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The influence of transformation changes after 1989 on commuting in Slovakia

Introduction

Big transformation changes, connected with transition from a centrally planned to a market economy, took place in Slovakia after 1989. Slovakia, as one of the post-socialist countries, began its economic, political and social transformation with a heavy burden of socialist heritage. Amongst the main problems were 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 (I. 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 change in the structure of relative prices and the elimination of subsidies. Besides this state firms lost crucial suppliers and in many cases had to stop production (O. Blanchard, 1996).

Economic reforms centred round the processes of liberalisation of prices, opening of markets, encouraging new private business and processes of privatisation and structural reform (transfer of state owned enterprises into private ownership and programmes of industrial restructuring) (I. McMaster, 2004; see S. Djankov, G. Pohl, 1999). 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 (J. Svejnar, 1996). Foreign direct investments and accession to international organisations (e.g. WTO and EU) played a very important role in the process of the transition.

In the consequence of growing unemployment and other changes connected with the transition also the number of commuters decreased and the position of individual commuting centres changed. The aim of this paper is to identify the most important changes in commuting in Slovakia in the years 1991–2001, caused by the transformation process, to investigate some regional aspects of such changes and to evaluate the factors that caused them. This paper is focused on the evaluation of some changes in out-commuting at the national level of Slovakia, evaluation of the selected changes in out-commuting at the level of the individual

districts, and evaluation of changes in commuting to the centres with more than 500 in-commuters.

Data on commuting

The data on commuting were obtained from the March 1991 and May 2001 censuses while 1991 can be considered the initial stage of transformation, in which there was a large decline in industrial production (O. Blanchard, 1996) and the most recent data concerning commuting at the national level are from 2001.

According to the methodological guidelines to the census, commuter is a person who works outside his commune of permanent residence. The Statistical Office of the SR 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 the job while the daily and other commuting were discerned. Daily commuting means an everyday travel to work. Persons temporarily living in the place of work (hostel or rented living place) also quoted daily commuting; that is commuting from their temporary living place to work. Other than daily commuting means irregular commuting (for example guarding service, free-lance position and the like). The commuting data have been processed for all communes and they are classified by out-commuting centres. Names are quoted only in case if more than 10 persons out-commute. It means that in some cases it is not possible to identify the commune of out-commuting.

Certain inaccuracy in comparison of the out-commuting data is caused by the changes in the territorial division of Slovakia in terms of communes. In time of the 1991 and 2001 censuses there were 2,825 and 2,883 communes respectively in Slovakia. In the time between censuses 16 communes disappeared including 15, which joined other 13 communes, and one disappeared by joining a couple of communes. On the other side, 74 new communes were formed by division or separation, which concerned 57 communes. The quoted changes concerned 145 communes, which existed in the 2001 census.

Changes in out-commuting at the national level

The most important and striking change in commuting between the years 1991–2001 was the *decrease of the number of out-commuters* by 201,441 persons from 997,925 to 796,484, (20,2%). Apart from the decreased number of out-commuters, the out-commuting rate also decreased. While as much as 38.1% of all economically active inhabitants commuted outside their communes in 1991, in 2001 they made up for only 29.0%.

Compared to 1991, the share of economically active inhabitants working in the commune of their permanent residence also dropped by 6.2% to 45.6%. The increase of unemployment caused by transformation of economics is more obvious in the share of out-commuters than in the share of economically active inhabit-

ants working in the commune of their permanent residence as testified to by the values of Pearson's correlation coefficient in the set of 72 districts (-0.61 and -0.51).

If out-commuting is expressed by the share of the out-commuters in the total number of employed persons, it dropped by 3.6% from 42.4% employed in 1991 to 38.8% in 2001.

In comparison to 1991, *the share of persons commuting abroad* almost doubled from 3.5% (35,166 out-commuters) to 6.0% (47,542 out-commuters), while in 1991 the out-commuters to the Czech republic amounted to 3.0% (29,957 out-commuters) and out-commuters to other countries constituted only 0.5% (5,209 out-commuters). The 2001 data do not quote the target country of commuters. We suppose that commuting to the Czech Republic also dominated in 2001. Compared to 1991, out-commuting to other countries prevailed probably because of higher wages in the countries of the EU, USA and other advanced countries. The higher share of commuters to foreign countries is also the consequence of better travelling possibilities and the improving foreign language skills of Slovaks.

In terms of *the share of men and women in the total number of out-commuters*, there were almost no changes at the all-Slovakian level (approximately 60% men and 40% women).

Observing *the age structure of out-commuters*, it is obvious that the largest change concerns the out-commuters at the age of 15 to 24 years. The share of out-commuters in this category decreased from 24.1% to 14.2%. It is caused by the extension of the obligatory school attendance years from nine to ten, by increase of number of university students and the ageing of Slovakia's population. On the other side, the share of out-commuters at the age of 45 to 59 years increased from 20.9% to 27.3%, as also caused by the larger share of this age category in total population.

As far as *the structure of out-commuters by the individual sectors of the national economy* is concerned, the share of commuters, which decreased most, was the one of agricultural workers (by 8.1% from 13.7% to 5.5%). Restructuring of the agricultural sector caused it - many agricultural firms were closed, over-employment decreased, and also because some associated productions were separated from the agricultural firms).

A similar decrease of out-commuting was observed in that to industrial companies where the corresponding share decreased by 7.6% from 38.6% to 30.9%. One of the causes of this decrease is the fact that in transformation period many, formerly parts of industrial companies covering the catering, recreational services or departments of foreign trade, separated from their companies and often transformed into new businesses where the workers reclassified into the sector of services in contrast to their appurtenance to the industrial branches in 1991.

The decrease of the number of out-commuters in construction was also important (by 5.0% from 12.9% to 7.9%). In spite of the fact that the number of eco-

nomically active inhabitants in transport and communications decreased by more than 21 thousand, their share in out-commuting remained at an approximately the same level (it increased by 0.2% to 8.0%). The accessible data make it possible to compare the representation of out-commuting in trade where the increase of out-commuting was observed by 4.0% from 8.5% to 12.5%.

As the remaining data categories in the framework of the structure of out-commuters in terms of branches were different in the 1991 and 2001 censuses, the comparison is impossible. But it is supposed that the share of out-commuters working in services increased. A certain distortion of the results of out-commuting is also caused by the fact that there is as much as 16.4% of commuters under the category of "other and not specified" in 2001.

The immediate cause of the decrease of the number of out-commuting persons lies in changes of economic activity of population evoked by transformation in the individual sectors of the national economy. Compared to 1991 when there were 2,617,935 economically active persons in Slovakia, this number increased by 130,115 to 2,748,050 in 2001. This increase also manifested in the share of economically active inhabitants in the total population (increase by 1.4% to 51.1%).

In spite of the increased number of economically active persons, the number of working persons in Slovakia dropped by 310,874 from 2,313,631 in 1991 to 2,002,757 or by 13.4%. The result of decrease of working persons number and the increase of economically active persons was the increased number of unemployed. Whereas in 1991 there were only 107,416 unemployed (4.1% economically active persons), their number increased as much as to 561,214 (20.4% economically active persons) in 2001.

Changes in out-commuting at the regional level

In the period between censuses, the territorial-administrative division changed and the number of districts increased from 38 to 79, while Bratislava and Košice were divided into 5 and 4 districts respectively. As it is not appropriate to divide these cities into smaller units for the study of commuting, out-commuting was assessed at the level of 72 districts.

The decrease of the number of out-commuters in the period 1991–2001 (see Figure 1) was observed in all districts with the exception of Bratislava where it increased by 5.2%. Presumably, this change is connected above all with the increase of out-commuting abroad and it is also due to reverse commuting, a new phenomenon in Slovakia, when population of large cities out-commutes to their hinterlands. A comparatively low decrease of out-commuters (below 10%) was found in hinterland of Bratislava (districts of Malacky, Pezinok, Trnava, Piešťany, Myjava) and in two central Slovakian districts (Žiar nad Hronom, Zvolen). Districts in western part of Slovakia are remarkable for below-average decrease of out-commuters. On the contrary, a decrease of at least 30% of commuters was found in districts of Medzilaborce (by 42.1%), Veľký Krtíš, Snina, Sabinov,

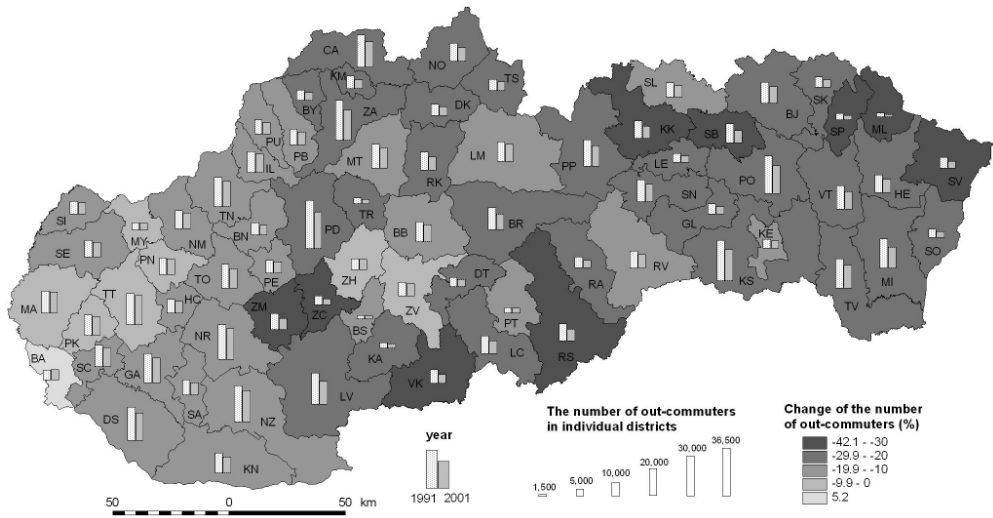


Figure 1. Changes in total out-commuting at the regional level in the years 1991–2001

Source: Author's map based on data from Statistical Office of the Slovak Republic

Rimavská Sobota, Žarnovica, Zlaté Moravce, Stropkov a Kežmarok (by 30.0%) with the common feature of high unemployment and in some of them (Medzilaborce, Veľký Krtíš, Zlaté Moravce) also the decrease of economically active persons.

Likewise, out-commuting rate also decreased from 38.1% in 1991 to 29.0% in 2001. The highest decrease of the out-commuting rate was found in eastern Slovakia where it reached more than 20% in five districts (Sabinov, Košice - okolie, Sobrance, Kežmarok, Gelnica). On the other side small decrease (below 5%) was observed in districts of Liptovský Mikuláš, Banská Bystrica, Zvolen, Žiar nad Hronom, Trnava, Piešťany, Myjava a Košice, and in Bratislava only a slight rise (by 0.1%) of out-commuting was observed.

Considering the individual branches of economy, the decrease of number of out-commuters was most striking in agriculture, industry and construction, i.e. those most affected by transition. The decrease of out-commuters in agriculture was observed in whole Slovakia and the least afflicted were the districts with the highest share of workers in forest management. Likewise, the decrease of number of out-commuters in industry manifested in the whole territory of Slovakia with the exception of Bratislava. In construction, the decrease of out-commuters was recorded in the major part of the Slovak territory (above all in its southern part), but there also exist districts with an increasing importance of out-commuting in construction (districts of Námestovo, Stropkov, Svidník, Tvrdošín, and Stará Ľubovňa with out-commuting to large cities and abroad in some districts of northern and eastern Slovakia).

Changes in commuting to centres with at least 500 commuters

Transition of economy also led to transformation of various industrial firms, which were once the most frequent destinations of commuters. In the consequence, the total employment decreased and some firms were reduced or disappeared which was logically accompanied by changes in commuting as observable in changes of mutual position of the individual commuting centres. As jobs are much more spatially concentrated than economically active inhabitants, the centres with at least 500 commuters will be given attention.

However, many important commuting centres were affected by territorial changes in the period between the censuses – some communes were separated. In order to compare the commuting data for the individual centres, the 2001 data for centres with more than 500 commuters were adjusted to the territorial situation in 1991.

Changes in commuting to the largest commuting centres are listed in Table 1 and changes in commuting to centres with at least 500 commuters are depicted on Figure 2.

While in 1991 there were as much as 197 centres with at least 500 commuters, their number decreased to 173 in 2001. In 35 centres the number of commuters dropped below 500 and on the contrary, the number of commuters exceeded the limit of 500 in 11 centres.

Compared to 1991, the number of *largest commuting centres* (with at least 10 thous. commuters) dropped from 14 to eight – now all seats of regional administration – Bratislava, Trnava, Nitra, Trenčín, Žilina, Banská Bystrica, Prešov and Košice.

The largest commuting centre in Slovakia is Bratislava, while its position in commuting has strengthened. While in 1991 there were 74,895 commuters, in 2001 it was as much as 89,424 economically active commuters to Bratislava, what represents 11.9% of all commuters in Slovakia. Compared to 1991, this was an important increase of commuters by about 14.5 thousand inhabitants (19.4%), above all in contrast with the national decrease of commuters. This increase was caused by the fact that Bratislava became the capital of the new state in 1993; its economic power capable to generate more work opportunities increased and attracted more commuters. On the one side, the number of commuters to work in agriculture, construction and partially also industry decreased and on the other, new jobs emerged above all due to the development of commerce and services of financial sector, information technology, etc. Bratislava became an attractive centre of commuters for inhabitants of the whole country, above all the young people below 34 years (D. Michniak, 2003).

Position of *Košice, the second largest commuting centre in Slovakia* with 30,486 commuters did not change either in 2001. But compared to 1991, the number of commuters decreased by 4,563, as caused by decrease of commuters in construction (decrease by 4.1 thous. commuters) and in industry (decrease by 2.9 thous. commuters above all in metallurgical and engineering industries).

Table 1. Changes in commuting to the largest commuting centres between 1991 and 2001

	Commuting centre	A	B	C		Commuting centre	A	B	C
1.	Bratislava	74 895	89 424	19.4	16.	Nováky	9 913	5 555	-44.0
2.	Košice	35 049	30 486	-13.0	17.	Topoľčany	9 512	7 156	-24.8
3.	Žilina	26 917	22 938	-14.8	18.	Piešťany	9 250	7 491	-19.0
4.	Prešov	23 739	16 241	-31.6	19.	Levice	9 174	5 600	-39.0
5.	Nitra	16 952	17 360	2.4	20.	Liptovský Mikuláš	9 080	7 136	-21.4
6.	Trnava	14 719	13 370	-9.2	21.	Spišská Nová Ves	8 988	7 034	-21.7
7.	Trenčín	14 623	14 402	-1.5	22.	Považská Bystrica	8 942	5 429	-39.3
8.	Zvolen	12 688	9 090	-28.4	23.	Bardejov	8 592	5 350	-37.7
9.	Banská Bystrica	12 091	11 916	-1.4	24.	Ružomberok	8 484	6 022	-29.0
10.	Nové Zámky	11 845	7 460	-37.0	25.	Prievidza	8 431	9 005	6.8
11.	Martin	11 575	8 942	-22.7	26.	Vranov nad Topľou	8 285	5 398	-34.8
12.	Michalovce	11 478	8 627	-24.8	27.	Lučenec	7 950	6 147	-22.7
13.	Dubnica nad Váhom	10 750	5 309	-50.6	28.	Galanta	7 900	4 480	-43.3
14.	Humenné	10 074	6 640	-34.1	29.	Svit	7 378	4 004	-45.7
15.	Poprad	9 985	8 357	-16.3	30.	Komárno	7 263	5 374	-26.0

Note: A – the number of commuters in 1991, B – the number of commuters in 2001, C – change in commuting between 1991 and 2001 expressed in percentage

Source: Author's table based on data from Statistical Office of the Slovak Republic

An important decrease of number of commuters was also observed in the *third largest commuting centre* – *Žilina*, where the number of commuters decreased by 3,979 commuters. According to the individual branches of economy, the decrease of commuting manifested above all in industry (decrease by 4.1 thous. commuters), while the chemical, engineering and paper and pulp industries were the most affected ones.

Compared to 1991, the *largest decrease in number of commuters was recorded in Prešov* (decrease by 7,498 commuters). The cause of this decrease is first of all the decrease of number of employees in industrial firms (engineering, electrical and clothing industries). While in 1990 total of 17,771 employees worked in industrial branches, in 1999 it was 12,040 employees which means that employment in industry decreased by almost a third (by 5,731 jobs) (D. Popjaková 2001).

Apart from actual regional centres more than 10 000 persons commuted in 1991 to towns Zvolen, Nové Zámky, Martin, Michalovce, Dubnica nad Váhom, Humenné. These industrial centres boast a comparatively diversified structure of industry, while Dubnica nad Váhom and Martin were afflicted by transformation of engineering industry (mainly defence industry – see Y. Kiss, 1999), Nové Zámky was struck by transformation of electrical engineering and food-processing industries, Zvolen by transformation of engineering and wood-processing industry, Humenné by transformation of chemical industry and Michalovce by transformation of engineering and food-processing industry.

An interesting indicator expressing the decrease of commuting to the individual centres is *the decrease of the number of commuters to the given centre expressed in percentage*. As much as in 33 centres to which more than 500 commuters commuted in 1991, the number of commuters decreased by more than a half. The largest of these centres were in 1991 Dubnica nad Váhom (decrease by 50.6%), Nižná (by 74.7% to 1,254 commuters), Stropkov (by 54.8% to 1,467 commuters), and the town Strážske (by 50.6% to 2,131), struck by transformation of chemical industry. The commuting decrease (by at least 50%) in such centres is attributable to transformation of firms in different industrial branches, which had dominant position in the economy of these cities. In centres Cigeľ, Sebedražie, Koš, Modrý Kameň, Rudňany a Hodruša - Hámre the dumping of mining and quarrying, production of energy and other materials was the cause of decreased commuting. That in centres Dubnica nad Váhom, Pohorelá, Závadka nad Hronom and Spišská Stará Ves was caused by transformation in manufacture of machinery and equipment, centres Hronec, Oravský Podzámok, Slovinky and Báhoň were subjects to transformation of manufacture of basic metals and fabricated metal products, in centres Nižná, Stropkov a Oravská Lesná it was transformation of manufacture of electrical equipment, v Slavošovce it was transformation of the firm dedicated to manufacture of paper, in centres Turany, Pravenec it was transformation of wood products, in Podvysoká it was transformation of the firm dedicated to manufacture of leather and leather products, in Lipany and Spišská Stará Ves it was manufacture of textiles and textile products, in Veľký Šariš it was transformation of manufacture of food products, beverages and tobacco products). The main cause

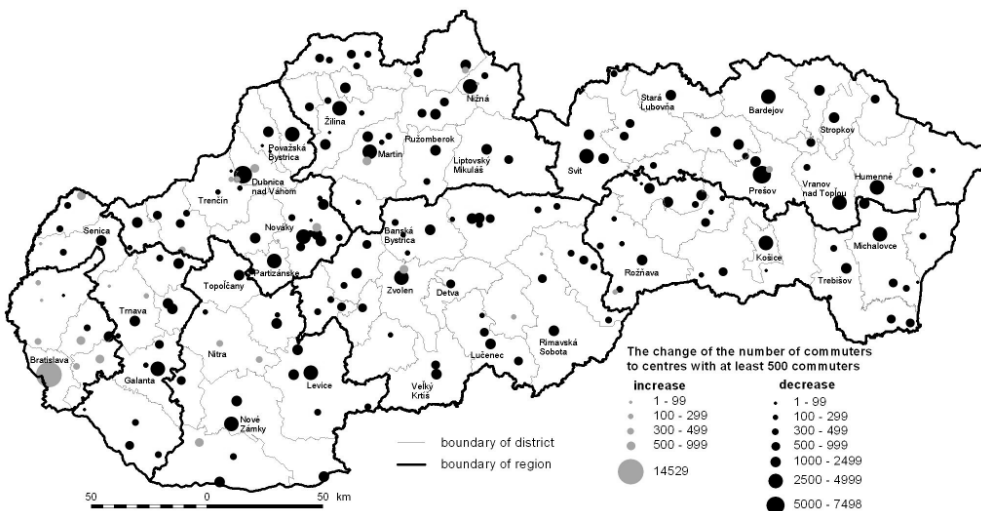


Figure 2. Changes in commuting to centres with at least 500 commuters

Source: Author's map based on data from Statistical Office of the Slovak Republic

of commuting decrease to centre Gabčíkovo was the conclusion of the construction of the dam.

In spite of the general decrease of number of commuters to the majority of observed centres in Slovakia, there are *centres with increased number of commuters* in comparison to 1991. Apart from Bratislava, which was mentioned above, commuting in 21 studied centres increased by more than 250 commuters. This group covers the centres like Nitra, Prievidza (foreign investments into electrical engineering industry – Yazaki Debnár Slovakia, s.r.o.), Jaslovské Bohunice (nuclear power station), where the number of commuters increased only by 2.4–7.3%. These centres maintained their economic basis and the firms existing there are destinations of commuters.

The group of larger commuting centres where the number of commuters increased includes Vrábľe (by 342 to 2,570 commuters), Ilava (by 629 to 2,656 commuters), Senec (by 697 to 2,597 commuters), Pezinok (by 744 to 3,528 commuters), and Skalica (by 812 to 3,419 commuters). Increase of commuting in Vrábľe by 15,4% is mainly due to opening of the industrial park IGP Vrábľe and investments to firms Semecs s.r.o. and Hefra s.r.o. One of important investors in Skalica is INA Skalica, s.r.o., producer of bearings. Increased number of commuters in towns Senec a Pezinok is due to their location near Bratislava, which led to creation of new work opportunities.

Vicinity of Bratislava also influenced commuting to smaller centres in its immediate hinterland, i.e. Stupava (increase by 343 to 1,059 commuters) and Ivanka pri Dunaji (increase by 396 to 1,070 commuters). Among the centres where the number of commuters increased above 1,000 are also two neighbouring communes of Trenčianska Teplá (increase by 288 to 1,279 commuters) and Nová Dubnica (increase by 498 to 1,370 commuters) with important investment in electrical engineering industry (the firm Leoni Slovakia, s.r.o. in Trenčianska Teplá producing car cables and the firm Q Nova, s.r.o. in Nová Dubnica) and the town of Sliač (increase by 515 to 1,166 commuters). The town of Poltár also drew close to the limit of 1,000 commuters (increase by 269 to 969 commuters).

New centres with more than 500 commuters also appear in the group of commuting centres with less than 500 commuters in 1991. They include the centres Veľké Leváre and Ľubotice, where more than 400 employees commuted in 1991 and their number slightly increased. In Ľubotice (increase by 462 to 864 commuters) there are various industrial firms in the immediate vicinity of Prešov. This group include also centres with important investments in industry. In Gemerská Hôrka (increase by 288 to 530 commuters) new jobs originated in the firm dedicated to hygiene products (SCA Hygiene Products, s.r.o.), more of them were created in Horná Streda (increase by 373 to 532 commuters) in electrical engineering industry (Vacuumschmelze s.r.o.), in Vavrečka (increase by 479 to 502 commuters) in electrical engineering industry (Punch Campus Námestovo s.r.o.), in Košfany nad Turcom (increase by 777 to 881 commuters) car industry – produc-

tion of car seats and casings (Trim Leader, a.s.) in machinery (Hansa - Flex Hydraulic), and in Kolárovo (increase by 855 to 1,222 commuters) in electrical engineering industry (Kromberg a Shubert, s.r.o.).

Four of new commuting centres with more than 500 commuters in 2001 are centres created by separation from some towns – they are Hencovce (separated from Vranov nad Topľou) s 2,234 commuters, Tovarníky (separated from Topoľčian) with 781 commuters and Lužianky (separated from Nitra) s 777 commuters, and Ivanka pri Nitre (separated from Nitra) with 616 commuters. These communes were considered parts of towns from which they were actually separated for the purpose of comparison of commuting data for the years 1991 and 2001.

Conclusion

Transformation changes in Slovakia after 1989 influenced the character of commuting. The most important change in commuting which took place in the years 1991–2001 was the decrease of the absolute number of commuters by more than 200 thous. This decrease was recorded in all regions in Slovakia with the exception of Bratislava (the highest decrease was identified in eastern Slovakia).

Observing commuting to centres with more than 500 commuters, one of the most important changes resulted in the strengthened position of Bratislava as the largest commuting centre in Slovakia. Approximately the same number of commuters was maintained in some largest centres such as Nitra, Trenčín and Banská Bystrica in the study period. On the contrary, in 1991 more than 30 % decrease of commuters (more than 7 thous. commuters) was identified in centres Prešov, Zvolen, Nové Zámky, Dubnica nad Váhom, Humenné, Nováky, Levice, Považská Bystrica, Bardejov, Vranov nad Topľou, Galanta and Svit.

The key factor influencing the position of commuting centres was their ability to face up to transformation of economy. The foreign investments played a very important role in its successful realisation. It is possible to suppose that the position of commuting centres with foreign direct investments and centres with industrial parks will be strengthened. Examples of centres demonstrating the above said, are centres with growing number of commuters as Bratislava, important centres are Vrábľe, Ilava, and Skalica, and the smaller of them include Trenčianska Teplá and Nová Dubnica. Increase of number of commuters to centres like Senec, Pezinok, Stupava, and Ivanka pri Dunaji was caused by their position in the immediate vicinity of Bratislava. Among examples of formation of new commuting centres with at least 500 commuters as fostered by arrival of foreign investors are Gemerská Hôrka, Horná Streda, Košľany nad Turcom, and Vavrečka.

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