

11 The velvet and mild

Socio-spatial differentiation in Prague after transition

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Abstract

This chapter deals with socio-spatial differentiation in Prague after transition. The empirical evidence shows decreasing segregation indices for the whole of the twentieth century, so this decrease cannot be ascribed solely to the period of post-socialist development. The process of professionalisation has flattening differences within the higher-status groups and has led to a decreasing share of lower-status groups in Prague's population during the last decennia. The decrease in socio-spatial differentiation is mainly a consequence of the location of new housing and in-migration of higher-strata groups into formerly poorer neighbourhoods. Moreover, the high price of housing has restricted the in-migration of the economically weak population. Thus we cannot find larger poor areas in contemporary Prague.

Introduction

The socio-spatial structure of contemporary Prague has been influenced by the long-term development of complex political, economic and cultural processes that formed the urban patterns in Europe over several decades. However, the consequences of these macro-processes differ depending on the state and city context (Kazepov 2005). The Czech settlement system was exposed to these processes at various levels of intensity and was highly dependent on the openness of the Czech border and the extent and nature of the contacts within the global and European economic and cultural system. During the interwar period the Czechoslovak state was among the top European economies and had a tight connection with Western countries (Musil 1997; 2005), but under socialism (1948–1989) Czechoslovakia was reoriented towards the Soviet Union and other countries on the eastern side of the Iron Curtain, which served also as a solid barrier against movements of various kinds including international migration, economic and cultural exchange, and the transfer of ideas (Musil 1997; Ruoppila 2004). The period after the Velvet Revolution (November 1989) is often depicted as a return to a capitalist or neo-liberal development of the economy, where

political and economic transformations gradually produced winners and losers (Kornai 2006; Kovács 1999; Węclawowicz 1998). It is logical to assume that significant changes in social and economic systems would have been mirrored in the spatial organisation of the settlement structure and urban environment throughout the past 90 years of Prague's evolution (Musil 1993; 1997). However, the core question in urban studies on this point is: to what extent are social inequalities and transformations of the welfare state translated into the spatial patterns of the internal structure of the city? Thus the main aims of this chapter are twofold:

- to discuss evidence on the differences in socio-spatial differentiation in the capital city of Prague and provide details of the specific context and conditions that have produced these outcomes during the last 90 years of urban development, with special attention to the most recent stage of the post-transition period, specifically 2001–2011.
- to apply widely adopted analytical techniques to the available data to make an international comparison of the level of segregation in selected European capital cities.

We argue that one of the main attributes of Prague's recent history is its relatively stable progress and lack of sudden changes to the trajectories of urban development. Moreover, the spatial consequences of World War II, of 40 years of socialism and also of the post-socialist transformation are relatively mild compared to those experienced by some of the other cities discussed in this book. We illustrate that none of the historical urban layers was completely destroyed or overcome by succeeding development and that the physical structure, the functions of individual quarters and to a high degree also the symbolic values and social environment show considerable inertia and persist within the contemporary residential mosaic of the city (Matějů 1980; Musil 1987; Ouředníček and Temelová 2009).

In the first part of this chapter, we provide a description and explanation of the long-term context of the pre-socialist, socialist and transformation eras. Then, we turn our attention to the main focus of this study, namely the recent evolution of socio-spatial differentiation in Prague and especially the question of segregation. Our discussion is based mainly on the results of quantitative analyses of data on socio-professional structure for the period 2001–2011. In the last part of this chapter we focus on the differential development of six types of neighbourhood in Prague and on explaining the processes that have influenced changes to these types in the context of the contemporary processes of urban development.

Historical context of socio-spatial differentiation in Prague

The socio-spatial differentiation of Prague was one of the most discussed topics in this field during the interwar period in Czechoslovakia. The books and papers published during that time are mostly studies of the demographic and socio-spatial structure of interwar Prague based on population census data (Boháč 1923; Lehovec 1944; Moscheles 1937) or provide in-depth knowledge of the city's development

(Král 1945; Ulrich 1938). Most of these authors used the theoretical concepts and methods of social ecology and anthropogeography. Indeed, Boháč (1923) evaluated ethnic structures for census tracks and spatial development of demographic processes in five concentric zones one year before the now-famous concentric model of Chicago was presented by Burgess (1925). The ecological tradition in urban research strengthened after the Second World War, when the Western-inspired quantitative analysis approach was widely applied in Prague for the indices of residential segregation (Musil 1960; 1968), the methods of factorial ecology (Matějů 1980; Matějů *et al.* 1979), and the typology of urban areas (Linhart *et al.* 1977). After the Velvet Revolution, the processes of socio-spatial differentiation or segregation were discussed by just a few authors (Ouředníček and Temelová 2009; Sýkora 1999; 2009), which we draw on in our discussion below.

Prague has undergone several significant changes in its history. During the thirteenth (Ottokar II) and fourteenth (Charles IV) centuries and the turn of the sixteenth and seventeenth (Rudolph II) centuries, it belonged to the group of principal cities of Europe that were home to a concentration of social and cultural elites of Europe-wide importance. In contrast to those periods of rapid growth, during the industrialisation era Prague remained a rather provincial city while other large European cities were reinforcing their positions within the European settlement system (Musil 1997). The largest industrial cities and capitals of the colonial empires became the target of extensive domestic and international migration and grew into European metropolises, but Prague's catchment area covered only the central part of Bohemia, and the population of other parts of Bohemia and the whole of Moravia migrated mostly to Vienna (Horská 2002). Consequently, the social and economic elites tended to concentrate in Vienna, the capital of Cisleithania. Later, the residential differentiation of Prague – divided into an historical core and newly built quarters for clerks and workers in growing nineteenth-century suburbs – was enriched during the interwar period by 30 new villa estates and several temporary dwelling (slums) dating mainly from the economic crisis of the 1930s (Votrubec 1959). Even though the Prague of the 1930s has been described as differentiated in terms of housing type and also social status (Matějů 1977; Musil 1987), the level of segregation was rather low compared to other European cities (Musil 2005).

The relative homogeneity of Prague's population was further strengthened by the events of the Second World War, when the traditional diverse ethnic structure of the city was diminished (Musil 2005; compare Węclawowicz 1998). The expulsion of Germans (out of a total population of around 25,000, approximately 80 per cent were expelled from Prague) and the genocide of the Jewish population brought about a flattening of the socio-economic stratification within the city as both the Germans and the Jews were often more wealthy than the Czechs. At first glance, the indices of dissimilarity for four social groups based on a comparison of data from the 1930 and 1950 population censuses (see Table 11.1) reveals that there was a relatively large decrease in socio-spatial differentiation. However, this decrease can be partly explained by the use of different statistical units for the measurement of dissimilarity; 46 cadastral units in 1930 and 16 city districts in

Table 11.1 Indices of dissimilarity in Greater Prague, 1930–1950

<i>Social group</i>	<i>Social group</i>					
	<i>Clerks</i>		<i>Foremen, non-manual employees</i>		<i>Workers</i>	
	<i>1930</i>	<i>1950</i>	<i>1930</i>	<i>1950</i>	<i>1930</i>	<i>1950</i>
Self-employed, tenants, employers	12.29	8.13	18.50	9.58	25.11	13.28
Clerks	–	–	19.36	10.88	27.45	14.63
Foremen, non-manual employees	–	–	–	–	13.03	5.51

Note: Indices were constructed for 46 cadastral units (1930) and 16 city districts (1950).

Source: Musil (1968: 254)

1950. The different population size of the city districts seems to have resulted in lower numbers than the use of cadastral units would probably uncover (this effect is well documented for the contemporary situation; see later and Figure 11.5).

The industrial growth of Prague defined the functional structure of the city and divided the quarters of Prague according to social status and symbolic values, and these survived without fundamental change until the policy of Complex Housing Construction was applied in Czechoslovakia during the era of state socialism. Musil notes that the social structure of Prague at that time ‘was already formed in the period prior to World War II and that very little of this general pattern has changed during the past 30 years’ (1968: 251). However, the urban growth of Prague was considerably slower than that of the largest European cities. Moreover, the housing shortage of the 1930s and 1940s blocked the population growth of the city, whose working power was secured by the intensive commuting of industrial workers. Together with post-war ethnic and to some extent also socio-economic homogenisation, these developments led to lower social-spatial differences than in the other cities presented in this book. This homogenisation was consequently strengthened by 40 years of socialism.

The development of Prague’s ecological structure and socio-spatial differentiation under socialism has been the main topic of many publications since 1989 (Musil 1993; Ouředníček and Temelová 2009; Sýkora 1999) but is surprisingly also referred to in the sociological literature before the Velvet Revolution (Matějů *et al.* 1979; Matějů 1980; Musil 1968; 1987). Socialist developments were considerably influenced by the policies of the state, such as those on urban growth control in the form of the Central Settlement System and Complex Housing Construction policies. These policies were applied during the whole period of socialism and had different impacts on distinctive size categories of settlements that were set up by the communist government. Generally, in light

of the differing impacts of these policies, we can distinguish three periods of development of the Czechoslovakian settlement system and Prague's socio-spatial structure under socialism.

First, the immediate post-war period of development, from circa 1945 to 1959, can be described as one that strangled urban growth. Investment in medium-sized cities and industrialised regions as well as the redistribution of the workforce through fixed job assignments (*umístěnky*) to depopulated areas of the Sudetenland were distinctive at the level of the organisation of the settlement system. The administrative area of Greater Prague established during the 1920s remained the same, but the size of the population was even lower than before the Second World War, housing construction was rather stagnated (see Figure 11.1) and residential mobility decreased (Matějů et al. 1979). Working power was provided by intensive commuting from relatively large catchment areas. Musil (1987) described this period as a phase of redistribution, which involved the implementation of specific housing and social policies. It was typical to divide large apartments and villas, formerly owned by the upper and middle classes, into two or three dwelling units and allocate them to households in need (Musil 2001). This mixing of households was accompanied by the removal of temporary dwellings (Votrubec 1959), which together smoothed the differences between the most obvious poles of the housing stock.

In the second period of development, during the 1960s, the Complex Housing Construction and the Central Settlement System policies were introduced and affected mostly the outer parts of Czechoslovakian cities. While the Complex Housing Construction led to investment in specific zones on the outskirts of built-up areas, the latter had an impact on the hinterlands of Czech cities. The Central Settlements System originated in the so-called concept of urbanisation and used tools of regional planning derived from the theory of central places.

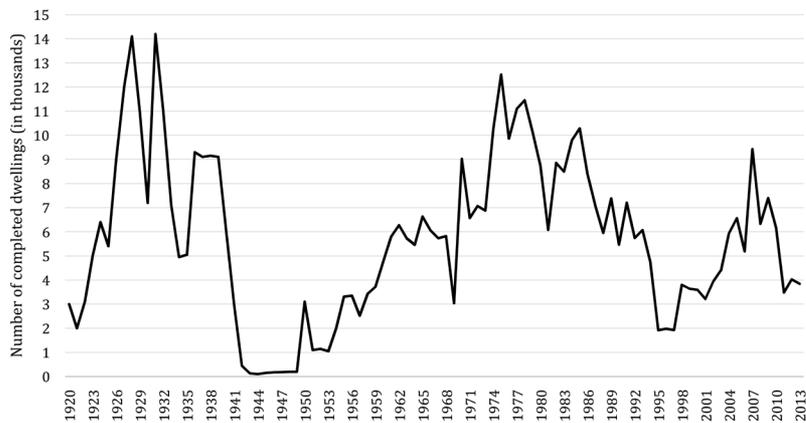


Figure 11.1 Number of completed dwellings, 1920–2013

Source: Czech Statistical Office 2014

Socialist regional planning employed this theory for the creation of a network of central settlements with a specific hierarchy. This blocked the development of non-central settlements where investment in social, transport and technical infrastructure was restricted. Thus the creation of inner peripheries was one of the most pronounced impacts on the settlement system (Musil 2002). In the case of the metropolitan regions, investment in the outer parts of only some selected cities and towns meant a lack of resources for the rest of the region – mainly inner parts and hinterland. Thus the Central Settlement System policy influenced many small municipalities within the hinterland of Prague, where distinctive features of the inner periphery have survived to date (Ouředníček 2007).

The Complex Housing Construction policy aimed at the mass construction of apartments and thus the spatial structure of socialist cities began to be determined by the construction of housing estates (*sidliště*). This development resulted in the first significant enlargement of Prague's administrative territory in 1968 (24 municipalities; 100 sq. km) and led to a considerable increase in housing construction beyond the area of former Greater Prague (see Figure 11.1). The three different forms of ownership – state, cooperative and company – were mixed within the same areas of new construction and diversified the socio-economic structure of the population of housing estate neighbourhoods, distinguishing the social structure in Prague from that of other post-socialist cities, where this mix was not usual (Musil 2001). For example, cooperative apartments, which were characterised by the growing financial participation of households in housebuilding, were of better quality and led to the presence of new dimensions in the social differentiation of urban space (Musil and Ryšavý 1983). The allocation of apartments to younger families changed the inert socio-economic patterns of the capital that have continued to the present day and caused a smoothing of the socio-economic differences between the inner city and periphery of Prague during the 1960s (Musil 1987), but it also created quite differentiated patterns of family status within the city (Matějů *et al.* 1979). The substantial investment in housing estates led to the stagnation or regression of inner-city tenement houses. In contrast, Matějů (1980) describes the growing residential attractiveness of the villa quarters, Prague's West End, and also its historical centre based on data from a migration preferences survey conducted in Prague.

During the third development period, the late 1970s and 1980s, the socialist state showed a strong preference for developing the capital, which was the main economic development area (Musil and Ryšavý 1983; similarly Enyedi 1998). Development of the capital city of Prague was designated a priority of the national economic plan in the main conclusions of the Fourteenth Congress of the Communist Party (1971). In practical terms, it meant the stimulation of the growth of the city and its agglomerative effects (Musil and Ryšavý 1983). A series of measures covered, among others, the enlargement of Prague's territory in 1974 (30 municipalities, 200 sq. km), and the establishment of a new subway (metro) system. This created the conditions for the evolution of mass pre-fab housing construction in the form of autonomous residential districts outside the built-up area of former urban quarters – for example South Town (for 100,000 people) and South Eastern Town (for 130,000 people).

The socio-spatial structure of Prague during socialism was more homogenous and the level of segregation was lower than in the interwar period (Musil 2005). While the index of segregation of manual workers in 1930 was 0.32 (Musil 1968), according to our calculations, it was considerably lower in 1970 (0.10). This decrease was achieved by increasing the share of manual workers in the total population (33 per cent in 1930 to 43 per cent in 1970) and their more equitable distribution within the city. From the population censuses held in 1970 and 1991 we can measure indices of segregation on the level of basic settlement units (BSUs). However, for 1970 we can measure only the category of manual workers (index of segregation (IS) = 0.14) because the other occupational groups were subsumed under the 'employees' and 'other' categories. After the end of the socialist era, in 1991 more detailed occupational categories were used in the census and the indices of segregation for lower status occupational groups were even lower (0.11 in the case of industrial workers, 0.12 for machine operators and 0.10 for unskilled workers). This confirms that a decrease in segregation is not an attribute of post-socialist development but rather has its roots in the post-war and socialist eras (compare Marcińczak *et al.* 2013 for Polish cities; Csanádi and Csizmadý 2006 for Budapest).

The main features of the development of socio-spatial differentiation in Prague during the socialist era can be summarised as follows: first, the role of socio-economic status retreated in favour of the role of family status and was less applicable than in capitalist cities. Both the city centre and inner city of Prague were characterised by the continuity of their physical fabric (Musil 1987), but their attractiveness was considerably weakened by years of underinvestment in maintaining the physical state of the housing stock and infrastructure. Beyond the former area of Greater Prague, three generations of pre-fab housing estates were built and housed a demographically homogenous but socially differentiated population. The hinterland of Prague was significantly affected by the Central Settlement System policy because of underinvestment in non-central settlements that created an inner periphery characterised by physical and social decline close to the city. These conditions were the starting point for post-socialist transformation in Prague.

Developments after the Velvet Revolution

Prague's socio-economic structure has been affected by various local and global processes during the last 25 years (post-socialist transformation, economic globalisation, deindustrialisation, EU enlargement). In academic debates, these processes have been associated with the emergence of new or the growth of existing socio-economic inequalities (Musil 2005; Sýkora 1999). Mainly sociological studies have discussed the question of earnings disparities (Večerník 2001a) or new classes of differentiation or inequalities in accessing education (Matějů *et al.* 2008). However, their conclusions are rather ambiguous and highly dependent on the data and methods used for the analyses. We would argue that, despite the dynamic economic transformation in the Czech Republic, the country retained, rather uniquely, a high degree of equality inherited from its

socialist past (Večerník 1996) and that the impacts of transformation have also had a rather smaller effect on the spatial pattern of cities, at least at the level that the statistical evidence allows us to evaluate.

Growing social inequalities have been mostly documented as a widening of the gap between rich and poor. The 1990s in the Czech Republic were characterised by a slight increase in wage inequalities as measured by the decile ratio¹ (2.5 in 1985, 2.7 in 1992 and 2.9 in 1999; Večerník 2001a), and a gradual and relatively stable increase can be observed since 2000 (2.9 in 2001, 3.0 in 2004 and 3.4 in 2012; ČSÚ). If we take only the private sector into account, the variability is greater (decile ratio 3.7 compared to 2.6 in the case of state employees in 2013; MPSV 2013). Household income inequalities as measured by the Gini index (per capita) increased at the beginning of the post-socialist era (Večerník 2001b), but in recent years there has been a stagnation or slight decrease (25.3 in 2006, 25.1 in 2009 and 24.6 in 2013; Eurostat 2013). In the case of Prague alone, the development of wage inequalities is not that different from the rest of the Czech Republic but the gap between the rich and poor working in the private sector is wider and has been increasing more rapidly (from 4.2 in 2003 to 5.3 in 2013; MPSV 2013). However, if we compare the Czech Republic with other European countries utilizing the Eurostat data,² the Czech Republic is among those with the lowest income inequalities (Eurostat 2013) together with the Scandinavian countries, which are known as highly developed welfare states. Also, unlike other CEE countries poverty has remained low in the Czech Republic during the whole transition period (Musil 2005; Večerník 2004).

The spatial patterns of the city seem to reflect the post-revolutionary societal processes only to a limited extent, and overall a relatively high level of inertia has persisted. Socio-spatial differentiation is manifested mainly through the housing market, which has weakened rather than strengthened the spatial differences in recent times. The restitution of tenement houses within the inner city to former owners and the privatisation of housing stock in housing estates in favour of sitting tenants have created a new housing tenure structure that has significantly decreased the role of the public sector in housing provision. According to the 2011 census, out of 542,000 of apartments, 28.7 per cent are in the hands of dwelling owners associations, which were established especially in the privatised parts of housing estates, 24.8 per cent of apartments are owned by a private owner (family houses and restituted tenement houses), 17 per cent by housing cooperatives and 12 per cent by the local authority or the state. Thanks to generous social assistance³ and the survival of rent regulation in large Czech cities (until 2012), lower-income residents have been pushed out from attractive neighbourhoods very slowly and have remained in the inner parts of the cities. The privatisation of former state housing stock and company-owned apartments has led to hundreds of thousands of people remaining in their flats. This, together with a relatively small amount of housing construction and low migration, has fixed the spatial patterns of the city. Former tenants have remained in their dwellings and now, as homeowners, they have started to invest in the modernisation of their high-rise blocks located in large pre-fab housing estates. Such behaviour will help to continue to maintain

the social mix in different neighbourhoods and housing types for several decades at least (Oufedníček *et al.* forthcoming).

The existing research shows that the spatial concentration of urban problems has been very limited and that the seeds of poverty appear only at the micro level in particular houses or block of houses in the Czech Republic (Macešková *et al.* 2009). This has also been confirmed in the case of Prague, where social segregation is found to exist only here and there in a micro-local form, encompassing individual buildings or at most several blocks (Kostelecký *et al.* 2012). No signs of pauperisation or ghettoisation in Prague are evident, at least within the statistic data. Other aspects such as homelessness, ethnic differences (Roma people and guest workers) and unrecorded types of housing for example, shared apartments, dormitories) are not covered adequately by the data available. This makes it impossible to undertake extensive analysis on those aspects; however, this does not mean that more pronounced forms of segregation might be or not be revealed in the case of their inclusion.

Methodological framework

Our research reflects the discussion on the expected increase in residential segregation as a response to growing income inequalities in post-socialist countries (for example, Marcińczak *et al.* 2013; Sýkora 2009). In their work, Marcińczak *et al.* (2013) question this broadly accepted assumption and call for more empirical research to explore the development of segregation patterns in post-socialist countries. Our aim is to make a contribution to this discussion by exploring the development of socio-spatial differentiation in Prague during the period 2001–2011, which could be termed ‘post-transition development’. Our methodology is based on the well-established procedures for the assessment of segregation in the European context and we further develop them by applying some new evaluations. The main analysis of changes in socio-economic segregation in Prague investigates the data on occupational structure from population censuses. The Czech Classification of Occupations (CZ-ISCO) employed by the Czech Statistical Office is built on the International Standard Classification of Occupations (ISCO-08), making international comparison possible (see also the introduction of this book for more detail: Tammaru *et al.* 2015). The classification is based on type of work (occupational task) and skill level. Nine out of 11 occupational groups are included in our analysis. Two groups were excluded: armed forces and agricultural workers. Thus, 87 per cent of the economically active population of Prague is considered in our evaluation (see Table 11.3).

Even though occupational data are widely used for the evaluation of socio-economic status and segregation (Duncan and Duncan 1955; Marcińczak *et al.* 2012), there are some limitations that need to be addressed. For instance, these data cover the economically active population only (this equates to 50.8 per cent of Prague’s population in 2011),⁴ but society is much more differentiated when pensioners, unemployed, children or homeless people are included. For this reason we use some additional socio-demographic data (unemployment rate, education, age) in further analyses. Another issue concerns the drawback of the assessment

of segregation only on the basis of place of residence and excluding the temporal dimension (see Silm and Ahas 2014). However, the social environment of urban localities may be influenced significantly by encounters between daily users from different parts of the city or the wider region during the day (Pospíšilová 2012).⁵

The data analysis enabled us to examine the socio-spatial differentiation of various strata of the population based on their socio-professional characteristics. Two types of indices, the IS and the ID, were calculated to measure the overall level of segregation. To visualise the spatial pattern of socio-economic differentiation, we employed the locational quotient (LQ), which allows us to compare the variable in a given spatial unit to the values for Prague as a whole. The main dataset used in the analysis consists of occupational data from 2001 and 2011. Indices based on data from 1991 are presented only in the introductory part of this chapter because a different occupational classification (NACE) was used in that census so it is not fully compatible with the ISCO. However, the comparison of the data from the last two censuses is also complicated by an important methodological discrepancy. During the period between 1961 and 2001 the data were sorted and published according to registered permanent residency (not necessarily identical to the place where the person actually lived), whereas in the 2011 census (and also in the period between 1921 and 1950) usual residency was recorded. Because the latter type of residency should better correspond to where one actually lives (regardless of formal registration), the spatial differentiation of the population based on usual residency could be more accurate. It is necessary to bear these differences in criteria in mind when interpreting the overall development of spatial patterns.

To reveal the effect of socio-economic differentiation/segregation at different spatial scales, we compute segregation indices and display the spatial patterns for four types of spatial units: cadastral units (112 units in Prague; with an average population of around 10,000 people), BSUs (916; 1,000), discrete territorial units⁶ (1,404; 400) and census tracts (5,663; 200). Finally, we compare socio-economic differentiation in these types of BSU. The typology is based on the prevailing character of housing, the construction period and distance from the city centre (for details, see Table 11.2 and Figure 11.2).

Research findings

First we provide an overview of the development of the occupational stratification of Prague's population between 2001 and 2011. Then we evaluate the general patterns and measures of segregation. In the last part of this section we focus on the analysis of residential differentiation in distinct types of neighbourhood in Prague.

Socio-occupational structure of Prague

The data from the two most recent population censuses conducted in 2001 and 2011 show that the process of professionalisation (rather than polarisation) significantly influences the change in the occupational stratification of Prague's population. The workforce in the bottom three occupational categories (industrial workers, machine operators and unskilled workers) decreased by one third, and the number

Table 11.2 Typology of residential areas

Type of residential area	Characteristics	Number of basic settlement units	Number of inhabitants in 2011 (share in %)
Historical core	Housing located in historical city centre	23	46,939 (3.7)
Tenement houses	Prevailing share of tenement houses located predominantly in inner city	141	331,855 (26.2)
Villas	Prevailing share of family houses, mainly bigger houses with own garden, located predominantly in inner city	52	99,281 (7.8)
Housing estates	Prevailing share of prefabricated apartment housing, which emerged after World War II	153	530,626 (41.9)
Working-class houses	Prevailing share of family houses, rather small, raw and working-class houses, located mainly in outer city, often original 'villages' centres	82	103,443 (8.2)
Inner Inner-suburbs	Prevailing share of family houses, centres of original rural settlements or/and newly built suburbs	131	154,001 (12.2)
Newly built areas	(i) Prevailing share of newly built houses – 90% of flats built since 1991	(i) 14	(i) 11,901 (0.9)
	(ii) Significant share of newly built houses – 30% of flats built since 1991	(ii) 62	(ii) 11,1640 (8.8)

Note: This typology does not involve non-residential areas or indistinct units, which were not possible to assign to any category (all smaller than 50 inhabitants; total population of 2,651 people). The last category of newly built areas was delimited additionally for the evaluation of new construction impact on socio-spatial structure. BSUs and number of population of this type were distributed to particular types.

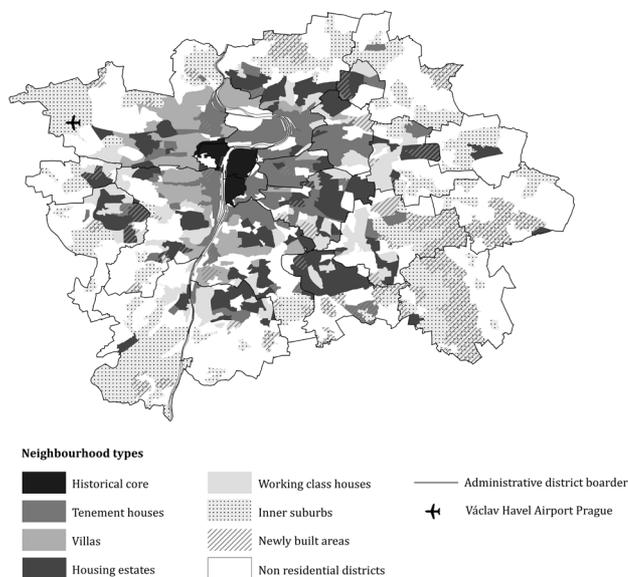


Figure 11.2 Residential areas in Prague

Source: Own typology, see Table 11.2

of unskilled workers halved over the course of the decade (see Table 11.3). On the other hand, the share of the top three occupational groups (managers, professionals and technicians) rose from 57 per cent to 62 per cent between 2001 and 2011. This is caused not only by the tertiarisation of economy (Musil 2005) but also by the changes in the social structure of the population (exemplified by the increase in the proportion of the university-educated population in Prague from 19 per cent in 2001 to 24 per cent in 2011).

This change is in accordance with the trends in the occupational stratification of the Czech population as a whole during the transformation period for which very similar changes can be observed. However, the exclusive position of the capital city as a national economic centre with a concentration of progressive sectors of the economy is reflected in the fact that the share of the top three groups in the workforce is considerably higher than the national average (62 per cent and 37 per cent respectively). Also, a high proportion (20 per cent) of Czech managers and professionals is concentrated in Prague (the share of Prague's economically active population is 13 per cent).

However, as mentioned above, the volume of any shift may be influenced to some extent by the methodological change in the registering of residents according to their permanent or usual residence in the censuses of 2001 and 2011, respectively. The number of inhabitants with permanent residence was 10 per cent lower than the number of inhabitants who reported that they have their usual residence in Prague.⁷ This should be borne in mind when interpreting both the changing share of occupational groups and the measures of segregation.

Table 113 Labour market segmentation by ISCO occupational groups in Prague, 2001–2011

	2001		2011	
	Total number	In %	Total number	In %
Managers (1)	47,003	7.9	50,785	9.0
Professionals (2)	107,741	18.0	159,087	28.2
Technicians (3)	185,387	31.0	136,552	24.2
Clerks (4)	52,039	8.7	43,590	7.7
Sellers (5)	78,088	13.1	85,406	15.1
Industrial workers (7)	65,414	10.9	44,221	7.8
Machine operators (8)	32,742	5.5	30,106	5.3
Unskilled workers (9)	29,037	4.9	14,536	2.6
ISCO 1,2,3,4,5,7,8,9	597,451	100.0	564,283	100.0
Armed forces and agricultural workers (ISCO 0, 6)	6,790		3,182	
No response	30,864		77,178	
Economically active – total	635,105		644,643	

Sources: Population Census 2001, 2011, Czech Statistical Office

General patterns and measures of segregation

From our results, the degree of segregation, as measured by the traditional index of segregation (IS), followed a standard U-shape in both years (see Figure 11.3). The least segregated groups are traditionally middle-ranked groups of technicians,

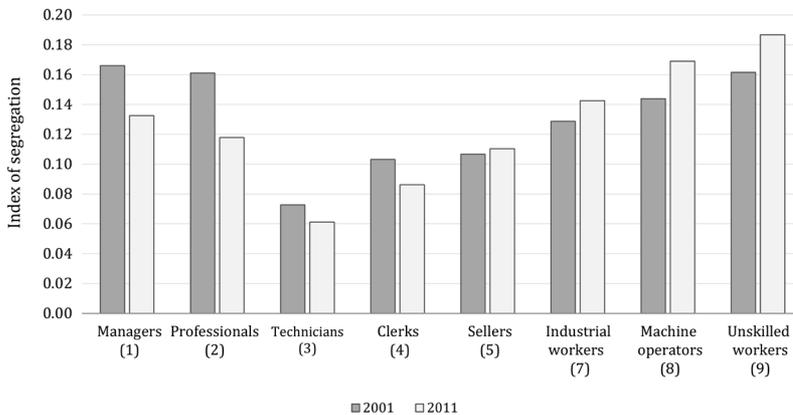


Figure 11.3 Development of segregation indices in Prague by ISCO occupational groups, 2001–2011 (on the level of discrete territorial units)

Sources: Population Census 2001, 2011, Czech Statistical Office

Table 11.4 Development of dissimilarity index in Prague by ISCO occupational groups, 2001–2011 (on the level of discrete territorial units)

	2011								
	Managers (1)	Professionals (2)	Technicians (3)	Clerks (4)	Sellers (5)	Industrial workers (7)	Machine operators (8)	Unskilled workers (9)	
Managers (1)	—	0.12	0.13	0.17	0.19	0.21	0.24	0.26	
Professionals (2)	0.17	—	0.10	0.14	0.16	0.20	0.23	0.23	
Technicians (3)	0.17	0.14	—	0.09	0.11	0.14	0.17	0.20	
Clerks (4)	0.20	0.19	0.11	—	0.11	0.14	0.16	0.19	
Sellers (5)	0.21	0.20	0.12	0.12	—	0.13	0.14	0.17	
Industrial workers (7)	0.22	0.22	0.14	0.13	0.12	—	0.14	0.18	
Machine operators (8)	0.23	0.25	0.16	0.15	0.13	0.12	—	0.18	
Unskilled workers (9)	0.25	0.25	0.18	0.17	0.14	0.15	0.15	—	

Sources: Population Census 2001, 2011, Czech Statistical Office

clerks and salespersons, whereas the high- and low-status groups show a greater level of segregation. Between 2001 and 2011, the level of segregation changed in two ways. First, it significantly decreased in the case of the top two occupational groups (managers and professionals). This is connected particularly with the localisation of new housing construction in the formerly lower-status neighbourhoods, the migration of high-income groups to both newly built and renovated apartments in such areas and the consequent processes of gentrification and suburbanisation (as discussed below). Second, the index of segregation of lower-status groups increased, especially in the case of industrial workers, machine operators and unskilled workers. The IS of these groups is even higher than in the case of managers and professionals. Although these workers decreased in number, it can be assumed that those who remained became trapped in the less attractive areas that the high- and middle-income residents were able to move away from. However, such localities are not numerous in the capital. Yet, it can be concluded that, in general, the rates of segregation are relatively low compared with other post-socialist metropolises such as Budapest (Kovács and Szabó 2014).

The index of dissimilarity (ID) indicates the degree to which social distance is accompanied by spatial distance. From Table 11.4 it is obvious that although the values of the ID are generally quite low, the relationship between the spatial and the social is evident. The highest level of separation can be observed between the groups of managers and professionals on the one side and the groups of industrial workers, machine operators and unskilled workers on the other side (ID ranging from 0.2 to 0.26). For those groups whose social distance is small, the ID takes a low value. Similar to the indices of segregation, the indices of dissimilarity show an upward trajectory in some cases but a downward trend in others. The increase can be observed in the case of the group of unskilled workers (in relation to the majority of all other groups apart from managers and professionals) and to a limited extent also in the case of machine operators. In contrast, the values of the dissimilarity index decreases in the case of managers and professionals whose spatial distance, especially from technicians, clerks and salespersons, considerably diminishes.

Spatial patterns and types of residential areas

The second part of our empirical analysis is devoted to the detailed evaluation of the spatial patterns of occupational groups that lie behind the measured values of segregation indices. While the spatial structures of cities such as Budapest or Vilnius are relatively intelligible, with easily recognisable sectors of low- and high-social status, Prague's spatial arrangement is much grainier with the housing of rich and poor often located side by side (Marcinčzak et al. 2015). This is clear from the spatial distribution of occupational groups (Figure 11.4) within Prague's territory, which is quite difficult to explain without knowledge of the local conditions of individual neighbourhoods. The aim of the following paragraphs is to shed more light on the regularities of the spatial distribution of occupational categories by exploring the patterns on the level of BSUs, which

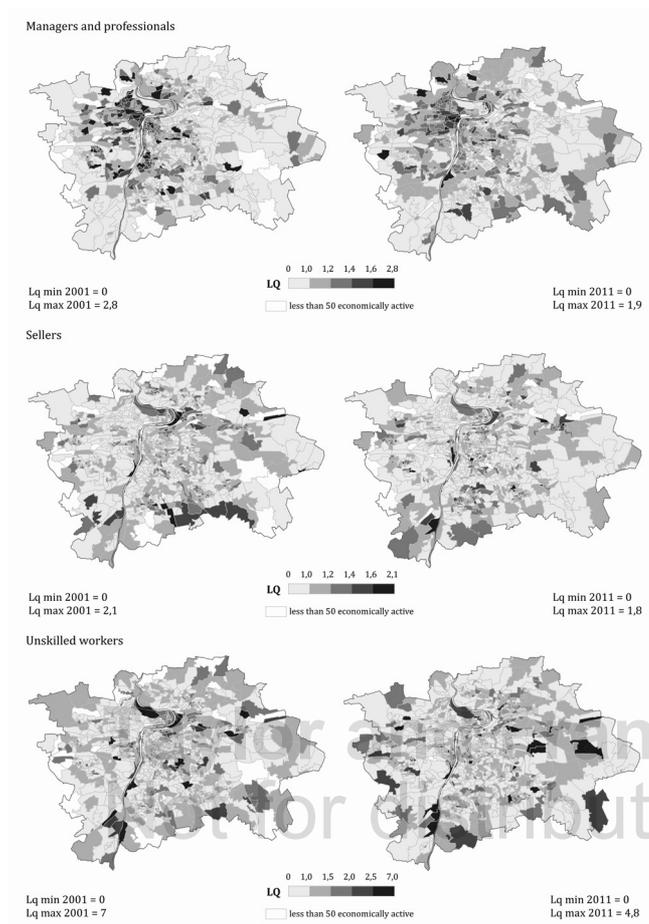


Figure 11.4 Location quotient of selected ISCO occupational groups 2001–2011 (on the level of discrete territorial units)

Sources: Population Census 2001, 2011, Czech Statistical Office

are categorised according to prevailing housing type into six groups (historical core, tenement houses, villas, housing estates, working class houses and inner suburbs).

However, first it is necessary to show how the values of segregation measures change at various spatial levels in Prague (i.e., at the level of census tracts, discrete territorial units, BSUs and cadastral units). As reported in other empirical studies (Duncan and Duncan 1955; Musil 1968; Wong et al. 1999), we found that the higher the spatial level of analysis of Prague's units, the lower the values of the segregation indices (see Figure 11.5). This is in accordance with the findings of previous research on segregation in the Czech Republic that claims that manifestations of

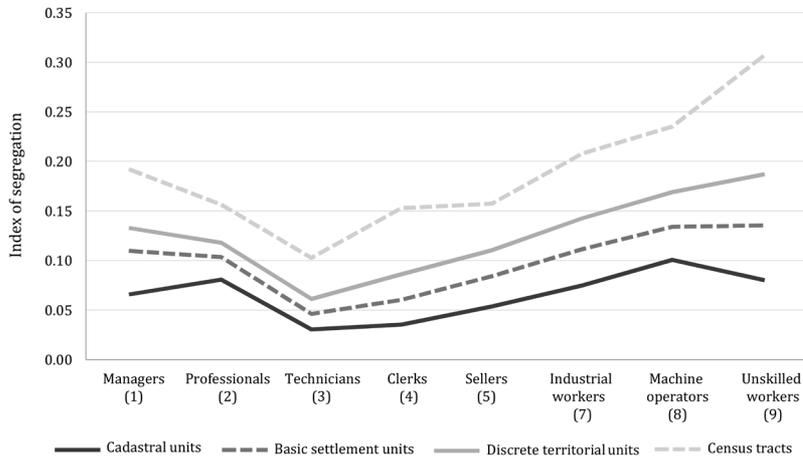


Figure 11.5 Segregation index in Prague by ISCO occupational groups in 2011 on various spatial levels

Source: Population Census 2011, Czech Statistical Office

segregation are often registered in small spatial units, even at the level of one or more houses (Kostelecký *et al.* 2012).

Although the calculated indices for all occupational groups fit this rule, the differences between the values of IS at different spatial levels vary considerably among these groups. The characteristic U-shape is most apparent at the lowest spatial level of the census tracts. On the other hand, the variability of IS values at the level of cadastral units is relatively low. The gap is widening in the case of groups with the lowest social status (unskilled workers, machine operators and industrial workers) and the highest social status (managers). A significant part of differentiation in the distribution of these groups takes place especially at the lower spatial level. On the other hand, cadastral units are relatively more homogenous in terms of the distribution of professionals and technicians. For the purposes of further analysis, it is important to note that the differences between IS values at the levels of discrete territorial units (used in the previous analysis) and BSUs are quite small and that the variability in the differences between groups is quite low.

We also searched for regularities in the spatial pattern that might explain the segregation measures in Prague. As a part of our analysis, we assessed the heterogeneity of the six selected types of residential neighbourhoods by using the segregation indices for both years 2001 and 2011 (see Table 11.5). The historical core and the housing-estates types show the lowest level of segregation and can therefore be regarded as the most mixed types of neighbourhood, while the greatest differentiation is registered in the inner suburbs, working class houses and tenement houses (but only in the case of low-rank occupational groups in the case of the latter).

Table 11.5 Indices of segregation in types of residential areas in Prague, 2001–2011

	<i>Managers (1)</i>		<i>Unskilled workers (9)</i>	
	<i>2001</i>	<i>2011</i>	<i>2001</i>	<i>2011</i>
Historical core	0.08	0.07	0.06	0.11
Tenement houses	0.15	0.10	0.12	0.15
Villas	0.12	0.06	0.14	0.13
Housing estates	0.11	0.07	0.09	0.10
Working class houses	0.13	0.11	0.12	0.15
Inner suburbs	0.13	0.11	0.14	0.16

Source: Population Census 2011, Czech Statistical Office

Undoubtedly, there is a considerable differentiation across neighbourhood types in terms of the socio-economic composition of residents. First, it is necessary to point out that new housing construction is one of the shaping factors in Prague's residential differentiation. As shown in Figure 11.6, residents with high-ranking occupations account for almost 50 per cent of the inhabitants in neighbourhoods with a high share of newly built housing (this category consists of 62 BSUs and covers 8.8 per cent of Prague's population). As discussed in the following paragraphs, new construction takes place predominantly in the types of neighbourhoods where lower or moderate social status residents are present, thus contributing to the more even socio-spatial development of Prague's neighbourhoods.

The historic core (23 BSUs with 3.7 per cent of the population) and villa neighbourhoods (52 BSUs; 7.8 per cent of the population) are traditionally areas of the highest social status and even 40 years of socialist policies were unable to change this. The share of high-ranking occupational groups (managers, professionals and technicians) is very high (45 per cent) in both of these types of residential area compared to the rest of the city (see Figure 11.6). At the same time, about half of the BSUs of these areas belong to the top 20 per cent of Prague units with the most progressive occupational structure. Although the historical core has been experiencing commercialisation (Ouředníček and Temelová 2009) connected with the displacement of some of the original residents, there have not been any drastic changes in terms of the transformation of the structure of the economically active population. However, although the high-status population continues to reside in the historical core and villa neighbourhoods, these areas are losing their exclusivity as part of this population gradually spreads to other areas of the city (to tenement houses, suburban areas). This is definitely one of the reasons for the decreasing of the segregation indices in the case of managers and professionals.⁸

In contrast, one of the types of residential area where significant changes have taken place is tenement houses, which are home to 330,000 people (141 BSUs; 26.2 per cent of the population). The average share of high-ranking occupational groups within the population in this type of residential area has increased considerably since 2001 (and is slightly above the city average) and, more interestingly,

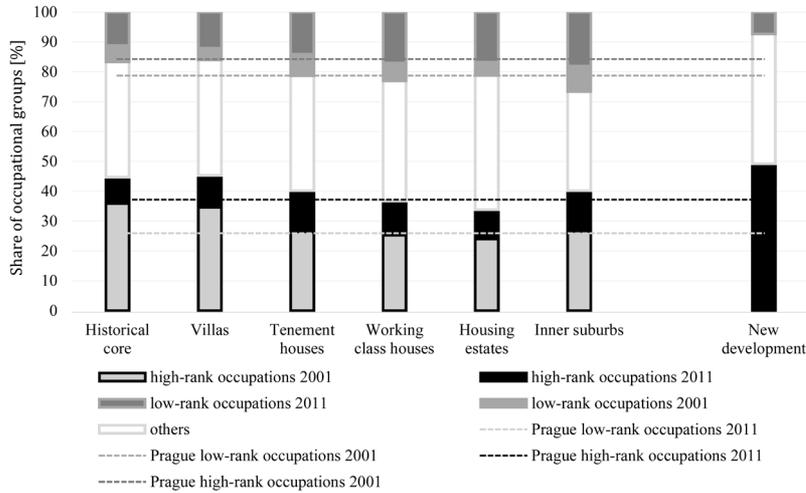


Figure 11.6 Share of residents with high-rank and low-rank occupations in types of residential areas in Prague in 2001 and 2011

Source: Population Census 2001, 2011, Czech Statistical Office

30 per cent of BSUs belong to the top 20 per cent of all Prague units with the highest share of managers and professionals. Conversely, the proportion of low-ranking occupational groups in this population diminished between 2001 and 2011. This shift in population structure is connected with processes of revitalisation, gentrification, and/or incumbent upgrading (Sýkora 1999; Temelová 2007). However, these processes have affected (at least for the time being) only a part of this housing stock. Our analysis of additional socio-economic characteristics reveals that neighbourhoods of tenement houses are extremely heterogeneous and that this heterogeneity has been growing over the past decade. This is evidenced by the fact that approximately one third of BSUs belong to the fifth of Prague's units with highest unemployment rate and worse educational structure, while also having the highest proportion of university educated (the latter proportion has even doubled since 2001). Moreover, a number of changes will not be recognisable at the level of the statistical units analysed in this study because they often take place at the level of streets and even houses.

The housing estates in Prague represent a type of residential area where any changes in the population's socio-economic structure are very carefully observed by both scientists and politicians, because they are home to over 530,000 people (153 BSUs; 41.9 per cent of the population). Indeed, they are also located in the parts of the city that are the worst off: the share of low-ranking occupational groups is slightly above the city average and the proportion of high-ranking occupational groups is the lowest compared with all other residential areas. However, because there have been quite intense regeneration efforts made in these areas, we assume

that the fear of a steep decline taking place in these neighbourhoods appears so far to be groundless in the large majority of Prague's housing estates (compare. Temelová et al. 2011). Concerning the spatial pattern, housing estates seem to be the least heterogeneous type of residential area in the city. Thus it can be inferred that these areas contribute to lowering of the values of the segregation indices.

Similar to housing estates, the working-class-housing type of residential area (82 BSUs; 8.2 per cent of the population) has a slightly higher share of the economically active population that are in the lower part of the socio-professional hierarchy (and this was the case especially for 2001). These neighbourhoods were originally independent villages that were absorbed into the city's fabric during periods of industrial and socialist growth; they represent a relatively heterogeneous part of the urban landscape and consist of family houses of different quality, ranging from former working-class colonies to more spacious housing near the outer city limits.

The residential space that witnessed the second-most significant set of changes over the period of interest is the suburban neighbourhood (131 BSUs; 12.2 per cent of the population), where the share of the low-ranking occupational group declined considerably, while that of managers and professionals increased greatly. This recent change is certainly a consequence of the suburbanisation process (Ouředníček 2003; 2007). Formerly underdeveloped parts of the city on its administrative border that house rather low-status population groups have seen the arrival of new high-status in-migrants who can afford to buy recently built houses and apartments. This has led to a mixture of different status inhabitants living near each other (Špačková and Ouředníček 2012; compare Marcińczak *m* 2013). Although the decline in the share of low-ranking occupational groups has been recorded in inner suburbia, it is still the highest among all six types of neighbourhood investigated in this study. On the other hand, a high proportion of suburban BSUs belong to the top 20 per cent of Prague units with the most progressive occupational structure. Thus, as the suburbanisation process creates clearly delimited areas of housing for 'the rich' and 'the poor', it leads generally to a growing heterogeneity in the inner suburban zone and to increasing values of segregation indices.

In general, there has been a gradual spreading of the higher-ranking social groups to areas of Prague that were hitherto thought of as rather worse than those of the historical core and villa neighbourhoods for instance. On the other hand, there still remain areas of lower social status population that are composed of a higher proportion of people of older productive age who generally have a lower level of education and a consequent lower occupational status. This process of spreading has changed the level of segregation the most in the outer city areas (inner suburbs, working-class houses) and to some extent also in areas of tenement houses where a deeper polarisation on the lower scale has taken place.

Discussion and conclusions

An examination of the long-term development of Prague shows that the largest disparities in socio-spatial differentiation were created during the economic and population booms of the 1930s, 1970s and 2000s and are connected to the growing

stratification of urban society and diversification of the housing stock. The allocation of housing during the interwar period produced rather homogenous neighbourhoods built for similar social classes – villa quarters for the bourgeoisie, tenement houses for officers or workers and housing colonies for the working class, as well as temporary dwellings for the urban poor. This resulted in a relatively differentiated city structure consisting of particular neighbourhoods with distinctive characteristics that to a certain degree persisted in the form of the contemporary inner city. From this time, measures of the social differentiation and segregation started to decrease gradually. Generally speaking, Prague has always been a very stable city in terms of its spatial organisation. Under socialism there was a unified policy for the construction of prefabricated housing estates throughout the outer parts of the city for all social groups to live in the same place or even in the same apartment block. The empirical evidence, i.e., the segregation indices, illustrate that socio-spatial differentiation decreased gradually during the second half of the twentieth century and that this decrease cannot be ascribed to post-socialist development (for similar findings, see Marcińczak *et al.* (2013) for Polish cities based on an analysis of data for the period 1978–2002).

Our evaluation of post-socialist development, based on detailed measures for socio-professional groups and types of residential neighbourhoods, has confirmed that professionalisation rather than polarisation has had an effect on the social structure of Prague. This is illustrated by the increase in the proportion of higher occupational categories in the economically active population and the decrease in the number and share of those in the lower occupational categories. During the post-socialist development period, indices of segregation and dissimilarity have decreased in the case of higher occupational groups. This could be explained partially by the increase in the number and share of people in the higher socio-economic categories and a consequent increase in the variance within these groups. In a simplified way, we could say that non-manual professions can be taken up by a much bigger proportion of the population than before and that these categories contain more heterogeneous people in terms of social stratification (in terms of assets, incomes, lifestyles and so on). The opposite is happening to the categories of manual and unskilled workers, whose share in the city population is decreasing and who are essentially becoming relicts of dwindling neighbourhoods of worse housing stock in parts of the urban environment that are located especially within the outer city and periphery. However, in contemporary Prague, we cannot actually find larger truly poor areas or neighbourhoods characterised by considerable urban decay.

The decrease in socio-spatial differentiation is mainly a consequence of the location of new housing. It may seem surprising that new small-scale developments in the form of in-fills are often located in places representing the socially least developed parts of the metropolitan region at the end of the socialist era. Such new projects are located within or on the edge of former suburban villages, in working-class quarters (Karlín, Smíchov, Holešovice), and in specific inner-urban peripheries, alongside railways and industrial brownfield sites. Because new housing construction is focused almost solely on the middle- and higher-income strata

of population, the incoming population is socially and economically stronger than the indigenous population of these quarters. It is not clear at this stage whether this inflow will strengthen the social structure of these quarters or will lead to social polarisation and segregation on the level of individual houses or blocks of houses that reflects the dichotomy between old and new housing stock.

Although migration to newly constructed housing is the most important factor in the changes to social-spatial differentiation that have been occurring in Prague, the Czech population is characterised by low spatial mobility. This low mobility was even reinforced for a large part of Prague's population by several waves of privatisation of apartments during the transformation period, which still continues today, and this together with regulations on restituted property has fixed the inhabitants in their places of current residence. This 'velvet' housing policy has protected tenants from growing commercial rents⁹ and together with low unemployment has actively blocked out-migration from the city. Additionally, due to the relatively high price of housing and rent, the capital city is almost 'restricted' in terms of preventing a significant inflow of the economically and socially weak population. These aspects of development can be considered as specific factors that have influenced the low level of segregation in Prague, when we compare the city with other parts of the Czech Republic, and also with other CEE capital cities (Kovács and Szabó 2015; Kährlik *et al.* 2015; Marcińczak *et al.* 2015, Valatka *et al.* 2015).

Of course, all these conclusions are valid only in terms of the statistically registered economically active population permanently living in Prague, as recorded by the population census. The decrease in socio-spatial differentiation could be partially influenced by the fact that we excluded economically non-active people, mostly pensioners, who represent a growing proportion of Prague's population and who have declining purchasing power and rather specific spatial concentrations, especially in the oldest housing estates (Temelová *et al.* 2011). Second, foreigners, both from the West and the East, account for the most important part of the migration to Prague, but there is limited information recorded about them in the population census. Moreover, Prague's social environment is structured according to the perpetually changing social spaces of different social groups which, in addition to residents, covers roughly 600,000 non-residents, tourists, workers and clients of shops and services. This mix of social spaces is more complicated and more diversified than the socio-professional structure of Prague's residents. Although this comparative analysis of the socio-professional structure provides an important insight into the overall picture of the socio-spatial structure of this contemporary city, future investigations of socio-spatial differentiation could focus on these other groups of people who together create the social environment of the city.

Acknowledgements

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Notes

- 1 Namely, decile ratio of gross earnings (D9/D1). The decile ratio does not take into account the earnings of the lowest and highest 10 percent of the population (Večerník 2001a).
- 2 Income inequalities are measured by the Gini coefficient of equalised disposable income and the S80/S20 income quintile share ratio.
- 3 In particular, the provision of housing allowance and housing supplement, which address cases where the income of the family is insufficient to cover housing costs. For families with no income, the housing supplement may actually cover total housing costs. Such arrangements make demand-side subsidisation of housing in the Czech Republic very generous – at least in comparison with other post-socialist states (Hegedüs *et al.* 2013; Ouředníček *et al.* forthcoming).
- 4 Furthermore, persons who did not supply their occupational group or complete the census form at all are not included in the analysis, i.e., 77,178 of Prague's inhabitants are not included in our analysis (CZSO 2014).
- 5 In the city centre of Prague, the daily population can be as much as five times higher than the night-time population (Pospíšilová 2012).
- 6 Discrete territorial units were defined especially for this comparative analysis by the authors to create spatial units of similar population size.
- 7 It is obvious from this fact that the labour market of the capital city is very attractive to broad groups of people who seek employment there.
- 8 We must bear in mind the deficiencies of the last census, which was, for instance, unable to cover part of the population (among them especially foreigners).
- 9 The average rents in the regulated part of Prague's housing stock are still about half the price of market rents.

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