

## **INFLUENCE OF LABOUR COMMUTING ON HINTERLANDS OF THE CZECH AGGLOMERATIONS: CONTEMPORARY TRENDS**

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### **Abstract**

**The article is aimed at the analysis of changes in labour commuting to Prague, Brno and Plzeň during the 1990s. The author delimits with the help of the 1991 and 2001 censuses commuting hinterland of the Czech cities and evidences an increase in number of commuting flows from longer distances, which is related to weakened employment function of a number of microregional centres, district towns included. In the period there was a significant expansion of commuting hinterland of the cities, but simultaneously there was a decrease in labour commuting intensity from municipalities located in the immediate hinterland of Prague, Brno and Plzeň. In this part of hinterland a number of new labour positions were created and they were largely occupied by local population – persons, who as late as in the early 1990s commuted to the cities. In connection with the process of suburbanisation not only residential function but also labour function is strengthened.**

**KEY WORDS:** cities, labour commuting, commuting flows, commuting hinterland

### **1. INTRODUCTION**

Labour commuting is a significant component of spatial mobility of population. It is conditioned by an uneven spatial distribution of economically active population on one hand, and of labour opportunities on the other. It is a significant regional process, which plays a significant part in forming of spatial relations in a settlement system, and which is very intensive in the Czech Republic. For regional sciences this process is extremely valuable since it has an unambiguous meaning (one starting and one target point for each flow), relatively high portion of the population takes part in it, and during last decades it is relatively well and in detail statistically registered.

Labour commuting is generally understood as the movement of the population to labour, which crosses an administrative boundary of a place of permanent residence. Studies concerned with the labour commuting in the Czech Republic were until the beginning of the 1960s based entirely on the questionnaire surveys, which were carried out by regional

planning institutions, e. g. B. Šilhan (1947), J. Mrkos (1948) or M. Macka (1962). Labour commuting data were surveyed for the first time in 1961 as a part of the population census. Since that year the labour commuting data are regular part of censuses and are widely used in regional works concerned with the core-hinterland relationship. Their main task is particularly a delimitation of catchment areas of commuting centres and an intensity of relation between centre and its hinterland. More complex studies take into account also for instance a typology of centres, their hierarchy or position in a settlement system. The most valuable works deal with the whole area of the republic, e. g. M. Macka (1969), M. Hampl, J. Ježek, K. Kühnl (1983), S. Řehák (1987), J. Müller (1994), M. Hampl (2004 and 2005) or V. Polášek (2004).

This contribution has somewhat different aim, partly due to limited space. It is aimed at the intensity changes and spatial distribution of labour commuting in the largest Czech one-core agglomerations after 1989. The changes in the core-hinterland relations are studied in the Prague, Brno and Plzeň agglomerations with regard to an increasing importance of their cores.

## **2. CHANGES IN LABOUR COMMUTING IN THE CZECH REPUBLIC IN 1991–2001**

The 1991 and 2001 censuses data on the numbers of labour commuters are not entirely comparable. Apart from methodical changes regarding persons<sup>1</sup> for which the data were collected, the number of commuters is influenced also by the changes in the organization of the settlement structure. We mean both the level of integration or independence of spatial units into municipalities and the changes of district or region delimitation. In 1991 there were 5 768 municipalities by the census date and in 2001 there were 6 258 of them. Integrations and disintegrations cause that flow between particular spatial units is or is not included into flows outside a municipality.

In 2001 1 727 thousand persons were commuting outside a municipality, it is by 30 thousand less than in 1991. If we exclude from 2001 origin trips the cases of “new-born” origin trips as a mere consequence of municipality disintegration (in 1991 these trips took part within one municipality), the number would drop by 27 thousand, which would make up 57 thousand of commuters as compared to the preceding census.

Considering the lower number of employed in 2001 (there were 486,9 thousand unemployed, 10 years earlier only 122,8 thousand) the portion of labour commuters increased from 33,2% to 36,5%. In the 1990s there was a significant increase of destination trips from longer distances. In 1991 the intra-district commuting made up 69,1% of the commuting total, commuting to other districts of a region 19,5%, commuting to other regions 10,6%, and commuting abroad (including Slovakia) 0,8%. Relative figures for 2001<sup>2</sup> were

<sup>1</sup> In 2001 census foreigners with long term stay are included in the total population (in accord with international recommendation). In 1991 census women on so called further maternity leave (until 3 years of a child's age) are included to the economically active population, as well as persons drawing parental benefit, if their employment lasted; in 2001 only women on maternity leave lasting 28 or 37 weeks. Others (women on further maternity leave and persons drawing parental benefit were considered in 2001 as economically non-active.

<sup>2</sup> In administrative boundaries valid in 1991

as follows: 61,2 %, 20,7 %, 16,6 %, and 1,5 %. There was a decrease of commuters from the place of permanent residence to municipalities in the same district, on the contrary there was an increase of the portion of commuters to other districts of the region, but mainly to municipalities in other regions. Increased labour movements across regional borders were recorded in all "old" regions, there are however significant differences. While the Central Bohemia region experienced an increase by more than three fourths, former North Moravia region had the same number of commuters in both years (only by 0,1 % higher). An important factor was how regions succeeded in the economy transformation process (increase/decrease of labour opportunities) and geographical location, quality of transport connections to other regions (possibility to commute to other regions, to become a commuting centre respectively). The highest relative increase was recorded in the commuting abroad, which almost doubled, which is a consequence of political changes connected with the fall of the iron curtain. Absolute figures for commuting abroad reach, however, only 25 thousand (almost all scholars consider this number as underrated).

### 3. Changes in labour commuting to Prague, Brno and Plzeň

The numbers of commuters to Prague, Brno and Plzeň in 1991 and 2001 are given in the table 1. For the sake of comparability the commuters from Slovakia are not taken into account in 1991. As the table shows the highest increase in commuting in the 1990s was recorded in Prague. In Brno it was almost 10 % and in Plzeň it did not exceed 1 %.

Tab. 1: Labour commuting to Prague, Brno and Plzeň in 1991 and 2001

City	Number of labour commuters		index 2001/1991
	1991	2001	
<b>Prague</b>	105 006	163 108	<b>155,3</b>
<b>Brno</b>	59 419	65 127	<b>109,6</b>
<b>Plzeň</b>	27 153	27 362	<b>100,8</b>

Source: Sčítání lidu, domů a bytů (SLDB) 1991. Dojíždka a vyjíždka do zaměstnání a škol. Federální statistický úřad (FSÚ), 1992. SLDB 2001. Dojíždka do zaměstnání a škol. Český statistický úřad (ČSÚ), 2003.

The number of labour commuters increased in 2001 as compared to 1991 in all regional capitals. The exception was Ostrava, Karlovy Vary and Zlín. The largest decrease was experienced in Ostrava, where in 10 years the number of commuters decreased by 14 thousand persons from 59 358 to 45 359. Apart from Prague, high increase of commuters was recorded also in the regional capitals of Liberec, Jihlava, České Budějovice and Olomouc. Out of other cities the highest increase was recorded in Mladá Boleslav (in accord with increased automobile production), where the number of commuters more than doubled. Mladá Boleslav belongs to the cities with more than 20 thousand commuters

in 2001. Apart from it and the three analysed cities only Ostrava, Oloumouc and České Budějovice belong to that category.

The increase of commuting to selected agglomerations is confirmed by three following tables. However, Prague differs from Brno and Plzeň in the fact that the slight increase was recorded even in the case of the so called “country” districts (the Praha-východ and Praha-západ districts). The increase of commuting from other districts of the Central Bohemia region is high as well in the case of Prague (by 72,6 %); corresponding figures for Brno and Plzeň do not exceed 20 %. There is an interesting fact that the development of commuting to Brno and Plzeň according to analysed areas (neighbouring districts, other districts of the region and other regions of the Czech Republic) is very similar in the 1990s.

Tab. 2: Regional structure of labour commuting to Prague in 1991 and 2001

year	Number of labour commuters		
	from Praha-východ and Praha-západ districts	From other districts of the Central Bohemia region	From other regions of the CR
<b>1991</b>	36 951	33 469	34 586
<b>2001</b>	38 168	57 766	67 174
<b>index 2001/1991</b>	<b>103,3</b>	<b>172,6</b>	<b>194,2</b>

Source: SLDB 1991. Dojíždka a vyjíždka do zaměstnání a škol. Hlavní město Praha. FSÚ, 1992. SLDB 2001. Dojíždka do zaměstnání a škol. Hlavní město Praha. ČSÚ, 2003.

Tab. 3: Regional structure of labour commuting to Brno in 1991 and 2001

year	Number of labour commuters		
	from Brno-venkov district	From other districts of the South Moravia region	From other regions of the CR
<b>1991</b>	31 603	19 358	8 278
<b>2001</b>	29 213	22 614	13 300
<b>index 2001/1991</b>	<b>92,4</b>	<b>116,8</b>	<b>160,7</b>

Source: SLDB 1991. Dojíždka a vyjíždka do zaměstnání a škol. Okres Brno-město. FSÚ, 1992. SLDB 2001. Dojíždka do zaměstnání a škol. Jihomoravský kraj. ČSÚ, 2003.

Tab. 4: Regional structure of labour commuting to Plzeň in 1991 and 2001

year	Number of labour commuters		
	from Plzeň-jih and Plzeň-sever districts	Form other districts of the Plzeňský region	From other regions of the CR
<b>1991</b>	21 635	3 886	1 632
<b>2001</b>	20 270	4 419	2 673
<b>index 2001/1991</b>	<b>93,7</b>	<b>113,7</b>	<b>163,8</b>

Source: SLDB 1991. Dojíždka a vyjíždka do zaměstnání a škol. Okres Plzeň-město. FSÚ, 1992. SLDB 2001. Dojíždka do zaměstnání a škol. Plzeňský kraj. ČSÚ, 2003.

Changes in commuting to Prague, Brno and Plzeň are assessed not only by intensity but also by importance of commuting flows from individual municipalities to the agglomerations. The intensity of a flow is given by the number of commuters. The following tables give 10 highest commuting flows both in 1991 and 2001 for all three cities. A special attention is paid to flows with more than 500 commuters and to so-called significant flows. A significant flow is considered to represent at least 10 % portion commuting to Prague etc. out of the total number of the economically active in a municipality.

### 3.1. Commuting to Prague

The capital city of Prague is an important source of labour force as the largest city in the Czech Republic, but at the same time the largest centre of labour opportunities. Prague as the capital, centre of social and cultural life with high concentration of educational and health institutions together with other specific condition for activities in tertiary sphere of the economy offers a large number of labour opportunities not only for its inhabitants but also for inhabitants from the nearest hinterland, to lesser extent for inhabitants from the rest of the republic. The number of commuters from other regions of the Czech Republic increased in 1991 to 2001 by more than 30 thousand, which is not a negligible figure.

High intercensal increase of labour commuters to Prague meant the increase of their portion in occupied labour positions during ten years from 14,5 % to 22,5 %. If we took into account commuting from abroad (the Ministry of labour and social affairs of the Czech Republic claimed by the end of 2000 that the number of working foreigners in Prague reached 49 960 persons at that time) it is obvious that at least each fourth person employed in Prague had a permanent residence outside Prague by the 2001 census.

The increase of commuters to Prague in the 1990s was reflected in most cases by strengthened commuting flows. In 1991 thirty six commuting municipal flows headed for Prague with more than 500 commuters, out of which in 9 cases this figure exceeded 1 000 persons. The largest numbers commuted to Prague from Kladno (4,2 thousand). Slump in some industrial branches, mainly metallurgy, was the main cause of the decrease of labour positions in this district and meant the increase in commuting to Prague. By the 2001

census more than 8,3 thousand persons commuted from the city of Kladno to Prague and this flow became the most important in the Czech Republic (the commuting flow from Havířov to Ostrava dropped to the second position). The number of commuters to Prague from the Kladno district increase from 8,4 to 15,6 thousand persons, which was in 2001 only by little less than commuting from the Praha-západ (19,8 thousand) and Praha-východ (18,3 thousand) districts.

Tab. 5: Ten largest commuting flows to Prague in 1991 and 2001

Commuters in 1991			Commuters in 2001		
Rank	Municipality	Number	Rank	Municipality	Number
1.	Kladno	4 213	1.	Kladno	8 345
2.	Říčany	2 220	2.	Brandýs n. L. - St. Boleslav	2 079
3.	Brandýs n. L. - St. Boleslav	2 074	3.	Říčany	2 079
4.	Roztoky	1 585	4.	Neratovice	1 956
5.	Černošice	1 398	5.	Brno	1 925
6.	Úvaly	1 375	6.	Ostrava	1 656
7.	Hostivice	1 222	7.	Beroun	1 597
8.	Čelákovice	1 158	8.	Slaný	1 555
9.	Kralupy nad Vltavou	1 044	9.	Příbram	1 519
10.	Neratovice	991	10.	Plzeň	1 502

Source: SLDB 1991. Dojíždka a vyjíždka do zaměstnání a škol. Hlavní město Praha. FSÚ, 1992. Dojíždka do zaměstnání a škol. Hlavní město Praha. ČSÚ, 2003 SLDB 2001.

The number of commuting flows to Prague with more than 500 commuters increased from 36 to 57 (in 22 cases they represented more than 1 000 commuters). Only four flows to Prague weakened during the decade, from Říčany, Roztoky, Černošice and Úvaly. In all cases they were municipalities in the immediate hinterland of the capital, where the labour function was significantly strengthened after 1989. The creation of new labour positions was mostly a result of employers with foreign capital. Among ten largest commuting flows to Prague there were in 2001 three flows from other regions - Brno (an increase from 820 to 1925 commuters), Ostrava (from 715 to 1656) and Plzeň (from 8521 to 1502). These are the largest cities of the Czech Republic. More than 1 thousand commuters to Prague were recorded also in Pardubice and Hradec Králové.

A crucial factor for delimitation of commuting regions or commuting hinterland is typically the intensity of labour commuting. As municipalities closely connected to a regional core are often considered those from at least one tenth of the economically active population (or working population) living in a municipality commutes to a regional core. This criterion of significant flows was used in this contribution as well for a delimitation of commuting hinterland of the Czech agglomeration. The hinterland of Prague (Brno and Plzeň respectively) was divided into four zones according to the intensity of labour commuting. The first zone of Prague's hinterland is formed by the municipalities from which

more than 50% of the employed commuted to Prague, the second zone municipalities with this portion between 33,4–44,9%, the third zone the municipalities between 20–33,3% and the fourth zone the municipalities between 10–19,9%.

In 1991 the ten per cent criterion was fulfilled by 322 municipalities, ten years later it was already 565 municipalities. Commuting hinterland of Prague in 2001 extends to all districts of the Central Bohemia region. A part of hinterland is the whole area of the Praha-východ and Praha-západ districts. Almost the whole Kladno district (82 out of 100 municipalities belongs to the Prague's hinterland and the Beroun, Mělník and Kolín districts have more than 50% of municipalities belonging to the Prague's hinterland. On the contrary the least municipalities belonging to Prague's hinterland are in the Mladá Boleslav district (10 municipalities).

Tab. 6: Commuting hinterland of Prague in 2001

Municipalities where % of commuters out of employed is	Number of municipalities	Number of commuters to Prague	Employed	Average portion of commuters to Prague out of employed (%)
50,0 and more (zone 1)	65	15 955	28 625	55,7
33,4 - 49,9 (zone 2)	121	21 229	52 411	40,5
20,0 - 33,3 (zone 3)	128	27 318	108 441	25,2
10,0 - 19,9 (zone 4)	251	17 043	119 102	14,3
<b>Total</b>	<b>565</b>	<b>81 545</b>	<b>308 579</b>	<b>26,4</b>

Source: SLDB 2001. Dojíždka do zaměstnání a škol - Středočeský kraj. ČSÚ Praha, 2004.

Eighty-one and half thousand persons commuted to Prague from its hinterland, which is almost exact half of all commuters to Prague. The number of commuters from the first zone increased only slightly, but the importance of this zone for the total commuting during decade significantly decreased, from 15% to 9,8%. Absolute increase of commuters but relative decrease is registered also in the second zone of commuting hinterland. Only in the third and mainly in the fourth zone experienced both absolute and relative increase of the portion in the total commuting to Prague. In the fourth zone the number of commuters increased almost by 85% (see Tab. 7).

Tab. 7: Changes in commuting to Prague in 1991–2001 according to the zones of the commuting hinterland in 2001

Zones	Number of commuters of Prague in 1991	Portion of zones in commuters to Prague in 1991 (%)	Number of commuters to Prague in 2001	Portion of zones in commuters to Prague in 2001 (%)	Index 2001/1991
Zone 1	15 747	15,0	15 955	9,8	101,3
Zone 2	19 795	18,9	21 229	13,0	107,2
Zone 3	16 965	16,2	27 318	16,7	161,0
Zone 4	9 231	8,8	17 043	10,4	184,6
<b>Total</b>	<b>61 738</b>	<b>58,8</b>	<b>81 545</b>	<b>50,0</b>	<b>132,1</b>

Source: Sčítání lidu, domů a bytů k 3. 3. 1991. Vyjíždka a dojíždka do zaměstnání, škol a učení – Středočeský kraj. KSS ČSÚ Praha, 1993; Sčítání lidu, domů a bytů k 1. 3. 2001. Dojíždka do zaměstnání a škol – Středočeský kraj. ČSÚ Praha, 2004.

### 3.2 Brno

The influence of labour commuting on the situation at the labour market in Brno was dealt with in detail by T. Krejčí and V. Toušek (2004). The numbers of commuters included also foreign employees registered by the Labour Office Brno-město. Thus, the number of commuters increased in 2001 by more than 12 thousand as compared to 1991.

Tab. 8: The strongest municipal labour commuting flows to Brno in 1991 and 2001

Commuters in 1991			Commuters in 2001		
Rank	Municipality	Number	Rank	Municipality	Number
1.	Šlapanice	2 341	1.	Šlapanice	1 876
2.	Kuřim	1 272	2.	Kuřim	1 462
3.	Rosice*	1 031	3.	Blansko	1 033
4.	Modřice	928	4.	Vyškov	982
5.	Tišnov	878	5.	Tišnov	968
6.	Rajhrad	811	6.	Modřice	890
7.	Střelice	769	7.	Rosice	783
8.	Mokrá-Horákov	697	8.	Ivančice	746
9.	Vyškov	672	9.	Bilovice nad Svitavou	718
10.	Ořechov	651	10.	Slavkov u Brna	711

\* Rosice including Zastávka, in 2001 from Rosice and Zastávka commuted to Brno 1036 persons

Source: SLDB 1991. Dojíždka a vyjíždka do zaměstnání a škol. Okres Brno-město. FSÚ, 1992. SLDB 2001. Dojíždka do zaměstnání a škol. Jihomoravský kraj. ČSÚ, 2003.

Out of 10 largest commuting flows to Brno in 1991 in five cases there was a decrease of their importance given by the lower number of commuters. These were the flows from



the municipalities in the immediate hinterland of Brno: Šlapanice, Modřice, Rajhrad, Střelice and Mokrý-Horákov (see the preceding table). In the case of Modřice even greater importance was recorded with an inverse commuting flow. Eight hundred and thirty persons commuted to Brno, while from Brno to Modřice it was 1 314 persons. It is obvious that in present (after completion of the Modřice industrial zone) this flow is even more important. The increase of commuters from Kuřim to Brno was significantly influenced by intensive housing development in Kuřim. However, Tyco Electronics Czech plant was built on the "green field" in Kuřim, which is presently the largest industrial employer in the South Moravia region, that is why the labour commuting from Brno to Kuřim increased as well. The Brno labour market is significantly related to labour markets in nearby Modřice and Kuřim.

During 1991–2001 the labour function of the South Moravian district town considerably weakened. This weakening was reflected in the increase of labour commuting from these towns to Brno. The increase of commuters was the most important in the case of Blansko and Vyškov, where it was more than 300 persons. In 1991 three hundred and twenty seven persons commuted to Brno from Adamov, in 2001 it was already 549 persons. It was caused by the significant slump in industrial production in this town in the 1990s.

The list of municipalities from which at least one tenth of employed local population commuted to Brno was considerably extended in 2001 as compared to 1991 (from 252 to 339 municipalities). Presently the commuting hinterland of Brno reaches not only all districts of the South Moravia region but also to the districts of Třebíč (12 municipalities) and Žďár nad Sázavou (27 municipalities), which are part of the Vysočina region. The most municipalities of hinterland is in the Brno-venkov district (136; from this district only Zálesná Zhoř is not a part of Brno commuting hinterland), followed by the Vyškov (50), Blansko (42), Břeclav (35) and Znojmo (32) districts. The district with the weakest commuting link to Brno is Hodonín, from which only 5 municipalities were a part of Brno commuting hinterland.

By reorganization of spatial administration by January 1<sup>st</sup>, 2005 twenty five municipalities of the Vysočina region joined the South Moravia region. Out of these municipalities 24 were originally a part of the Žďár nad Sázavou district and one a part of the Třebíč district. All these municipalities were attached to the Brno-venkov district. Nineteen of these municipalities were in 2001 a part of Brno commuting hinterland (out of which 5 belonged to the third zone). This fact confirms the correctness of the change of regional affiliation in favour of the South Moravia region for these are unequivocally a part of Brno labour region.

Delimitation of the Brno commuting hinterland and importance of its zones is presented in the tables 9 and 10. Unlike Prague the Brno zones 1 and 2 experienced in 1991–2001 decrease in the number of commuters, mainly thanks to newly created labour opportunities in a number of municipalities in both zones. This decrease caused that the number of commuters to Brno from its whole hinterland decrease during ten years by more than 1 thousand persons (Prague experienced increase by almost 20 thousand).

Tab. 9: Commuting hinterland of Brno in 2001

Municipalities where % of commuters out of employed is	Number of municipalities	Number of commuters to Brno	Employed	Average portion of commuters to Brno out of employed (%)
50,0 and more (zone 1)	43	11 883	20 573	57,8
33,4 - 49,9 (zone 2)	68	15 055	35 631	42,3
20,0 - 33,3 (zone 3)	92	11 261	43 513	25,9
10,0 - 19,9 (zone 4)	136	7 134	54 928	13,0
<b>Total</b>	<b>339</b>	<b>45 233</b>	<b>154 645</b>	<b>29,3</b>

Source: Sčítání lidu, domů a bytů k 1. 3. 2001. Dojížd'ka do zaměstnání a škol - Jihomoravský kraj. ČSÚ Praha, 2004.

Tab. 10: Changes in commuting to Brno in 1991-2001 according to the zones of the commuting hinterland in 2001

zones	Number of commuters of Brno in 1991	Portion of zones in commuters to Brno in 1991 (%)	Number of commuters to Brno in 2001	Portion of zones in commuters to Brno in 2001 (%)	Index 2001/1991
Zone 1	13 538	21,9	11 883	16,1	87,8
Zone 2	16 197	26,2	15 055	20,3	92,9
Zone 3	11 101	18,0	11 261	15,2	101,4
Zone 4	5 588	9,0	7 134	9,6	127,7
<b>Total</b>	<b>46 424</b>	<b>75,1</b>	<b>45 333</b>	<b>61,3</b>	<b>97,6</b>

Source: Sčítání lidu, domů a bytů k 3. 3. 1991. Vyjížd'ka a dojížd'ka do zaměstnání, škol a učení - Brno-město. KSS ČSÚ Brno, 1993; Sčítání lidu, domů a bytů k 1. 3. 2001. Dojížd'ka do zaměstnání a škol - Jihomoravský kraj. ČSÚ Praha, 2004.

### 3.3 Plzeň

In "Top 10" municipalities according to the number of commuters to Plzeň in 2001 there are 9 municipalities, which were in "Top 10" already in 1991. The only change was substitution of Líně by Horní Bříza. As evident from the table 11, the largest commuting flows mostly weakened during the decade, the exception being Dobřany, Přeštice and mainly Rokycany. In this district town the number of labour commuters to Plzeň increased from 705 to 922.

Tab. 11: The ten strongest municipal labour commuting flows to Plzeň in 1991 and 2001

Commuters in 1991			Commuters in 2001		
Rank	Municipality	Number	Rank	Municipality	number
1.	Třemošná	1 221	1.	Třemošná	1 114
2.	Starý Plzenec	1 067	2.	Starý Plzenec	941
3.	Nýřany	943	3.	Rokycany	922
4.	Dobřany	893	4.	Dobřany	907
5.	Vejprnice	788	5.	Nýřany	884
6.	Zruč-Senec	742	6.	Horní Bříza	714
7.	Rokycany	705	7.	Preštice	686
8.	Štáhlavy	637	8.	Vejprnice	638
9.	Preštice	633	9.	Zruč-Senec	588
10.	Lině	609	10.	Štáhlavy	533

Source: SLDB 1991. Dojíždka a vyjíždka do zaměstnání a škol. Okres Plzeň-město. FSÚ, 1992. SLDB 2001. Dojíždka do zaměstnání a škol. Plzeňský kraj. ČSÚ, 2003.

During 1991–2001 the number of municipalities forming the Plzeň hinterland increased from 166 to 198. Higher number of municipalities in the commuting hinterland of Plzeň was, as in the case of Brno, accompanied by weakening of commuting intensities in the immediate hinterland. The importance of individual zones of Plzeň commuting hinterland in 2001 is presented in the table 12. While in 1991 there were 33 municipalities in the first zone, in 2001 there were only 28 of them. In both cases they were located in the Plzeň-sever and Plzeň-jih districts. Both these districts had also the largest portion of all municipalities belonging to the Plzeň commuting hinterland. Out of 198 municipalities of the Plzeň commuting hinterland there were 83 in the Plzeň-jih district (83,8% of the municipalities of the district) and the same number of 83 municipalities in the Plzeň-sever districts (82,2% of the municipalities of the district). Higher number of commuting flows (belonging to the remaining zones of the hinterland) was recorded from the Rokycany district (23 flows); remaining districts did not play important part in the commuting to Plzeň (Klatovy 5 municipalities, Tachov and Domažlice 0).

Tab. 12: Commuting hinterland of Plzeň in 2001

Municipalities where % of commuters out of employed is	Number of municipalities	Number of commuters to Plzeň	Employed	Average portion of commuters to Plzeň out of employed (%)
50,0 and more (zone 1)	28	4 777	8 698	54,9
33,4 - 49,9 (zone 2)	38	7 022	16 668	42,1
20,0 - 33,3 (zone 3)	53	5 941	23 470	25,3
10,0 - 19,9 (zone 4)	79	3 579	25 179	14,2
<b>Total</b>	<b>198</b>	<b>21 319</b>	<b>74 015</b>	<b>28,8</b>

Source: Sčítání lidu, domů a bytů k 1. 3. 2001. Dojíždka do zaměstnání a škol - Plzeňský kraj. ČSÚ Praha, 2004.

Unlike Brno in the case of Plzeň the decrease of the number of commuters was recorded not only in the 1<sup>st</sup> and 2<sup>nd</sup> zones but also in the 3<sup>rd</sup> zone. Whole Plzeň commuting hinterland experienced a decrease, representing almost 1 thousand commuters (see the table 13). The portion of municipalities located in the commuting hinterland in the total labour commuting reached in 2001 more than 70 % which was considerably more than in the case of Brno (61,3 %) and Prague (50 %).

Tab. 13: Changes in commuting to Plzeň in 1991–2001 according to the zones of the commuting hinterland in 2001

zones	Number of commuters of Plzeň in 1991	Portion of zones in commuters to Plzeň in 1991 (%)	Number of commuters to Plzeň in 2001	Portion of zones in commuters to Plzeň in 2001 (%)	Index 2001/1991
Zone 1	5 437	19,7	4 777	16,0	87,9
Zone 2	7 521	27,3	7 022	23,5	93,4
Zone 3	5 969	21,6	5 941	19,9	99,5
Zone 4	3 301	12,0	3 579	12,0	108,4
<b>Total</b>	<b>22 228</b>	<b>80,6</b>	<b>21 319</b>	<b>71,4</b>	<b>95,9</b>

Source: Sčítání lidu, domů a bytů k 3. 3. 1991. Vyjíždka a dojíždka do zaměstnání, škol a učení – Plzeň-město. KSS ČSÚ Plzeň, 1993; Sčítání lidu, domů a bytů k 1. 3. 2001. Dojíždka do zaměstnání a škol – Plzeňský kraj. ČSÚ Praha, 2004

#### 4. CONCLUSION

The number of commuting flows with more than 500 commuters increased during 1991 and 2001 only in the case of Prague (from 36 to 57), Brno and Plzeň experienced a slight decrease.

Tab. 14: Municipal commuting flows with more than 500 labour commuters to Prague, Brno and Plzeň in 1991 and 2001

City	1991		2001	
	Total	Out of which 1 000 and more	Total	Out of which 1 000 and more
Prague	36	9	57	22
Brno	19	2	18	3
Plzeň	13	2	10	1

Source: SLDB 1991. ČSÚ Praha, 1993; SLDB 2001. ČSÚ Praha, 2004.

A common feature of all three cities is an extension of their commuting hinterland which reflects an increase of commuting from longer distances. The area of commuting hin-

terland and the number of municipalities is related to the size of the centre. In the case of Prague it is almost 5 thousand km<sup>2</sup>, in the case of Brno 3,1 thousand km<sup>2</sup>, and in the case of Plzeň almost 2,3 thousand km<sup>2</sup>. The same hierarchy is recorded in the number of labour commuters from the hinterland to the centre. The three cities however do not differ much from one another in the portion of commuters from the hinterland to the centre in the employed persons living in the commuting hinterland (Prague 26,4 %, Brno, 29,3 %, and Plzeň 28,8 %).

Tab. 15: Commuting hinterland in 2001

	Number of municipalities	Area (km <sup>2</sup> )	Population	Number of employed	Number of commuters to core
Prague	565	4 933,5	634 445	308 579	81 545
Brno	339	3 077,4	346 251	154 600	45 328
Plzeň	198	2 274,6	153 283	74 015	21 319

Source: SLDB 2001. ČSÚ Praha, 2004; own calculations.

In the 1990s there was not only an increase in persons commuting to labour to the Czech cities, but also there was a significant increase of their portion in occupied labour positions in these cities. The only exception out of cities with more than 100 thousand inhabitants is Ostrava, where both indexes decreased, mainly thanks to former one-sided orientation to mining, metallurgy and heavy machinery (branches experienced during the decade deep slump) – M. Bašťová, et al. (2005). The total increase of commuters to Prague, Brno and Plzeň was caused not only by commuting from longer distances but also from abroad.

The decrease (with the exception of Prague) of the number of persons commuting to the Czech cities from the immediate surroundings is important information. The immediate surroundings are formed mainly by the first and partly even by the second zone of delimited commuting hinterlands. Municipalities belonging to both zones strengthened in the 1990s not only their housing but also labour function. We can talk about suburbanisation tendencies influencing the development of the settlement structure of the Czech Republic. We can assume that in 5 years the intensity of suburbanisation process is going to weaken. The housing development will be transferred from the surroundings back to the cadastral area of large cities. If the concentration of new labour positions will be transferred as well we cannot say. We can however assume that new labour positions will be created in the tertiary sector and it will be concentrated (but for logistic companies) to the centres of the cities. This fact will probably lead to further increase of the labour commuting intensity both to Prague, Brno and Plzeň. This process could however be influenced significantly by new trends at the labour market, mainly by “home” labour, which will gain greater importance thanks to quickly developing information and communication technologies. The consequence in this case would be a decrease in labour commuting intensity on the contrary.

**SOUHRN****Vliv dojížd'ky za prací na zázemí českých velkoměst: současné trendy**

Obsah článku je zaměřen na analýzu změn dojížd'ky za prací do Prahy, Brna a Plzně během 90. let minulého století. Autor za pomoci dat z censů 1991 a 2001 vymezuje dojížd'ková zázemí českých velkoměst a prokazuje nárůst počtu obecních dojížd'kových proudů do nich z větších vzdáleností, což souvisí s oslabením pracovního významu řady mikroregionálních středisek včetně okresních měst. V hodnoceném období tak došlo k výraznému rozšíření dojížd'kového zázemí velkoměst, ale za současného snížení intenzity dojížd'ky za prací z obcí ležících v nejbližším okolí Prahy, Brna a Plzně. V této části zázemí uvedených měst byla vytvořena řada nových pracovních míst, které byly z velké části obsazeny místním obyvatelstvem, osobami, které ještě na počátku 90. let dojížděly za prací do velkoměst. V souvislosti s probíhajícím suburbanizačním procesem je tímto posilovaná nejen obytná funkce obcí ležících v nejbližším okolí analyzovaných měst, ale také funkce pracovní.

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