fast food restaurants, in cafes, on travelling, shopping at markets, and in addition to all this, there is also spending in kind, etc. Secondly, the data on private consumption does not have to be approximated at all. SORS publishes the data on private consumption regularly (quarterly and annually) and it is one of the main statistical pieces of data that the national accounts of Serbia rest on. It is unbelievable that the Director of the SORS (Kovačević) would avoid using the existing data of the SORS to analyse private consumption, opting rather to (incorrectly) approximate it with the retail turnover. The real growth of private consumption from 2012 to 2017 amounted to only 1.3%. This does not even remotely fit in with the LFS data on employment growth of almost 20% since private consumption is largely funded precisely from labour income.

In the following part of the paper, we will consider the analysis of the alleged connection between the LFS data and the administrative employment data from the Central Registry of Compulsory Social Insurance (CRCSI). According to Kovačević et al. (2017), the growth of formal employment excluding agriculture (LFS) was almost identical to the growth of the comparable registered employment, agriculture excluded (CRCSI), in the period from 2012 to 2016 – both employment categories allegedly increased by about 100,000 employees in the observed period. This argument should show that the data from the LFS were consistent with the administrative data and, thus, reliable. However, this analysis is very questionable and comprises certain severe errors.

First of all, SORS introduced CRCSI as the source of administrative data on employment only in 2015. This is why the CRCSI data in the first three years covered by this analysis do not actually originate from this administrative source, but are rather estimated by the SORS. In the data series, there is even an obvious change in trend in 2015, when the data moved from estimates to true administrative data. Since administrative data have only been in use since 2015, one part of the analysis in [11] boils down to comparing data from the LFS with other estimates by the SORS and not with the administrative employment data. An even more interesting fact is that the LFS itself was used as one of the sources for estimating administrative employment before 2015.[33] Thus, it turns out that in this analysis the LFS is being compared to itself, unsurprisingly yielding an overlap of the data.

In addition, the analysis has some substantial errors. Namely, Kovačević et al. (2017) mistakenly include over 33,000 employed farmers[34] in the CRCSI data on the number of employees excluding agriculture in 2016. Since these employees were not included in the CRCSI data for 2012, the calculated increase in the number of employees in the period from 2012 to 2016 is incorrect. When this mistake is corrected, it can be seen that employment growth, according to CRCSI, encompassed 62,400 and not 96,000 employed persons, which represents a 40% slower growth than the comparable data from the LFS (increase by 103,000 employed persons) show. Similar trends continue in 2017, in which the number of employees according to the LFS grew by over 30,000 more than the CRCSI data show. The LFS data even show systematically significantly higher employment growth than the administrative data (even in the period when the administrative data was obtained by estimation). The only exception is 2015 (the year in which the transfer from SORS estimates to exact data took place). Thus, contrary to the intentions of Kovačević et al. (2017), even this analysis, with all its shortcomings, actually shows that the LFS has significantly overestimated the number of employees since 2012, i.e. that it is not reliable.

33 See the SORS table: "Registered employment 2000-2014, revised data", the section on methodological remarks.

34 Farmers employed in agriculture as a sector of economic activity by NACE.

Nullius in verba (take nobody's word for it): On claims and evidence

Kovačević et al. have been confusing the general public and the community of experts for quite some time, with their public appearances and studies comprising poorly performed analyses which fail to meet the minimum scientific criteria. From these analyses, the authors draw pretentious and incorrect conclusions which they then present in public, without hesitation. For instance: "It has been proven, both theoretically and in practice, that there is no correlation between the GDP and the number of employed persons in the short and medium term."[35] We only hope that Kovačević has not reached this conclusion using his example of Spain, where this "non-existent" correlation amounts to 0.97 (Figure 9).

If we set these extreme claims aside, some of the conclusions reached by Kovačević et al. (2017) on the basis of the (unreliable) Labour Force Survey, in their form, do somewhat resemble those that could be grounded in science. For example: "... the precarious nature of growing employment, driven by low labour productivity and low wages which, due to high labour taxes and contributions to social security funds, most often remain in informal sector" [11, p.343], would represent a serious finding – provided it was (empirically) proven. The latter means that they should first show that labour taxes and contributions in Serbia are higher than in comparable countries in which this phenomenon does not occur, then that correlation between the magnitude of contributions and taxes and the size of informal sector is statistically significant and, in addition to that, they should supply econometric evidence of the impact that tax burden on labour has on formal and informal employment. However, Kovačević et al. (2017) make no such attempt whatsoever.

When a hypothesis is not proven by scientific methods, the conclusions presented do not only lack weight, but are usually quickly refuted in time. Ironically, just a few months after Kovačević et al. (2017) had presented the aforementioned conclusion that low salaries and low productivity led to a high growth of precarious (uncertain) jobs in Serbia and that high taxes and contributions led to a strong increase in informal employment, new data were published by the SORS (where Kovačević occupies the position of Director) for 2017, which refute these conclusions. Namely, in the first three quarters of 2017, the LFS shows that secure permanent jobs are now the leading type of jobs in employment growth, while insecure jobs (fixed-term, seasonal or temporary jobs) are showing a slight drop compared to the previous year. However, there are no indications that this change has originated from significant changes in productivity and salaries which would "explain" it. Similarly, even though there has been no decrease in the tax burden on labour in 2017 (the minimal wage was even increased by 7.5%), new data indicate that formal employment is growing faster than informal employment (and, naturally, faster than GDP).

If the purpose of the research conducted by Kovačević et al. (2017) was to come to the truth, further discussion is purposeful only if the authors correct serious fundamental errors that we have pointed out in this paper and draw appropriate conclusions on LFS reliability or demonstrate that such mistakes had not been made. That is the only way to have a scientific discussion, which is something that Kovačević and his co-authors failed to adhere to until now. Namely, we already pointed out that the claim that there is no correlation between employment trends and working hours that in the 2014-2016 period [10] resulted from their severe error, i.e. that this correlation is actually very high. These authors completely ignored this fact in their next paper. Instead of correcting the noted mistake, or explaining it, they published a new article [11] with new erroneous arguments that should support their beliefs. Such avoidance of answers could continue forever, but it does not lead any closer to truth. Thus, if we again encounter silence from Kovačević and his co-authors regarding fundamental errors, mistakes and oversights that we have pointed out in this paper, we see no point in any further discussion with them.

35 Kovačević, statement for the magazine Vreme (no. 1315), March 17, 2016.

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