

EMPLOYMENT AND THE FUNCTIONING OF THE LABOUR MARKET IN SERBIA¹

Kosovka OGNJENVIĆ²

Abstract

This paper deals with the analysis of the functioning of the labour market in Serbia. The overall situation in the Serbian labour market is deteriorating. However, if the two sub-periods are observed, before and after the recent economic crisis, it can be noticed that some improvements occurred immediately before the crisis. The first improvement that came about was the unemployment decline, and after that the level of employment increased. This in particular affected women, which further led to the narrowing of the employment gender gap. Unfortunately, these improvements were only short-lived. During the post crisis period the situation aggravated, as manifested by a convergence between the employment and unemployment rates of women, whereas the economic activity of women dropped to only half of the female workforce. Similar patterns are also characteristic of both young and older workers. The rates of employment of these two subsamples of the workforce have been at the lowest levels achieved in the last couple of years in Serbia. The increasing levels of unemployment disturb the sectoral distribution of employment. This, jointly with the skill and occupational mismatches, contributes to the further deepening of the structural unemployment. All of these indicate an increasing malfunctioning of the Serbian labour market.

Key words: *Employment, labour market functioning, Serbia.*

INTRODUCTION

Well-functioning labour markets are characterized by high participation rates and low unemployment rates, while employment opportunities are available even for depressed labour categories, such as women, young and older workers, and the process of finding a decent job is shorter. Bearing in mind that the rates of participation and employment are on a permanent decline and that the unemployment level has considerably deteriorated, the Serbian labour market can be characterized as the labour market with an increasing malfunctioning. In addition, the unemployment levels of women, as well as young and older workers, have risen during the economic crisis, but these negative tendencies have continued in the post crisis period too. There are several research papers that have recently examined the functioning of the labour market in the EU countries (Koske 2009; Lasinio & Vallanti 2012), but there is still a research gap in specialized analyses for the transition countries.

In this paper the analysis of the key indicators of the functioning of the labour market in Serbia is conducted. In addition, starting with the assumption that structural change may considerably affect the labour market, especially during the periods of economic crisis, the indicators of structural imbalance (Jackman and Roper 1987; Lilien 1982) for the Serbian labour market are calculated and analysed. The results show that the structural imbalance among industrial sectors has significantly increased since 2010 as a result of the sharp decline in the aggregate employment. The indices of occupational

¹ This paper is part of research projects: 47009 (*European integrations and social and economic changes in Serbian economy on the way to the EU*) and 179015 (*Challenges and prospects of structural changes in Serbia: Strategic directions for economic development and harmonization with EU requirements*), financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

² Kosovka Ognjenović, MSc, Institute of Economic Sciences, 12 Zmaj Jovina, 11000 Belgrade, Serbia. E-mail: kosovka.ognjenovic@ien.bg.ac.rs.

and skill mismatches indicate an increasing instability that occurred due to the decreasing number of job opportunities. Similar results are found for Central and South Eastern European countries (non-EU members). Namely, it is estimated that the effect of structural change, observed through the reallocation of jobs out of the less productive agricultural sector into the high value added manufacturing and services sectors, is much slower than before the economic crisis (International Labour Organization 2013). Some applications of the theoretical concept of matching function, based on job vacancies available in the labour market, are provided by Pissarides (2011).

This paper is organized as follows. The next section provides a brief analysis of the characteristics of the Serbian labour market and shows some comparison with the EU. After that the policies on the labour market in Serbia are analysed. The central part of this paper is devoted to the analysis of the functioning of the labour market in Serbia, whereas the final section provides some general conclusions.

CHARACTERISTICS OF THE LABOUR MARKET

The labour market in Serbia substantially differs from those of the EU, but it is not too much different than in the Western Balkan countries or in the former transition countries of Central and Eastern Europe. The common feature of all these labour markets is low employment and economic activity of the workforce. In addition, some unfavourable developments in the labour market are characteristics of certain labour categories, such as women and young and older workers. In order to harmonize the local labour market development with the EU employment policy, the Serbian government adopted the National employment strategy for the period from 2011 to 2020 (Government of Serbia 2011). However, the instruments for the implementation of this strategy are rather weak and the measures of the success of implemented policies in the Serbian labour market still diverge from those prescribed by the employment policies of the Europe 2020 strategy (Ognjenović & Branković 2012b).

Table 1. Participation rates by educational attainment, in percentage (population from 15 to 64 years)

Year	Serbia			EU-28			EU-15		
	ISCED 0-2	ISCED 3-4	ISCED 5-6	ISCED 0-2	ISCED 3-4	ISCED 5-6	ISCED 0-2	ISCED 3-4	ISCED 5-6
2002	---	---	---	53.5	75.2	86.7	56.7	75.8	86.8
2003	---	---	---	53.9	75.0	86.8	57.3	75.9	86.8
2004	47.9	72.9	84.0	53.6	75.1	86.9	57.2	76.1	87.0
2005	46.2	71.8	83.2	53.9	75.2	86.9	57.5	76.6	86.9
2006	44.7	69.9	82.4	54.2	75.4	87.1	57.9	77.2	87.1
2007	44.4	69.2	81.6	54.4	75.3	87.2	57.9	77.3	87.2
2008	45.3	67.3	82.1	54.2	75.3	87.0	57.7	77.2	87.1
2009	42.7	65.5	78.7	54.0	75.2	87.1	57.3	77.1	87.1
2010	38.8	64.1	79.6	53.7	75.0	87.0	56.9	76.9	87.1
2011	39.3	64.0	80.1	54.3	75.0	86.8	57.8	76.8	87.0
2012	40.3	64.0	80.2	54.7	75.2	87.1	58.1	77.0	87.3

Source: LFS data of the National Bureau of Statistics of Serbia and of Eurostat.

When we look at Table 1 above, we can see a persistent declining trend in the participation rates for all the observed educational levels over the period 2004-2012 in the Serbian labour market. In contrast, in EU-28 the participation rates of those with less than primary, primary and lower secondary education

(ISCED 0-2 levels) slowly increased from 2002 to 2012, whilst the rates of those with secondary and post-secondary non-tertiary education (ISCED 3-4 levels) remained stable over the same period. An upward trend is recorded for those with the tertiary education (ISCED 5-6 level). The similar development is characteristic of the EU-15 labour market on average. The tendency in the Serbian labour market can be partly explained by the decreasing rates of female participation in the workforce and by the delayed entrance to the labour market of young cohorts due to pursuing education.

The participation rates of the working age population in Serbia declined by more than six percentage points in total as well as by gender in 2012 compared with 2004. However, the decline was even sharper in the female subpopulation reaching almost seven percentage points. There is also no evidence on the narrowing of the gender gap observed through the difference between the participation rates of men and women. The male participation rate is around 17 percentage points greater than that of women. In addition, no significant changes are noticed throughout the age distribution for both male and female participants as reported in Table 2 below.

Table 2. Participation rates in Serbia by age and gender, in percentage (population from 15 to 64 years)

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	15-64
Total											
2004	17.6	54.8	78.2	89.2	86.7	88.8	82.4	71.9	51.2	28.6	66.4
2008	14.7	49.0	74.3	84.1	88.0	84.5	80.1	71.2	50.6	25.9	62.7
2012	10.7	46.1	77.1	84.6	86.3	83.3	80.7	70.7	51.3	24.0	60.1
Male											
2004	20.5	59.7	86.8	95.5	93.4	94.3	90.1	82.8	69.8	40.1	75.1
2008	17.7	56.6	82.2	91.7	94.8	91.5	87.2	80.1	65.8	37.9	71.2
2012	14.5	55.9	82.2	91.9	92.3	89.4	87.0	81.2	65.7	37.2	68.8
Female											
2004	14.7	50.1	69.5	82.6	80.5	83.0	74.7	61.5	33.8	18.5	57.9
2008	11.5	41.2	65.4	76.7	81.4	77.9	73.7	62.6	36.3	15.9	54.4
2012	6.5	35.2	70.6	77.0	80.5	77.3	74.9	60.8	37.8	11.7	51.2

Source: LFS data of the National Bureau of Statistics, Bulletin, various issues.

Retrieved from: <http://www.stat.gov.rs>.

The employment rate for the working age population in Serbia followed a similar pattern as the measure of economic activity of the total population over the period 2004-2012. While, in general, the employment rates of the total workforce as well as of the male workforce were stable until the occurrence of the economic crisis, the employment rate of women slightly increased. This increase appeared across all the age groups except at the very bottom and top tails of the age distribution. The lower decline in the female employment rate induced the narrowing of the employment gender gap in 2012. But still the difference between the two employment rates is above 14 percentage points as shown in Table 3, which classifies women into the vulnerable group of the labour market participants.

*Table 3. Employment rates in Serbia by age and gender, in percentage
(population from 15 to 64 years)*

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	15-64
Total											
2004	7.3	30.1	56.9	72.5	72.2	75.7	71.2	62.9	45.6	27.0	53.4
2008	8.4	32.8	57.3	71.8	77.9	75.4	71.1	64.5	46.3	24.7	53.7
2012	3.8	23.8	49.9	61.0	68.3	67.4	64.5	57.0	41.7	20.7	45.3
Male											
2004	9.3	33.7	68.8	82.9	81.5	85.2	81.4	73.3	61.4	37.3	63.1
2008	10.9	40.3	64.4	80.9	86.3	84.8	79.8	73.0	60.1	35.5	62.3
2012	5.7	30.7	55.6	68.1	75.6	73.3	69.9	65.2	52.7	31.2	52.4
Female											
2004	5.3	26.6	45.1	61.6	63.5	65.7	60.9	52.9	30.9	18.0	44.0
2008	5.7	25.2	49.2	62.8	69.8	66.5	63.4	56.3	33.3	15.8	45.3
2012	1.8	16.0	42.7	53.7	61.1	61.5	59.5	49.2	31.4	11.1	38.1

Source: LFS data of the National Bureau of Statistics, Bulletin, various issues.

Retrieved from: <http://www.stat.gov.rs>.

The unemployment rates followed the decreasing trend from 2004 to 2008 for both men and women for the total workforce and across all the age groups, as shown by figures reported in Table 4 below. However, the trend has switched as of the beginning of the economic crisis, indicating the rising level of unemployment. The unemployment rate of men increased faster than that of women, showing a difference in the range of the 2012 and 2004 unemployment rates of 8 and 1.5 percentage points for men and women, respectively.

In summary, it can be concluded that both men and women experienced significantly deteriorated positions in the labour market due to its malfunction. However, the difference in the employment rates between men and women indicates the weaknesses of the Serbian labour market in terms of the available employment opportunities for the latter.

Table 4. Unemployment rates in Serbia by age and gender, in percentage (population from 15 to 64 years)

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	15-64
Total											
2004	58.6	45.1	27.2	18.7	16.7	14.7	13.6	12.6	10.9	5.6	19.5
2008	42.9	33.0	23.0	14.7	11.5	10.8	11.2	9.4	8.4	4.5	14.4
2012	64.1	48.4	35.3	27.9	20.9	19.1	20.0	19.4	18.7	13.5	24.6
Male											
2004	54.6	43.5	20.8	13.2	12.7	9.6	9.7	11.5	11.9	6.9	15.9
2008	38.1	28.8	21.7	11.8	9.0	7.3	8.4	8.9	8.6	6.4	12.6
2012	60.5	45.0	32.4	26.0	18.1	18.0	19.6	19.7	19.8	16.2	23.9
Female											
2004	64.1	46.9	35.1	25.5	21.1	20.8	18.4	14.0	8.8	3.0	24.1
2008	50.7	38.9	24.8	18.1	14.3	14.6	14.0	10.1	8.2	0.9	16.7
2012	72.9	54.5	39.5	30.3	24.1	20.4	20.5	19.0	16.9	5.8	25.6

Source: LFS data of the National Bureau of Statistics, Bulletin, various issues.

Retrieved from: <http://www.stat.gov.rs>.

LABOUR MARKET POLICIES

The Serbian government adopted the labour market policies, passive and active ones, in order to foster well-functioning of the labour market under the conditions of rising unemployment, especially of the youth and women, the appearance of work surpluses over the course of privatization and restructuring, rising labour market dualism and gender differentials, etc. Serious reforms of the labour market started as of 2001 when the first Labour law, which was intended to support the overall process of transition reforms, was put into the force. The amendments introduced by the 2005 Labour law were assessed as less desired for an economy and the labour market in restructuring (OECD 2008; World Bank 2006). The major changes introduced by this law were related to the provisions about temporary employment and collective dismissals. These institutes, in particular, determine the level of rigidity of the labour market.

The overall level of the strictness of the Serbian labour market, as measured by the OECD index of the employment protection legislation, ranged between 0 and 6, accounted for 2.4 (OECD 2008: 57). When the permanent and temporary jobs are observed, the largest source of this strictness occurs because of temporary employment (2.9) rather than permanent employment (2.2). However, the level of protection with respect to the collective dismissals is pretty high (2.9), which is the level comparable with some former transition countries, for instance with Slovenia, but still, it is below the OECD average (3.0) and the levels for most of the European OECD countries (Ognjenović & Branković 2012a: 385). The share of temporary contracts in Serbia ranges from 11 to 14 percent (National Bureau of Statistics 2013).

There are examples of the transition countries that show that the decreasing rigidity of the labour market can be induced by such structural reforms that lead to the improvement of the functioning of the labour market. Koske (2009) elaborated that in the case of Slovenia young people are more affected by the effects of the employment protection legislation because of a prevalence of temporary contracts among the new entrance to the labour market. The author argued that temporary contracts may have twofold effects; to be the link towards the permanent contracts, on one hand, but also they can induce moving of young people between temporary jobs and unemployment, on the other hand. Not only in the transition country economies, but also in the case of developed industrialized economies of the EU, stringent employment protection legislation may prevent against the faster reallocation of workers and jobs across sectors. Lasinio & Vallanti (2012) showed that relaxation of the employment protection legislation improved the functioning of the labour market, observed through both the unemployment and participation levels. However, the price of increased flexibility in using temporary contracts was the decline in labour productivity that diverged from the trend common to other OECD countries. With the score of 1.9 the strictness of the Italian labour market is ranked as one of the lowest among the European OECD countries.

Passive labour market policies are much more important for the functioning of the Serbian labour market than active ones, which is the case in most of the transition countries. This conclusion does not result from the effects of the policies, but it comes from the distribution of total expenditures that are envisaged for passive and active labour market policies. Namely, since their introduction by the Law on employment and unemployment insurance in 2003 (Official Gazette no. 71/03, 84/04 and 36/09, 88/10) the share of expenditures for active labour market policies ranged from 0.03 to over 0.11 percent of the gross domestic product. However, the expenditures for passive labour market policies have totalled between 0.90 and above one percent of the gross domestic product (Gligorov et al.: 55). The largest portion of the passive labour market policies is related to the payment of the unemployment benefits. However, the share of the unemployment benefits recipients is low and accounted for around 8 percent on average (National Employment Service 2013). An upward trend in the number of participants in additional education and training programs on the labour market is present in the last couple of years in Serbia. Moreover, in 2012 nine thousand recipients were entitled to use this active labour market policy measure. The net effects of training programs on the labour

market, such as basic computer literacy trainings and advanced IT trainings, were among the lowest (Ognjenović 2007).

FUNCTIONING OF THE LABOUR MARKET

Bearing in mind that young and older workers are disproportionately affected by the recent economic crisis, in the following analysis we will observe the distributions of unemployment and employment rates for the three labour categories in terms of their age. The first category includes young workers aged 15 to 24 years, followed by those of 25 to 49 years of age, and the third category includes workers from 50 to 64 years of age. Several authors argued that the unemployment and employment rates are the most common measures of the functioning of the labour market (Jensen 1989; Koske 2009; Lasinio & Vallanti 2012), so that in this section the movements of these two indicators will be first analysed. The figures recorded for the Serbian labour market are compared with the corresponding figures provided by the European Commission and Eurostat for the harmonized averages for the EU-28 and EU-15 countries.

Table 5. Distribution of unemployment rates by age and gender, in percentage (population from 15 to 64 years)

	2004			2008			2012		
	<i>Serbia</i>	<i>EU-28</i>	<i>EU-15</i>	<i>Serbia</i>	<i>EU-28</i>	<i>EU-15</i>	<i>Serbia</i>	<i>EU-28</i>	<i>EU-15</i>
<i>15-24 years</i>									
Women	50.5	18.7	16.2	41.3	15.6	15.2	57.0	22.1	21.3
Men	46.1	18.7	15.8	31.0	15.6	15.6	47.9	23.5	23.1
Total	48.1	18.7	16.0	35.2	15.6	15.4	51.1	22.9	22.2
<i>25-49 years</i>									
Women	23.9	9.4	8.6	16.7	7.0	7.2	26.0	10.3	10.5
Men	13.1	7.6	6.7	11.6	5.7	5.8	22.6	9.6	9.9
Total	18.0	8.4	7.5	14.0	6.3	6.4	24.1	9.9	10.2
<i>50-64 years</i>									
Women	11.3	7.2	6.9	8.5	5.3	5.4	16.8	7.0	6.9
Men	11.0	7.1	6.4	8.4	5.1	5.1	19.0	7.8	7.8
Total	11.1	7.1	6.6	8.4	5.2	5.2	18.1	7.4	7.4

Source: LFS data of the National Bureau of Statistics of Serbia and of Eurostat.

For young people in Serbia the recorded unemployment rate is almost three times higher than for their counterparts in EU-28 and EU-15 in 2012, showing an increasing malfunctioning of the labour market during the post crisis period. As Table 5 above shows, some improvements in the development of the youth unemployment rate were present during the period before the occurrence of the crisis. This general pattern was characteristic of the workers who belong to the group of middle age workers, as well as of older workers. Common for both the Serbian and the EU labour market is the rising trend of the unemployment rates throughout all the age categories of workers, as well as by gender. Furthermore, it should be pointed out that in the group of 15-24 years of age the unemployment rate between men and women is diverging faster, thus deepening the unemployment gender gap, whilst in the group of 25-49 years of age the difference in the unemployment rates between men and women is much lower. The unemployment rate of women of the age 50-64 years is even lower than that of men of the same age, because the greater portion of the female workforce in this age group is inactive.

Table 6. Distribution of employment rates by age and gender, in percentage (population from 15 to 64 years)

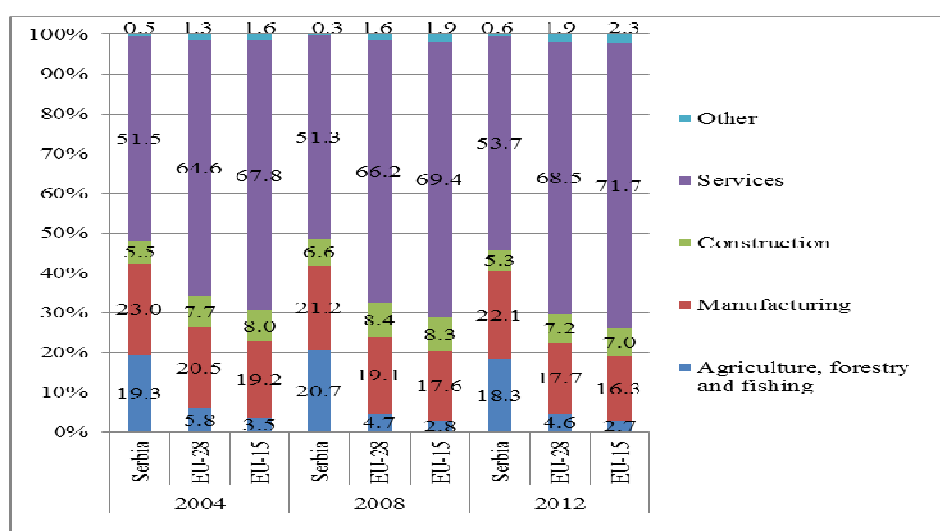
	2004			2008			2012		
	Serbia	EU-28	EU-15	Serbia	EU-28	EU-15	Serbia	EU-28	EU-15
<i>15-24 years</i>									
Women	16.5	32.7	36.6	15.9	34.3	38.1	9.4	30.7	33.9
Men	22.0	38.5	42.4	26.0	40.3	43.4	19.1	34.7	37.0
Total	19.2	35.6	39.5	21.1	37.3	40.8	14.5	32.8	35.5
<i>25-49 years</i>									
Women	59.3	69.6	69.7	62.5	72.8	72.7	56.4	71.4	71.4
Men	79.9	85.6	87.0	78.9	87.5	88.0	68.4	83.4	83.5
Total	69.6	77.6	78.4	70.6	80.2	80.4	62.5	77.4	77.5
<i>50-64 years</i>									
Women	36.5	42.6	43.9	37.0	47.9	49.5	29.8	51.7	53.7
Men	60.4	61.0	63.1	59.1	65.3	66.6	49.3	65.5	67.2
Total	48.0	51.6	53.3	47.6	56.4	57.9	39.2	58.4	60.3

Source: LFS data of the National Bureau of Statistics of Serbia and of Eurostat.

Table 6 above illustrates a sharp decline in the employment rate of the youth in Serbia in 2012 compared with 2008 and 2004. The youth employment rates in EU-28 and EU-15 are as much as two times higher than in Serbia in 2012. At the same time, the employment rate of the middle age workforce exceeds three quarters of the total workforce, and in the latest age group three fifths of the total workforce are employed. However, with the exception of young workers, for all other labour categories in EU-28 and EU-15, the rising employment rates are recorded over the period 2004-2012. Unfortunately, this is not the case in Serbia. This means that the EU labour market was not so vulnerable during the post crisis period and that the labour market policy measures were properly planned and implemented when older and experienced workers are observed, but still rising unemployment of the youth is common for both the Serbian and the EU labour market.

Figure 1. Structure of employment by economic sectors, in percentage

(population from 15 to 64 years)

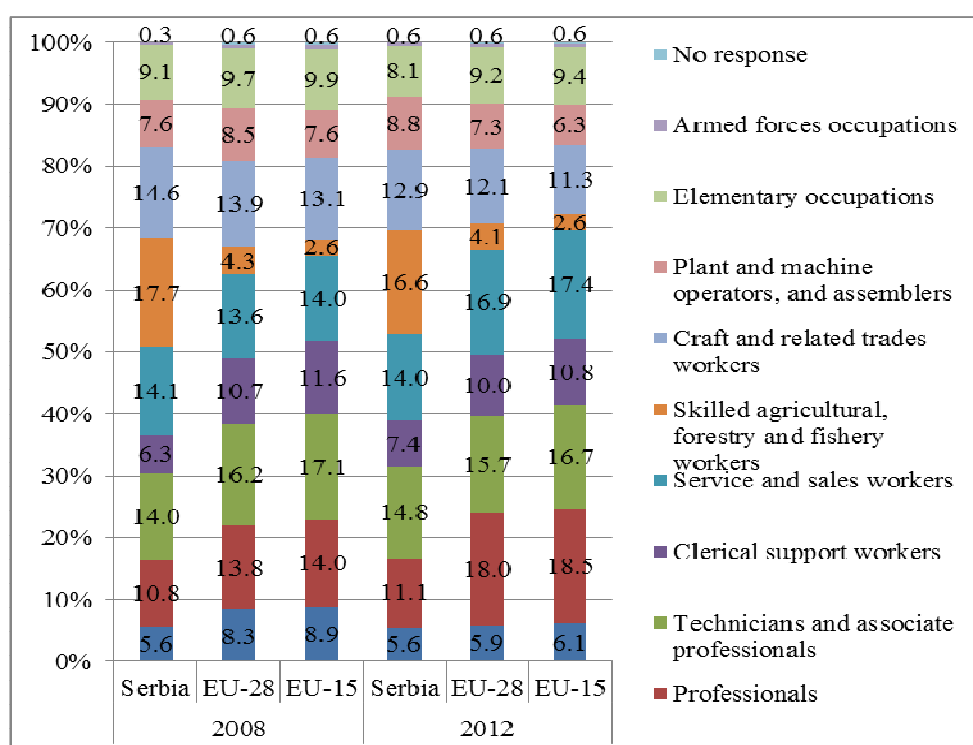


Source: LFS data of the National Bureau of Statistics of Serbia and of Eurostat.

The sector of agriculture, forestry and fishing absorbs almost one fifth of the workforce in Serbia, which is substantially larger percentage than in the EU on average. The importance of agriculture as an employer even increased during the period of the economic crisis because many jobs were lost in manufacturing and business services sectors. In comparison to EU-28 and EU-15 the economic sectors of construction and services are depressed, whilst the share of employees in manufacturing is slightly above the EU average as depicted by Fig. 1.

The distribution of the aggregate employment by economic sectors corresponds to the distribution of the employed persons by occupational groups as shown in Fig. 2. If the structure of employment, alongside the complexity of occupational groups, is observed, it can be noticed that elementary occupations together with low-skilled and skilled professional occupations comprise almost half of the employed in Serbia. The situation is different in the EU. These occupations cover around one third of the employment distribution in EU-28 or even less than 30 percent in EU-15. The tendency, noticed in the Serbian labour market in the last couple of years, points to the rising share of occupational groups that gather skilled and high-skilled professionals.

Figure 2. Structure of the employed persons by occupational groups, in percentage (population from 15 to 64 years)



Source: LFS data of the National Bureau of Statistics of Serbia and of Eurostat.

As it was already elaborated, the Serbian labour market recently recorded a substantial deterioration in terms of employment and unemployment. In order to show to what extent the total unemployment is contributed to by structural imbalance, observed through the industrial distribution of the employed and through the skill and occupational distribution of the unemployed, two indices are used. The first one, proposed by Jackman and Roper (1987), represents a measure of the structural unemployment, and the other one shows the level of cyclical unemployment as defined by Lilien (1982). The Jackman and Roper index is obtained as an absolute difference between the sectoral share of the total unemployment and its share of total job vacancies weighted by one half (Jackman and Roper: 11). The index constructed by Lilien is much simpler and for its calculation one only needs data on sectoral employment growth rates over the observed period (Lilien 1982: 787). The data on the number of the unemployed and job vacancies across the occupational and skill groups that are used for construction

of the first index come from the National Employment Service (2012). The LFS data for 2012 and for other observed years are provided by the National Bureau of Statistics (2013) and are used for construction of the second index. The indices are calculated for the period 2004-2012. Despite the fact that the Serbian labour market suffers from the structural unemployment, it seem to be reasonable to combine the measures of structural and cyclical unemployment, because over the observed period the episodes of transitional recession are combined with the influence of the global economic crisis.

Fig. 3 depicts the Lilien index of structural imbalance and percentage changes in the unemployment and employment rates for the period 2004-2012. One may recognize three patterns of behaviour of these measures that are related to the functioning of the Serbian labour market. The first pattern was characteristic of the period of high but diminishing rates of economic growth, which was followed by decreasing rates of employment and increasing rates of unemployment. Many jobs were then lost due to privatization and restructuring, but also some improvements of business environment triggered the rising incidence of the real sector. This induced the change in the pattern of unemployment and employment rates; moreover the economic growth rate lifted as well. The economic crisis then showed to what extent the Serbian labour market is fragile. The unemployment tremendously increased, whilst the employment declined to its historical minimum.

Furthermore, over the period 2004-2012 the index of structural imbalance slowly declined and remained stable until the occurrence of the economic crisis (Fig. 3). As Jackman and Roper (1987) stated the economic sectors that experienced the significant variability in the employment growth rates show the larger portion of workers in the “wrong” sectors which have to be moved out of these sectors in order to achieve sectoral balance. Accordingly, the sectoral imbalance will increase in the times of recession due to sectoral sensitivity to cyclical fluctuations. Indeed, the Lilien index constructed for the Serbian labour market jumped to higher level after the crisis and remained at this new equilibrium level. The two main factors are responsible for this, changes in the composition of demand for labour, on one hand, and the declined number of job opportunities, on the other hand. Three economic sectors, manufacturing, agriculture, and wholesale and retail trade, due to their high shares in the total employment, may induce significant fluctuations in the aggregate demand for labour.

Figure 3. Indices of structural imbalance and changes of employment and unemployment rates, in percentage points (population from 15 to 64 years)



Source: LFS data of the National Bureau of Statistics and Public employment service. Retrieved from: <http://www.stat.gov.rs>; <http://www.nsz.gov.rs>. Author's calculation.

All three measures of structural imbalance, observed either through occupational and skill mismatches or through the variability of employment growth rates across the economic sectors, followed a similar pattern over the observed period (see Table 7 below). Structural imbalance among industrial sectors has significantly increased as of 2010, which coincided with the sharp decline in the total employment. It can be noticed that occupational mismatch indices are more instable over the years 2010-2012. These instabilities occurred due mainly to the severe decline in job vacancies, especially in the manufacturing industry, since 2010.

There are two possible explanations for recorded instability in mismatch indices. The first obvious reason arises due to the crisis and the decline in job opportunities that was caused by the local economy developments. The other possible reason of instability in mismatch indices may be because the 2009 Law on employment and unemployment insurance abolished the provision that obliged the employers to record every job vacancy at the National employment service (Gligorov et al. 2011: 33). Also, the positive matter induced by changes of the law is the fact that more realistic needs of those employers who decided to record job vacancies are available. It is obvious that, according to the recent data, there is still no reliable source of job opportunities that would combine figures provided by different sources. An additional reason for structural imbalance over the period 2010-2012 is the artificial demand for different labour categories in terms of their skills and occupations. Namely, the government intended to positively discriminate certain labour categories, such as young people, through active labour market policy measures. The wage subsidies were provided to those employers who were obliged to employ job seekers who were eligible for these active labour market policy measures.

Table 7. Measures of structural imbalance

Year	Indices of structural imbalance		
	Skill ¹	Occupational ²	Industrial ³
2004	0.12	0.28	4.36
2005	0.10	0.28	4.24
2006	0.10	0.30	4.21
2007	0.09	0.29	4.22
2008	0.09	0.30	4.21
2009	0.09	0.31	4.25
2010	0.11	0.21	5.09
2011	0.12	0.57	5.16
2012	0.18	0.14	5.11

Notes: Indices (1) and (2) are calculated following the Jackman and Roper (1987) approach, while the index (3) represents the Lilien (1982) measure of sectoral change.

Source: Public employment service. Retrieved from: <http://www.nsz.gov.rs>. Author's calculation.

The Serbian labour market has recovering very slowly during the post crisis period (Ognjenović & Branković 2012a). Furthermore, the actual demand for labour is on the decrease and changes in the potential demand observed through the pattern of behaviour of the companies are not encouraging (Ognjenović 2013; Ognjenović & Branković 2013).

CONCLUSIONS

This paper deals with the analysis of the functioning of the labour market in Serbia over two sub-periods. The first sub-period covers the years 2004-2008 and includes the initial effects of the global economic crisis, whilst the second sub-period encompasses the years 2009-2012, indicating the behaviour of the labour market immediately after the crisis and during the post-crisis period. Bearing

in mind that well-functioning labour markets are characterized by high participation rates and low unemployment rates, while employment opportunities are available even for depressed labour categories, such as women, young and older workers, and that the process of finding a decent job is shorter, we can conclude that the Serbian labour market does not function well.

The participation rates of the working age population in Serbia have consistently declined during the observed period. More specifically, the participation rates declined by more than six percentage points in total, as well as observed by gender in 2012 compared with 2004. Thus, the participation rates respectively were 66.4 and 60.1 percent in 2004 and 2012. This decline was even sharper in the female subpopulation reaching almost seven percentage points. However, some improvements occurred in the aggregate level of unemployment immediately before the crisis. Namely, the unemployment rates followed the decreasing trend from 2004 to 2008 for the total workforce as well as for men and women. The sharp and persistent increase in the aggregate level of unemployment has been the characteristic of the post crisis period, so that, in general, the unemployment rate increased from 19.5% in 2004 to 24.6% in 2012 for the whole working age population. In particular, young people and older workers are more affected by these unfavourable developments in the labour market. After the recorded decrease in the level of youth unemployment up to 2008, the youth unemployment rate tremendously increased, exceeding the unemployment rate of the same population in the EU almost three times. Similarly, the unemployment rate of older workers in Serbia exceeds the unemployment rate of the same cohort in the EU more than two times. In general, the employment rates of the total workforce as well as of the male workforce were stable until the occurrence of the economic crisis, whereas the employment rate of women slightly increased. The recorded employment rates for the total workforce in 2004 and 2012 were 53.4 and 45.3 percent, respectively. The lower decline in the female employment rate induced the narrowing of the employment gender gap in 2012, but still the employment level of women in Serbia is at a very low level, because less than two fifths of the female workforce is employed.

LITERATURE

- 1) European Commission, *Eurostat: Statistics Database*. Retrieved from: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database
- 2) Gligorov, V., Ognjenović, K. & Vidovic, H. (2011), *Assessment of the Labour Market in Serbia*. Vienna: wiiw Research Report No. 371. Retrieved from: <http://wiiw.ac.at/assessment-of-the-labour-market-in-serbia-p-2348.html>
- 3) Government of Serbia (2011), *National Employment Strategy for the Period 2011-2020*. Official Gazette No. 31/11. Retrieved from: <http://www.minrzs.gov.rs/sektor-za-zaposljavanje.php>
- 4) International Labour Organization (2013), *Global Employment Trends 2013: Recovering from a Second Jobs Dip*. Geneva (Switzerland): ILO. Retrieved from: http://www.ilo.org/global/research/global-reports/global-employment-trends/2013/WCMS_202326/lang--nl/index.htm
- 5) Jensen, H. (1989), "Employment and unemployment policies and the functioning of the labour market in a comparative perspective". *Acta Sociologica*, 32(4): 405-417.
- 6) Jackman, R. & Roper, S. (1987), "Structural Unemployment". *Oxford Bulletin of Economics and Statistics*, 49 (1): 9-36.
- 7) Koske, I. (2009), "Improving the functioning of the Slovenian labour market". *OECD Economics Department Working Papers*, No. 719. OECD: OECD Publishing. Retrieved from: <http://dx.doi.org/10.1787/221857425110>
- 8) Lasinio, C.J. & Vallanti, G. (2012), "Reforms, labour market functioning and productivity dynamics: a sectoral analysis for Italy". Department of the Treasury, Ministry of the Economy and of Finance Working Papers No. 10. Retrieved from SSRN: <http://ssrn.com/abstract=1818854> or <http://dx.doi.org/10.2139/ssrn.1818854>
- 9) Lilien, D. M. (1982), "Sectoral Shifts and Cyclical Unemployment". *Journal of Political Economy*, 90 (41): 777-793.

- 10) Law on employment and unemployment insurance. *Official Gazette* no. 71/03, 84/04 and 36/09, 88/10. Retrieved from: http://www.paragraf.rs/propisi/zakon_o_zaposljavanju_i_osiguranju_za_slucaj_nezaposlenosti.html
- 11) National Bureau of Statistics (2013). *Labour Force Survey 2012*. Bulletin No. 564. Retrieved from: <http://www.stat.gov.rs>
- 12) National Employment Service (2013), *Business Report for 2012*. Belgrade: NSZ. Retrieved from: http://www.nsz.gov.rs/live/dokumenti/izve_taj_i_program_rada_nsz.cid4040
- 13) OECD (2008), *Reviews of Labour Market and Social Policies, Serbia: A Labour Market in Transition*. Paris: OECD Publishing.
- 14) Ognjenović, K. (2013), “How structural changes affect enterprises’ expectations about employment in Serbia?”. *Forthcoming in Economic Analysis*, 46 (3-4).
- 15) Ognjenović, K. (2007), The use of propensity score-matching methods in evaluation of active labour market programs in Serbia. *Economic Annals*, 52 (172): 21-54.
- 16) Ognjenović, K. & Branković, A. (2013), Employment change and business prospects in Serbia. *Industry*, 41(3): 67-84.
- 17) Ognjenović, K., & Branković, A. (2012a), “Job creation and employment in a time of crisis”. In J.S. Andrade *et al.* (eds.), *Managing Structural Changes: Trends and Requirements* (pp. 375-396). Coimbra (Portugal): Faculty of Economics of the University of Coimbra.
- 18) Ognjenović, K. & Branković, A. (2012b), “Employment policy in the Western Balkan countries and their perspectives in the process of European integration”. In P. Teixeira *et al.* (eds.) *European Integration Process in Western Balkan Countries* (pp. 389-415). Coimbra (Portugal): Faculty of Economics of the University of Coimbra.
- 19) Pissarides, C. (2011), “Equilibrium in the labor market with search frictions”. *American Economic Review*, 101(2): 1092–1105.
- 20) World Bank (2006), *Serbia: Labor Market Assessment*. Washington D.C.: The World Bank, Report No. 36576-YU. Retrieved from: <http://documents.worldbank.org/curated/en/2006/09/7151675/serbia-labor-market-assessment>