

Gorana Krstić*

WHY INCOME INEQUALITY IS SO HIGH IN SERBIA: EMPIRICAL EVIDENCE AND A MEASUREMENT OF THE KEY FACTORS

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ABSTRACT: *We analyse the extent and evolution of income inequality in Serbia and examine factors that may have contributed to the high and rising inequality. Specifically, using data from the 2013 Survey of Income and Living Conditions, we focus on two issues: the effect of the quantity and quality of household members' employment on the earnings of low-wage workers, and the role of taxes and social transfers in redistributing income from the better-off to the poor. The results suggest that income inequality, measured by the Gini coefficient, has significantly increased in Serbia over the period of economic crisis, reaching 38.7 in 2013. The examined causes of such a high inequality are the high rate of*

low work intensity of household members and the high proportion of people working in non-standard forms of employment (i.e., part-time, temporary, and self-employment arrangements), mostly in the informal sector. In addition, the low coverage of social transfers, particularly monetary social assistance and child benefits, and the very low level of progressivity of the Serbian personal tax system explain the relatively modest – by international standards – redistributive role of direct taxes and social transfers.

KEY WORDS: *inequality, employment, redistribution, social transfers, taxes, Serbia*

JEL CLASSIFICATION: D31, H23, I38, O15

* University of Belgrade, Faculty of Economics, Republic of Serbia,
E-mail: gkrstic@ekof.bg.ac.rs

1. INTRODUCTION

One of the earliest studies that systematically documents changes in distributional outcomes in Eastern European and Central Asian countries during their transition from planned to market economies (World Bank 2000) found that rising inequality was a common feature of the transition process in these countries, and was driven by significant changes in the labour markets. Rising total income inequality was mainly driven by increasing wage disparity (Milanović 1999; Mitra and Yemtsov 2006). Factors usually cited as a major driving force of increased earnings inequality are increased returns to education, and sectoral and structural shifts in employment (towards services and less regulated forms of employment such as temporary contracts), and changes in the institutional setting of wage bargaining (Leitner and Holzner 2008).

There is a huge literature on income inequality, but so far little of it has applied to Serbia. This paper summarizes the state of existing knowledge on income inequality in Serbia, highlighting the issues of comparability in measurement of income inequality arising from different data sources (the Household Budget Survey (HBS) for the period 2006-2010 and the Survey of Income and Living Conditions (SILC) since 2013). It also examines some factors that may have contributed to the much higher income inequality in Serbia than in the EU. Specifically, we focus on two issues: the quantity and quality of employment of household members; and the role of taxes and social transfers in redistributing incomes from the better-off to the poor.

Our results suggest a number of interesting findings. Perhaps the most worrying is that the level of income inequality in Serbia, measured by the Gini coefficient, is among the highest in Southeast Europe, since it has significantly increased over the period of economic crisis reaching 38.7 in 2013. A second result of interest is that labour market inequality exists not only between those who are employed and those who are unemployed, but also among the employed. Finally, although tax and benefit policies have significantly reduced income inequality in Serbia, their impact is modest in comparison to EU standards, which indicates the importance of reforming the Serbian tax and benefits systems.

The paper is structured as follows. Section 2 presents an overview of the existing literature on income inequality, including its trends and causes. Section 3 details the methodology for measuring the redistributive impact of social transfers and taxes. Section 4 presents the evolution of income inequality in Serbia over the period 2006-2013 and explains comparability issues in its measurement arising

from different data sources. Section 5 explores possible factors that help to explain the high and rising income inequality. A final section concludes the paper with some policy implications.

2. LITERATURE REVIEW

Serbia was a latecomer to transition due to armed conflicts, international isolation throughout the 1990s, political and economic instability, and post-conflict rebuilding. Significant reforms began after 2001, almost a decade after the new European Union member states (NMS). Although Serbia has made significant progress towards a market-based economy on a number of fronts, many crucial reforms, such as privatization, business restructuring, and improvement of the business regulatory framework were incomplete when the global economic crisis started.

While the poor benefited most from growth prior to the crisis (Krstić 2008), they were disproportionately hurt by the slow-down and recession over the 2008-2010 period and by rising inequality (World Bank 2015). Aggregate consumption dropped by 3.8% on average for the bottom 40% of the population between 2008 and 2010, and by 2.9% for the overall population. Labour market opportunities have significantly worsened since 2008, with employment being reduced even more than GDP. Reduced labour demand, as a result of the reduced demand for products and services during the recession, has meant fewer job openings and increased job losses. In 2012 Serbia had a very low employment rate of 45.3%, compared with 63% in European Union new member states, and a very high unemployment rate of over 24.6% (Table 2). Youth and long-term unemployment rates in Serbia are amongst the highest in Europe. Informal employment remains one of the biggest challenges for the Serbian economy: 17% of overall employment was informal in 2012.

A number of studies show that the labour market plays a central role in the evolution of market income inequality (ILO 2015a, 2015b). Income inequality has increased substantially since 1990 in most of the developed world (IMF 2015). Much of this rise was generated by the widening dispersion of labour income. During the recent economic crisis inequality widened, mainly due to the fall in employment, but redistribution of income through social transfers and taxes partly offset this trend. Furthermore, the ILO (2015a) revealed that in countries where inequality increased the most, employment effects dominated wage effects, suggesting that job losses were the major cause of top-bottom inequality during

the crisis. Other income sources offset about one-third of the increase in inequality generated by the labour market effect (i.e., wage plus employment effect).

Koske, Fournier, and Wanner (2012) explored the determinants of labour income inequality for 32 OECD countries (including Brazil). The authors shed light on the role of non-policy factors (technological change and globalization) and structural policies (in particular, education, labour, and product market policies) in shaping the distribution of earnings. They found that the increase in the Gini index is particularly large for countries where part-time workers make up a sizable share of the total employed, and for countries with high unemployment and inactivity rates.

Empirical evidence as to whether non-standard employment leads to income inequality is mixed. Some studies have found that there is no mobility for those with non-standard jobs to better quality jobs, which would lead to decreasing income inequality (Giesecke and Gross 2004; Blanchard and Landlier 2002). Gregg and Wadsworth (1996) showed that countries where non-standard employment was found to be the major income source (as in Britain) have experienced widening income inequality. In some other countries (like Japan), the degree of income inequality depends on the working status of household members (Tachibanaki and Yagi 1992). By contrast, other studies suggest that fixed-term jobs are 'stepping stones' to permanent jobs and thus do not lead to increasing income inequality (Engellandt and Riphahn 2005; Dorantes and Serrano-Padial 2007). A recent OECD (2015) study showed that the labour market prospects of non-standard workers differ significantly according to their characteristics, with prime-age and older workers having a better chance of using non-standard jobs as 'stepping stones'.

Recent studies (OECD 2015, ILO 2015b) emphasize that the increased share of people working part-time, on temporary contracts, or who are self-employed is one important driver of growing income inequality. The earnings gap between non-standard and standard workers is largest among low-skill and low-paid workers. It narrows among higher-income workers and disappears completely among top earners. The ILO (2015b) study also shows that in a number of countries where temporary, part-time, and informal employment increased, income inequality has reduced since the global recession, mainly through tax benefit systems.

A number of studies examine the redistributive effects of tax and social transfers across European countries (e.g., Immervoll et al. 2007; Zaidi 2009; Fuest, Niehues, and Peichl 2010; ILO 2015b). Zaidi (2009) found that in 2006 the level of income inequality in selected Central European and Baltic countries, although higher

than pre-transition levels, was low by international standards. This was mainly due to the very high redistributive role of direct taxes and public transfers, while differences in educational level and participation rates also played a significant role in explaining observed inequality across people and regions within these countries. The ILO (2015b) study showed that in advanced economies and the EU, transfers and taxes reduced market income inequality by between 12 and 31 percentage points.

Randelović and Žarković-Rakić (2011) analysed the distributional effects of alternative tax reform scenarios based on the tax and benefit microsimulation model for Serbia (SRMOD) using Living Standards Measurement Survey (LSMS) data for 2007. They found that tax and benefit policies have a significant impact on reduction of income inequality, but that there is room for further improvement in the redistribution features of Serbian tax and benefits policy.

The examination of inequality in Serbia since the beginning of transition has attracted only modest empirical research. Milanović (2003) analysed inequality of consumption and income and the contribution of income sources to total income inequality using the Living Standards Measurement Survey for 2002. Krstić et al. (2007) focused on inequality of labour market earnings using data from the Labour Force Survey over the period 1996–2003. Krstić and Sanfey (2011) analysed the extent and evolution of informality and inequality over 2002–2007 based on the LSMS data. They showed that informal employees earned significantly less than those in the formal sector, controlling for a range of other variables, and that informality played an important role in explaining earnings inequality. Milanović (2012) emphasised that the basic problem in Serbia is not inequality but low productivity and the low level of total income. Recently released 2013 SILC data allow us to extend this analysis to see what the latest trends in Serbia are.

3. DATA AND METHODOLOGY

The data for this study are drawn from the Survey of Income and Living Conditions, which was conducted for the first time in Serbia in 2013 on a representative sample of households. The sample covers 8,000 households and collects information on their activity, income, social exclusion, and living conditions, based on Eurostat methodology. The reference period for income and labour market activity of household members aged 15 and over is 2012. The data are representative at a national level, and by region (four regions) and type of settlement (urban/other).

For the purpose of this study, income inequality is measured using the Gini coefficient. The redistributive impact of social transfers and taxes (*RE*), following the approach applied by Immervoll et al. (2007), is measured as the difference (or ratio) between the Gini coefficient of income before (*Gx*) and after social transfers and taxes (*Gst*).

$$RE = Gx - Gst \quad (1)$$

In this way, the redistributive impact of a specific instrument is evaluated comparing hypothetical income inequality without the instrument in question and income inequality with the instrument.

Another, slightly different approach used to examine the impact of income components on inequality, applied by Mitchell (1991), Whiteford (2008), Feust et al (2010), and the ILO (2015b), is a sequential income accounting approach. In this approach, income components are added one after another and income inequality is measured after inclusion of each income component. One limitation of this approach is that the impact of each income component on inequality depends on the order of inclusion of the different income components. The magnitude of this impact depends upon where a particular component is included in the income measure (ILO 2015b). We apply this approach for a robustness check of our results.

Different income measures are defined in order to measure the redistributive impact of social transfers and taxes. Market income comprises labour income, capital income, and private transfers. Gross income is defined as market income plus all social transfers, while disposable income is defined as gross income minus contributions to social security and personal income taxes. Social transfers include old-age and survivors' pensions, monetary social assistance, child allowance, unemployment benefits, sickness and disability benefits, and housing allowances. Income is expressed as equivalised income, using the revised OECD equivalence scales in order to take into account differences in the composition of households and shared household expenses.

Using this accounting approach, various measures of the redistributive impact of the tax benefit system can be evaluated by comparing inequality at different stages of household income. For example, the impact of social transfers is measured by comparing the Gini coefficient of market income and Gini coefficient of gross income. The impact of personal income tax is measured by comparing the Gini coefficients of gross income and post-tax income, and so on.

4. COMPARABILITY OF INCOME INEQUALITY BASED ON DIFFERENT DATA SOURCES

Income inequality, measured by the Gini coefficient, increased in Serbia over the period of economic crisis, reaching the value of 38.7 in 2013 according to the latest 2014 SILC data. Another inequality measure presented in Table 1, which does not capture inequality across the whole income distribution like the Gini coefficient, is the quintile ratio. The quintile ratio also significantly increased in 2012-2013, from 8.6 to 9.8. This means that the equivalised income of 20% of the population was almost 10 times higher than that of the poorest 20% in 2013.

Table 1. Income inequality in Serbia and the EU, 2006-2013

	HBS					SILC	
	2006	2007	2008	2009	2010	2012	2013
Gini coefficient							
Serbia	35.4	34.1	32.1	31.2	33.0	38.0	38.6
EU	30.2	30.6	30.8	30.4	30.5	30.5	31.0
Quintile ratio S80/S20							
Serbia	6.9	6.5	5.5	5.2	...	8.6	9.8
EU	4.9	5.0	5.0	4.4	5.0	5.0	5.2

Note: Income in kind is excluded from total income.

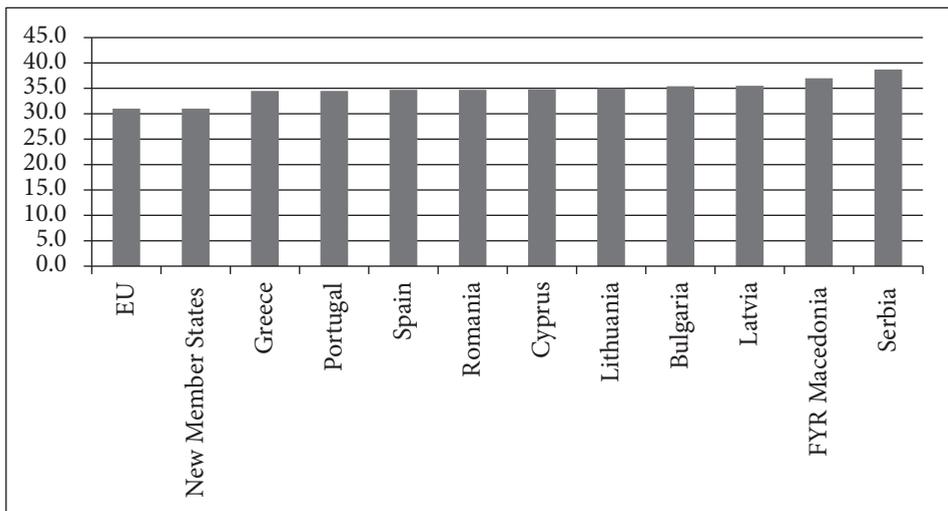
Source: For 2006-2010 HBS, Statistical Office of the Republic of Serbia (SORS). Government of the Republic of Serbia (2012). For 2012-2013 SILC, SORS (2015), Report No. 366. For EU, Eurostat database.

The latest SILC data reveals much higher income inequality in Serbia, using both inequality measures, than observed in the previous period of 2006-2010 based on the HBS data. Table 1 shows that after a period of declining inequality (2006-2009), inequality started to increase after the onset of the economic crisis, as in many other countries. The Gini coefficient increased from 33 in 2010 based on HBS data to 38 in 2012 based on SILC data. However, it should be noted that these survey data are not completely comparable. It can be assumed that both inequality measures (Gini coefficient and quantile ratio) based on HBS data are overestimated. This is because not all types of social transfers, which primarily refer to the lowest parts of income distribution, are completely recorded in the HBS. Social transfers are not recorded individually but within larger groups. All income sources are much better captured in the SILC than in the HBS, because the HBS is mainly designed to measure expenditure, not income. This means that part of the increase in inequality from 2010 to 2012 can be explained by the different data sources that have been used for measuring inequality.

Although social transfers are better captured in the SILC than in the HBS, they are still underestimated in the SILC. Table A1 in the Annex shows the number of beneficiaries of two main benefit programmes, monetary social assistance (MSA) and child allowance (CA) according to the SILC and administrative data. The number of beneficiaries of these two benefits is underestimated in the SILC by 20%-23%, which means that actual income inequality is slightly lower than the SILC data shows.

The other reason for lower actual income inequality as compared to observed inequality based on SILC data is exclusion of income in-kind from total income according to Eurostat methodology, as in all EU SILC countries. In 2007 income in-kind comprised 7% of total income in Serbia (Mijakovac 2008).¹ Thus, inclusion of income in-kind in total income decreased the Gini coefficient by 2.5-1.7 Gini points and the quintile ratio by 1.1-0.5 percentage points over the period 2006–2009 (Table A2 in the Annex).

Graph 1. Gini Coefficient in Serbia, in EU countries with the highest Gini, and in Macedonia, 2013



Notes: Gini coefficient is multiplied by 100.

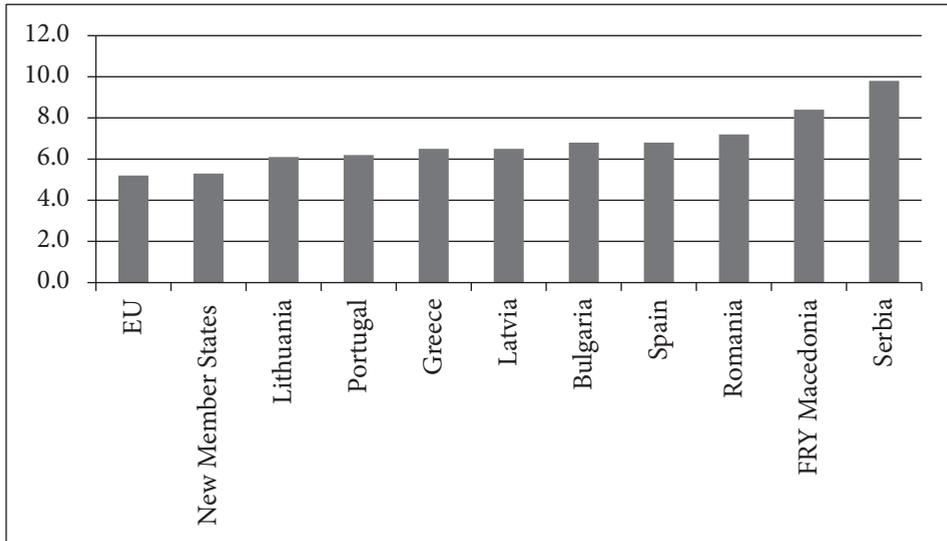
Source: Eurostat database. Data for Macedonia refers to 2012.

Income inequality in Serbia, measured by the Gini coefficient, is among the highest in Southeast Europe, and higher than in EU countries with the highest

¹ The share of income in-kind in total income has declined in recent years and amounted to 5% in 2014 (RZS 2016).

inequality (Graph 1) such as Lithuania (35), Bulgaria (35.4), and Latvia (35.5). Among neighbouring countries, the highest income inequality after Serbia is recorded in Macedonia (a non-EU country which participated in the EU-SILC).

Graph 2. Quintile ratio in Serbia, in EU countries with the highest quintile ratio, and in Macedonia, 2013



Source: Eurostat database. Data for Macedonia refers to 2012.

Graph 2 reveals that Serbia also has high income inequality compared to other EU countries according to the quintile ratio. It is considerably higher than in EU member states with the highest quintile ratio, such as Greece and Latvia (6.5), Bulgaria and Spain (6.8), Romania (7.2), and the non-member country FRY Macedonia (8.4). Graph 2 also shows that there is a much greater difference in income inequality between Serbia and EU member states according to quintile ratio than according to Gini coefficient.

5. SOME POSSIBLE FACTORS THAT CONTRIBUTE TO HIGH INEQUALITY

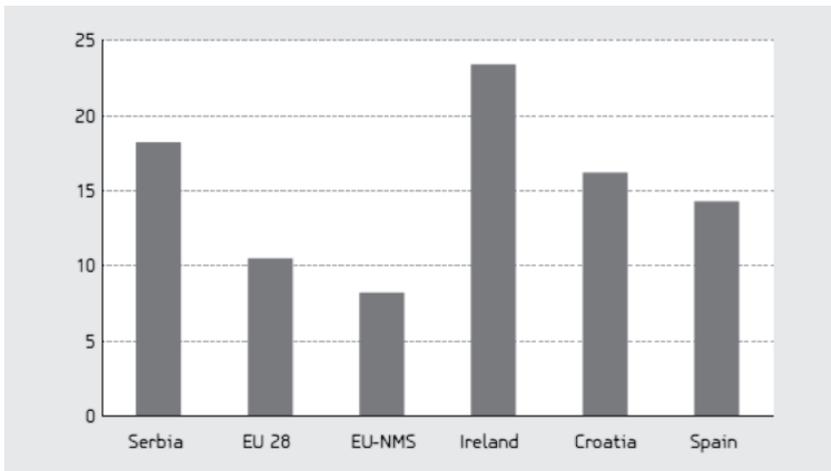
In this section we examine some factors that may have contributed to the much higher income inequality in Serbia than in the EU. Specifically, we focus on two issues: the quantity and quality of employment of household members; and the role of social transfers and taxes in redistributing incomes across people.

5.1 Quantity of Employment

The quantity of employment of household members will be examined using the EU-SILC indicator “work intensity of household members”, whereby each household is assigned a work intensity status ranging from very low to very high. Persons who live in households with very low work intensity are all those aged 0-59 who live in households in which the members of working age have worked less than 20% of the total number of months in which they could have worked during the reference period.² Other categories of work intensity are the following: low (from 20% to less than 45%), medium (from 45% to 55%), high (over 55% to 85%), and very high (over 85% to 100%).

Serbia is characterized by a very low work intensity of household members, with a significantly larger share of persons in these households (18.2%) than the European average (10.5%) and the average of new member states (8.2%). In comparison with individual EU countries, only Ireland has a higher percentage of persons who live in households with very low work intensity (23.4%) than Serbia (Graph 3).³

Graph 3. Percentage of persons (0-59) who live in households with very low work intensity in Serbia, the EU, and EU countries with the highest percentage of these persons, 2012



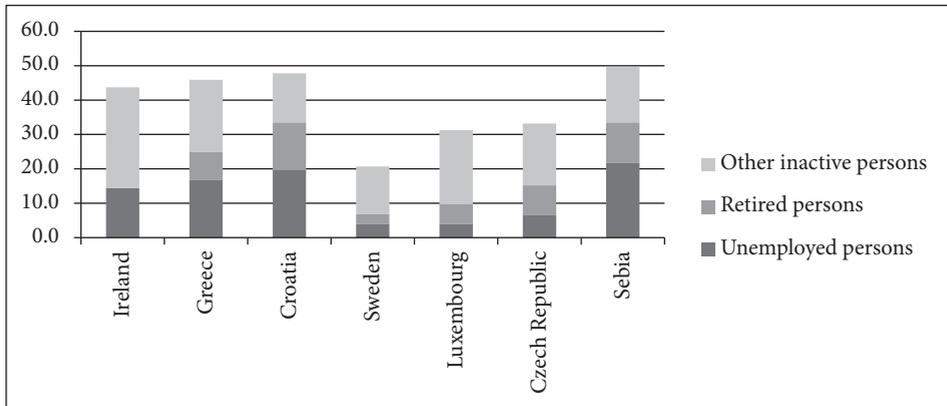
Source: Matković, G., Krstić, G. and Mijatović, B. (2015). Serbia: Income and Living Conditions 2013, Statistical Office of the Republic of Serbia.

² The reference period refers to 12 months in the year preceding the year of the survey.

³ http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvhl11&lang=en accessed on 5.10.2014

The high rate of low work intensity of household members in Serbia is caused by the high inactivity of the working age population, as well as the fact that a low percentage of such persons live with other adults who work (Krstić 2015). Serbia has the highest share of persons who do not work in the working age population (especially the unemployed) among EU countries (Graph 4). It is even higher than in countries with the highest share of these persons (Ireland, Greece, and Croatia).

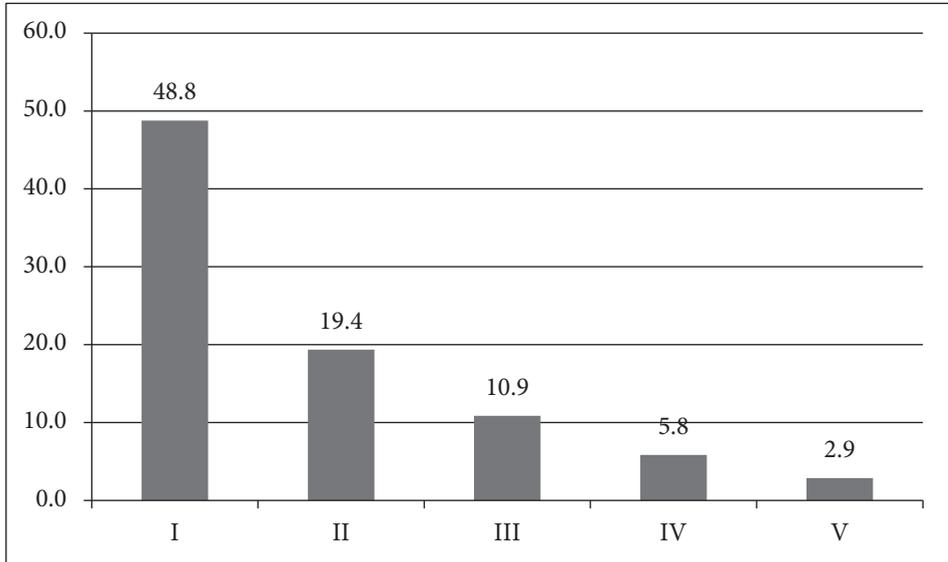
Graph 4. Percentage of persons who do not work in the working age population (aged 18-64) in Serbia and EU countries with lowest and highest share of these persons, 2012



Source: Author's calculations. SILC, SORS for Serbia; for the EU, Eurostat's website: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvhl02&lang=en

Graph 5 shows that the poorest income quintile has a much higher share of persons (aged up to 59) who live in households with very low work intensity than the richest quintile group, which widens inequality. This is expected, since the low equivalised income is the result of low work intensity of household members. The majority of persons who live in households with very low work intensity are pensioners and the unemployed, given their large share in the working age population shown in Graph 4.

Graph 5. Percentage of persons who live in households with very low work intensity by income quantiles (0-59), 2012



Source: Author's calculations. SILC.

5.2 Quality of Employment

Beside the quantity of employment, the second factor of our interest is the quality of employment. Graph 6 shows the structure of the employed exposed to poverty risk by work intensity of household members. Only one quarter of the employed exposed to poverty risk live in households with low or very low work intensity. This means that the main cause of low income and poverty of the employed is not the labour supply of the other adult members in the household, but rather the characteristics of the job (hours of work, type and quality of employment), characteristics of the employed (education, work experience) and/or characteristics of the household (number of dependent children, etc.). In subsequent sections we will examine only characteristics of the job and how they may affect inequality.

The lower wages associated with non-standard forms of employment, i.e., part-time, temporary, and self-employment, can contribute to wider inequality (OECD 2015). Table 2 shows that these employment categories comprise a significant and increasing share of the employed individuals in Serbia. In 2014, 12.9% of the employed aged 15 and over were part-time workers, 24.1% were self-employed,

and 18.2% were temporary workers. Although these types of employment overlap to some extent, they comprise a significant share of total employment in Serbia. Most of them are concentrated at the lower end of the income distribution. Graph 6 shows that self-employed and part-time workers are most exposed to poverty risk. This would not be of great importance in the short run if such types of employment were a stepping-stone to a better quality job in the future, but for many this is not the case.

Table 2. Labour market indicators for Serbia 2008–2014, %

	LFS			
	2008	2012	2013	2014
Participation rate	62.7	60.1	62.2	61.8
Employment rate	53.7	45.3	49.2	49.6
Unemployment rate	14.4	24.6	21.0	19.7
In % of total employment (15+)				
Self-employed	24.8	22.8	24.8	24.1
Informal workers	23.0	17.5	19.3	22.0
Part-time workers	10.4	8.1	11.0	12.9
Temporary contracts (15–64)	12.6	14.1	15.5	18.2

Note: Participation and employment rates expressed in percentages of the working age population (15–64 years).

Source: LFS, RSO.

The self-employed (aged 18–64) have a significantly higher at-risk-of-poverty rate⁴ than employees (39.1% versus 6.4%), given that a large proportion of the self-employed are informal workers who are outside social protection systems and generally in low-paid, low-productivity jobs. Informal employment remains high in Serbia, amounting to 22% in 2014, despite its gradual decline over the period of economic crisis.

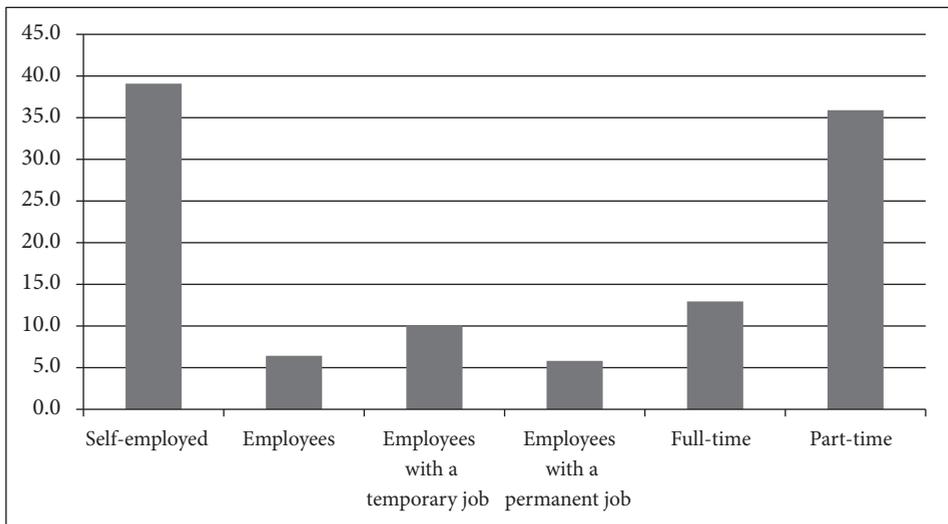
Krstić and Sanfey (2011) found that informality played an important role in explaining earnings inequality in Serbia over the period 2002–2007 and that informal workers earned less than formal workers, even when controlled for a range of other characteristics. In 2007 informal employees earned 22% less (in monthly terms), *ceteris paribus*, relative to formal employees. Using Labour Force Survey data for 2008 and 2009, Blunch (2015) also found a large formal-informal

⁴ At-risk-of-poverty rate is the share of persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).

earnings gap, favouring the formal sector. This is partly explained by the worse employment-related characteristics of informal workers (they are concentrated in poorly paying sectors, have less education etc.), and by lower returns to these characteristics. The other unexplained part of the gap is associated with the non-observable characteristics of informal workers, such as relatively lower bargaining power and less access to personal and professional networks. Radvanský and Štefánik (2015) found that informal employees are more likely to be at the lower end of wage distribution and that there is only a 20% likelihood of middle-income groups being informally employed.

Furthermore, inequality also exists among employees, since those with temporary contracts have a significantly higher at-risk-of-poverty rate than those with permanent contracts (10.1% compared to 5.8%).

Graph 6. In-work at-risk-of-poverty rate by type of employment, 2012, %



Source: SILC.

Part-time work significantly increases the in-work at-risk-of-poverty rate. Approximately every third employed person who works part-time (35.9%) is exposed to the risk of poverty (Graph 6), as compared to 12.9% of full-time workers. The economic crisis has influenced the growth of part-time employment (Table 3), not as a voluntary choice, but because of a lack of better employment options. According to SILC data, 29.6% of part-time workers would like to find a full-time job, which shows that part-time employment is the only option for a

significant number of workers in Serbia. Many part-time workers are informal workers, as part-time work in the formal sector does not pay off, especially for low wage earners, due to the very high tax burden caused by minimum social security contributions. Blunch (2015) confirms this, revealing that, besides level of education, part-time status is among the main drivers of the observed formal-informal earnings gap.

5.3 Social Transfers and Taxes

The extent of income redistribution attributable to social transfers and taxes will be examined in subsequent paragraphs. First, we examine the total redistribution impact of social transfers and taxes, and then, separately, the role of social transfers excluding pensions and the role of taxes.

In the absence of social transfers and taxes, income inequality in Serbia, measured by the Gini coefficient, would increase from 38 to 55.1, or by 17 percentage points (Table 3). This suggests that tax and benefit policies significantly reduced income inequality in Serbia in 2012. However, their impact is relatively low compared to advanced economies and the EU. Transfers and taxes reduced market income inequality by between 12 percentage points in the United States and 31 percentage points in Ireland (ILO 2015b). In only two countries (the United States and Cyprus) was the effect of transfers and taxes on income inequality lower than in Serbia (12 percentage points and 15.6 percentage points vs. 17.1 percentage points).

Table 3. Impact of tax and social transfers on income inequality in Serbia, 2012

	Gini coefficient (*100)
Market incomes (pre-tax-benefit equivalised incomes)	55.1
Disposable incomes (post tax-benefit equivalised incomes)	38.0
Post tax-pre-benefit (excluding pensions) equivalised incomes	42.6
Gross income (pre-tax-post benefit) equivalised incomes	40.7

Notes: Author's calculations. SILC.

Randelović and Žarković-Rakić (2011) reported a slightly lower impact of taxes and social transfers on income inequality (as the difference between the Gini coefficient for market income and Gini coefficient for disposable income), amounting to 12 percentage points for 2007. The analysis is based on the tax

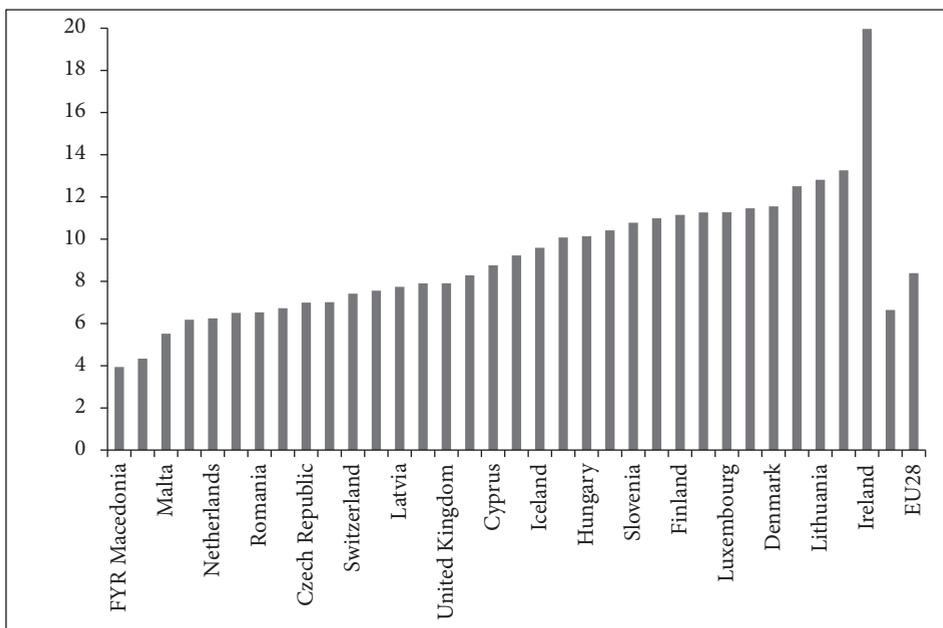
and benefit microsimulation model for Serbia (SRMOD) using 2007 LSMS data, which includes net to gross imputations, as that survey collects only data on income net of taxes.

It may be important to emphasize that Serbia compares well with advanced and EU countries regarding market income inequality, as its Gini coefficient is close to the average value for these countries (54.7). However, the low redistributive impact of social transfers and taxes is responsible for the highest Gini coefficient of disposable income among these countries (except the United States).

Social transfers excluding pensions

The share of social transfers excluding pensions in disposable income in Serbia is higher than in the EU28 (10% and 8.4%, respectively) and in new member states (6.6%). Although the share of social transfers in disposable income is not low in Serbia by EU standards (Graph 7), their redistributive role could be improved. In the absence of social transfers (excluding pensions), income inequality in Serbia would increase from 38 to 42.6 (by 4.6 percentage points, Table 3).

Graph 7. The share of social transfers (excluding pensions) in disposable income in Serbia and the EU, 2013, %



Source: Eurostat database.

Table 4 shows Serbia and the five countries with the lowest and five countries with the highest redistributive impact of social transfers, measured as the difference between the Gini coefficient of disposable income before and after social transfers (pensions excluded from social transfers) (see methodology section). The Gini coefficient in Serbia based on pre-benefit incomes is higher by 4.6 percentage points than that based on final disposable incomes. Serbia is closer to countries in which transfers have a weak redistributive role, but with the highest Gini coefficient. The redistributive impact of social transfers excluding pensions in Serbia is slightly below the average value for the EU28 (4.6 vs 5.6 percentage points). Ireland is the only EU member state that has a higher Gini coefficient before social transfers than Serbia, but it has the strongest redistributive role of social transfers among EU countries.

If we apply a sequential accounting approach, the impact of social transfers (excluding pensions) is even smaller. The Gini coefficient of market income including pensions is compared with the Gini coefficient of gross income (market income+pensions+other social transfers). According to this approach, social transfers (excluding pensions) reduce income inequality by 3.5 percentage points, from 44.2 to 40.7 (Table 5). Using this approach, the impact of social transfers (excluding pensions) in Serbia is close to the average value for advanced economies and the EU (ILO 2015b) (3.7 percentage points).

Table 4. Difference between Gini coefficient of disposable income before and after social transfers excluding pensions (5 countries with highest and 5 countries with lowest difference, and Serbia), 2012

	Difference	Gini coefficient for disposable income (*100)
Italy	2.3	32.5
FYR Macedonia	2.6	37.0
Greece	2.6	34.4
Bulgaria	2.7	35.4
Latvia	3.1	35.2
Serbia	4.6	38.0
Sweden	8.0	24.9
Finland	8.2	25.4
Norway	8.4	22.7
Denmark	11.4	27.5
Ireland	16.3	30.0

Source: Author's calculations. Eurostat database.

Table 5. Impact of social transfers excluding pensions on income inequality in Serbia: Accounting framework, 2012

Market income + pensions	44.2
Market income + pensions+ other social transfers	40.7

Notes: Author's calculations.

Within social transfers, the two major means-tested social assistance programmes, which are designed to help low income households, are monetary social assistance and child allowance. Although the share of social transfers in disposable income is not low in Serbia, the share of monetary social assistance and child allowance in social transfers is low. Total spending on these two benefit programmes has been reduced to the current 0.6% of the GDP - a figure far below the level of the majority of European Union countries.

Recent empirical analysis based on 2013 SILC data (Žarković-Rakić et al. 2016) suggests that targeting of child allowance and monetary social assistance in Serbia is relatively good, as approximately one half of the child allowance payments and 88% of monetary social assistance payments are received by households from the bottom quintile of income distribution (before all social transfers). However, coverage could be improved, as 44% of households with children from the bottom income quintile received child allowance and only 12.8% of households from the bottom income quintile received monetary social assistance. Low spending on these two benefit programmes leads to low coverage of the poorest households, which explains the modest redistributive role of these social transfers. In addition, if these two benefit programmes were better represented in the SILC, their effect on inequality would be slightly higher.

Taxes

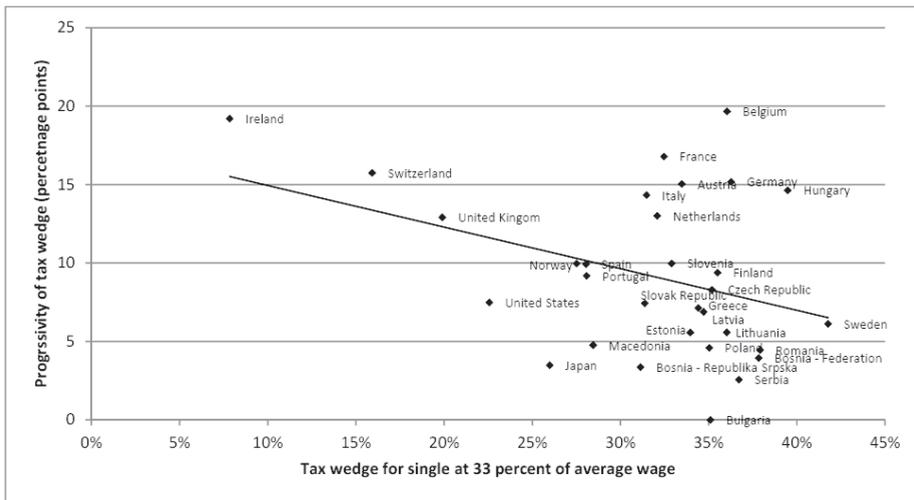
In the absence of taxes, income inequality in Serbia would increase from 38 to 40.7 (Table 3). This redistributive impact of taxes is lower than the average value for advanced and EU countries (3.8 percentage points), for which it ranges between 1 percentage point and 7.1 percentage points (ILO, 2015b). It is obvious that social transfers excluding pensions are more efficient in reducing income inequality than taxes. The redistributive impact of income tax is relatively low by international standards, given the low progressivity of the personal income tax system in Serbia.

Graph 8 presents the progressivity of the labour tax system in Serbia, the EU, and some developed countries. Compared to Serbia, the progressivity of the labour tax system is lower only in Bulgaria, which has zero progressivity, while in most other

countries labour taxes increase significantly, moving over the scale of 33% to 100% of the average wage level. For many countries the tax wedge increases by over 10 percentage points within the same scale of the average wage. Serbia shows very low progressivity of the labour tax system, as labour taxes increase by only 2.6 percentage points (Koettl and Weber 2012). The tax wedge is defined as the difference between total labour costs and take-home pay as a percentage of total labour costs.

This graph also shows high labour taxes for low-wage earners in Serbia (x-axis), since the tax wedge on labour at lower wage levels (33% of the average wage) is high. It is higher than in neighbouring countries (Macedonia, Bosnia and Herzegovina), most new member states, and other developed countries (IMF 2014). High labour taxes for low-wage earners in Serbia are due to the minimum social security contributions that employers and employees are obliged to pay. The minimum base for the calculation of social security contributions equals 35% of the average gross wage. If the monthly gross wage of an employee is below 35% of the average gross wage, social security contributions are still calculated on this threshold. It is not adjusted for hours actually worked, so the same threshold is applied to part-time and full-time workers. This may create incentives for low-wage earners to work informally or become inactive and receive benefits such as unemployment benefits, monetary social assistance, and/or child allowance – which may increase inequality.

Graph 8. Progressivity of the labour tax system, 2009



Note: Data for Bosnia, Macedonia, and Serbia refer to 2009.

Source: Koettl and Weber (2012).

Randelović and Žarković-Rakić (2012) simulated the abolishment of the minimum social security contributions base and calculated the distributional effects of that reform using the tax-benefit micro-simulation model for Serbia (SRMOD) and 2007 LSMS data. According to their results, the abolishment of the social security contributions base would not significantly reduce inequality.

6. CONCLUSIONS

This paper has attempted to shed some light on income inequality in Serbia, describing the extent and evolution of inequality using different data sources. The availability of new, high-quality 2003 SILC data has allowed us to draw a number of important conclusions about actual versus observed income inequality, about how the quantity and quality of employment may have contributed to inequality, and about the role of social transfers and taxes in redistributing incomes from the better-off to the poor.

Serbia faces high and rising income inequality. Our results suggest that actual income inequality is slightly lower than observed, due to under-reported social transfers in the SILC and to the exclusion of income in-kind in total income measure according to Eurostat methodology – which both primarily refer to the lowest parts of the income distribution. However, both factors may have contributed a little to observed inequality (by not more than 1.5 percentage points).

Our analysis reveals that labour market inequality does not only concern inequality between the employed and the unemployed, i.e., the quantity of employment, but also inequality among the employed, i.e., the quality of employment. From the policy perspective, boosting employment might be expected to reduce income inequality, as the number of people earning no salary or relying on unemployment benefits would fall. However, this is insufficient if these new jobs are not full-time, permanent, formal-sector jobs or, in other words, better quality jobs with higher wages. What the impact of increased work intensity or increased income from self-employment would be on inequality requires the use of an income source decomposition approach, which is an interesting avenue for future research.

Although Serbia compares well with advanced and EU countries regarding market income inequality, the modest redistributive impact of social transfers and taxes is responsible for the highest Gini coefficient of disposable income among these countries (except the United States). Social transfers, excluding

pensions, are more efficient in reducing income inequality than taxes, and are close to the average level for the EU. Social transfers, excluding pensions, reduced income inequality measured by the Gini coefficient by between 3.5 percentage points and 4.6 percentage points in Serbia depending on the method used, while taxes reduced it by 2.8 percentage points. Although social transfers and taxes have reduced income inequality in Serbia significantly, the low coverage of social transfers, particularly monetary social assistance and child benefits, and a very low level of progressivity of the Serbian personal tax system explain the relatively modest, by international standards, redistributive role of direct taxes and social transfers. All these results highlight not only the importance of new and better quality jobs in reducing inequality, but also the importance of reforming the Serbian tax and benefits systems. These reforms need to focus on preventing in-work poverty among households with low work intensity and with non-standard workers, while providing sufficient incentives to take up and increase work incentives.

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ANNEX:

Table A1. Number of MSA and CA beneficiaries according to SILC and administrative data

	SILC*		Administrative data**	
	no. of hhs	% of all hhs	no. of hhs	% of all hhs
Number of beneficiaries hhs MSA	67,195	2.7	87,330	3.5
Number of beneficiaries hhs CA	161,988	6.5	203,294	8.2

Source: FREN (2015)

Table A2. Gini coefficient and Quintile ratio calculations based on different income measures

	2006	2007	2008	2009
Gini coefficient				
Income in-kind excluded	35.4	34.1	32.1	31.2
Income in-kind included	32.9	32.0	30.2	29.5
Quintile ratio S80/S20				
Income in-kind excluded	6.9	6.5	5.5	5.2
Income in-kind included	5.8	5.6	4.8	4.7

Source: HBS, SORS. Praćenje socijalne uključenosti u Srbiji, Government of the Republic of Serbia, 2012.

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