

DIFFERENTIAL SUBURBAN DEVELOPMENT IN PRAGUE URBAN REGION

Martin Ouředníček¹

ABSTRACT. Numerous authors have asserted that suburbanisation contributes to many problems in both suburban and inner city localities. Research of suburban development demonstrates variations in spatial patterns, the intensity of spatial processes, and the social and economic status of new suburbanites. While some forms of suburban development could cause serious problems throughout the urban region, other forms could be perceived as processes improving the quality of life in suburbia. This paper seeks to investigate different types of suburban development in the Prague urban region over the last 15 years of transformation. The focus of my interest is residential suburbanisation, which is one of the most significant spatial processes today in the settlement systems of post-socialist countries. The theoretical part of the contribution deals with the differentiation of spatial processes changing the suburban zone. Here I discuss the concepts of several processes of suburban development and their distinctive impact on both suburban and inner city localities. The empirical part of the contribution is based on an analysis of migration flows in the various localities of the Prague urban region in the period 1995-2003. I attempt to describe the magnitude and spatial patterns of suburbanisation and the composition of migrants to suburbia. The paper concludes with a discussion about the possible future development of suburbanisation in the Prague urban region.

Key words: Suburban development, suburbanisation, migration, post-socialist city

INTRODUCTION

The vast majority of publications dealing with the impact of suburbanisation consider this process to be a significant danger to the living environment of urban regions. Numerous authors have asserted that suburbanisation contributes to many problems in both suburban and inner city localities (e.g. Savage and Warde, 1993; TCRP 2002; Jackson, 2002). This critique is pronounced not only in western literature, which can draw from long-term experience with suburban development, but also in the post-socialist countries, where urban scholars describe only the 10-year impact of suburban growth (Pucher, 1999; Wießner, 2000; Tammaru, 2001; Timár and Váradi, 2001; Sýkora, 2002; Mäding, 2003). Research of suburban development in the Czech Republic (Sýkora, 2002; Ouředníček, 2003; Sýkora and Ouředníček, 2005) demonstrates variations in spatial patterns, the intensity of spatial processes, and the social and economic status of new suburbanites. While some forms of suburban development can indeed cause serious problems throughout the urban region, other forms could be perceived as processes improving the quality of life in suburbia.

My intention is to differentiate between the distinctive processes that form suburban zones of urban regions and to identify features and processes that affect the (sub)urban environment. The main aim of this paper is to describe the initial consequences of suburban development and to predict the most probable future impact of suburbanisation on the urban environment.

¹ Martin Ouředníček is assistant professor at Charles University in Prague, Faculty of Science, Department of Social Geography and Regional Development, Albertov 6, 128 43 Prague 2, Czechia, <http://www.natur.cuni.cz>, slamak@natur.cuni.cz, 00420-221951385

The main emphasis is placed on evaluating the effects of *residential suburbanisation* on the social environment of the Prague urban region during the transformation period.

The article consists of a theoretical and an empirical part. First, I try to describe the processes at work within the suburban zones of post-communist cities and to show the impact of each process on the suburban environment. Then the new suburban development of the Prague suburban zone (mainly the districts of Prague-East and Prague-West) is analysed. In the empirical evaluation, I try to describe the magnitude of suburbanisation, the respective spatial patterns, and the composition of suburban migrants by age, education and source destination. These attributes of migration to the hinterland (suburban zone) help us to better identify the impacts of suburbanisation itself and the other processes that form the suburban zone. The main research method used is the analysis of migration flows in the suburban localities of the Prague urban region. I use predominantly data on individual moves in the period 1995-2003, when suburbanisation was fully underway. This data, although collected annually by the Czech Statistical Office, is not usually published and was, therefore, acquired especially for this paper. As an alternative source of in-depth knowledge about new residential patterns I designed field research of selected suburban communities around Prague undergoing intensive suburban development. Part of this research was focused on street-by-street mapping of all new buildings to describe the spatial patterns of new suburban development. Finally, more than 250 maps from 144 suburban communities were collected by social geography students of Charles University in Spring 2004. Several of the results are presented in the Šeberov case study.

PROCESSES FORMING SUBURBAN AREAS

Suburbanisation of post-socialist cities belongs to the most attractive research areas of present-day social geography. Transformation of the hinterlands of big cities has attracted the interest of many scholars in the field of urban studies over the last few years (e.g. Sýkora and Čermák, 1998; Kok and Kovács, 1999; Sýkora 1999; Ott, 2001; Tammaru, 2001; Timár and Váradi, 2001; Brown and Shafft, 2002; Szymanska and Matzak, 2002; Sýkora, 2002; Ouředníček, 2003; 2006; Tammaru *et al.*, 2004; Sýkora and Ouředníček, 2005). The attitude toward the suburbanisation process has differed considerably in these publications, and until now there has been no generally accepted definition of suburbanisation. In the following text I seek to differentiate between the processes of suburban development, focusing especially on residential suburbanisation.

Studies of urbanisation processes use distinctive approaches with respect to the magnitude of the geographic perspective. Settlement geography tends to perceive cities as units in the settlement system or points on a map. Suburbanisation is, therefore, defined as absolute or relative growth of suburban areas (Hall and Hay, 1980; van den Berg *et al.*, 1982; Cheshire and Hay, 1989; Cheshire, 1995). One can then decide whether the settlement system is dominated by *urbanisation*, *suburbanisation*, *deurbanisation* or *reurbanisation*. Through this approach, the whole system of settlement, rather than a particular city or urban region, is examined.

When we have ambitions to explore causes and consequences on the level of individual urban regions or suburban localities, it is essential to differentiate more thoroughly between the distinct processes of suburban development. We can mention *the theory of differential urbanisation* (Geyer and Kontuly, 1993; 1996) as a good approach to distinct spatial processes. The authors of the theory, Herman Geyer and Thomas Kontuly, managed to erode

the most influential paradigm of settlement geography that had existed until that time: *the theory of stages of urban development* (Hall and Hay, 1980; van den Berg *et al.*, 1982). First, in contrast to the theory of stages, they sought to differentiate between migration processes on particular hierarchical levels of national settlement systems. Consequently, they brought about the idea of migration *mainstreams* and *substreams* (which supplement each other and often operate in opposite directions). Geyer and Kontuly suggested that the development of a settlement system could be characterised not simply by a change of subsequent stages, but more likely by the predominance of one kind of urbanisation process, which can temporarily prevail but rather co-exists with other processes. Moreover, the theory of differential urbanisation made a connection between concentration processes (urbanisation) and *productionist* reasons for migration. Deconcentration of the population, on the other hand, results from the growing preference for the *environmental* reasons for migration. With a certain degree of generalisation, Kontuly and Geyer (2003) supposed that poor people tend to migrate to stronger economic centres (supporting urbanisation), while more wealthy people prefer the environmental quality of smaller settlements (supporting counter- or sub-urbanisation).

The empirical verification of this theory was only partially successful (Geyer, 2003; Kontuly and Geyer, 2003) and findings from tested countries differ among one another (TESG, 2003). In my opinion, it is not possible to say that settlement systems develop in cycles or stages. The differential approach to evaluation of urbanisation processes, like the theory of stages, uses predominantly quantitative characteristics of urban development and does not pay much attention to the composition of migration streams, people's motivations and micro-regional impact. Therefore, the theory cannot be used to describe the development of individual agglomerations. On the other hand, the theory's main contribution is an increasingly sensitive differentiation between individual processes that are changing the settlement system. For the purpose of the analysis of individual urban regions this approach can be further developed in the following way: The processes of urban development can operate within the settlement system simultaneously, and the prevalence of one process or another depends mainly on the *structure of society* and the *residential preferences* of particular social groups. When society is rich and the proportion of young, childrearing families is high, there is a high probability of dominance of suburbanisation. On the other hand, when society is poor, even these families prefer the economic attractiveness of big cities at the expense of a lower standard of living. Of course, there are a lot of "obstacles" in the form of intervention from various state and communal housing policies and practices affecting the different spatial patterns of individual cities. In summary, we can say that it is possible to differentiate between urban processes not only on the basis of the distinctive levels of settlement systems, but even on the basis of distinctive social groups (at different stages of their life cycle or with their varying economic status), and that for each social group certain migration behaviour is typical. These facts consequently results in the proportion of particular spatial processes active within communities, urban regions, and the entire settlement system.

The usefulness of having a precise definition of deconcentration processes has already been mentioned by the classics of urban studies Berry and Kasarda (1977, p. 180), who distinguished between the processes of *deconcentration*, *decentralisation* and *suburbanisation*. A more sophisticated elaboration of the distinctions between the deconcentration processes has only been done in the most recent geographic literature, which to a considerably high level inclines to a *purification* of the basic terms (Halfacree, 2001). Tiit Tammaru uses a different meaning of the terms *suburbanisation* and *suburban growth*. Suburban growth for him is a "*change of population in suburban areas,*" ... while

...”*suburbanisation refers to the relatively quicker growth of suburban areas as compared to the central city in urban agglomerations*” (2001, p. 1342). Consequently, *suburban development* (growth or decline) can consist of other centrifugal or even centripetal forces. I have identified seven different forces (processes), which are evaluated in the next chapter.

Other scholars focus on the differences between two deconcentration processes: *suburbanisation* and *counter-urbanisation* (deurbanisation). Urban Lindgren (2003) has defined urbanisation processes on the basis of the source and target destinations of population migration. Tania Fischer (Ford, 1999; Fischer, 2003) has studied the processes that are changing peri-urban areas using several characteristics of migrants and target localities of migration. Among the observed variables, she has incorporated the origin of migrants, their connection to metropolitan areas, the motivation behind migration and the quality of residential development (Ford, 1999, p. 302). Consequently, she has distinguished between *suburbanisation*, *counter-urbanisation*, *population retention* (within suburban areas), and *centripetal migration* (to suburban areas). This means that population growth in a suburban zone can be caused by several concurrent processes with different attributes (connectivity with the core city, origin etc.). Significant growth is generated by centripetal migration. In comparison with suburbanisation, the sources of centripetal migration are rural destinations, and these migration streams support concentration processes rather than deconcentration.

Which processes then transform the suburban areas of big cities? Principally, I agree with Fischer that besides the origin of suburban migrants, we should take into consideration even other attributes of suburban migrants (who are different from suburbanites) and the characteristics of the target destinations. When one looks carefully at the structure of core-to-hinterland migration, we can identify a rich mosaic of people with different *social status* and *migration motivations* moving to various types of housing in suburbia. This fact can be demonstrated using the kinds of suburban processes described below.

Seven processes of suburban development

There are at least five different deconcentration processes that differ considerably in terms of migration motivation, relationship to core city, quality of housing, and impact on source and target localities. In addition to *suburbanisation*, these include: *migration to older housing stock*; *elderly migration to senior citizens' homes*; *migration to recreational houses and cottages*; and *migration to remote places* (counter-urbanisation). There are two other processes with almost the same aspects as suburbanisation in respect of a visible built environment whose actors are movers from areas outside the core city: *tangential* and *long-distance centripetal migration* (urbanisation). All these processes, though not equal in importance, are together changing the suburban area of Prague.

Suburbanisation. Residential suburbanisation is the relocation of the population from the core city to new housing in the suburban zone. When this deconcentration process becomes stronger, it has a dual impact on both the target localities (in suburbia) and source destinations of migration (inner city, housing estates and so on). Suburbanisation influences not only the above stated localities, but also other parts of the urban region (TCRP, 2002; Sýkora and Ouředníček, 2005). For example: increasing transportation between the hinterland and the core causes traffic jams on radial communications in the inner and outer city; new housing is always considerably different from the architecture of the original villages (Figure 8 and 9); and new residents of suburbia have better education, different life styles, and higher economic status than native villagers (Dobriner, 1960; Ouředníček, 2003), and are thus changing the social structure.

Migration to old houses. Shortly after the Velvet Revolution, the Czech state changed its housing policy entirely (Sýkora, 1999). After completion of the last apartment in the communist's Complex Housing Construction programme, young people were left entirely to themselves to arrange for their housing. The decline of housing construction, absence of state support of housing, non-existence of mortgages, and lack of readiness of young couples and families to take care of their housing needs were typical features of the first half of the 1990s. Many young people were grateful for the possibility to reconstruct step-by-step an old house in a place that was reasonably accessible to Prague. Even supposing that moving to old houses in the hinterland is very similar to suburbanisation (e.g. impact for the source destinations), it differs considerably concerning its impact in suburbia. Instead of concentration of suburbanites in new (greenfield) areas of family houses – which is one of the essential features of suburbanisation – there is scattered immigration of couples or families to existed housing stock. This process has a different impact, for example, on the social segregation or architectural quality of suburban communities. Even though this process can be considered marginal, Milovice near Nymburk, for example, where hundreds of flats previously occupied by the Soviet army were reconstructed, belonged in the 1990s to the most rapidly growing communities in the whole of the Czech Republic.

Migration to nursing homes. In Prague's hinterland, there are approximately a dozen communities with homes for seniors. Some of these homes are residences especially designated for the elderly citizens of Prague. While Czech statistics treat the moving of seniors to homes as regular migration, some of the above communities can be easily recognized on the map of immigration rates. For example, the community of Jenštejn, with a large nursing home, has occupied for a long time the leading position among 171 communities of Prague's hinterland in net immigration rate. The mobility of elderly people and the impact of homes on the life of communities are generally low. On the contrary, the number of elderly people leaving Prague will certainly increase, and it is expected that these migration streams will continue at the same level as today or even increase in intensity (compare Warnes, 1994 for London).

Migration to second homes. The multitude of small and less accessible communities around Prague has survived the socialist era only due to the seasonal or weekend inflow of Prague citizens to their second homes: cottages and recreational houses. Some of the second homes were transformed to more or less solid, permanent houses, and many people (especially newly retired seniors) do indeed live there for a substantial part of the year. The transformation of second housing was labelled by Harold Carter as "seasonal suburbanisation" (1995, p. 13), and according to Nyström (1989) it is one step towards permanent settlement. The percentage of transformed second housing is hard to estimate. Still no empirical work has been done either to count these transformed houses or to explore the real use of permanent city apartments owned by "cottagers". It is probable that a part of the former residents of inner city or housing estates lease out their apartments seasonally or assign them to their children. *Seasonal suburbanisation* is without a doubt a theme for more comprehensive comparative research, as this phenomenon is also described in other post-socialist countries (Treivish *et al.*, 2000).

Migration to remote places. A peculiar feature of post-socialist urban development is migration of the poor and unemployed out of the city, especially to more distant villages with subsistence agriculture. This process can be observed in almost all post-socialist European countries, particularly in Eastern Europe and the Balkan Peninsula (Kovács, 2000; Kok, 2000;

Brown and Schafft, 2002) and is considerably different from Western-style *counter-urbanisation*. In the Czech Republic, however, there is no evidence of this kind of migration. The reasons for the absence of this general post-socialist process are numerous. The absence is partially due to the “velvet” social and economic transformation, partially due to persistent rent regulation and the dense welfare network in the Czech Republic. The earlier industrialisation of the Czech lands led to the abolishment of family contacts and loss of the possibility to return to a former village house. Although there is a similarity with migration to old houses, the people who have escaped from the city are likely to have moved to more distant localities and completely severed contact with the core city. This *post-socialist deurbanisation* is unlikely in the Czech Republic even if rent regulation diminishes and social polarisation increases.

Tangential migration. A part of the new residents of newly built suburban localities originate in neighbouring communities. Their migration motivations are quite different from suburban movers, the reasons often being related to family (weddings, divorces etc.). People usually move a short distance from one village to another. It is not exceptional for owners of restituted land to build a new house for themselves or their children. This tangential migration inside the suburban area has again a different impact than suburbanisation.

Long-distance migration. The opposite of tangential migration can be considered long-distance migration from other parts of the country and from abroad. Long-distance migration can be split up into the two categories: migration from small communities to the suburban area of Prague – in fact *urbanisation* (compare with Fisher’s *centripetal migration*), the concentration of people to the centre of a higher degree – and *long-distance suburbanisation*, which covers migration from large cities to Prague’s suburbia (for Lindgren, 2003, p. 403 it is also *urbanisation*). It may be expected that a higher proportion of long distance migrants originate in the largest Czech cities and that the proportion of long-distance suburbanites and foreign migrants will increase over time.

THE DEVELOPMENT OF SUBURBAN MIGRATION IN THE PERIOD 1995-2003

Statistical analysis of migration belongs to the most useful methods for measuring urbanisation processes (Sýkora and Čermák, 1998; Sjöberg and Tammaru, 1999). Nevertheless, the reliability of data is limited by several negative factors. During the 1990s, the responsibility for collecting migration reports was transferred from police offices (approx. 25 offices) to the offices of individual communities and Prague’s boroughs (together approx. 200). Experience with collecting migration data confirms that officers from the communities occasionally cumulate migration reports for several months and even years before sending them off as a bunch to the Czech Statistical Office (CZSO). This fact is obvious from database tables, where zero values are followed by dozens of migrants in subsequent years in several communities.

Furthermore, statistical evidence cannot cover all actual moves to the hinterland because many new residents do not want to register in their new community (compare Tammaru and Sjöberg, 1999 and Sjöberg and Tammaru, 1999 for Estonia). The main reason for this behaviour of new suburbanites is the unpleasant bureaucracy associated with the change of registration of permanent residence and more often with the exhausting problems associated with re-registration of the entrepreneur’s agenda. In some cases, we can recognize statistical migration of only a part of the household (or one partner), while the rest is left registered in the former place of residence. On the other hand, suburban communities try to force new

residents to register permanently to avoid the loss of relatively significant financial support from the state. Funds for community budgets are calculated partly on the basis of the size of the population of the community. The paradox of Czech suburbanisation is the fact that while in western literature and reality there is an out-flow of tax revenues, which is perceived as a significant problem for inner city governments, the situation in the Czech Republic is reversed. Due to statistical imperfections, many new suburbanites are left registered in the city and money out-flow is less than it should be.

The last methodological problem is faulty statistics on foreign migration, which are to a great extent due to poor emigration records. The CZSO records many more people immigrating to the Czech Republic than emigrating from this country. This data is significantly influenced by the different requirements on foreigners in the Czech Republic to register and deregister. While registration for permanent residence in the Czech Republic is required to obtain a job, documents and housing, there is no important factor pushing one to deregister. The net balance of foreign migration is, as a consequence, misrepresented on all hierarchical levels of settlement, and it is even uncertain whether the number of foreigners in the Czech Republic is increasing or decreasing. This inaccuracy was even heightened by CZSO adopting new methodologies in 2001, which had migration statistics now take into account even people with long-term residence (over 90 days). It can be estimated that official statistics fail to record approximately 15-20 percent of migration moves. A good example of this is the sharp change in Prague's net migration between 2001 and 2002 (Figure 1), which reversed solely by the change in methodology. Prague's population is no longer decreasing, but increasing due to "foreign migration". We can say that the suburbanisation process is in terms of statistical numbers generally underestimated as are the underpaid revenues of suburban communities around large cities.

Magnitude of suburbanisation

Among the most often-used characteristics of migration are: net migration balance; number of in-migrants; or crude immigration rate of suburban zones or individual communities (Sýkora and Čermák, 1998; Ott, 2001). In the first part of the analysis I use these characteristics to examine the development of migration over the long term. This observation over a longer period makes it possible to describe the reversal in population growth of Prague in relation to the growth of suburban areas during the transformation period.

The first set of questions that I seek to answer focuses on the size or magnitude of suburbanisation in the Prague urban region. I want to know if suburbanisation is a strong or weak process, if it is increasing or decreasing, and what the proportion of suburbanisation and other processes defined by direction and composition of migration streams is.

The political and societal transformation after the Velvet Revolution changed the conditions for the development of suburban areas and the approach to construction of new housing. Restitution of land, heterogenisation of social stratification with new affluent people, and new possibilities for financing housing were crucial conditions for the start of suburban development in the second half of the 1990s and onwards. A similar development in suburban areas has been described in the neighbouring post-socialist countries of Poland (Szymanska and Matzak, 2002) and Hungary (Timár and Váradi, 2001). When we compare the magnitude of past suburban development in the United States or in Western Europe, the intensity of deconcentration processes in the Czech Republic and even around Prague is relatively low. It is important to state that the growth of communities in Prague's hinterland (the districts of Prague-East and Prague-West) had been interrupted for several decades and that today's

development can be perceived rather as a revival of suburban communities. Even though the number of in-migrants to the suburban zone is relatively small, it is gradually increasing and obviously will continue. More than ten thousand people moved to the two adjacent districts of Prague in 2004, which constitutes an immigration rate of 53 per mille (and a net migration of 32 per mille - Figure 1). This is the highest post-war rate measured at the level of administrative districts. From this point of view, it seems that the suburbanisation process has not stopped, but is in fact increasing.

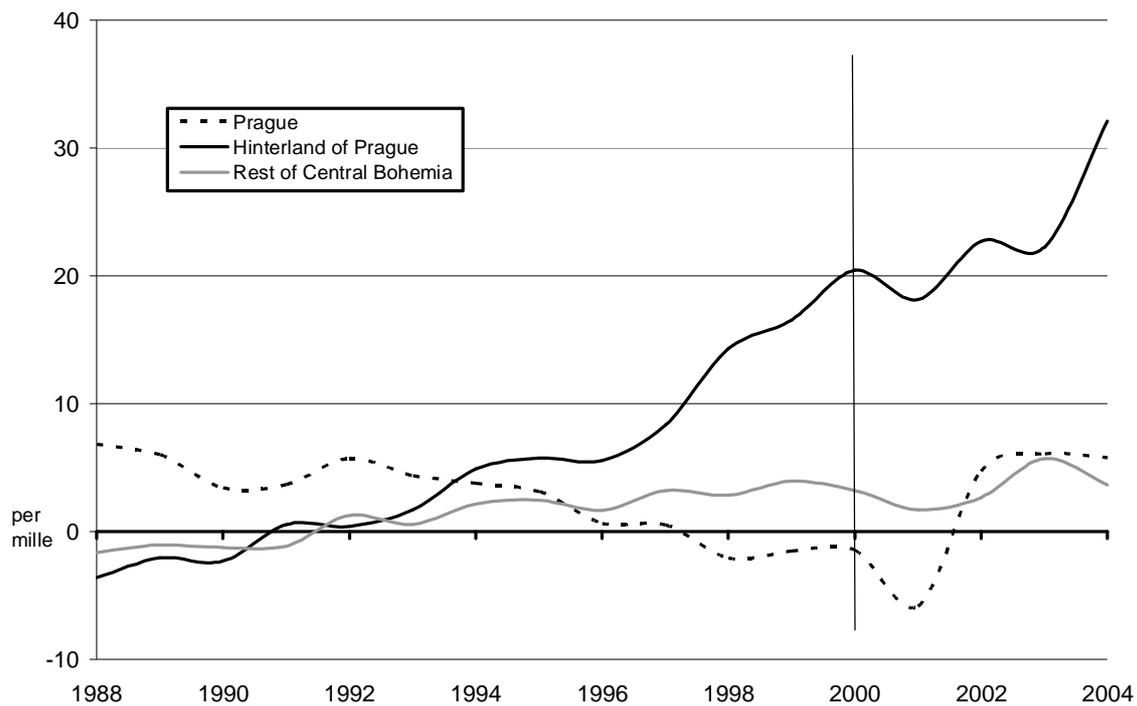


Figure 1 Net migration rate in Prague, Prague-East and Prague-West (hinterland) and the rest of Central Bohemia.

Note: Between 2000 and 2001, a new migration statistics methodology was implemented.
Data: Population movement (1988-2004), Czech Statistical Office.

In line with Fisher's argument outlined above, we cannot consider migration growth or the number of in-migrants as the only indicators of suburbanisation. Figure 2 shows the proportion of selected streams to the hinterland sorted by source destination of in-migrants for the period of 1995-2003, the period of the most intensive suburban deconcentration. Prague's share is 61 per cent and has been stagnating over the last few years (see Table 1). The percentage of in-migration to the hinterland from the core city, from the hinterland itself, and from other communities is relatively stable over time (Ouředníček, 2003) and probably does not vary considerably in other big post-socialist cities (e.g. the same proportion exists for Budapest in Kok and Kovács, 1999). In the observed period, almost 32 thousand migrants to the suburban zone came from Prague.

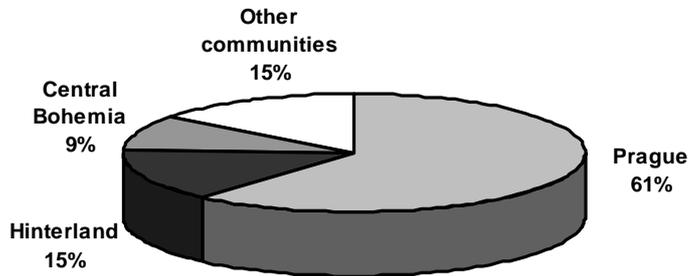


Figure 2 The proportion of in-migration streams to Prague's hinterland (the districts of Prague-East and Prague-West) by community and source destination in 1995-2003.

Data: Czech Statistical Office

In-migration to hinterland	1995		1999		2003		1995-2003	
	abs.	in %	abs.	in %	abs.	in %	abs.	in %
From:								
Prague	2202	54.0	3773	63.5	4536	62.0	31951	61.3
Hinterland	758	18.6	843	14.2	913	12.5	7613	14.6
Central Bohemia	507	12.4	524	8.8	643	8.8	4947	9.5
Other communities	608	14.9	803	13.5	1222	16.7	7606	14.6
Total in-migration	4075	100.0	5943	100.0	7314	100.0	52117	100.0

Table 1 The development of in-migration to Prague's hinterland (the districts of Prague-East and Prague-West) by source destination in 1995-2003.

Data: Czech Statistical Office

Approximately 40 per cent of migrants came from other communities in the Czech Republic. More than half of these in-migrants originated from communities in Central Bohemia (of which almost 24 per cent from the districts of Prague-East and Prague-West in the hinterland) and their migration motivations are mostly connected to family reasons such as weddings or divorces. These migrations even include streams from small villages to nearby larger and better-equipped towns in the suburban zone – *urbanisation of suburbs*. The concentration process within the suburban zone is marked by the slow disappearance of jobs in small villages and the strengthening of the position of smaller towns in Prague's suburban zone. The concentration of investment was the main aim of the unsuccessful communist settlement policy of the 1970s (*settlement system centres*), but the effect became fully evident only after a decrease of the number of jobs in cooperative agricultural farms and the differentiation of land prices during the transformation period.

When we look at the migration gains of the largest suburban communities (towns) with the rapid recent suburban development, we can consider the rather different spatial patterns of the location of housing and commercial development (Sýkora and Ouředníček, 2005). The proportion of tangential migration is significantly lower, and within the suburban zone there is no sign of concentration to more populous towns. The communities with the highest migration gains (Figure 3) have a smaller proportion of migration from nearby villages and on the other hand approximately 70 per cent of new residents from Prague.

While the number of in-migrants from the more distant communities of the Czech Republic has doubled during the observed years, migration from smaller villages within the hinterland (tangential migration) has increased only slowly, and the share of this migration stream has

gradually decreased (see Table 1). Among the in-migrants from more distant communities, only a small percentage of people have moved from large cities (long-distance suburbanisation), and their proportion has decreased either in terms of the total number of in-migrants or in terms of long-distance migration. This result is at variance with my preliminary suggestion that long-distance migration is increasing. This discrepancy could be caused by competition from newly constructed housing within the inner city. For people moving from the larger cities, economic reasons play a decisive role for migration. Singles and yuppies often prefer inner-city housing, which has recently increased considerably in terms of size and form. Beside suburbanisation, it is also urbanisation – concentration to Prague itself or to its suburban zone and the urbanisation of suburban towns – that could be identified as an important substream, with a gradually increasing proportion of moves from the Czech countryside to the suburban zone of the urban region of Prague.

Spatial patterns of suburban development

Detailed observation of individual suburban localities brought about knowledge of the uneven development within Prague's hinterland (Figure 3). The highest intensity of in-migration is concentrated to the south part of suburban zone. These localities are distinguished by natural beauty, with nice forests and hilly terrain, with easy access to the centre using radial communication axes and the D1 highway. The communities with the highest absolute in-flow of new residents in the period 1995-2003 are among the most populous communities in the vicinity of Prague. It is typical for almost all intensively developed communities to have very good connectivity to Prague: 20-30 minutes by train. The north hinterland of Prague has only several scattered localities of suburban development with higher absolute number of in-migrants. These are above all smaller towns and communities with senior citizens' homes. On the other hand, several small communities south of Prague have a considerably high relative rate, but also a significant absolute increase of in-migration. Five communities have even doubled their population during the observed period.

Suburban development has been affecting gradually all communities of the Prague urban region. This fact can be supported by the changing number of growing and declining communities during the transformation period. While at the beginning of the 1990s, only 36 per cent of communities in Prague-East and Prague-West showed a population increase, this figure changed to 91 per cent in 2000 (Ouředníček 2001). The diffusion of suburban residential construction and the in-flow of new suburbanites infill even less accessible communities and recreational localities in the more distant areas of the urban region.

The source destinations of suburban migration are depicted as dots within the administrative area of Prague (see Figure 3). The distribution of source localities shows that they are concentrated to the inner city and larger housing estate areas. A typical sign of this is the outflow from the second generation of housing estates (see the example of Southern Town below), where "empty nesters" leave their parents and a part of them move to the hinterland. Selective suburban migration of younger and wealthier people could lead to slow degradation of the social structure in several inner city neighbourhoods as well as in small, older housing estates with poor housing quality.

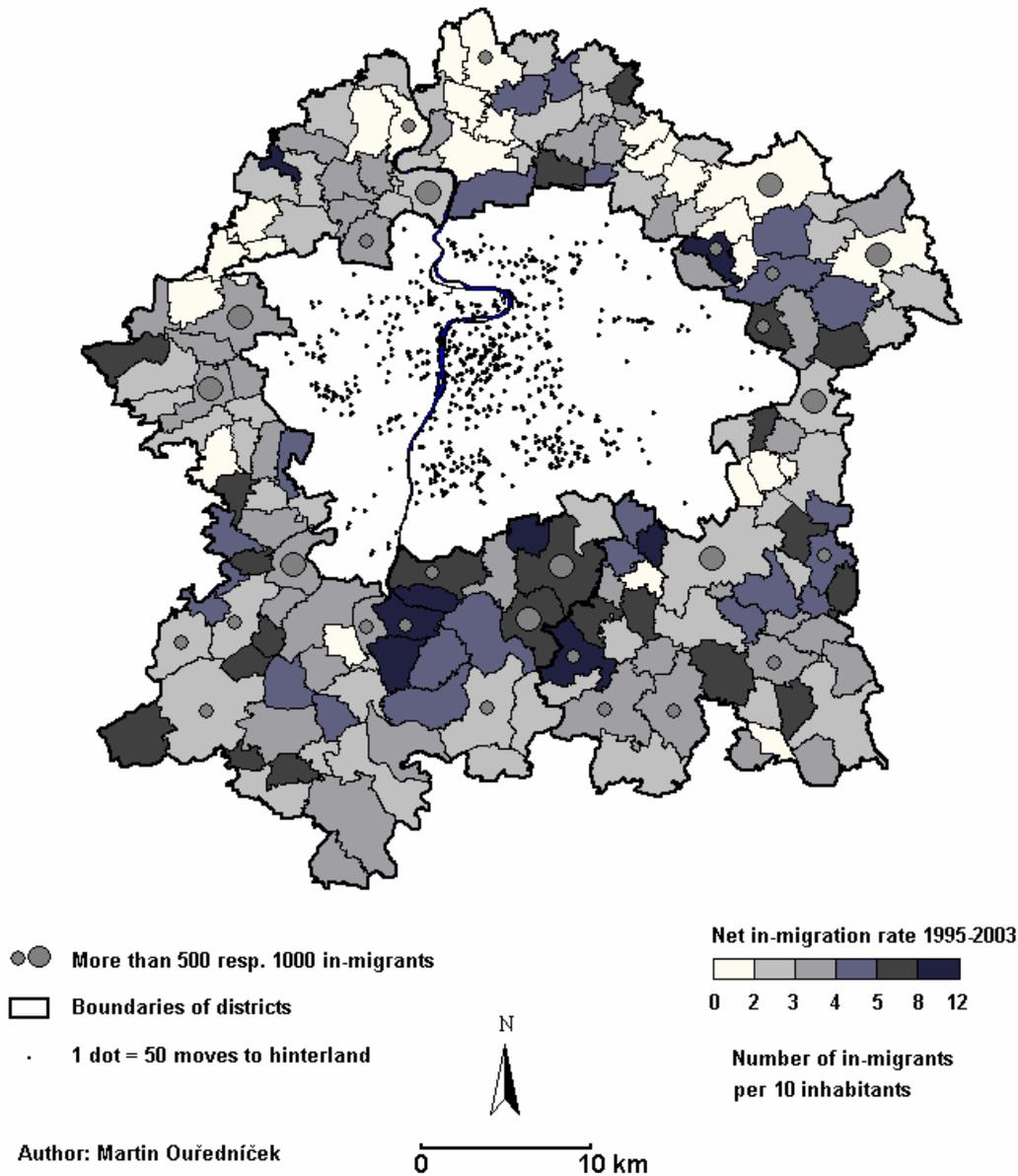


Figure 3 Spatial patterns of in-migration to communities of Prague-East and Prague-West and out-migration to these communities from Prague's basic statistical units in 1995-2003.
 Data: Czech Statistical Office

The investigation of new housing construction and migration on the micro-level of individual communities can be extended by the results of field research completed in Summer 2004 in 144 suburban localities around Prague. We have drawn up more than 250 maps of individual suburban localities. Šeberov, a borough on the southern edge of Prague, can be used as an example of a typical area of intensive suburban development (see Figure 4). The spatial patterns of its development and socio-economic characteristics of in-migrants are similar to that of many suburban settlements. The construction of new housing started there already at the beginning of the 1990s and is still underway. More than 400 new houses were erected there in the period 1991-2004, which is indicative of some 1000-1200 new suburbanites and a doubling of the population of the community in the observed period.

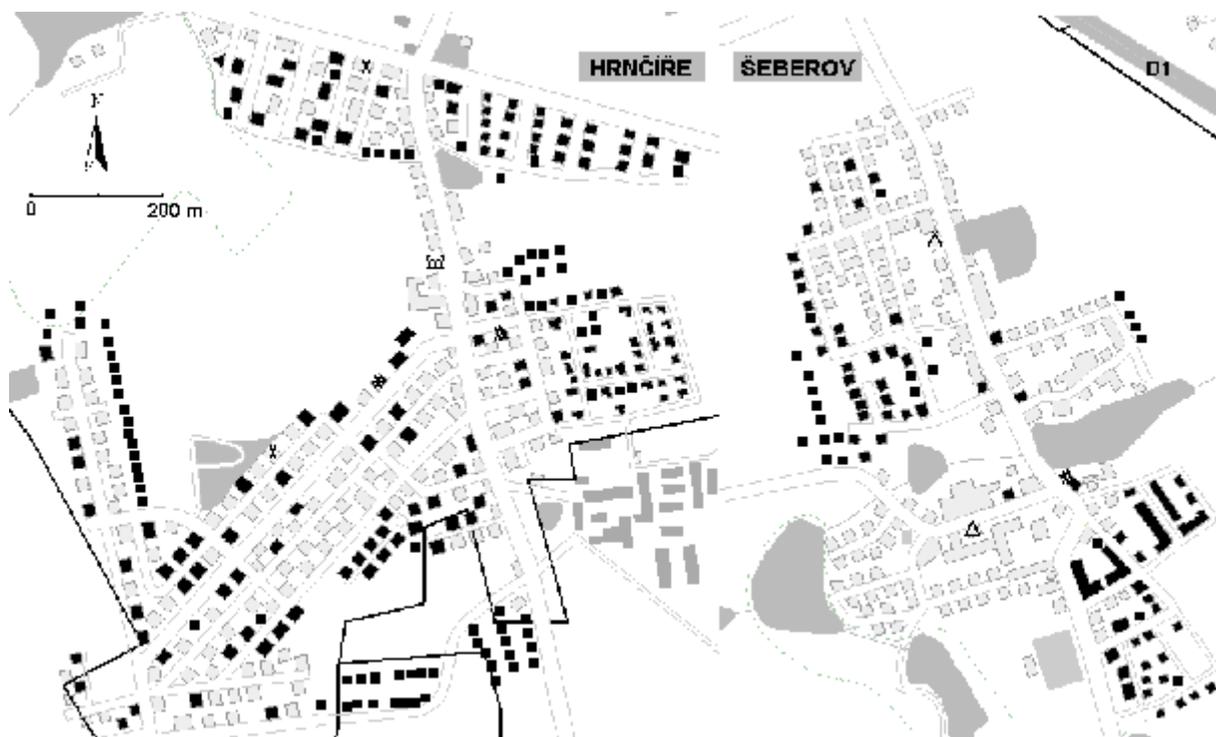


Figure 4 New housing constructed during the period 1991-2004 in Šeberov and Hrnčiče on the southern edge of Prague.

Note: Dark points = new houses built during 1991-2004 This borough consists of two spatially detached villages: Hrnčiče and Šeberov itself.

Data: Own field research in suburban areas of the Prague urban region in 2004

Author: Martin Ouředníček

Several types of location of new housing construction are visible on both maps, and these construction projects are being reproduced in most suburban settlements. Prague's hinterland has no completely new autonomous settlement. New development is mainly attached to the built-up area of former villages. Only a few examples of isolated projects of tens of houses constructed "in the middle of a sunflower field" were discovered. This spatial form of new suburban development is considerably different from North American and partially even from Western European suburbanisation (see e.g. Bergman and Renwick, 2005, p. 439). In comparison with North American suburbanisation a spatial pattern of Prague's suburban development is influenced by a dense network of small settlements in the hinterland of the city and by the absence of large-scale greenfield projects.

Structure of suburban migration

In this part of the article, I focus on the social structure of new suburban residents. The first question that I would like to describe and explain is whether there are important spatial differences in patterns of suburban migration structured by age and attained education of the in-migrants. Moreover, I ask whether the structure of in-migration depends on the type of locality of former residence, in other words, whether migrants from Prague are of similar or different age and have a similar or different educational structure to those migrants from surrounding villages (tangential migration) or more distant communities (long-distance migration).

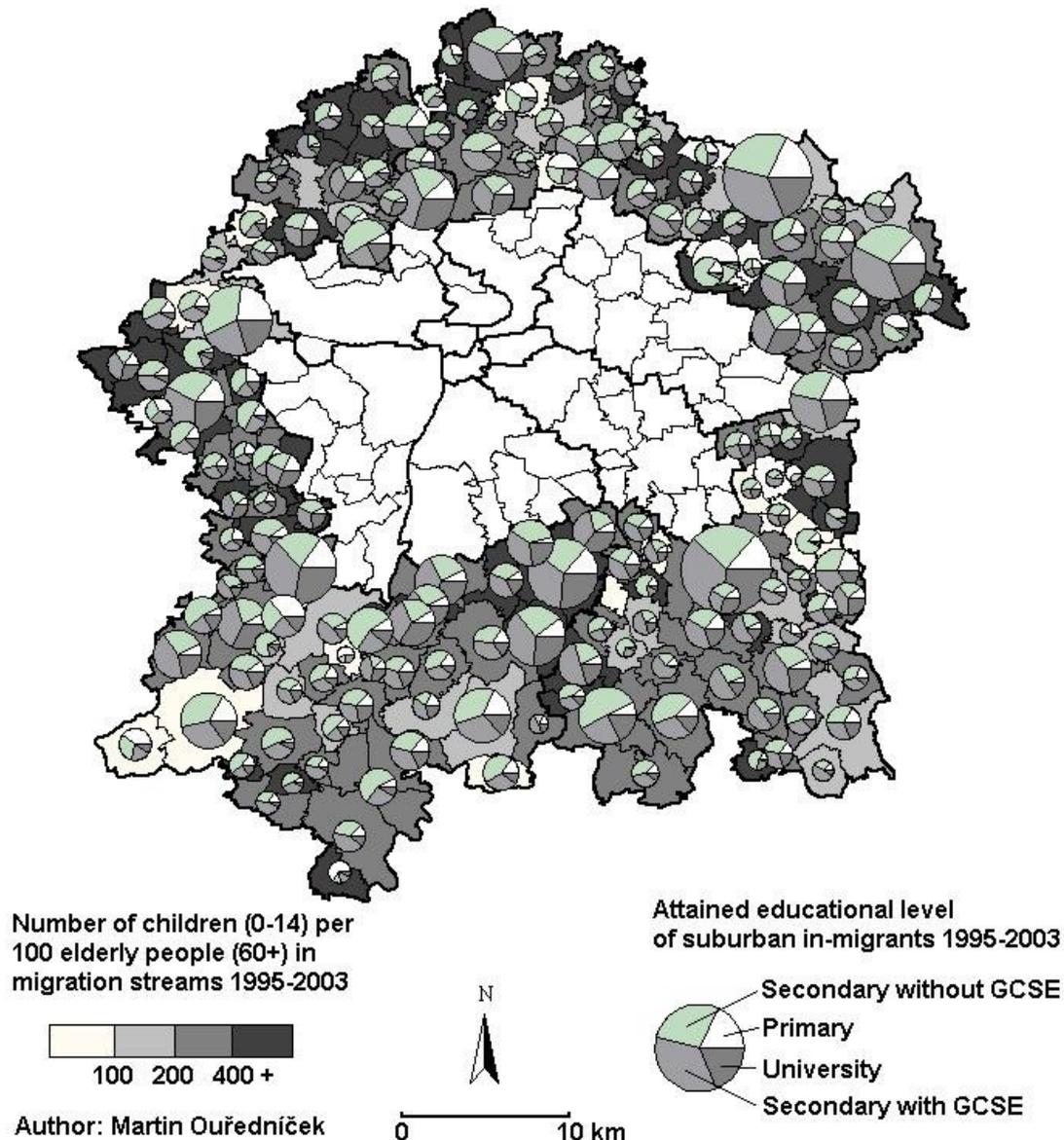


Figure 5 Age and educational structure of in-migration to communities of Prague-East and Prague-West in 1995-2003

Notes: Size of circle is proportionate to number of migrants; GCSE = General Certificate of Secondary Education

Data: Czech Statistical Office

The educational structure of new residents of Prague's suburbia is the only characteristic of socio-economic status recorded in migration statistics. I suppose that a population with a higher social (and economic) status has attained higher education. The population structure by highest attained education is considerably distorted by the specific age structure of migration with very young and subsequently more educated people. This fact results in a much higher proportion of people with higher education (university or secondary with GCSE) in migration streams than in the general population. For example, in 2001, the proportion of university-educated residents of Prague's hinterland was 10 %, while their percentage in in-migration streams was two-times higher. Nevertheless, the uneven spatial dispersion of suburban immigrants and their education is obvious (Figure 5). In almost all communities with intensive suburban migration, the two higher levels of education prevail. In almost all

communities with intensive suburban migration, the two higher levels of education prevail. Similar patterns of distribution of high-status people are described by Leetmaa and Tammaru in Tallinn (2006). Among such communities are those concentrated in the southern hinterland and several others easily visible in Figure 3. All of the largest communities and those neighbouring with Prague generally have a significantly higher in-flow of well-educated people. On the other hand, smaller and more distant communities often have poor infrastructure and worse accessibility, and these often serve as recreational places for Prague's citizens. The most popular recreational areas are located in the middle of natural preservation areas surrounded by forests or near the Vltava, Sázava and Berounka rivers. Furthermore, the construction of new housing in areas of inundation or natural beauty is often restricted. I suppose that the majority of in-migrants to these villages move either to older housing or to transformed cottages and recreational houses. As the transformation of second housing is typical for older and retired people, attained education is generally lower there. Furthermore, small communities with houses for senior citizens have an extremely low proportion of university- and secondary-school-educated people.

The structure of in-migration differs considerably by the source destination. Better educated people have a higher tendency to migrate long distances, and among migrants from the largest cities, there is higher proportion of well-educated people (70-80 per cent of the two highest categories of education). On the other hand, short-distance migration between communities of Prague's hinterland comprises only 30-40 per cent of these two categories. The suburban zone of Prague has thus acquired the most educated people from greater distances, which fact is partially influenced by the specific, younger age structure of these migrants.

Education	Percentage of in-migrants to the hinterland (1995-2003)				Share in population census 2001	
	Prague	Hinterland	Other communities	Total	Prague	Hinterland
Primary	12.2	25.9	13.5	14.6	16.7	21.7
Secondary without GCSE	30.7	40.9	31.8	32.5	28.8	39.3
Secondary with GCSE	36.2	25.6	32.8	33.8	35.7	28.8
University	20.9	7.5	21.8	19.2	18.8	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 2 Structure of in-migration to the districts of Prague-East and Prague-West by attained education and type of source destination in 1995-2003

Note: Row "Primary" includes also non-identified education and people without any education; GCSE = General Certificate of Secondary Education

Data: Czech Statistical Office

The average age of migrants from more distant communities is four years lower than for Prague and seven years lower than for migration within the hinterland. The shape of age pyramids for suburban migration from Prague, within the hinterland, from other large cities, and from smaller communities in the Czech Republic differ to some extent in the observed period (Figure 6). The low proportion of very old people influences the younger age structure of migrants from longer distances. In the case of Prague, the most mobile age group (20-30-year-olds) comprises less than half of total immigration to the hinterland in this category (Figure 7). Immigration from Prague prevails mainly in childbearing age and then in the category of 35-65-year-olds, with almost 80 percent being the most affluent people before retiring. The percentage of Prague immigrants among retired people is much lower (40 percent), and even though this migration stream is considerably smaller, short-distance moves within the hinterland (mainly to senior citizens' homes) predominate.

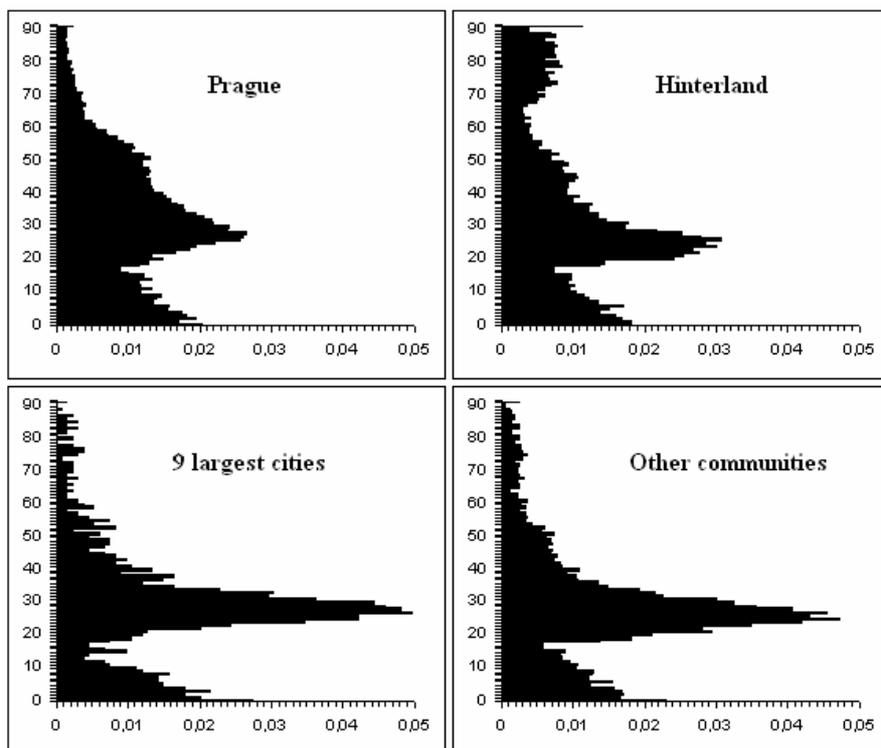


Figure 6 Age structure of in-migration to the hinterland of Prague from Prague, the nine largest cities, communities of the hinterland itself, and from other communities in the Czech Republic

Note: Among the nine largest cities of the Czech Republic are Brno, Ostrava, Plzeň, Olomouc, Liberec, České Budějovice, Hradec Králové, Ústí nad Labem and Pardubice
 Data: Czech Statistical Office

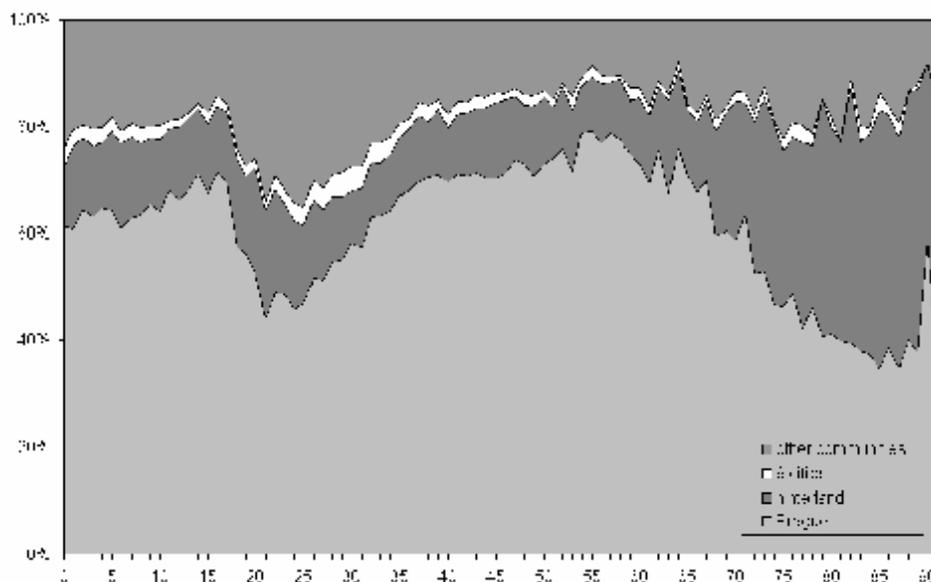


Figure 7 Proportion of in-migration to the hinterland of Prague by source destination and age in 1995-2003

Data: Czech Statistical Office

Migration to suburban communities has an impact on the change of social structure and more generally on the social environment of suburban communities. Suburbanisation leads to a change in the demographic behaviour of the population in Prague's hinterland. In the Czech Republic, generally a country with very low birth rates, there exist only few districts with a natural increase of population (births exceeding deaths). By 2004, the suburban districts of Prague-East and Prague-West belonged among them, which fact is a direct consequence of selective in-migration of young people of childbearing age. The increasing number of children has raised demand for social infrastructure. The big problem of suburban communities is the insufficient capacity of kindergartens and grammar schools. Many communities must pay for pupils attending school in neighbouring villages, and the councils of larger communities often decide to build new schools.

Communities with a formerly very low proportion of people with higher education today have almost the same social structure as Prague, which situation is caused by selective migration of younger and more educated people to the hinterland. In the case of Šeberov, the share of university-educated people has increased during the period 1991-2001 by almost 10 per cent (from 7 % in 1991 to 16 % in 2001), while the average increase for Prague was only 3 per cent (from 16 % to 19 %). On the one hand, this process could be perceived as an upgrade of the social structure; on the other, it could be responsible for an increase of two types of social segregation. The first is a gradual increase of differentiation of social status of people living in new suburbia and in the core city, particularly in the source localities of suburban migration. Approximately one half of incomers to Šeberov come from Prague's panel housing estates, mainly from the nearby Southern Town. The high percentage of people between 20-30 years of age with small children is typical for these streams. Parents of these young people usually remain in the housing estate apartments; thus, the age structure of these localities increases and their educational composition stagnates or even decreases. On the other hand, it is not true that housing estates have started to decline, as is the case in Eastern Germany (Harth *et al.*, 1998; Mäding, 2003). This out-flow of young (and consequently educated) people is rather part of the life cycle of residential areas (Bourne, 1976), where the young generation leave their parents. Prague's housing estates have still a fairly stable population of people for the most part satisfied with their housing. A large proportion of housing-estate residents have bought their apartments during the recent privatisation of housing stock. The significant barrier for the social degradation of panel houses in Prague is the relatively high price of apartments.

The apparent upgrade of the social structure of suburban communities could in reality cover instead a polarisation of the social structure of the local population and its splitting up into two distinctive groups: former villagers and new suburbanites (Dobriner, 1960; White, 1984) with different social status and life styles (Figure 8 and 9). Potentially, segregation is affected by the number and structure of new immigrants, the behaviour of these immigrants, and the spatial form of new residential area.



Figure 8 and 9 Different social status and life style of new and old residents in comparison with housing, cars and gardens.

Photos: Jiří Neubert and Martin Ouředníček

CONCLUSION

At present, suburbanisation is one of the strongest processes changing the face of post-socialist cities. To provide a better understanding of urbanisation processes, the research has focused on the micro-level of individual localities and performed a detailed investigation of the structure of migration streams to suburban places. The micro-level focus and the use of case study localities can help explain causal relationships between migration and changes of the social and physical environment in urban regions. By using the differential approach to evaluate migration streams and substreams, it was possible to identify that suburban development consists of various centripetal, tangential and centrifugal processes, all of which have different impacts within the source and target localities of migration. Among these processes, suburbanisation has a dominant position, bringing more than a half of new residents and substantially changing the social and demographic structure of suburban communities.

Comparison of statistical figures on migration, housing construction and the field research show that migration statistics fail to record approximately 15-20 percent of moves to hinterland. Therefore, the real intensity of suburban process is a bit higher. Until now, the outflow of people from the core city has not caused any substantial problems in terms of degradation of inner city quarters. There are only several separate localities of new suburbanites appearing in the suburban zone, but no cases of significant spatial segregation have been observed. This may be due to a relatively scattered distribution of new housing with typically smaller housing projects adjacent to former villages or construction of single houses on individual plots inside the community. In my opinion, this type of development will lead to an integration of new residents and successful future cohabitation of original villagers and new suburbanites. Suburbanisation can be seen as a revival of small communities around the largest cities and an upgrade of the social and physical environment.

The second important spatial process in the suburban zone is in-migration from the Czech countryside. While people who have lived in large cities prefer the inner quarters of Prague, the proportion of suburban moves from smaller communities is slowly growing. Among them there is a high proportion of well-educated people of childbearing age and people with children. On the other hand, tangential migration between Prague suburban communities has decreased during the observed period. There is no sign of concentration of suburban people to

greater suburbia. A rather wide-spread suburban development may be observed in almost all of the communities located in the Prague suburban zone.

Considering the changes in social environment, suburbanisation cannot be viewed as a negative process in the Czech Republic. At the moment, most suburban communities are undergoing relatively massive social changes. Temporal turbulences in social life of small communities are influenced by a disturbing construction of new houses and infrastructure as well as by a sudden inflow of young and well-off people with rather different life styles. Many of new suburbanites live separately when they move to new housing, but they start gradually integrating due to contacts within community institutions (offices, schools, kindergartens, pubs etc.). It is not true that suburban life is more individualistic than urban one. Paradoxically, many people who used to be inhabitants of anonymous housing estates find out a more open and friendly community life in the suburbia.

The future development of Prague suburbanisation depends highly on people's demands, with the supply of new suburban housing being massive. It was the "Czech dream" of many Prague citizens during the communist era to have their own house with a garden. The present deconcentration of older generations settles the gap between residential preferences and real places of residence of these elderly people and is a specific feature of the transformation period. It may be assumed that a relatively high proportion of old-age suburban moves is only a temporal phenomenon. The number of people in their fifties and sixties, who were not able to afford suburban housing in the communist period, is bound to decrease. Another factor that can influence suburban development is a currently widening spectrum of inner-city housing and a gradual rent deregulation which could lead to a decrease of rent and better accessibility of housing in Prague (Lux 2004). Although there are extensive plans for development of suburban communities, it is hard to believe that all of them can succeed. In my opinion, the rapid suburban development of Prague suburban zone is going to continue for several years. Spatial expansion of suburban development will most likely move to other large and medium-sized Czech cities.

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