

REGIONAL DISPARITIES AND GROWTH DYNAMICS IN THE REPUBLIC OF SERBIA

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Abstract

The issue of regional development is very topical for the Republic of Serbia, faced with political, economic, social, and ethnic challenges, between 1991 and 2001 as part of former Yugoslavia space. In the new geopolitical context, and its recently acquired status (March 2012) of candidate country for EU accession, Serbian society as a whole must adapt to new situations, pass through stages, meet criteria for community integration together with the other Western Balkan states. From an economic point of view, during the 2000s, there was a difficult course for Serbia, as shown by the results achieved in economic development, determined, inter alia on the economic and financial crisis that affected, and, in some cases, continue to adversely affect, all European countries. Fundamentally, there are great economic and social disparities between the various Serbian districts, which will be highlighted on the basis of available indicators at NUTS 2 level of spatial subdivisions, according to official statistics and economic modeling.

1. Introduction

Economic inequalities or significant differences between different geographical regions in terms of GDP/capita, income/capita, wages or (un)employment rate are one of the main topics of Economics in general and especially of Economic Geography. To measure the disparities in terms of income, economists use, for example, the Gini coefficient, which takes values between 0 and 1, 0 representing the perfect equality and 1 perfect inequality. The existence and perpetuation of interregional disparities are one of the main concerns for both researchers and decision makers, whereas both seek to achieve a balanced development level throughout a state or group of states, as, for example, the case of the European Union.

From a historical point of view, in capitalist countries (e.g. Western European countries), competition with socialist countries led to the adoption of relatively equitable economic policies, building a social state with a generous welfare and income redistribution. However, in many countries, economic growth was often accompanied by increased social and regional disparities, with rich regions earning the bulk of national wealth, while the poorest regions have experienced a stagnation or even decline in their relative standard of living. However, until recently, social and regional disparities were not a widespread concern, at least as long as economic growth had not been compromised. Under the influence of some economists, e.g. Simon Kuznets, Nobel laureate in 1971, who believes that as the economy grows, it passes through a period of growing inequalities that will eventually reduce when a certain point of development is achieved [5], among policy makers increasing inequalities existence were not seen as a major issue. It was thought, therefore, that there is a tradeoff between equity and efficiency: to redistribute income in order to generate equality would undermine incentives, thus reducing the growth rate and the disposable income, which in turn would generate an increase in poverty.

Serbia had to face a difficult recovery process after the turbulent years in which it went through a process of territorial relocation, wars and economic and financial crisis. Based on Territorial Organization Law of 29 December 2007 with subsequent amendments [6], territorial organization units are represented by the autonomous provinces (autonomous status of Vojvodina, in the north, with 39 municipalities and 6 cities), 150 municipalities and 24 cities (23 urban municipalities, plus the state capital - Belgrade).

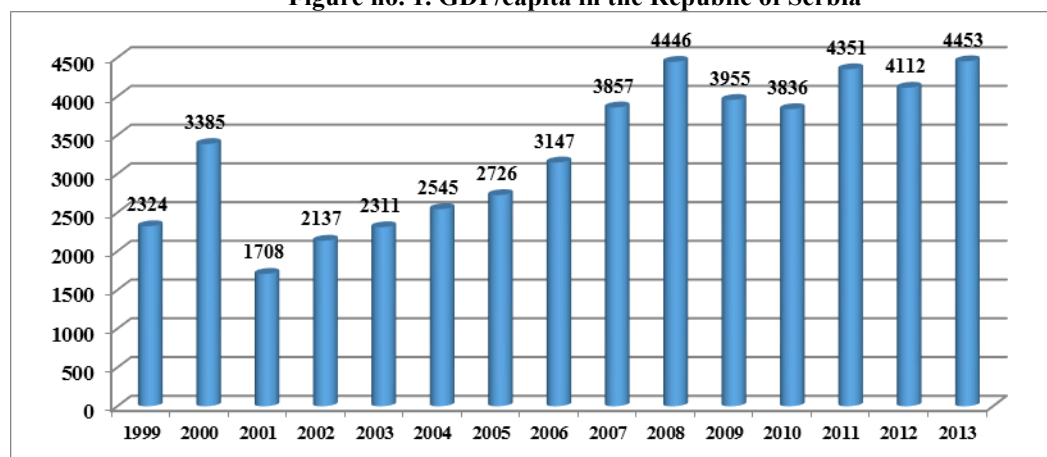
Municipalities (opštine) are the basic entities of local autonomy, each having an assembly (elected every 4 years in local elections), a municipal president, public service and budget. Typically, municipalities have over 10,000 people and comprise local communities corresponding to rural settlements (several small villages may include a local community and larger villages may contain some communities).

Cities (gradovi) are another type of local self-government. Territories with a city status usually have over 100,000 inhabitants, but are generally very similar to municipalities. Serbia has 23 cities, each with an assembly and local budget. According to statistical criteria, based on 2011 census (which did not include Kosovo), the urban population, numbering 4,346,611 inhabitants, included 75 cities with over 10,000 inhabitants (3,863,422 totally) and 99 towns with less than 10,000 inhabitants (483,189 in total). The criteria used for the census are not limited to the size of the settlement, but include the percentage of residents employed in agriculture, the population density etc. Thus, not all

cities are more populated than villages in the statistical sense and are not always municipal centers. The majority of cities embody a number of local communities and their role is more important in rural areas. Five cities are divided into several urban municipalities (currently 33): Belgrade - 17 urban municipalities, Novi Sad (which formally includes the city and Petrovaradin, City of Novi Sad is the only large city, with 300,000 residents), Kragujevac (5), Niš (5), Požarevac (2), Vranje (2).

Municipalities and large cities are included in the statistical territorial units called *districts* or *counties (oblast)*. There are 24 districts across Serbia (without the 5 districts in the composition of Kosovo), plus Belgrade district status, according to the Government's Enactment of 29 January 1992. Districts are administrative divisions hosting various state institutions (funds, offices, courts); they are not defined by the Law on Territorial Organisation from 2007, but by a Government's Enactment from 29 January 1992 [4]. Districts have cities (*gradovi*) and municipalities (*opštine*) as subdivisions.

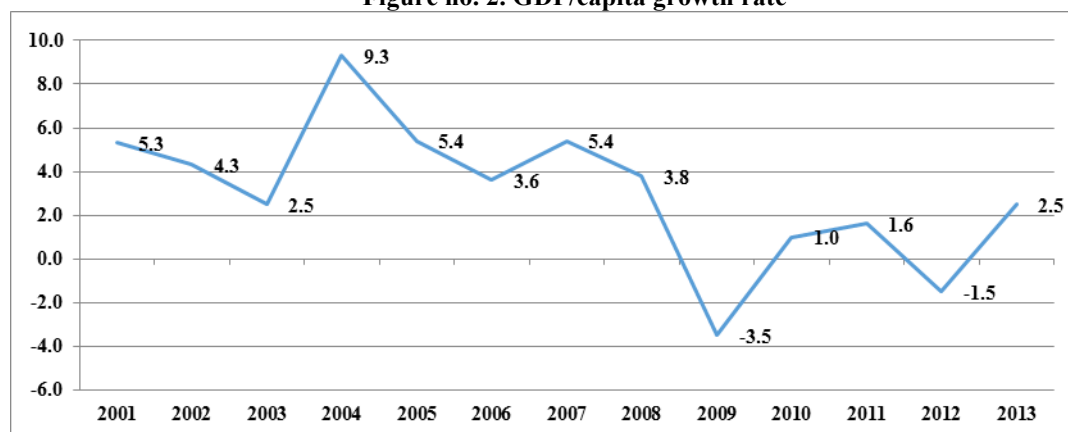
Figure no. 1. GDP/capita in the Republic of Serbia



Source: own preparation based on the Statistical Office of Republic of Serbia, 2014

Equal Spatial Development Act 2009 [7] provides a framework for a seven statistical regions, their number was later reduced to five (including Kosovo and Metohija region) by an act of 2010 [10]. The 25 districts are part of four statistical regions: Vojvodina, Belgrade, Šumadija, Western Serbia and Southeastern Serbia, respectively 7 regions in Vojvodina and 17 in the rest of Serbia). The capital, Belgrade is a separate territorial unit established by the Constitution and by several other acts, comprising the Belgrade district and also the Belgrade region.

Figure no. 2. GDP/capita growth rate

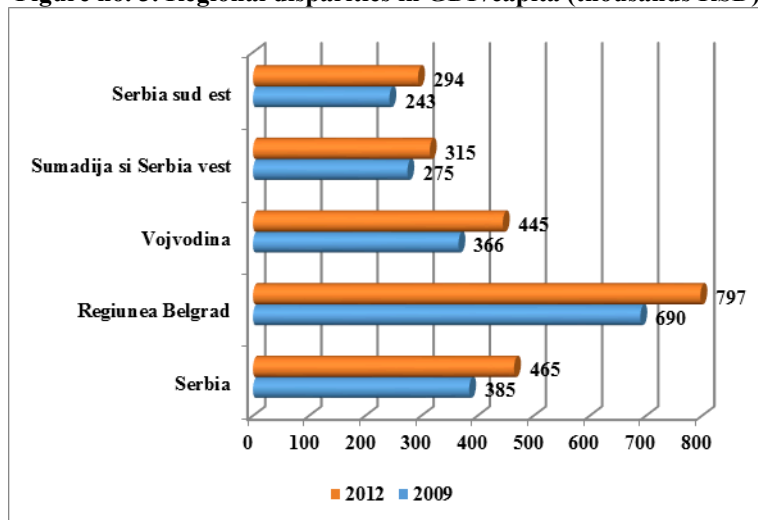


Source: own preparation based on The Statistical Office of Republic of Serbia, 2014

Economic and social dimensions of an area are generally measured using some customary indicators, starting from the surface (in km²), gross domestic product, population, employment rate, unemployment rate etc. In assessing the development of a region (as a spatial unit), usually gross domestic product is one of the most commonly used indicators. Serbia's GDP is not high compared to EU countries. Thus, in 2013, GDP / capita of the EU-28 was 23.200 euros, while in Serbia it represented 0.36 of the EU average or around 3.100 euros (current prices), according to Eurostat data (2014). National data, according to the Statistical Office of the Republic of Serbia (2014) indicate a doubling of the GDP in 2013 compared to 2001-2002, economic crisis affecting in a strong manner growth rates, which were small or even negative in the years 2009-2012 (a decrease of 7.3% annual growth in 2009 compared to 2008, when a -3.5% negative growth was registered).

On statistical regions, the data show major differences in economic performance, gaps are mainly caused by differences in regional economic structure, labor productivity and business types in different parts of the country.

Figure no. 3. Regional disparities in GDP/capita (thousands RSD)

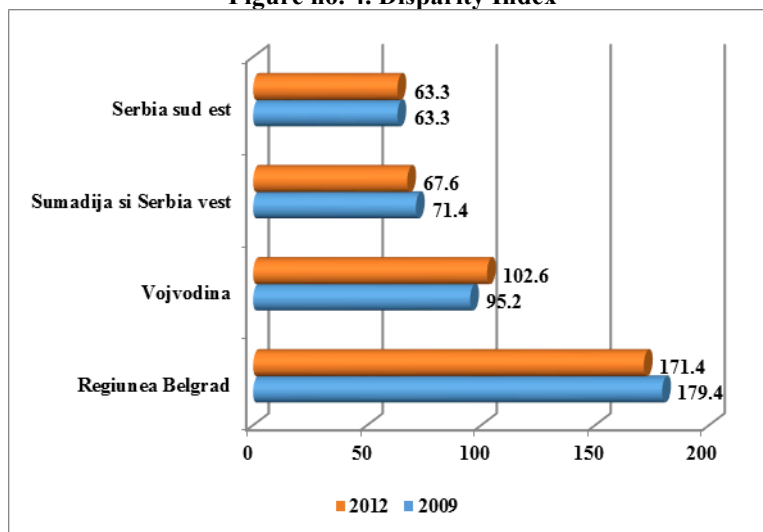


Source: own preparation based on The Statistical Office of Republic of Serbia, 2014

In Belgrade region, GDP per capita value, 797.000 RSD (about 7045 euros), was approximately 71% higher than the national average (about 4.110 euros), while the index for Vojvodina showed the same level with the national average (477.000 RSD or 4.217 euro). There are major differences compared with Šumadija region or Western Serbia, where, according to the disparity index in 2012, GDP / capita represented only 67.6% of GDP / capita national average (315.000 RSD / EUR 2.785), similar to 2011. In the southeast region of Serbia, it represented only 63.3% (294.000 RSD / 2.599 euro) of the average, decreasing by 2% compared to 2011. Thus, even if the data shows a minimum reduction of the disparity index of the Belgrade region between 2009-2012 (from 179.4 to 171.4), there are several differences regarding inter-regional economic development: in 2012 in Belgrade region GDP/capita was 2.71 times higher than in southeastern Serbia, since 2001, when it was 2.64 times higher. Furthermore, these regions do not represent areas of uniform policies and measures, and an analysis only in these large areas would be difficult to interpret. Also, it is not easy to analyze the potential effects of economic factors on all subdivisions or districts or even or municipalities [9].

Such data are still not available for the entire national territory and for the four statistical regions. As a result, limiting the existing statistical indicators (especially the economic ones) on districts and municipalities, on the number time series (years), does not allow the construction of a large number of potential variables that may influence economic growth, labor productivity or wage growth. Variables such as the area of counties and municipalities will be taken into account in calculating the market potential, which is a key indicator in economic geography models as well as employment density or population parameters which are relevant for the of estimated coefficients.

Figure no. 4. Disparity Index



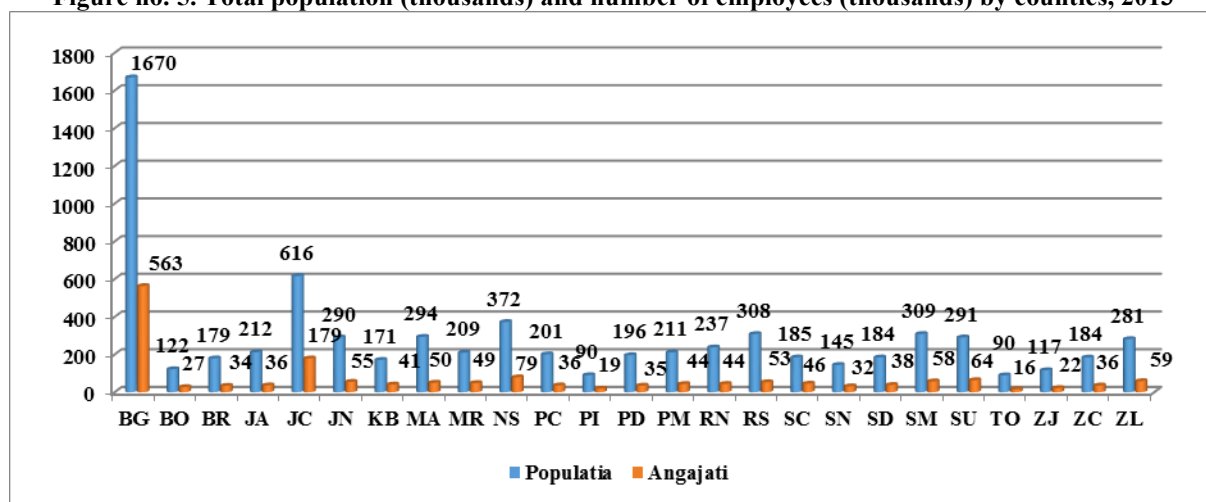
Source: own preparation based on The Statistical Office of Republic of Serbia, 2014

Based on employment rate, Serbian regions had the following shares of national GDP: in 2012, the Belgrade region achieved 39.6%, Vojvodina had a share of 27.4%, Šumadija and western Serbia - 19, 0%, Southeastern Serbia - only 14.0%, with very small changes over the previous year.

2. Population and density

The events which Serbia had to face in recent years have reflected on its demographic, economic and social features. Between 2002 and 2013 the population fell from 7.498.001 to 7.164.132 inhabitants, a decrease by 4.45%. Only three districts registered increases in population (Beograd, Južnobačka, Raška), all other districts have registered a decline in the number of inhabitants. The differences among regions are significant, the lowest population is to be found in Toplička district (county) (89.500) and highest in Južnobačka (616.100) excluding Belgrade region, where the population was in 2013 1.669.600 [9].

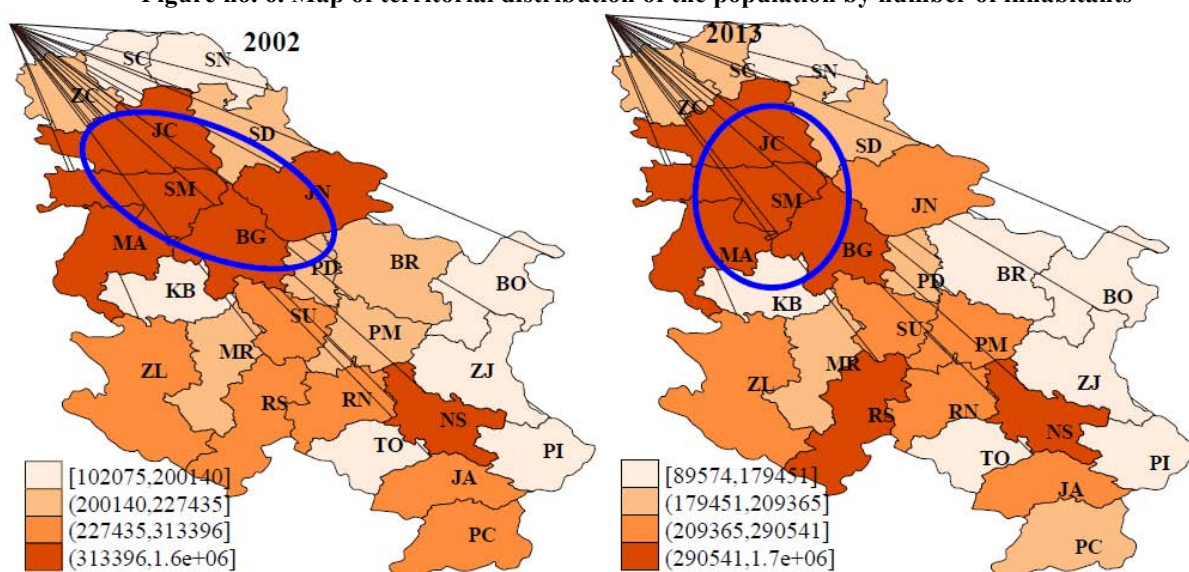
Figure no. 5. Total population (thousands) and number of employees (thousands) by counties, 2013



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2014

Extreme distribution of the population is observed clearly on the maps below, which show the higher population concentration in 4-5 districts in the northern half of the country around the capital Belgrade and one developed urban area in the southern part, Niš. Also, districts are the most sparsely populated in the Eastern part of Serbia, including two districts which in 2002 had a considerable larger population.

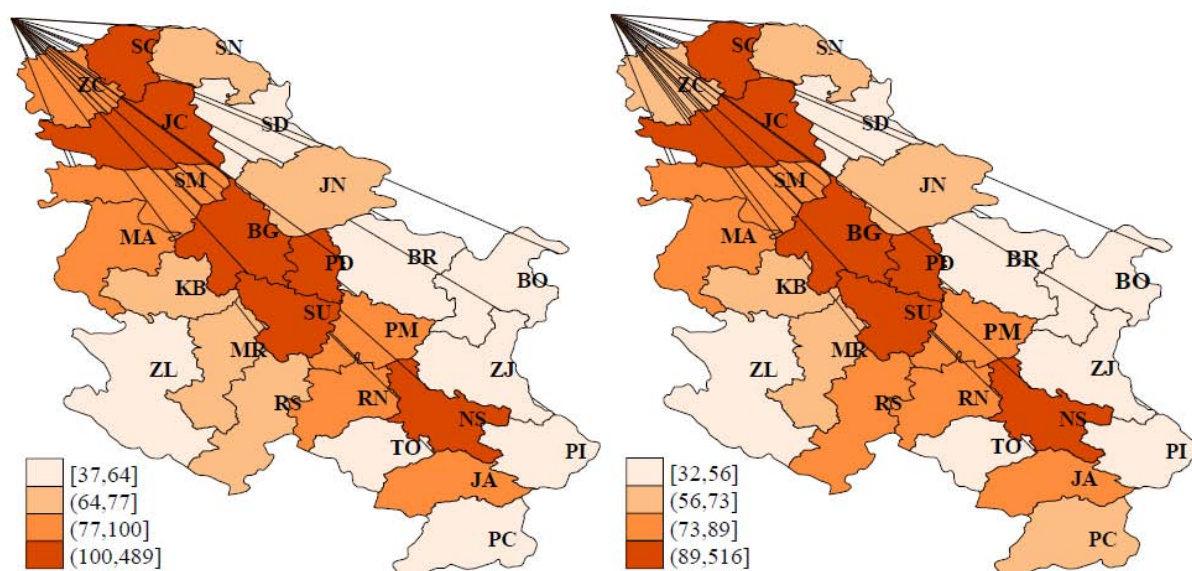
Figure no. 6. Map of territorial distribution of the population by number of inhabitants



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2003 - 2014

The importance of demographic size for the potential development of an area is best highlighted using population density, the ratio between the number of inhabitants and the space area on which they live. Districts (counties) with the largest population do not necessarily have the highest density. By the population in absolute terms there is a large concentration in Belgrade region in some districts around the capital and in two other areas (Niš and Raska). In terms of density, illustrated image is that of a chain running through dense areas of the country from north to south, with very little dense eastern side and in the districts of the south-west. In this regard, there are almost no changes, except a county in the extreme south, where the population density was significantly reduced. However, districts in the south-east are the least populated, both in terms number of inhabitants and the population density.

Figure no. 7. Population density in the Republic of Serbia, inh. /km²
2002 **2013**



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2003 -2014

Corroborating the lower density of population with the level of GDP / capita in South Serbia and, more specifically, in the region of Sumadija and Western Serbia, it could be a first indication of the relationship between the size of an area, measured by population, and economic development. Due to this relationship, if an area is not a central location, it will be difficult to attract new firms, without measures to support the various facilities and discounts, eliminating trade barriers and improving the infrastructure.

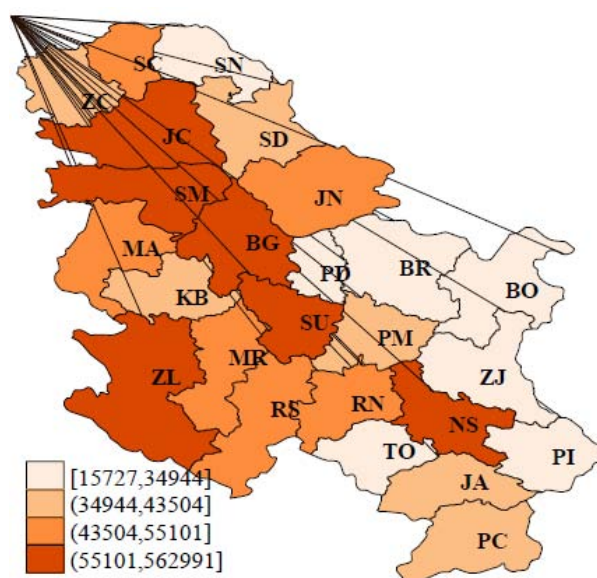
3. The number of employees and the employment rate

Wage employment rate is the number of employees, with a full-time job or equivalent in a region at certain a time. In our analysis, along with the total population, this indicator will also be used as a basis for calculating the market potential availability, in the economic geography models.

There were 1.715.164 employees in Serbia in 2013, compared to 2,068,963 in 2005, decreasing (2013 to 2005) in all districts, including in Belgrade in the other two districts where the population grew. Differences in the employment rate are, however, extremely large, with occupancy among districts, from 16 thousand in Toplica, to 179 thousand in Južnobačka. Furthermore, there are 563.000 employees in Belgrade, which indicates a spatial grouping of certain activities and a concentration of activities on the western part of the country.

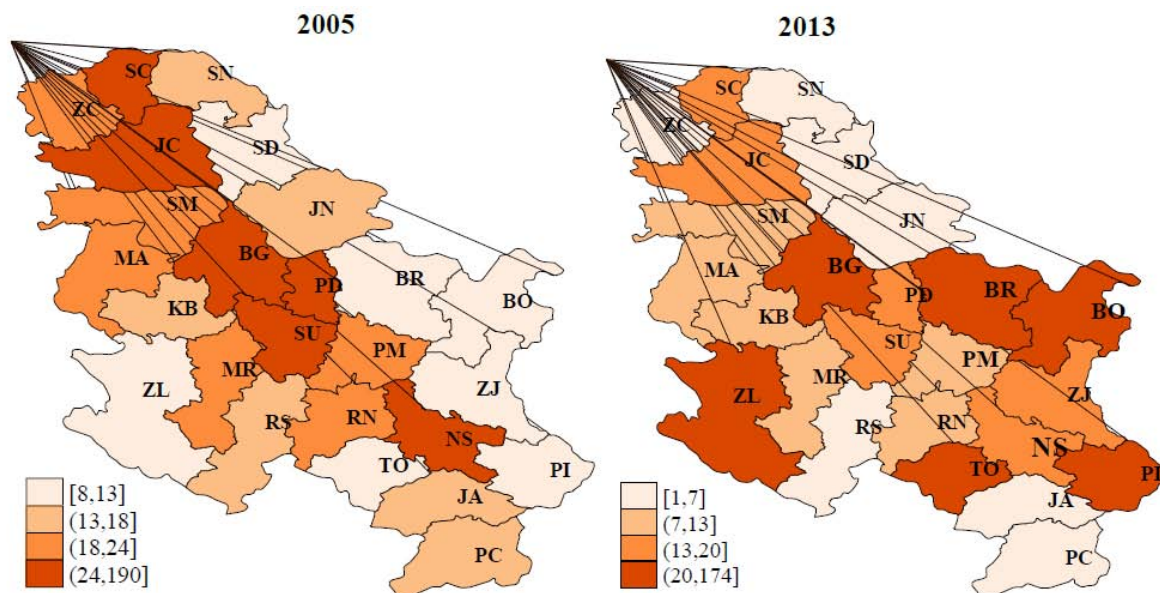
As a measure of the size of the local economy, employment density is the variable that captures economies of urbanization and it is included in a large number of studies. The employment density is considered relevant for assessing the overall size of the local market and in models of urban economy with limited specifications estimation. Compared to population, it has the advantage of being more continuous in time, which is one of the reasons it is preferred in empirical studies of urban and regional economy or used, in particular, in evaluating labour productivity or economic growth [1] – [2] – [4]. In many cases productivity gains were achieved as a region's scale became higher [3]. The indicator is calculated simply by weighting the number of persons employed with area of a region.

Figure no. 8. Number of employees 2013



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2003 - 2014

In our econometric specifications on the spatial distribution of economic activity we will estimate the wage equation, as it is described in NEG models. Given the relatively small opportunities to build a diverse range of influence variables, we will use this indicator in assessing the potential influence of the wage and its growth. To benefit separate from the area indicator, it will be replaced by the market potential region, estimated by the absolute number of employees.

Figure no. 9. Employment density across Serbia (employees/km²)

Source: Statistical Office of Republic of Serbia, Municipalities and Regions of The Republic of Serbia, 2003 -2014

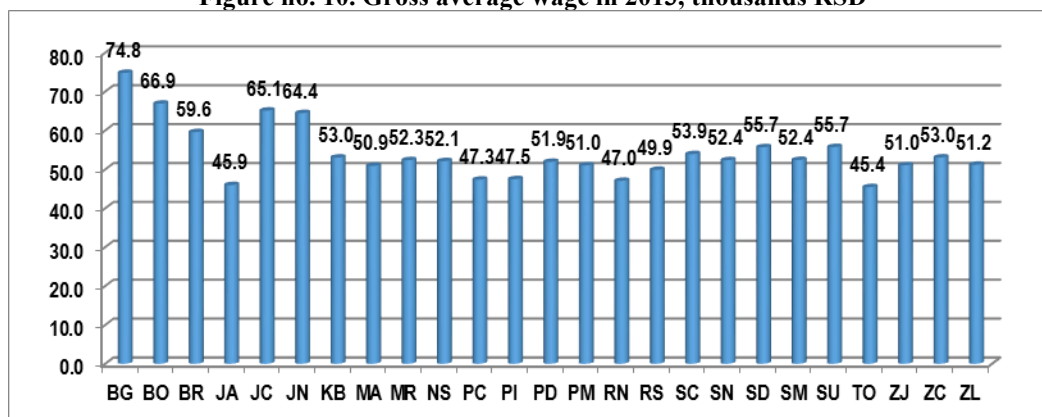
Employment appears very unevenly distributed in the territory: in 2005 the regional average employment density was 27.37 employees / wage-earners per km² (2,068,964 employees), reduced to 22.47 employees per km² (1.715 .164 employees) in 2013; in 2005 only six districts had a higher density (Belgrade, 190,48 (Beograd, 190,48 angajați/km²; Jablanička, 52,17; Nišavska 37,04; Podunavska, 39,39; Severnobačka, 31,97; Šumadijska, 33,27); Jablanička, 52,17; Nišavska 37,04; Podunavska, 39,39; Severnobačka, 31,97; Šumadijska, 33,27), the rest of districts having density ranging from 8.25 (Toplička) to 24.24 (Pomoravska).

The average density of regional employment decreased in 2013 to 22.47 employees per km², highest density being in Belgrade (with 174.08) and the lowest in the Zaječar District (6.13), in Toplička the employment density is 7.05 employees / km².

4. Gross nominal wage and salary disparity index

National gross nominal wage was in 2002, of 13.260 RSD, increasing to 60.708 RSD in 2013, but with large differences among districts.

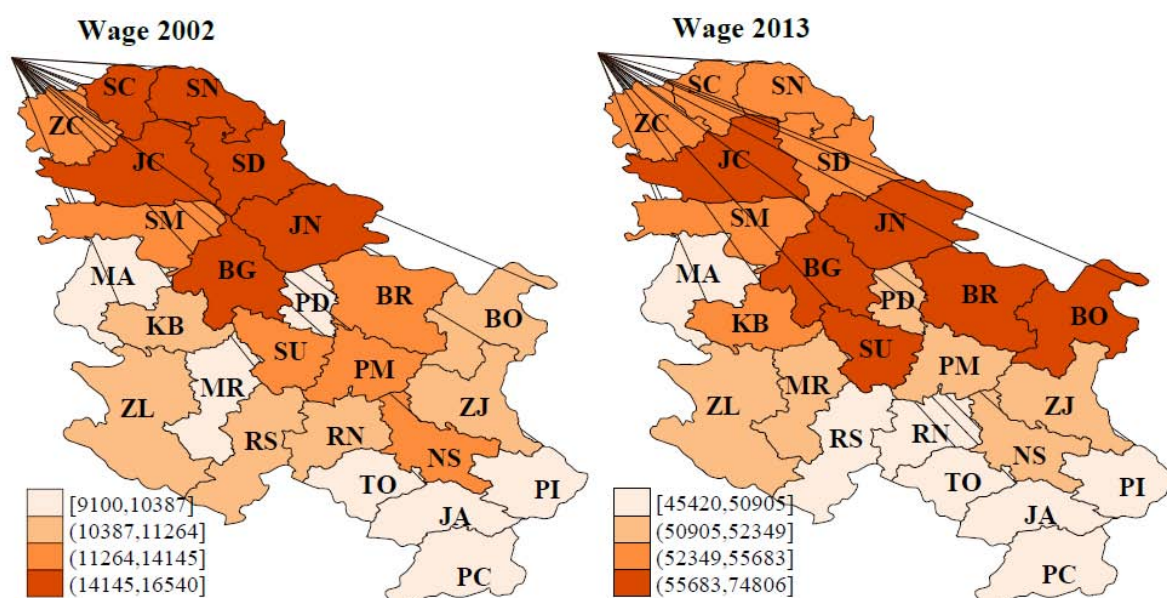
Figure no. 10. Gross average wage in 2013, thousands RSD



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2003 – 2014

Wage discrepancies are evident on the two maps below, with certain amendments during the 12 years. If in 2002, the highest salaries were obtained in only six districts in the northern part of the country, in 2013 the districts with the highest salaries were those located in the center-west and only three of the first six districts succeeded to maintain their status as country's high income area.

Figure no. 11. Wage differences



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2003 - 2014

Basically, districts like Šumadijska (SU), Braničevski (BR) or Borska (BO) are those that have managed to increase salaries above the national average. Three districts in the northeast: Severnobačka (SC), Severnobanatski (SN) and Srednjobanatska (SD) have growth rates below the national average wage. Increasing salaries in Šumadijska, Braničevski and Borska is due to the local development of industrial parks or other investments made in the area.

In order to analyze the changes (+/-) in wages in 2013 compared to 2002, we reported the disparity in salary index, calculated as ratio between the gross nominal wage and the average wage level in the region or in the country.

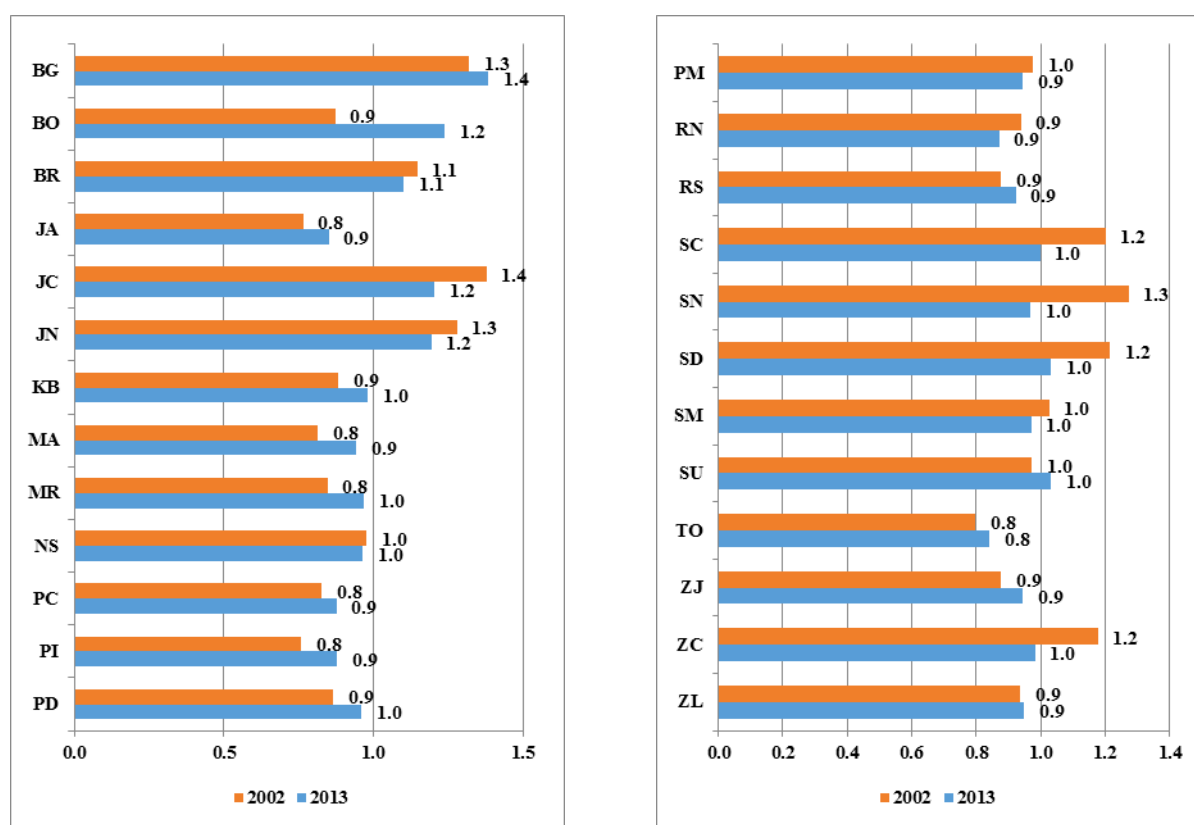
In 2002, the regional average wage was 12.010 RSD, a wage below this level being registered in 17 districts. The minimum salary of 9.100 RSD, was recorded in Pirot, representing 0.76 of the regional average (disparity index). A salary above average was obtained in eight districts, the maximum being recorded in the district of Južnobačka (JC) in Vojvodina, 16.540 RSD.

In 2013, the regional average salary was 54.019 RSD, the maximum salary, 74.806 RSD, was registered in Belgrade, and the minimum value, 45.420 RSD, in Toplička County (disparity index is equal to 0.84). Wages below the regional average were found in 18 districts. Wages above the average were found in 7 districts, with salaries between 74.806 RSD (Belgrade) and Srednjobanatska (SD) with 55.683 RSD, the wage gap was thus equal to 29.386 RSD. Consequently, while the regional average share of minimum wage increased from 76% to 84%, in absolute value, regional disparities have widened significantly, the difference between the maximum and the minimum rising about 3.9 times, from 7.440 RSD to 29.386 RSD.

The configuration of these indicators on the spatial distribution of population and employment density does not allow to test the size of their influences on regional economies (districts) on wages' growth. Also, it is difficult to establish the precise orientation of pull and push forces across the country's regions. Therefore, these influences can only be suggested by some direct correlation between salary and the regional dimension measured by population and labor force employed, as shown in the following correlations.

In 2002, the correlation between income levels and population was not very visible in the districts, though there currently is a trend of wage growth that comes along with the population growth in the last year analyzed (2013).

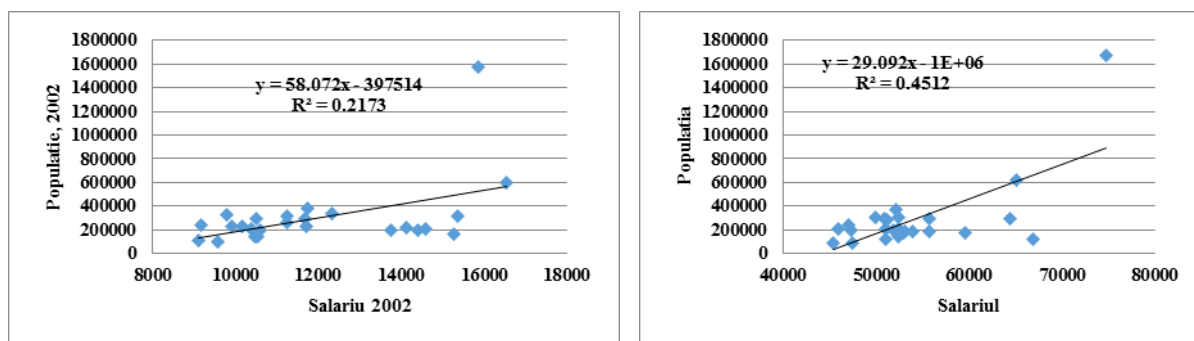
Figure no. 12. Index of regional disparity in terms of average gross salary, 2009 and 2013



Source: Statistical Office of Republic of Serbia, Municipalities and Regions of the Republic of Serbia, 2003 – 2014

There are assessments generally accepted that regional economies with large population and high density have also good results in their development, considering that a higher pool of people means increased demand as well. This process attracts investors to locate in those areas where they can achieve economies of scale, with beneficial effects on productivity and therefore on wages.

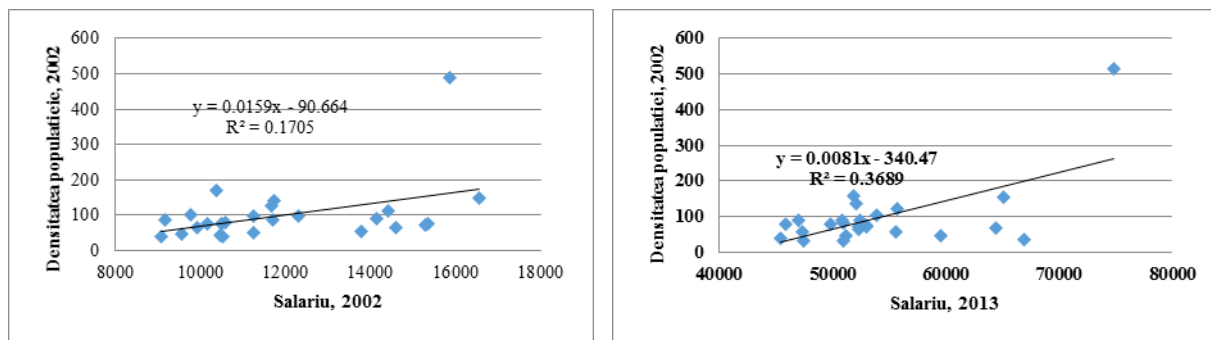
Figure no. 13. The Correlation between nominal wage and total population, 2002 and 2013



Source: own preparation based on data from Statistical Office of Republic of Serbia, Municipalities and Regions of The Republic of Serbia, 2014

In spatial economic analyzes, population density is considered a proxy of the size of the regional economy; in our case the correlation with gross nominal wages suggest a potential influence. In this case Pearson coefficient values are lower than the ones for the number of inhabitants, but this could be explained by the fact that areas with the highest population are not always those who have the highest density.

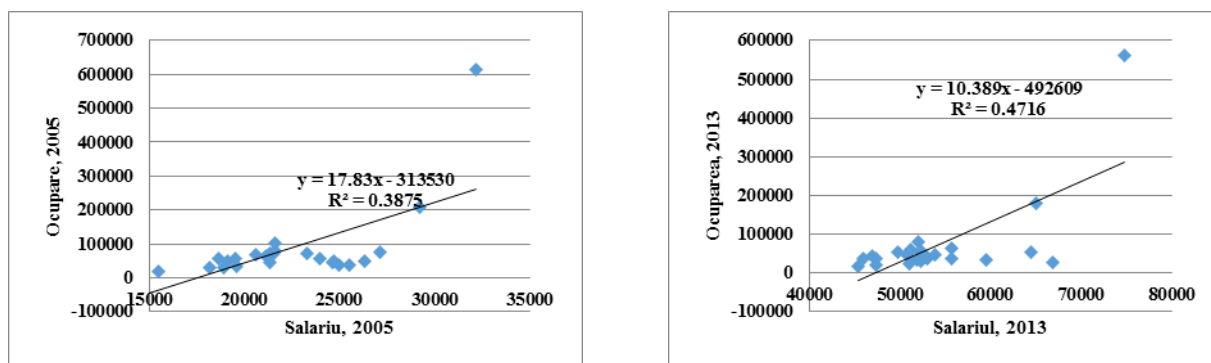
Figure no. 14. Correlation between nominal wages and population density, 2002 and 2013



Source: own preparation based on data from Statistical office of Republic of Serbia, Municipalities and Regions of The Republic of Serbia, 2014

Relating similarly, the labor force employed in the economy of a district, the conclusions are the same, namely the trend towards a link between the number of employees or employment density and the wages level. This trend is growing from relatively insignificant level in 2005 to a possible positive influence, which is registered today, while increasing the nominal value of wages.

Figure no. 15. The correlation between nominal wages and the number of employees, 2002 and 2013

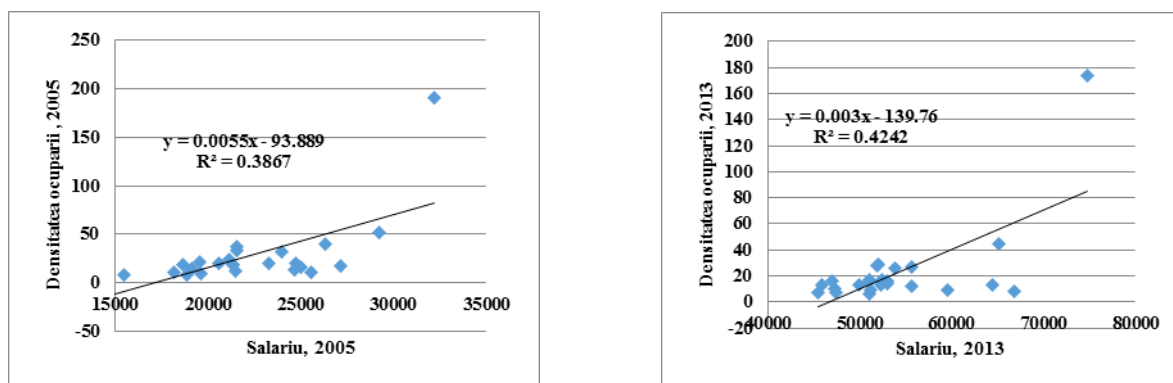


Source: own preparation based on data from Statistical office of Republic of Serbia, Municipalities and Regions of The Republic of Serbia, 2014

Increasing employment may increase the productivity growth as well, as the main channel of economic growth and, naturally, of real wages growth. Salaries are attractive factors for industrial agglomerations and may induce a

development even in some related industries. However, the market equilibrium involves negative externalities effects and some congestion forces acting in reverse, as dispersion factors.

Figure no. 16. The correlation between nominal wages and employment density, 2002 and 2013



Source: own preparation based on data from Statistical office of Republic of Serbia, Municipalities and Regions of The Republic of Serbia, 2014

5. Conclusions

In the Republic of Serbia linear influences of population - wages, employment - wages appear to be higher taking into account the indicators in absolute value than their relative densities. This is due mainly to the fact that throughout the period analyzed, the majority of regions, especially in terms of labor market integration, were subject to strong shocks induced by the economic and financial crisis, whose effects were felt differently across time and space. Serbia recorded a slowdown in GDP growth, its growth rate being negative in 2009, and again in 2011, which reveals the fragility of economic recovery.

As a potential indication in subsequent analyzes, these configurations suggests the importance of market size on the dynamics of regional economic development. Among the factors most commonly stated in the literature that come to explain why disparity growth rates fall: greater variety of small regions over time, measurement errors, increased vulnerability to shocks and less diversified economic sectors. The correlation between market size and growth rates goes towards a positive relationship between the various economies of agglomeration, local characteristics and spatial economic development. Large spreads of economic performance highlight the heterogeneity of regions and districts of Serbia, suggesting, however, that there are potential determinants of growth in all the space clippings.

ACKNOWLEDGEMENT

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