

Economic profile of the Serbian commuter *

UDK 331.556(497.11)

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Summary: Contemporary socio-economic development and changes within the structure of economy have reflected to economic characteristics of labour, primarily onto economic activity. Share of people employed in the primary sector has been decreasing, along with the increase of significance of the secondary and tertiary sectors. Over the last couple of years, the greatest increase within the share of the employed and national income has been lying within tertiary activities. The aforementioned structural economic change have been affecting the scope, directions and structure of commuting flows on local, regional and national levels. The aim of this paper is to point the key characteristics of economic structure of commuters in Serbia (without the data for Autonomous Province Kosovo and Metohija) - who they are and where they go.

Keywords: commuters, workers, economic activity sector, Serbia

Rezime: Savremeni socio-ekonomski razvoj i promene u strukturi privrede odrazili su se na ekonomska obeležja radne snage, prevashodno na privrednu delatnost. Udeo zaposlenih u primarnom sektoru se smanjuje uz porast značaja sekundarnog i tercijarnog sektora. Poslednjih godina najveće povećanje u udelu broja zaposlenih i nacionalnom dohotku imaju tercijarne delatnosti. Pomenute strukturno-ekonomske promene, utiču na obim, pravce i strukturu dnevnih migracionih tokova radnika, na lokalnom, regionalnom i nacionalnom nivou. Cilj ovog rada je analiza glavnih karakteristika ekonomske strukture dnevnih migranata radnika u Srbiji (bez podataka za AP Kosovo i Metohija) – ko su i kuda idu.

Ključne reči: dnevni migranti, radnici, privredna delatnost, Srbija

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** This Paper is published within the research on the Project 47006 funded by the Ministry of Education and Science of the Republic of Serbia*

1. THE TERM 'COMMUTER' AND SOCIO-ECONOMIC DETERMINANTS OF COMMUTING

According to official statistical data of the Statistical Office of the Republic of Serbia commuters "are people who work or go to school out from their place of residence, but return to it on daily basis or several times a week". (i.e., [20]) In the published results of Serbia census 2012, commuter outflows are additionally represented in an annex to the table according to their economic activity sector. Sector of activity refers to economic activity being practiced in a company, shop, facility, collective farm (etc.) in which a person is employed. Classification of economic activity sector used in census 2012 is comparable with the UN International Standard Industrial Classification. The data are presented by sectors based on Industrial Classification at the highest level of aggregation, including commuters outflows only. Data on labour characteristics (age, education, occupation) which are exchanged between two different functional regions are not available.

There is a need of researchers for a more comprehensive and varied tabulation of Census results cause standard census data processing is focused on wide spectre of statistical data users. Thus information which results from standard data tabulation give general overview of the situation of observed phenomena. That is why additional statistical data processing method was used to show active employed commuters population in Serbia (data for Kosovo and Metohija N/A), meeting special needs, referring to Serbia Census 2002 data base. (i.e., [12]) The focus of this additional Census data processing is up to individuals, not to certain contingents. This and a greater number of chosen features of commuters offers more possibilities for understanding determinants of commuting in comparison with standard processing programme. Cross-tabulation of commuters has been done, according to their dwelling place, place of work and economic activity sector. The aim was to come to realisation in what way economic activity sector, as a feature of labour force, has an influence on differences regarding direction of commuting. Also, leading economic activity sectors in which commuters are employed have been isolated, according to the lowest levels of aggregation, i.e. according to subgroups, as well as established structure of commuting flows of workers based on their occupation.

A number of researches indicate that socioeconomic features of employed commuters (like marital status, education, occupation and branch of industry) have influence on the propensity of commuting and on variations related to commuting time and commuting distance, and that scope and structure of commuting flows are subject to changes of conditions in commuting. The impact of activity sectors, occupation and commuter's earnings on the commuting distance reflects in three ways:

- commuters who work in specialized professions travel further;

- commuters are employed in industries which are by their nature concentrated on a relatively small number of locations commute travel farther in contrast to school and health workers;
- commuters employed in types of profession with higher earnings commute farther. (i.e., [3,8])

Economic specialization of areas also has influence on commuting, so rural area population has the least share in this type of population mobility. Larger scope of commuting is associated with cities in which there is a greater variety of jobs. The most extensive volume of commuting in Italy is in the central industrial region with a homogenous urban network and long tradition of light industry. (i.e., [3,1]) In Belgrade, service workers are leading in the structure of commuting inflows with 73.2%. When it comes to commuting outflows, the ratio of secondary sector workers is 40.2% versus 54.5% for service sector workers.

Scope, directions and structure of commuting flows are largely influenced by spatial organization of economic activity sectors. The type of industry and location of industrial installations in relation to residential areas can also influence the scope and directions of commuting, especially with those industrial branches which have negative effects on environment. In most countries, as well as in Serbia, industry is the sector of economic activities with the greatest volume of commuting (especially processing industries). It is followed by energetics, construction and service sector. The greatest commuting propensity has been recorded with people employed in chemical or metal and machine industry, because these branches have difficulties in meeting their needs for workers on local labour markets. (i.e., [4,22])

2. STRUCTURE OF COMMUTERS ACCORDING TO THEIR ECONOMIC ACTIVITY SECTOR AND OCCUPATION

Socio-economic development influenced changes in the structure of the population of Serbia with regards to economic activity sectors. Generally speaking, there has been an increase in the number of employees in non-agrarian sectors as well as significant decrease in importance of primary sector. The biggest changes in the structure of population with regards to economic activity sector have been made in Vojvodina, where an intensive process of deagrarianization has been happening since early 60s of the 20th century. After a strong process of industrialisation at that time, privatization, restructuring and modernization of economy nowadays have been influencing creation of a new economic structure in which the importance of trade, financial, intellectual, personal and other kinds of services has been rising. (i.e., [16]) Besides constant rise of its share in employment rate, which was particularly significant since 1981, tertiary sector of economy has been increasing its share in making

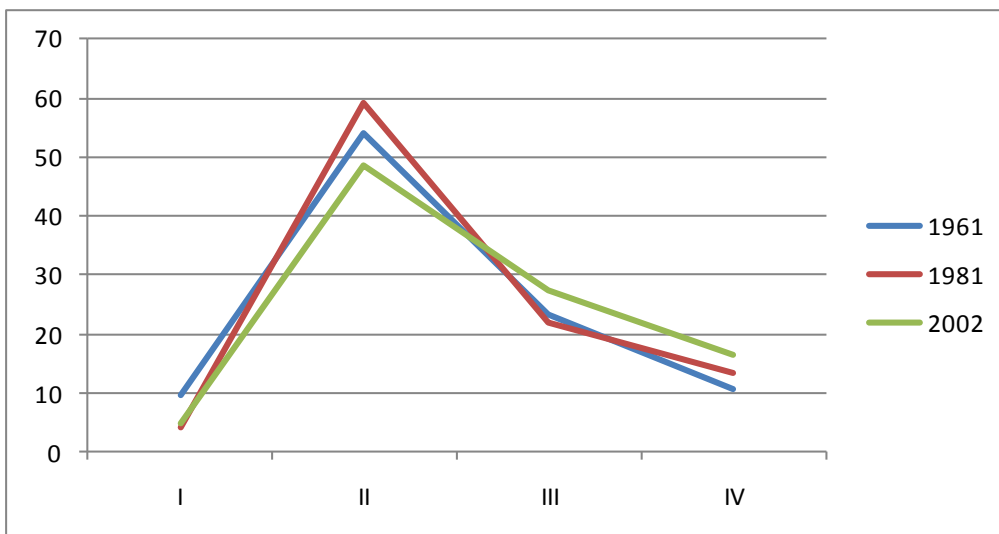
of the national product, as well as in total economic activity, which is a phenomenon characteristic of postindustrial societies.

Commuting is characterised by changes in volume, directions and demographic and socio-economic characteristics of commuters. These transformations are the result of changes in number of active population, system of education, economic structure, changes in labour market and availability and level of development of transportation network, as well as changes in personal aspirations and life styles of workers over time. In Serbia likewise, in analogy with the process which had already been fully spread in more developed countries, gradual decrease of the share of commuters employed in primary and secondary sector activities has been noted, along with increase of the number of commuters employed in tertiary and quaternary activities. This is consistent with changes in the structure of total active population with regards to economic activity sector. Changes occurred as a result of economy transformations over a period of time in Serbia. Besides structural changes in commuting flows with regards to sectors of economic activities, there has also been an increase in participation of women in commuting, as well as of more highly educated and skilled workers. There have also been changes in territorial scope of commuting, so that the share of inter-municipality commuters in total volume of commuting has been rising again, after a decrease in this type of commuting in early 80s of the 20th century. (i.e., [12])

The employed in the secondary sector of the economy are the most numerous in commuting flows in Serbia since the 60s of the 20th century. In the year 1961, 9.8% of employees working outside their dwelling place had a job in the primary activities, 54.0% in secondary, 23.5% in tertiary and 10.8% in quaternary activities. At that time, commuting was a part of fast-developing industrialisation and population transfer, from agrarian to non-agrarian sectors of the economy. Workers employed in industry, mining and engineering made up the most of the number of commuters. (i.e., [12]) Commuters employed in industry presented the majority in commuting flows during the same time period in the USA. (i.e., [9]) Most of commuters from rural areas were still in farming, which caused a relatively small decrease of rural population, the so called industrialisation with deficient urbanisation. This phenomenon was characteristic for the Southern Europe, where levels of industrialisation were higher than the levels of urbanisation, especially between 1950 and 1970. (i.e., [17]) Low income of mostly unskilled commuters influenced them and they turned to farming as an additional source of earning, thus there was a great number of households with so called mixed source of income. There were 19.1% of households in Serbia with mixed sources of income as far back as 1961. (i.e., [5]) One of the reasons for employing farmers in non-agrarian sectors, at the time of speaking, was the desire to have health insurance and exercising the right to pension money. Potential migrants decided much more easily to move into towns and cities if they had no land nor and alternative income from farming. Similar situations happened in some other ex-socialist countries, like Hungary and Romania, when it comes to combining farming and employment in industry. (i.e., [14,15]) Later changes in household structure regarding income were going in the direction of

decreasing the share of households which have mixed incomes. The emersion of partial engagement in farming has much lesser share in Serbia today (6.6% of rural households with income both from farming and non-farming workers). (i.e., [21])

The share of commuters employed in the secondary sector of the economy decreased from 54.0% in 1961 to 48.7% in 2002, while at the same time the share of commuters employed in tertiary and quartenary activities increased (from 23.5% to 27.5%, i.e. from 10.8% to 16.5%). The most commuters in 2002 were employed in processing industry, and at least in agriculture, fishing and forestry (see Fig. 1). Researches of commuting structure according to their economic activity sectors, withing the scope of lower levels of classification, i.e. according to activity sub-groups, indicates that the employed in the sub-group of rough construction work are the most numerous, followed by hospitals, leather shoes manufacturing, medical practice, processing and manufacturing of meat, railway transportation and public safety.



Source: ([12])

Figure 1 Structure of commuters according to their economic activity sector (%)

When it comes to occupations of commuters, the number of shop assistants and demonstrators is the greatest, followed by digging tools operators and machines operators, assistants and cleaners, nurses, accountants, factory-employed workers in sales, measuring and labelling. Some of the aforementioned occupations, like construction workers, but also many other like real estate agent

and auditor, imply a changeable place of work or working on several locations during the day.

3. IMPACT OF ECONOMIC FACTORS ON COMMUTING

In many countries, globalisation and transition (transition from centrally-planned system of economy towards market economy based on private property) has caused dramatic structural changes in their economic, social, political, institutional, ecological, as well as spatial development. (i.e., [2]) Taking into account that economic motives (offer and demand of labour, differences in economic opportunities of various areas, life standard and differences in level of income) are the most common reasons of commuting, so the aforementioned changes have resulted in transformation of commuting population structure in Serbia. Economic factors that affect commuting are directly connected with local and regional economic conditions, which manifest themselves as the level of development and diversity of economics, increase or decrease in demand for certain occupations and income level, as well as condition on the labour market and real estate market. Workers adjust to changes in local labour market and increase of unemployment rate by retraining themselves, or finding employment in some other settlement (by commuting), or changing their place of residence.

Transformations of volume, structure and directions of commuting flows of active population in Serbia have been happening under the great influence of great differences in the level of development of various regions, therefore under influence of differences in income and life standard levels. Disrupted economic and social relationships in underdeveloped areas (economically underdeveloped areas or areas with specific developmental problems - demographically endangered areas and border areas with structural and demographic problems) have caused the continuation of the immigration from areas which are geographically more distant and with poor communication facilities with cities, while in other built-up areas there have been an increase in volume of commuting as a method of adjustment and overcoming the problem of unemployment in local area. In most underdeveloped municipalities of Serbia the share of commuting outflows in total number of commuters is over 60%. A small number of outgoing commuters in some underdeveloped municipalities is the result of hidden unemployment or „false employment“. For example, the share of outgoing commuters in municipalities of Bor and Majdanpek is somewhat below 30% despite the difficult state of economy in these municipalities i.e. low level of production, low incomes and implementation of social programme for dealing with the problem of a large number of the unemployed. For that reason, it should be pointed out that the next census in Serbia would give more detailed information about relation, volume and direction of reorientation of commuting flows in industry and industry-employed workers,

as a consequence of intensive reforms since 2001 and initial revitalisation of economic activity at the end of this decade.

The heaviest burden of unfavourable economic conditions, during political and economic crisis of 1990s, as well as structural changes during the period of transition in Serbia, was carried by the very sector of industry. Taking into account the collapse of the Serbian model of industrialisation, which was the basis of economic development of Serbia after the Second World War, there is a need for a new industrial policy. (i.e., [18]) The share of workers in industry in total commuting flows was decreased by 4% in the period from 1981 to 2002 (from 46.4% to 42.5%) in favour of workers in service activities, the share of which in commuting was increased from 35.3% to 44.1% (see Fig. 1).

In case of larger industrial centres, the decrease of industrial workers share in commuting was from 7% in the town of Loznica up to 16% in the town of Kragujevac, which was followed by proportional increase of service activity workers share. The situation is specific in the town of Bor, where the increase of the share of industry-employed commuters in the total number of commuters has been recorded, while the share of service-employed commuters has not been changed. This is the consequence of still unfinished process of restructuring of the Copper Mining and Smelting Complex Bor company, which is the pivot of economic growth of this town. Affectness of industrial towns and regions, which are characterised by specialised production, by transformation from one to another system of economy, has influenced the Government of Serbia to design a programme or reviving large industrial centres which are of special national interest. According to that programme, the regulation on conditions and attracting foreign investors, that is incentive of the state to employ workers, will spread to the towns with more than 50.000 inhabitants which have unemployment rate over 20%. (i.e., [19])

Unemployment, as a general social problem in conditions of economy transition in Serbia, is one of the important economic push factors that affect commuting. High unemployment rate in the place of residence causes greater competitiveness on the local labor market, which can lead to increase of commuting of economically active population. Using the unemployment rate as an indicator of work opportunities in some area confirmed that the increase of unemployment rate by 1% increases the possibility of commuting by 4%. (i.e., [1]) The importance of unemployment factors in commuting propensity has been proved in Serbia, too. Municipalities with general low level of development (observing the relation between employment rate and national income per capita) are starting point for a great number of economically active commuters. In the group of ten municipalities, which were the place of departure for more than one third of their workers to other municipalities in 2002, four municipalities (Grocka, Sremski Karlovci, Doljevac and Merošina) had the rate of unemployment higher than the rate of employment. (i.e., ([11])

4. EFFECTS OF ECONOMIC ACTIVITY SECTOR TO COMMUTING DIRECTIONS

Besides modern changes and transformations in the structure of Serbian economy, changes in composition of commuting flows as regards to economic activity sector depend on the differences in economic structure of labour force of the settlements of origin and destination of commuters. Qualitative differences of labour force between settlements and municipalities where commuters work and reside, together with disaccord between the number of economically active population and their economic structure with the local economical needs have direct effect on the scope and flows of commuting in Serbia. Comparison of differences between municipalities in Vojvodina, or to be precise between commuters outflows and inflows of workers according to economic activity sector in which they are employed, as well as comparison of values of diversity index, show that the highest index of diversity in incoming and outgoing commuting streams according to their economic activity sector can be found in the underdeveloped municipalities of Sečanj and Mali Idjoš. In four municipalities of Vojvodina it is necessary to redistribute more than one third of population amongst their economic activity sector, in order that structure of commuters who travel towards these municipalities is the same as the structure of labour force for which these two municipalities are places of departure. (i.e., [13])

Spatial organisation has an important role in intensity of commuting between settlements, in a way that volume and directions of commuting flows are dependant on the settlement system and type of the settlements where commuter live and work. Commuting in Serbia is caused with prominent concentration of functions in towns, so that workers are often forced to seek employment in a settlement of greater "functional capacity". This term was introduced in national scientific literature since the 1970s. (i.e., [10]) The inability of economics to fully employ local population, which is due to lack of local potential or its insufficient use, unavoidably causes greater volume of commuting of economically active population, although disproportions between demand and offer of labour force of specific qualifications also may influence the relationship between the place of work and the place of residence of a worker. (i.e., [12])

Dominant directions of commuting are formed under the influence of structure of commuting flows according to various characteristics. Starting from the assumption that women, workers with higher education, as well as the employed in service sector, commute "upwards" in hierarchy of places, because distribution of working places and needs of metropolitan centers for specific occupations are such as they are, it is important to say that research of commuting flows within the settlement system in the USA have shown that women, workers with higher education and employed in production activities, as well as those who have higher income, commute "upwards" in the hierarchy, almost double in comparison with the ones who commute to smaller settlements.

(i.e., [6]) In Serbia, for each commuter in production sector, who commutes to a settlement with smaller number of residents, there are six workers who commute to a populationally larger settlement and with more numerous functions within the settlement system, i.e. seven, in case of service sector.

Table 1 Structure of commuters according to leading economic activity sectors and directions of commuting flows in 2002 (%)

Sector	Name and description of activity	urban-urban	rural-urban	urban-rural	rural-rural	Activities in rural settlements
A	Agriculture, hunting, forestry and water management	8.3	48.8	13.5	29.4	42.9
B	Fishing	13.5	32.7	11.7	42.1	53.8
C	Mining and quarrying	10.6	34.5	23.7	31.2	54.9
D	Processing industry	12.7	68.8	6.7	11.8	18.5
E	Production and supply of electricity, gas and water	20.0	57.9	11.8	10.2	22.1
F	Construction industry	17.2	73.6	3.1	6.1	9.3
G	Wholesale and retail; sale and repair of motor vehicles	20.6	66.3	4.4	8.8	13.2
H	Hotels and restaurants	18.9	62.9	7.0	11.2	18.2
I	Transport, storage and links	20.2	70.8	2.6	6.4	9.0
J	Public administration and defense, social security	25.9	58.7	5.9	9.5	15.4
K	Education	21.6	41.0	18.5	18.9	37.4
L	Medicine and social work	23.0	64.7	5.3	7.0	12.3
M	Other community, social and personal services	25.2	67.0	2.6	5.2	7.8

In many rural settlements there is deficit of working places, so people are forced to commute on daily basis to some other settlement for work or to change their place of residence. In Serbia, majority of commuters (over 70%) live in settlements which are not of urban type. That is why we have conducted a research of commuting flows according to commuters economic activity sector and type of residential settlement, as well as of commuters workload. This research took into account similar researches of interrelationship between commuting, rural settlements and employment on the territory of Canada. (i.e., [7]) Using additionally processed data from the 2002 Serbia Census, researcher had access to all types of commuting directions of labour force between rural and

urban settlements (urban - urban, rural - urban, urban - urban, rural - rural). The results obtained present the first step towards understanding of total commuting in Serbia and potentials for employment of population of rural and urban areas. The share of activities which happen in rural areas was calculated by summation of columns urban - rural and rural - rural. The sum of urban-based activities can be calculated in the same way. Economic activities within two sectors of activities, fishing and mining and quarrying, are mostly done in rural settlements, while activities in service sector are more loosely connected with rural settlements.

Research results indicate that there is significantly less economic activity in rural settlements. Yet, agriculture, fishing and mining and quarrying are still activities which get their labour force from rural settlements. Other activities which are traditionally connected with towns and cities (like service activities) have their rural-based share of workers of mere 7.8% (TABLE 1). In the column rural-urban can be seen attractiveness of towns for employment of rural population, according to sectors of activities. In commuting flows of this type, the most numerous are workers in civil engineering, transport and processing industry. In the opposite direction, i.e. in urban - rural direction there are mostly workers in mining and quarrying, followed by the number of employed in education which indicates a lack of qualified highly-educated staff in rural settlements.

5. CONCLUSION

The sector of economic activity and occupation, besides demographic and other socio-economic characteristics of commuters affects volume and variability of commuting flows between the place of residence and place of work. These characteristics of commuters affect different spatial orientations of commuting flows, which are the result of the lack of compliance of local labour markets with economic structure of labour force.

The effects of changes in Serbian economy turned out to be an important factor of changes in the structure of commuting flows of workers. Change of employment structure in favour of service sector leads towards sectoral shift of commuters towards services. Transitional processes and transformation of economic structure of Serbia have directly influenced shifts from economically active to inactive population, i.e. influenced reduction of employment rate and increase of unemployment. Significant factors of influence on commuting in Serbia are unbalanced development, unemployment, and consequences of transition on industry.

The results of analysis of relation between employment and commuting show that the most numerous commuters are those employed in the subgroup of rough construction works, hospitals, production of leather shoes, medicine, railroad transportation and public security. When it comes to occupations of

commuters, the number of shop assistants and demonstrators is the greatest, followed by digging tools operators and machines operators, assistants and cleaners, nurses, accountants, factory-employed workers in sales, measuring and labelling. Analysis of commuting flows according to economic activity sector and type of commuters' place of residence and work indicates greater potential of urban settlements and significantly less economic activity in rural settlements. Rural populations find towns and cities the most attractive for finding employment, especially in civil engineering, transportation and processing industry. In the opposite direction, from urban to rural area, the most numerous are workers in mining and quarrying, followed by workers in education.

Comprehensive (demographic, economic and social) changes have influenced economic profile of a commuter in Serbia. Modern changes in structure of Serbian economy are in causal link with changes of volume, structure and directions of commuting flows. Trends in interrelations between employment and commuting also have influence on the population which does not take part in commuting, as well as on transportation. Research of changes in commuting flows, and defining a profile of a commuter (both incoming and outgoing directions) of a certain area aims at realisation what profiles of workers employers need, that is which profiles are lacking, so that appropriate measures could be taken to influence the labour market. It also makes a foundation for development of policies for commuting management.

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To cite article, use the following format: Lukić, V.: Economic profile of the Serbian commuter, *Industrija*, Vol. 40, No. 2, pp 79-90