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INTERNAL MIGRATION

AND

REGIONAL POPULATION DYNAMICS

IN EUROPE:

CZECH CASE STUDY

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FOREWORD

This study[1] is one among ten case studies made within the project entitled "Internal Migration and Regional Population Dynamics in Europe". This project was initiated by the European Population Committee (CDPO) of the Council of Europe. At its meeting in October 1995, the CDPO decided to commission an investigation into the feasibility of a comparative study of internal migration and regional population dynamics within European countries, for two reasons. Firstly, there had been little interest by researchers or international organisations working in the field of intra-country migration. Secondly, there has been a general improvement of population statistics across Europe, but this has not extended to statistics on internal migration.

Philip Rees and Marek Kupiszewski of the School of Geography at the University of Leeds (United Kingdom) carried out such a feasibility study and presented it to the CDPO in June 1995. The study covered the 28 member states (the number current in 1995) of the Council of Europe with more than 1 million inhabitants. Based on a questionnaire sent to all relevant countries, the conclusion was that, in spite of varying data systems, it would be possible to perform a comparative analysis of this kind (Rees and Kupiszewski 1996).

The CDPO decided to ask Drs Rees and Kupiszewski to undertake a comparative study of internal migration and regional population dynamics. To guide this work, the CDPO also appointed a Group of Specialists with nine members (representing the Czech Republic, Estonia, Germany, Italy, the Netherlands, Norway, Poland, Portugal and Romania), chaired by Mr Lars Østby, CDPO member for Norway. The terms of reference of the study were defined by the CDPO as follows: (1) to investigate the extent of rural depopulation, (2) to analyse the degree to which the processes of urbanisation, counterurbanisation and suburbanisation are in train and (3) to describe the patterns of and trends in internal migration. For each aim comparison of the situation in the early/mid-1980s with that in the early/mid-1990s was to be carried out.

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[1] The views expressed in this study are those of the authors and do not necessarily reflect those of the Council of Europe.

The European Commission, represented in the CDPO by Ms Isabelle de Pourbaix at DG V, Unit E1, took a great interest in the project, and provided co-sponsorship of 30 000 ECU in the first year. Eurostat has followed the project throughout its existence and has supplied information on the digital boundaries of regions.

Due to limited finances and the time available, the study had to restrict itself to ten countries. These were the countries in which the Group of Specialists or consultants had expertise. Even with this limited coverage, the studies provided very interesting results, illustrating the usefulness of this kind of cross-national comparison. The country studies are written by the consultants and, where appropriate, co-authored by the national representative in the Group of Specialists, by a colleague or colleagues from the National Statistical Office in the country concerned or by other national experts.

Lars Østby

Chairman, Group of Specialists of the CDPO on Population Dynamics and Internal Migration

ACKNOWLEDGEMENTS

ABSTRACT

Czech Republic has experienced, over the last decade, quite a balanced population system with low growth. This has changed recently and from 1994 we noted a decrease in population partially offset by international migration, for the time being mainly temporary labour circular movements. The decreasing trend may well continue due to future replacement in the reproductive ages of large female cohorts with much smaller cohorts, currently aged 0-15 years. Ales and Simek (1996) expect by the year 2020 a population decrease of at least 471 thousand (high variant). International migration will probably reduce to some extent the effect of negative natural increase.

In terms of population dynamics the most important feature we have observed is slow but clear deconcentration of population from large cities to suburban areas. The main gains are observed in medium size towns and smaller communities at the expense of large cities and rural areas. However, the migration factor plays a lesser role than in the past. Net migration is low and migration effectiveness is very limited. The relationship between migration and other variables (population density, level of urbanisation) is rather weak.

Unemployment has limited negative impacts on migration flows. No doubt, this may change when the serious restructuring of industry starts and unemployment increases - an almost certain scenario given the Czech Republic's willingness to join the European Union.

The main enigma of the Czech migration system is its future dynamics. So far migration has been low, but with the development of the economy, including the housing market, improvement of telecommunication and increasing wealth of the society one may expect that migration trends would contribute much more to the regional population dynamics.

The large units for which migration data were available in the Czech Republic reduce the number of inter-unit migrations, increase the number of intra-unit migrations, and in effect blur the picture of mobility, which anyway is quite low. Another factor, which made the analysis somewhat difficult is the mixture of signals sent to the economy by the Czech government. This mixture has confused professional economists, not to speak of ordinary people.

1. CONTEXT

The enormous political, social and economic changes in Central and Eastern Europe that we have witnessed in the last decade present a substantial challenge to the international community. For wealthy old Western democracies the challenge is to help to integrate weaker Central and East European democracies into the Western World. For the former communist states the challenge is to develop their economies and political systems to make them compatible with the Western style democracies. As recent invitations show, such as that issued by NATO to the Czech Republic to negotiate its membership and such as the expected negotiation to join the European Union, this process is well advanced. It goes on at many levels and in many different places. The project on Internal Migration and Regional Population Dynamics in Europe, initiated by the Council of Europe and financed jointly with the European Commission, is just one example of the contribution to the much wider developments that are encouraging European integration.

The Czech Republic is a very interesting case - one of pre-war Europe's economic leaders, crippled by communist management to much less extent than other forcibly sovietised countries, and one of unquestioned, despite recent problems, leaders in the economic transition. It is one of the countries which are the closest, among economies in transition, to the European Union's standards. For demographers it is interesting to identify whether demographic behaviour of population in Czech Republic is typical of the Western or Eastern part of the continent.

2.   INTERNAL MIGRATION AND POPULATION CHANGE REVIEWED

After a transfer and expulsion of at least 2.8 million Germans the Czech Republic had a population of 8.8 million on its territory in 1948. As of 1991 (census data), the country had 10.3 million inhabitants. Hence, over that period there was an average increase of 34.8 thousand people a year which means in relative terms 0.36%. According to the estimates, the Czech Republic lost about 430 thousand inhabitants through international (to a large extent illegal) migration between 1948 and 1989, which represented more than 10 thousand a year (Kucera 1994). The country had lost some 600 thousand people as compared to the situation at the end of 1937 (Kucera 1994). The 1950s were typified by a relatively high fertility rate and decreasing mortality; then, the 1960s symbolised worsening of the trends while, in turn, the 70's revitalisation of vitality. A long-term demographic depression of the whole country (Vyvoj... 1995) started in early 1980s when the average increase per year was lower than 10 thousand and continued in the 1990s. Over time negative population trends are more and more evident. Between 1991 and 1994 the population of the Czech Republic increased by only 28,554 people, in relative terms 0.28% *per annum*. In 1994, 1995 and 1996 the population decreased, mainly due to reducing fertility, by 0.9 thousand 11,8 thousand and 12,2 thousand respectively (Council of Europe 1997). The positive net international migration, in these two years was about 10 thousand and was not able to offset the losses through natural decrease. The latest changes in demographic patterns are closely related to ongoing processes of transition and transformation. Since 1989, the Czech Republic has begun to experience huge economic and social changes that had already been under way in Western European countries for 20 years. These included significant falls in the rates of marriage and birth, and, after 30 years of stagnation a rise in life expectancy (Human development report, 1996). Period TFR, which till 1979 oscillated around replacement level, has been falling since then reaching in 1996 exceptionally low 1.18 children per woman. No doubt cohort TFR will be

higher, as this very low period TFR may be due to the postponement of births to more prosperous, in economic terms, times. Mean age at childbearing increased from 24.6 years in the first half of 1980's to 26.2 in 1996 (Council of Europe, 1997). Furthermore, there is a process of demographic ageing which might pose significant social and economic problems at the beginning of the next century. The demographic forecast estimates the future development of the Czech population to be as follows: 10.289 million in 2000, 10.317 in 2010 and 10.216 in 2020 (Populacni vyvoj 1996, a medium variant).

An important process in population development is the redistribution effect of internal migration. When analysing this process, there are several trends which are worth pinpointing, briefly describing and explaining (see the following publications for details: Kühnl 1975, Kühnl 1978, Kühnl and Pavlik 1981, Kühnl 1986, Kara and Kucera 1987, Drbohlav 1989, Drbohlav and Blazek 1992, Hampl and Kühnl 1993, Bartonova and Drbohlav 1993, Kucera 1994, Vyvoj 1995, Hampl, Müller 1995, Kühnl and Cermak 1995, Cermak 1996a,b, Drbohlav and Cermak, forthcoming). During the whole communist era the migration did not follow natural preferences and dislikes of the population. The state artificially influenced internal migration patterns through various administrative instruments. These were, in particular, through allocating housing construction, which was of decisive importance, through the direction of investment, (e.g., there was a ban on building family houses in some rural areas) and through various direct and indirect subsidies. The main aim of these policies was to homogenise the built environment as much as possible through a kind of decentralised urbanisation (Kucera 1994).

In the 1940s the migration situation was heavily influenced by resettlement of the border zone (mainly North Bohemia, West Bohemia and North Moravia regions), from which more than 2.8 million Germans had to leave. More than 1.2 million people came there by May 1947 (Kucera 1994). During the 1950s, the need for labour in the Ostrava region with its coal mining, metallurgy, and heavy industry, were met through planned migration. Thus, through migration of young people the age structure of North Moravia's local population was significantly improved. In the 50s and 60s the state supported migration mainly to the North and West Bohemia border zone, to support agriculture, forestry and then also other branches of economy and to try, not too successfully, to stabilise population, and consequently, economic life there.

3

The third migration wave started in the 1970s. After significant deterioration of the environment, the state attempted to make the industrial North Bohemia area, dominated by coal mining, heavy industry, and electricity production, more attractive for people to work and live in. Since the 1970s, as a consequence of administrative decisions, migration streams have mostly been channelled towards selected urban centres, in particular, regional and district capitals. As a corollary, due to a loss of young people and because of ageing process, many rural settlements started losing population through natural decrease.

The general picture of migration, based on existing research, for the whole period under study, can be summarised as follows:

1) There has been a relative inertia in migration patterns.

2) The gradual decline of migration intensity has been apparent. For example, while between districts (*okres*) on average 174 thousand persons migrated per year in 1961-1965, only 129 thousand did so in 1986-1990 (Cermak 1996a). Also, the migration effectiveness (the share of net migration of the migration turnover) has been decreasing over time. Thus, the whole process of population redistribution has been less important.

3) Migration over long and medium distances has been diminishing while that for short distances has been increasing or has stabilised. It can be documented by a fact that the share of those migrating between administrative communes within districts increased from 26% to 43% between 1950-1954 and 1986-1990, while a share of those migrating between regions within the state decreased from 43% to 31% in the same period (see Table1).

4) There has been a significant increase of migration intensity from East to West.

5) Population shift from smaller to larger settlements has occurred. The most dynamic and the most attractive in terms of migration were towns between 20 and 50 thousand inhabitants followed by centres with 10 to 20 thousand inhabitants. In turn, the smallest settlements with less than 5000 people were the most unattractive. Prague suffered because of the policy to spread urbanisation. It increased its population by only 81 thousand (7.2%) between 1961 and 1990 (Kucera 1994).

6) Over time economic reasons for migration were losing their importance while other reasons, for instance, environmental and social qualities, were on the rise.

7) Prague, together with Central Bohemia, has exhibited permanent popularity amongst migrants. While previously experiencing large migration losses, the South Bohemia region has become attractive since the 1970s. On the West Bohemia and North Moravia regions can be marked as rather unpopular during the 1980s.

Table 1. **The structure of migration in % of total flows, Czech Republic, 1950-1994**

Time	Migration between communities within districts[1]	Migration between districts within regions[2]	Migration between regions within country[3]
1950-1954	25.9	31.5	42.6
1955-1959	27.5	32.5	40.0
1961-1965	39.4	27.1	33.5
1966-1970	40.5	26.7	32.8
1971-1975	44.1	25.0	30.9
1976-1980	44.9	25.0	30.1
1981-1985	43.2	25.8	30.9
1986-1990	43.4	25.4	31.1

Notes: Source: Cermak - internal materials.

1 About 15-20 km, 2 about 60-80 km, 3 about 150-200 km.

Comparability of the data is in part eroded: 1) In 1960 by significant changing of number of administrative districts and regions; 2) During the whole period by aggregating of communes which led to decreasing of the whole number of communes (except for 1991-1995).

The transition era of the first half of the 90s has brought about the decline in migration intensity even more significant than in the previous periods. The reasons for the change are grounded in a collapse in housing construction in an under-developed housing market. The under-development manifests itself trough (1) inadequate legislation, (2) unclear ownership relations and (3) not fully liberalised rents. Lower migration also results from the absence of strong push factors in potential out-

migration areas. For example, the number of migrants who changed residence between communes has fallen by 25% between 1990 and 1994 (Drbohlav and Cermak, forthcoming). Also, the share of migration between communes within districts climbed to 47% of the total migration in the period 1991-1995. Old industrial regions in the North Moravia and North Bohemia lose even more through migration while Central Bohemia and south-west border zone have strengthened their position as regards migratory gains (reflecting the advantage of a proximity to Germany). The present development constitutes an evident shift towards an increased migration attraction of smaller communes with 1-5000 people. On the other hand, the migration loss of large cities has intensified (Cermak 1996). Suburbanisation processes have started being more apparent in the case of Prague and Brno (Cermak 1996a).

There is a new, important and very dynamic component of population change in the Czech Republic - international immigration. At the end of 1995 there were 120,060 immigrants being officially granted a long-term residence for one year. Some 90% of them fall into a category of typical economic migrants (Informace 1996). Although their current influence upon the population development is rather marginal - immigrants' stay is meant to be temporary - world-wide experience teaches us that temporary migrants can easily become permanent with significant impact on demographic characteristics of the entire population.

Migration is often substituted with commuting (the daily journey from home to work). When people change jobs, the characteristics of their commuting journey also change and they re-assess their residential location. In some cases this re-assessment leads to residential migration. Commuting where an administrative border of a municipality is crossed, is a very important phenomenon in the Czech Republic. Measurement of this process is a complicated task since the number of municipalities changes over time and also the definition of who is considered to be a commuter was not the same all the time. Nevertheless, we find that the intensity of this process is relatively stable over time and ranges between 31% and 36% of the economically active population between 1961 and 1991.

3.   METHODS USED AND DATA EMPLOYED

In this section of the report we describe the demographic data and methods utilised in the analysis.

3.1.   Geographical scale and geographical units

The spatial scale of the research was determined by the availability of the data. The investigation was conducted for 75 *okres* plus Prague. This spatial scale is roughly equivalent to NUTS level 3 in the European Union. This geography is far from ideal for the kind of study we designed. Much more significant results could have been obtained if the research was based on commune level, where averaging effect of large administrative units could have been avoided.

3.2.   Variables

3.2.1. Population and population change data

Stocks of population for *okres* in 1984 were compared with the stock of population in the end of 1994. No recalculation was needed as no changes of *okres* boundaries occurred between 1984 and 1994.

3.2.2. Migration

On the *okres* level origin destination age sex (ODAS) arrays for 1984 were provided in a print out form by the Department of Social Geography and Regional Development of the Charles University. These data were typed into data files and checked for consistency. For the other two years of the analysis, 1994 and 1995 the data were provided in the form of anonymised individual records. They were aggregated to origin destination age sex arrays. The use of data for two years (1994-1995) reduces the statistical errors and short term fluctuations. At a later stage of the analysis the data was aggregated into unemployment bands, density bands, altitude bands, functional

bands and population size bands, separately for males and females. In each case net migration and the effectiveness of migration between bands were calculated.

3.2.2.1.The registration system for migration in the Czech Republic

This section of the report provides a brief description of the registration system for recording migration which operates in the Czech Republic. Any migrant, after migrating from one residence to another, has an obligation to register his/her migration movement in the destination district. He or she must go to the municipal registration office except in the case of Prague and Brno, where registrations are carried out at police stations. Besides other various forms, a migrant has to fill in a form called "Hlaseni o stehovani" that is specific to the registration of a migration. He/she has to report name, date of birth, date of registration, sex, family status, citizenship, the highest educational level attained, reason for migration, former and present residential addresses. Every month data are passed from districts and regions to the Central Statistical Office in Prague - which is responsible for handling these kinds of statistics, processing the data and preparing them for publication. The main results are made available as crosstabulations of migration by various characteristics in the annual Statistical Yearbook, published by the Czech Statistical Office. In 1997 some new procedures were introduced. The data files now go directly from municipalities to the centre without being assembled at regional level.

Besides the migration form required for the Czech Republic's statistics, another migration form has to be filled in for police purposes. This is a form recording change of permanent residence, which is required by the Czech Registration Office for the Central Population Register. On receipt of this form, the police inform an "origin (former) municipality" about the migration and the municipality de-registers the person. This triggers a request for the origin municipality to send all the migrant's documents to the destination municipality office.

3.2.3. Births and deaths

Data on births and deaths in 1994 for *okresy* were used to construct Webb typology of population change for each commune and municipality. The period for which births and deaths were recorded is inconsistent with the period for which migration data were recorded. This should not introduce any significant errors in the Webb typology.

3.2.4. Unemployment

Data on unemployment expressed a percentage of unemployed in the total labour force by *okres* in 1994.

3.3. Key indicators

3.3.1. Population density

Population density was calculated for *okres*, based on the area calculated from maps provided by the Land Survey Office in Prague and a population count for 1994. As the units of measurement are large, this indicator provides somewhat misleading information, averaging population density, particularly in those *okres* where there is a mixture of low and high density settlement.

3.3.2. Unemployment

Unemployment data were expressed the percentage of unemployed to the total labour force. The definition of unemployment applied in Czech statistics has been used and it may not be comparable with definitions in other countries covered by the programme of research. The comparison of the notion of unemployment in various countries is out of the scope of this work.

3.3.3.   Functional classification

The functional classification applied in this study is a very simple one (see section 9). It was proposed and calculated by Hampl (1996) for each *okres* based on the data from 1991. The formula behind the indicator favours those *okres* which have a low share of agriculture and high share of services, that is a modern post-industrial type of economy.

3.4.   Mapping methods

Mapping methods have been described in Rees, Durham and Kupiszewski (1996). The rules set out there are used in this study.

4.   SPATIAL PATTERNS

4.1.   The pattern of population change: 1984-1994

Over the decade 1984-1994 the population of Czech Republic declined by slightly more than 700 people, a remarkable stability. The geographical distribution of these changes is also rather flat, hardly a surprise, given the average size of *okres* equal to 136 thousand. As Figure **1** shows the increase of population has been observed in the Eastern and Southern parts of the Republic and in the largest cities such as Prague and Brno. Selected o*kresy* in the North - Central part of the Republic and a triangle with vertices in Svitavy, Breclav and Uherske Hradiste have been losing population.

4.2.   The pattern of internal migration in 1994-1995

Okresy with the largest inflow (Figure 2, Figure 3, Figure 4, Figure 5) are located in northern part of Bohemia, except the extreme North. There is also quite significant inflow to *okresy* located in the far South. This is in particular visible for female migrants. Rings around Prague and Brno show both high in- and outmigration. Characteristically the urban centres: Prague, Plzen, Brno, Karvina or Ostrava have low rates of inflow and outflow. Moravia in general generate much less migration both in- and outbound than Bohemia. The picture of net migration (Figure 6 and Figure 7) is a lot more complex. The urban centres: Prague, Plzen, Brno, Ostrava, and Karvina were all moderately losing population due to migration, whereas the surrounding o*kresy* noted increases in population. This was particularly visible for Prague and Plzen, where growth was highest. The sex of migrants has little impact on their behaviour. Efficiency of migration (Figure 8 and Figure 9), in general low, increased in these suburban areas. The pattern described suggests that the process of suburbanisation is underway in the Czech Republic. This has to be confirmed in research based on much smaller units.

Figure 1: Population change in Czech Republic by Okres, 1984-1994

Population change
(1984 = 100)

- 105 to <110   (2)
- 100 to <105 (27)
- 95 to <100 (46)
- 90 to <95   (1)

0   40   80
Kilometers
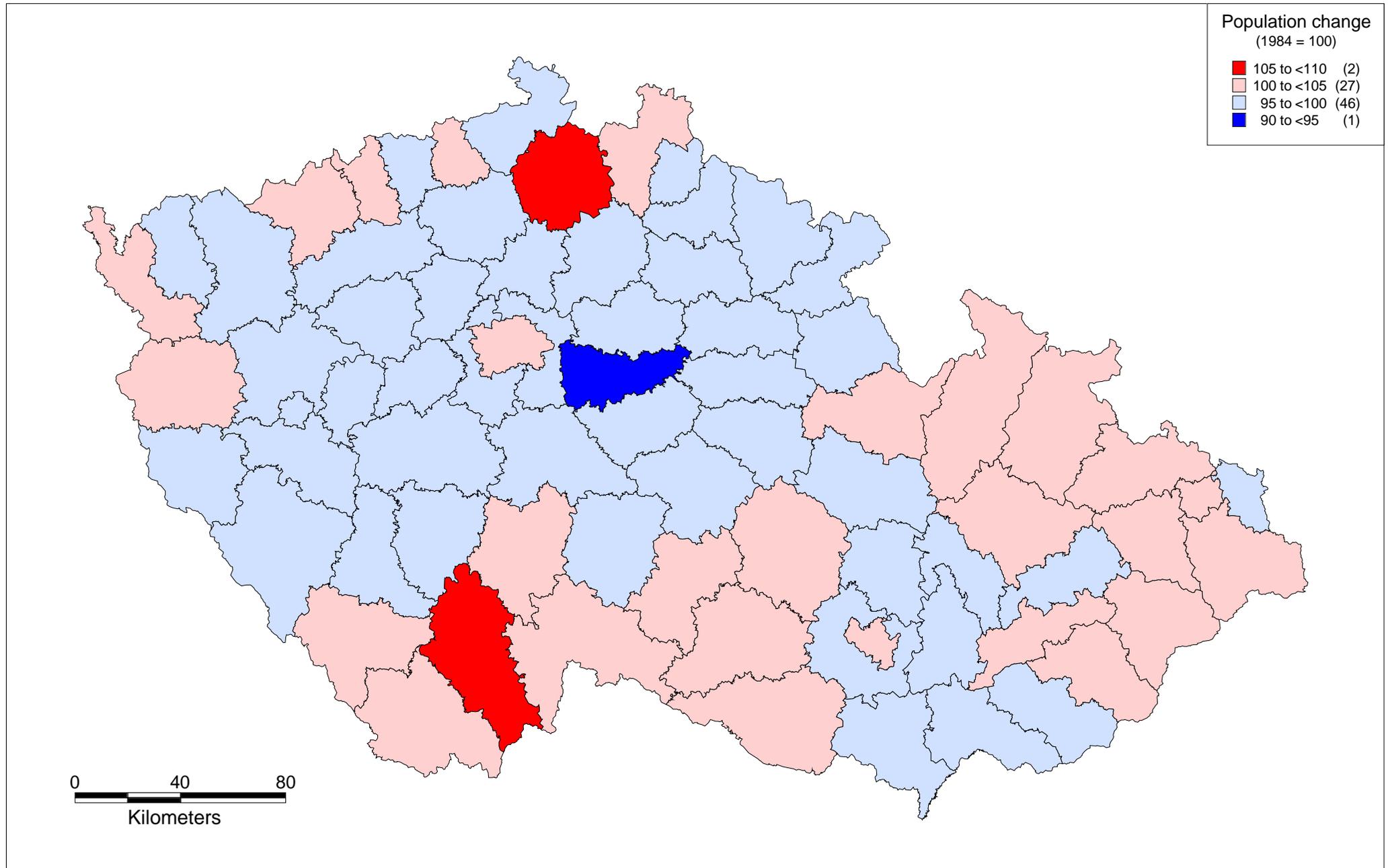
Figure 2: Annualised rates of male inmigration in the Czech Republic by Okres, 1994-1995

Inmigration per 1000

- 15.0 or more (2)
- 10.0 to <15.0 (19)
- 7.5 to <10.0 (42)
- 5.0 to <7.5 (13)

0   40   80
Kilometers
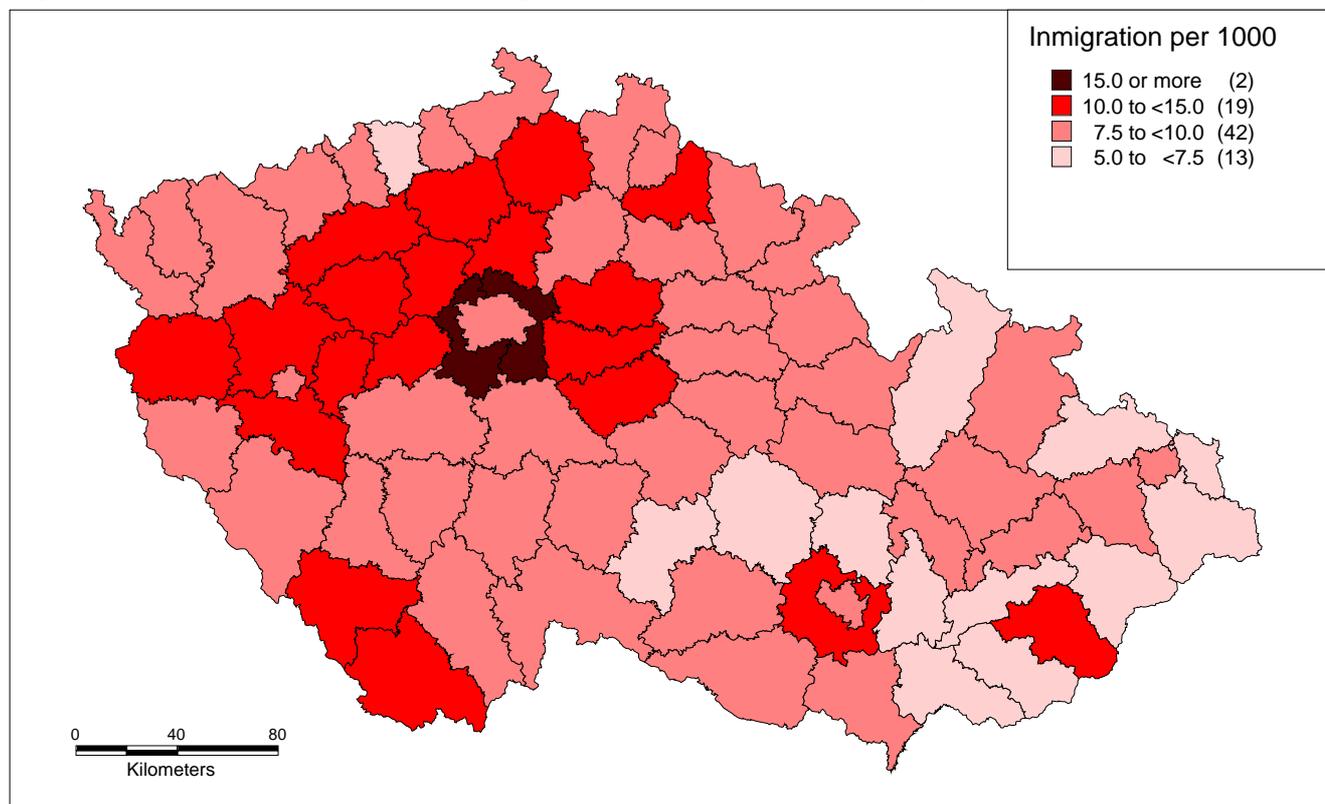
Figure 3: Annualised rates of female inmigration in the Czech Republic by Okres, 1994-1995

Inmigration per 1000

- 15.0 or more (2)
- 10.0 to <15.0 (26)
- 7.5 to <10.0 (38)
- 5.0 to <7.5 (10)

0   40   80
Kilometers
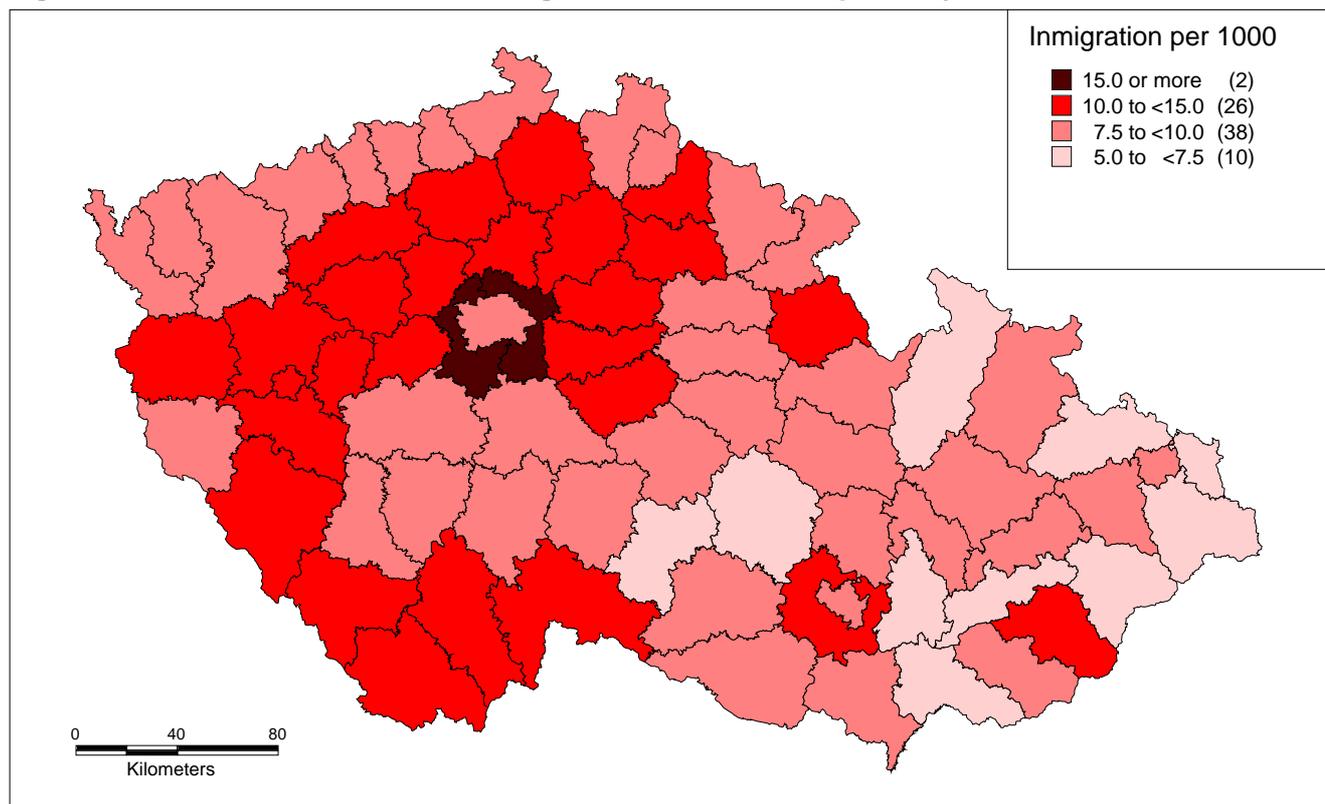
Figure 4: Annualised rates of male outmigration in the Czech Republic by Okres, 1994-1995

Outmigration per 1000
- 15.0 or more   (1)
- 10.0 to <15.0 (18)
- 7.5 to <10.0 (39)
- 5.0 to <7.5 (18)
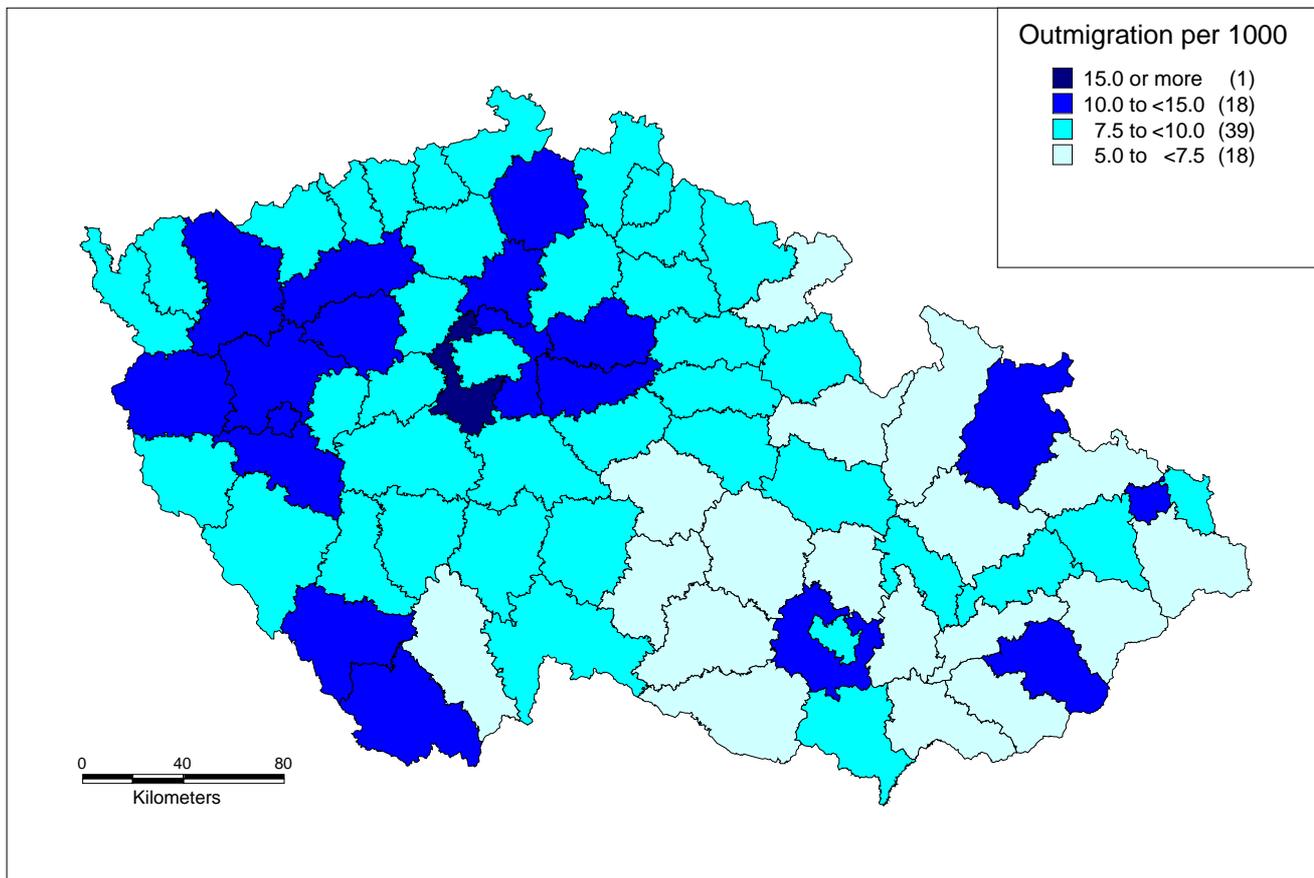
Figure 5: Annualised rates of female outmigration in the Czech Republic by Okres, 1994-1995

Outmigration per 1000
- 15.0 or more   (3)
- 10.0 to <15.0 (26)
- 7.5 to <10.0 (38)
- 5.0 to <7.5   (9)
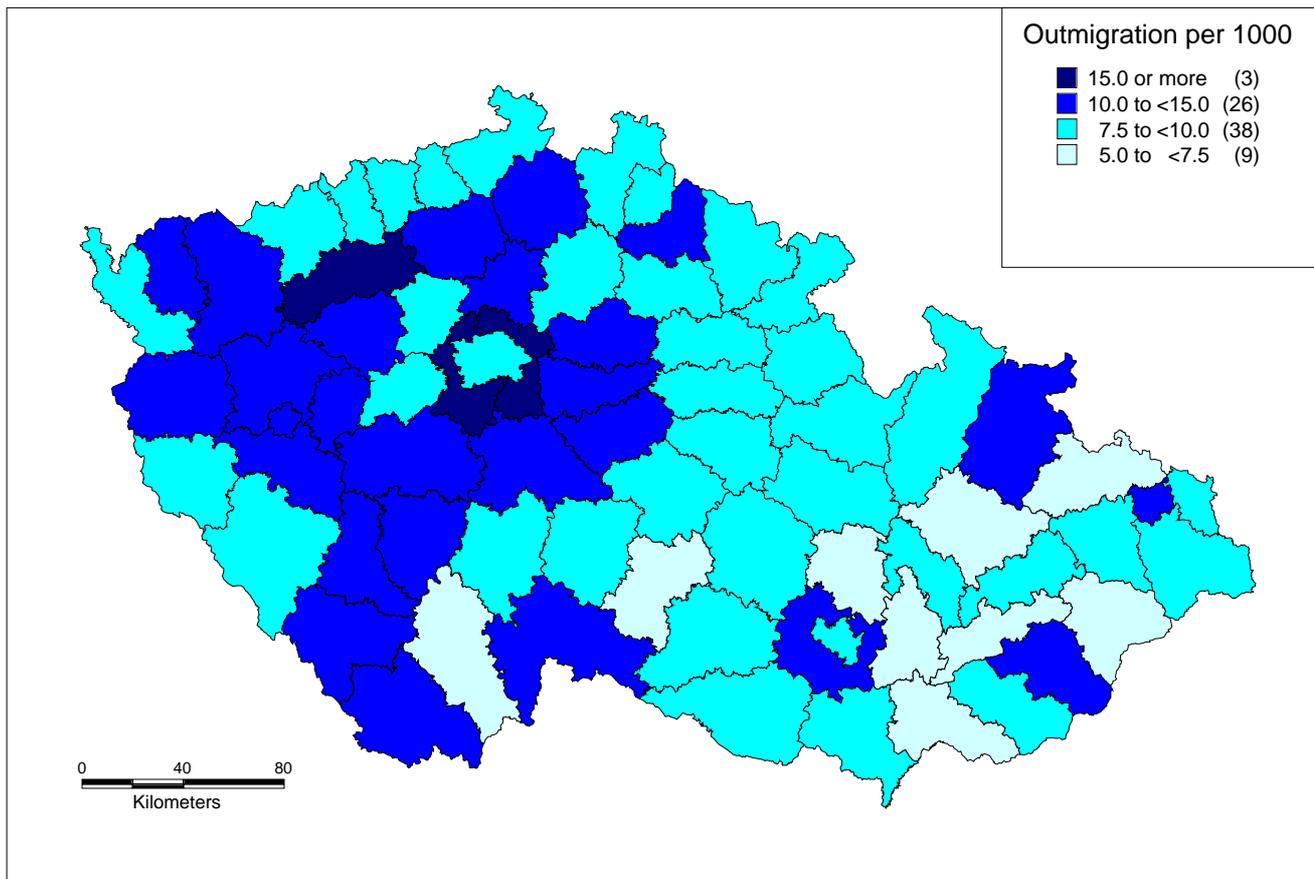
Figure 6: Annualised net male migration in the Czech Republic by Okres, 1994-1995

Net migration per 1000

2.5 or more (7)
1.0 to <2.5 (11)
0.0 to <1.0 (27)
-1.0 to <0.0 (16)
-2.5 to <-1.0 (14)
-5.0 to <-2.5 (1)

0   40   80
Kilometers
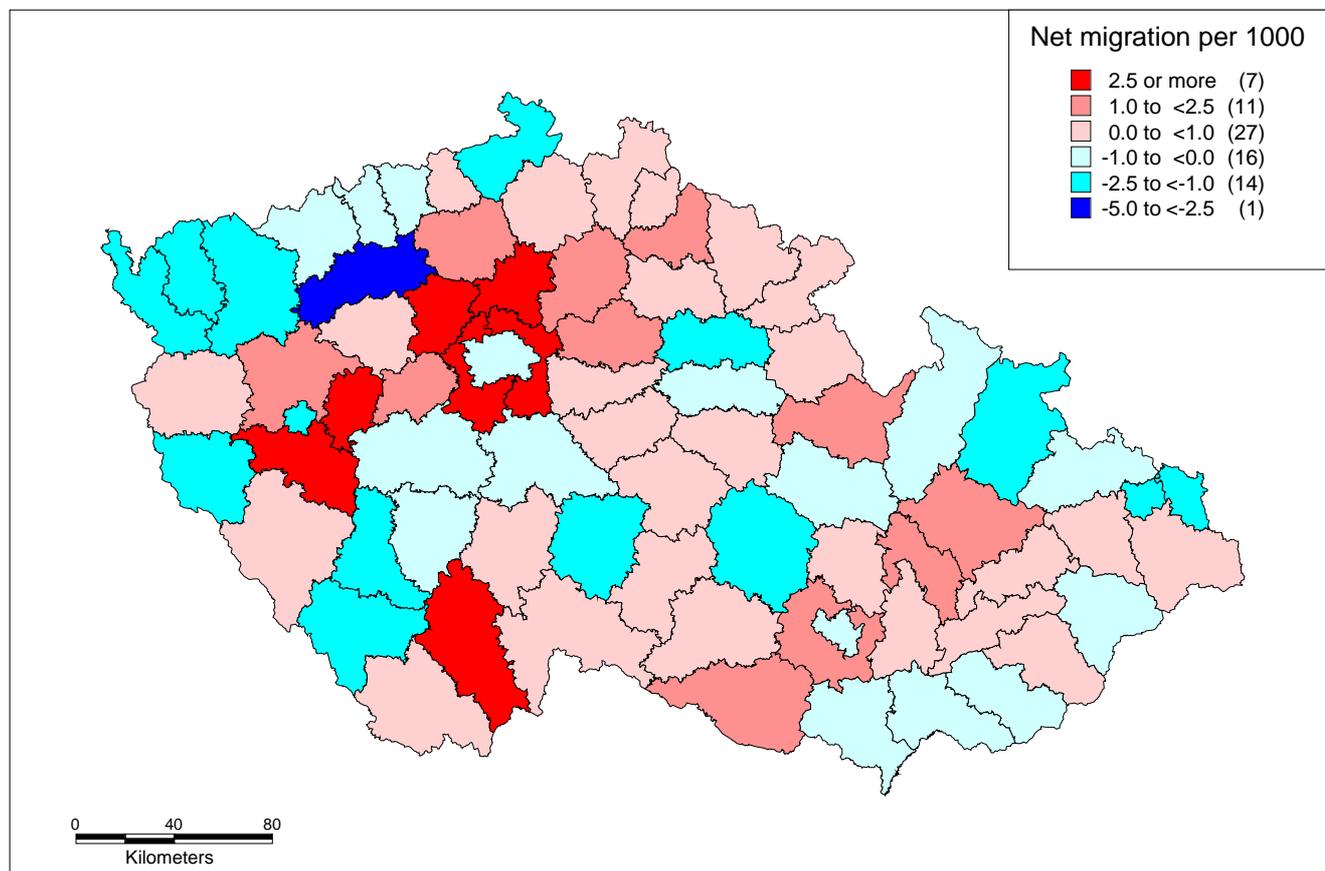
Figure 7: Annualised net female migration in the Czech Republic by Okres, 1994-1995

Net migration per 1000

2.5 or more (5)
1.0 to <2.5 (13)
0.0 to <1.0 (21)
-1.0 to <0.0 (27)
-2.5 to <-1.0 (10)
-5.0 to <-2.5 (0)

0   40   80
Kilometers
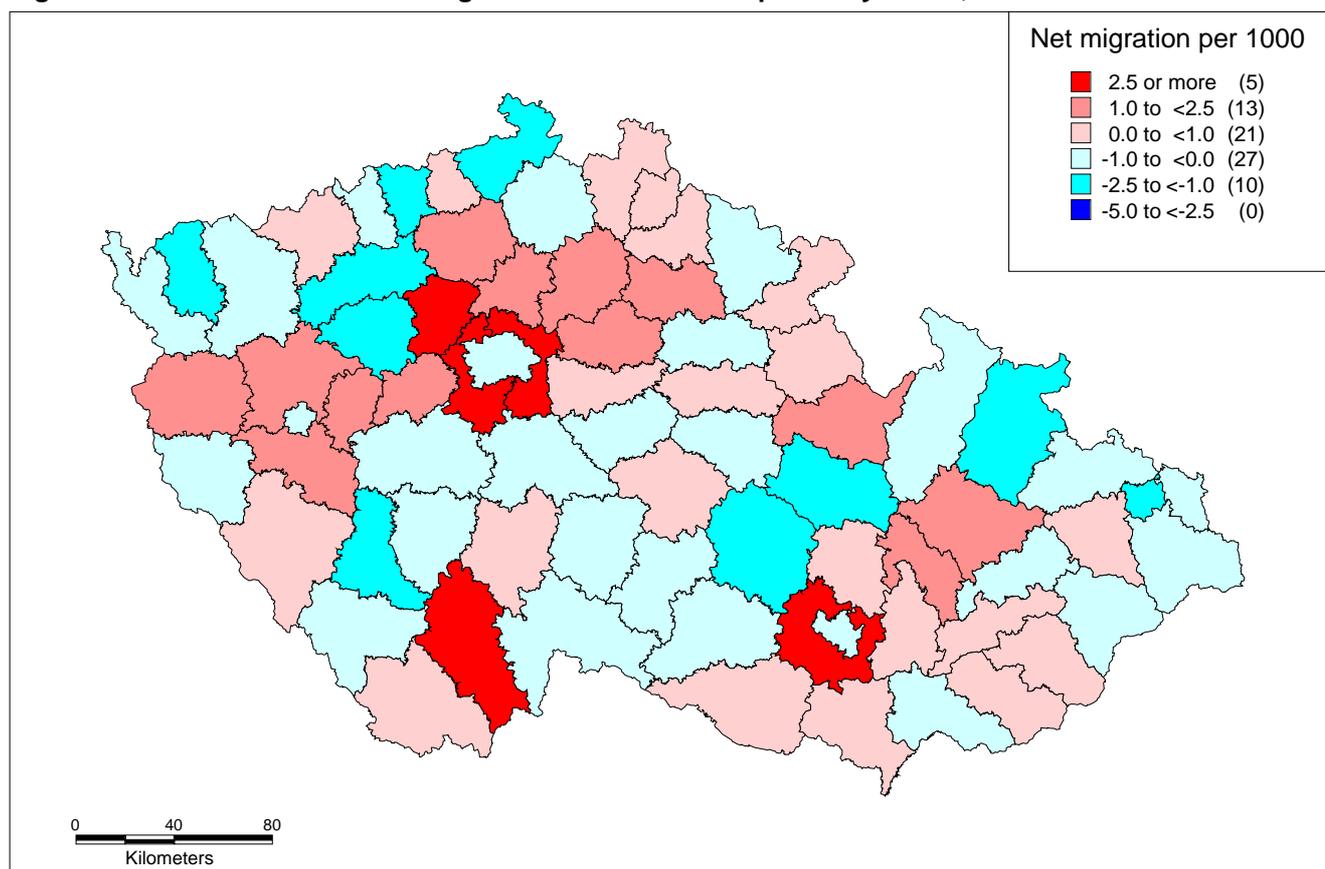
Figure 8: Efficiency of male migration in the Czech Republic by Okres, 1994-1995

Efficiency of migration

- 20.0 or more   (0)
- 15.0 to <20.0   (3)
- 10.0 to <15.0   (12)
- 5.0 to <10.0   (25)
- 2.5 to <5.0   (13)
- 0.0 to <2.5   (23)

0   40   80
Kilometers
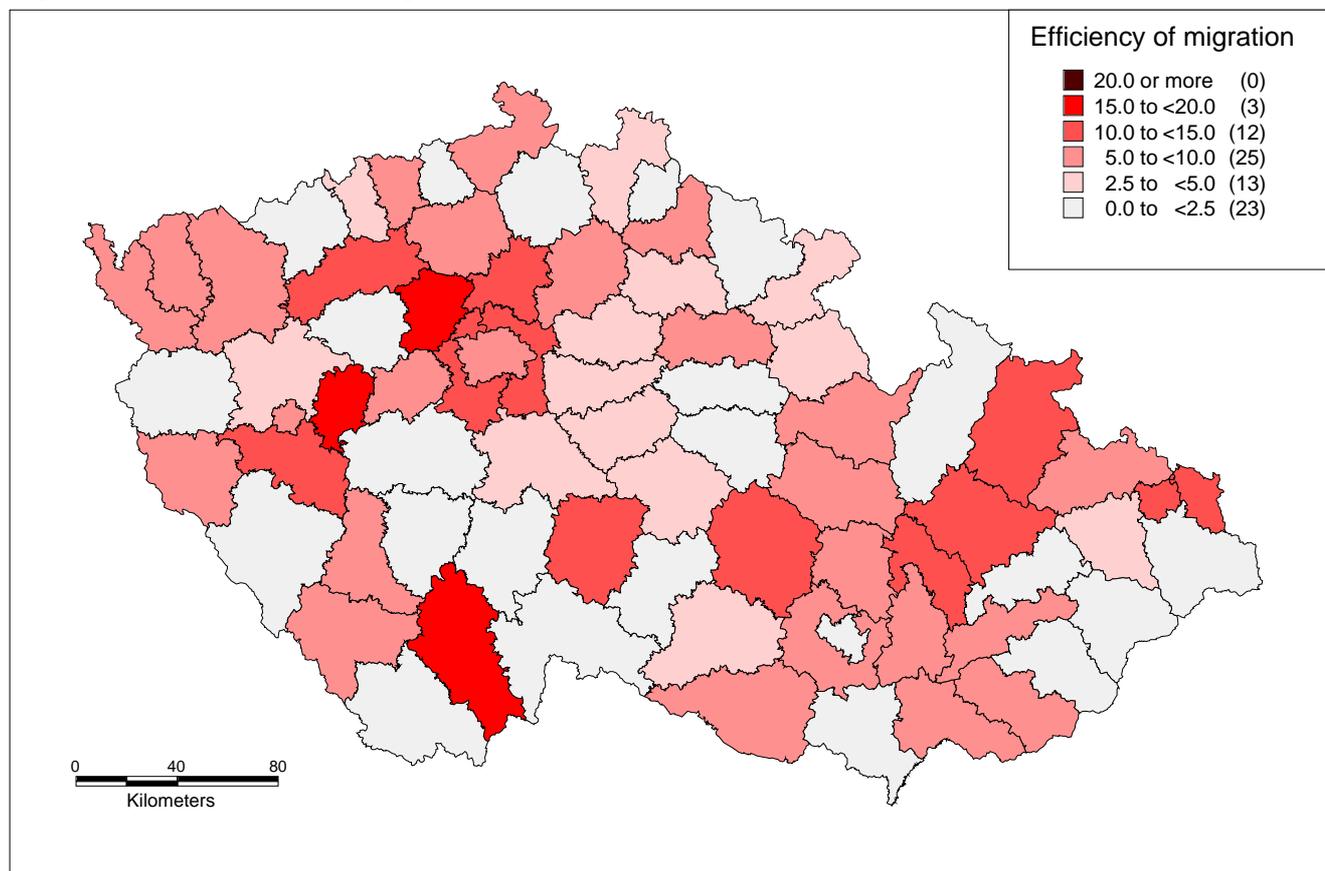
Figure 9: Efficiency of female migration in the Czech Republic by Okres, 1994-1995

Efficiency of migration

- 20.0 or more   (1)
- 15.0 to <20.0   (2)
- 10.0 to <15.0   (5)
- 5.0 to <10.0   (25)
- 2.5 to <5.0   (17)
- 0.0 to <2.5   (26)

0   40   80
Kilometers
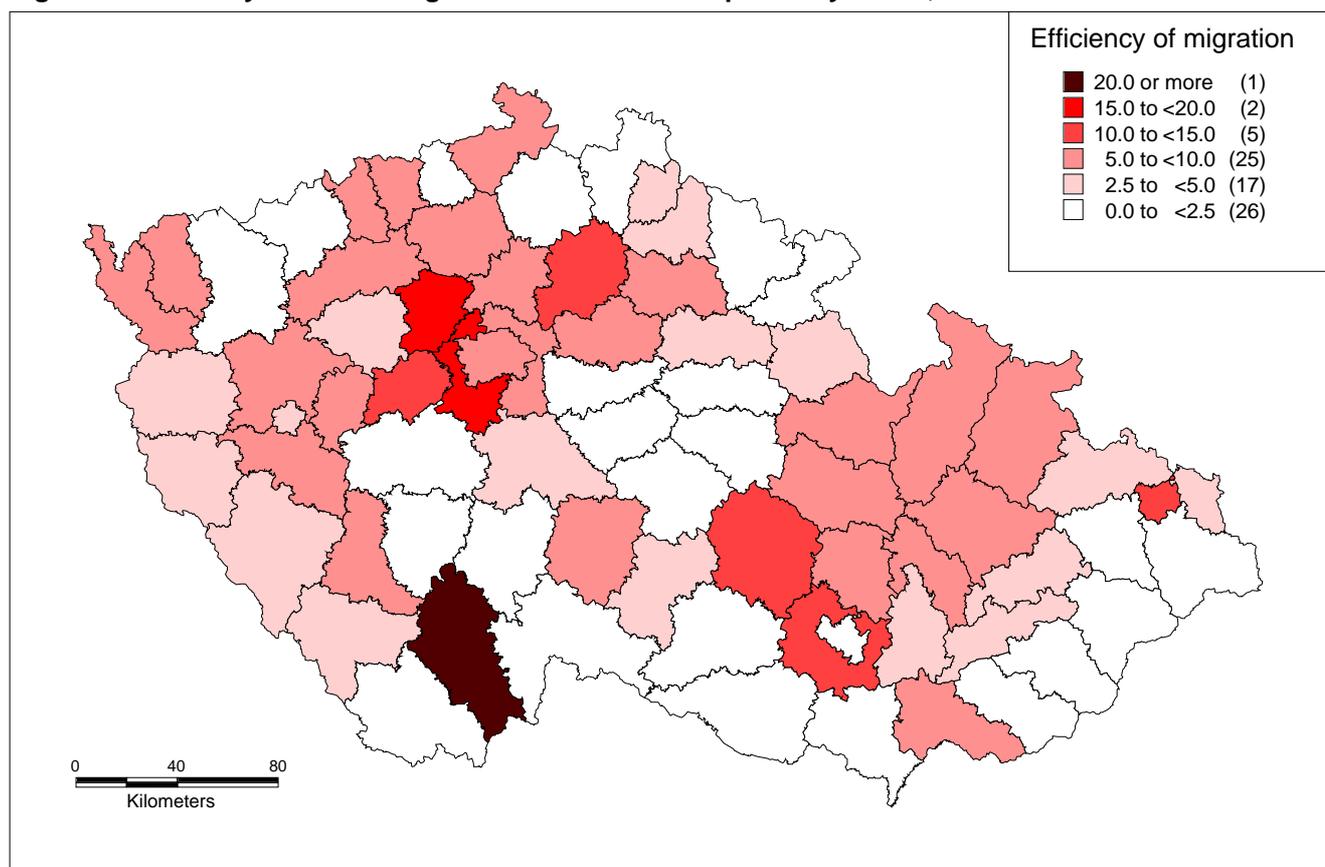
5. INTERNAL MIGRATION THROUGH THE LIFE COURSE 1994-1995

The maps of net migration at o*kres* level in the Czech study are "flat". This can be interpreted in the following way. Socio-economic conditions, mainly availability of working opportunities, in the Czech Republic have been, to date, relatively "homogeneous" over space. Thus, there has been a lack of very strong "push" factors which might expel population from their localities. Moreover, the collapse in housing construction and non-existence of a market for houses or apartments strengthens the "frozen structure". This will probably change in the near future with growing economic problems (very intensive polarisation of the whole society), rising rates of unemployment and liberalisation of prices in the housing market. Also the size of units of analysis is relatively large, masking intra-o*kres*, inter-commune migration.

Migration data are summed into five broad age groups that correspond to different life course stages and match roughly (with the retirement ages amalgamated in one group) to the age groups used in the United Kingdom and Italian case studies - Rees, Durham and Kupiszewski 1996, Rees et al. 1996:

    (1) ages 0-14:   the childhood ages

    (2) ages 15-29:   the adolescent and young adult ages

    (3) ages 30-44:   the labour force and family ages

    (4) ages 45-59   the older labour force and early retirement ages

    (5) ages 60 and over: the retirement ages

5.1. Migration in the family ages 0-14 and 30-44

Migration in the family ages (Figure 10 and Figure 12) demonstrate a very clear picture of outmigration from urban agglomerations. Prague, Plzen, Brno, Ostrava, the largest cities in the Republic show negative net migration in these both age groups. Main beneficiary of these outmigration are regions surrounding these cities, forming very clear rings around them. Also o*kresy* in north-eastern part of Bohemia, along boundary

with former GDR suffered from negative net migration. Apparently the neighbourhood with struggling East-German economy is not yet attractive enough to make migrants stay put.

Table 2 shows the net migration for settlements of various sizes. In the family age groups clearly most popular are settlement of size between 1000 and 5000 inhabitants, whereas larger settlements, over 20 thousand are unpopular. Adults at the age 30-44 tend to inflow to places smaller than 5000 inhabitants, whereas children prefer settlements in the 1 to 20 thousand band. This may suggest prevailing outflow of large families from the smallest settlement units, below 1000 population.

Table 2:Net internal migration by age and size of settlement: annual average in 1000s for the Czech Republic,1992 - 1994

Age groups	Settlement population in 1000s								
	0-<0.2	0.2-<1	1-<2	2-<5	5-<10	10-<20	20-<50	50-<100	100+
0-15	-367	-331	766	779	284	113	-224	-385	-635
15-30	-817	-2,539	-201	144	-44	325	472	-54	2,713
30-45	28	775	697	455	-143	-306	-647	-687	-172
45-60	135	963	474	367	-22	-122	-289	-741	-766
60-75	-18	43	122	357	200	229	202	-321	-814
75-90	-149	-508	67	382	353	208	125	-156	-323
Total	-1,188	-1,597	1,925	2,484	629	447	-361	-2,343	5

Source: Z.Cermak: Geograficke aspekty vnitrni migrace v Ceske republice. *Demografie*, 39, 1997, 4, 242 - 248.

5.2. *Migration in the late adolescent and young adult ages*

Migration in the ages from 15 to 29 is dominated by young persons' needs to complete their education and begin work careers. Figure 11 shows a very different pattern of migration from those observed for the family ages. Large cities, mainly with tertiary education (Plzen, Olomuc, Ceske Budejovice, Liberec) attract young people. The

largest cities, such as Prague and Brno have such force of attraction, that not only have positive net migration themselves but also in the surrounding rings of *okresy*. In the case of former agglomeration this zone of attraction extends to North to Kladno and Melnik and to West as far as to Plzen. Almost all other units lost population in the years 1994-1995.

This age group is the only one which strongly prefers large settlements (Table 2) and equally strongly dislikes small ones.

5.3. *Migration in older labour force and retirement ages*

Migration flows in these ages (45 years and more) revert to some extend to a pattern observed in family ages (Figure 13 and Figure 14). Large agglomerations were losing population, whereas almost all other units were gaining it, with the exception of *okresy* along former border with the GDR. For the retirement ages the gains in some regions in Bohemia were relatively intense.

Older working age population migrates from larger (over 5000 inhabitants) to smaller settlements with all settlement classes above the 5000 threshold showing negative and all below showing positive net migration (Table 2). Retired people tend to move towards the small to medium size of settlements, showing negative net migration both in the largest and smallest settlements (Table 2). The outflow from the smallest units, below 1000 inhabitants may be attributed to re-creation of multigenerational families and migration of the elderly from villages to their families in towns.

As in the case of other case studies it is evident that migrants respond to different stimuli. Families with children and elderly are looking for favourable environmental condition and try to escape urban congestion. The latter group seek also support from their children and escapes from difficult conditions of rural life. Young people are attracted by the lights and thrills of urban agglomerations as well as by educational opportunities and jobs availability.

Figure 10: Annualised net migration rate of 0-14 years old in the Czech Republic by Okres, 1994-1995

Net migration per 1000

■	2.5 or more	(14)
■	1.0 to <2.5	(15)
■	0.0 to <1.0	(16)
■	-1.0 to <0.0	(15)
■	-2.5 to <-1.0	(10)
■	Less than -2.5	(6)

0   40   80
Kilometers
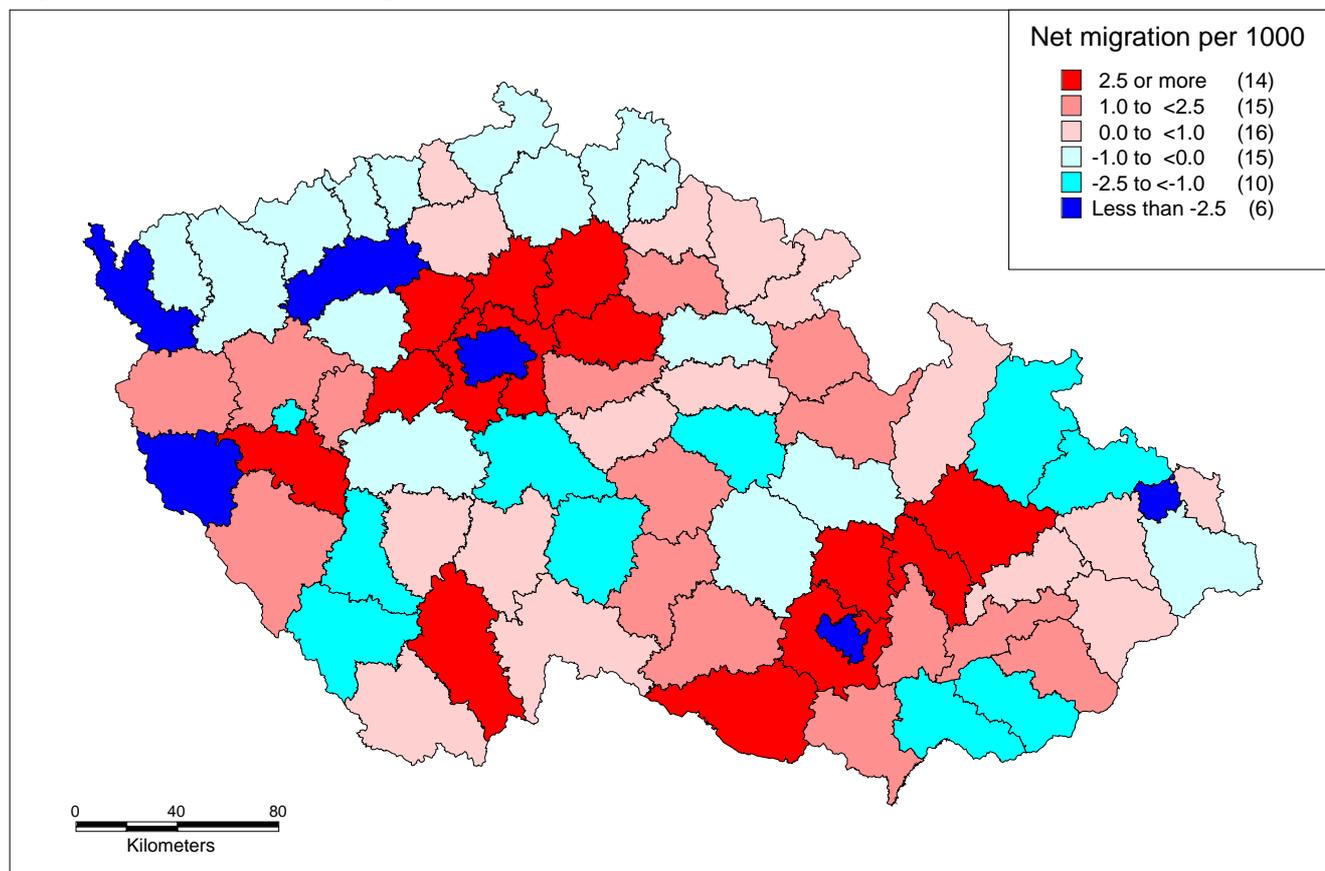
Figure 11: Annualised net migration rate of 15-29 years old in the Czech Republic by Okres, 1994-1995

Net migration per 1000

■	2.5 or more	(7)
■	1.0 to <2.5	(7)
■	0.0 to <1.0	(6)
■	-1.0 to <0.0	(16)
■	-2.5 to <-1.0	(22)
■	Less than -2.5	(18)

0   40   80
Kilometers
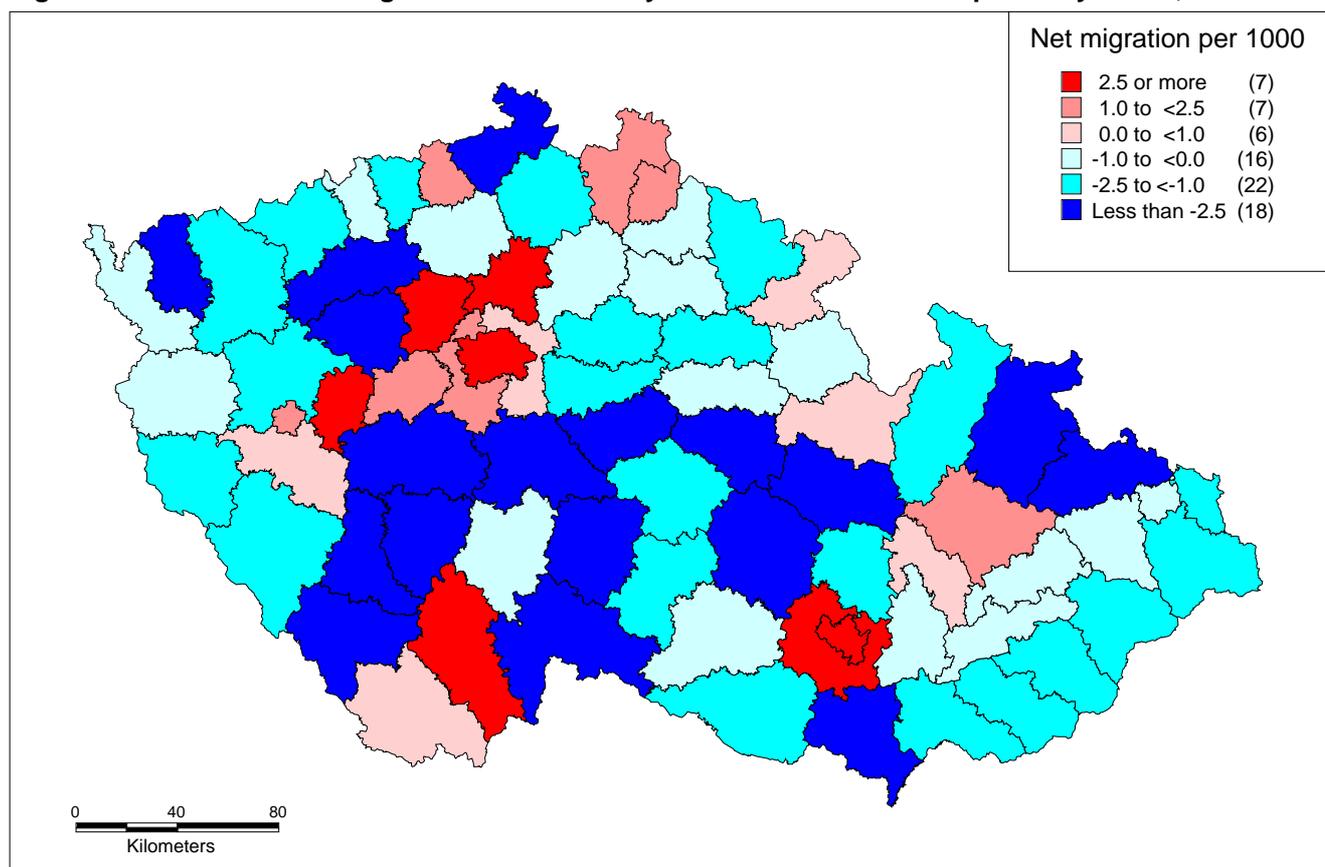
Figure 12: Annualised net migration rate of 30-44 years old in the Czech Republic by Okres, 1994-1995

Net migration per 1000

- ■ 2.5 or more (6)
- ■ 1.0 to <2.5 (14)
- ■ 0.0 to <1.0 (17)
- ■ -1.0 to <0.0 (25)
- ■ -2.5 to <-1.0 (12)
- ■ Less than -2.5 (2)

0 40 80
Kilometers
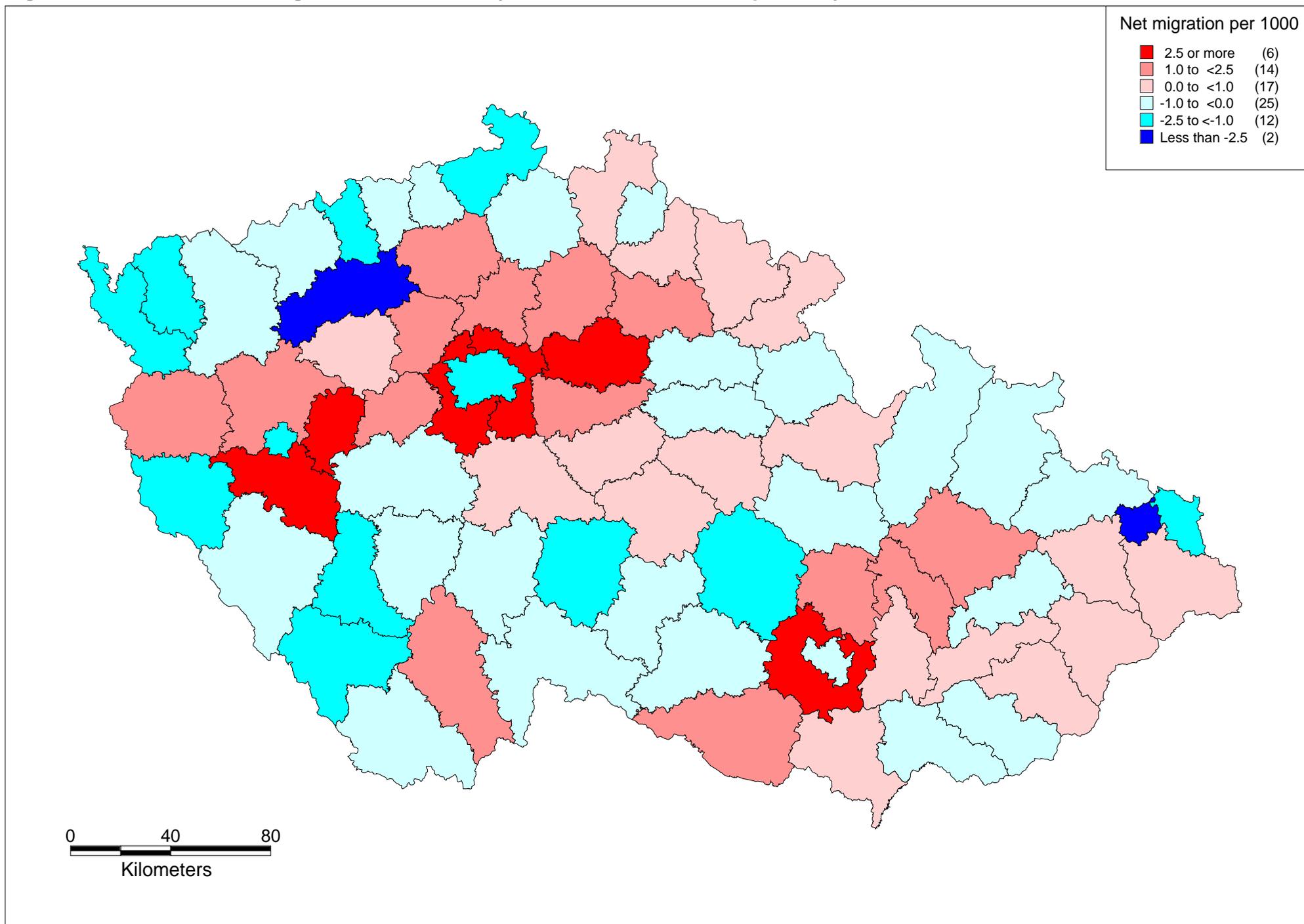
Figure 13: Annualised net migration rate of 45-59 years old in the Czech Republic by Okres, 1994-1995

Net migration per 1000

■	2.5 or more	(3)
■	1.0 to <2.5	(34)
■	0.0 to <1.0	(25)
■	-1.0 to <0.0	(4)
■	-2.5 to <-1.0	(9)
■	Less than -2.5	(1)

0   40   80
Kilometers
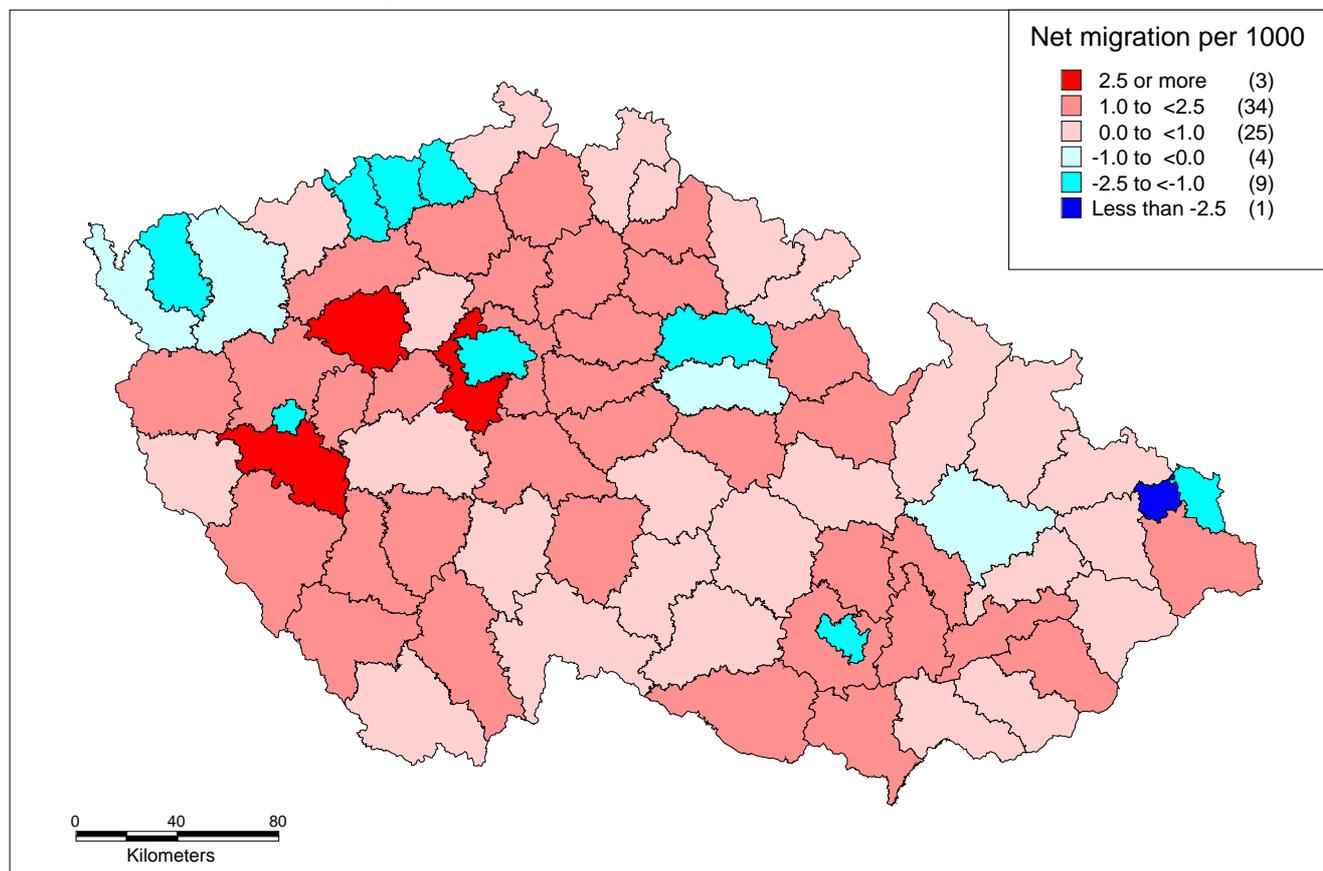
Figure 14: Annualised net migration rate of 60 years and more old in the Czech Republic by Okres, 1994-1995

Net migration per 1000

■	2.5 or more	(14)
■	1.0 to <2.5	(19)
■	0.0 to <1.0	(17)
■	-1.0 to <0.0	(17)
■	-2.5 to <-1.0	(8)
■	Less than -2.5	(1)

0   40   80
Kilometers
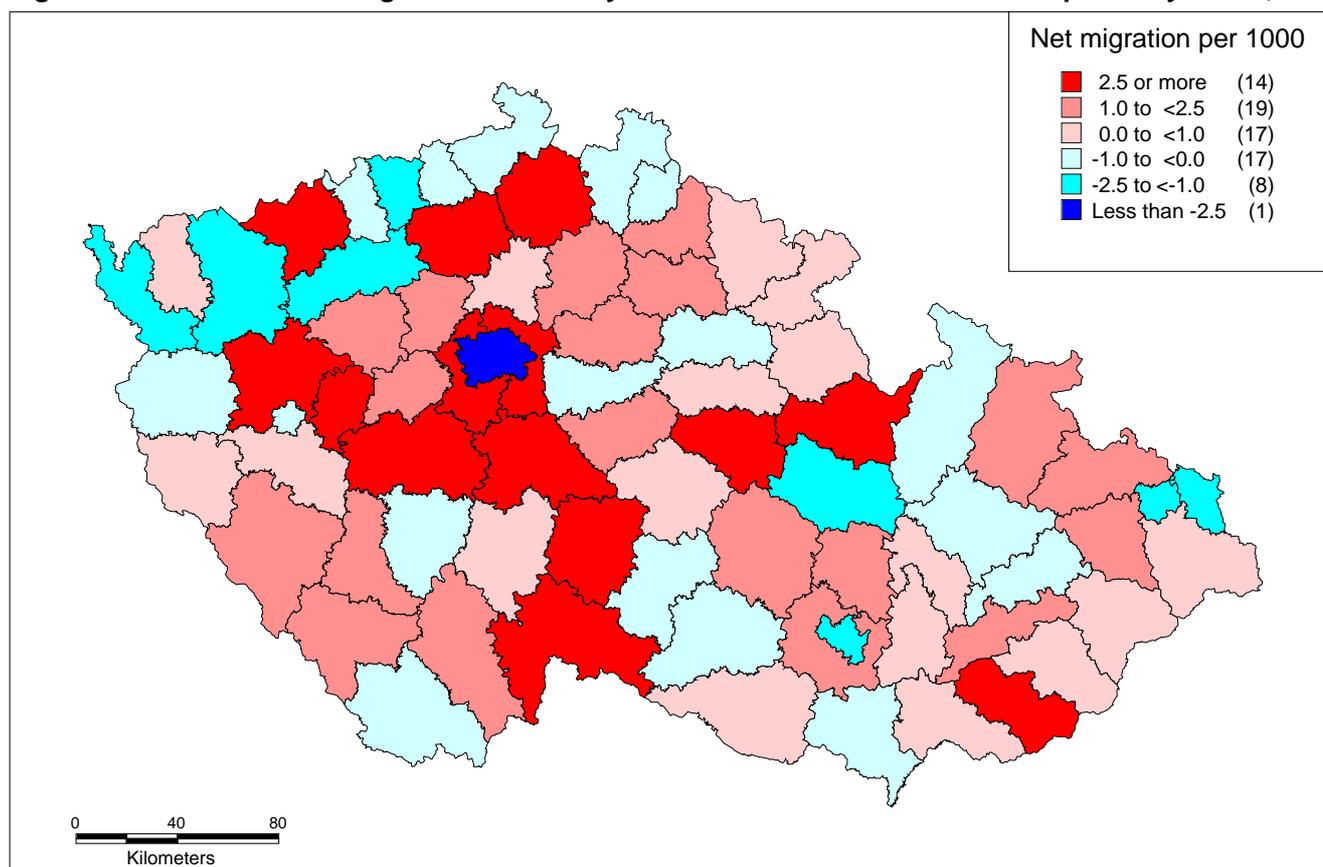
6. THE DEMOGRAPHIC SOURCES OF POPULATION CHANGE

The spatial redistribution of population presents integrated effects of natural increase and mobility in each o*kres*. An analysis of the interplay of natural growth and net migration on commune and municipality level has been conducted using Webb classification. This classification originating in the paper of John Webb (1963), has been described in detail in the Polish case study (Kupiszewski, Durham, Rees 1996).

The classification used (Figure 15) allows for an immediate identification of the direction of population change, sign of net migration and natural growth and the leading force behind the population change.

There are 10 o*kresy* where the natural increase is positive and exceeds negative net migration. All but two of them are in Moravy, especially in Severomoravsky Kraj and are predominantly rural. *Okresy* where positive net migration offset negative natural growth (type D) are located around largest urban agglomerations - Prague and Brno.

There are quite a few o*kresy* which have positive both natural increase and net migration, and therefore sound demographic growth (types B and C), only 11 of them. They are located along Czech-Austrian border and in the North of Bohemia where they constitute a mosaic pattern.

Units where the negative net migration exceeding positive natural increase (class H) are very few (4) and do not constitute any recognisable pattern. Class E, to which belong units where negative natural increase exceeds positive net migration are the most numerous. *Okresy* which fall into this category are located in central Bohemia and central Moravia.

Much worrying are these o*kresy* where both components, net migration and natural growth are negative (type F and G). The former type, where the natural loss is the driving force of depopulation is characteristic to large cities: Prague, Brno, and Plzen, as well as to o*kresy* located in Central Bohemia. The latter type is not a very numerous one and relevant units are spread without any clear pattern.

The overall pattern of population change in 1994 shows that as many as 48 units were losing population, of which 21 demonstrate an alarming pattern - population decrease

Figure 15: Webb classification of population growth in the Czech Republic by Okres, 1994

Webb classification

■	A	(10)
■	B	(7)
■	C	(4)
■	D	(6)
■	E	(23)
■	F	(6)
■	G	(15)
■	H	(4)
□	Not defined	(1)

0   40   80
Kilometers
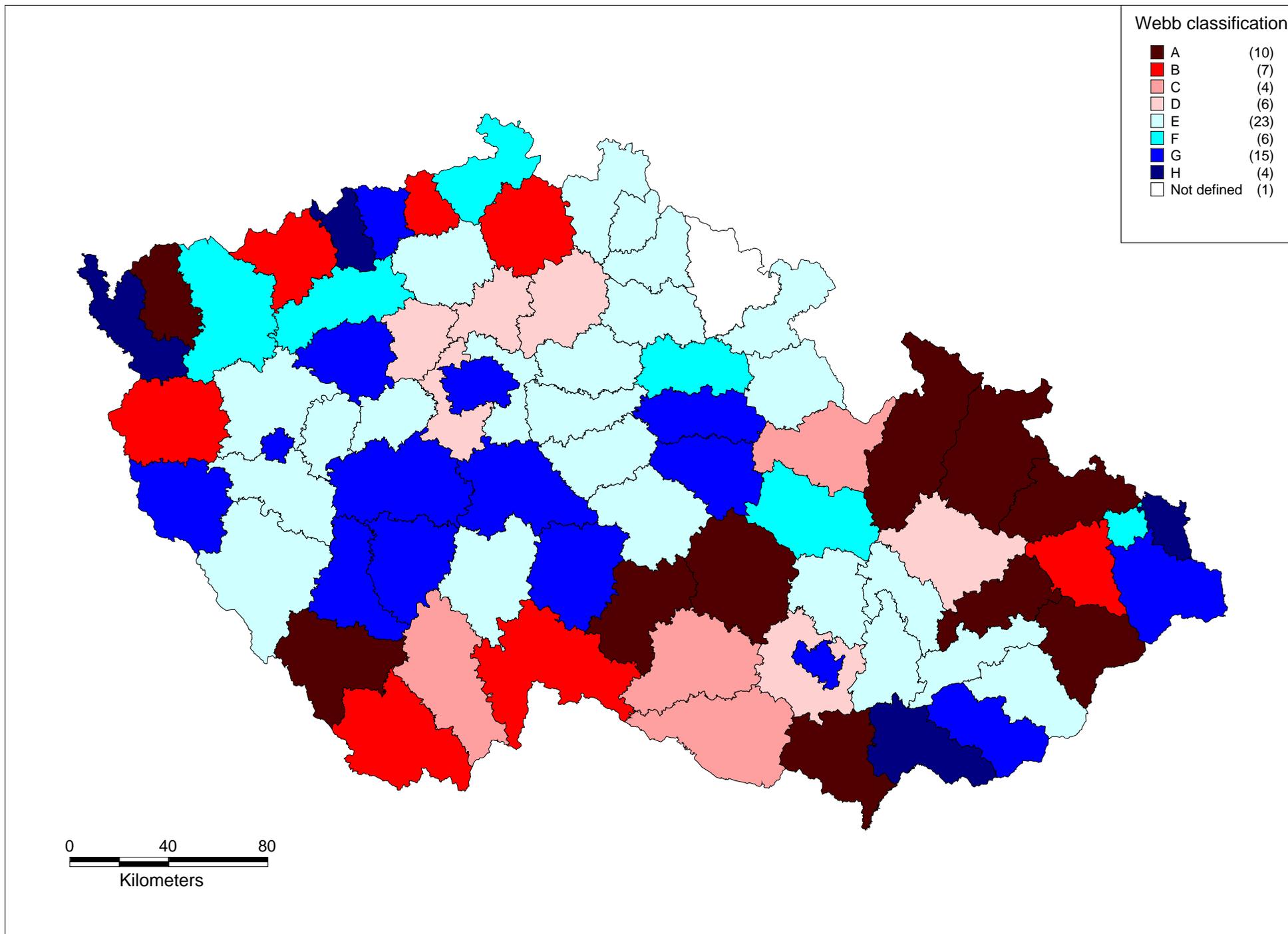
due to both negative natural increase and net migration. The validity of these observation is limited due to large spatial units of observation.

7. RELATIONSHIP TO THE URBAN SYSTEM (1994)

7.1. Gaining and losing urban systems

In the Czech Republic it is not possible to construct a matrix of migration flows between categories of cities (towns) and rural settlements. We can deduce rural-urban exchanges only through data on migration flows between size groups of settlement. Within the socialist framework of planning concepts, among which the planned location of housing construction was typical, some important migratory features developed. A very stable feature of internal migration was its strictly hierarchical pattern, which worked towards concentration of population. For example, data for the 70s and 80s clearly demonstrate the strong hierarchical ordering of migration: lower size groups are, almost without exception, the source of migrants to all higher size groups of settlement. On the other hand, as Cermak (1996a), mentions an artificial suppression of regionally selective migration led in part to limitation of concentration processes primarily to a framework of small administrative units (see also Drbohlav 1989).

> "The most preferential treatment, the highest intensity of housing construction and the highest intensity of net migration was recorded in small and medium-sized towns (10 thousand - 50 thousand people) during the best part of the post-war period. This was particularly true of district administrative centres" (Cermak 1996a).

These towns also had the highest population growth as a whole in the 70s and in the first half of 80s. Thereafter, bigger cities grew more intensively at the expense of those with between 10 thousand and 20 thousand inhabitants.

Table 3 summarises the migratory trends over time and by the size of settlement. It shows a permanent unattractiveness of the smallest categories of settlement and a stable and growing role of Prague as a migratory destination. In the

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late 80s the capital had the highest migration gains in the post-war period (Kühnl, and Cermak 1995).

Table 3: Migration by settlement size bands, Czech Republic, 1961-1994

Year	Size band in thousands						
	0-2	2-5	5-10	10-20	20-50	50-100	100+
1961-1965	-12.1	-0.1	8.4	10.2	13.5	20.7	7.9
1966-1970	-10.8	-1.4	5.9	9.4	9.1	8.7	6.7
1971-1975	-11.7	-2.7	7.2	13.9	9.4	4.1	4.9
1976-1980	-10.2	-0.5	6.7	6.9	9.5	1.6	4.4
1981-1985	-7.6	-1.9	0.9	1.8	4.9	2.1	5.4
1986-1990	-5.4	-1.8	-0.6	1.4	3.3	-0.4	4.6
1991-1994	-0.3	2.3	0.7	0.5	-0.3	-1.9	0.0

Source: Cermak 1996a.

The Revolution at the end of the 80s and the consequent deep transition and transformations processes are reflected in the nature of geographical mobility. Nevertheless, three long-term development trends continue: the total level of migration is declining, the ratio of net migration to gross migration is falling and the migration closure of the territorial units at the district level is increasing (Cermak 1996a). Housing is the key factor behind the decline in mobility in the 1990s. After 1989 a dramatic collapse in housing construction has occurred. While in the 80s about 60 thousand new flats were completed a year, 13 thousand were finished in 1995. Moreover, another related factor, an undeveloped housing market (tied to legislative issues), along with missing strong push factors in potential out-migration areas can explain the low level of migration in the Czech Republic. However, some important changes linked with the size structure of communities must be pinpointed. Cermak (1996a) states that

> "The migratory attractiveness of the middle-sized towns with between 10 thousand and 50 thousand inhabitants has decreased, while current development shows an obvious shift towards an increased migration attractiveness of smaller communities with 1000-5000 people".

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Also, the migration loss of cities between 50 thousand and 100 thousand inhabitants intensified. Thus, in a short period from 1991 to 1994 the traditional pattern has been totally changed: small communities/towns having from 2000 to 5000 inhabitants gain via migration, while towns over 20 thousand lose their population through migration movements (Table 3). This pattern can be explained, in part, by the relationship between settlement size and economic performance. Some of the highly urbanised regions (having big centres) suffer the negative consequences of economic restructuring (the decline of employment in coal mining and heavy industry) which is reflected to some extent, in net migration losses. On the other hand, small size settlements in western and southern borderland districts take advantage of their geographical position - to profit in the broad sense of the word from close contact with Germany and Austria. The collapse of housing construction has mainly hit the largest cities, where the construction of traditional housing estates (prefabricated block of flats) has nearly ceased. The construction of individual family houses in the hinterlands of the largest cities and in rural areas has decreased much less. Hence, migration growth of smaller towns partly due to difficulties in migrating out of these areas rather than with their increasing migration attractiveness as such. On the other hand, migration losses of the highly urbanised areas are not caused by increasing intensity of outmigration but decreasing in-migration streams (see also Cermak, forthcoming).

Population in the most urbanised areas grew over the period 1984-1994 (Table 4), despite negative net migration. All other bands noted either stagnating (in the 60-75% urban population band) or decreasing population.

Table 5 shows a picture of net migration for males and females by the level of urbanisation in 1994. The large net migration losses are typical of the group of the biggest cities, including Prague (-1,103 for males; -1,105 for females) followed by the second most urbanised band (-602 for males; -380 for females). By contrast, the greatest gains (1,061 for males and 1,059 for females) are made by a group of districts whose share of urban population is between 60% and 75%. Migratory gains in a category of the least urbanised districts (30-45%) is closely linked with losses of the largest cities. Four out of eight districts which fall into the least urbanised group are direct neighbours of the biggest cities (Praha zapad - Praha, Brno venkov - Brno, Plzen-jih and Plzen-sever - Plzen) and, moreover, four others are also in close

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proximity. Thus, this migration relationship can be attributed to a process of suburbanisation, when some people migrate out of the large city and settle in close neighbouring areas, while keeping a possibility to reach the city easily and quickly. This migration stream (for both males and females) is the biggest and also its effectiveness is the highest (14% for males and 13% for females). In general, there are no more significant differences concerning migratory behaviour between males and females with one exception: The 45-60% destination band of urbanisation is unpopular with females (-202) but attractive for males (73).

Table 4 Net migration and population growth of males and females by level of urbanisation of *Okres* in 1994, Czech Republic

Share of urban pop in 1994 in %	Male pop. in 1994 as a % of 1984	Female pop. in 1994 as a % of 1984	Total pop. in 1994 as a % of 1984	Male net migration rate /1000 in 1994	Female net migration rate /1000 in 1994	Total net migration rate /1000 in 1994
30-44	98.2	97.6	97.9	1.54	1.62	1.58
45-59	99.7	99.3	99.5	0.05	-0.13	-0.04
60-74	100.2	100.0	100.1	0.82	0.78	0.80
75-89	99.5	100.1	99.8	-0.77	-0.46	-0.61
90-100	101.9	101.0	101.4	-1.05	-0.95	-0.99
Total	100.1	99.9	100.0			

Table 5: Net migration and migration effectiveness ratios in 1994 for males and females by level of urbanisation (percentage share of urban population in 1994) class, Czech Republic

	Destination band of urbanisation				
Origin band of urbanisation	30-44	45-59	60-74	75-89	90-100
Males					
30-44		*1*	*3*	*12*	*14*
45-59	15		*5*	*5*	*4*
60-74	-29	-370		*9*	*8*
75-89	67	160	273		*4*
90-100	517	298	390	-102	
Total	570	73	1061	-602	-1103
Females					
30-44		*3*	*2*	*10*	*13*
45-59	61		*6*	*2*	*4*
60-74	-23	-507		*7*	*6*
75-89	61	73	232		*0*
90-100	528	294	298	-14	
Total	628	-202	1059	-380	-1105

As far as the age structure of migrants is concerned, Cermak describes the situation for 1992-1994 (Cermak 1996a). Small communities (with fewer than 1000 people) along with large towns (with more than 50 thousand inhabitants) lose people aged 60 and over (measured by net migration). The most mobile category (15-30 years) leaves small communities, and enters towns/cities over 10 thousand of population and mainly the largest cities (over 100 thousand). Small communities below a 5000 threshold exhibit a positive net migration for those aged between 30 and 60 years. On the other hand, settlement groups above this threshold lose through migration in this middle and higher productive age without exception.

To conclude, it should be stressed that 1994 is a turning-point when migratory trends seem to change their character due to a composition of new transformation steps and "inertia of the history". Apparently, under such conditions it is not so easy to

interpret the migratory situation which has had too limited time to develop after 1989 and has not fully crystallised yet.

7.2.   Deconcentration within urban regions

To elaborate on what has already been mentioned, the current negligible gains or obvious migration losses of the largest cities (especially Prague) can be attributed to suburbanisation processes. Leaving aside the 1920s and 1930s when "natural suburbanisation" was quite typical of Prague as the westernised capital of highly developed democratic society, as early as the 1980s there was some empirical evidence of deconcentration flows of migrants within regions of largest cities (Kara and Kucera 1987). The process was manifested above all in Prague metropolitan area, where almost half of all administrative communes displayed positive net migration with the metropolitan core of Prague at the beginning of 1980s. Overall, net migration for the whole metropolitan area was negative. The current suburbanisation tendencies occur mainly in the conurbations of Prague, Brno and Ostrava, but in part also in the cities of Plzen, Olomouc, Ceske Budejovice and Liberec. Cermak (1996a) states

"Between 1992 and 1994, for the first time since the 60s, Prague´s suburbs (Praha-vychod, Praha-zapad, Beroun, Kladno and Melnik) and Brno´s suburbs (Brno-venkov, Blansko and Vyskov districts) recorded positive net migration in relation to the conurbation centre".

This author also mentions that flows toward vicinity of the given cores are typical for migrants with higher educational levels. In particular, this observation applies to the Prague metropolitan area, namely districts of Praha-vychod and Praha-zapad.

The suburbanisation processes is fuelled by the creation of a new middle and upper-class. This category of well-off people has been newly established within a functioning capitalist society, and it is a manifestation of more complicated process of polarisation within society as a whole. This group of people, unlike other social categories, will be a driving force able to solve the housing crisis either by

reconstructing old residential property or through construction of new houses, mainly outside the administrative boundary of a large urban centres, but at the same time in close vicinity to the city centre. Their aspirations and demands are met by developers who construct and, consequently, sell a wide variety of family houses. So far this "trend of compromise" (mediated through commuting) - to share both advantages of being close to attractive economic, social and cultural activities of the city and, at the same time, to benefit from quiet climate of privacy and natural amenities - has been rather marginal. The future development of the suburbanisation processes but also the whole migration situation in the Czech Republic will follow from what will be the socio-economic development of the country, and from what will happen on a housing market. A key issue will be whether the state will be restrictive or instrumental in meeting the housing demands of the broad mass of population.

In relation to Prague and migration movements another emerging important aspect must be pointed out. At the end of 1996, some 53 thousand international migrants were officially registered in Prague under the umbrella of long-term residence permits. Some 90% of them were typical economic migrants (the purpose of their stay is connected with gaining employment, or with engaging in entrepreneur activity). Most of these circular labour migrants came from countries of the former communist block. To some extent they, together with many others who stay and work illegally, substitute for internal migrants in the Czech Republic in general and in Prague in particular (see Drbohlav 1997).

8.   RELATIONSHIP TO POPULATION DENSITY

A map of population density (Figure 16) shows clearly that there is a relatively strong concentration in five main urban centres, with population densities with over 800 persons per square kilometre. Outside these agglomerations density drops rapidly to below 300. This is probably partially due to the size and delimitation of o*kresy*, which is quite generous compared to the territory occupied by strictly urban space (Rehak *et al.* 1992). Medium density areas extend along main transportation arteries between largest agglomerations (Ostrava-Brno) or around the main centres. Low density can be observed in south-western part, in the Sumava Mountains.

Figure 16: Density of population in the Czech Republic by Okres, 1994

Persons per square kilometre

■	300 and more	(5)
■	150-<300	(15)
■	100-<150	(23)
■	50-<100	(28)
□	Less than 50	(5)

0   40   80

Kilometers
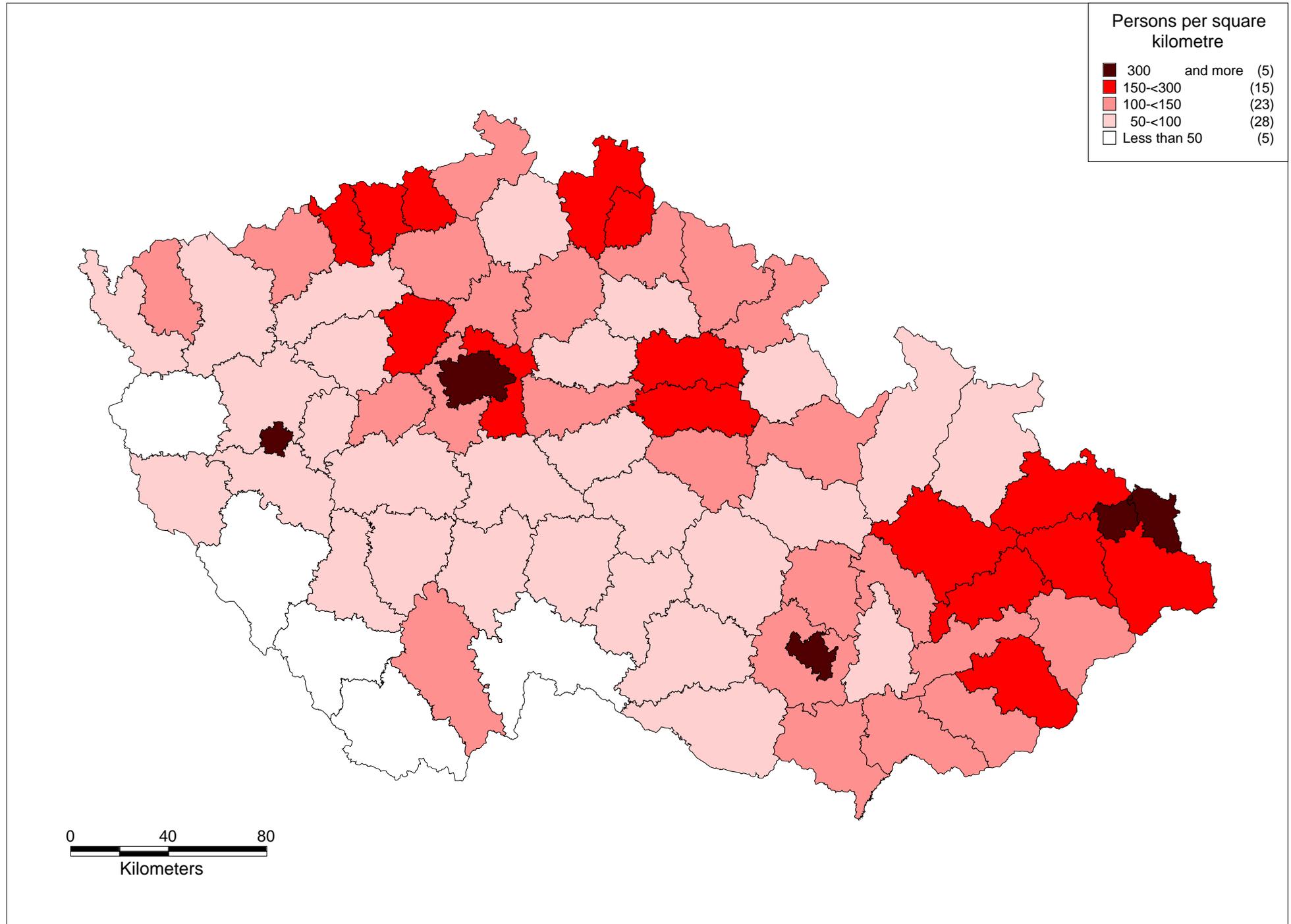
In 1994-1995 the population growth by density bands of population was positive for the lowest and two highest density bands (Table 6), despite moderately negative migration rates. The migration patterns between bands (Table 7) shows hierarchical upward moves from the low to medium density bands and hierarchical downward movements from the high to medium density bands, resulting in the band 100-150 persons per square kilometre being the main beneficiary of migration and the band over 800 persons per square kilometre being the main loser. In geographical terms rings around large urban agglomerations are often increasing its population due to migration. This picture is consistent with previous findings in the Polish case study (Kupiszewski, Durham and Rees 1996).

The size of units used in this study makes it difficult to draw final conclusions due to the averaging effect large units have on migration measurement and population density measurement.

Table 6: Net migration and population growth of males and females by population density of *okres* in 1994, Czech Republic

Density of population in persons per square km in 1994	Male pop. in 1994 as a % of 1984	Female pop. in 1994 as a % of 1984	Total pop. in 1994 as a % of 1984	Male net migration rate /1000 in 1994	Female net migration rate /1000 in 1994	Total net migration rate /1000 in 1994
0-50	100.7	100.6	100.6	-0.02	0.18	0.08
50-100	99.3	99.2	99.2	-0.15	-0.31	-0.23
100-150	99.5	99.2	99.3	0.80	0.85	0.82
150-300	100.2	100.4	100.3	0.37	0.28	0.32
800-2500	101.6	100.8	101.2	-1.13	-0.91	-1.01
Total	100.1	99.9	100.0			

Table 7: Net migration and migration effectiveness ratios in 1994 for males and females by population density class, Czech Republic

	Destination band of population density				
Origin band of population density	0-50	50-100	100-150	150-300	800-2500
	Males				
0-50		*6*	*8*	*1*	*1*
50-100	70		*3*	*3*	*3*
100-150	-82	-160		*4*	*11*
150-300	-2	-129	165		*8*
800-2500	10	167	652	450	
Total	-4	-192	1058	417	-1279
	Females				
0-50		*3*	*9*	*13*	*7*
50-100	39		*4*	2	*0*
100-150	-100	-262		*3*	*10*
150-300	40	-103	134		*7*
800-2500	53	5	677	404	
Total	32	-399	1172	333	-1138

9.   RELATION TO THE FUNCTIONAL CLASSIFICATION

Cities and regions are characterised by a variety of economic functions and of occupations of their working inhabitants. Modern economies have evolved from a concentration of work in primary industries (farming, fishing, forestry, mining) through the development of secondary industries (raw material processing, manufacturing) to a dominance by service industries (wholesaling, retailing, business services, finance, information and knowledge creation and transmission). This is a generally desirable sequence as it reflects a much more productive economy and a society free from the burden of physical labour.

Urban and regional economies can be characterised by their degree of progress along this development path. Hampl (1996) has suggested an empirical index, using data from the 1991 Census, which scores local economies in terms of the structure of employment. Lower scores indicated less developed economic regions, higher scores indicate more developed economic regions. The index has the advantage of combining information on the employment shares of all sectors rather than relying on the percentage in one sector only (e.g. services).

The index proposed by Hampl is created as a sum of a share of jobs in agriculture and forestry weighted by 1, a share of jobs in industry and construction weighted by 2 and a share of jobs in other sectors weighted by 4. The 76 districts including Prague were assorted into four categories (Figure 17) whilst the last - most progressive one (325-350 points) - is represented only by a capital of Prague. The second most progressive group (300-325) is composed of three districts which are also regional centres (Plzen-mesto - Western Bohemia, Usti nad Labem - Northern Bohemia and Brno-mesto - Southern Moravia) and two not so highly urbanised districts located in western border zone of the Czech Republic. Other two categories are a mixture of various types of districts, while the least progressive group (250-275) is mainly typical of more or less agricultural areas.

Figure 17: Functionality indicator in the Czech Republic by Okres, 1994

Functionality

- Towards postindustrial (1)
- (5)
- (48)
- Towards agricultural (22)

0   40   80
Kilometers
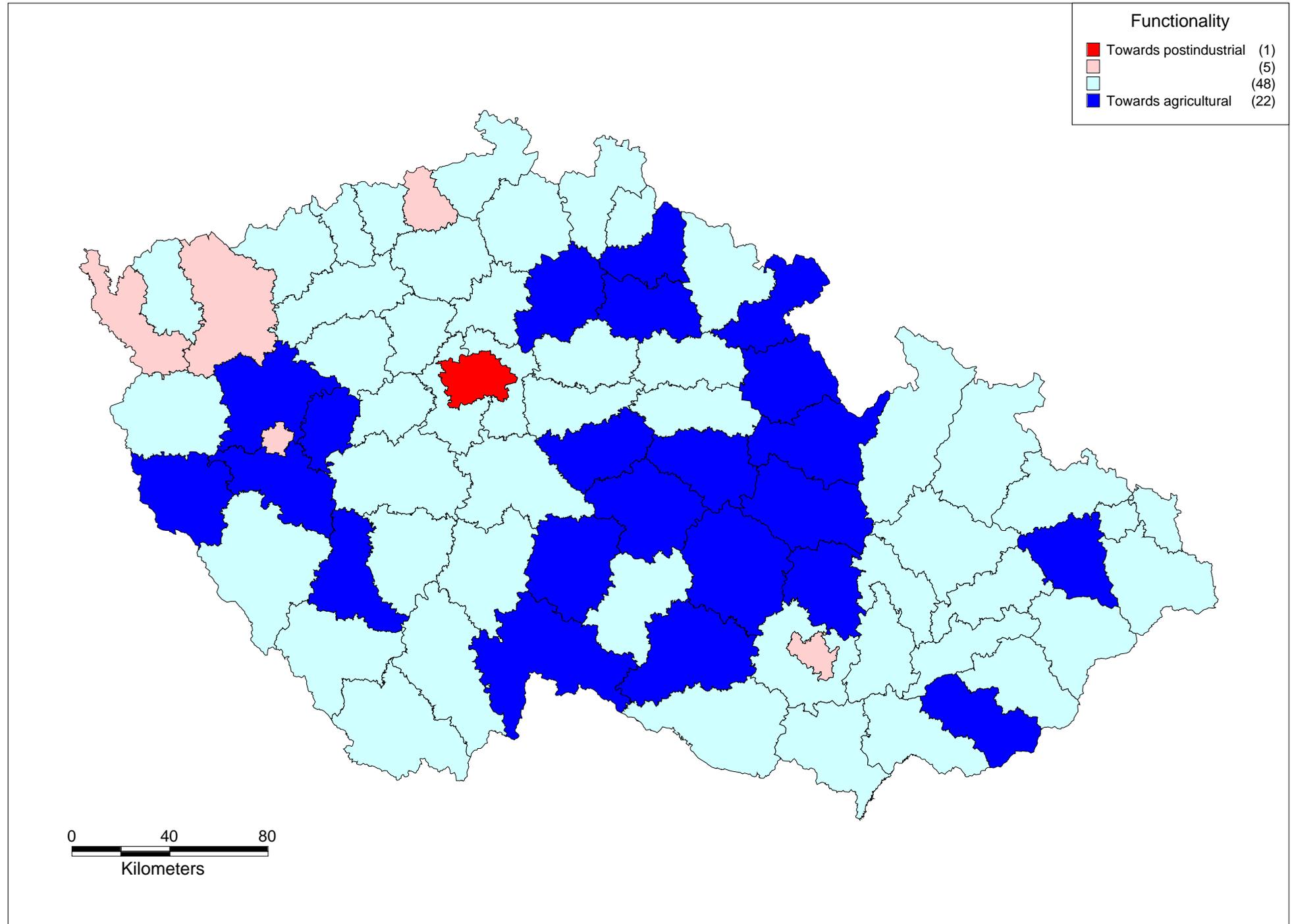
As far as the comparison of the situation between 1984 and 1994 is concerned (Table 8) there is an evident trend of greater total population increases with economic advancement of the area. The increase is, mainly in the case of Prague, slightly more apparent for males than females. The opposite tendency concerns an analysis of net migration rate (in relative terms) in 1994. The more progressive the district, the lower net migration rate. The most progressive categories lose migrants on balance as compared to the other bands which gain migrants. At first glance, this is surprising, going also against the logic of the ongoing deep transformation processes. It can be explained by unnatural character of the migration situation currently. Prague and other big cities have not attracted a positive balance of migrants because of a collapse of housing construction and an undeveloped housing market. These factors dissuade in-migrants from moving to the capital and other big cities. Moreover, an absence of strong push factors in potential out-migration areas (more or less surviving regional socio-economic homogenisation), and a revitalisation of a suburbanisation processes (see Cermak and Drbohlav, forthcoming) go against the trend of more significant migratory attractiveness. On the other hand they were very attractive for international migrants, who concentrated in large cities and were the main factor behind their growth.

Table 8 Net migration and population growth of males and females by indicator of functionality of *Okres* in 1994, Czech Republic

Indicator of functionality	Male population in 1994 as a percentage of 1984	Female population in 1994 as a percentage of 1984	Total population in 1994 as a percentage of 1984	Male net migration rate per 1000 in 1994	Female net migration rate per 1000 in 1994	Total net migration rate per 1000 in 1994
250-274	99.7	99.2	99.4	0.35	0.20	0.27
275-299	99.7	99.7	99.7	0.17	0.15	0.16
300-324	100.4	100.3	100.4	-0.79	-0.29	-0.53
325-350	103.0	101.4	102.1	-0.90	-0.87	-0.89
Total	100.1	99.9	100.0			

Table 9 Net migration and migration effectiveness ratios in 1994 for males and females by functional class, Czech Republic

Origin band of functionality class	Destination band of functionality class			
	250-274	275-299	300-324	325-350
	Males			
250-274		*2*	*6*	*2*
275-299	210		*3*	*7*
300-324	121	155		*10*
325-350	27	547	-59	
Total	357	492	-335	-515
	Females			
250-275		*1*	*1*	*2*
275-300	140		*0*	*7*
300-325	32	10		*14*
325-350	40	613	-93	
Total	212	483	-135	-560

Regarding sex and age, Prague lost through net migration slightly more females than males in 1994 (560 versus 516). Though in the age category 15-29 Prague gains a lot (560 males and 868 females) in other categories (0-14, 30-44, 45-59 and 60+) it significantly loses. For ages 30 and older the loss is more significant for females than males. Other progressive districts (within a band of 300-325 points) lose through migration as well, except for Usti nad Labem which noted minimal gain. What is worth mentioning is that overall losses are, in contrast with Prague, higher as regards males than females. Similarly as in the case of Prague, except for age category 15-29 where large districts towns, in particular Brno, gain population. In other age groups these units lose population through migration.

Regarding migration streams between individual functional bands (Table 9) there is a general pattern of the flows down the functional hierarchy. The bands occupying lower position in the hierarchy receive migrants at the expense of those which stand higher. As far as sex is concerned, there are no significant differences

between the two migratory patterns. The most important flow goes, both in case of males and females, from Prague to the second highest band (275-300 points) which has also the overall highest gains in absolute terms. One exception to this trend has to be mentioned. The most progressive district - Prague gains migrants from the second most progressive band. Moreover, the effectiveness of this mutual migration is the highest one (males - 10%, females - 14%).

10.   RELATIONSHIP TO UNEMPLOYMENT

Unemployment in the Czech Republic is and has been on a very low level. This may be partly attributed to slow pace of restructuring of Czech industry and the high level of state intervention. Therefore the unemployment rate cannot be seen as a clear economic indicator of the health of regions. The geographical distribution of unemployment (Figure 18) shows low values in the cities with central functions (Prague, Brno), along Vltava river, and in the West (except the Tachov o*kres*). High unemployment occurs mainly in the North Moravia and North-East Bohemia, that is on the areas with the highest share of heavy and extractive industries and in some typical agricultural regions of South Moravia region.

Population growth varied between bands and has not shown a clear dependence with unemployment level, partially due to the intervention of two other factors: international migration and natural increase (Table 10). The higher the unemployment the lower net migration, with two highest bands of unemployment losing migrants the two lowest bands gaining migrants respectively in net terms.

Inter-band flows show the expected hierarchical structure from higher unemployment to lower unemployment bands, with some irregularities both for flows of males and females (Table 11). Despite these irregularities the migration gains are negative for higher unemployment bands and positive for lower unemployment bands. The efficiency of migration increases with the distance between bands, but in general is low. Only interactions between the lowest and the highest unemployment band show medium efficiency (12 for females and 9 for males).

**Figure 18: Unemployment in the Czech Republic by Okres, 1994**

Unemployment in % of labour force

■ 6 or more	(7)
■ 4-<6	(14)
■ 2-<4	(34)
■ 0-<2	(21)

0   40   80
Kilometers
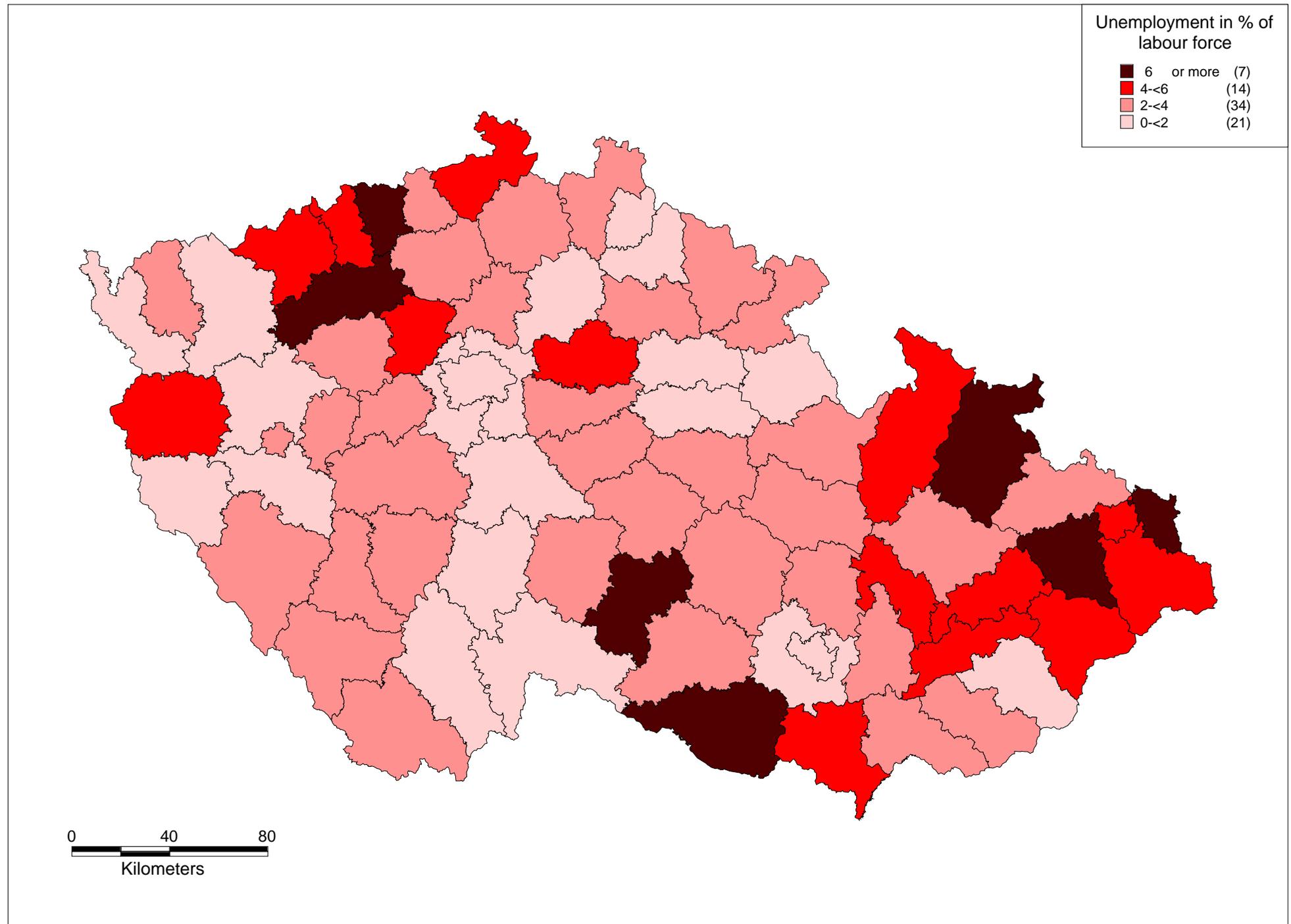
Table 10: Net migration and population growth of males and females by unemployment band of *Okres* in 1994, Czech Republic

Unemployment in % of economically active population	Male pop. in 1994 as a % of 1984	Female pop. in 1994 as a % of 1984	Total pop. in 1994 as a % of 1984	Male net mig.rate per 1000 in 1994	Female net mig. rate per 1000 in 1994	Total net mig. rate per 1000 in 1994
0-2	100.9	100.2	100.6	0.07	0.22	0.15
2-4	99.6	99.3	99.4	0.17	0.09	0.13
4-6	100.0	100.2	100.1	-0.06	-0.24	-0.15
6-8	99.5	99.8	99.7	-0.75	-0.69	-0.72
Total	100.1	99.9	100.0			

Table 11: Net migration and migration effectiveness ratios in 1994 for males and females by unemployment class, Czech Republic

Origin band of unemployment	Destination band of unemployment			
	0-2	2-4	4-6	6-8
Male				
0-2		*1*	*3*	*9*
2-4	99		*4*	*7*
4-6	-119	239		*2*
6-8	145	159	61	
Total	126	299	-60	-365
Females				
0-2		*1*	*0*	*12*
2-4	186		*3*	*6*
4-6	20	192		*1*
6-8	220	161	-34	
Total	426	167	-245	-347

Migration response to unemployment, as observed in 1994-1995 is rather weak. As it is an imperative for Czech economy to enter the stage of decisive restructuring and relaxation of protectionist policies, tightening of financial regulations and reorganisation of the banking system, unemployment is bound to increase. It is very likely that this increase will trigger much stronger response in terms of population migration in future. It is also closely linked to the housing problem and creation of an effective housing market (see above).

11. MIGRATION BETWEEN CZECH AND SLOVAK REPUBLICS

From the Second World War to the present time, the Czech Republic has permanently been gaining population through migration from the Slovak Republic. However, gains fluctuated over this time and reflected changing conditions which triggered the migration flows. The whole period can be divided into three phases.

The first one is closely connected with the aftermath of the Second World War. The border zone (North Bohemia, West Bohemia and North Moravia) was especially hit by population losses due to expulsion of Germans. It was resettled by more than 1.2 million people by May 1947 (Stehovani…, 1995). It is estimated that 116 thousand of them were Slovaks (Kucera 1994). The migration of others from the interior of the Czech Republic and Slovakia to this zone continued during the late 40s but there are no reliable data covering this phenomenon. Only since 1950 there have been available relatively reliable internal migration statistics for the Czech Republic and Slovakia (Czechoslovakia).

The second phase lasted from 1950 to 1989. During this time 1.067 million Czechs and Slovaks crossed the border between the two republics. The Czech Republic gained 231 thousand people, being the difference between 649 thousand immigrants who came from Slovakia and 418 thousand people who left the Czech Republic for Slovakia (Andrle and Srb 1992). The gain was unequally distributed in space and over time. During the 50s the gain was just over 92 thousand and was

closely related to economic motives, which, in fact, have been a decisive motor of migration of Slovaks to the Czech Republic for the whole period. The Western border zone (in a broad sense of the word) and Ostrava region in North Moravia - an industrial base (heavy industry, coal mining) - were the main destinations. For the following three decades (1960-1969, 1970-1979 and 1980-1989) the average net migration a year oscillated around 7000, 3500 and 3500, respectively. Gypsies (Roma population) represented fairly important part of these movements. It is estimated that their average net migration a year in the above decades (starting with the 1960s) was about 1000, 1500 and 2000, respectively (Kucera 1994). As far as regional differentiation of Slovak immigrants is concerned the regional pattern created in the 40s and 50s has not changed too much in the course of time. As of 1991, Northern Moravian border districts and north-western and Western Czech borderland (*Kraj*) had the largest portion of people who were born in Slovakia (i.e., Karvina district - 7.2% of the population, Sokolov and Cheb more than 6%, Polacek, Pospisil 1995).

Apparently, inflows to the Czech Republic were decreasing over time as the economy strengthened and, consequently, employment opportunities were increasing in Slovakia. While the gross migration was about 54 thousand a year between 1950-1954, it was only about 15 thousand in the late 1980s. The inflows of Slovaks have improved the age structure and the structure of economically active population of the Czech areas, since mainly relatively young people and families with children immigrated (Kucera 1994). Regarding economic and sociodemographic characteristics, the Czech Republic gained altogether 8,508 immigrants through net migration with Slovakia between 1988 and 1990. Out of them 85% were in a productive age (only 32 in absolute terms were in the post-productive ages); 49% were single and 48% married; 41% had finished basic education, 18% university; 51% were clearly identified as manual workers within various branches of the economy (Stehovani 1995).

The third phase is a period of transition and transformation processes (see Table 12) summarises Czech-Slovak migration vis-a-vis other international migration flows for the Czech Republic between 1990 and 1995 (see Bartonova 1977). The Czech-Slovak migration itself was a part of internal migration patterns of Czechoslovakia till 1992. Since 1993, however, it has been changed into international migration as two independent states were established. Despite many problems with an official registration of migration movements and, consequently, interpretation of data

(the apparent overestimation of immigration and underestimation of emigration) some conclusions might be drawn. We comment, however, only on data based on immigration statistics since one cannot really ascertain to what extent the emigration data corresponds to the real situation.

Table 12. The structure of migration between Slovak Republic, Czech Republics and outside World 1990-1995.

	1990	1991	1992	1993	1994	1995
Immigrants from SR	10,073	8,334	11,740	7,276	4,076	3,845
Immigrants from abroad (except SR)	2,338	5,762	7,332	5,624	6,131	6,695
Total Immigration	12,411	14,096	19,072	12,900	10,207	10,540
Emigrants to SR[1]	7,674	7,324	6,823	7,232	3,144	1,497
Emigrants going abroad (except SR)[2]	4,113	3,896	468	192	209	401
Total emigration[2]	11,787	11,220	7,291	7,424	3,353	1,898
Net migration with SR[1]	2,399	1,010	4,917	44	932	2,348
Net migration with[2] abroad (except SR)	-1,775	1,866	6,864	5,432	5,922	6,294
Total net migration[2]	624	2,876	11,781	5,476	6,854	9,999

Notes: Source: Bartonova, forthcoming
[1] *For 1994 and 1995 the data are based on immigration statistics of Slovak Statistical Office.*
[2] *Not reliable data, since the official statistics cover only part of those who, in reality, emigrate from the country.*
3. *SR = Slovak Republic*

The migration from Slovakia and other countries to the Czech Republic reached its peak in 1992. Since then, the Slovak immigration has been diminishing as was immigration from other countries which. Closer relations between the two

countries based on a seventy five-year coexistence is mirrored by a fact that of Slovak's share in the whole immigration to the Czech Republic is by far the largest, and, albeit decreasing, it still represented 57% in 1995. During the 90s, as in the past, the Czech Republic gained migrants from Slovakia (more than 2000 in 1995). However, the gain is rather very small. Moreover, the gross migration has been sharply decreasing (by 30% between 1990 and 1995). The structure of Slovak immigrants to the Czech Republic, is characterised by slightly more males than females (e.g. 55% in 1995), mostly productive age (76% - the average for 1991, 1993 and 1995) and a negligible share of people older than 60 (6% - again the average for the above mentioned years), relatively high educational level - 27% had secondary and 18% university level of education (the average for the above mentioned years - see Bartonova 1997). As of the 90s, among the immigrants coming from Slovakia approximately 60% were of Slovak nationality.

A number of Slovak workers in the Czech Republic was more or less stable over time and it represented some 30 thousand persons during the communist era. After the division of Czechoslovakia their numbers have been increasing: as of the end of 1993 23,336 Slovak citizens were registered by the Czech job centres, the figures for the next three years (1994-1996) represented: 39,209; 59,323 and 72,244, respectively. As well as legal Slovak labour force, illegals also come from Slovakia to work in the Czech Republic.

The permanent attractiveness of the Czech Republic for Slovak citizens, based again mainly on economic reasons (in particular, higher wages and lower rate of unemployment and ability of the labour market to absorb foreigners in the Czech Republic has been manifested not only by permanent migration but also by temporary movements (in this case there is not an adequate counter-movement). These are realised, for example, under the umbrella of a long-term residence. Long-term residence can be granted for the necessary time with a maximum duration of one year. This period can be repeatedly prolonged, if applied for by an alien. In 90% of cases the purpose of such prolonging is to gain employment (Information…, 1995) and a work permit. As of the end of 1995, about 34 thousand Slovak citizens were granted long-term residence in the Czech Republic and about 59 thousand Slovaks with work permits were registered there. Out of the latter number, the highest shares were identified in North Moravia region - 26% and Prague - 21%.

Figure 19: Location of Okresy in the Czech Republic

12. CONCLUSIONS

The large units for which migration data were available in Czech Republic reduce the number of inter-unit migrations increase the number of intra-unit migrations and in effect blur the picture of mobility, which anyway is quite low. Another factor, which made the analysis somewhat difficult is the mixture of signals sent to the economy by the Czech government. This mixture has confused professional economists, not to speak of people.

Czech Republic has experienced over the last decade, quite a balanced population system with low growth. This has changed recently and from 1994 we noted a decrease of population partially offset by international migration, for the time being mainly temporary labour circular movements. The decreasing trends may well continue due to future replacement in the reproductive ages of large female cohorts with much smaller cohorts, currently aged 0-15 years. Ales and Simek (1996) expect by the year 2020 a population decrease of at least 471 thousand (high variant). International migration will probably reduce the effect of negative natural increase.

In terms of population dynamics the most important feature we have observed is slow but clear deconcentration of population from large cities to suburban areas. The main gains are observed in medium size towns and smaller communities at the expense of large cities and rural areas. However, the migration factor plays lesser role than in the past. Net migration is small and migration effectiveness is very limited. The relationship between migration and other variables (population density, level of urbanisation) confirms this finding.

Unemployment has rather weak negative impacts on migration flows. No doubt, this may change when the serious restructuring of industry starts and unemployment increases - an almost certain scenario given the Czech Republic's willingness to join the European Union.

The main enigma of the Czech migration system is its future dynamics. So far migration has been low, but with the development of the economy, including the housing market, improvement of telecommunication and increasing wealth of the society one may expect that migration trends would contribute much more to the regional population dynamics.

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