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MAIN TRENDS IN COMMUTING IN SLOVAKIA.

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Abstract

The aim of this paper is to identify main commuting trends in Slovakia based on the data of 2001 and 2011 Censuses. The increase of the total number of out-commuters was an important change in commuting. The increased number of cross-border commuters was the result of integration of Slovakia into the EU and the gradual opening of labour markets of the EU Member States for the citizens of Slovakia. Strengthening of the position of Bratislava as the largest commuting centre in the country is a consequence of the fact that it is the largest city and the capital of Slovakia, which concentrates the most important administrative, social, cultural and economic roles in the country. The changing position of other commuting centres was based on their capacity to face up to transformation of economy after 1989 and to attract the foreign direct investment.

Keywords: *Commuting, cross-border commuting, commuting centres, Bratislava, Slovakia*

1. INTRODUCTION

Since 1989, society in Slovakia has undergone many substantial changes, e.g., transition from a centrally planned to a market economy, (re)introduction of parliamentary democracy, splitting of Czechoslovakia and integration in international organisations (e.g., WTO and EU). These changes found reflection in various areas of the society and influenced, among others, the economy and its spatial structure. Hamilton (1999), Dunford and Smith (2000), Sokol (2001) and Svejnar (2002) studied the transition of post-communist economies, and Smith (1998) paid specific attention to the transition of the Slovak economy. Amongst the main problems of the Slovak economy before 1989 (oriented mainly on the heavy and military industry) were the obsolete production structures and industries, poor productivity and economic management, over employment, low levels of technical infrastructure, and dependence on Central and East European and Soviet markets (McMaster, 2004). Transition has typically been characterised by a collapse of output in state firms, which was only partially offset by an increase in private sector output. Much of the decrease in state firms' output can be explained as the result of the changed structure of relative prices and the elimination of subsidies. Besides this, state firms lost their crucial suppliers and in many cases had to stop production (Blanchard, 1996). Unemployment has become a new phenomenon in the labour market. Economic reforms centred around the processes of liberalisation of prices, opening of markets, encouraging new private business and processes of privatisation, as well as the structural reform (McMaster, 2004). In the first phase of the transition, Slovak economy achieved macroeconomic stabilisation, but it also experienced a

major decline in officially measured output and a slower but significant decline in employment (Svejnar, 1996). Foreign direct investment (FDI) has played a significant role in the transformation of the Slovak economy. FDI represented a vital source of investment for modernising the industrial structure and for improving the quality and reliability of infrastructure (Lansbury et al., 1996). In the time of the splitting of Czechoslovakia, the economic performance of the Slovak Republic was lower than that of the Czech Republic. Economy of the Slovak Republic was affected by the negative accompanying effect of transition to a larger extent than the Czech Republic.

All changes in the Slovak society and economy have influenced the labour market in Slovakia and, inter alia, the spatial distribution of places of work. The character of spatial distribution of population and jobs is different, and there is a spatial mismatch between the localisation of places of residence and places of work that can be overcome by commuting. Michniak (2005, 2006) in Slovakia and Szczyrba and Toušek (2004) and Tonev (2013) in the Czech Republic studied changes in commuting in the period 1991–2001. The most important changes in commuting in the years 1991–2001 in Slovakia, identified by Michniak (2005, 2006), were a decrease of the absolute number of out-commuters by more than 200 thousand, the strengthening of the position of Bratislava as the biggest commuting centre in Slovakia and changes of the position of other commuting centres, based on their ability to face up to transformation of economy (e.g., decreasing centres with collapsed industrial factories) or to attract the foreign direct investment (e.g., new industrial centres).

The aim of this paper is to identify the main trends in commuting in Slovakia, based on the data of the 2001 and 2011 Censuses. The structure of the article is organised as follows: In the first part of the paper, different approaches to the research of commuting and the applied commuting data are presented. In the second part, some of the main changes and trends in commuting in Slovakia in the period 2001–2011 are analysed. They include the increase of the total number of out-commuters, the increase of the number of cross-border commuters, the increase of the numbers of commuters to Bratislava and the changing position of other commuting centres.

2. RESEARCH ON COMMUTING

Commuting is a significant process from the economic, social, cultural and environmental aspects both for an individual and the whole society (Pooley and Turnbull, 1999). Commuting can be the research subject of many scientific disciplines, e.g., geography, regional respective urban economics, sociology, traffic engineering, spatial planning or ecology. According to the scientific orientation approach, research of commuting can be geographical, sociological, at the interface of two disciplines or, in some cases, also multidisciplinary.

The study of commuting attention can be paid either to the commuters, to their destinations (commuting centres) or to the routes of commuters (spatial distribution and spatial patterns of commuting flows). Each spatial element of commuting can be analysed separately, or all elements can be viewed in their mutual connections or in the relations with other geographical phenomena. In the next section, a broad spectrum of approaches is outlined. Commuting literature comprises many studies at different geographical scales from international to national, regional and local.

Commuter issues can be studied – the structural characteristics of commuters, such as the structure by age, by gender (differences in commuting between men and women), the educational structure of commuters, the structure according to sectors of the economy,

commuting of selected population groups, such as the socially disadvantaged population (Ong and Blumenberg, 1998, Michniak, 2016), members of ethnic and other minorities (Thomas, 1998) and others.

Particular attention has also been devoted in many cases to the commuting centres (Śleszyński, 2013) and their hinterlands as issues of the commuting centres hierarchy (Van Nuffel and Saey, 2005), delimitation of travel to work areas, local labour market areas or functional urban regions (Potrykowska, 1989, Bezák, 1990, 2000, Andersen, 2000, Halás et al., 2014). Specific problems are cross-border commuting (Buch et al., 2009, Gottholmseder and Theurl, 2007), rural-urban relationship in commuting (Morrill et al., 1999), reverse commuting (Aguiléra et al., 2009), and jobs-housing balance (Cervero, 1989, 1996).

An integral part of commuting is also some form of transport that allows overcoming spatial separation between places of residence and places of work. Such topics as travel time (Redmond and Mokhtarian, 2001, Niedzielski and Boschmann, 2014), travel cost (Martin, 2001, Horňák, 2012), road travel distance (Boussauw et al., 2012), frequency of commuting, long-distance commuting or transport modes (commuting by foot or by using certain means of transport) in commuting can be analysed (Pooley and Turnbull, 2000). In many cases, commuting was studied in connection with other forms of spatial mobility, especially migrations (Zelinsky, 1971, Green et al., 1999, Eliasson et al., 2003, Romani et al., 2003). Another stream in the commuting literature has focused on the commuting behaviour and preferences in commuting (Sandow and Westin, 2010).

3. DATA ON COMMUTING IN SLOVAKIA

According to Tonev (2013), the data on commuting can be obtained directly or indirectly. In the first case, data on commuting are obtained using a controlled interview, a questionnaire or a survey directly devoted to the issue of commuting. In the second case, such data are gained from a specific administrative source, where the information is recorded primarily for reasons other than study of commuting from a social insurance registry, database of employers, transport companies, etc. Information concerning commuting can be collected only for a sample population, according to the predetermined selection criteria (e.g., questionnaire focused on young people, women, employees with low wages, etc.) or for all commuters in a territorial unit (e.g., population census). In this case, we focus on data collected for the population Censuses held in 2001 and 2011 (ŠÚ SR, 2003, 2014a).

According to the Statistical Office of the Slovak Republic, a commuter is a person who works outside their commune of permanent residence. The Statistical Office processed the data about commuting, based on the data concerning the place (commune, district) of *permanent* residence of the commuter and the place (commune, district) of work, while daily and other commuting were discerned in the years 1991, 2001 and 2011. In contrast to Slovakia, the commuting data in the Czech Republic in 2011 were related to the *habitual* residence of inhabitants.

The data on commuting from population censuses in Slovakia have many drawbacks that to some extent reduce their quality and in some cases complicate the possibility to compare the results from various censuses. One of the main drawbacks is the definition of a commuter. In published census results, Slovakia commuters were regarded only as those inhabitants that crossed boundaries of the smallest administrative unit in Slovakia. The smallest administrative unit is municipality (commune). There were 2,883 municipalities in Slovakia in 2001 and 2,890 in 2011. If a person who lives in the vicinity of town crosses the statistical border of the town on his/her journey to work, and the trip takes only 15 minutes, such a

person is regarded as a commuter. But a person who travels to work from one neighbourhood in town to the opposite part of the town, and his/her commuting time amounts to more than one hour (in a case of Bratislava or municipalities with dispersed settlements), such a person is not regarded as a commuter, according to the above-mentioned definition. Other factors that have influenced commuting data were integration and especially disintegration of municipalities, mainly in the 1990s, including foreigners with a long-term residence in the population census, not including the persons on parental leave and an increase of the number of inhabitants with an unidentified location of workplace. Despite these deficiencies, the commuting data from censuses are very valuable and offer a relatively accurate view of the character of commuting of an economically active population in Slovakia.

The basic data on commuting in Slovakia in 2001 and 2011 are shown in Table 1. A higher number of out-commuters in Slovakia by about 71.8 thousand were registered in 2011 in comparison to 2001. The number of commuters to other municipalities in Slovakia in the studied period remained practically unchanged and only slightly decreased by 7.7 thousand. Mainly cross-border commuters, which increased by 79.6 thousand, caused the rise in the number of out-commuters.

The increased number of out-commuters is also linked to the decrease of the unemployment rate in the period 2001–2011, because in 2001, Slovakia experienced one of the highest unemployment rates in its history (according to the 2001 Census data, when it amounted to 20.4% of the economically active population).

Table 1: The basic data on commuting in Slovakia in 2001 and 2011

	2001		2011	
Commuters to other municipality in Slovakia	748,942	94.03%	741,173	85.36%
Cross-border commuters	47,542	5.97%	127,149	14.64%
Out-commuters in Slovakia	796,484	100.00%	868,322	100.00%

Source: Data from the Statistical Office of the Slovak Republic (ŠÚ SR 2003, 2014a)

Despite the decline in the number of commuters within the territory of Slovakia, it is possible to talk about "greater mobility" of commuters in Slovakia, based on the data on commuting to other districts, while the number of commuters who cross the border of the district increased by 49.8 thousand of economically active inhabitants in the period 2001–2011 (Michniak, 2015).

If we look further into the past, the number of out-commuters in the period 1991–2001 decreased by approximately 220 thousand from almost 998 thousand to 748 thousand as a result of the decreased number of work places and increased unemployment caused by transformation of the Slovak economy (see ŠÚ SR, 1994, 2003, Michniak, 2005, 2006).

4. RESULTS

4.1. Growth of the number of cross-border commuters

While in 2001, when only 47.5 thousand of the economically active inhabitants commuted abroad, the number of cross-border commuters in 2011 reached 127.1 thousand. The share of cross-border commuters of all out-commuters grew in the same period from 6.0% to 14.6%. The main factors of this increase were the accession of Slovakia to the EU in 2004, entry of Slovakia into the Schengen Area in December 2007 and, above all, the gradual opening of labour markets of the EU Member States for the citizens of the Slovak Republic. After entry

of Slovakia into the EU, 12 of the 15 EU countries decided to use the transitional period and to close their labour markets for citizens of countries that joined the EU in 2004. Only Great Britain, Ireland and Sweden opened their labour markets in 2004. In 2006, Finland, Greece, Portugal, Spain and Italy fully opened their labour markets with partial opening of the labour market in Belgium, Denmark, France, Luxembourg and Netherlands. Austria and Germany, as the last from the EU15, opened their labour markets for the citizens of Slovakia in May 2011.

Integration of Slovakia into the EU also contributed to the growth of labour migration. Several studies dealing with the topic of cross-border labour migration of inhabitants of Slovakia exist (see Baláž et al., 2004, Bleha et al., 2007, Divinský, 2007, Jurčová, 2008).

Commuting data from Censuses do not include information about commuting destinations. Such data can be obtained only by using secondary sources. A possible source of data on cross-border commuting in Slovakia is the Labour Force Sample Survey. The methodology adopted for the Labour Force Sample Survey (LFS) in households is the standard one recommended by international institutions under the co-ordination of the International Labour Office (ILO). Figure 1 depicts commuting destination countries for inhabitants of Slovakia, according to their share in the total number (115 thousand) of Slovak inhabitants that worked abroad in 2011 (ŠÚ SR 2014b). The main target country for Slovaks working abroad in 2011 was the Czech Republic, followed by Austria, Hungary, Great Britain, Netherlands and Germany.

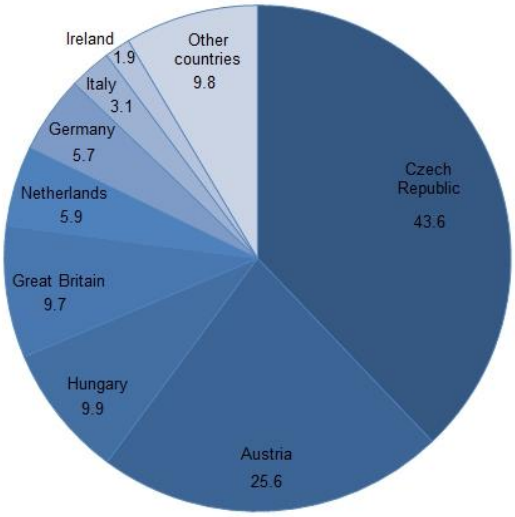

Figure 1. Cross-border commuting in Slovakia in 2011 (in %)

Cross-border commuting in Slovakia is regionally differentiated (see Figure 2). The most intensive cross-border commuting in 2011 was in cities of Bratislava (49.4%) and Košice (42%). In Bratislava there is a distinct commuting to Austria and its capital city Vienna, supported by numerous public transport connections by trains and buses. Cross-border commuting also plays a very important role in many districts in the poorer part of the country – the southern part of central Slovakia and eastern Slovakia. Some of them (mainly those in the southern part of central and eastern Slovakia) have been regarded as poverty regions of poverty (see Michálek and Veselovská, 2016). Willingness of inhabitants of the regions of poverty to solve their negative economic situations through cross-border commuting has changed in the period 2001–2011. While in 2001 there were only a small number of commuters from regions of poverty working abroad, in 2011, cross-border commuting

significantly increased (see Michniak, 2016). Districts in the northern part of eastern Slovakia and regions of Orava and Kysuce are regions with a long tradition of commuting abroad (mainly to the Czech Republic), as was also evident before 1989.

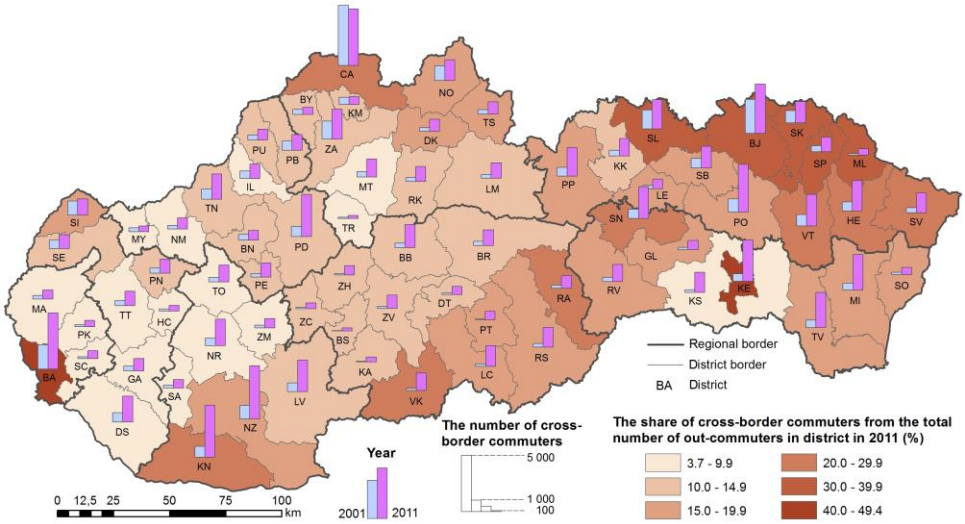

Figure 2. Cross-border commuting in 2001 and 2011

The highest increase of cross-border commuters in the period 2001–2011 was identified in the district of Komárno and Nové Zámky (by more than 3.5 thousand). In this case, it is mainly commuting to industrial centres in Hungary (Esztergom, Komárom and Győr) located near the border with Slovakia. The Statistical Office of the Slovak Republic data (ŠÚ SR 2014b) supports this fact, because nearly 89% of commuters from Slovakia to Hungary were residents of the Nitra region.

The increased cross-border commuting in the period 2001–2011 was registered in all districts in Slovakia, with the exception of Čadca, which had the highest absolute number of cross-border commuters in Slovakia in both monitored years 2001 and 2011 (more than five thousand), stemming in a strong linkage with the industrial centres in the Ostrava region in the Czech Republic.

If we focus on a relative increase of the numbers of cross-border commuters, we can find districts with enormous changes. In the district of Poltár, the number of cross-border commuters was eight times greater in 2011 than in 2001, in the districts of Lučenec and Veľký Krtíš, it was seven times greater, and in the districts of Košice – environs, Banská Štiavnica and Zvolen, it was five times greater. In twelve of 72 districts in Slovakia, this relative increase at least quadrupled.

A relatively new phenomenon in cross-border commuting is female commuting, mainly to Austria, focused on in-home care for older adults and people with disabilities. This form of commuting is based on an alternative two-week stay abroad and at home.

4.2. Growth of the number of commuters to Bratislava

One result of a long historical, political and socio-economic development of Bratislava is, besides others, the fact that Bratislava is the largest commuting centre in Slovakia. This position in the period 2001–2011 strengthened, and in 2001, almost every eighth out-commuter in Slovakia commuted to Bratislava (Table 2).

Table 2: The basic data on commuting to Bratislava in 1991, 2001 and 2011

	1991	2001	2011
Number of commuters to Bratislava	74,895	89,424	107,381
Share of commuters to Bratislava from all out-commuters in Slovakia	7.5	11.2	12.4

Source: Data from the Statistical Office of the Slovak Republic (ŠÚ SR 1994, 2003, 2014a)

First, Bratislava is a commuting centre, particularly for inhabitants from its hinterland, where daily commuting dominates. More than 50% of all out-commuters in Bratislava's three neighbouring districts (Senec, Pezinok and Malacky) worked in Bratislava in 2011 (see Figure 3). The increasing number of commuters to Bratislava from its hinterland in 2001–2011 (e.g., from the district of Senec by 3.3 thousand) points to the development of the suburbanisation process (see Šveda and Podolák 2014, Šveda and Šuška 2014). Significant commuting flows of an economically active population to Bratislava also depart from districts of Dunajská Streda (35%), Galanta, Šaľa, Trnava and Senica (20–30%), followed by districts of Nové Zámky (15%) and Hlohovec (13%). These districts are characterised by above-average commuting to Bratislava, supported by intensive transport connections between Bratislava and these districts. Commuting time between places of living and Bratislava often exceeds one hour in one direction.

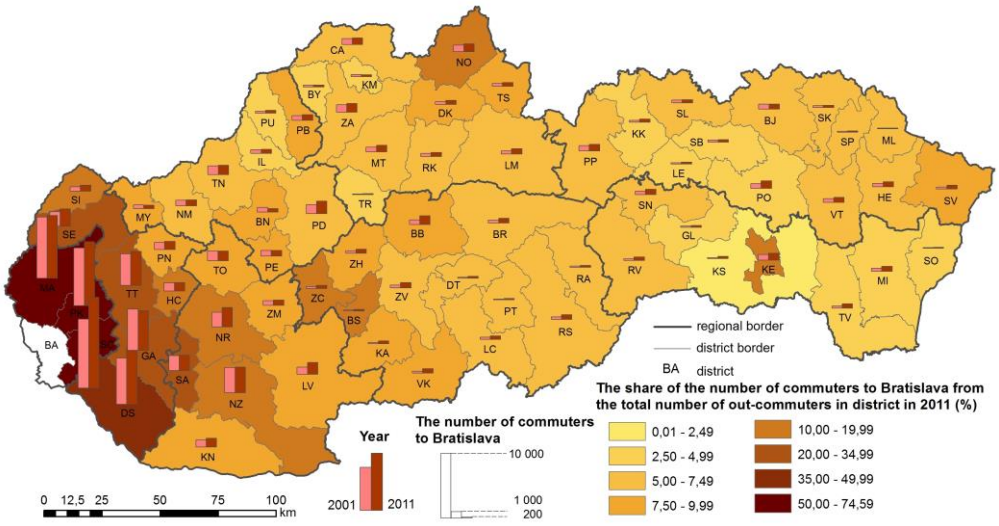

Figure 3. Commuting to Bratislava in 2001 and 2011.

Second, Bratislava is also a commuting centre for the residents from other regions in Slovakia who commute to Bratislava other than daily. It is clear that with the increasing distance to Bratislava, intensity of commuting generally decreases. But there are some exceptions, such as commuting from district of Námestovo in the northern part of Slovakia with traditionally strong commuting of workers in the sector of construction to Bratislava (11% of out-commuters). Similarly, strong commuting flow also exists between Košice and Bratislava. Likewise, a difference in commuting to Bratislava between the Prešov and Košice regions is visible, since the lowest number of commuters to Bratislava characterises the Košice region.

A new phenomenon of cross-border commuting to Bratislava from Austria and Hungary has developed, mainly after the entry of Slovakia to the Schengen Area. This process is interrelated with the process of suburbanisation that was, to some extent, limited by border

controls till December 2007. Communes in Austria and Hungary located near the border with Slovakia attracted immigrants, especially by their proximity to Bratislava, good transport accessibility by car and considerably lower prices of real estate (see Slavík et al., 2011, Székely, 2013). Data on cross-border commuting to Bratislava are not available from the population census in Slovakia. Inhabitants from these communes in Austria and Hungary commute to Bratislava daily, and they use mainly cars as transport means, but some of these communes also have good public transport connections with Bratislava by bus (e.g., Rajka, Wolfsthal, and Hainburg) or train (Kittsee and Marchegg).

4.3. Changes of position of towns as commuting centres

When we are dealing with the commuting centres, we can select them by the number of commuters, by the positive commuting balance or by the commuting hinterlands with intensive commuting to this centre. In our analysis of commuting centres, we focused on more important centres with at least 500 commuters in 2001 or 2011. In Slovakia, 192 commuting centres meet this condition (Figure 4).

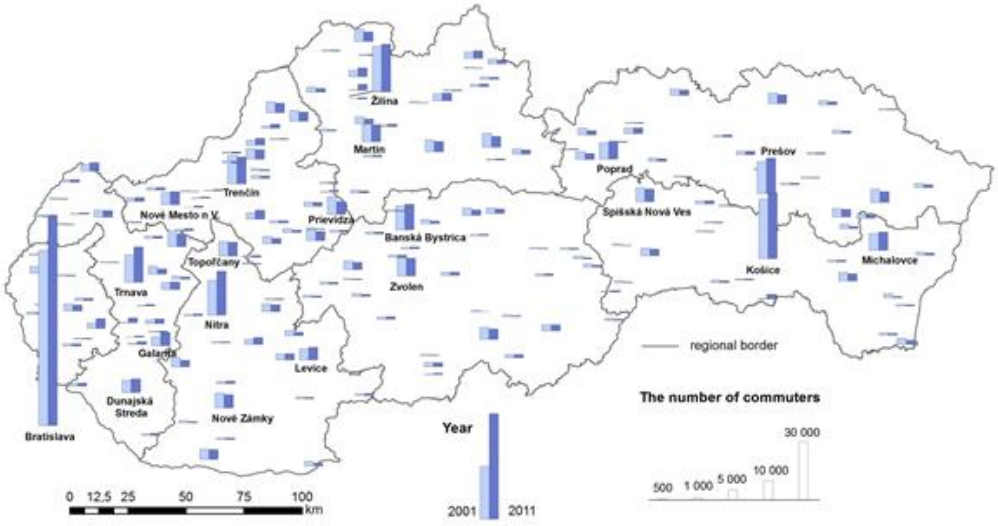

Figure 4. The number of commuters to commuting centres in Slovakia in 2001 and 2011.

Every commuting centre in Slovakia has its own position within the hierarchy of commuting centres, which changes over time. The decreasing number of such centres from 197 centres in 1991 to 173 in 2001 and to 166 centres with at least 500 commuters in 2011 (Table 3) points to the process of concentration of workplaces to a smaller number of more important commuting centres. This is also confirmed by the growth of commuting to the ten largest centres in Slovakia (with the exception of Trenčín) that concentrated one-third of all commuters in Slovakia. The specific role of Bratislava as the most important commuting centre in Slovakia has been discussed in the previous part of this article.

Table 3. Commuting centres with at least 500 commuters in Slovakia in 1991, 2001 and 2011

	1991	2001	2011
The number of centres with at least 500 commuters	197	173	166
The number of new centres with at least 500 commuters	-	11	17
The number of centres with the number of commuters dropped below 500	-	35	26

Source: Own calculations, based on data from the Statistical Office of the Slovak Republic (ŠÚ SR, 1994, 2003, 2014a)

According to the changes of the number of commuters in the period 2001–2011, commuting centres can be divided into two groups: (1) commuting centres with a growth of the number of commuters, that is, 70 centres and (2) commuting centres with a decrease of the number of commuters, that is, 122 centres. A particular attention was devoted to the centres with the high relative changes of the number of commuters.

On the one side, there were centres with rapid growth of the number of commuters (Table 4, Figure 5). In seven centres in the period 2001–2011, this indicator grew at least tenfold, and in three centres, it grew four to five times. Apart of Kechnec, other rapidly growing centres are situated in the western and better-developed part of Slovakia. These ten new commuting centres are rural municipalities with a relatively small number of inhabitants, and almost all employees have to commute to these centres from towns and other rural municipalities in their surroundings. Four of these centres were able to attract 2.4–3.0 thousand commuters, and the other six absorbed 640-870 commuters in 2011. Their successful development was the result of foreign direct investment into the automotive and electrical engineering industry and building of logistics centres. Other factors, such as transport infrastructure (location near railway, motorway or expressway) and a successful local leader (e.g., mayor of the Kechnec municipality), also played an important role.

Table 4. Commuting centres with rapid growth of the number of commuters in 2001–2011

Commuting centre	Number of commuters 2001	2011	Relative growth	Commuting balance	Location	Main employers
Teplička nad Váhom	114	2,972	25.1	1,977	Žilina (5km)	Automotive industry Kia Motors Slovakia
Gáň	38	679	16.9	482	Galanta (5 km)	Logistics park - Samsung Electronics Europe Logistics
Voderady	145	2,397	15.5	2,031	Trnava (12 km)	Electrical engineering industry Samsung Display Slovakia
Gbeľany	54	874	15.2	535	Žilina (9 km)	Automotive industry Mobis Slovakia, Hysco Slovakia
Kočovce	65	832	11.8	483	Nové Mesto n. V. (8 km)	Automotive industry Hella Slovakia Front-Lighting
Kechnec	199	2,419	11.2	2,224	Košice (18 km)	Industrial zone with 15 companies in various industrial sectors
Lozorno	240	2,749	10.5	2,021	Bratislava (25 km)	Automotive industrial park mainly for Volkswagen Slovakia
Zavar	138	845	5.1	298	Trnava (12 km)	Logistics park mainly for Peugeot Citroën
Dojč	122	645	4.3	341	Senica (8 km)	Electrical engineering industry OMS Lightning
Beckov	124	655	4.3	335	Nové Mesto n. V. (8 km)	Logistics park TESCO distribution centre

Source: Own elaboration

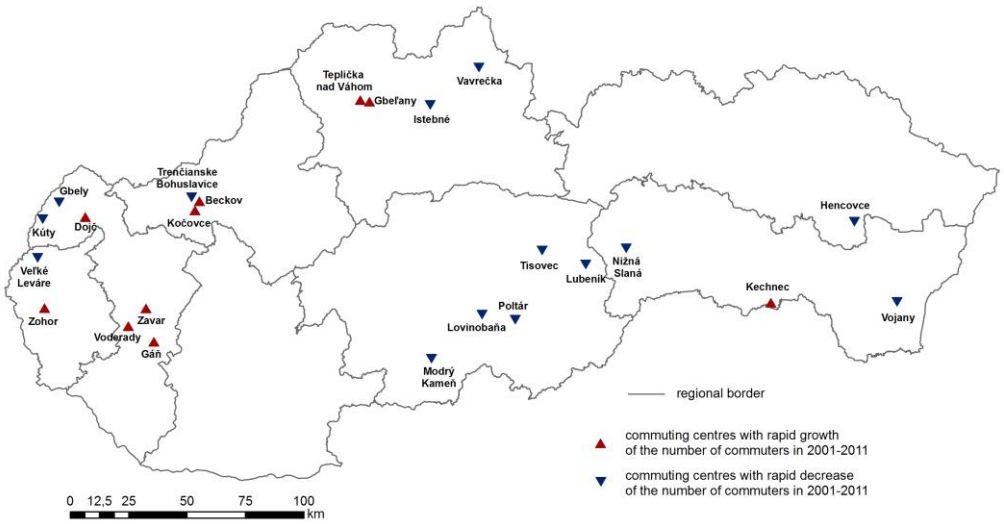

Figure 5. Commuting centres with rapid growth an raid decrease of the number of commuters in 2001–2011

On the other side, there were centres with the rapid decrease of the number of commuters (Table 5, Figure 5).

Table 5. Commuting centres with rapid decrease of the number of commuters in 2001–2011

Commuting centre	Number of commuters 2001	2011	Relative decrease	Commuting balance	District	Main decreasing sector
Nižná Slaná	929	81	-91.3	-51	RV	Mining of siderite
Lovinobaňa	628	106	-83.1	-277	LC	Production of refractories
Vavrečka	502	117	-76.7	-206	NO	Electrical engineering industry
Istebné	856	214	-75.0	-83	DK	Metallurgical industry
Veľké Leváre	657	183	-72.1	-870	MA	Construction, cardboard packaging
Vojany	2,118	661	-68.8	577	MI	Energy industry
Trenčianske Bohuslavice	550	174	-68.4	-137	NM	Construction
Lubeník	1,449	591	-59.2	394	RA	Mining and processing magnesite
Gbely	701	296	-57.8	-740	SI	Oil and gas production
Poltár	969	452	-53.4	-416	PT	Glass industry
Kúty	993	477	-52.0	-395	SE	Customs Office
Modrý Kameň	557	270	-51.5	-11	VK	Brown coal mining
Hencovce	2,234	1,089	-51.3	848	VT	Wood processing industry
Tisovec	525	262	-50.1	-264	RS	Machine industry

Source: Own elaboration

In 14 centres, this indicator decreased by at least 50% in the period 2001–2011. Four centres from this group are small towns (Poltár, Gbely, Tisovec, and Modrý Kameň) with less than six thousand inhabitants, the others are rural municipalities. Many of them are situated in the less-developed regions of the southern part of central Slovakia and in eastern Slovakia, where it is difficult to substitute the lost workplaces. Layoffs in some companies often lead to the increased unemployment rate, even worsening the unfavourable economic situation of the population and deepening of poverty. Most problematic sectors were the mining industry and metallurgy industry.

5. CONCLUSIONS

Changes in the society after 1989 also affected the labour market in Slovakia. In the period 2001–2011, the most important changes were the integration of Slovakia in the EU and the Schengen Area, gradual opening of labour markets of the EU Member States for the citizens of Slovakia, the foreign direct investment into the Slovak economy and the ongoing process of globalisation. All these changes also influenced commuting as one of the instruments of how to overcome the existing and growing spatial jobs-housing imbalance that is in relation with core-periphery imbalance (e.g. Ikonomou, 2011). The main trends in commuting in Slovakia, identified on the base of data of the 2001 and 2011 Censuses, included the increase of the total number of out-commuters, the increase of the number of cross-border commuters, the strengthening of the position of Bratislava as the largest commuting centre in Slovakia and the changing position of other commuting centres, based on their ability to face up to transformation of the economy after 1989 and their ability to attract the foreign direct investment.

Data concerning changes in the number of commuters to centres over time point to the various development trajectories of commuting centres and economic adaptability of centres (local firms and other employers) to the changing economic conditions. If some centres are able to attract considerably more commuters that it was ten years ago, we can refer to their positive economic development. If the number of commuters to other centre decreased significantly during the same period we can identify a negative economic development of the respective commuting centre.

The top position of Bratislava is a consequence of the fact that it is the largest city and the capital of Slovakia that concentrates the most important administrative, social, cultural and economic roles in the country. Data on commuting to the ten largest centres in the period 2001–2011 also point to the higher concentration of workplaces to a smaller number of more important commuting centres, what corresponds with the polycentric patterns of development of a region (e.g. Blăgeanu, 2015).

Comparison of data on commuting in 2001 and 2011 (e.g., a higher absolute number of commuters and more intensive commuting to Bratislava and cross-border commuting) illustrates the growing jobs-housing imbalance in Slovakia that may point to the high cost of living in places with good offers of jobs. A key factor influencing the position of commuting centres in the period 1991–2001 was the ability of mainly industrial companies to face up to transformation of the economy. The foreign investment in some centres has also played an important role (Michniak, 2006). In the period 2001–2011, foreign direct investment played a decisive role. Centres with rapid growth of the number of commuters document this fact. There were seven rural centres in the period 2001–2011, where this indicator grew at least tenfold. These centres use their advantageous location in the proximity of important industrial centres and good transport accessibility and attracted the foreign direct investment in the main sectors of the Slovak industry – the automotive and electrical engineering industry.

Commuting flows to Bratislava from the whole territory of Slovakia and the new rapidly growing commuting centres that are situated in western and the better-developed part of Slovakia indicate strong socio-economic polarisation of Slovakia. Commuting to distant regions and cross-border commuting is a necessity and not a desire for many inhabitants, due to the lack of jobs in the peripheral and poor regions where they live. Commuting to distant regions or cross-border commuting, in addition to the positive effect (economic security of families or higher income) can have also the adverse effects, which are often disruption of

family and social relationships (Green et al., 1999) or a negative impact on the health status of commuters (Hoehner et al., 2012).

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