
Munich Personal RePEc Archive

Current Demographical Issues in the Eastern Poland Macroregion

Celińska-Janowicz, Dorota and Miszczuk, Andrzej and Płoszaj, Adam and Smętkowski, Maciej

Centre for European Regional and Local Studies (EUROREG), University of Warsaw

2010

Online at https://mpra.ub.uni-muenchen.de/45152/
MPRA Paper No. 45152, posted 16 Mar 2013 18:55 UTC

EUROREG

EUROREG Reports and Analyses 5/2010

Current Demographical Problems of the Eastern Poland Macroregion

Dorota Celińska-Janowicz, Andrzej Miszczuk
Adam Płoszaj, Maciej Smętkowski

TECHNICAL ASSISTANCE
NATIONAL COHESION STRATEGY

MINISTRY OF REGIONAL DEVELOPMENT

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

Current Demographical Issues in the Eastern Poland Macroregion

Dorota Celińska-Janowicz, Andrzej Miszczuk
Adam Płoszaj, Maciej Smętkowski

THE REPORT HAS BEEN PREPARED FOR THE MINISTRY OF REGIONAL DEVELOPMENTas part of the "Current demographical issues in the Eastern Poland region" project implemented by the Centre for Regional and Local Studies EUROREG.

Project financed by European Regional Development Fund

Dorota Celińska-Janowicz: d.celinska@uw.edu.pl
Andrzej Miszczuk: a.miszczuk@uw.edu.pl
Adam Płoszaj: a.ploszaj@uw.edu.com
Maciej Smętkowski: msmetkowski@uw.edu.pl

Translated by Paweł Luchowski (pawel.luchowski@gmail.com)

Typeset and design: Adam Płoszaj
Cover design: Adam Płoszaj, Katarzyna Wojnar
Cover photo: Agata Zborowska

Warsaw 2010

EUROREG Reports and Analyses 5 / 2010

Editor in Chief:
prof. dr hab. Grzegorz Gorzelak

Publisher:
Centre for European
Regional and Local Studies EUROREG

ISSN: 2080-1564

Address:
EUROREG Reports and Analyses
University of Warsaw
Centre for European Regional and Local Studies EUROREG
Krakowskie Przedmieście 30
00-927 Warszawa, POLAND
euroreg@uw.edu.pl
www.euroreg.uw.edu.pl

CONTENTS

FIGURES

TABLES

1. SUMMARY

The purpose of the study was (1) to assess current problems and demographical trends of Eastern Poland macroregion, (2) to analyze the consequences of the demographical situation for the social and economic system and development perspectives for the macroregion and (3) to develop recommendations for the regional policy for 2014-2020. The study covers the territory of Eastern Poland, understood as five voivodships: Lubelskie, Podkarpackie, Podlaskie, Świętokrzyskie, and Warmińsko-Mazurskie.

Poland is an example of a European country with regional bipolarity of demographical processes, which means formation of highly populated areas on the one hand, and depopulated areas on the other. In most cases depopulated areas are peripheral areas – both in terms of space and social and economic conditions, such as Eastern Poland macroregion. However, Eastern Poland is to a certain degree internally diversified. Highly populated areas are situated around voivodship capital cities, nearly the entire Podkarpackie Voivodship and a part of Warmińsko-Mazurskie Voivodship. The depopulation in other areas follows mostly the traditional depopulation model (migration outflow), whereas only in the central-eastern part of Lubelskie Voivodship, in the eastern part of Podlaskie Voivodship and in the eastern and southern part of Świętokrzyskie Voivodship a new, more dangerous type of depopulation, mainly caused by negative population increase, is dominant. However, in the entire Eastern Poland macroregion no significant influence of depopulation on settlement density and no influence of natural environment's advantages on demographical processes were observed. Initially (without confirmation by means of a statistical analysis due to missing data for poviats) a positive influence of depopulation on changes in the area structure of farms can be identified, which is expressed by a decrease in the total number of farms and an increase in the number of farms of over 50 ha.

Population ageing is a phenomenon common for most European countries, including Poland, and is the consequence of limited child mortality rates, longer life expectancy, and a decrease in population growth (fertility). The Eastern Poland macroregion differs from other parts of the country in a larger decrease in the size of pre-working age population, a slightly larger increase in the size of working age population and a smaller increase in the size of post-working age population. The decrease rate of pre-working age population is very high, as during the past 8 years it has reached about 20%. Within the next dozen years this will certainly contribute to limitation of available labour force and further growth of the post-working age population, which will result in difficulties for the social insurance system's operation and necessitate further development of social infrastructure for the older people. The ageing processes (expressed by the ageing index) are intensifying very rapidly.

The phenomenon of imbalance between sexes in Eastern Poland, expressed by lowered female-male ratios as compared to the national average is most of all observed in the 20-34 age group. The phenomenon of lowered female-male ratios (20-34 years) is mainly the problem of rural areas. However, even there it is not so intensive as to regard these areas as being afflicted by low female-male ratio problem. The problem of lowered female-male ratios in the 20-24 age group is not noticeable in the largest cities of Eastern Poland, since they are destinations of migration for young women leaving rural areas. Although the observed female-male ratios in the 20-34 years group, low as compared to the average, have not been so related to a significant decrease in the number of births and marriages, the tendency, i.e. the growing deficit of women in highest fertility age groups in large areas (mainly rural ones) of Eastern Poland may lead to such problems in the immediate future.

The Eastern Poland macroregion differs from the rest of the country mainly in a significant predominance of migration outflow over inflow. It is also worth noticing that the related registered scale of population loss is not large and in 2002-2009 totalled about 100 thousand people. On the other hand the main problem is the negative net migration value in the group of persons with higher education (in particular aged 25-34). Nearly a half of the negative net migration can be attributed to this group. The main migration destination of people with higher education are metropolitan centres of the central

Poland: Warsaw, Cracow, and the Tricity, and the basic reason for changing the place of residence is the intention to find a well-paid job, whereas the main reasons for coming back are difficulties in finding a job corresponding to the migrants' qualifications. Additionally, according to the official statistics the scale of foreign migration outflow from Eastern Poland is smaller as compared to western and central voivodships. However, the number of returns that have started with economic recession in migration target destinations is larger. It is also worth noticing that voivodship capital cities of Eastern Poland, along with their suburban zones (apart from Kielce), have become relatively stronger thanks to the migration processes, i.e. the migration outflow outside the macroregion was compensated and even exceeded by the intraregional inflow. Nevertheless, the migration outflow of population with higher education on the macro-region scale should be considered a sign of brain drain, which restricts the inherent development potential and investment attractiveness of Eastern Poland.

The level of commuting in Eastern Poland (with the exception of Podkarpackie Voivodship) was smaller as compared to the population size, due to larger percentage of persons employed in agriculture. However, it was higher when adjusted by the number of people working in agriculture. At the same time the system of commuting in voivodship capital cities situated in Eastern Poland was slightly less developed than in the other regions of the country, although the system of commuting was more monocentric. The largest potential to create polycentric networks of cities was found in Podkarpackie Voivodship and in the western part of Warmińsko-Mazurskie Voivodship. What is more, Eastern Poland differed from the other regions of the country in that communes constituting the main commuting centres were at the same time the most important economic centres. Voivodship capital cities situated in Eastern Poland were also of relatively higher significance as compared to the other areas of the country in terms of provision of higher-order services (in particular education and health services) and their importance in this respect grew. In the light of questionnaire surveys permanent migrations to voivodship capital cities were not very frequent, which could indicate both competition from other urban centres situated outside the macroregion and foreign migrations.

The main problem areas of Eastern Poland are poviats affected by depopulation processes related to population ageing. The other type of problem poviats are those that as a result of advanced processes of population ageing developed a regressive demographical structure, even if not accompanied by a significant decrease in the number of inhabitants. The third type of problem areas are poviats with significant migration outflow and a low population density. These problem areas cover nearly the entire Eastern Poland, with the exclusion of Podkarpackie Voivodship, where only individual poviats are threatened with marginalisation. In other voivodships the situation is opposite, and only individual poviats have no major demographical problems, i.e. the western part of Warmińsko-Mazurskie Voivodship (poviats of Ostróda, Nowe Miasto, Iława, and Działdowo), poviats of Giżycko and Ełk, a part of Podlaskie Voivodship (poviats of Łomża and Zambrów), poviats of Łęczna and Biłgoraj in Lubelskie Voivodship and poviat of Staszów in Świętokrzyskie Voivodship. Also rural poviats of voivodship capital cities with the exclusion of Białystok are free from demographic problems, thanks to increase in suburbanization processes, whereas the voivodship capital cities themselves and most subregional centres usually face some demographical problems caused mainly by ageing of the population.

On the basis of the above conclusions three basic groups of recommendations for the regional policy, both for the entire macroregion of Eastern Poland and for the selected problem areas, can be presented.

The first group of recommendations concerns the necessity for actions taken as part of regional policy to concentrate on voivodship capital cities of Eastern Poland and their urban regions. These actions should focus on maintenance of migration attractiveness of voivodship capital cities, thanks to supporting the creation of quality jobs there and on enhancing the living quality of their inhabitants. Used to this end should be the standard measures, related most of all to raising the level of technological advancement of companies and enterprise development, as well as improving the quality of public services and housing conditions.

The second group of recommendations concerns mitigation of results of demographical problems. In the conditions of smaller public intervention as compared to actions taken in voivodship capital cities these actions should be more selective and territorialized, and include: development of public transport, including connecting smaller urban centres with voivodship capital cities first, and later on with subregional centres, enhancing quality of public services in problem poviats, development of modern and dedicated welfare services, including those for old people, in particular in poviats with regressive demographical structure.

The third group of recommendations concerns neutralizing the causes of demographical problems resulting from low fertility rate and the migration outflow. Actions at the national level, consisting in development of relevant regulations reducing costs of bringing up children, should be supplemented by regional and local initiatives. Another important element are actions aimed at decreasing emigration and encouraging remigration.

2. PURPOSE AND SCOPE OF THE STUDY

The purpose of the study was to:

- assess the current demographical problems of Eastern Poland macroregion and tendencies in this area according to population projections;
- analyse the consequences of the demographical situation for the social and economic system and development outlooks for the macroregion;
- develop recommendations for the regional policy for the 2014-2020.

The study covered the period from 2002 (the last national census) to 2009, although in selected cases also analyzed were data for selected subperiods and years.

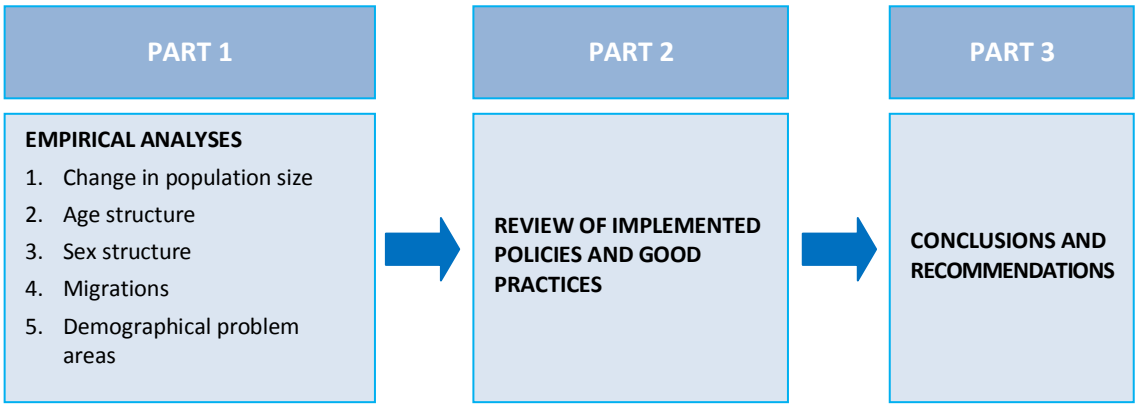
The study covered the territory of Eastern Poland, understood as five voivodships: Lubelskie, Podkarpackie, Podlaskie, Świętokrzyskie, and Warmińsko-Mazurskie. In this macroregion various spatial units were analysed: voivodships (NUTS2), poviats (NUTS4), and in selected cases communes (NUTS5).

The study examined selected demographical phenomena, such as: change in population size, structure by age and sex, permanent migrations, and migrations caused by commuting – which have been presented in a wider social and economic context.

The structure of the study is presented below (Figure 1). The first part includes empirical analyses based mostly on statistical data from the Central Statistical Office. The second part reviews selected policies and good practices which have been implemented regarding the analysed issues. On this basis conclusions and recommendations for the regional policy are presented in the last part.

The study used quantitative methods (statistical analyses), spatial methods (cartographic analyses), and qualitative methods (review of literature, expert analyses, and results of available surveys).

Figure 1. Research model



Source: Prepared by the authors.

3. EMPIRICAL ANALYSES

3.1. INTRODUCTION

The contemporary demographical processes in many countries have polarizing character, which is the result of advanced level of urbanisation processes. On the one side hand the population is concentrated in the largest urban centres, whose population – as a result of suburbanisation processes – "sprawls" to the neighbouring rural areas and, on the other hand, peripheral rural areas situated far from large cities become depopulated. The rural areas depopulation processes have started at the end of the 19th century as a result of industrialisation. They first covered areas which were overpopulated as well as those with less favourable conditions for settlement and business (mountainous and adjacent areas).

At present depopulation pertains to regions which are peripheral both in spatial and socio-economic context. The phenomenon is not disappearing, which is manifested among others by the demographic projections for years up to 2030 carried out by EUROSTAT for 267 EU regions (NUTS-2)[1]. It indicates that the decrease in population size will be recorded in 98 regions. This phenomenon is relatively most common in small countries, like Estonia, Lithuania, Latvia, and Hungary; the new EU members: Bulgaria and Romania; Germany (28 depopulation regions out of 39), and Poland (12 to 16).

In the context of depopulation processes in Europe three types of countries can be distinguished (Bucher, Mai 2005):

- countries with large depopulation areas but small interregional differences (the Baltic countries, Romania, Bulgaria, the Czech Republic, and Russia);
- countries with regional bipolarity, which means larger or smaller depopulation areas and clearly geographically separated areas of population growth (Germany, Spain, Portugal, Italy, Poland, France, Greece, Finland, Sweden, Switzerland, Slovakia, Slovenia, and Hungary);
- countries with depopulated regions, but having no depopulation problems in general (Great Britain, Ireland, Island, Denmark, Norway, Belgium, Holland, Austria, and Macedonia).

The end of the 1980s and the beginning of the 1990s saw the highest intensity of depopulation studies in Poland. There were numerous regional studies prepared, analyzing reasons and results of depopulation and making international comparisons (see e.g.: Jelonek 1986; Stasiak, Mirowski 1990).

On the basis of data by communes from 1946-1978 P. Eberhardt determined 11 depopulated Polish regions. The requirement assumed for classifying a commune as a depopulated region was meeting by it of at least two criteria out of the following four: population decline in 1946-1978 by over 30%, population decline in 1950-1978 by over 20%, population decline in 1960-1978 by over 15%, and population decline in 1970-1978 by over 5%. Seven such areas were identified in the eastern part of Poland (regions of Masuria and Warmia, Suwałki, Kurpie and Biebrza, Podlasie and Nadbuże, Janów and Hrubieszów, Roztocze and the region along the Vistula River) (Eberhardt 1989).

In the 1990s the problem of depopulation and low population density in Northern Finland and Sweden was reflected in the EU regional policy (objective 6 in the years 1994-1999). In the subsequent programming periods the problems of depopulated areas of member states were reflected in both objectives 1 and 2. In the current programming period the problem area on the EU scale is also Eastern Poland, which found its expression in implementation of a special operational programme for this area.

The demographic situation of the macroregion consisting of Lubelskie, Podkarpackie, Podlaskie, Świętokrzyskie, and Warmińsko-Mazurskie Voivodships is systematically deteriorating, which is manifested by over 100-thousand decline in population size in 2000-2009 and the further decrease projected by at least 800 thousand inhabitants by 2035.

[1] http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Regional_population_projections.

Depopulation results from migration processes, which in a long-term – because of their selective character (outflow of young persons) – also negatively influence the natural increase. This phenomenon is caused most of all by economic reasons, related to finding an attractive, well-paid job and to improving one's accommodation standards. The results of this phenomenon are not only demographical – related to deformations in population sex and age structure in the depopulated area, but also have socio-economic character, manifested by unfavourable changes in the structure of economic activity of the population and deterioration in entrepreneurship and creativity (Miszczuk 1993). The phenomena occurring in depopulated areas include: less numerous labour force of lower quality caused by the outflow of active and educated people, ageing processes in local and regional communities, and difficulties in ensuring access to social services –, among others due to unfavourable consequences of depopulation processes for the public finance system (including self-government finance system), and for the social security and health care system. As a result competitiveness of the depopulated areas is low.

3.2. CHANGE IN POPULATION SIZE

The objective of the first empirical analysis is to describe the phenomenon of Eastern Poland's depopulation and identify its consequences for the economic system as well as for the society and the environment. Specialist literature usually lists two types of depopulation, the so-called traditional type, where the main reason for depopulation is the migration outflow, and a new type, resulting mainly from natural decline (negative natural increase). The new type may be said to result from persistent depopulation of the traditional type (Bucher, Mai 2005). Therefore, to determine the extent to which depopulation issue should be reflected in the regional policy intervention it is necessary to identify types of depopulation, since this determines whether the actions should be more oriented at limiting migration outflow or stimulating natural increase.

The period for which detailed analyses by poviats (LAU 1) have been carried out is 2002-2009. However, in order to present demographical phenomena in the long run and allow for comparisons, population changes by communes (LAU 2) from 1990 onwards (Figure 2) are also shown. The figure shows division into demographically active areas – usually situated near large cities, which is the consequence of suburbanisation, and depopulated areas – numerous in Eastern Poland, particularly in Podlaskie Voivodship and in the eastern part of Lubelskie Voivodship.

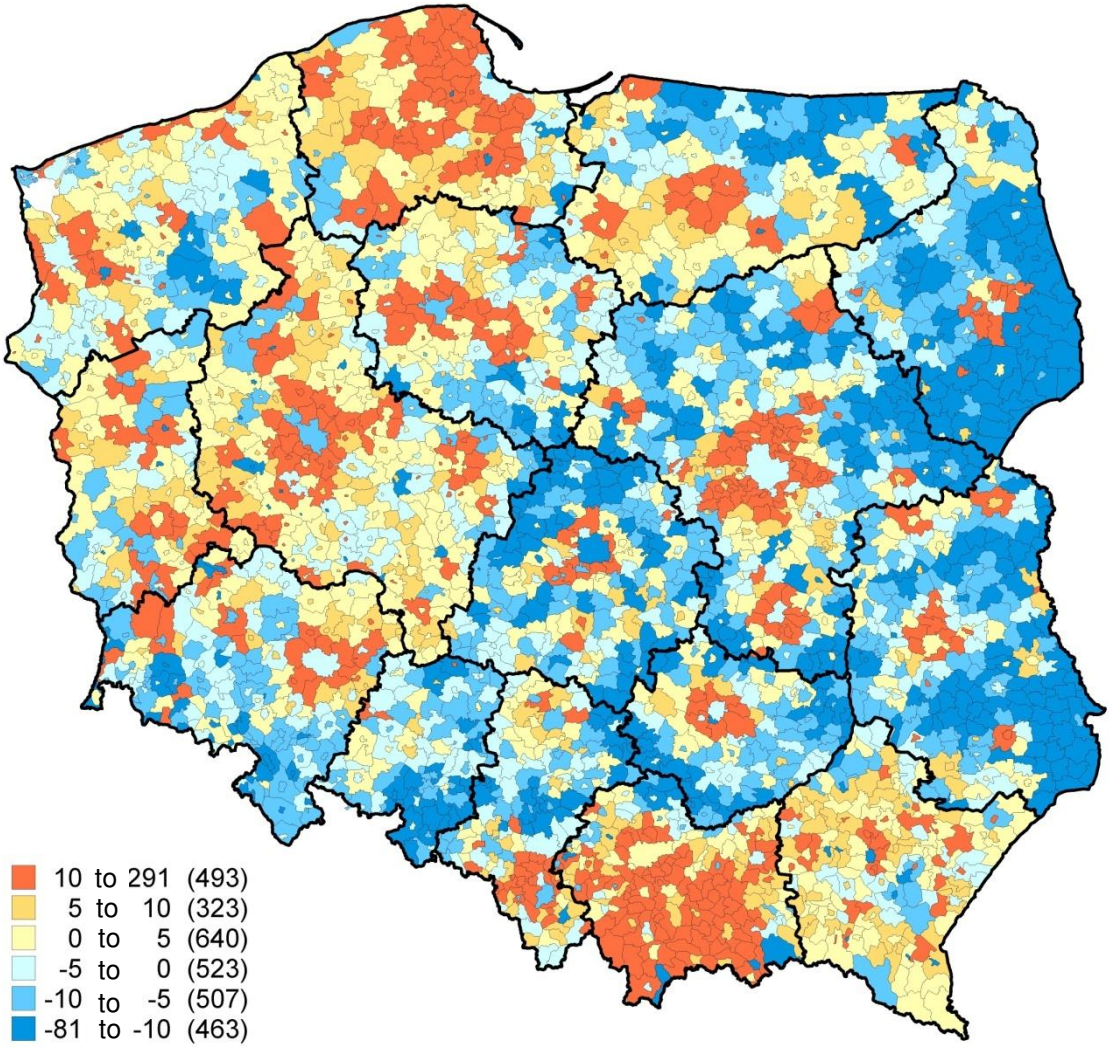
In the main period under consideration (2002-2009) one can see that population changes in the three large regions, i.e.: Eastern Poland, Western Poland, and Central Poland were not very intensive (Table 1). Only Eastern Poland recorded a decrease by 1.1%, whereas the two other parts of Poland saw only a slight decrease. As a result, the total population in Poland in 2002-2009 declined by 0.1%.

Table1. Changes in population of Poland in 2002-2009

Specification	Eastern Poland*		Central Poland*		Western Poland*	
	In persons	*% in total*	*In persons*	*% in total*	*In persons*	*% in total*
Population in 2002	8234130	21.5	21018514	55.0	8965887	23.5
Population in 2009	8145903	21.3	21033273	55.1	8988153	23.6
Change (2002 = 100)	98.9	-	100.1	-	100.2	-

* Eastern Poland: Lubelskie, Podkarpackie, Podlaskie, Warmińsko-Mazurskie, and Świętokrzyskie
** Central Poland: Kujawsko-Pomorskie, Łódzkie, Małopolskie, Mazowieckie, Opolskie, Pomorskie, and Śląskie
***Western Poland: Dolnośląskie, Lubuskie, Wielkopolskie, and Zachodniopomorskie.
Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure 2. Changes in population density of gminas, 1990-2008 (inhabitants per km^2)



Source: Prepared by the authors on the basis of Central Statistical Office data.

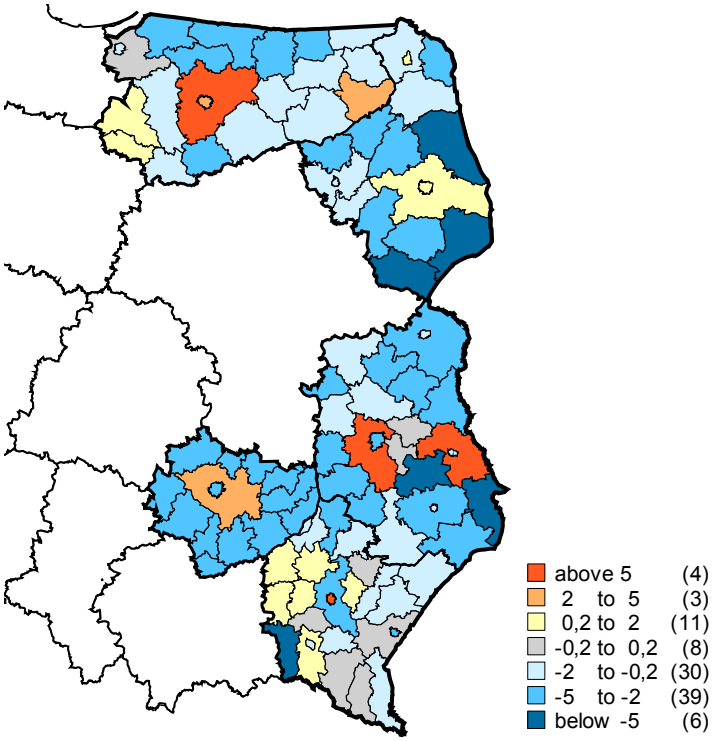
However, the analysis of poviats in Eastern Poland indicates that population changes recorded in the analyzed period are more diversified, which is presented in Figure 3. Demographically active poviats are most of all those located around voivodship capital cities, whereas in the case of Lublin and Kielce this phenomenon is connected with population decline of the city itself. In Białystok and Olsztyn the increase in population in the suburban poviat is accompanied by population increase in the cities. The situation in Rzeszów Poviat is seemingly untypical, since population in Rzeszów increases, while population in its poviat drops. However, this is the consequence of extension of the city's administrative borders to include suburban areas. Population increase in Chełm Poviat results from change of its administrative borders to include one commune formerly located in Krasnystaw Poviat.

To present the actual population processes without deformations caused by changes of administrative borders Figure 4 presents the typology of population changes based on their two shaping elements, i.e. natural increase (NI) and net migration (NM). Consequently, there have been four types of population changes isolated, i.e.:

- increase, meaning a combination of NI and NM that ensures population increase,
- stabilization, i.e. stable population size in the period under consideration,
- depopulation – type 1 (traditional), i.e. population decline resulting mostly from negative NM,
- depopulation – type 2 (new), i.e. population decline resulting mostly from negative NI.

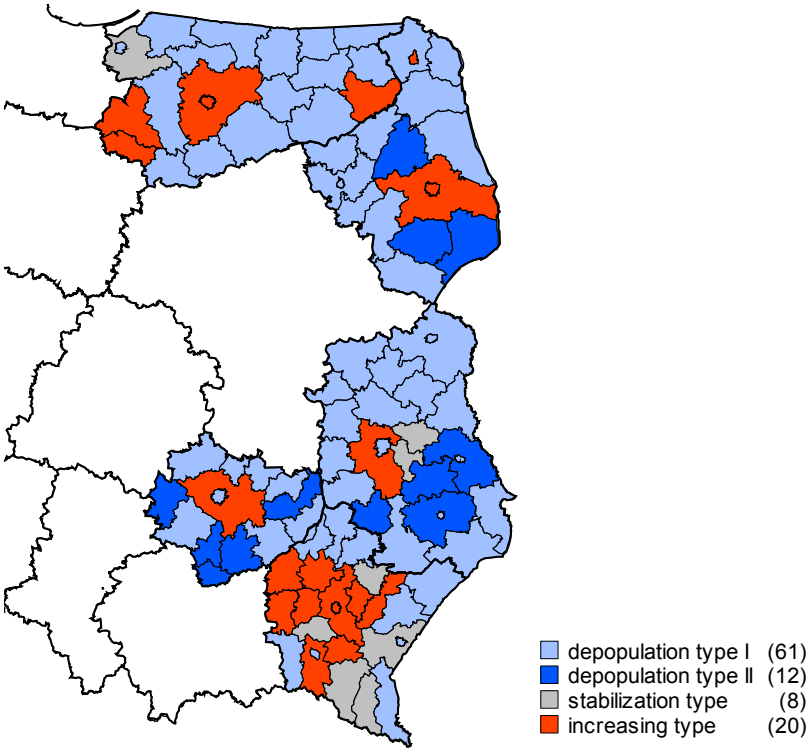
The most frequent type of population processes is the traditional depopulation. Population increase covers a group of poviats around Rzeszów and suburban poviats around voivodship capital cities (Białystok, Kielce, Lublin, and Olsztyn). However, in the case of Białystok, Kielce, and Lublin suburban poviats neighbour type 2 depopulation poviats whose population, as a result of long-term migration outflow, is dying out (significant natural declines).

Figure3. Population changes in Eastern Poland poviats in 2002-2009



Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure4. Typology of population changes in Eastern Poland poviats in 2002-2009



Source: Prepared by the authors on the basis of Central Statistical Office data.

Demographical processes may influence the number and average size of settlement units. Table 2 shows that both in Eastern Poland and in other parts of Poland there was a concentration process observed, manifested by decrease in the number of localities and increase in their average size. However, Eastern Poland is exceptional because of the fact that despite general population decline the number of localities declines slower and the increase in the average number of inhabitants is very minor.

Table2. Changes in the number and size of settlement units in Poland in 2002-2009

Specification	Eastern Poland*		Central Poland*		Western Poland*	
	Absolute value	*% in total*	*Absolute value*	*% in total*	*Absolute value*	*% in total*
Localities in 2002	17178	29.9	26903	46.8	13389	23.3
Localities in 2009	16850	30.7	25211	45.9	12869	23.4
Change (2002 = 100.0)	98.1	X	93.7	X	96.1	X
Average size of localities in 2002 (persons)	479	X	781	X	670	X
Average size of localities in 2009 (persons)	483	X	834	X	698	X
Change (2002 = 100.0)	100.8	X	106.8	X	104.2	X

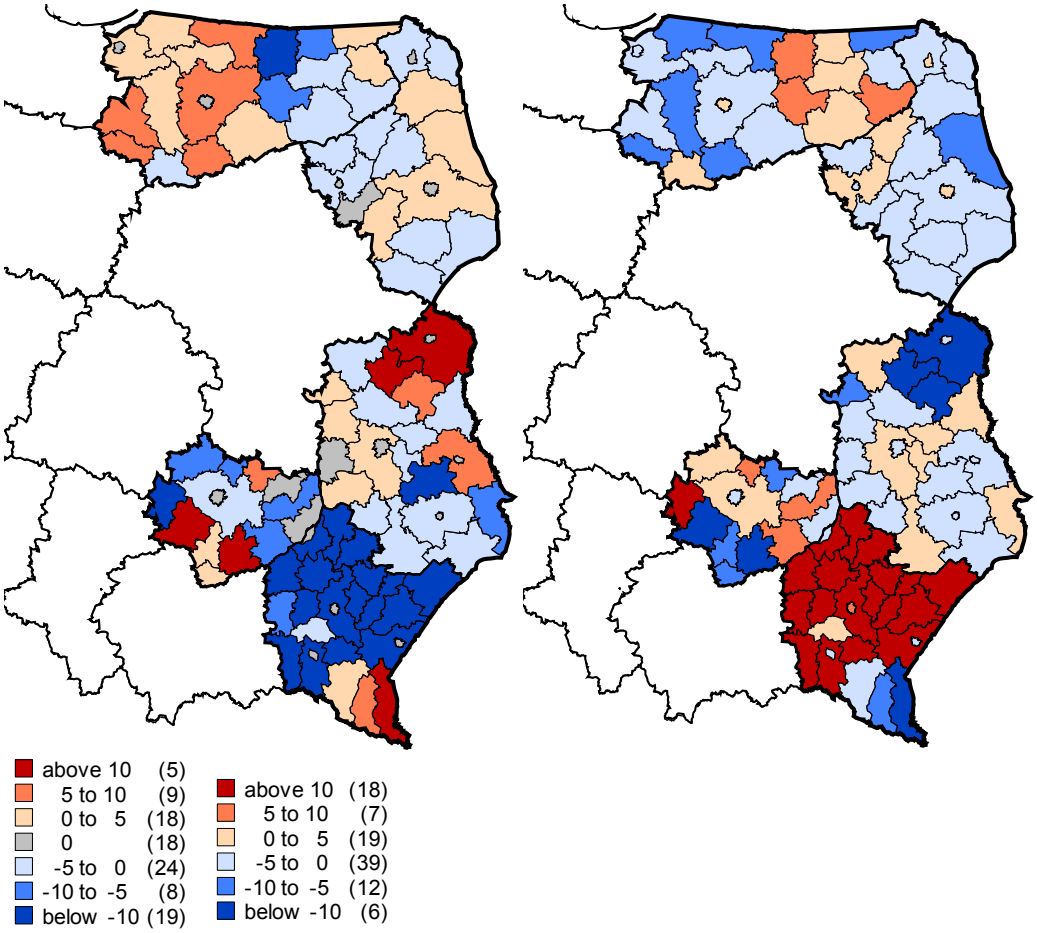
Source: Prepared by the authors on the basis of Central Statistical Officedata.

Diversification of changes concerning the number of localities by poviats of Eastern Poland is shown in Figure 5. It allows to indicate the areas with declining number of localities, namely: almost entire Podkarpackie Voivodship, the central and southern part of Lubelskie Voivodship, the northern and eastern part of Świętokrzyskie Voivodship, the southern part of Podlaskie Voivodship and the borderland between Podlaskie Voivodship and Warmińsko-Mazurskie Voivodship. On the other hand an increase in the average size of localities (Figure 6) was reported in Podkarpackie Voivodship, in the borderland between Podlaskie Voivodship and Warmińsko-Mazurskie Voivodship, as well as in the central part of Lubelskie Voivodship, and the northern part of Świętokrzyskie Voivodship.

While for all the poviats in Eastern Poland there is a very strong negative correlation between changes in the number of localities and their average size (r = -0.957), the influence of population changes on the number of localities is insignificant (r = -0.029). The influence exerted by changes in population size and in the average size of settlement units (r = 0.212) are insignificant as well. The conclusion is that depopulation has no noticeable negative influence on decline in the total amount of settlement units in Eastern Poland.

Figure5. Changes in the number of settlement units in poviats in 2002-2009

Figure6. Changes in average population size of settlement units in poviats in 2002-2009



Source: Prepared by the authors on the basis of Central Statistical Office data.

3.3. STRUCTURE BY AGE

A very important field for studies of demographical processes in Eastern Poland is analysis of population ageing problem and identification of its consequences. This phenomenon is common not only in the area of this study. It is estimated that by 2050 in EU member states there may be about 48 million fewer 15-64 year olds and 58 million more people over 65 (Regions 2020). However, the population ageing problems are particularly severe in depopulated areas, and are not only of demographical nature (Bucher, Mai 2005; Johansson, Rauhut 2002).

On the one hand the process of population ageing is the consequence of longer life expectancy caused by civilization changes, better dwelling conditions, good diet, quantitative and qualitative progress in the field of medical services, and on the other hand by lower fertility caused by the second demographical transition (change of the family model and family objectives, entering into marriages late, delayed typical reproductive age, fewer families with many children, etc.). The second demographical transition started in Western Europe after a period of high natural increase compensating the population losses caused by the Second World War, and affected Poland and other countries of Central and Eastern Europe in the 1990s.

The question in this general and regional context is: what social, cultural, and economic factors can shape positive attitudes towards reproduction in Eastern Poland. There is certain diversification in this respect, mainly attributable to Podkarpackie Voivodship, which – for historical and cultural reasons – still has relatively high natural increase. In other voivodships the demographical factors related to migration outflow of reproductive-age population seem to prevail. Depopulation areas affected by intense processes of population ageing have – due to the deteriorating quality of their human resources – limited opportunities for endogenic development. The social costs of ageing population's living are growing, and there are also difficulties regarding public funds for provision of relevant public services.

As a result of longer life expectancy the demographical old age limit, presently set at 65+, shifts and the age structure in the oldest age groups, noticeably dominated by women, changes (Okólski 2005).

The data presented in Table 3 reflect tendencies in Eastern Poland for three age groups specified on the basis of economic criterion, i.e. the available labour force, as compared to the rest of Poland.

The largest percentage of pre-working age population lived in Warmińsko-Mazurskie Voivodship (with the exception of its northern part), and in the neighbouring poviats of Podlaskie Voivodship (Figure 7). Another area with numerous young people was the northern part of Lubelskie Voivodship and the central part of Podkarpackie Voivodship, as well as rural poviats of Kielce and Lublin. Poviats with the largest share of post-working age population were numerous in Podlaskie Voivodship (areas neighbouring Białystok Poviat), in the southern and eastern part of Lubelskie Voivodship, and in the southern part of Świętokrzyskie Voivodship. In terms of availability of labour force defined as working age population the special positions was that of Warmińsko-Mazurskie Voivodship (with Olsztyn and its rural poviat in the first place), the southern and northern peripheral regions of Podkarpackie Voivodship, and the northern part of Świętokrzyskie Voivodship.

The Eastern Poland macroregion is specific as compared to Western and Central Poland because of its stronger decline in pre-working age population, a slightly stronger increase in working age population, and a smaller increase in post-working age population. This means that over the next dozen or so years the pre-working age population decline will contribute to limitation of available labour force and a further growth of post-working age population share.

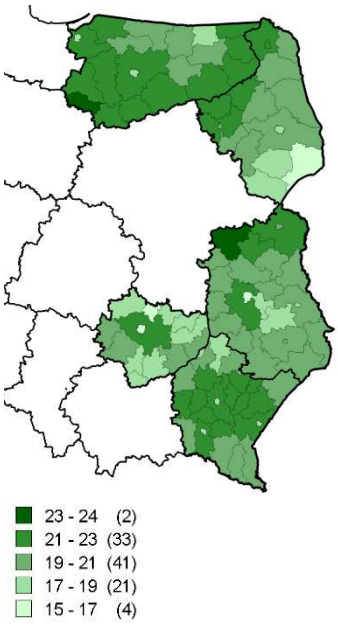
Table3. Pre-working, working, and post-working age population in Poland in 2002-2009

Specification	Eastern Poland		Central Poland		Western Poland	
	In persons	*% in total*	*In persons*	*% in total*	*In persons*	*% in total*
Pre-working age population in 2002	2005575	23.1	4634448	53.5	2023662	23.4
Pre-working age population in 2009	1 606511	22.2	3924722	54.3	1700038	23.5
Change (2002=100)	80.1	-	84.7	-	84.0	-
Working age population in 2002	4965195	20.9	13150182	55.2	5674430	23.9
Working age population in 2009	5 193711	21.1	13543569	55.0	5887163	23.9
Change (2002=100.0)	104.6	-	103.0	-	103.8	-
Post-working age population in 2002	1263310	21.9	3233934	56.1	1267795	22.0
Post-working age population in 2009	1 345681	21.3	3564982	56.5	1400952	22.2
Change (2002=100)	106.5	-	110.2	-	110.5	-

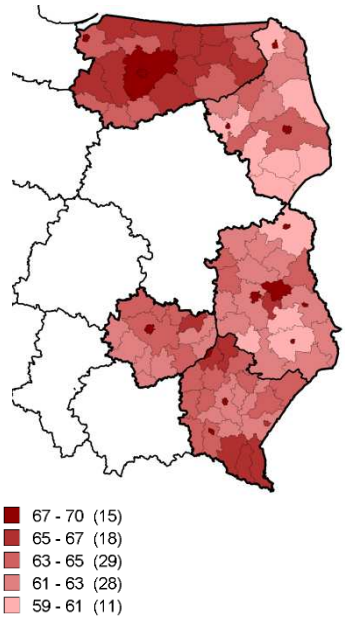
Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure7. Eastern Poland's population by economic age groups in 2009 [%]

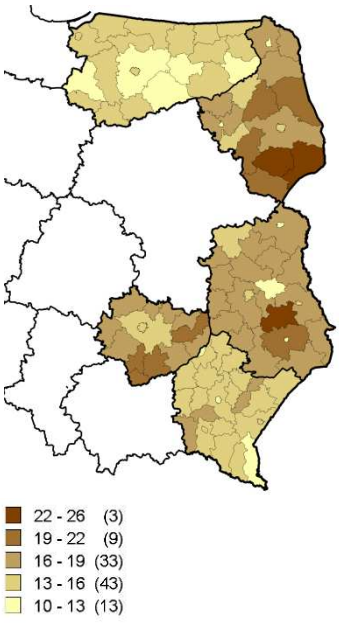
a) pre-working age



b) working age



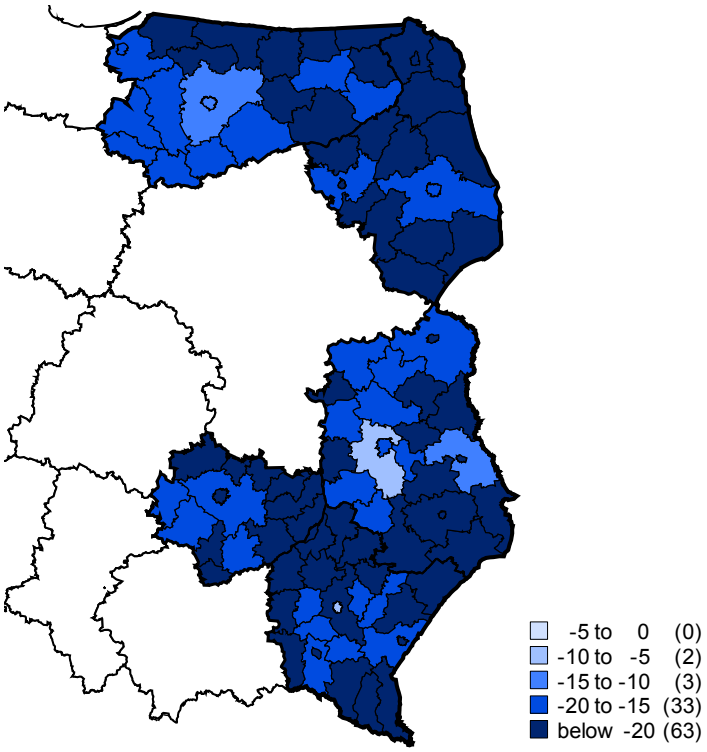
c) post-working age



Source: Prepared by the authors on the basis of Central Statistical Office data.

The pre-working age population is not strongly diversified by voivodships, since its decline in 2002-2009 was between 21.6% (Podlaskie Voivodship) and 18.5% (Warmińsko-Mazurskie Voivodship). The highest growth in the working age population was recorded in Podkarpackie Voivodship (by 6.5%), whereas the lowest one was recorded in Świętokrzyskie Voivodship (by 2.8). The largest growth in post-working age population was observed in Warmińsko-Mazurskie Voivodship (by 10.1%) and the lowest in Lubelskie Voivodship (by 4.9%).

Figure8. Changes in pre-working age population in Eastern Poland poviats in 2002-2009



Source: Prepared by the authors on the basis of Central Statistical Office data.

The analysis by poviats (Figure 8) shows that all Eastern Poland poviats experienced a decline in pre-working age population in 2002-2009. The phenomenon was most intensive (exceeding 20%) in poviats in the northern and eastern part of Warmińsko-Mazurskie Voivodship, the northern, eastern, and southern part of Podlaskie Voivodship, the central and eastern part of Lubelskie Voivodship, and the borderline between Lubelskie, Podkarpackie, and Świętokrzyskie Voivodships. The smallest decline in pre-working age population was recorded in Rzeszów and Lublin Poviats.

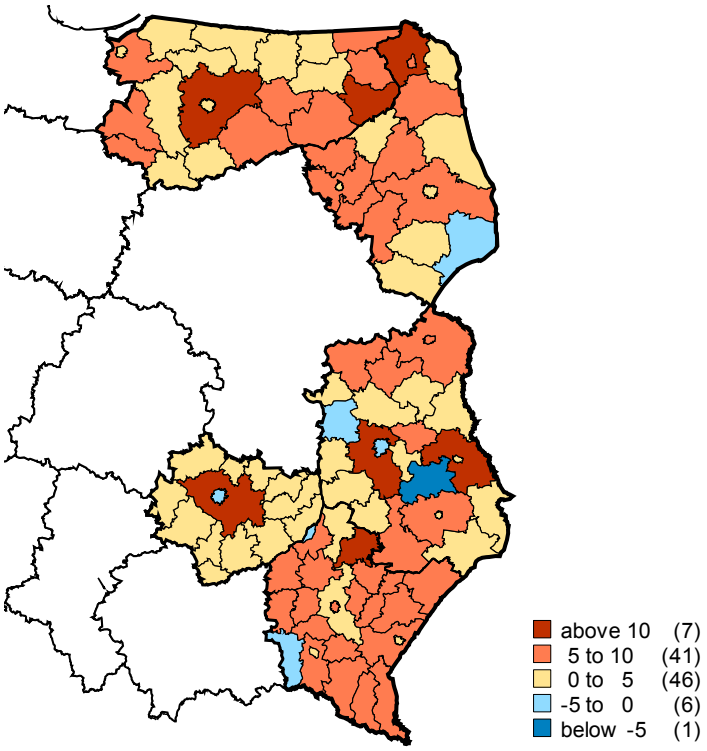
The decline in pre-working age population size is strongly correlated (r = 0.768) with general population changes in the poviats under consideration. This is mainly the consequence of lower natural increase and migration outflow to a much smaller degree – since members of this group usually do not move independently (they usually migrate with parents). The consequences of the decrease in pre-working age population size are and will remain a serious problem for education establishments (schools and universities) and during the next dozen or so years also for the labour market and the social security system.

On the other hand, in most poviats the number of working age population grows (Figure 9). This growth is the most intensive (amount to over 10%) in poviats surrounding voivodship capitals (Olsztyn, Kielce, and Lublin) as well as poviats of Ełk, Suwałki, and Nisko. In Chełm Poviat the actual demographical processes are distorted as a result of connecting a new commune to the poviat. Declines in available

labour force were recorded only in poviats of Krasnystaw, Hajnówka, Puławy, and Jasło, as well as in Kielce, Lublin, and Tarnobrzeg.

The increase in post-working age population is the most intensive in all poviats of Warmińsko-Mazurskie Voivodship and in most poviats of the remaining voivodships as well as in voivodship capitals and other towns with poviat rights in the Eastern Poland macroregion (Figure 10).

Figure9. Changes in population number in working age in Eastern Poland's poviats 2002-2009



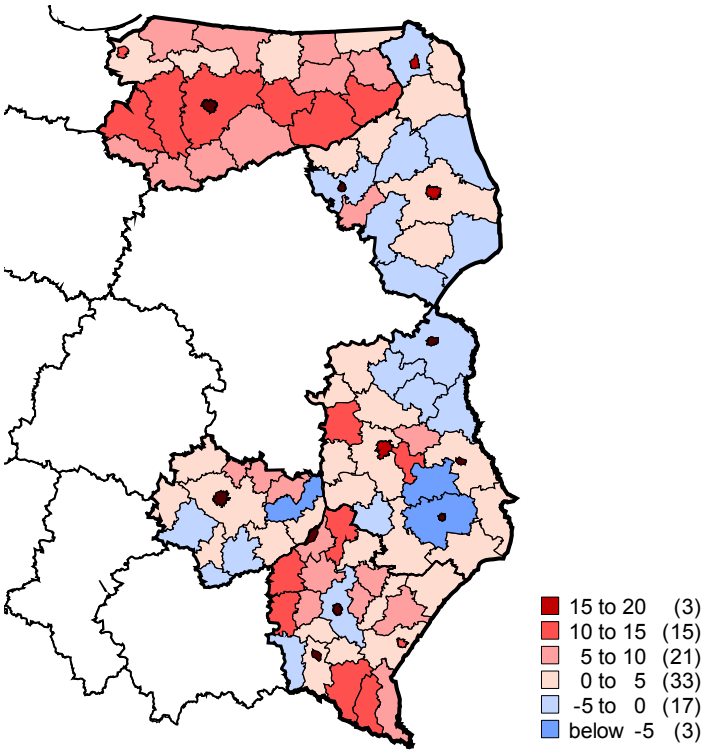
Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure 11 shows ageing indices[2], prepared in order to present the progress of ageing processes in Eastern Poland poviats and the rate of older (65+ years old) population replacement with the youngest population. The comparison of 2002 and 2009 data shows a fast pace of changes caused mainly by decline in size of the youngest population. In 2002 the highest ageing index (above 60) was recorded in 11 poviats. These were poviats of: Sokółka, Hajnówka, Siemiatycze and Bielsk in Podlaskie Voivodship, Zamość and Krasnystaw in Lubelskie Voivodship, and Busko, Jędrzejów, Kazimierza Wielka, Skarżysko-Kamienna and Opatów in Świętokrzyskie Voivodship. In Warmińsko-Mazurskie and Podkarpackie Voivodships not a single poviat of this type was recorded.

In 2009 there were already 34 such poviats (eastern part of Podlaskie Voivodship, most poviats of Lubelskie and Świętokrzyskie Voivodship as well as Giżycko Poviat in Warmińsko-Mazurskie Voivodship) and five voivodship capitals (Białystok, Kielce, Lublin, Olsztyn, and Rzeszów), and further five towns with poviat rights (Krosno, Przemyśl, Tarnobrzeg, Chełm, and Elbląg).

[2] Ageing index is defined as the ratio of the size of population aged 65 and over to the size of population aged 0-19.

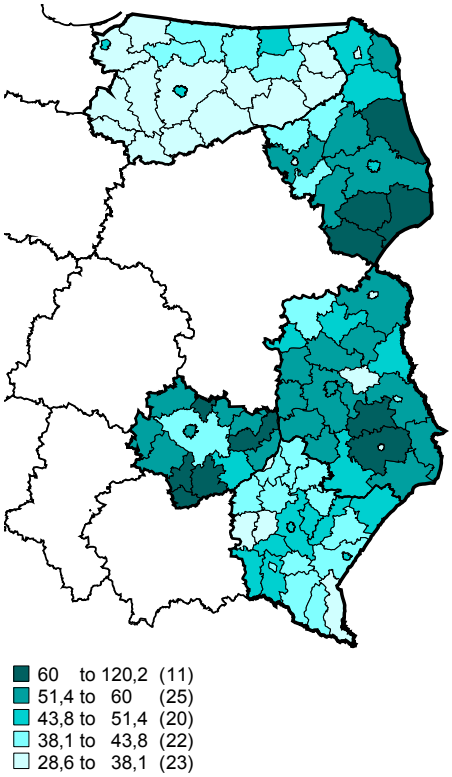
Figure10. Changes in post-working age population in Eastern Poland poviats in 2002-2009



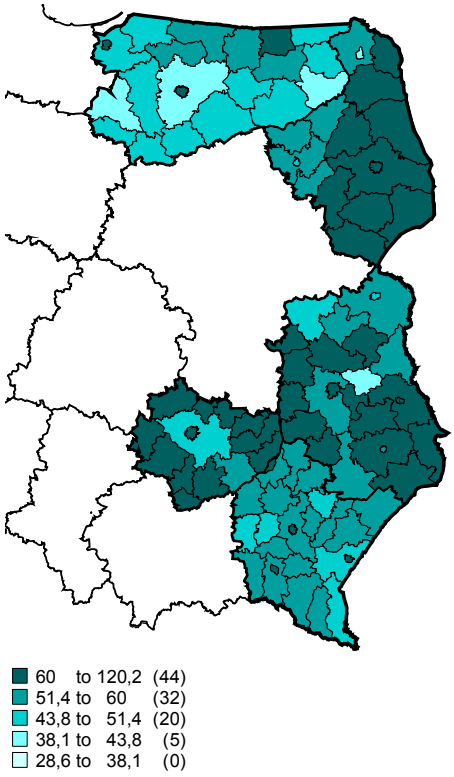
Source: prepared by the authors based on data from Central Statistics Office.

Figure11. Advancement of ageing processes in Eastern Poland poviats in 2002 and 2009– aging index in proportion to the 0-19 age group

2002



2009



Source: prepared by the authors based on data from Central Statistics Office.

On the basis of the analysis the following conclusions can be made:

1. Population ageing is a common phenomenon in most European countries, including Poland, which, on the one hand, results from lower child mortality rates and longer life expectancy, and on the other hand from lower natural increase (fertility).
2. The specificity of the Eastern Poland macroregion as compared to the rest of the country lies in greater decrease in its pre-working age population, slightly greater increase in working age population, and smaller increase in post-working age population.
3. The pre-working age population decrease is very high, and during the last eight years reached about 20%. During the next dozen or so years this will certainly contribute to limitation of available labour force and a further increase in post-working age population, which will result in difficulties for operation of the social security system and will necessitate further development of infrastructure for the older people.
4. The ageing processes (expressed by the ageing index) are intensifying very quickly. The areas where those processes are the fastest include poviats in the eastern part of Podlaskie Voivodship, most poviats of Lubelskie Voivodship and Świętokrzyskie Voivodship, as well as all voivodship capitals and five further towns with poviat rights (former voivodship capitals). The pace of population ageing in Podkarpackie Voivodship and Warmińsko-Mazurskie Voivodship is slower.

To sum up, it may be concluded that a serious consequence of Eastern Poland population ageing is a noticeable decline in available labour force (working age population), which will probably occur during the next dozen or so years and can negatively affect competitiveness of the entire macroregion. The observed pre-working age population decline results and is further going to result in limited use of the existing and developing (mainly thanks to EU funds) infrastructure of primary, lower secondary, secondary (including vocational), and higher education. Given the decreased number of potential pupils or students and the necessity to maintain employment in school and universities there is a real danger of lowering the entrance criteria and, as a consequence, also the educational standards and quality of education. This may further deteriorate the quality of labour force in Eastern Poland. Nevertheless, the decreasing demand for education services may trigger restructuring of establishments and institutions providing such services, better selection of teachers, and extension in spatial area of interest in the offer of Eastern Poland's educational institutions.

On the other hand the large and growing share of post-working age population causes a considerable demand for medical services and social assistance, which, given the lack of health care and social welfare system financing reforms may result in growing expenses to be borne by the budgets of the state and territorial self-governments of the Eastern Poland macroregion. Inefficiency, or simply the death throes, of the repartition social security system poses a very serious threat to the public finance system in situation of population ageing.

It should be also noted that population decline and ageing processes negatively affect income-earning potential of territorial self-government units, due to smaller proceeds from income taxes, as post-working age population is less professionally active and pays lower amounts of taxes on lower income. Thus, from the point of view of the public finance system population ageing involves growing expenses to be borne by the state budget and decreasing income, which particularly restricts territorial self-governments' possibilities to stimulate socio-economic processes, including in particular those in the Eastern Poland macroregion.

3.4. STRUCTURE BY SEX

The sex imbalance phenomenon observed in population should be analyzed in two aspects: the geographical aspect (including the division into urban and rural areas) and the age-related aspect (particular age groups). In the first aspect, the sex imbalance results mainly from migrations. Their directions and structure in Poland result in overrepresentation of women in cities and a general sex balance in rural areas. In 2009 there were 101 women per 100 menliving in rural areas, whereas in urban areas there were 111 women per 100 men. This reflected the share of women in the urban population of 52.7%, and in rural areas – of 50.2%. However, the key factor for determining the demographic effects of sex imbalance is analysis of the female-male ratio (number of women per 100 men) in individual age groups, as it is one of crucial ratios determining reproductive potential of the population in a given area (Bański 2002). In the youngest age groups a natural phenomenon of overrepresentation of men is observed, since each year more male than female babies are born. The share of boys in the number of births totals about 0.51 – 0.52 (Holzer 1999). On the other hand – since women on average live longer than men, there is a natural predominance of women in the oldest age groups.

Of particular importance for the current and future demographical situation of a given area is the value of female-male ratio in the marriageable-age population group (20-29 years) and in the age group with the highest total fertility rates. Deficit of women in these age groups causes a decline in the number of marriages and births, leading to increase in population ageing processes. In the last decade in Poland the highest fertility (number of live births per 1000 women) was observed in the 25-29 age group. The recent years have seen the highest fertility rates move to the older age groups. While in 2000 the highest number of births per 1000 women was observed in the 25-29 and 20-24 age groups all over Poland, in 2005 the analyzed ratio assumed similar values in the 20-24 and the 30-34 age groups, and in 2009 the number of live births per 1000 women in the 30-34 age group was larger than in the 20-24 age group (in the whole period the highest values were observed in the 25-29 age group) (Demographical Yearbook 2010). This phenomenon occurs both in cities and rural areas, although in the latter case it is slightly delayed and on the level of the whole country it occurred first only in 2009.

The analysis of the sex imbalance phenomenon in Eastern Poland in 2002-2009 was conducted on the basis of data from the Central Statistical Office (Regional Data Bank and Demography Base). Its basis was the data on the number of men and women, which allowed calculation of the female-male ratio (the number of women per 100 men) in individual age groups, by territories and periods.

Although migration mobility in Eastern Poland is similar to that in the rest of Poland, migration outflow prevails in this macroregion (see the part of the report on migration). Additionally, the highest negative net value of migration occurs among people with higher education, aged up to 34, and women. Thus it pertains to reproductive-age women, the deficit of whom may bring about further demographical consequences. Furthermore, the relatively slightly less developed settlement network in Eastern Poland and the smaller number of large cities constituting target destinations of migration contribute to outflow of population (including young women) from the macroregion. Therefore, Eastern Poland seems to be particularly seriously threatened with sex imbalances, particularly in rural areas.

The analysis of the female-male ratio for the entire macroregion of Eastern Poland indicates that the highest deficit of women (fewer than 95 women per 100 men and even below 90 in rural areas) is observed in three age groups: 20-24, 25-29, and 30-34 . While in 2002 the lowest female-male ratios (amounting to less than 95) were still recorded in the 20-24 and the 25-29 age groups, within the next years this deficit shifted towards older age groups, and in 2009 the lowest values of the female-male ratio (i.e. 93.5 in the entire Eastern Poland macroregion and 89 in its rural areas) were recorded in the 25-29 and the 30-34 age groups (in the 20-24 age group the value of the ratio totalled 95.8 and 94, respectively). The tendency for the largest deficit of women to shift to older age groups is accompanied by another phenomenon, observed all over Poland and described in the introduction, i.e. shifting of the highest female fertility rates (live births per 1000 women) to the older age groups. In 2002 those two

phenomena were the most intensive in the 20-24 and the 25-29 age groups, whereas in 2009 – in the 25-29 and the 30-34 age groups. Their coincidence means that the phenomenon of deficit of women in reproductive-age, affecting mainly rural areas of Eastern Poland, may have very serious (particularly long-term) consequences for the present and future demographical situation of the macroregion, that is the low birth rate resulting in depopulation and population ageing.

It should be also stressed that the absolute scale of this phenomenon (even in rural areas) is not large enough to consider the entire Eastern Poland macroregion as an area affected by a serious deficit of women. In the macroregion as a whole this phenomenon, even though taking place, is not intense enough to describe the region as a "demographically distorted" area (area of female-male ratio decline phenomenon), in specialist literature defined as an area with female-male ratio in marriageable age group not exceeding 80 (Strzelecki 1995). Only one poviat in Eastern Poland had a female-male ratio lower than 80 in the 20-34 age group (i.e. Ryki Poviat with the ratio amounting to 79). In addition to the low female-male ratio in 2009 the poviat also recorded the strongest decline in the female-male ratio in 2002-2009 (-6.85) and one of the largest negative net migration value in the macroregion.

The comparison of the Eastern Poland macroregion with the Western Poland macroregion (Voivodships: Zachodniopomorskie, Lubuskie, Wielkopolskie, and Dolnośląskie) and Central Poland (Voivodships: Pomorskie, Kujawsko-Pomorskie, Łódzkie, Mazowieckie, Małopolskie, Śląskie, and Opolskie) clearly shows that the Eastern Poland macroregion records lower female-male ratios than the rest of Poland (Table 4). This is the case for female-male ratio both in total and in the 20-34 age group, and in the latter case both in urban and rural areas for which the rate was as low as 91 in 2009. The female-male ratio changes in Eastern Poland look slightly better. However, the increase in this rate observed in the entire population results mainly from growing predominance of women in the oldest age groups, which is confirmed by the negative changes of the female-male ratio in Eastern Poland in the 20-34 age group. Figure 12 shows changes in values of the female-male ratio in selected age groups. It follows clearly that during the entire analyzed period the female-male ratio in the 20-34 age group was noticeably lower in Eastern Poland than in the other macroregions. Additionally, a significantly stronger decline trend in the female-male ratio was reported in Eastern Poland in the respective period. It was mainly attributable to the declining female-male ratio in the 30-34 age group, as well as – from 2008 onwards – also in the 20-24 age group (Figure 12). On the other hand the fact that in the 25-29 age group, i.e. the group with the highest fertility rates, the female-male ratio grew during the last years, is positive. From 2003 on the female-male ratio grew relatively fast also in the 20-24- age group – a positive tendency which reversed in 2008. Such a situation (plus conclusions from the analysis of migration processes) allows to assumethat the increased female-male ratio observed by 2008 in this age group could have resulted from the foreign emigration of men recorded in this period.

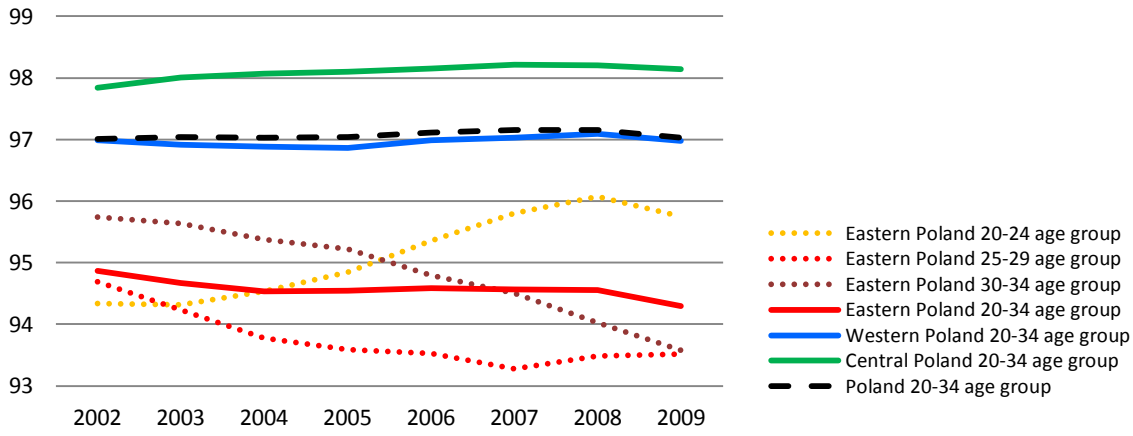
Even though in rural areas in the respective period the rate for the 20-34 age group in Eastern Poland is increasing, this mainly results from significant increase in the 20-24 age group, i.e. in the group to which declining trend in fertility rates applies. Thus important for the subsequent decades are directions of changes in the 25-29 and the 30-34 age groups (where fertility rates grow). The female-male ratios for these groups in rural areas of Eastern Poland show a downward tendency, significantly stronger than in the rest of Poland.

Table4. Female-male ratios in the selected age groups

	Eastern Poland		Central Poland		Western Poland		Poland	
	2009	*2002-2009*	*2009*	*2002-2009*	*2009*	*2002-2009*	*2009*	*2002-2009*
Total population	105.4	0.56	107.8	0.67	107.0	0.45	107.1	0.60
Rural areas	100.7	0.17	101.4	0.37	100.7	0.13	101.0	0.26
20-34 years old	94.3	-0.57	98.7	0.30	97.0	-0.01	97.0	0.02
20-34 years old – urban areas	97.7	-1.72	100.4	0.51	98.8	-0.26	99.5	-0.09
20-34 years old – rural areas	91.0	0.63	94.1	0.23	93.8	0.74	93.2	0.47
20-24 years old – rural areas	94.0	4.88	94.7	1.94	94.5	2.16	94.4	2.78
25-29 years old – rural areas	89.6	-1.17	94.2	0.26	93.2	-0.37	92.7	-0.28
30-34 years old – rural areas	89.0	-2.25	93.4	-1.69	93.8	0.45	92.3	-1.34

Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure12. Female-male ratio in the selected age groups



Source: Prepared by the authors on the basis of Central Statistical Office data.

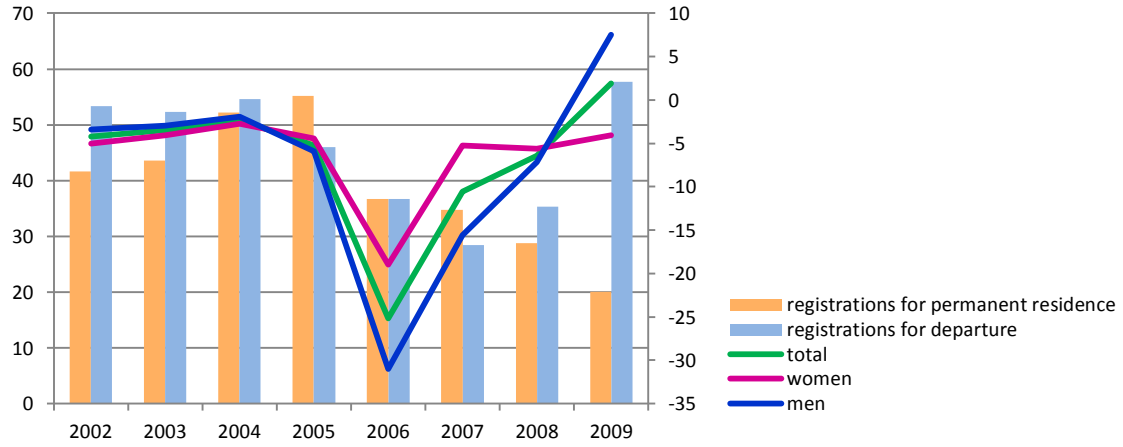
MIGRATIONS AS THE DIRECT CAUSE OF IMBALANCE OF SEXES

The imbalance of sexes in the 20-34 age group results directly from migrations, or – more specifically – from their selective nature. If there are more women among emigrants and/or more men among immigrants in this age group the female-male ratios fall below to their average value. In Eastern Poland in the period of 2002-2009 both internal and foreign migrations had this selective character.

According to the official statistics of the Central Statistical Office absolute net values of foreign migration are relatively low (in particular as compared to the values of internal migrations). In 2002-2009 for the entire 20-34 age group the net value of migration totalled -10 710 people, which may indicate lack of significant impact of this phenomenon on the female-male ratio (for internal migration the net value amounted to 78 434 people). However, in the respective period the officially registered foreign migration was at least ten times lower as compared to the estimates made by means of other research methods (more information can be found in the part of this report dealing with migrations). Thus, the chapter on the female-male ratios focuses on the sex structure of migrants rather than on the absolute size of the phenomenon of migration. An assumption was made that even if the absolute scale of migration is understated, this distortion affects migrating women and migrating men equally. Therefore, the share of women and men among migrants – crucial for the level of female-male ratios – may form the basis for analyses and further conclusions.

As far as foreign out-migration is concerned in the 20-34 age group a slight predominance of women was recorded before 2005, whereas from 2005 onwards their share decreased until 2008, when it started to grow rapidly. In 2009 the share of women amongst foreign emigrants reached almost 58% (Figure 13). As regards international immigrants, after a period of increased share of women observed by 2005 (when it reached 55%), in subsequent years the Central Statistical Office recorded a systematic decrease (to only 20% in 2009) in the share of women among immigrants registering their residence. Therefore, during the entire period under consideration among both foreign immigrants and migrants there were more men, while the share of women among people going abroad (40%) was higher than among people coming from abroad (34%). Given mutual proportions of the international inflow and outflow streams it turns out that women made up 44% of negative net migration value in the 20-34 age group. Simultaneously, the analysis of changes in net migration values by sexes clearly indicates that migrations of men tend to change more over time. The high increase in emigration observed after Poland's accession to the European Union reached its peak in 2006 and the net migration rate assumed much higher negative values for men than for women. In the consecutive years the negative net value of foreign migrations dropped and this process was faster among men than women in the same age group. This process led in 2008 to a relative levelling of net migration values for both sexes. However, since the pace of changes was still faster among men, from 2008 onwards the relative net foreign migration value for men was larger than that for women and in the first of those groups it also took positive values (first time in the respective period). Therefore, while the return trend among male foreign emigrants started in 2006 was relatively stable, the same phenomenon among women slowed down in 2007. This confirms that men, as mentioned in specialist literature, are generally more mobile and inclined to migrate abroad (Okólski, Fihel 2008). From 2007 onwards this tendency deepens sex imbalance in Eastern Poland in the 20-34 age group caused by smaler number of women. In the period of intensive emigrations more men than women went abroad, however when the period of returns to Poland started – more men than women returned. This is probably caused by the fact that a certain number of women that emigrated abroad after 2004 started families there, which significantly limited their spatial mobility. When the wave of immigration started (2006-2007) the women that came back first were those who had not started families abroad and who, similarly to men, found it easier to come back to Poland. This is why after 2007 the wave of immigrations of women definitely dropped, since among female emigrants were those who, having started families abroad, decided to stay there.

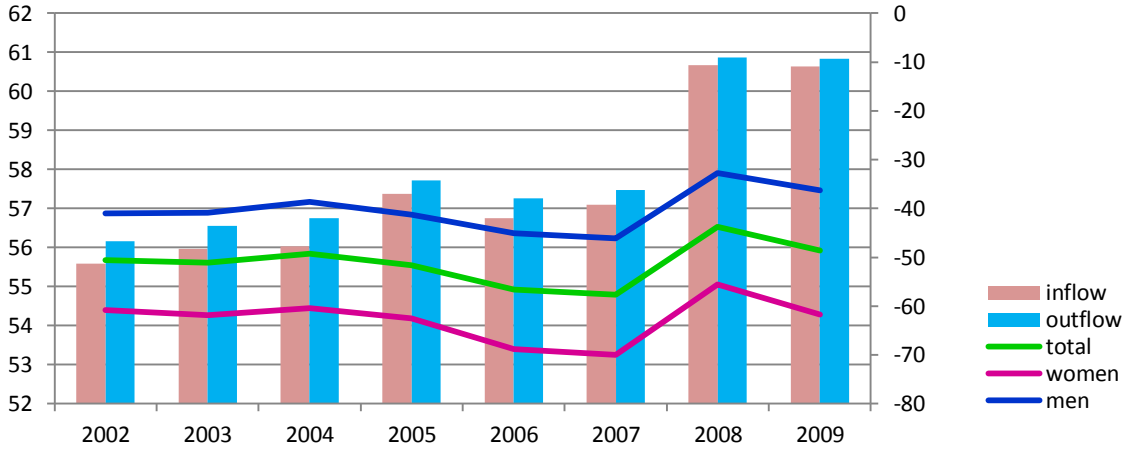
Figure13. Population – 20-34 age group: share of women in foreign migrations (bars, left axis) and net migration value per 10 000 inhabitants (of a given sex, 20-34 age group) (lines, right axis)



Source: Prepared by the authors on the basis of Central Statistical Office data.

As far as internal migrations for permanent residence are concerned a predominance of women was recorded in the 20-34 age group of migrants throughout the time period under consideration, pertaining both to migration inflow and outflow (Figure 14). Share of women in outflow was always by a couple of tenths of percentage point larger than in inflow. During the whole analyzed period the share of women among migrants tended to increase, with a particularly intensive increase recorded between 2007 and 2008. In this period also a decrease in migration mobility (decline in inflow and outflow and decrease in the negative net migration) was recorded and was almost twice as large as among men (both inflow and outflow declined by 28%) than that of women (16%). In the whole respective period the voivodships of Eastern Poland macroregion recorded a negative net value of internal migrations for permanent residence. The pace of this change as per 10 000 inhabitants (in the 20-34 age group) was similar for both sexes, whereas in the group of women the relative net migration (as related to the number of women aged 20-34) was about twice as high as in the group of men. Additionally, the year 2008 saw a significant decrease in the negative net migration (for both sexes), which was accompanied by a considerable increase (by over three percentage points) in the share of women among migrants. Additionally, in the period under consideration (in the group of migrants aged 20-34) the share of women among immigrants (57.4%) was slightly lower than among emigrants (57.9%). Given the absolute sizes of both the streams it turns out that women accounted for 59.6% of negative net internal migration observed in 2002-2009 for the 20-34 age group. Therefore even though sex selectivity of internal migration in the 20-34 age group (stronger spatial mobility of women) is similar for inflow and outflow, the scale of migration of young women from voivodships of Eastern Poland is much larger than the scale of their inflow, which results from the absolute sizes of both migration streams.

Figure14. Population group aged 20-34: share of women in internal migrations for permanent residence (bars, left axis) and net migration per 10 000 inhabitants (of a given sex, 20-34 years) (lines, right axis)

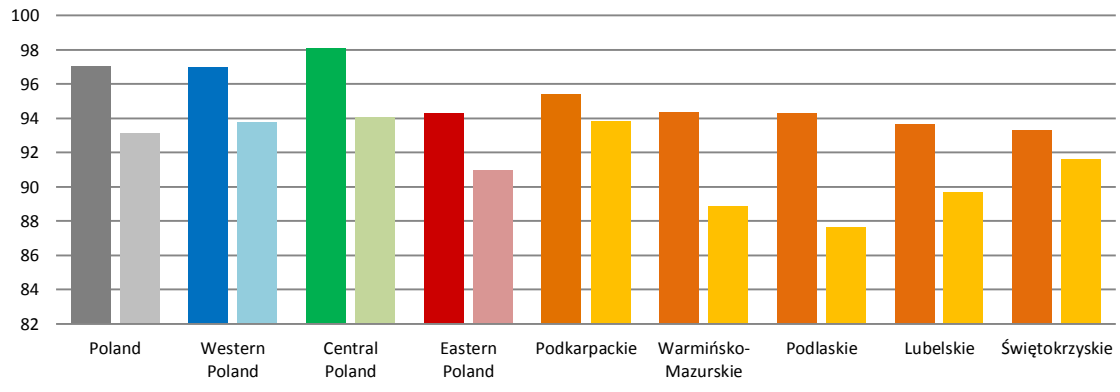


Source: Prepared by the authors on the basis of Central Statistical Office data.

DIVERSIFICATION WITHIN THE EASTERN POLAND MACROREGION

The lowest values of the female-male ratio in the 20-34 age group in 2009 were recorded in Świętokrzyskie Voivodship (93.31) and Lubelskie Voivodship (93.65), while the largest values of this ratio were observed in Podkarpackie Voivodship (95.42). The latter voivodship also showed the highest female-male ratio in 20-34 age group in rural areas in the macroregion as a whole (this ratio being slightly lower than the total female-male ratio) (Figure 15). While the female-male ratio for individual voivodships was relatively uniform in the Eastern Poland macroregion (difference between voivodships with the highest and lowest value amounting to 2.11) the situation in rural areas was more diversified. The differences between the female-male ratio in rural areas of individual voivodships reached 6.22, that is they were almost three times higher than the differences in the case of the general female-male ratio. What is more, while in the two southern voivodships (Podkarpackie and Świętokrzyskie) the female-male ratio for rural areas was only slightly lower than for the region as a whole (difference of about 1.6 – its value was over two times lower than in the Western Poland and Central Poland macroregion, as well as the country as a whole), these differences were much larger in northern voivodships of Eastern Poland (Warmińsko-Mazurskie, Podlaskie, and Lubelskie) and the female-male ratio was the smallest of all Polish voivodships.

Figure15. Female-male ratio in the 20-34 age group in total and in rural areas, 2009

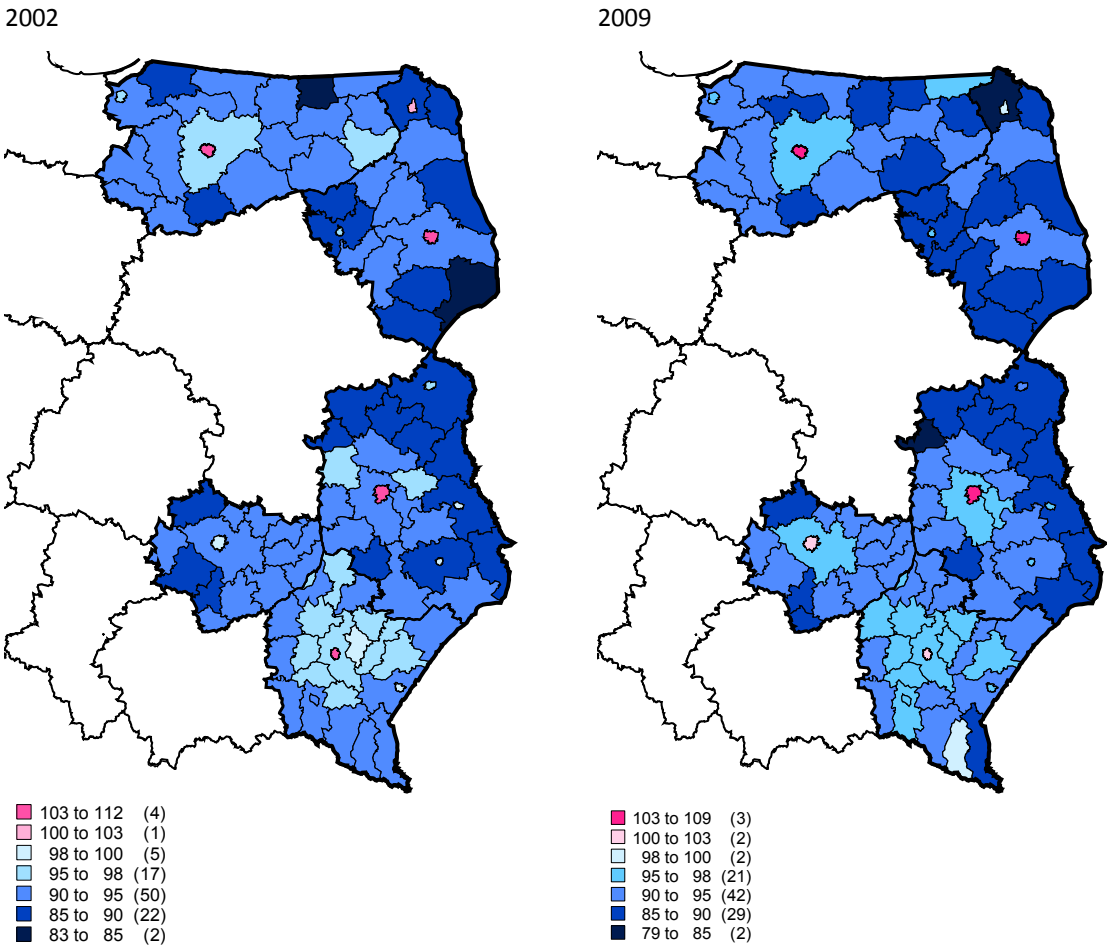


urban and rural areas - dark bars rural areas - bright bars

Source: Prepared by the authors on the basis of Central Statistical Office data.

As already mentioned – the low level of the female-male ratio in the 20-34 age group in 2002-2009 pertained mostly to rural areas (91 in 2009 in rural areas, as compared to 98 in urban areas). In the largest cities of Eastern Poland the women deficit phenomenon was practically not existent, as these areas are destinations for young women migrating in search of a job. In 2009 in the age group 20-34 an excess of women was observed in Lublin, Białystok, Olsztyn, Rzeszów, and Kielce, in the first three of these cities reaching about 110 women per 100 men. In other urban poviats, with the exception of Biała Podlaska where the female-male ratio reached 92 in 2009, the rate exceeded 95. Furthermore, a clear dependency between the city's size and the female-male ratio was recorded in this group of poviats (the larger the city the higher the ratio), which results from the biggest agglomerations being more attractive for migrants. Olsztyn (the fourth largest city) was special in this respect: having the highest female-male ratio for the 20-34 age group in entire Eastern Poland, both in 2002 and in 2009 (amounting to 112 and 109, respectively), despite relatively significant decline in the value of this rate in that period. Besides, in the group of urban poviats the largest increase in the female-male ratios in the 20-34 age group between 2002 and 2009 was recorded in the three largest cities of the macroregion: Lublin, Białystok, and Kielce (in the case of Kielce and Lublin above 1.1).

Figure16. Female-male ratio in the 20-34 age group

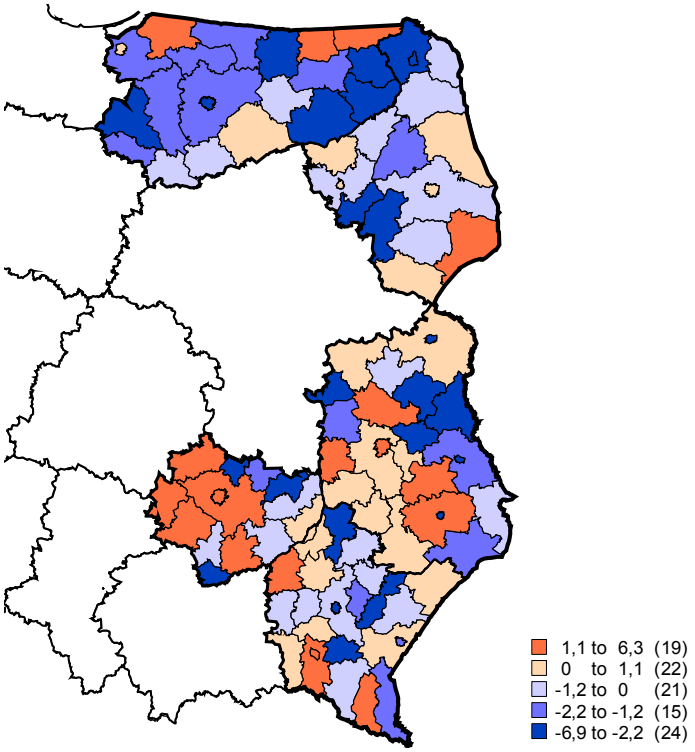


Source: Prepared by the authors on the basis of Central Statistical Office data.

Analysis of the female-male ratio in the 20-34 age group in individual poviats reveals the regularity described above, namely that this ratio takes the highest values in towns with poviat rights, i.e. the largest urban centres (Figure 16). Relatively high values of the ratio (between 100 and 90) are also observed in poviats located around the largest agglomerations. These are areas with suburbanization processes (of various intensity) taking place in recent years as a result of population inflow consisting mostly of young people, i.e. also including women in the analyzed age group. On the other hand this ratio is the lowest in poviats with low population density, i.e. consisting of numerous rural areas: Suwałki (population density of 27 people/km2), Węgorzewo (34 people/km2), and Hajnówka (29 people/km2)poviats. This regularity is reflected in the high correlation coefficient between the female-male ratio (both in total and in the 20-34 age group) and population density (Table 5). Besides, the spatial diversification of the female-male ratio in the 20-34 age group clearly indicates that rural poviats with the lowest female-male ratio form (in particular in 2009) relatively concise zones in the eastern and northern part of Lubelskie Voivodship and in the southern part of Podlaskie Voivodship (with the exception of the poviat surrounding Białystok).

Also spatial diversification of the female-male ratio changes in the 20-34 age group in 2002-2009 indicates the aforementioned division into the northern and southern part of the Eastern Poland macroregion (Figure 17). In the period under consideration poviats of northern voivodships were more affected by the decline in the female-male ratio in the 20-34 age group, although there were units situated within their borders that in 2002-2009 recorded a significant increase in this ratio (Gołdap, Braniewo, and Węgorzewo poviats). These are poviats with a relatively low population density, which also recorded a significant migration outflow in 2002-2009.

Figure17. Change in the female-male ratio values in the 20-34 age group in 2002-2009



Source: Prepared by the authors on the basis of Central Statistical Office data.

POSSIBLE CAUSES AND RESULTS OF IMBALANCE OF SEXES

Migration of women is the main cause of imbalance of sexes. In Poland these migrations have usually economic grounds and result from difficulties in finding jobs in the previous place of residence. At the same time the deficit of reproductive age women may directly lead to decrease in numbers of marriages and births, which in the long-run will result in population ageing processes, growth of old age dependency ratio, and intensification of depopulation processes. In order to establish the relations between sex imbalance and the likely causes and consequences of this phenomenon quantitative methods (correlation analyses) were used, based mostly on female-male ratios (in total and in the 20-34 age group). The quantitative analysis covered rates characterizing the likely causes of the phenomenon (unemployment rate among women, share of agriculture and services in employment structure) and its potential direct consequences (rate of births, rate of marriages) (Table 5).

Table5. Probable causes and consequences of disturbed sex balance – Pearson correlation ratios (Eastern Poland, NTS4, N=101)

	Female-male ratio (total population)		**Female-male ratio 20-34 years old**	
	2002	*2009*	*2002*	*2009*
Marriages/1000 population 2002	-0.362	-0.361	-0.428	-0.412
Marriages/1000 population 2009				-0.309
Live births/1000 population 2002	-0.611	-0.629		
Unemployment rate of women 2002	-0.324	-0.306		
Share of employed in agricultural sector 2003	-0.711	-0.721	-0.686	-0.589
Share of employed in agricultural sector 2008	-0.699	-0.708	-0.690	-0.593
Share of employed in services sector 2003	0.723	0.737	0.659	0.590
Share of employed in services sector 2008	0.736	0.751	0.661	0.595
Share of rural population 2002	-0.753	-0.783	-0.577	-0.462
Share of rural population 2009	-0.754	-0.784	-0.573	-0.461
Population density 2002	0.791	0.796	0.692	0.635
Population density 2009	0.800	0.807	0.696	0.641
Live births/1000 women at age 20-34 in 2009 (Fertility rate*)	-0.534	-5.48	-0.518	-0.562

Blue cells – relatively weak correlations, purple cells – stronger correlations, red cells – relatively strong correlations; darker cells – correlation coefficient between rates for the same (or comparable) year.

*Age-specific female fertility rate – ratios of the number of live births from women in a given age group and the number of women in the same groups of age.

Source: Prepared by the authors on the basis of Central Statistical Office data.

The results of the correlation analysis show relatively strong relations between the female-male ratio in total (both in 2002 and in 2009) and indices pertaining to the structure of economy, i.e. the share of agricultural and services sector in employment in a given area. It clearly follows that the high level of employment in the agricultural sector is related to low total female-male ratios, i.e. deficit of women (correlation coefficient of -0.71), whereas for employment in the services sector this relation is the opposite, that is in poviats with a higher level of employment in services the female-male ratio assumes higher values (correlation coefficient of over 0.7). This correlation was also observed in the study of a group of poviats with the exclusion of urban poviats, including the largest cities of the Eastern Poland macroregion, although in this case the value of Pearson coefficient was lower (about 0.40-0.47). In both cases (for all poviats and with the exclusion of urban poviats) this dependency was stronger in 2009 than in 2002, which indicates growing corelation between the labour market structure and the female-male ratios. The above dependencies were also observed for the female-male ratio in the 20-34 age group (correlation coefficient of about 0.6). The observed statistical dependency results from the fact that women have more difficulties in finding jobs in agriculture; consequently, if they become unemployed and the agricultural sector plays an important part in a given area's labour market, they tend to emigrate to cities in order to find jobs – which is easier for them in the services sector. It is confirmed by observed, statistically significant (though relatively weak) inverse correlation between the value of the female-male ratio and unemployment rate of women in 2002 (of about -0.3). Weaknessof this correlation may result from the fact that unemployed women emigrating in search of jobs contribute not only to decrease in the female-male ratio in a given area, but also to decrease in unemployment rate.

Quantitative analysis also proved that the low total female-male ratios are related to the low rate of marriages (correlation coefficient of -0.36 for 2002) and births (live births per 1000 inhabitants) (correlation coefficient of -0.61 for 2002). The correlation between the female-male ratio and the rate of marriages in 20-34 age group was slightly higher than for the general female-male ratio (-0.43 in 2002 and -0.31 in 2009), whereas the correlation between the 20-34 female-male ratios and the rate of births does not exceed 0.3, which means that statistically significant correlation does not virtually exist here. This may indicate that the deficit of women aged 20-34 in Eastern Poland poviats is still not as large as to bring direct demographical consequences yet. Moreover, the observed situation may be related to the fact that the women migrating to cities from rural areas are likely to have fewer children later on, or not have them at all (due to higher education and the related professional career, discouraging women from having many children). This is confirmed by fertility rates for the 20-24 and the 25-29 age groups higher in rural areas than in urban areas and by positive correlation between the level of fertility in the 20-34 age group (in 2009) and the share of rural population (0.44) as well as by negative correlations between fertility rate and population density (-0.49). Also, the dependency between the level of fertility and the female-male ratio in the 20-34 age group is relatively strong (-0.56). This indicates that in poviats with lower female-male ratios higher fertility rates are recorded, meaning that in these areas the negative impact of reproductive-age women deficit on the number of births may be decreased by increased fertility. This situation is partially due to the fact that low birth rates result not only from fewer women than men in the 20-34 age group, but also from this age group's share in entire female population. In Eastern Poland in rural areas this share is twice as low as in cities. On the other hand the share of 20-34-year old women in the population is negatively correlated (-0.36 for 2002 and -0.30 for 2009) with fertility level in this age group. This confirms the earlier assumption that areas from which women aged 20-34 emigrate are also those with relatively higher fertility, which may compensate the negative impact of women deficit on birth rate level.

The results of the quantitative analysis also indicate the existence of statistically significant correlation between the female-male ratio (in general and for the 20-34 age group) and the share of rural population in entire population (both in 2002 and 2009). The higher the share is, the lower the female-male ratio (Pearson correlation coefficient amounting to -0.75 in 2002 and -0.78 in 2009 for the population as a whole and -0.58 and -0.46 for 20-34 age group). This means that deficit of women is more prominent in rural areas than in urban areas and that such a situation occurs not only in the entire

population but also in the group of reproductive-age women. An even stronger correlation exists between the female-male ratios and population density rates, which proves the fact that small female-male ratios for the 20-34 age group are recorded usually in rural and sparsely populated areas.

However, the aforementioned phenomena are beneficial for agglomerations which are target destinations of young women's migrations. These centres win not only new working age inhabitants but also reproductive-age inhabitants, which may alleviate the negative effects of low fertility in cities. This is confirmed by the positive correlation between the female-male ratios in 2002 and 2009 and the change in the value of natural increase coefficient in 2002-2009 (0.45), and also the rate of births in 2002-2009 (0.50).

3.5. MIGRATIONS

3.5.1. PERMANENT MIGRATIONS

Population flows in the form of permanent migrations have an important influence on local and regional socio-economic development processes. The inflow of new inhabitants may provide impetus to development due to agglomeration effects, including: the size of the potential consumer market, diversification of the labour market, and extension of the offer of services. Besides, permanent migrations are often connected with capital flows regarding purchase of houses and dwellings. Analogically, a decline in the number of permanent inhabitants may have a negative influence on the regional economy, leading to decline in available human resources, shrinkage of consumer market, etc., and consequently creating a barrier for development of certain types of services. On the other hand the population outflow may be partially compensated by transfers of emigrants' income to their families that have stayed in the previous place of residence. Moreover, returns of emigrants may prove beneficial in the long-run, as they use the acquired experience and capital to start business and use market niches previously unknown in their region. Another group of returning emigrants may be retirement-age people who may invest in real property market (by buying dwellings and houses as well as buying the so-called second houses in their home regions).

It is not possible to carry out a complete assessment of permanent migrations' influence on the socio-economic development of a region without describing migrants and identifying their reasons for migration. Unfortunately, the public statistics offer only relatively scarce and inaccurate data in this field (which partially results from the fact that the migrants typically do not fulfil the obligation to registration report change in their permanent residence) and covers:

- data from 2002 national population and housing census (NSPLIM) at the level of communes
- data on domestic migrations from the Demography Database and the Regional Data Bank available on Internet pages of the Central Statistical Office.

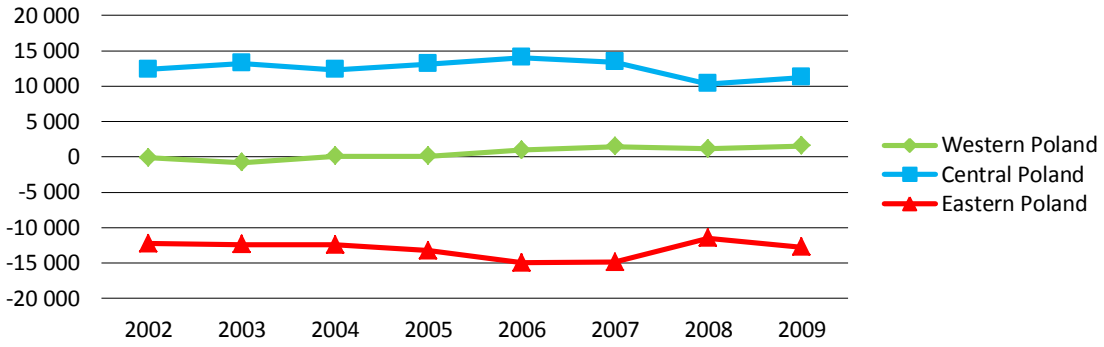
Empirical studies of permanent migrations have been conducted for selected aspects depending on availability and comparability of statistical data. First, the analyses present separately (internal) migration for the whole country and foreign migrations, which results from incomparability of data between these two kinds of migrations (poorer quality of data on foreign migrations). Second, in the case of internal migrations it became necessary to differentiate between intervoivodship and intravoivodship migrations. Third, depending on the analyzed aspect, various time frames were used, i.e. either 2002-2009, or a selected year – 2005 for the structure of emigrants' education, and 2008 for the age structure.

DOMESTIC (INTERNAL) MIGRATIONS

In 2002-2009 five voivodships of Eastern Poland recorded a population decline caused by migration, which – according to the Central Statistical Office's official data – totalled over 100 thousand people. This means that on average 12 thousand people left the Eastern macroregion per year and moved to voivodships situated in the central or western part of Poland. The total population decline amounted to about 1.28% of the macroregion's population in 2002 (8 million and 234 thousand). It is worth noticing that in this period migration mobility (total in- and out-migration as compared to the size of population) in Eastern Poland totalled on average 2.26% per year. This makes it noticeably lower (on average by 0.3 percentage points in 2004-2009) than the migration mobility in western voivodships of Poland. Additionally, in 2008-2009 this mobility declined to the level of 2.0% in Eastern Poland. However, an even greater decline was recorded in Central Poland, namely from 2.57% in 2007 to 2.05% in 2008. At the same time migration effectiveness (net migration as compared to the total in- and out-migration) was the highest in Eastern Poland and fluctuated between -6.5% and -7.9% in the respective period, which indicates quite significant predominance of outflow of the region's inhabitants over their inflow.

A detailed analysis of net migration indicates that the scale of decline depended, at least partially, on the economic situation (Figure 18). This may be confirmed by lower population decline (decrease in the negative net value by 3.4 thousand people to about 12 thousand) recorded in 2008 and 2009 which coincided with slower pace of economic growth. Simultaneously, during the period of economic prosperity – i.e. in 2006-2007 – the negative net migration in Eastern Poland amounted to about 15 thousand people.

Figure18. Changes in the net internal migrations in Polish macroregions in 2002-2009



Source: Prepared by the authors on the basis of Central Statistical Office data.

Correct interpretation of migration phenomena is not possible without description of migrants, particularly in respect of their sex, age, and education. Two of the first elements have been comprehensively described in the earlier parts of the report; this part focuses most of all on the structure of emigrants' education, which is of key importance for assessment of economic consequences of migration processes. The structure of emigrants' education was presented on the example of 2005 (the last year for which data were available), in particular by means of analysis of the situation of people with higher education (Table 6).

In 2005 about 22% of emigrants and only about 18% immigrants from Eastern Poland were university graduates (this result was by about four or two (respectively) percentage points lower as compared to the voivodships of Central Poland) (Table 6). As a consequence, in 2005 the negative net migration among people with higher education totalled about 6.5 thousand, whereas the total net migration was equal to -13.2 thousand people. It is also worth noticing that in this group migration effectiveness, i.e. the net migration compared to total in- and out-migration was highest and totalled -18.1%, whereas for secondary education it amounted to -6.2% and for incomplete primary education only -5.4% respectively (Figure 17).

Table6. Migrations of people with higher education as compared to human resources in 2005

	Eastern Poland		Central Poland		Western Poland	
	In persons	*% of total migrants*	*In persons*	*% of total migrants*	*In persons*	*% of total migrants*
Inflow of people with higher education	14 802	17.7	50 703	21.8	21 429	20.2
Outflow of people with higher education	21 366	22.1	44 563	20.3	21 005	19.8
Net migration (/migration effectiveness)	-6 564	-18.1	6 140	6.4	424	1.0
Number of people with higher education in 2002 (/total population)	612 201	8.9	1 826 002	10.5	716 366	9.5
Number of university graduates in 2005 (/population with higher education)	79 479	13.0	174 429	9.6	91 596	12.8

Source: Prepared by the authors on the basis of Central Statistical Office data.

The comparison of the decline in human resources with its level determined on the basis of 2002 census data, as well as with the number of graduates of regional universities (2005), indicates that the outflow covered about 1.1% of population with higher education and 8.3 of the university graduates (Table 6). This loss, though not very severe in terms of numbers, is of key significance for the position of Eastern Poland voivodships. The increase in the number of people with higher education (number of graduates in 2005 minus the number graduates in 2002) as adjusted by negative net migration totalled 11.9%, only slightly exceeding the comparable index for Central Poland voivodships (10.0%); the percentage of people with higher education in Eastern Poland, however, was significantly lower (8.9% as compared to 10.5%).

Table7. Structure of education of emigrants and immigrants crossing the border of Eastern Poland macroregion in 2005 in %

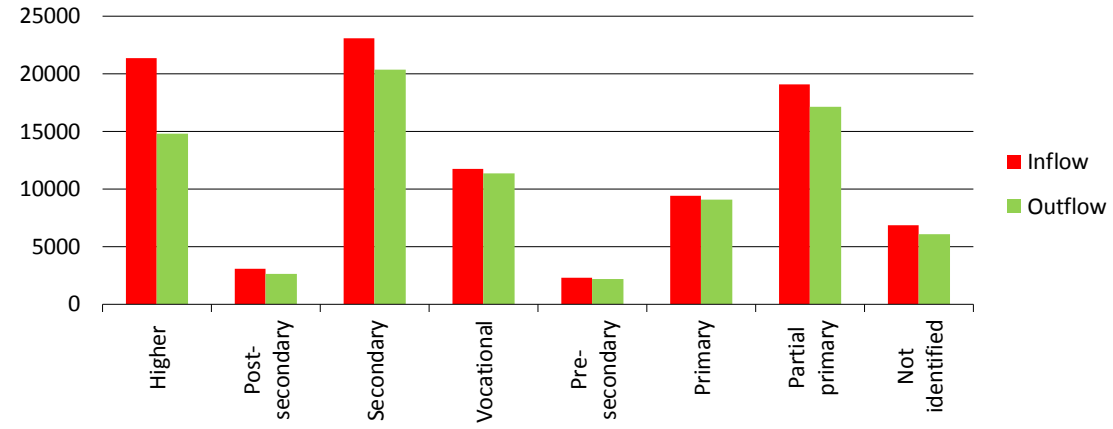
	Higher	Postsecondary	Secondary	Basic vocational	Lower secondary	Primary	Incomplete primary	Not specified
Outflow	43.6	27.3	24.7	16.9	16.9	17.3	21.0	30.4
Inflow	18.6	15.8	14.7	14.0	11.8	14.7	12.1	21.3

Source: Prepared by the authors on the basis of Central Statistical Office data.

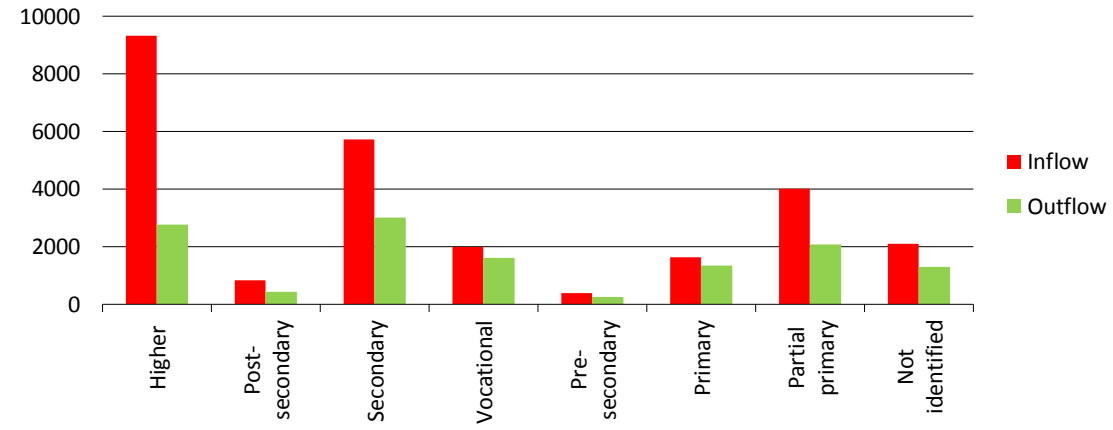
The value of migration effectiveness of people with higher education is getting particularly high when adjusted by internal migrations within Eastern Poland, and it amounts to -54,4% (Figure 19). This follows from the fact that people with higher education accounted for about 35.9% of all emigrants leaving the macroregion, whereas only 21.7% of people coming to Eastern Poland from other regions had higher education. What is more, nearly one in two people with higher education (43.6%) who decided to change the place of residence chose a voivodship situated outside the macroregion (Table 7).

Figure19. Migrations by education in Eastern Poland in 2005

a) total internal



b) internal crossing Easter Poland macroregion's borders

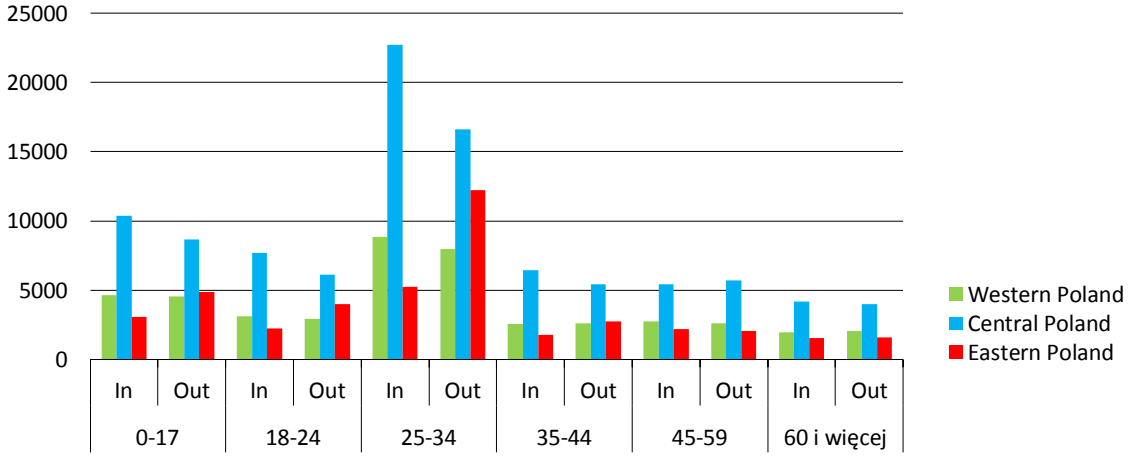


Source: Prepared by the authors on the basis of Central Statistical Office data.

The analysis of the age structure of migrants on intervoivodship scale in 2008 (Figure 20) indicates that the largest migration mobility was observed in 25-34 age group, a significant portion of which constitute university graduates. This group in Eastern Poland had a very high negative net migration value of 7 thousand people, as compared to the net value for all groups amounting to about -11.5 thousand people. Negative, although smaller, net migration values (about 1.8 thousand in each case) are also observed in pre-working age groups (which may indicate emigration of families with minor children) and people aged 18-24 (including students). However, migration flows in the age groups above 34 are relatively equal. Nevertheless, a dominance of inflow of people aged 35-44 to Eastern Poland can be observed, which may be, among other factors, caused by inflow of specialists from other regions of Poland.

Migrants from and to Eastern Poland were mainly women, whose share among emigrants was slightly higher (56.1%) than among immigrants (53.6%). Given the differences between migration inflow and outflow, however, this slight difference causes women to account for 60% of the macroregion's negative net migration (more information on the nature and consequences of this phenomenon can be found in the chapter on sex structure).

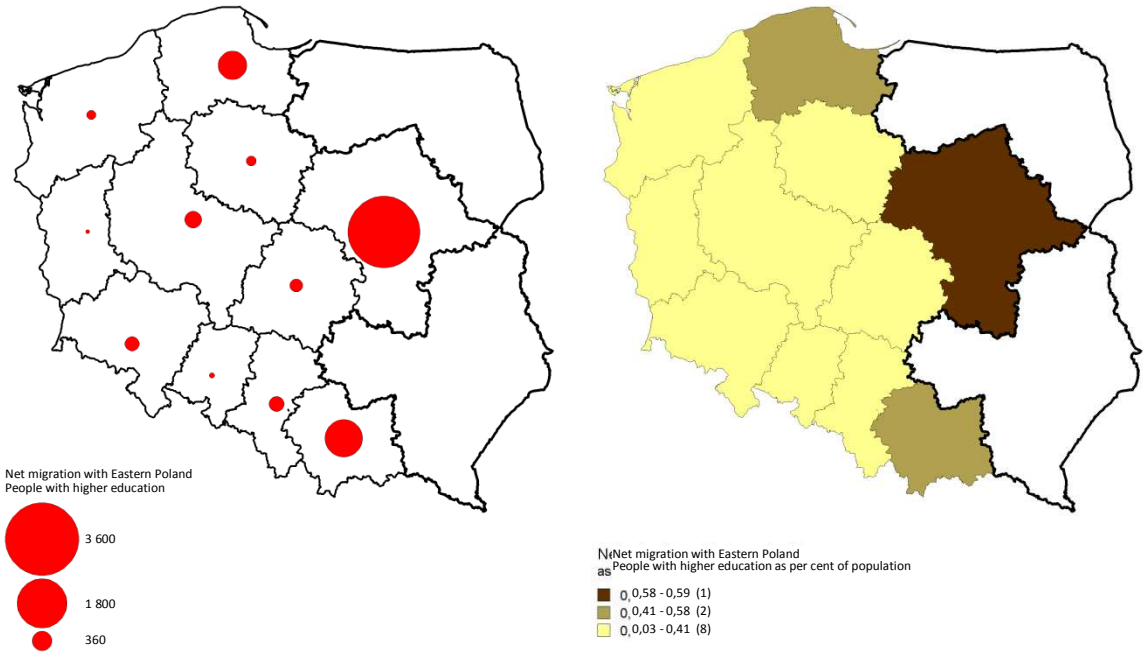
Figure20. Intervoivodship migration flows by age groups in 2008



Source: Prepared by the authors on the basis of Central Statistical Office data.

Because of the very large share of people with higher education in the out-migration the analysis of migration directions has been narrowed down to this group of people. Studies prove that the largest net recipients of migration flows with Eastern Poland were Mazowieckie Voivodship (Warsaw), as well as Małopolskie Voivodship (Cracow), and Pomorskie Voivodship (Tricity). The scale of flows with other regions was much smaller and the migration flows were relatively balanced. In this group of regions relatively most important were Wielkopolskie Voivodship (Poznań), but also, to a lesser degree, Śląskie, Dolnośląskie and Łódzkie voivodships (Figure 21).

Figure21. Range and importance of net migration of people with higher education with Eastern Poland in 2005

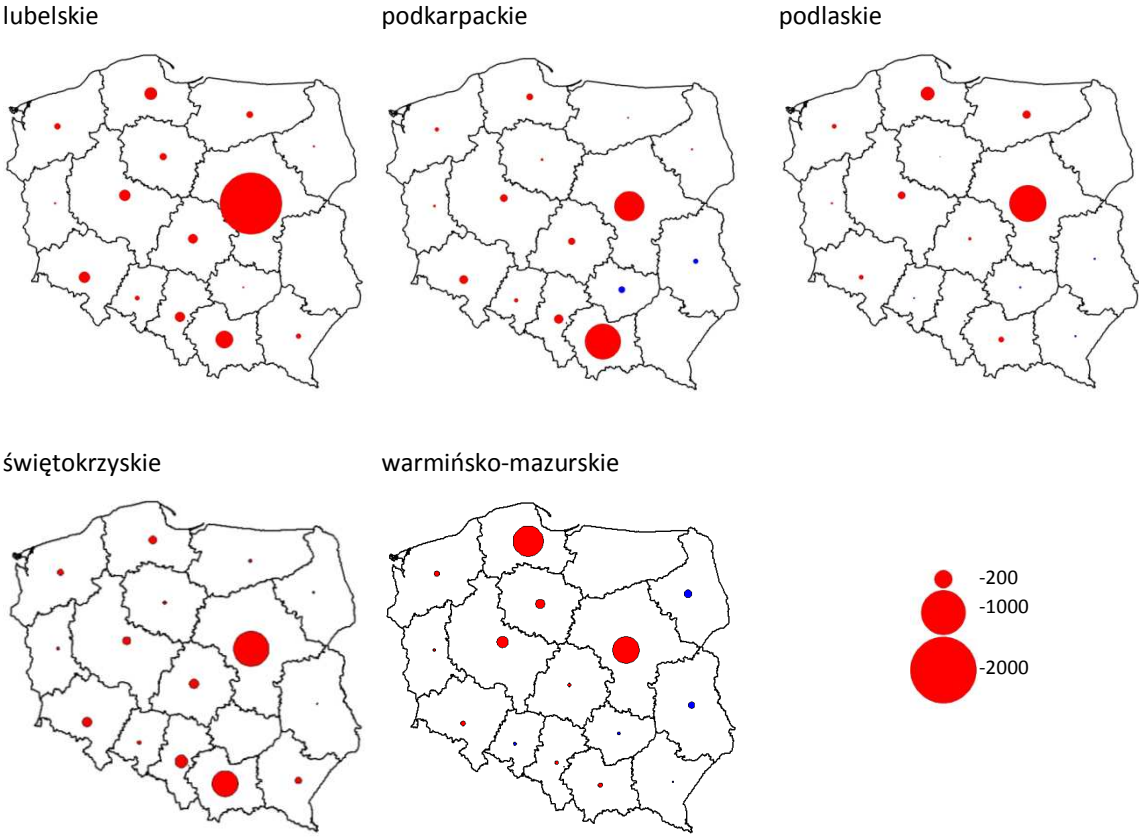


Source: Prepared by the authors on the basis of Central Statistical Office data.

The directions of migration in Eastern Poland were rather diversified in particular voivodships. However, prevailing was the outflow to the neighbouring voivodships with the country's major metropolitan centres, i.e. Warsaw, Cracow, and Tricity (Figure 22). In Lubelskie and Podlaskie Voivodships the main destination of migration outflow was Mazowieckie Voivodship (Warsaw). In other voivodships competition between various centres could have been seen, i.e. Warsaw and the Tricity (also with some importance of Kujawsko-Pomorskie Voivodship and Wielkopolskie Voivodship) – in the case of Warmińsko-Mazurskie Voivodship, and Warsaw and Cracow in the case of Świętokrzyskie Voivodship and Podkarpackie Voivodship.

The significance of migration flows between communes of Eastern Poland and the main metropolitan centres of the whole country may be presented on the example of Warsaw and the Tricity for the period between censuses, i.e. 1988-2002 (Figure 23). In the case of Warsaw its impact expressed by the negative net migration was very noticeable in all the neighbouring voivodships, including their capital cities. The migration outflow to Warsaw totalled from -0.50% of population in Białystok and Olsztyn to -0.75% of the population in Lublin and Kielce and the migration effectiveness was very high - from -51% for Olsztyn to -72% for Kielce. The scope of Warsaw's impact was similar for the population with higher education, but more selective (no significant outflow from some communes, resulting mostly from the very small number of people with higher education in certain rural communes). However, in voivodship capitals the share of population with higher education in the total outflow to Warsaw accounted for about 50% for Olsztyn and up to 60% in Lublin. The impact of the Tricity was weaker and most of all pertained to inflow of population with higher education, mainly from communes in the northern and western part of Warmińsko-Mazurskie Voivodship.

Figure22. Net migration in Eastern Poland in 2005

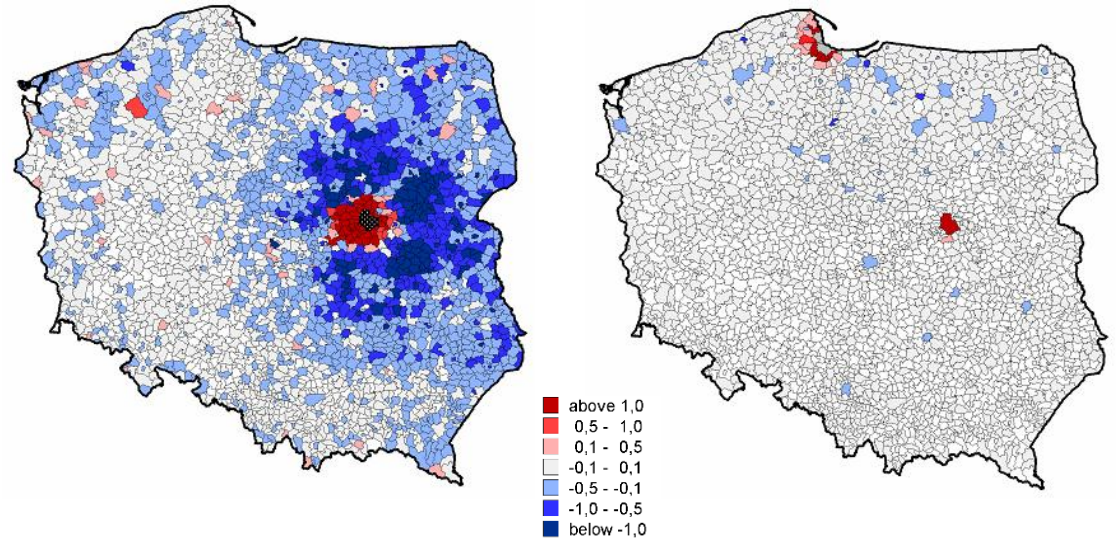


Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure23. Net of migration to/from Warsaw and the Tricity in 1998-2008 as % of inhabitants of a given commune

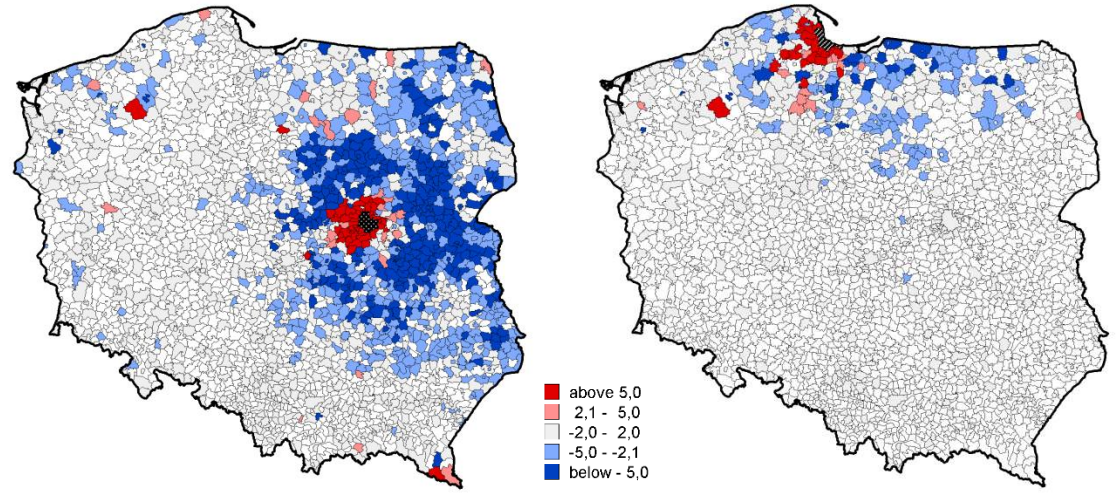
Warsaw – % of population

TriCity – % of population



Warsaw – % of population with higher education

TriCity – % of population with higher education



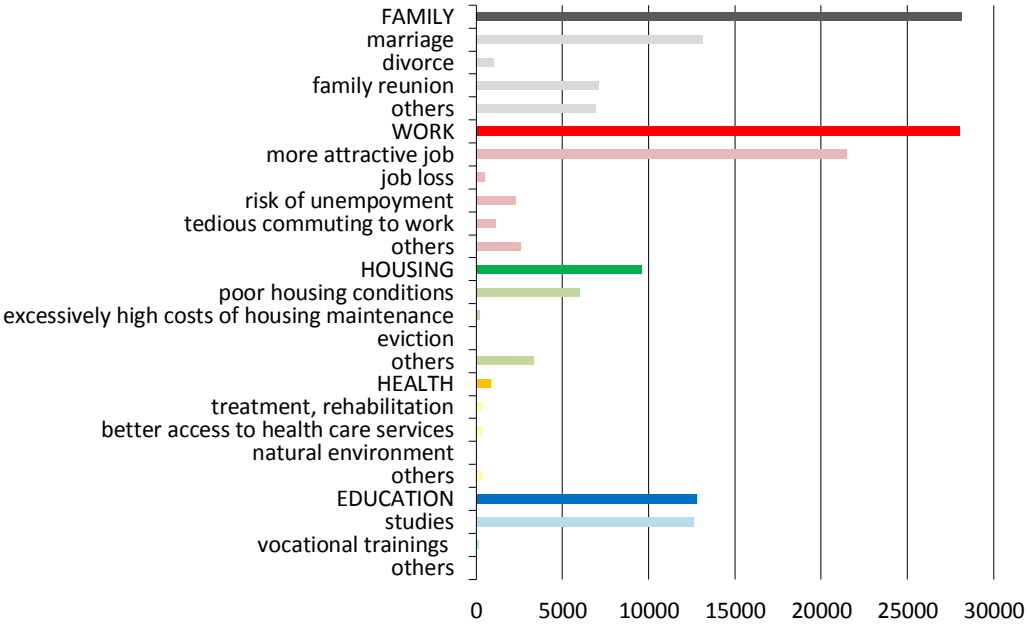
Source: Gorzelak, Smętkowski 2005.

The missing current statistical data on causes of migration may, to a certain degree, be replaced with information on migrations to Warsaw based on the 2002 national census. This approximation seems justified, as voivodships situated in Eastern Poland were those – apart for Mazowieckie Voivodship, having its voivodship capital city in the country's capital – with the highest share in migration to Warsaw.

The most important factor attracting emigrants to Warsaw were, apart for family affairs, work (36%) and education – mostly at universities (26%) (Figure 24). This was particularly connected with the possibilities offered by the capital city's job market and concerning finding well-paid jobs, as only a small percentage of immigrants listed factors encouraging emigration from their previous place of residence such as: loss of job or danger of unemployment, or inconvenient commuting to work. 9% of immigrants indicated also other factors encouraging emigration, such as dwelling conditions, in particular bad technical condition of the premises. The indirect conclusion is that the most important factors

encouraging emigration from Eastern Poland voivodships were difficulties in finding well-paid jobs corresponding to the emigrants' qualifications.

Figure24. Pull and push factors of migration to Warsaw [1988-2002]



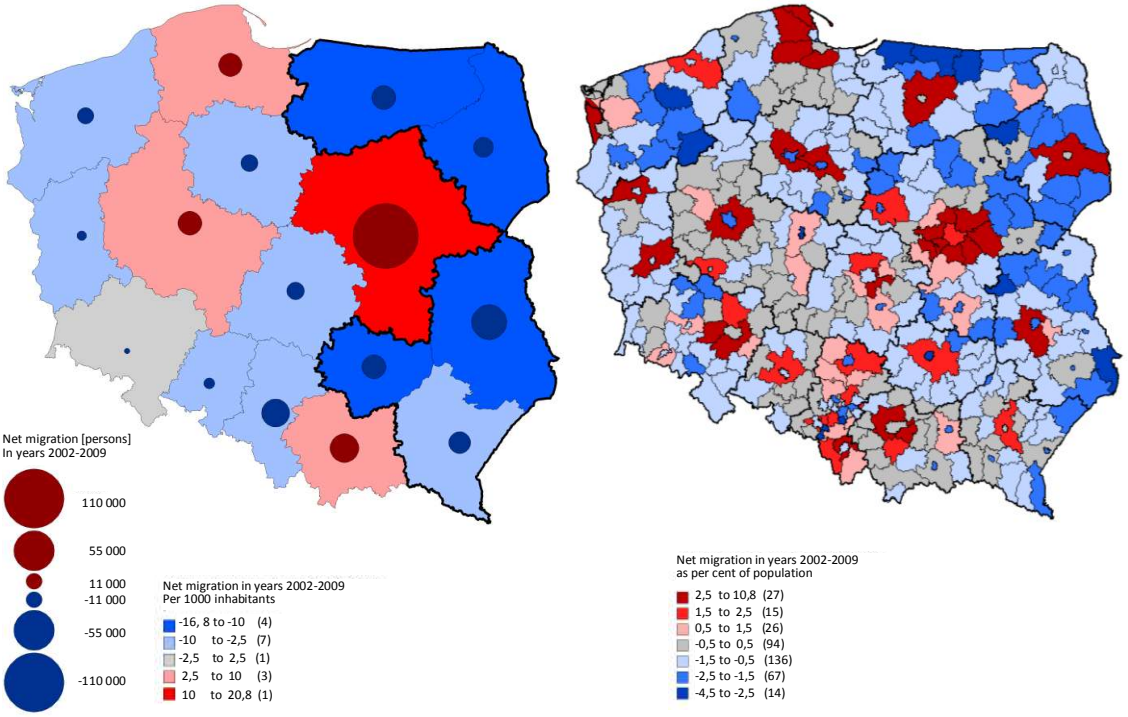
Source: Prepared by the authors on the basis of data from the 2002 National Population and Housing Census.

On the whole country scale Eastern Poland is quite homogenous in terms of migration processes by voivodships (Figure 25). All voivodships in Eastern Poland (except for Podkarpackie Voivodship) record a large negative net migration of over 1% in 2002-2009, which differentiates them from other regions, particularly those voivodships that attract the largest numbers of emigrants from Eastern Poland, i.e. from Mazowieckie, Małopolskie, and Pomorskie voivodships. In absolute numbers the largest decline in population is observed in Lubelskie Voivodship, followed by Świętokrzyskie and Warmińsko-Mazurskie voivodships and Podkarpackie Voivodship – which, despite lower negative net migration as compared to the size of its population, preceded Podlaskie Voivodship and had only insignificantly lower results than the two voivodships preceding it.

However, the homogeneity of the Eastern Poland macroregion in terms of population outflow is clearly deformed on poviat level, although it is quite balanced on regional level. In Eastern Poland voivodships – similarly to most other regions of Poland – suburbanization phenomena are observed, which affect mainly communes situated near voivodship capitals. As a consequence, all rural poviats of Eastern Poland regional centres recorded quite high positive net migration, ranging from 1.7 in Kielce Poviat and 4.2% in Lubelskie Poviat. Similar processes, though to a smaller degree, were also observed in the surroundings of subregional centres, for example Łomża, Zamość, Przemyśl or Krosno. On the other hand in peripheral poviats of individual voivodships, including in particular of those situated near the border, a negative net migration exceeding 1.5% of the number of inhabitants in 2002 was observed. This mainly pertained to border poviats of Warmińsko-Mazurskie Voivodship, Podlaskie Voivodship with exception of Suwałki Region, the northern and eastern part of Lubelskie Voivodship and the border parts of Podkarpackie Voivodship.

Figure25. Net migration in 2002-2009 by:

a) voivodships b) poviats



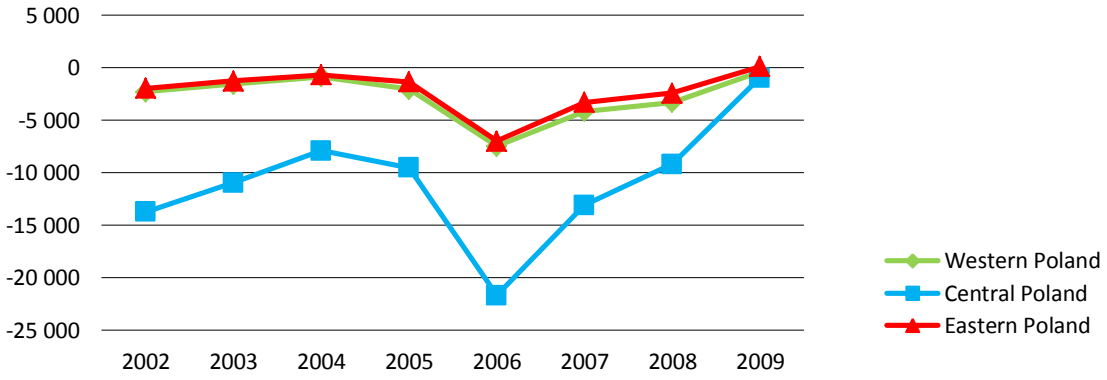
Source: Prepared by the authors on the basis of Central Statistical Office data.

FOREIGN MIGRATIONS IN EASTERN POLAND

The analysed regions of Eastern Poland have a long tradition of foreign emigrations. This is particularly the case for Podlasie and Podkarpacie, for which the traditional destination of emigration was the USA. This situation changed with gradual increase in the openness of the national borders resulting from Poland's joining the European Union and greater accessibility of labour markets of individual European Union countries. This is confirmed by the decrease in negative net migration value in the period preceding Poland's accession to the EU, which was noticeable in all regions of Poland and could have resulted from expectations of taking up legal work abroad (Figure 26). According to the statistics of the Central Statistical Office this situation did not significantly change in 2005, whereas from 2006 onwards foreign migrations increased rapidly, amounting to 0.27% of population in Central Poland and 0.22%-0.23% in Eastern and Western Poland. In the subsequent years this tendency weakened and, according to the official statistics, in 2009 the streams of foreign migration became equal. This was mainly caused by a decline in the number of residence deregistrations, even though in all regions of Poland foreign immigrations were on the increase, which may prove that some emigrants were returning. This situation probably resulted from deteriorated conditions in foreign labour markets caused by the global economic crisis. According to the official statistics in 2004-2008 Poland recorded negative net foreign migration value (about 93 thousand people), of which migrations from Eastern Poland amounted to 14.5 thousand people. This indicates that the scale of registered emigration was at least ten times smaller as compared to estimates obtained using other research methods (GUS [Central Statistical Office] 2009)[3].

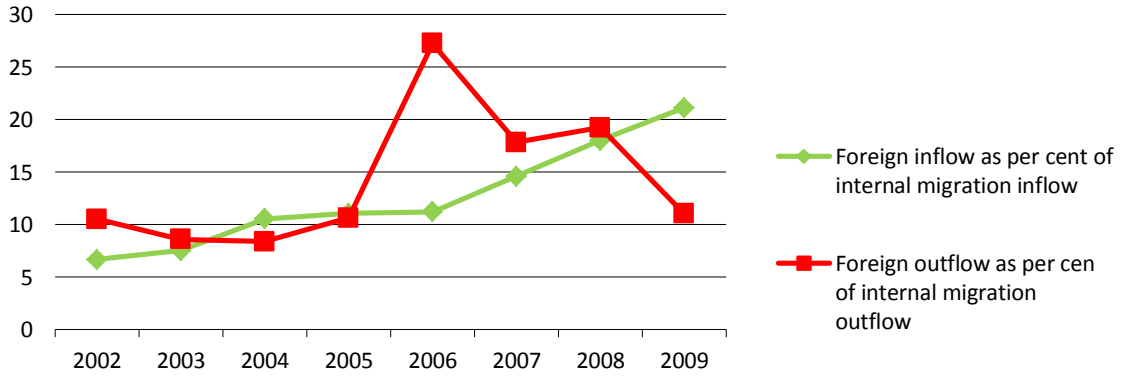
[3] GUS, 2009, Informacja o rozmiarach i kierunkach emigracji z Polski w latach 2004 – 2008, http://www.stat.gov.pl [The Central Statistical Office, 2009, [Information on the volume and directions of emigration from Poland in 2004 – 2008]

Figure26. Dynamiscs of foreign net migration in Polish macroregions in 2002-2009 [number of persons]



Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure27. Dynamisc of foreign inflow and outflow in relation to internal migration in Eastern Poland in 2002-2009

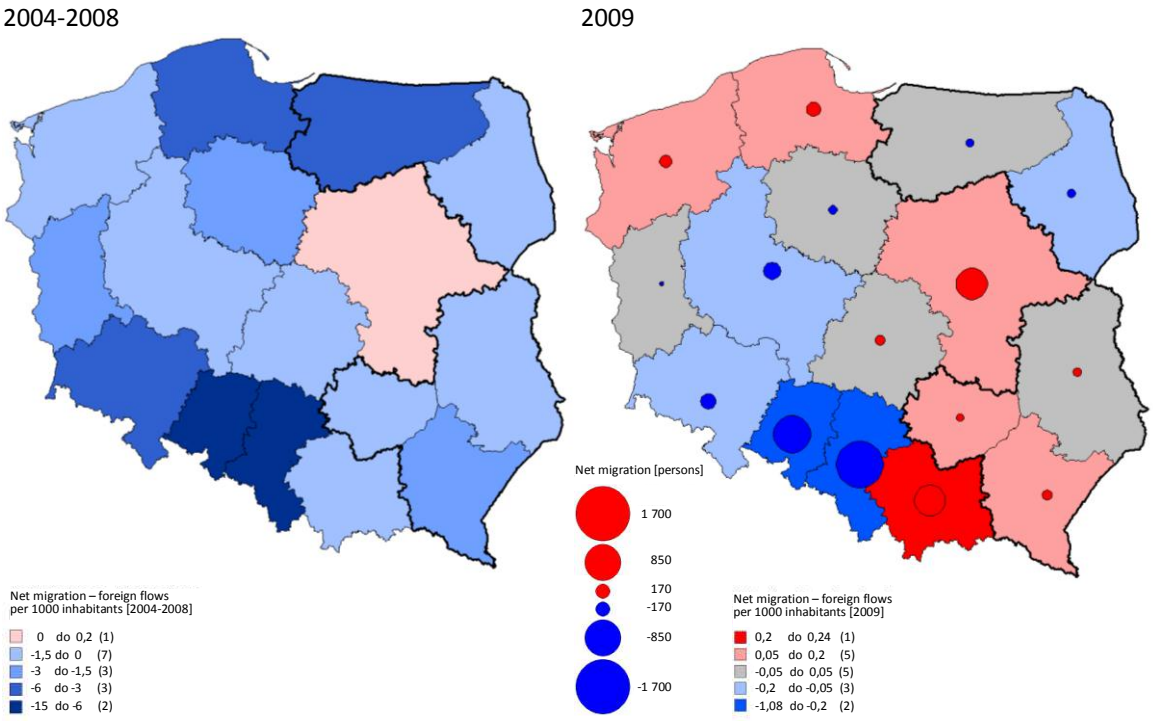


Source: Prepared by the authors on the basis of Central Statistical Office data.

Particularly interesting is the comparison between the volume of foreign migrations and domestic migrations in the Eastern Poland macroregion (Figure 27). Basing on this comparison a conclusion can be made that from 2006 onwards the migration outflow changed, since the volume of foreign emigrations significantly increased as compared to the volume of domestic migrations (28%) and still remained relatively high (18-20%) also during the two subsequent years. In 2009 this tendency ended and there was a decrease to 10% recorded. Additionally, in 2006-2009 the volume of foreign immigrations grew as compared to domestic ones (from 11% to 22%). This may indicate that foreign out-migration was relatively less permanent than domestic out-migration (migrants were more inclined to return).

According to the official statistics in 2004-2008 the largest decline in population resulting from foreign emigration was recorded in Opolskie Voivodship and Śląskie Voivodship, whereas positive net value of migration with foreign countries was recorded only in Mazowieckie Voivodship (Figure 28). Eastern Poland voivodships, with the exclusion of Warmińsko-Mazurskie Voivodship, did not differ in this respect from the rest of the country (net migration value from 0 to -1.5 per mille). The global economic crisis in 2008-2009 led to reversal in this tendency, which was manifested by a positive net foreign migration value recorded in seven voivodships (most of all in Małopolskie and Mazowieckie voivodships, but also in Podkarpackie, Świętokrzyskie, and Lubelskie voivodships). However, due to the lack of good quality data and the small scale of this phenomenon it is difficult to assess whether it has a permanent character. However, it should be expected that there is quite a significant potential for development of remigration, which may improve the situation of Eastern Poland (transfers of knowledge and capital).

Figure28. Net migration – foreign flows [per 1000 inhabitants]



Source: Prepared by the authors on the basis of Central Statistical Office data.

THE INFLUENCE OF PERMANENT MIGRATIONS ON COMPETITIVENESS OF LOCAL SYSTEMS

This part of the study focuses on the possible influence of the observed migration processes, particularly the negative net migration value, on economic competitiveness on the level of poviats. In measuring this competitiveness an index of own income of communes and the communes' shares in state taxes (PIT and CIT) per inhabitant have been used. At NUTS 3 level this index is very strongly correlated with GDP per capita (Pearson *r* of 0.99).

The analyses conducted do not allow for clear determination of the influence of migration on competitiveness of local systems (Table 8). Even though in Poland as a whole there was some very weak correlation between own income of communes and the net migration, the correlation did not exist in Eastern Poland, even when the rural areas got excluded from the analysis. This may indicate that the weak nationwide correlation mainly results from migration outflow from poorer voivodships of Eastern Poland to voivodships of Central Poland.

Simultaneously quite noticeable and growing were the relations between population inflow and migration mobility on the one hand, and the levelof affluence in the whole country, including Eastern Poland voivodships, on the other hand. This means that wealthier poviats received more immigrants, but simultaneously more people emigrated from them. This phenomenon can be explained by segmentation of migration processes, i.e. the fact that a certain number of the wealthiest poviats' inhabitants moved to suburban regions and were replaced with new inhabitants arriving from peripheral regions. This process is described in detail in the Figure 25b above, presenting net migration per 1000 population in 2002-2009. This interpretation is also supported by the fact that there is no correlation between wealth of the poviat on the one hand and migration mobility and inflow on the other hand, even after exclusion of urban poviats from the analysis – as seen on the example of Eastern Poland.

Table8. Migration processes as compared to wealth of poviats – current situation and change

a) own income of communes per inhabitant

	Own income per inhabitant in 2002			**Own income per inhabitant in 2008**		
	Poland (N=379)	*Eastern Poland (N=101 / 87*)*		*Poland (N=379)*	*Eastern Poland (N=101 / 87*)*	
Net migration in 2002-2008 [% of population]	0.19	0.00	0.04	0.15	-0.04	0.00
Migration inflow in 2002-2008 [% of population]	0.39	0.36	0.13	0.41	0.39	0.14
Migration mobility in 2002-2008 [% of population]	0.46	0.44	0.15	0.51	0.51	0.19

b) change in own income of communes in 2002-2008

	Change in own income per inhabitant in %			**Change in own income per inhabitant in PLN**		
	Poland (N=379)	*Eastern Poland (N=101 / 87*)*		*Poland (N=379)*	*Eastern Poland (N=101 / 87*)*	
Net migration in 2002-2008	0.08	-0.01	0.03	0.11	-0.06	-0.02
[% of population]	0.22	0.29	0.11	0.38	0.38	0.12
Migration mobility in 2002-2008 [% of population]	0.28	0.36	0.12	0.49	0.50	0.18

* po wyłączeniu powiatów grodzkich

Source: Prepared by the authors on the basis of Central Statistical Office data.

PERMANENT MIGRATIONS AND POPULATION DENSITY

Assessment of the volume of migration outflow in areas with low population density is of significant importance for the issues discussed here. Such out-migration may be beneficial, as it may improve productivity in agriculture (in consequence of increased size of farms), but it can also pose a barrier to development of poviat capitals (labour force), and decrease accessibility of various types of services. Assessment of this phenomenon should allow for identification of problem areas, i.e. poviats with low population density affected by migration outflow.

To identify in detail such problem areas the following threshold values have been used:

- for population density: very low density of 50 people per km2 (average for rural areas in Poland) and a low population density of 80 people per km2 (average for Eastern Poland);
- for net migration values: negative value of net migration and large negative value of net migration (net migration outflow in 2004-2008 exceeding 2% of population).

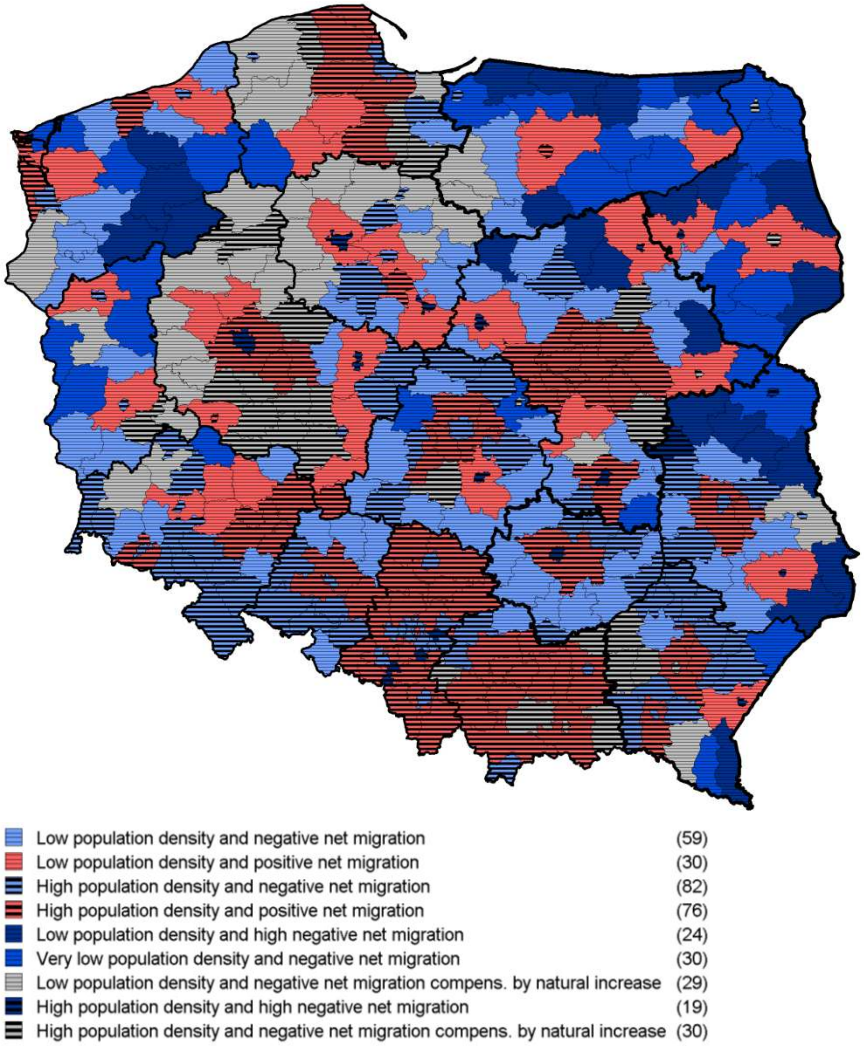
The analysis is supported with additional category of poviats with negative net migration value compensated by high natural increase.

This allows for distinguishing two types of problem areas (Figure 29). The first one covering poviats with very low population density and migration outflow, and the second covering those with low population density and large population decline caused by migration. This was the case in numerous poviats of: Warmińsko-Mazurskie Voivodship, Podlaskie Voivodship and in the northern part of Lubelskie

Voivodship, particularly in poviats that recorded a very significant population decline in result of migration (2% of population in 2004-2008) and situated usually next to the state border or the voivodship border. This was also the case for sub-regional centres whose location in problem areas may affect development of their higher-order central functions. This phenomenon was recorded most importantly in: Suwałki, Biała Podlaska, Łomża, and Zamość, but also in: Elbląg, Chełm, Przemyśl, Krosno, and Tarnobrzeg.

This probably pertained to a lesser extent also to voivodship capital cities and their immediate surroundings, since three of them recorded an increase in population and only Kielce and Lublin observed a decline. While in the first case this situation was caused by noticeable migration outflow, in the second it was the consequence of population ageing (Table 9).

Figure29. Net migration and population density in 2004-2008



Source: Prepared by the authors on the basis of Central Statistical Office data.

Tabela 9. Change in population and net migration in urban areas of voivodship capital cities in 2002-2009

Miasto	Voivodship capital city		Immediate surroundings*		Urban area in total	
	Net migration	*Population change*	*Net migration*	*Population change*	*Net migration*	*Population change*
Białystok	-1408	2003	4287	-232	2879	1771
Lublin	-5457	-5536	5956	4502	499	-1034
Kielce	-5341	-4361	3368	3156	-1973	-1205
Olsztyn	870	2292	3647	3382	4517	5674
Rzeszów**	-317	11633	3425	-6637	3108	4996

* data for the urban poviat or neighbouring poviats
** in 2005 the administrative borders of Rzeszów changed, causingchanges in population of the voivodship capital city and the immediate surroundings of the city

Source: Prepared by the authors on the basis of Central Statistical Office data.

3.5.2. MIGRATIONS CAUSED BY COMMUTING

Another type of spatial connections is migrations caused by commuting. The most frequent and at the same time the most important type of these migrations results from commuting to work. This type of migration denotes journeys beyond commune borders. This commuting may take place each day (every twenty four hours) or each week. The latter type occurs when the migrant changes his or her place of residence but is still strongly tied (usually family ties) with that place, which makes this person come back to his or her previous place of residence for leisure time (this phenomenon often leads to permanent migration). This type of commuting determines the functional connections of cities with their surroundings, which may help in assessing competitiveness of urban centres, as well as assessment of development of polycentric cooperation network of cities which promotes territorial cohesion.

Unfortunately, statistical data on commuting to work are relatively scarce and cover only estimates made in 2006 for the level of communes on the basis of state registers. Some of the data can be obtained from the Regional Data Bank of the Central Statistical Office. The studies also use the results of the nationwide communes survey conducted in 2010 (with 13.9% rate of return), which concerned connections of voivodship capital cities and poviat centres with their surroundings (daily and weakly commuting to work, commuting to schools, commuting for shopping purposes, or in order to use higher-order services).

COMMUTING TO WORK

Commuting to work beyond borders of commune was less popular in Eastern Poland than in the rest of the country, which is confirmed by lower commuting mobility (the total in- and out-commuting to work) per inhabitant (Table 10). This is probably the result of a larger share of people working in agriculture in Eastern Poland since the commuting mobility compared to the number of people not working in agriculture indicates that the mobility is larger in other regions of Poland and totals nearly 46 commuters per 100 employed people. Podkarpackie Voivodship, due to its highest level of commuting mobility in Poland (67), largely contributes to this result. Podlaskie Voivodship, on the other hand, records the smallest value of commuting mobility in the country (25). In total there were about 440 thousand people out-commuting from Eastern Poland communes and 410 thousand people in-commuting, which resulted in negative net of the commuting migrations totalling about 35 thousand people (of which Lubelskie Voivodship recorded 11 thousand people). Thus, the negative net value of commuting to work constitutes as many as 2% of people not working in agriculture in Eastern Poland.

Destinations of these journeys are probably most of all metropolitan centres of the neighbouring voivodships, namely Warsaw, the Tricity, and Cracow. As a consequence, the ratio of people in-commuting and out-commuting totals 0.92, which noticeably distinguishes Eastern Poland from the other macroregions of Poland.

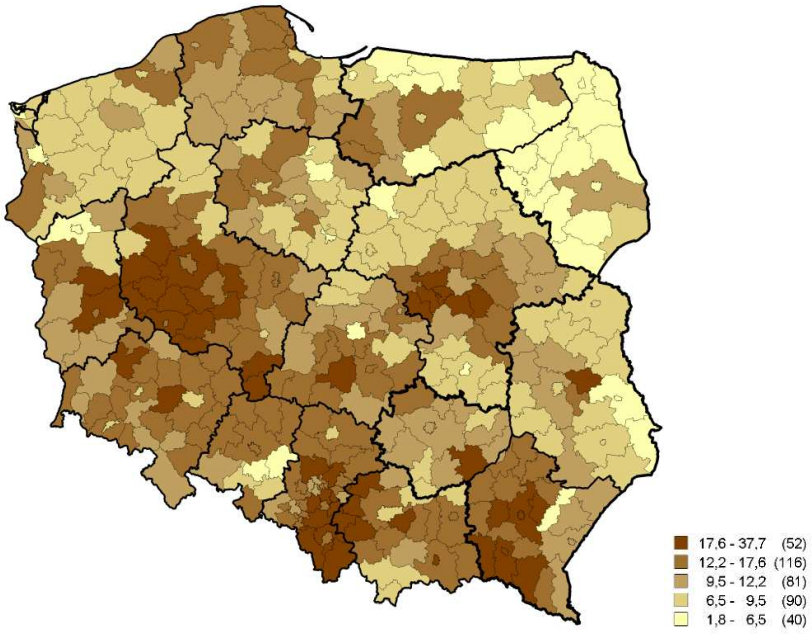
Commuting mobility in terms of commuting to work in is noticeably spatially diversified both in the whole Poland and in the Eastern Poland macroregion (Figure 30). Podkarpackie Voivodship records the largest commuting mobility in Poland, which probably results from the industrialization model adopted in the pre-war period (The Central Industrial Region) and from the tradition of peasant farmer-workers' commuting in the period of the People's Republic of Poland. The position of Lubelskie Voivodship in this respect is slightly below the national average, and relatively lowest mobility is observed in Podlaskie Voivodship (with the exclusion of Białystok Poviat). On the other hand Warmińsko-Mazurskie Voivodship is strongly internally diversified, namely the western part of the region and poviats situated along the national road No. 16 differ from the rest of the voivodship.

Table10. Description of commuting to work in macroregions of Poland in 2006

	Commuting mobility [out-commuting + in-commuting] per 100 inhabitants	**Commuting mobility [out-commuting + in-commuting] per 100 people working outside agriculture**	**Net commuting to work [in persons]**	**Number of people in-commuting to work per 1 person out-commuting to work**
Eastern Poland	10.4	45.9	-35 024	0.92
Central Poland	12.8	42.8	36 884	1.03
Western Poland	12.7	43.5	-1 860	1.00

Source: Prepared by the authors on the basis of Central Statistical Office data.

Figure30. Commuting to work: mobility (in and out commuters per 100 inhabitants)



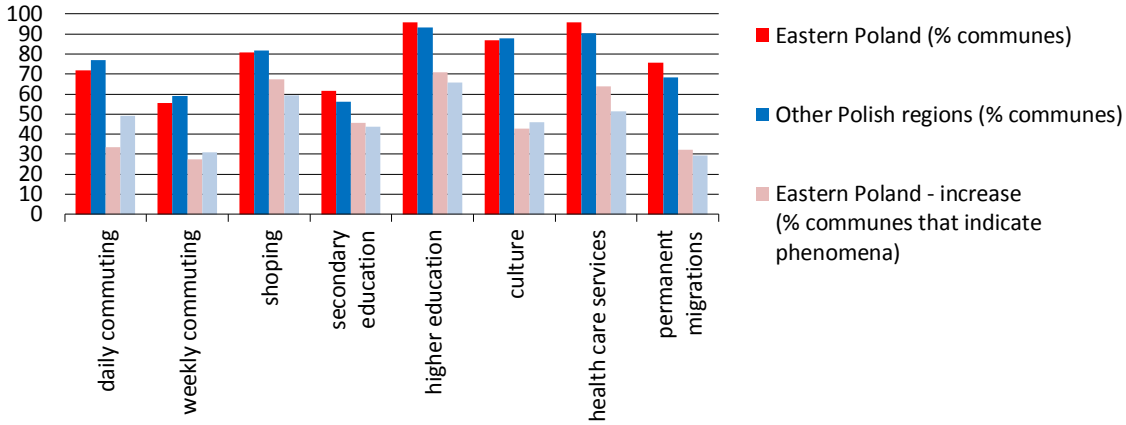
Source: Prepared by the authors on the basis of Central Statistical Office data.

COMMUTING TO VOIVODSHIP CAPITAL CITIES

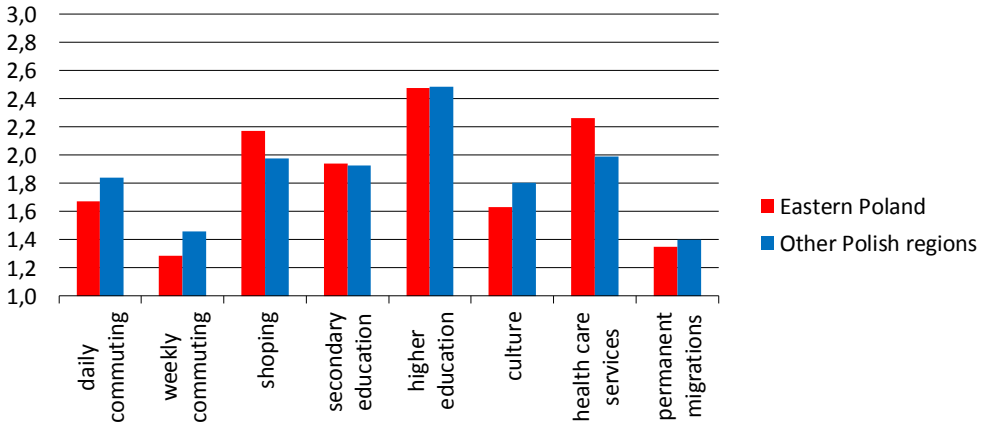
The results of questionnaire surveys indicate a lower frequency of occurrence and smaller scale of commuting to work (both daily and weakly commuting) in voivodship capital cities of Eastern Poland (Figure 31). Nevertheless, about 72% of analysed communes situated in Eastern Poland observed daily commuting to work to voivodship capital cities, whereas over 30% of them recorded intensification of this type of commuting within the three-year period. The respective results for the rest of Poland were 77% and 50%. The situation was similar for weakly commuting, which was observed in more than half of communes in Eastern Poland, but its scale was usually considered insignificant.

Figure31. Commuting to voivodships centres for different purposes [2010] (based on communes survey)

a) occurence and intesity change



b) range (average for scale 1-3 where 1 - small range, 3 - high range)



Source: prepared by the authors based on survey.

The most common types of commuting to voivodship capital cities was commuting connected with the use of higher-order services: university education, healthcare, and culture (Figure 31). Actually all the analyzed communes recorded commuting to universities operating in voivodship capital cities, and communes situated in Eastern Poland recorded a slightly larger volume of such commuting. Besides, intensity of this type of commuting grew (in the opinion of over 70% of representatives of communes) and was assessed at 2.5 on average on a scale of 1 (low intensity) to 3 (high intensity). The situation was quite similar as regards commuting for health care purposes. However, the significance of voivodship capital cities as centres providing healthcare services was, in the opinion of communes, slightly greater

in Eastern Poland than in communes situated in the rest of Poland. Commuting for cultural purposes was just slightly less common, but its intensity and growth were noticeably lower, in situation of small differences recorded between communes of Eastern Poland and other communes. On the other hand commuting of inhabitants for shopping purposes, declared by 80% of communes irrespective of the region of Poland was widespread and its highest intensity was recorded in Eastern Poland (2.2) as compared to the rest of Poland (1.8). Additionally, its intensity was recorded to grow more during the last three years. Recently commuting to secondary schools, declared by 60% of communes, has intensified as well. 40% of these communes have declared its noticeable growth during the recent years, though its intensity was still considered moderate (1.9). In the opinion of communes all these types of commuting were more common than permanent migration of inhabitants to voivodship capital cities (70% of communes). Additionally, permanent migrations were in the view of the communes quite insignificant (1.4) and only about 30% of communes observing this type of commuting recorded higher intensity of this phenomenon. This result may in large measure indicate relatively small competitiveness of voivodship capital cities of Eastern Poland as compared to the main national economic centres of Poland and foreign migrations.

INFLUENCE OF COMMUTING ON COMPETITIVENES OF LOCALITIES AND POLYCENTRICITY OF SETTLEMENT SYSTEMS

This part of the study focuses – similarly as the part on migration flows – on possible influence of observed in- and out-commuting to work, and in particular its net value, on the competitiveness of the local economy measured by own income of communes.

Table11. Commuting to work as compared to wealth of poviats – current situation and change

a) own income of communes per inhabitant

	Own income per inhabitant in 2002			**Own income per inhabitant in 2008**		
	Poland (N=379)	*Eastern Poland (N=101 / 87*)*		*Poland (N=379)*	*Eastern Poland (N=101 / 87*)*	
Net commuting to work per 100 inhabitants	0.44	0.61	0.27	0.51	0.73	0.38
In-commuting per 100 employed people	0.46	0.40	0.28	0.43	0.43	0.25
Commuting mobility per 100 inhabitants	0.31	0.17	0.09	0.26	0.18	0.03

b) zmiana dochodów własnych gmin w latach 2002-2008

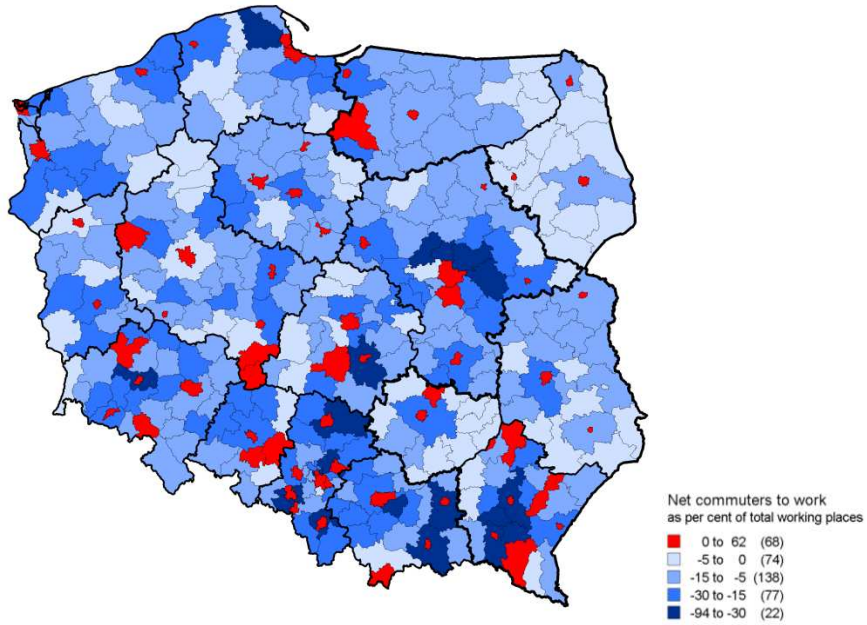
	Own income per inhabitant in %			**Own income change per inhabitant**		
	Poland (N=379)	*Eastern Poland (N=101 / 87*)*		*Poland (N=379)*	*Eastern Poland (N=101 / 87*)*	
Net commuting to work per 100 inhabitants	0.19	0.47	0.19	0.51	0.74	0.38
In-commuting per 100 employed people	0.10	0.25	0.04	0.36	0.41	0.17
Commuting mobility per 100 inhabitants	0.01	0.09	-0.04	0.19	0.18	-0.02

* with the exclusion of urban poviats

Source: Prepared by the authors on the basis of Central Statistical Office data.

The results of the study (Table 11) indicate a positive relation between: the net commuting value and percentage of workers commuting to work on the one hand, and own income of communes on the other.This correlation was particularly noticeable in Eastern Poland for the first index (0.61 in 2002 and 0.73 in 2008). It was statistically significant but weaker also after the exclusion of urban poviats (0.27 and 0.38, respectively). Moreover, poviats with attractive labour markets developed definitely faster as compared to other areas, which was also more noticeable in Eastern Poland than in the urban of Poland. On the other hand in the rest of the country general commuting mobility had relatively larger influence on development processes. These results indicate that the commuting system in Eastern Poland was more monocentric and that the largest cities – i.e. both voivodship capital cities, sub-regional centres, and certain smaller centres – played relatively more significant role in economic development of the region. This probably results from the lower level of Eastern Poland's industrialization. Simultaneously, this suggests that smaller income from work was transferred to communes constituting areas of employees' outflow.

Figure32. Net commuting to work as % of working people in 2006



Source: Prepared by the authors on the basis of Central Statistical Office data.

On the other hand, evaluation of influence of commuting on the formation of numerous functional centres in the settlement system is a difficult issue that requires detailed statistical data on commuting destinations and an initial identification of the main centres of this network (see Smętkowski 2009). In this study analysis of this phenomenon has been limited to preparation of a map presenting net migration related to the number of people working in a given poviat (Figure 32). This map indicates that all urban poviats situated in Eastern Poland (with the exclusion of Chełm) recorded positive net commuting value – which, however, was also the case in other regions of Poland. Additionally, this group covers also poviats of: Iława, Tarnobrzeg, Stalowa Wola, Przeworsk, and Lesko. The results suggest that Podkarpackie Voivodship, with its network of urban centres situated relatively close to each other and constituting destinations for commuting to work in the region, has the largest potential for development of numerous functional centres. Besides, the western part of Warmińsko-Mazurskie Voivodship in the area between Olsztyn, Elbląg, and Iława has a certain potential in this respect as well. However, this potential is disturbed by the proximity of the Tricity metropolis.

3.6. THE AREAS OF DEMOGRAPHICAL PROBLEMS

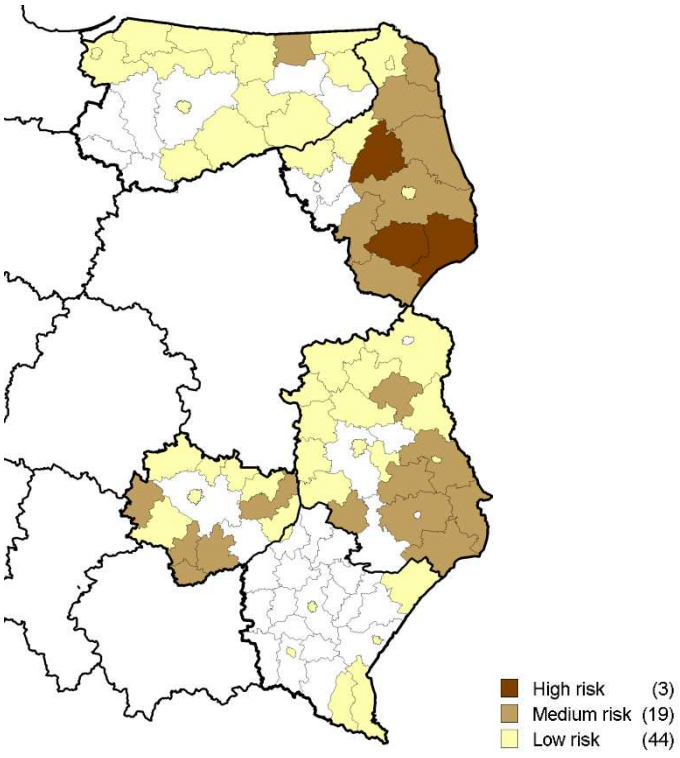
The main areas of demographical problems in Eastern Poland can be identified on the basis of the above partial analyses:

- depopulated areas connected with processes of population ageing (depopulation type 2 - Figure 4);
- regressive type of population age structure (ageing index above 60 - Figure 11);
- migration outflow in areas with low population density (Figure 29).

The first analysis identifies areas depopulated mainly as a result of natural population decline. The second one indicates areas with the most advanced ageing processes being the consequence of the regressive population age structure, whereas the third one depicts areas of population decline caused by migration and having a low or very low population density.

On the basis of these analyses a simple synthetic index has been created by adding up the three types of problem areas (giving 1 point to poviats that meet the above criteria). This index assumes values from 0 to 3 points and describes the scale of demographical problems in poviats of Eastern Poland (see Figure 33).

Figure33. Demographic problems areas in Eastern Poland



Source: Prepared by the authors on the basis of Central Statistical Office data.

The results suggest that the worst demographical situation was recorded in three poviats situated in Podlaskie Voivodship at a distance of 40-50 km from Białystok, namely poviats of: Bielsk, Hajnówka, and Mońki. Regions moderately threatened by demographical marginalization are: the eastern part of Podlaskie Voivodship including Sejny Poviat in the north, and poviats of Wysokie Mazowieckie and Siemiatycze in the south. A region with internally consistent level of marginalization threat resulting from demographical processes is also the former subregion of Chełm and Zamość (NUTS 3) with the exclusion of Biłgoraj Poviat, Zamość, and Chełm. In Lubelskie Voivodship the most serious problems are

observed also in Janów Poviat and Parczew Poviat. In Świętokrzyskie Voivodship the most endangered poviats are those situated in its southern part: poviats of Busko-Zdrój, Kazimierza Wielka, and Pińczów, as well as poviats of Włoszczowa and Opatów. In Warmińsko-Mazurskie Voivodship the least advantageous situation is observed in Węgorzewo Poviat. In Podkarpackie Voivodship the situation is relatively most advantageous, though a certain threat pertains to poviats of Lesko, Bieszczady, and Lubaczów. In other voivodships only single poviats have no demographical problems, namely: the western part of Warmińsko-Mazurskie Voivodship (poviats of Ostróda, Nowe Miasto, Iława, and Działdowo), poviats of Giżycko and Ełk, the western part of Podlasie Voivodship: Łomża and Zambrów, poviats of Łęczna and Biłgoraj in Lubelskie Voivodship and Staszów in Świętokrzyskie Voivodship. Besides, rural poviats of voivodship capital cities, with the exclusion of Białystok, are free from demographical problems thanks to proceeding suburbanization processes, whereas voivodship capital cities themselves and most subregional centres record certain problems caused mainly by population ageing.

4. SELECTED IMPLEMENTED POLICIES AND GOOD PRACTICES

Demographical changes are complex and long-term phenomena, which makes them a difficult domain for public intervention. Nevertheless, various actions influencing demographical processes can be taken. This chapter lists the fields of actions covering the most important demographic processes in Eastern Poland identified in the diagnostic part of the study. The list shows general directions for potential actions and examples of interesting initiatives taken both in Poland and abroad.

The discussed policies and good practices have been divided into three groups, concerning: (1) natural increase, (2) migration, and (3) creation of conditions for economic development in the context of population ageing. The selection of specific policies and good practices reflects plausibility of their implementation in Poland. The national context is particularly important, since many of the solutions discussed concern Poland as a whole and should be implemented in the whole country (e.g. legal solutions). It is also worth noticing that some of the policies and good practices are already in place in Poland, e.g. the family support policy. However, it seems that actions can be taken in order to improve effectiveness of their implementation.

The presented policies describe actions that can be taken regionally or locally (if it is possible to perform them at a given level), and regional and local examples are quite universal in character and as such can be implemented both in Eastern Poland voivodships and in the rest of the country. Proposals for the most important actions to be taken in Eastern Poland are dealt with in the part of the study expressing recommendations.

4.1. NATURAL INCREASE

PRO-NATALISTIC (PARENTS SUPPORT) POLICY

The pro-natalistic policy covers actions aimed at increasing the number of births. It is implemented by various financial and non-financial incentives addressed to families. However, they do not have to emphasize family as the main target of actions, instead being addressed to women and children, irrespective of whether the woman lives in a formal or informal relation. Even though “in the traditional social model pro-natalistic policy is at the same time a pro-family policy, this shall not lead to a situation where women who want to have children and live in informal relations, or are simply single, are discriminated” (Kofta 2005).

The pro-natalistic policy is based on the premise that the total fertility rate depends on personal preferences related to and costs of having children (Cigno 1991).Therefore, it is expected that reduced costs of having children may lead to increased number of births (see e.g. Gauthier, Hatzius 1997). The relation between support for families and the total fertility rate has been subject to numerous empirical studies, however – due to complexity of the phenomenon (for example changes in the total fertility rate result from civilisation or cultural changes) – it has still not been clearly confirmed (a synthetic review of the studies is presented in Gauthier 2007). It is stressed that the actions must be comprehensive (see e.g. Grant et al. 2006; Björklund 2006), i.e. introduction of one instrument, for example a baby bonus, has no measurable influence on the total fertility rate. What is more, some analyses show that actions pertaining to the labour market (for example parental leaves) and those allowing to reconcile professional career with bringing up children (for example providing childcare in a kindergarten) are more effective than direct financial support (Kalwij 2010).

Support for families raising children covers many instruments:

- maternity and parental leaves;
- paid dependant leaves and sick child care leave;

- bonuses on account of a child birth (baby bonus);
- benefits partially covering the costs of childcare;
- tax preferences for families bringing up children;
- various solutions in labour law facilitating reconciliation of parental roles and work – such as protecting pregnant women from being fired during maternal and parental leaves, breaks for baby feeding, possibility to limit work time for persons raising children, flexible work time etc.
- any instruments decreasing costs of bringing up children, for example free or subsidized: health care, nurseries, kindergartens, schools, and other forms of childcare and education (sports clubs, community centres, after-school occupations), discounts for public transport, free textbooks, subsidized school meals, subsidized holidays, etc.

The above-mentioned instruments in particular countries are implemented by means of various specific solutions (e.g. maternity and parental leaves, see Moss 2008). Besides, under general social policy, families meeting required criteria (low income, unemployment, housing problems) are covered by assistance, for example in the form of financial aid or other social benefits. On the other hand labour law solutions become also part of the gender equality (Björklund 2006). It should be, however, remembered that not all people want to have children and freedom of choice in this aspect is very important (see e.g. Douglass 2005).

Due do their character most actions in the field of pro-natalistic policy are the responsibility of central bodies. This pertains mainly to all legal regulations in the field of labour law, tax law, social welfare, educational regulations, etc. In Poland many analyses of and proposals for actions in this field exist, for example *Założenia polityki ludnościowej w Polsce [Assumptions of population policy in Poland]* (2006), *Polska 2030 [Poland 2030]* (2009) report, or *Raport o kapitale intelektualnym Polski[Report on intellectual capital of Poland]* (2008). The latter stresses complexity of total fertility rate issues: "The fact that bringing up children is an investment in human resources, creating so-called positive external effects for the society, is underestimated. Therefore there appears a justified fear about who is going to maintain older generations in the immediate future. (…) Within the last years the conditions for bringing up children created by the state have improved in some aspects - prolongation of maternity leaves or introduction of "child tax credit" in income tax. However, these solutions are still insufficient. The current system of legal provisions still contributes to small number of children being born in Poland and more and more of them are born and raised in single-parent families. Such a system does not solve social problems, but deepens pathologies and is costly for the state. The tax system in Poland, despite the changes introduced since the beginning of 2008, still sees children as a luxury product that only few can afford. This leads to deterioration of the economic situation of families, in particular those with many children. As a consequence, decisions to have and bring up children are considered very risky and costly. Besides, families not only bear higher expenses related to bringing up children, but also pay higher indirect taxes. People bringing up children incur higher opportunity costs in the period of professional activity (lower earnings, slower professional career, less leisure time for recreation) as well as later, when their children grow up and pay pensions mainly for those who chose only professional career" (*Report on intellectual capital of Poland* 2008, p. 32.).

At the regional and local level the scope of pro-family policy actions is smaller, but they can constitute an important supplement to actions at the national level, in particular in the form of long-term assistance for families. The respective actions involve most importantly high quality and availability of social services lying within the competence of communes, such as nurseries, kindergartens, schools, other forms of childcare (day-care rooms) and cultural institutions (community houses, libraries), sports institutions (sports clubs), as well as other forms of spending leisure time (see Bucher, Mai 2005, p. 43). Local authorities may ensure proper infrastructure and equipment as well as subsidize operation of the institutions so that costs for parents (in particular the poorer ones) are minimized. It is also very important to adjust the offer to the needs. This concerns, for example, adaptation of opening hours of kindergartens to the working hours of parents. It is also important for such institutions to be run by

bodies other than the local authorities – see the example below. The simplest but, as already mentioned, not particularly effective initiative is the so-called baby bonus offered by self-governments. The program is used for example in Cracow, where since 2006 the commune grants an additional baby bonus in the amount of PLN 1000 (www.bip.krakow.pl/zalaczniki/dokumenty/n/65824/0/karta).

"Orzełek" Flexible Kindergarten attached to the Białystok School of Economics

The aim of the project was to create a model kindergarten ensuring conditions allowing parents and small children's guardians to reconcile their career and family life. The kindergarten is created in the building situated near the headquarters of the Białystok School of Economics. The specific character of the university requires its employees, in particular academic teachers, to often work irregular working hours in the week, which significantly limits their ability to reconcile professional career and family life. Students face a similar situation, especially if they are also working and raising small children. The offered solution makes it possible to reconcile professional and family duties in a more flexible and effective manner.

The kindergarten is open seven days a week from 7:30 a.m. to 7:30 p.m., all year round, with the exception of national holidays and days statutory free from work. The time of child's stay depends on individual needs of the parents. Activities offered from Monday to Friday to groups of 15-20 children aged 2.5 to 7 are of educational and care character. On weekends the establishment offers only care and entertainment activities for groups of 20-25 children aged 2.5-11.

The use of kindergarten's services is completely free (as well as meals and additional classes). The project is financed under the Operational Programme Human Resources Development.

Source: www.epwse.pl/oferta.html

REPRODUCTIVE HEALTH

An important factor influencing the number of births is reproductive health. Infertility is a problem of 10-15% couples in Poland (Położnictwo i ginekologia [Obstetrics and Gynaecology] 2007). It may be effectively treated thanks to the use of various methods, depending on the causes. The advancement of infertility medicine and its availability is an important factor influencing the number of births. Also, availability of in vitro fertilization, which is refunded in many countries (see www.proinvitro.pl/in-vitro-w-innych-krajach) is very important. Presently in vitro fertilization in Poland is not refunded, but the Ministry of Health prepares a refund program (see Zagórski 2010). The use of in vitro is the object of disputes on moral grounds. In vitro is particularly strongly criticized by hierarchs of the Catholic Church in Poland (Wiśniewska 2010). The relatively large role of the Catholic Church in Eastern Poland (see e.g. Smętkowski 2008) may lead to decreased interest in this type of therapy, even if full refund of the costs is available(at present it is difficult to assess the possible range of the problem, but it does not seem to be significant).

In vitro fertilization in Israel

In 1981 free access to in vitro fertilisation was introduced in Israel. Refund availability of in vitro fertilisation is much larger in Israel than in most other countries. Women aged up to 45 can use the therapy free of charge. The number of fertilization attempts is unlimited until two children are born (with numerous exceptions allowing to exceed the limit free of charge). The therapy is available not only to two-parent families, but also to informal relations, homosexual couples, and single mothers (Birenbaum-Carmeli, Dirnfeld 2008).

4.2. MIGRATIONS

REPLACEMENT MIGRATIONS

Attracting immigrants is quite a simple way to eliminate working age population deficits. However, in the long-run replacement migration only weakens and slows down the processes of population decline and ageing. ”International migrations cannot compensate the decrease in fertility of the population and its ageing, but only to a little degree inhibit these processes. Replacement migrations [in Polish: compensatory migrations] would have to be constant streams, growing in time (populations of immigrants and their children also age as a result of gradual adaptation of fertility levels to values characterizing the receiving societies) and reaching astronomic sizes after a couple of dozens of years (Korcelli 2004, p. 65). In spite of this, replacement migrations are a solution used by many countries and frequently discussed (see e.g. Johansson, Rauhut 2005) since they make it possible to meet the current needs of the labour market; they are used no to prevent ageing of the society, rather to slow down the depopulation process. National immigration strategies are in most cases oriented at attracting young migrants with qualifications that are scarce in the domestic labour market. On the other hand migrants often perform jobs that the current inhabitants consider unattractive.

The migration policy, being the responsibility of the central authorities, consists mainly in preparing legal regulation in the field of migration, repatriation, naturalization of foreigners and asylum seekers, etc. Actions of central authorities may be focused very narrowly, for example aimed at attracting a certain number of specialists in a given field. Another important element of migration policy is attracting foreign students and encouraging them to stay in Poland after graduation (see the example below).

Fresh Talent Initiative

The Fresh Talent Initiative programme was created by the Scottish government in order to slow down the country’s depopulation. The initiative was addressed to foreign graduates of Scottish schools. After finishing their studies the graduates were encouraged to stay in Scotland and they were also offered help in finding a job. The objective of the program was not only to encourage people not to come back to the country of their origin, but also to encourage them to stay in Scotland and abandon seeking jobs in other parts of Great Britain. The program was operating from 2005 to 2008, when it was replaced by new solutions introduced in the entire Great Britain (points-based immigration system) (Skilling 2007, Danson 2007).

Actions supporting immigration at regional and local level are significantly restricted, which means that they must comply with national regulations. However, regional and local authorities may actively support immigration by promoting the region or a city as an attractive place for living and working, as well as by creating mechanisms that would assist immigrants in starting work and joining the local community’s life, for example by preparing schools for admission of immigrants’ children.

RESTRICTION OF ECONOMIC MIGRATIONS

Effective restriction of economic immigration must consist in elimination of its reasons, i.e. most of all issues related to the labour market. Therefore the respective actions cover a wide range of initiatives concerning economic development and labour market stimulation. It is important for the actions concerning labour market not to concentrate only on unemployment, since an important factor for economic emigration is not only the availability of employment, but also the quality of available jobs. Actions in the field of labour market or promotion of regional and local development are not instruments specifically oriented at preventing economic migrations. Their purposes and scope of influence is much broader. On the other hand, actions oriented at restricting economic migrations in the first place

are also possible. In principle they are complementary to development actions. These are usually "soft" actions, consisting in informing on development and professional career opportunities in a given locality or region. Their characteristic feature is that they address groups that are most inclined to migrate for economic reasons, including in particular people with qualifications important for the quality of the region's human resources (for example university graduates).

Stay in Dębica

The Dębica's Business Club association in 2008 held the project "Stay in Dębica – a cycle of activation, information, and promotion activities preventing economic migration of Dębica Poviat inhabitants". The project was mainly addressed to pupils of lower secondary schools and secondary schools and to the unemployed. It consisted in information and promotion activities, based on, for example, a dedicated Internet portal www.karierawdebicy.pl, courses, training sessions, conferences, job fairs, printed and audio-visual publications, etc. The undertaken actions were oriented at creating awareness of professional career and development opportunities in the poviat, taking informed decisions about professional development, identification of needs and requirements of the local labour market, as well as advantages and disadvantages of economic migration.

Source: http://www.karierawdebicy.pl/o-serwisie/#projekt

REMIGRATION

Supporting returns of migrants to regions that they left may significantly contribute to slowing down the depopulation processes. What is more, remigrations may be an important factor favouring regional development, since remigrants bring with them not only financial resources acquired in other regions or countries, but also new experiences and skills. Poland may draw on experiences of countries which experienced migration outflow followed by remigration. In this context a particularly interesting example is provided by countries emigration from which increased when they joined the European Union, i.e. Ireland, Spain, Portugal, and Greece. "In their case a dynamic economic growth caused by the accession resulted in an increase in remigrations and a gradual shift from the status of countries of emigration to the status of countries with a positive net migration value. In each of the above-mentioned examples this change took place at least about a dozen years after the accession to the European Union. So, if Poland is to repeat this process, it is still the beginning of the road" (Szczepański 2009, p. 4). Remigration preconditions are quite well examined, also in the Polish context. In addition a series of recommendations for supporting returns has been developed, see e.g. Duszczyk 2007, Szczepański 2009, and Lesińska 2010.

Irish information policy aimed at encouraging remigration

Ireland conducted a special information programme promoting the country as the "Celtic Tiger" – a good place for prompt professional career. "In mass media (press, TV, Internet) advertisements and sponsored articles presenting changes that took place in Ireland and its economic success were placed. The actions were particularly intensive in Great Britain and USA, i.e. the countries where large numbers of Irish people stayed, and they resembled the activities of headhunting companies. Articles and advertisements were placed in newspapers directed to Irish people (for example Irish Voice published in USA). Also a special Internet site (www.jobireland.com) was created. It included necessary information for people wishing to return to Ireland. During the first six months from its creation over 20 million visits were recorded. Besides, in places where large numbers of Irish people were expected, e.g. in connection with Saint Patrick's Day, a campaign promoting returns was conducted. Efforts were made for all events gathering the Irish and organized abroad to be opened by ambassadors or high representatives of the Irish government (Duszczyk 2007, p.15).

To come back, and what then?

The main objective of the project implemented by the Biłgoraj Region Community Foundation was to get temporary and regular migrants more interested in the local labour market, by helping them start their own business. The project covered information, consulting, and training activities, as well as an integration and study tour (showing enterprises using the local potential). An important element of the project, focused primarily on emigrants, was involvement of members of their families permanently living in the poviat.

www.flzb.lbl.pl

4.3. CREATING CONDITIONS FOR ECONOMIC DEVELOPMENT IN THE CONTEXT OF AGEING SOCIETY

PROLONGATION OF PROFESSIONAL ACTIVITY

An important factor that may alleviate the negative effects of ageing of societies is prolongation of professional activity. It is most of all about prolongation of the minimum retirement age and making the retirement age of men and women equal. Besides it is important to raise professional activity of people in their late working-age – i.e. in their 50s and 60s. In many European countries the retirement age for women and men is equal. What is more, in the face of public finance crisis some countries have postponed the retirement age, for example Germany and Denmark to 67 years of age. In Poland the retirement age for men is 65 years and for women 60 years, however – as a result of various privileges – in the actual retirement age tends to be lower. In 2009 an average woman became retired at the age of 57.8, whereas an average man – at the age of 61 (Fandrejewska, Walewska 2010).

ECONOMY ORIENTED AT OLDER PEOPLE

The growing number of older people makes them a more and more important group of consumers with specific needs (concerning health protection, entertainment, recreation, participation in culture, tourism, transport, construction, etc). This creates new business opportunities and new potential for development of regional economies. Of course old people form a diversified group, particularly in terms of wealth, also including wealthy and very wealthy people. However, in the Polish reality the older people are a group of clients of rather modest means. The needs of old consumers are specific – adapting the offer of public and non-public services to their expectations is an important factor for their living quality.

Senior Economy in Germany

"In North Rhine-Westphalia the conducted tests have shown that the actions meeting the needs and arousing interest of the older people may provide 100 000 new jobs, increasing state's receipts from taxes in total by over Euro 1.2 billion by 2010. Similar studies carried out in the Federal Republic of Germany forecast over 900 000 additional jobs in the so-called "silver economy" during the next twenty years, indicating that no other sector in Germany has such a high development potential. Therefore a special task group for "Seniorenwirtschaft" (old people's economy) has been appointed. This initiative is based on the dialogue, which means that many various entities such as entrepreneurs, trade unions, paramedical organisations, and universities from EU regions jointly participate in conferences and other events, thinking about a suitable offer of housing, telecommunications and entertainment services for old consumers" (Ferry, Baker 2006).

REGIONAL AND LOCAL STRATEGIES ADAPTED TO THE CONDITIONS OF THE AGEING POPULATION

One of the methods of neutralizing the negative effects of population ageing is to take a proper account of this phenomenon in regional and local planning and management. Strategies, plans, and investment actions should be adjusted not only to the present situation, but should also take account of the future tendencies.

Age Proofing Toolkit

The EU Committee of the Regions and the Age Concern England commissioned a set of instruments allowing for taking account of age issues in actions taken at regional level. The developed instruments are supposed to ensure that regional development strategies will fully take account of problems related to ageing of the society in all important aspects and sectors. This set consists of simple guidelines with examples and questions helping assess the provisions of strategic documents, for example:

> Is the document free of generalisations or stereotypical notions about people of different age groups and reflect the heterogeneity of people over 50?

> Does the document identify the current position in the region of the economic engagement of older people and the potential for improving this?

> Does the document recognise the significance of the purchasing potential of older people in different markets and their importance as consumers of public services?

> Does it identify the goods and services for which older people are key consumers?

> Does the document propose specific actions to help ensure older people maximise their income from sources including self employment, employment, investments and state benefits?

> Does the document identify how the demand will change over time and how service delivery will need to change?

> Does the document seek to ensure that older people have access to appropriate transport networks to enable them to live actively?

> Does the document make practical proposals to support older people to engage with new technological developments such as telephony products and Information and Communications Technology?

> Does the document reflect on the current and future demands for housing stock (for couples and single households) in the context of an ageing population?

> Does the document recognise the contribution older people make to community initiatives such as social enterprise and identify mechanisms to further develop this role?

(Ferry, Baker 2006).

BASIC INFRASTRUCTURE AND SERVICES IN RURAL AREAS

Providing rural areas with basic infrastructure and access to basic services (general practitioner, pharmacy, shops with the basic consumer goods, community house, library, access to the Internet, public transport) significantly enhances their attractiveness as a place for living. Ensuring a proper level of services may reduce depopulation caused by migration outflow from rural areas. Besides, it can also increase migration attractiveness of these areas, in particular for people who want to live in rural areas and work in the city, as well as for retirement age people who want to move out from the city. However, it is not enough to provide people with the basic infrastructure and grant them access to basic services. It is of key importance to connect rural areas with strong urban centres that ensure access to higher order services. Efficient transport connections – including public transport, particularly important for the older people – are of particular significance.

Migration to rural areas in the Midi-Pyrénées region

After decades of decrease or stagnation in population size in rural areas of the French region of Midi-Pyrénées, since the 1990s there has been a migration inflow to rural areas observed. Although it is most of all the case of areas situated near the most important urban centres of the region, such as Toulouse, the population size increase in result of migration is noticeable also in rural areas of the Lot department situated far from Toulouse. Migrants include most of all young families, although also the older people form a significant group. Migration attractiveness of the rural areas of the region results mainly from two factors. The first one is access to the central city of the region – Toulouse, and subregional centres (concentration of migrants not only in the vicinity of cities, but also next to the main communication routes), and the second is access to basic services (shops, schools, pharmacies etc). (Dugot, Laborderie, Taulelle 2008; Poisson, Bourniquel 2009; Płoszaj 2010).

5. CONCLUSIONS

The contemporary demographic processes taking place in Eastern Poland have polarizing character, similarly as in other regions of the country. On the one hand the population of the region gets more concentrated in the largest urban areas (capital cities of voivodships) and their immediate vicinity. This concentration is segmented, i.e. the size of population within urban centre's administrative borders remains relatively stable, but there occurs high migration mobility caused by inflow of population aged up to 34 (work and education) and outflow of people aged over 35. The latter phenomenon is caused by suburbanisation processes, which take the form of cities sprawling to their neighbouring rural areas. On the other hand rural areas peripheral in the spatial and socio-economic context become depopulated. This is caused both by migration outflow and increasingly by processes of population ageing and negative population increase.

The Eastern Poland macroregion is at the same time quite strongly internally diversified, especially in the second of the two aforementioned aspects, i.e. depopulation of peripheral areas. Demographically active areas are those situated around voivodship capital cities, as the result of suburbanisation, as well as almost entire Podkarpackie Voivodship (as a result of a positive natural increase and small migration outflow) and the western part of Warmińsko-Mazurskie Voivodship. The other areas (voivodships: Lubelskie, Podlaskie, Świętokrzyskie, and eastern part of Warmińsko-Mazurskie) are characterized by the traditional type of depopulation, i.e. caused mainly by migration outflow, and only the central-eastern part of Lubelskie Voivodship, the eastern part of Podlaskie Voivodship and the eastern and southern part of Świętokrzyskie Voivodship have the new, more dangerous type of depopulation, caused mainly by negative population increase, i.e. the areas slowly dying out. Most threatened by the processes are poviats situated near the national border and some poviats situated next to voivodship borders.

On the basis of the conducted analyses it may be concluded that the problems most important demographic in the context of regional development in Eastern Poland are:

- migration outflow of population with higher education aged up to 35;
- occurrence of depopulated areas caused by processes of population ageing;
- occurrence of areas with large migration outflow, characterized by low population density.

The Eastern Poland macroregion differs from the rest of the country most of all in the clear predominance of migration outflow over inflow. It should be also stressed that the registered scale of population loss connected with that phenomenon is not large, and in 2002-2009 totalled about 100 thousand persons. However, the main problem is the negative net migration in the group of people with higher education (including particularly those aged 25-34). Nearly half of the negative net migrationis attributed to this group. The main destination of migration for people with higher education are metropolitan centres of the central Poland: Warszawa, Cracow, and the Tricity, and the basic reason for changing their place of residence is the attempt to find a well-paid job, whereas the main reasons for coming back are difficulties in finding jobs corresponding to the migrants' qualifications.In addition, in the light of official statistics the scale of foreign migration outflow from Eastern Poland is smaller as compared to the western and central voivodships. Simultaneously the number of returns connected with economic recession in destinations of migrations is larger. It is worth noticing that voivodship capital cities of Eastern Poland and their suburban zones (apart from Kielce) become relatively strengthened thanks to the current migration processes, i.e. the migration outflow from the macroregion is compensated and even exceeded by the intraregional inflows. Nevertheless, migration outflow of population with higher education on the macro-region's scale should be considered a sign of "brain drain", which limits the inherent development potential and investment attractiveness of Eastern Poland.

The persistence of depopulation processes in selected regions of Eastern Poland resulted in evolution of its causes, which is confirmed by earlier studies carried out, among others, by P. Eberhardt (1989). The constant migration outflow selective in terms of age and sex causes a decrease in the working-age fe-

male population, resulting in negative population increase becoming the main depopulation factor. This is an advanced phase of depopulation, which is much more difficult to stop than that caused mostly by migration outflow. Any actions inhibiting the migration outflow are in principle insufficient, as it is necessary to change the age and sex structure and take pro-natalistic actions. This type of depopulation may be irreversible. Its areas in Eastern Poland macroregion are poviats surrounding the Białystok poviat from the south (poviats of Hajnówka and Bielsk Podlaski) and from the north (Mońki), poviats situated in the south-eastern and in the southern part of Lubelskie Voivodship: Chełm, Krasnystaw, Zamość, and Janów, as well as poviats neighbouring Kielce Poviat, i.e. Busko, Kazimierza Wielka, Pińczów, and Włoszczowa.

Problem areas are also areas with low population density and significant migration outflow. In particular this is the case of areas with very low population density of 50 persons per km^2 (which is the average for rural areas in Poland), which is observed in a significant part of poviats of Warmińsko-Mazurskie and Podlaskie Voivodships and the northern part of Lubelskie Voivodship. Among them the most endangered poviats are those with a large registered migration outflow (2% of the population in the 2004-2008 years), not compensated by natural increase and usually located near the state border or voivodship borders. On the one hand such a situation may be favourable because of possible economic growth in agriculture (related to growth in the sizes of farms). However, it may be a barrier to development of poviat centres, particularly in the context of their peripheral location.

The analyses conducted show that, despite the observed unfavourable tendencies, Eastern Poland so far has not been significantly affected by the following threats:

- population ageing expressed by a large share of post-working age people and a small share of pre-working age people;
- decline in female-male ratio, i.e. smaller number of women as compared to the number of men aged 20-34.

The present age structure of Eastern Poland's population is not significantly different from that in the rest of the country. However, specific for Eastern Poland, as compared to the other parts of the country, are: larger decrease in the size of pre-working-age population, slightly larger increase in the size of working-age population, and smaller increase in the size of post-working-age population. Therefore, assuming that the ageing process is tantamount to increase in the post-working-age population size, it may be concluded that the area under consideration does not stand out in a negative sense. However, the rate of decline in size of pre-working-age population is very alarming, since during the analyzed 8 years that rate has reached about 20%. During the next dozen years it will certainly contribute to limitation of potential labour resources and further increase in size of post-working-age population, which will involve difficulties in the social security system's operation and necessitate further development of infrastructure for the older people. The ageing processes (expressed by the old age ratio) are very intensive. The most ageing areas are poviats in the eastern part of Podlaskie Voivodship, mainly the poviats in Lubelskie and Świętokrzyskie Voivodship and all voivodship capital cities, as well as five more towns with poviat rights (former voivodship capital cities), i.e.: Krosno, Przemyśl, Tarnobrzeg, Chełm, and Elbląg. The ageing processes are mainly caused by decreased fertility.

Decline in female-male ratio observed in Eastern Poland is not significant enough to recognize this macroregion as a "demographically deformed" area affected by a serious deficit of women. The values of this ratio in each age group, and in fact in each poviat, quite considerably exceed the level of 80, specified as the level of female-male ratio below which the areas are affected by deficit of women (Strzelecki 1995). A relatively small scale of shortage of women (observed mostly in rural areas) has not yet resulted in any direct negative demographic consequences (lower rates of marriages and births). What is more, the problem of lowered female-male ratios in the 20-34 age group is not observable in the largest cities of Eastern Poland, since these centres are destinations for migrations of young women. The direct cause of sex imbalance in the 20-34 age groups are migrations, or more specifically – their selective character. Among internal migrants there are more women, which given the absolute scale of

migration means that women made up 59.6% of the negative net migration observed in the 2002-2009 period in Eastern Poland macroregion. In the case of foreign migrations, however, men are more inclined to migrate, which means than they are both more willing to go abroad and to come back from emigration. In the context of the re-emigration wave growing in the last several years (in which men prevail) this can mean a slow but noticeable growth of women deficit, particularly in agricultural, less populated rural areas.

The influence of demographical processes on economic phenomena involves most of all the necessity to ensure a suitable condition and quality of human resources necessary for maintenance or improvement of competitive position in the contemporary economy based on knowledge. The loss of this capital may limit the inherent development opportunities and deteriorate investment attractiveness of a given region and – as the result of shrinking of the potential customers' market – it may constitute a barrier to development of certain types of services.

The surveys conducted have proven existence of a certain dependency at the poviat level of wealth of communes and migration inflow/mobility. Generally speaking the larger the inflow of population and the migration mobility were, the wealthier were the communes forming a given poviat, which was also observable in Eastern Poland. This correlation may indicate existence of migration segmentation processes, i.e. outflow of population from urban poviats to suburban zones and their partial replacement with immigrants from peripheral areas. It is also worth noticing that in the light of the surveys permanent migrations to Eastern Poland's voivodship capitals were not very frequent, which could indicate both competition of other urban centres situated outside the macroregion and foreign migrations. In addition, commuting in Eastern Poland (with the exception of Podkarpacie) was less significant than in other regions of Poland, due to larger share of people employed in agriculture, which was particularly noticeable in Podlaskie Voivodship. What is more, the commuting there was more monocentric, covering the most important cities, especially voivodship capitals. Generally speaking capital cities of voivodships were of relatively higher significance as compared to the other areas of the country in terms of provision of higher-order services (in particular education and health services) to their regions, and their importance in this aspect was growing. It also may be concluded that the largest potential to create polycentric functional networks of cities was found in Podkarpackie Voivodship and in the western part of Warmińsko-Mazurskie Voivodship. In the light of these results it may be stated that the existing demographic processes have not negatively affected the position and development potential of voivodship capitals and their immediate vicinity. Nevertheless, their competitive position may deteriorate in the future, particularly if their attractiveness to migrants decreases, the size of 25-34 age group declines, and the population ages. Also in other areas no negative influence of the migration outflow on their development processes has been observed so far, which may partially result from productivity growth in agriculture.

In 2002-2009 agriculture was modernized in the whole country, which was manifested by change in the area structure of farms and meant that the total number of farms and small farms, i.e. those up to 20 ha, decreased. This process was relatively slowest in Eastern Poland as compared to the Western and Central Poland. In Eastern Poland macroregion the largest declines in the number of farms belonging to this group were observed in the following voivodships: Warmińsko-Mazurskie (by 18.3%), Świętokrzyskie (by 14.3%), and Lubelskie (by 12.3%). The number of farms with area exceeding 50 ha was growing significantly faster, and was the highest in Świętokrzyskie Voivodship (increase by 139.7%), Lubelskie Voivodship (by 91.0%), and Podkarpackie Voivodship (by 82.4%), which however was partially due to the "low base" effect. Relatively slower changes were recorded in Podlaskie and Warmińsko-Mazurskie voivodships and in the latter case the share of the largest farms in the total number of farms was high already in 2002. A strong influence of depopulation on changes in the area structure of farms cannot be clearly proved, although it is undoubtedly one of the triggers of this process.

6. RECOMMENDATIONS

The conclusions presented above allow for making three basic groups of recommendations for the regional policy, pertaining both for the entire macroregion of Eastern Poland and selected problem areas. It should also be stressed that actions taken in the whole country and related particularly to family supporting policy, migration policy, as well as economic, health, and social policy (some of them have been presented in chapter 4) are also essential in this respect. Despite their significance they have not been reflected in the recommendations, since they are not directly related to regional policy.

The first group of recommendations concerns **thenecessity for actions taken as part of regional policy to concentrate on voivodship capital cities of Eastern Poland and their urban regions.** The analyses conducted clearly indicate that voivodship capital cities are critical for maintenance of competitiveness and attractiveness of the Polish macroregion. These were in fact the only areas where depopulation was not observed. Moreover, voivodship capital cities are the main destinations for commuters and key centres of higher-order public services. Their role in this respect is relatively more significant than of capital cities of the other Polish voivodships. Additionally, their competitive position – resulting among others from concentration of the best quality human resources – may be only temporary since they compete heavily for human resources with the largest metropolitan centres of Poland, such as Warsaw, Cracow, and the Tricity, as well as foreign centres.

Key for maintenance of migration attractiveness of voivodship capital cities is offering by them attractive jobs and/or high quality of living. Used to this end should be the standard measures, related most of all to raising the level of technological advancement of companies and entrepreneurship development, as well as improving the quality of public services and housing conditions. Progress in this field is the precondition for actions encouraging domestic and foreign emigrants to return and for creation of an attractive offer for selective foreign replacement migrations.

The above actions should be accompanied by improvement of higher-order public services (education, health, and culture) of regional and supraregional significance, which in the conditions of better access to transport and development of public transport should compensate their poorer availability in the rest of the region.

The second group of recommendations concerns **mitigation of results of demographical problems**. In the conditions of smaller public intervention as compared to actions taken in voivodship capital cities these actions should be more selective and territorialized, and include:

- development of public transport, including connecting smaller urban centres with voivodship capital cities first, and later on with subregional centres;
- enhancing the quality of public services in problem poviats;
- development of modern and dedicated welfare services, including those for older people, in particular in poviats with a regressive demographical structure.

Development of public transport may, on the one hand, improve access to jobs and public services offered by the voivodship capital cities. However, it should be remembered that development of non-agricultural types of business generating high value added in suburban areas is not possible without highly skilled specialists, who must be provided with quality living standards. One of living quality elements that is scarce in peripheral areas is access to higher-order public services. The studies show that commuting for purposes of using these services forms the most important link between the metropolitan centre and its surroundings. In consideration of the above, attempts should be made to improve transport connections between peripheral areas and centres providing these services (voivodship capital cities and subregional centres) instead of attempts to extend these functions in smaller urban centres.

It follows that in poviats, particularly in problem ones, attempts should be made most of all to enhance the quality of public services and not to maintain or extend their scope. Additionally, these poviats should provide access to social security dedicated specifically to older people in the form of various assistance and nursing services that would be rendered by public and non-public institutions and allow them to manage on their own as long as possible.

The third group of recommendations concerns **neutralizing the causes of demographical problems** resulting from low total fertility rate and the migration outflow.

Actions taken in the whole country and consisting in development of relevant regulations reducing costs of bringing up children should be supplemented by regional and local initiatives. They may most of all consist in ensuring easily accessible and flexible care provided by nurseries and kindergartens. Important is also ensuring high quality primary education and easily available and attractive after-school occupations organized in schools, community centres, libraries, sports clubs, etc. They should facilitate reconciliation of professional career and raising children. They should be first taken in poviats with a relatively progressive age structure of the population.

Another important element is actions aimed at decreasing emigration and encouraging remigration. These can be e.g. initiatives addressed to young people studying outside their permanent place of residence (region) and consisting in granting them scholarships and encouraging them to return and take up work after graduation. Supporting remigration may consist in encouraging and facilitating returns through permanent information actions and creating conditions for creation of own businesses by the people who come back.

7. BIBLIOGRAPHY

Bański J. (2002). Typy ludnościowych obszarów problemowych [w:]Bański J., Rydz E. (red.). Społeczne problemy wsi. Studia Obszarów Wiejskich. nr 2. PTG, IGiPZ PAN. Warszawa.

Bański J. (2007). Przemiany funkcjonalno-przestrzenne terenów wiejskich – diagnoza, rekomendacje dla KPZK [w:] Ministerstwo Rozwoju Regionalnego. Ekspertyzy do Koncepcji Przestrzennego Zagospodarowania Kraju 2008-2033. Tom I. Warszawa.

Birenbaum-Carmeli D., Dirnfeld M. (2008). In Vitro Fertilisation Policy in Israel and Women's Perspectives: The More the Better? Reproductive Health Matters. 16(31).

Björklund A. (2006). Does family policy affect fertility? Journal of Population Economics. 19(1).

Bucher H., Mai R. (2005). Depopulation and its consequences for the regions of Europe. DG III – Social cohesion. Brussels.

Cigno A. (1991). Economics of the Family. Clarendon Press. Oxford.

Danson M. (2007). Fresh or Refreshed Talent: Exploring Population Change in Europe and Some Policy Initiatives [w:] Migrant Integration in Rural Areas Evidence from New Countries of Immigration.International Journal on Multicultural Societies. 9(1).

Douglass C.B. (2005). Barren States: The Population Implosion in Europe. Berg Publishers. Oxford, New York.

Dugot P., Laborderie S., Taulelle F. (2008). Midi-Pyrénées, régiond'Europe. CRDP Midi-Pyrénées. Toulouse.

Duszczyk M. (2007). Doświadczenia wybranych państw członkowskich Unii Europejskiej w zakresie migracji powrotnych. CMR WorkingPapers. nr 21/79.

Eberhardt P. (1989). Regiony wyludniające się w Polsce. Prace Geograficzne IGiPZ PAN. 148.

Fandrejewska A., Walewska D. (2010). Francuzi nie chcą zmian emerytalnych. Rzeczpospolita. 16-09-2010.

Ferry M., Baker R. (2006). Strategie regionalne a starzenie się społeczeństwa. „Age Proofing Toolkit" – zestaw narzędzi służących uwzględnianiu zagadnień związanych z wiekiem społeczeństwa.

Gauthier A.H. (2007). The impact of family policies on fertility in industrialized countries: a review of the literature. Population Research and Policy Review. 26(3).

Gauthier A.H., Hatzius J. (1997). Family benefits and fertility: an econometric analysis.Population Studies.51.

Gorzelak G., Smętkowski M.(2005). Metropolia i jej region w gospodarce informacyjnej. WydawnictwoNaukowe Scholar. Warszawa.

Grant J., Hoorens S., Sivadasan S., Loo M.V.H., Davanzo J., Hale L., et al. (2006).Trends in European fertility: should Europe try to increase its fertility rate...or just manage the consequences?.International Journal of Andrology. 29(1).

GUS (2009). Informacja o rozmiarach i kierunkach emigracji z Polski w latach 2004 – 2008

Holzer J. (1999). Demografia. PWE. Warszawa.

Jelonek A. (1986). Obszary zagrożeń demograficznych. Folia Geogr. Seria: Geogr. –Oecon. 19.

Johansson M., Rauhut D. (2005). ESPON project 1.1.4 The Spatial Effects of Demographic Trends and Migration.

Kalwij A. (2010). The Impact of Family Policy Expenditure on Fertility in Western Europe.Demography. 47(2).

Kofta M. (2005). Wypowiedź cytowana w artykule BronisławaTumiłowicza pt. „Na czym powinna polegać racjonalna polityka prorodzinna?". Przegląd. nr 49/2005.

Korcelli P. (2004). Migracje kompensacyjne a dylematy polityki migracyjnej. Studia Regionalne i Lokalne. 3(17)2004.

Lesińska M. (2010). Polityka państwa wobec migracji powrotnych własnych obywateli. Teoria i praktyka. CMR WorkingPapers. 44/102.

Miszczuk A. (1993). Wyludnianie się wsi a rolnictwo wschodniej Lubelszczyzny. DokumentacjaGeograficzna. z. 3.

Moss P. (2008).International Review of Leave Policies and Related Research 2008. www.sfi.dk/Admin/Public/DWSDownload.aspx?File=%2fFiles%2fFiler%2fLeave+network%2ffile47247.pdf.

Okólski M. (2005). Demografia. Wydawnictwo Naukowe Scholar. Warszawa.

Płoszaj A. (2010). Relacje metropolia-region – studium przypadku regionu Midi-Pyrénées. Materiały robocze projektu ESPON FOCI.

Poisson C., Bourniquel C. (2009). Le rural en Midi-Pyrénées Des territoires attractifs, inégalement équipés. 6 pages de l'Insee.Numéro 123: décembre 2009.

Położnictwo i ginekologia (2007). Warszawa: WydawnictwoLekarskie PZWL.

Regions 2020 (2008). An Assessment of Future Challenges for UE Regions. Commission of European Communities. Brussels.

Rocznik Demograficzny 2010 (2010). Główny Urząd Statystyczny. Warszawa.

Skilling P. (2007). New Scots: The Fresh Talent Initiative and Post-Devolution Immigration Policy. Scottish Affairs. 61.

Smętkowski M. (2008). Różnice między wschodem i zachodem Polski: Postawy mieszkańców [w:] Gorzelak G., Tucholska A. Historyczno-kulturowe uwarunkowania rozwoju – Polska i Ukraina. Wydawnictwo Naukowe Scholar.

Smętkowski M. (2009). Region Kopenhagi w świetle koncepcji rozwoju policentrycznego [w:] Jewtuchowicz A., Rzeńca A. (red.). Współczesne wyzwania miast i regionów. WydawnictwoUniwersytetu Łódzkiego.

Stasiak A., Mirowski W. (1990). The process of depopulation of rural areas in Central and Eastern. Conference Papers IGSO PAS.

Strzelecki Z. (1995). Założenia i zasady polityki regionalnej [w:] Polityka regionalna w rozwoju obszarów wiejskich. SGGW. Warszawa.

Szczepański M. (2009). Poszukiwanie metod zmniejszania emigracji zarobkowej i wspierania powrotu migrantów na polski rynek pracy.

Wiśniewska K. (2010). Biskupi: módlcie się o zakaz in vitro. Gazeta Wyborcza. 2010-10-27.

Zagórski S. (2010). Rząd chce płacić za in vitro. Gazeta Wyborcza. 2010-10-26.