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The Spatial Effects of Demographic Trends and Migration

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The Spatial Effects of Demographic Trends and Migration

Final report

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Separate volumes:

Annex A
Data, Indicators, Maps and Case Studies

Annex B
Ageing, Labour Shortage and 'Replacement Migration'

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This report does not necessarily reflect the opinion of the members of the Monitoring Committee.

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Preface

Low birth rates and migratory movements – within, as well as between nations – have resulted in population redistribution within the European territory. Birth rates are so low that a population decrease would result if not for immigration. For some regions, relatively high total fertility rates are not enough to match the number of deaths so they experience a natural population decrease while other regions with low total fertility rates have a natural population increase. This paradoxical phenomenon is a consequence of the skewed age and gender structures in differing regions that often is a result of migratory movements. Even if ageing is a less general ingredient in the population development in Europe, this process has progressed to various stages in different regions and nations. Ageing and its relation to the labour force is also one of the most discussed topics today with respect to labour market problems.

Population development presents both prerequisites and restrictions on functional labour markets and polycentric development, as well as for the spatial development. Ageing, skewed gender and age structures with their consequences on the composition of the labour force have also focused on 'replacement migration' as a means to solve future labour market problems within the European territory. Here, as always when migration is discussed, both push and pull factors are of great importance, but function differently for various categories of migrants with respect to age, education and skills.

Also the enlargement of the European Union by the East European countries will have effects on the 'east-west migration' on the European territory, especially then at the border regions. The fear of mass migration is perhaps overestimated, but the free movement of people is likely to have effects on the demographic structure in differing parts of Europe.

Another population problem – that also has spatial consequences for the European development – is the depopulation that is occurring in some European regions – especially in the peripheral areas. A combination of lower birth rates, skewed age and gender structures and out-migration result in a process where some regions – literally – are dying out. The result will be a redistribution of population from less favoured areas to more favoured, e.g. from rural and sparsely populated areas to local and regional centres and especially to metropolitan areas. These processes have different characteristics in various parts of Europe. The common denominator, however, is a continuous depopulation of the some European regions.

The trans-national group put together for this project comes from seven European countries. The Swedish Institute for Growth Policy studies has been Lead Partner for this project, and the following institutes and persons have taken part in this project:

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Below follows an overview of the work packages and labour division in the different work packages carried out and analysed in this study. The table also contains a schematic representation of the analytical project organisation or the work packages. It should be kept in mind that there are no watertight bulkheads between the seven work packages. Instead, all work packages are designed to provide specific feedback to one another throughout the whole project in order to guarantee a successful fulfilment. The organisation of the different work packages is shown in the table below.

WP0: Management and administration	WP leader: ITPS
WP1: Data gathering, indicators and conceptualisation	WP leader: ITPS Central role: IGEAT/ULB Inputs: all partners
WP2: Natural population development and conceptualisation	WP leader: ITPS Central role: NIBR, University of Vienna Inputs: all partners
WP3: Migration within and between European countries	WP leader: IGEAT/ULB Central role: University d'Annunzio, University of Vienna, VATI Inputs: all partners
WP4: Fertility, migration and depopulation	WP leader: NIBR Central role: CEG Inputs: all partners
WP5: Ageing, labour shortage and 'replacement' migration	WP leader: CEG Central role: University d'Annunzio Inputs: all partners
WP6: Population, migration and spatial development – policy recommendations.	WP leader: ITPS Inputs: all partners

The group has met five times for work shops to prepare the three interim reports and final report, and provide critical inputs from all partners. A kick-off meeting was held in February 2003 in Stockholm, followed by meetings in Oslo (August 2003), Budapest (January 2004), Alvito (July 2004), Brussels (November 2004) and Stockholm (February 2005).

This report, with annexes, is the result of the work of this project group.

Mats Johansson and Daniel Rauhut
Editors

31 March 2005 Stockholm, Sweden

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PART ONE

1 Executive Summary

The points of departure for the structure of this report are the Matera and Lillehammer Guidance Papers. The recommendations in these papers are that the report should be disposed in three parts – summary, results and annexes. In this summary the executive and scientific summaries have been integrated.

1.1 Summary of the Main Results

1.1.1 General Framework

The main objective of this ESPON project is to describe and analyse the variety of demographic situations in different parts of Europe the focus on EU29 - encompassing EU25, the two accession countries Bulgaria and Romania as well as Norway and Switzerland. The study sketches the complex demographic landscape of Europe with areas of stagnation and depopulation on the one hand, and areas of population growth on the other hand. But the project will not only describe these landscapes, it will also try to explain the different demographic situations by pure demographic factors. This means that external economic, political and geographical factors are included in order to gain a better understanding of the process behind the demographic development.

These connections are illustrated in a schematic way in Figure 1.1, a schematic application of the graph produced in the Matera Guidance Paper (the MGP-graph) with regard to demographic development and where economic and social factors are included as explanatory factors as well as dependent variables. It should be noticed that the processes in Figure 1.1 illustrate both vicious and virtuous circles with regard to regional development and natural population change. The figure can also be seen – in a simplistic way - as a theoretical point of departure for the analyses.

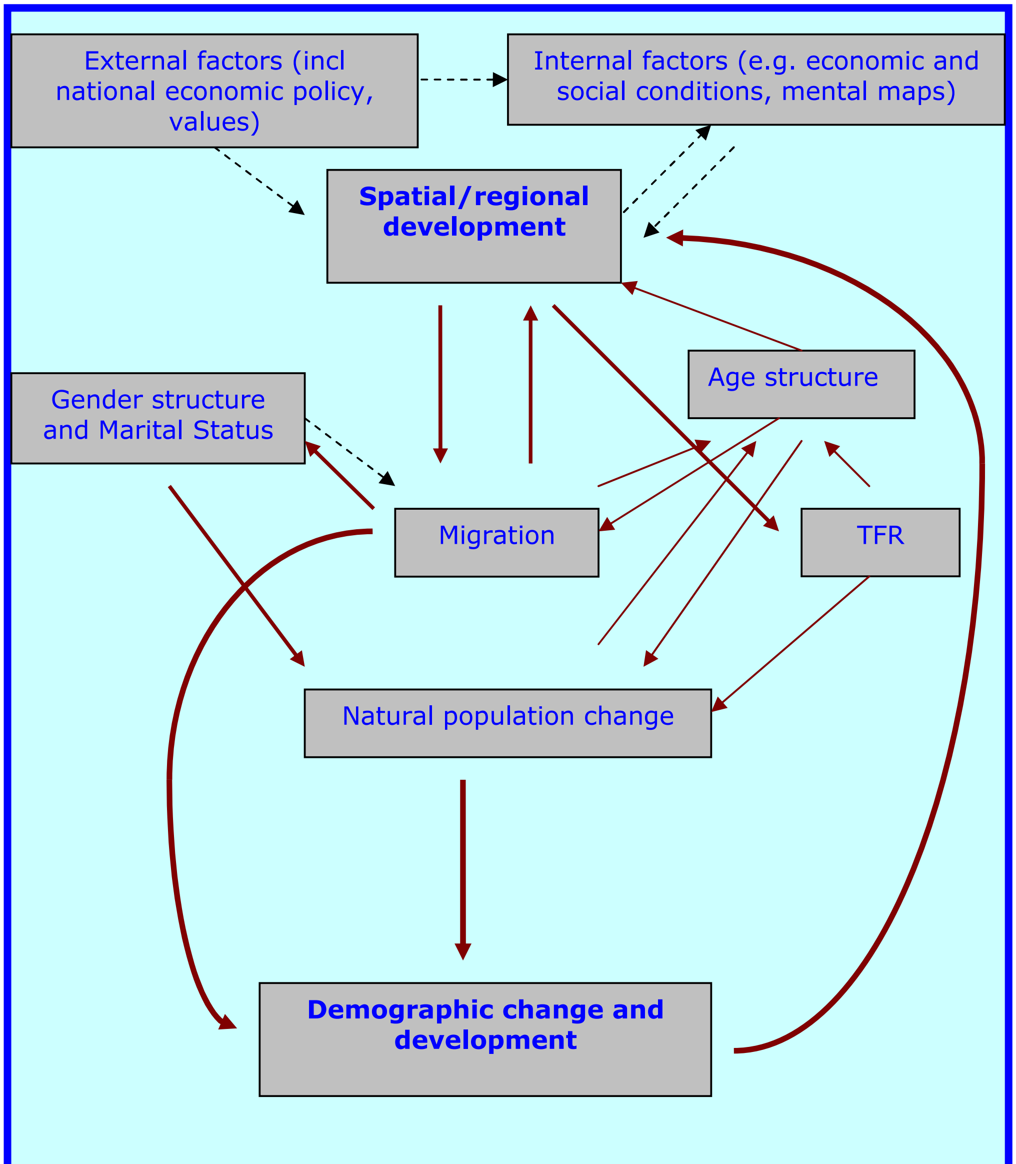


Figure 1.1 Application of the MGP-graph with regard to demographic change and spatial development

1.1.2 Typologies and population development

In order to classify the regions with respect to total population development, natural population development and migration, a base typology consisting of six different combinations are constructed. In table 1.1 the different types are illustrated as well as what characterises them with regard to population change.

This typology has been used with respect to total population development in EU29, depopulation, development in urban and rural areas according to OECD:s delimitation. In the latter case the typology was, however, based on data for EU25. With regard to the development in rural areas a typology based on data and definitions elaborated by ESPON 1.1.2 was constructed consisting of a combination of densely populated, intermediate populated and sparsely populated rural areas on the one hand and four categories of relative population development on the other hand – no depopulation, low depopulation, high depopulation and very high depopulation. The latter part was estimated by combing five indirect depopulation indicators and estimated as quartiles where the different regions were to be found in the statistical analysis. The typology in ESPON 1.1.2 final report consisting of six different urban-rural types has also been estimated with regard to migratory movements but with negative results in the sense that it tells us very little about the factors behind migration between these categories.

Other typologies used in the study are based on age and migration pattern (27 types), and a combination of mobility and migration. Here, mobility is measured as the sum of inflow and outflow of people in relation to the population size. The migratory movements are divided in two categories – net in-migration and net out-migration. By combining these four different patterns with regard to mobility and migration a typology have been constructed.

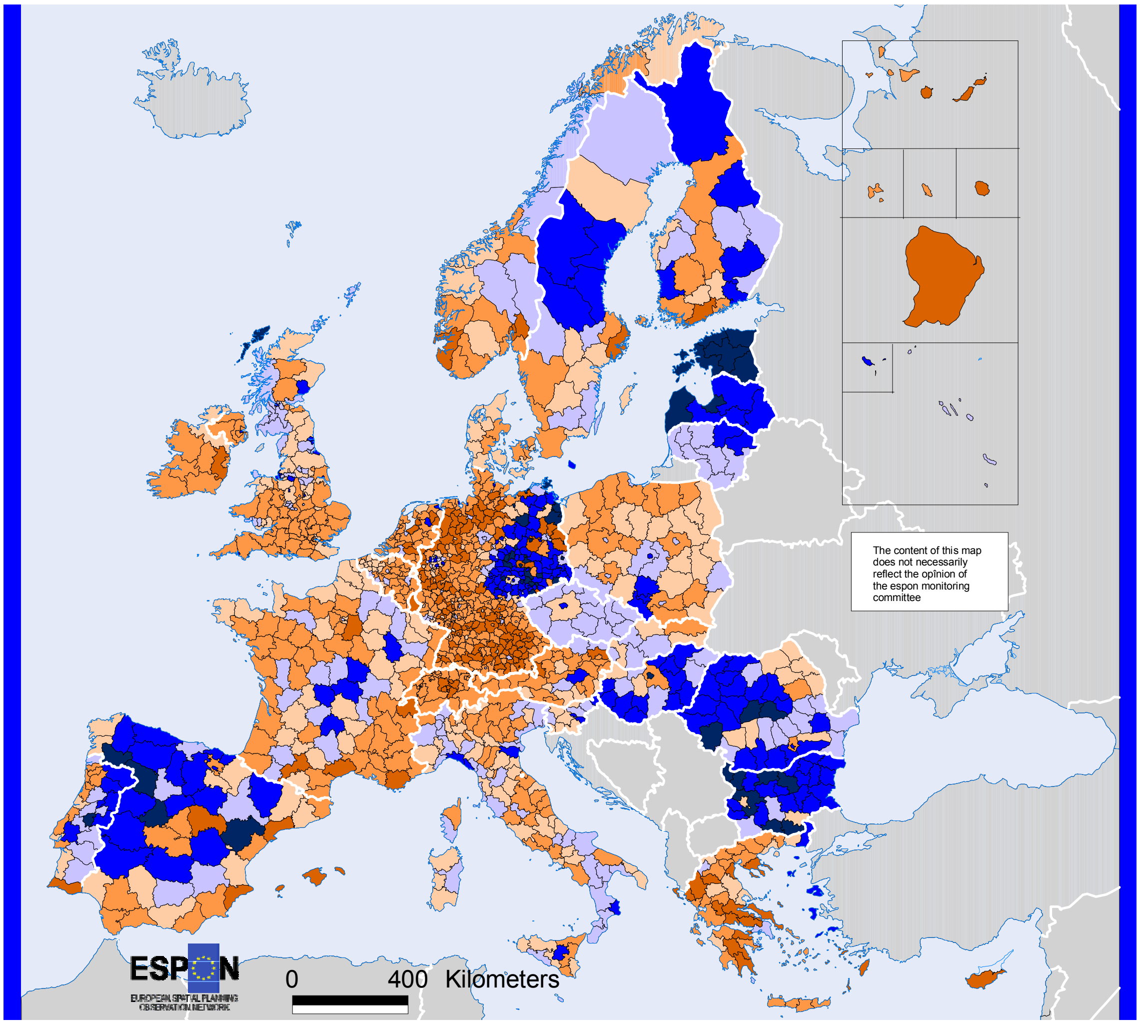
The population development during the 1990s is shown in map 1.1. Here the picture of growth and depopulation regions is painted. Pentagon is fast growing areas while peripheral

Table 1.1 A typology with regard to total population change, natural population change and net-migration.

1	PT>0	PM>0	PN>0	In-migration and young population/"high" TFR. High sustainability both in short and long term. The most favourable case.
2	PT>0	PM>0	PN<0	Out-migration and young population/"high" TFR. Short term – sustainability. Long term – eroding sustainability because of lopsided age structure (out-migration).
3	PT>0	PM<0	PN>0	In-migration of people with low TFR. Natural population decrease because of lopsided age structure and/or low TFR. Dependent on in-migration. No sustainability in long term – weak reproduction potential.
4	PT<0	PM<0	PN<0	Out-migration and old population/"low" TFR, depopulation. No sustainability both in short and long term. The worst case.
5	PT<0	PM>0	PN<0	Out-migration but still young population/"high" TFR. Traditionally high fertility regions. Falling TFR -> low sustainability.
6	PT<0	PM<0	PN>0	In-migration and old population/"low" TFR. In-migration of elderly people and/or singles, low reproduction potential. Dependent on in-migration. Low sustainability both in short and long run.
PT=Total population development PM=Net migration PN=Natural population development				

Map 1.1

Evolution of the population between 1990 and 2000



LEGEND

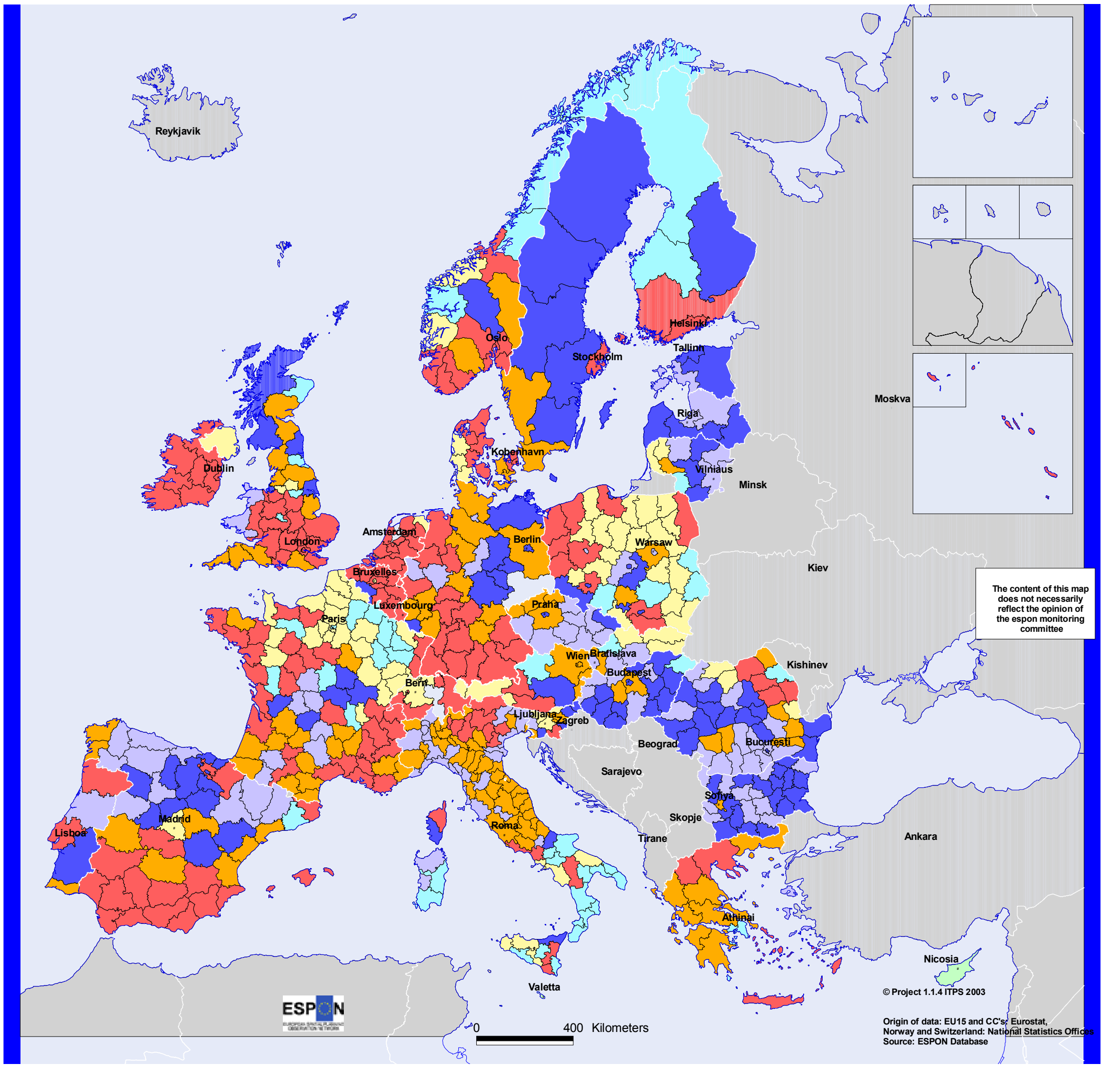
average annual growth (%)

- no data
- < -1.00
- -1 - -0.3
- -0.3 - 0
- 0 - 0.3
- 0.3 - 1
- > 1

Origin of data : EU 15 and CC's : Eurostat
Norway and Switzerland : National statistics office
Source : ESPON Database
Cartography : IGEAT- ULB

Map 1.2

Components of population increase, 1996-99



form of increase

- Total evolution>0; Migratory B>0; Natural B>0
- Total evolution>0; Migratory B>0; Natural B<0
- Total evolution>0; Migratory B<0; Natural B>0
- Total evolution<0; Migratory B<0; Natural B<0
- Total evolution<0; Migratory B>0; Natural B<0
- Total evolution<0; Migratory B<0; Natural B>0
- no data

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Offices
Own estimation for migratory balance

Europe is declining and more or less involved in a depopulation process. With respect to total population development during the end of 1990s, the majority of the regions – 60 percent – experienced a population increase between 1996 and 1999. Most of the growing regions (28 percent) can be placed in type 1 – the most favourable case - where both the natural population change and net-migration were positive. Type 2 involves 20 percent of the regions and 12 percent are placed in case 3.

Among the retarding regions, most regions are classified in type 4. This is the most unfavourable case and can be characterised as a depopulation case. 17 percent of the regions are classified in this category. 15 percent are in case 5 and the rest – 8 percent – in type 6.

More than half of the regions (52 percent) had a natural population decrease during the second half of the 1990s (see map 1.2). A fifth of the regions were expansive regions in the sense that they experienced a population increase as a consequence of net in-migration. This means that one third (32 percent) percent were regions where natural population decrease was also combined with a net out-migration that reinforced the population decline in these regions. These regions are in a problematic situation and can also be characterised as depopulation areas.

By using OECD:s definitions of urban and rural areas on NUTS3-regions we find from 1999/2000 data that the significantly rural areas are overrepresented in type 1 with both natural population increase and net in-migration – not in the sense that the majority of the regions is in this type, but compared to other regions. This contrasts to the development in predominantly rural regions that is overrepresented in type 6 with natural population decline in combination with net out-migration. It is, however, not easy to place the different OECD categories in special types as they consist of too many different types and a more detailed level is needed for further analyses and research.

Fertility, ageing and natural population development

According to this study of 1326 regions at NUTS3-level in 27 European countries (excluding Cyprus and Malta) as many as 531 regions experienced a total fall in population numbers from the middle to the end of the 1990s.

In this development, natural population development – the difference between the number of births and deaths – has been a strategic variable with regard to population development especially then at national land international levels. At regional and local levels the migratory movements are, however, the prime driver behind the population change. Despite this, natural population development is often in focus for the debate about population change and "population crisis" as it has an impact on the reproduction potential and future reproduction possibilities.

Death rates today are relatively stable, but the birth rates fluctuate in many parts of Europe and are today so low that the result will be a natural population decline. The strategic variable is thus fluctuations in birth rates and not in the death rates with respect to analyses of natural population variations. At regional levels the age structure has of course much influence on these variations and it is of utmost importance to differ between the crude birth rate and the total fertility rate (TFR) and consequently also between the crude death rates and the age-specific death rates. Population increase/decrease is thus not only dependent on the TFR but also on the age structure of women – a precondition for natural population growth is also dependent on the number of women in childbearing ages. Estimations done here show also that there is a positive correlation between TFR and total as well as natural population change, but this is not strong. The correlation between net-migration and total population change is much stronger. The correlation between natural population change and net-migration is, however, non-existent. It should be kept in mind that there are variations with regard to the different parts of EU29 concerning these estimations.

The connections between ageing and natural population development are also non-existent. Even here it is obvious that there are regional variations. In Southern Europe there is a high correlation between ageing and natural population change in a negative way. The same is valid for the new EU-members in Central Europe – Check Republic, Slovakia, Poland and Hungary – and for the Balkan Countries – Bulgaria, Romania and Slovenia - but not so strong. In Northern Europe there is a significant correlation between population decline and ageing.

The total fertility rate (TFR) in this sense is of central importance as it tells us how many children a woman will have in her life if the age-specific fertility rates prevail. This is a theoretical concept but it nevertheless implies the preconditions about regions' or nations' future development with regard to reproduction and its dependency on migratory movements. It also gives a hint about ageing and development ratios – low TFRs imply a high share of elderly people in the future if not compensated by in-migration. In-migration also has an impact on natural population development in the sense that it affects the age and gender structure.

Following these theoretical lines it is essential to include several indicators in the analyses in order to measure the number of births in a valid manner and to explain it in a theoretically satisfying way. It is necessary to use age-standardised indicators – e.g. TFR – for the level of birth. Other indicators like a CBR (Crude Birth Rate) are sensitive concerning the age structure of mothers. For the number of births it is essential if the potential mothers are relatively young or old. Therefore CBR is more affected by the age structure than by fertility. The theoretical construct of a total fertility rate expressing how many children a female will bear in her life is therefore a very useful indicator in analyses of natural population development.

TFR has declined in every part of Europe since the 1960s and is now below the reproduction rate (2.1) in every country (see map 1.3). Since the 1960s a drastic change in the position with regard to the TFR-levels has occurred. Countries with traditionally high fertility rates became low-level countries and vice versa. The Nordic countries with low levels in the 1960s were relatively high-level countries at the turn of the century and Southern Europe had taken a position at the bottom in the "fertility league". At around the turn of the century, negative natural population growth rates appeared in 12 EU29 countries and four countries were very close to zero natural population growth. The primary reason was the sharp drop in TFR and an age structure that was not favourable from a population growth point of view.

Countries with extremely low fertility rates are Spain, Italy, Bulgaria, Slovenia, Hungary, The Czech Republic, Estonia and Latvia. Within these countries wide "depopulation" areas exist according to our indicators, and in a few of them regional polarisation seems to be the case, with declining and growing areas existing side by side (for instance Spain and Italy). The countries of Southern Europe have been experiencing substantial demographic changes during the last two centuries and are becoming particularly vulnerable with regard to demographic prospects of certain regions. In Scandinavia, Swedish territorial units are deviant from the rest. At the territorial scale employed, most of the Swedish units will have to be characterized as "depopulation" areas, i.e. they are declining units within declining larger regions in a country with a fertility level well below replacement.

One explanation to the drop in TFR is, thus, the long-term increase of "singles" or one-person households and postponement of the first birth. The proportion of singles or one-person households is significantly higher in the urban areas than in the rural ones but the share of one-person households has increased during the last decades in most parts of Europe. The life-long marriage has dropped during the last decades as a consequence of the rise in divorces. On the other hand, there has been a sharp rise in non-marital cohabitation.

The rise of the female labour force participation and investment in higher education has resulted in higher family incomes and has two contradictory effects with regard to childbearing – an income effect and a price or substitution effect. The income effect should result in higher fertility as households with higher incomes have more money to spend on children than households with lower incomes. The price or substitution effect, however, implies that higher incomes also result in an increase in the relative price of children. This, in its turn, reduces the demand for children and increases the demand for other commodities.

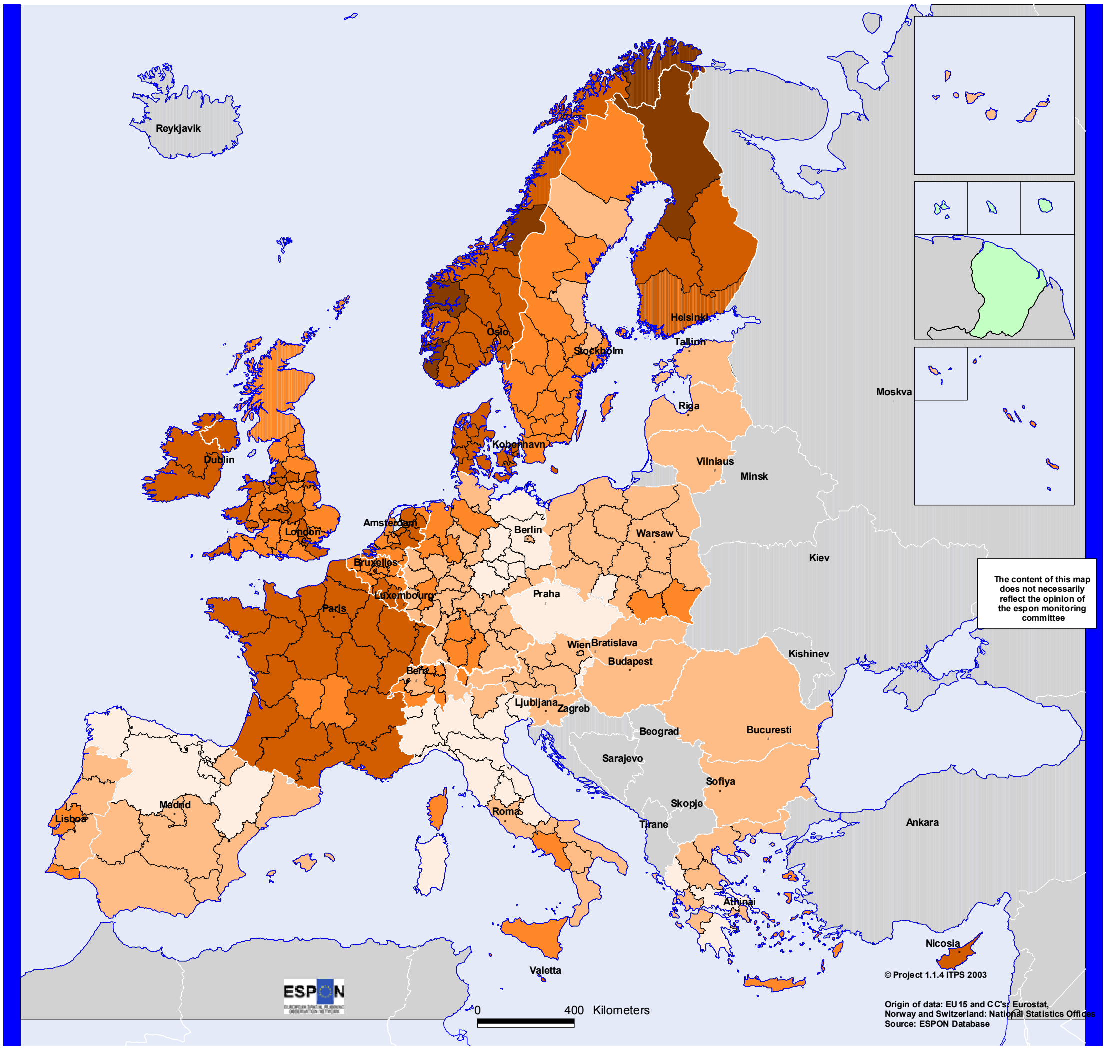
The looser family relations result also in a rise in the share of singles since many of these relations are not as long-lived as the traditional marital cohabitation. For this category the substitution effect – that the cost of children is higher than for other "commodities" - seems to be higher than for married or cohabited people. The obvious significant negative correlation between the share of singles and childbirth is in line with this reasoning and consequently not surprising.

The difference in the population structure is thus not only a function of the difference in fertility rates. It is rather the migratory movements that cause the regional differences in age structure. Migration intensities are highest in ages 20-30, which have differing impacts on in- or out-migration regions. This also means that the "population crisis" can take quite different shapes in various parts of a country or within the EU. In some regions, low fertility rates have traditionally dominated, while in other parts the problems have been connected with out-migration and lopsided age structures – out-migration of especially younger women. During the 1990s, declining TFR and out-migration have, however, reinforced each other in many European regions and communities resulting in an accentuated population decrease. The opposite however, is also valid – traditional in-migration areas have low TFRs as a consequence of a high share of singles and a high female labour force participation rate. This results in a situation where the reproduction potential is eroded and the population growth is dependent on a continuous in-migration. This is an obvious fact in many expansive in-migration areas in Europe where the future reproduction potential is weak. There is thus a connection between natural population development and migration – a fact that often is neglected or downgraded in the analyses of the "population crisis".

Summing up, natural population change is a result of the difference between the number of births and the number of deaths during a specified period. Changes in the number of births are a consequence of the development of the birth rates and of the size of the cohorts of childbearing age. Standardised for changes in age-specific fertility rates, large cohorts of childbearing age result in large new cohorts and vice versa. Consequently, the number of births fluctuates as a function of the size of the cohorts in cycles of around 25 years. From a regional perspective, age structure and the size of the cohorts are of

Map 1.3

Fertility rate in 1999



Number of children per women

- 0.75 - 1.17
- 1.17 - 1.45
- 1.45 - 1.69
- 1.69 - 2.02
- 2.02 - 2.42
- No Data

Sources : Eurostat and national sources for Switzerland and Norway + own estimate great importance for natural population development since the age structure varies in different regions. Depopulation and long term out-migration areas have e.g. much larger proportions of elderly compared to metropolitan areas or university towns, where the proportion of persons aged 20-30 years is much larger as a consequence of in-migration of people in these ages.

1.1.3 Trends in Migration

The European migratory flows have been completely altered since the 1960s. With regard to this changed pattern two breaks may be identified. First, the rural exodus which was still colouring much of the migratory balance map in the 1960s came to an end in the 1970s, even if this process was still continuing in Southern and Eastern Europe. Since that time, we observe in Western Europe, and later in Southern Europe, migratory flows from urban areas towards more or less distant rural areas; a process known as counter-urbanisation. The second main break occurred in the 1990s, when Europe as a whole became a continent of net immigration. On the one hand, east-west migration developed as a result of the fall of the Iron Curtain until the second half of the 1990s. On the other hand, migratory flows coming from the entire Third World have grown to a level never attained in the past.

General Trends in international migration

The temporal fluctuation of in- and outflows – parallel to economic cycles - is a significant phenomenon and allows us to divide the history of international migration in Europe since the Second World War into three periods:

The first period, between 1950 and 1975, is characterised by important intra-European migratory movements between the poor peripheral countries and the rich central countries where the growth had created an important need for labour. This is a typical migration pattern consistent with the traditional push-pull explanations where economic conditions and labour market performances are central ingredients. The main flows during this period were directed from the Mediterranean countries of Europe to North-Western Europe, but we can also notice the movements from Ireland to the United Kingdom and from Finland to Sweden. Within the same period, migrations between Eastern and Western Europe were very weak because of the closing of the frontiers and limited to some political refugees, mostly intellectuals. Progressively, in the 1960s and the first half of the 1970s, the extra-European flows exceeded the migrations from Southern to Northern Europe.

From 1975 to 1990, the extra-European flows into Europe dramatically decreased. It is important to remember that much immigration became illegal during this period, which could explain this decrease observed in official data, although not necessarily reflected in reality.

In the 1990s – start of the third period - we can observe a dramatic increase of immigration unrelated to any change in the legislation (in fact, legal conditions to enter the European Union have become more restrictive). In Europe, the decrease of the differences in standard of living and the crisis in the central countries explain the absence of clear imbalances in the intra-European migratory movements. But we have to notice that the quantitative balance of intra-European migratory flows does not mean that these flows are balanced in a qualitative way. The closing of the borders to immigration and the economic crisis have considerably reduced the extra-European flows to Europe. There still exist entries related to family reunion, the only immigrations still allowed, to countries of ancient immigration (North-Western countries) and also an onset of economic immigration to Southern Europe.

At the beginning of the 1990s, a first migratory shock appeared mainly from Eastern Europe. The sudden opening of the borders and the collapse of communism in the Eastern countries induced massive flows to Western Europe. But these flows rapidly decreased in the second half of the 1990s. Instead, temporary migrations supplanted to some degree definitive migrations and the flows from ex-USSR exceeded those coming from Central and Eastern Europe.

Turkey and Maghreb remain (or become again after the relative interruption of the 1980s) the major extra-European suppliers to Northwestern countries, and also to Southern Europe, which has an important need of low qualified workforce in some economic sectors (agriculture, tourism, industry). But behind this Southern and Eastern ring, flows of immigrants nowadays are originating mainly from Third World countries, as the growth in the number and origin of the asylum seekers clearly shows.

During the whole period, the geography of international migrations remained very stable: metropolitan areas remained the most favoured spaces by immigrants, while older industrial areas are nowadays clearly less attractive than they were before the economic crisis of the 1970s. At the intra-European scale, the geography of migrations became much more complex. Indeed, until the 1960s, the flows from peripheral to central Europe were concentrated to metropolitan and main industrial areas. But since the 1970s, flows have been more diverse: the metropolitan areas are still the main destinations of young qualified households but we also observe, for example, flows from Northern Europe to tourist areas in the South with good amenities and attractive climate.

Interregional migrations

Despite of all the changes the interregional migrations inside countries which have been observed since the 1960s, the main elements that explain the map of migration in the late 1990s are border effects and economic and social gaps that essentially play a role within national spaces. Such a reality can be expressed through some examples.

In Germany with regard to the East – West migrations and the North-South balance in the U.K. can be attributed to the huge economic gap between these regions. The older industrial regions of the North, including certain parts of Scotland, are still undergoing a structural crisis, whereas the service sector economies of the South, in particular that of the greater London region, is visibly more dynamic. This results in a relatively important North-South migration. The importance of the economic factor is confirmed by the weight of the young people in these movements (more than 90% of the North-South flow in England). The Italian case is quite similar, the gaps between the development in the North – one of the richest regions in the European Union – and the South, explain the persisting net migration in favour of the North. Development policies installed in favour of the Mezzogiorno have not yet reduced those gaps in development in any great sense.

The case of France can be closely compared. The crisis in the old industrial regions of the North, as in the Nord-Pas-de-Calais or the Lorraine, can explain a net migratory balance there, whereas the middle South has positive balances. But these migration flows appear to be less direct in the case where residents of the old industrial regions migrate towards the Paris region, whereas the inhabitants of the latter tend to migrate to the South or to the West. In France, the Southern regions (with of course sub-regional nuances) benefit at the same time from a good image in terms of quality of life and of a relative economic dynamism.

With regard to the macro-regional flows, the Scandinavian countries set out an original model which looks like the one generally known in the 1960s to most of the European countries. Indeed, migration remains dominated by the movements from peripheral regions but also from traditional industrial areas towards metropolitan zones. These flows have rather been reinforced in the 1990s; and they have become more massive in the second half of this decade.

In Eastern Europe the model is very simple. The metropolitan regions (in all cases mostly consisting of the capitals) are the attractive regions, whereas rural isolated regions (Eastern Poland for example) and industrial regions (such as Silesia) have negative migratory balances. But inside metropolitan areas, all centres experience a rapid suburbanisation process.

Counter-urbanisation, suburbanisation and sprawling

Since the 1970s a global process of counter-urbanisation has developed. For example in England, to a very large extent, each district type gained population from net migration from all the levels of the urban hierarchy above it and recorded net out-migration to all those below it. In Northern and Central Italy, while the internal migration balances of the provinces with high densities are negative, they are the most positive in the provinces with very low population densities.

In France, the observations are rather different. Indeed, there is a revival of rural areas, including some isolated ones, and we also observe negative migratory balances for urban areas. But it clearly appears that the balances are more positive in rural areas which have stronger connections with urban areas.

These results are contradictory only in appearance. On the one hand, these studies concern very different scales; much larger in Italy (provinces) than in France (commune). On the other hand, the dense urban networks of Germany, England or Northern Italy are not comparable with the loose urban network of France.

In sum, one can conclude the existence of a counter-urbanisation process, i.e. a general movement of de-concentration from the urban areas, especially from the biggest ones. This process fuels the revival of rural areas, especially those well located into the dense urban networks of North-Western Europe. In Southern Europe, the same process is clearly at play but is still counter-balanced by the out-migration of young people from the isolated rural areas (centre of Spain, interior Portugal).

Suburbanisation is only one, but probably the main aspect of counter-urbanisation, since it concerns more people and provokes big contrasts of migratory balances within short distances.

Counter-urbanisation and suburbanisation also entail large contrasts in migratory behaviours by ages. For example, the flow of young people to urban centres is more than compensated by the opposite flows of all other age classes, especially middle age active households with children.

Intra-urban migratory flows

The recent external immigration is often located in deprived urban districts of the inner city or in poor suburbs. But most of intra-urban migration occurs within very short distances, inside the core city. Most of these movements are balanced, but evidence of net in-migration to some central districts is to be noticed, especially from the middle classes, sometimes to the detriment of the poor population who resided there. Nevertheless, despite such gentrification processes, we do not observe a slowing down of suburbanisation trends.

The regions at NUTS2-level have been grouped together according to the similarity of the age structure of their migratory balances. The typology consists of six types and the profile of the migratory balances by age group has been calculated for each group, as shown in the graph. Two types represent areas attractive to young persons and repulsive for old persons; two other types represent areas repulsive to young persons and attractive for old persons. One type represents an area with net-migration close to zero for both young and old persons, and, finally, one type represents areas with a high rate of immigration. Young and active persons make up the majority of the immigrants to these areas.

The international and national flows of young people are mainly destined to big metropolitan areas; large national imbalances can be observed because they induce different age profiles of migratory balances; counter-urbanisation can be observed with the positive balance for adults of intermediary age and pensioners in some isolated areas. Moreover, the process of suburbanisation can hardly be observed at NUTS2-level, except for administrative regions that include only central towns (e.g. Berlin, Hamburg, Brussels, Vienna and Bucharest). In these cases, central towns always attract young people and their suburbs are classified in others types.

1.1.4 Depopulation – Dimensions and Causes

Depopulation is often associated with problem regions with long-term population decline and altered demographic structure. The immediate background is the recent fertility decline that took place in most European countries from the middle of the 1960s to the middle of the 1970s. Particular period-specific demographic events impact present and prospective demographic structures in different ways as the cohorts they affected most continuously reshape age pyramids. Such events are the relatively high numbers of births between the middle of the 1940s and the middle of the 1960s or the beginning of the 1970s and the entrance of continuous periods characterised by fertility rates below the reproduction level in an increasingly number of regions and countries since the end of the 1960s.

The risk of depopulation and ageing may be expected to be found particularly among the regions where long-term weakening of the natural growth potential is at work. However, certain regions may be able to permanently compensate – and possibly in the long run even remedy – the loss of natural growth potential by attracting migrants, potentially at the cost of other regions which are becoming increasingly sensitive to negative migration balances. The outcome may be more pronounced and self-perpetuating processes of regional-demographic polarisation. At sub-national levels the mechanisms of regional-demographic change – especially the role of migration – in many places have become strongly influenced by the emergence of a regional-demographic zero-sum or minus-sum game as national total populations gradually grew more slowly, stopped growing altogether, or even started to decline. It must also be kept in mind that the migratory movements have impact on the age and gender structure in the out- respectively in-migration areas that reinforce this polarisation process. Out-migration areas lose people in child-bearing ages while the opposite is valid in in-migration areas. Even if the fertility rates are the same in both categories, the result will be quite different with regard to natural population development in the two types of regions.

In this study, the development in 1326 regions at NUTS3-level in 27 European countries (excluding Cyprus and Malta) have been included and as many as 531 regions experienced a total fall in population numbers from the middle to the end of the 1990s. The median growth rate was 0.5 percent and one fourth of the regions had a total population decline of more than one percent. The growth rates varied from -13 to +31 percent among the 1326 regions. It is important to notice that the NUTS3-division represents very different levels of territorial detail in the different countries and a tremendous range of sizes (population and area) and other characteristics between, as well as within, the particular countries.

When we rank the regions within the ESPON-space according to their population growth rates we find that the German NUTS3-regions (especially the former East German regions) are remarkably well represented at the extremes. The most negative population change rates are found in the least densely populated regions in France, Spain and Portugal, the Northern and Southern parts of east Europe, and not least in the peripheral regions of Sweden and Finland.

The largest share of declining regions and affected populations are found in the ten countries of Latvia, Bulgaria, Hungary, Sweden, Romania, Czech Republic, Estonia, Finland, Lithuania and the Slovak Republic (in this order). In the Nordic countries far smaller shares of the population than of the regions and areas were affected due to the very low population density in the greater part of the area outside the few larger urban regions.

Among the ten percent of the most declining NUTS 3 regions in the latter half of the 1990s, the regions of 18 countries are represented. Of the 133 "most declining regions" as many as 64 regions are German, 18 regions are Bulgarian, 8 regions are part of the United Kingdom, 6 regions are Romanian and 5 regions are Portuguese. A large share of the regions of population decline may be characterised as relatively rural – in many cases sparsely populated and geographically remote, but even old industrial areas and relatively central towns seem to be affected.

Inherent in the dynamics of population decline and a possible signal of problematic depopulation, are the pure structural demographic effects of shrinking respective increasing shares of children and elderly persons in the population. Several indicators of structural demographic aspects are employed to point at the degree or level of "depopulation" in the regions. The regions with the highest shares of persons above 64 years of age are the Spanish and Portuguese regions with low population density, much of Northern and central Italy, and some parts of Greece, the United Kingdom and Sweden. The Italian regions with relatively high shares of elderly persons in the population, are generally more densely populated than the other regions, and include many of that country's most important cities. Only three regions within the former Eastern European countries have more aged populations than the average of the 29 European countries included in the study.

The Northern Italian regions, most of Greece and most of Sweden are among the regions with at least a half standard deviation higher representation of elderly persons in the potential labour force than the Europe 29 average. All the German regions also belong to this category. This may indicate a potential for migration from the new EU countries, where most regions have a lower share of the working-age cohorts close to retirement, than the European average. Neither France nor the Be-Ne-Lux countries, Spain, Ireland and Norway have an especially ageing labour force.

"Relative and structural depopulation"

In order to investigate the degree of "relative or structural depopulation" an estimate consisting of five indirect indicators has been constructed. These five indirect indicators are the share of children and elderly people in the population, post-active dependency ratio, the ratio of young people to elderly people, and the indicator of an ageing labour force. The average scores of the five indicators on "relative depopulation" display that Ireland is the only country with a national subdivision that is completely within the lowest degree of relative depopulation (no depopulation). No regions in Germany, the Czech Republic, Bulgaria and Spain are within this category. The regional picture indicates an apparently significant discrepancy with the geographical pattern of migratory balances of adults in the reproductive age groups in some parts of Europe. Examples of this are the very same Northern and Central Italian regions that for decades have experienced a migratory surplus, but are now in the category of "very high relative depopulation". Further, we can detect no clear north-south dimension in relative level of depopulation in the United Kingdom, and the regions of France with the most positive migratory balances are also among those with a high degree of relative depopulation according to this general indicator (map1 1.4).

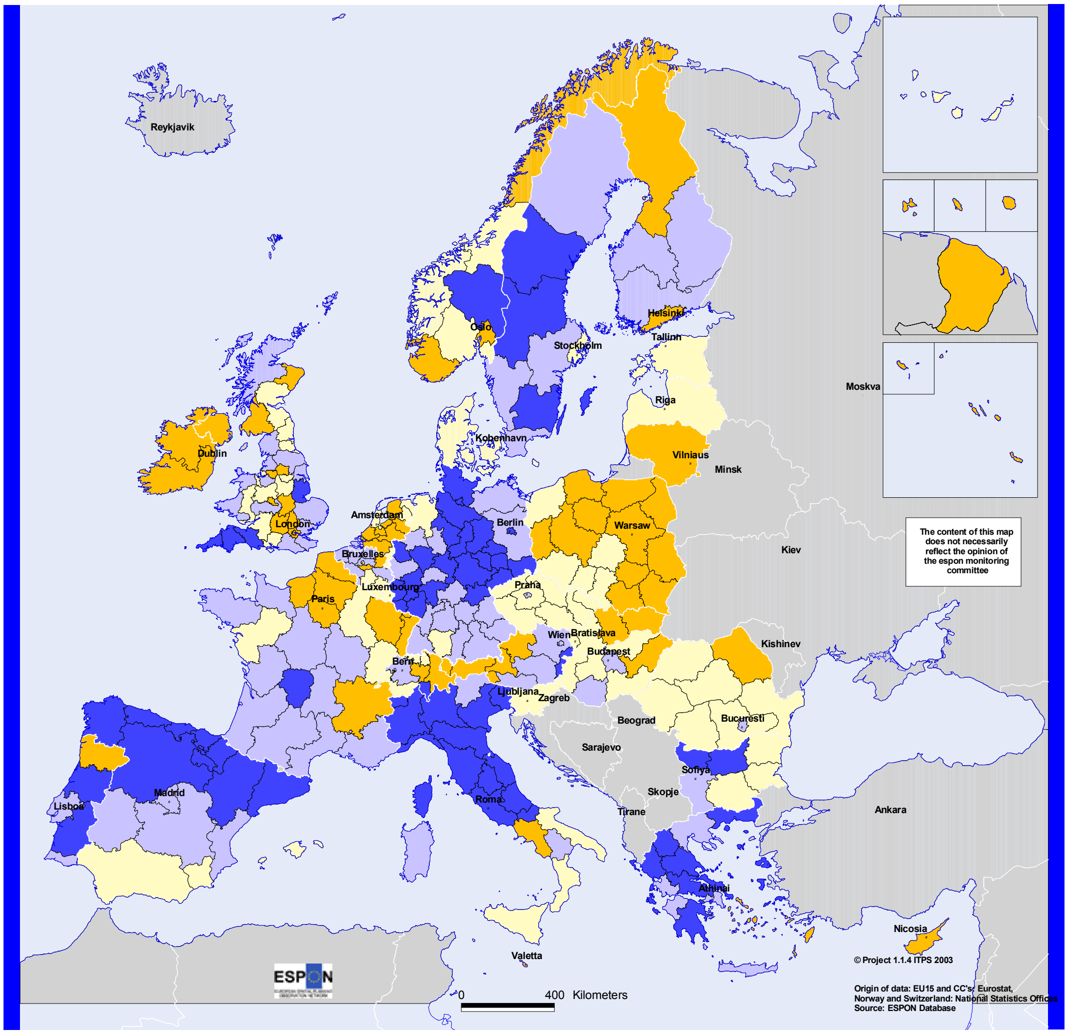
There is a rather strong positive association between "negative" demographic trends and the level of unemployment in the regions. The opposite seems to be the case with regard to relative "wealth" (GDP per capita), although these correlations are not equally strong. Correspondingly low correlations with the population density indicator (number of inhabitants per square kilometre) may be explained partly by the crude level of territorial detail and partly by the fact that large sparsely populated areas in Europe often are peripheral and remote regions. These regions were often late starters in the trend towards declining fertility and are still characterised by comparatively young populations and until recently somewhat higher levels of fertility than the national averages. The correlations may indicate potential socio-economic problems in some of the demographically declining and ageing regions, as well as a potential driving force towards migration from economically "lagging" to economically "leading" regions.

Migration trends seem to imply accelerating depopulation and ageing in sparsely populated rural and peripheral regions and in regions lagging in economic and labour market performance, and competitiveness policy will need to recognise the regional changes of the labour supply and the actual characteristics of the labour-force available in different types of regions. As the population will be increasingly older in certain areas the labour market will need to adjust. Even consumer needs and preferences are probably changing all over in the wake of demographic transformation and certain areas will be relatively more influenced by the upper segment of the age-pyramid.

Depopulation and ageing will not impact uniformly on regions. Given the diversity of the impact on different types of regions, the necessity to 'adapt to their demographic circumstances' will require different measures in different regions. This requires statistical analysis and research to be carried out at a more detailed territorial scale taking into account that demographic trends are only a single factor among a very large and complex set of factors influencing socio-economic development, and – after all – probably the slowest and most predictable factor, traditionally considered to be the outcome rather than the cause of socio-economic change.

Map 1.4.

Average score on indirect depopulation indicators in 2000



Average score on indirect depopulation indicators in 2000

- very low relative depopulation
- low relative depopulation
- high relative depopulation
- very high relative depopulation

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Office
Source : ESPON database

1.1.5 Replacement migration – a way out of the population crisis?

For many policy-makers immigration provides a simple and ready-made answer to the dual problem of lack of population and lack of labour force in many regions of Europe. Europe is, and will be in the future, one of the major destinations of world migration, and a continent subject to strong migratory pressure as a result of the sequential process of ageing and labour shortage.

By way of standard population projection techniques, we have calculated the number of persons in the NUTS2-regions up until the year 2050, as well as the age structure under different scenarios and assumptions. We have then identified the main trends in terms of ageing, labour shortage and replacement migration for the countries in EU29 and for each of the 276 NUTS2-regions. Identifying the main future trends in an integrated perspective should provide the basis for better policies in the fields of migration and regional development.

Models and scenarios

Nine different scenarios were developed. In the first five scenarios, we only consider demographic assumptions, despite knowing that some of those assumptions rest on implicit economic ones. The first one, designated by scenario or model "A", is exclusively demographic and does not include any migratory flows; as for the other four "B" scenarios, the first one has been designed in order to determine the effects upon the demographic structure of maintaining the recent migration trends, and the other three in order to make it possible to find out the amount of replacement migration (whether positive or negative) required to maintain the following variables at the level of the reference year (2000): a) the total population (model B1); b) the population inside the working age (model B2) and c) the population required in order to maintain the same PSR - Potential Support Ratio - i.e., the same ratio of people in working ages to old population (model B3). The other four are concerned with economic performance and allow us to determine the migration needed to the regional economy, assuming small differences in productivity level. Four different scenarios, related to a differential productivity development, are developed. Generally speaking, the results of these projections are not surprising. However, their magnitude and significance are, in some cases, quite startling.

The magnitude of the phenomenon of ageing in Europe is already very significant, but it will continue to increase substantially and in an irreversible fashion (*cf*. the extraordinary figures for the population and required migration under scenario B3, that in which the Potential Support Ratio – PSR – is kept constant). The development of the spatial pattern of the ageing processes shows that it will be intense in most parts of Europe. Only a handful of regions will be free from the pressures of strong population ageing processes.

Although with variable patterns, depending on the characteristics of each country, the most critical period in most of the scenarios, in terms of the ratio of "elderly to working aged people" will be between 2015 and 2030, just followed after by a more stabilised variation.

If we look at the regional and local reality and at the various possible future scenarios, some important questions arise, among which the following stand out:

- the actual importance of the ageing and depopulation trends in the various European regions
- the social and economic consequences of these trends and the way in which they affect the regional and local development processes
- the dimension of the migratory flows involved
- the issue of which formal and informal policy mechanisms will be more suitable in order to regulate these flows

Results and conclusions

The final results from the models point out some significant conclusions. If we maintain the present demographic trends and allow for no migration (Model A), Europe will in the near future experience a strong depopulation process. By the mid-21st century, the fifteen countries of the EU15 will have lost 80 million inhabitants, the ten countries of the enlargement about 20 million and all the 29 countries considered in this analysis will lose slightly over 111 million. Fifty years from the turn of the century, the population of Europe will be under its level of the 1960s.

Allowing both for the present demographic trends and for migrant flows akin to the recent past (Model B0), Europe will still experience a depopulation process – not as evident as in the "zero migration" model, but significant nonetheless. Indeed, under the present demographic and migratory conditions, the countries of the EU15 will lose some 36 million inhabitants, the ten new EU-members about 18 million and the countries of the EU29 taken altogether, some 65 million.

The other models show impressive figures of migration flows. To maintain the current population at constant levels, EU15 will need some 700,000 migrants each year in the beginning of the period, double that (more or less 1.5 million per year) in the middle of the period, and around 2.2 million by the year 2050. If we compare these results with those from the model in which the annual migration rate is held constant, we find that the average number of migrants per year will be maintained at the level of 720-750 thousand/year in the EU15, 750-785 thousand/year in the EU25 and 735-780 thousand/year in the EU29. According to the model in which the labour force is kept constant, we will need much more immigration in the first 25 years and less immigration at the end of the period. This is a consequence of the effect of the newly arrived immigrants upon the demographic characteristics of the population in general. However, it is the model which shows the level of immigration required in order to maintain the PSR at its current levels that seems most startling if we try to imagine the difficulty of receiving and somehow succeeding in integrating almost ten million people every year.

The models with economic assumptions show the relation between productivity levels and migrations flows. It is thus obvious that productivity increases of a size that replacement migration will not be necessary are unlikely. As an example it can be mentioned that around the year 2025, an overall annual improvement in productivity by 1 percent, which is a modest estimation, will imply, for the EU15, some 95,000 less immigrants every year – far from what the scenarios have presented as necessary. That increases in productivity can compensate for fewer workers is neither new in economic theory nor in an economic-historic perspective - it is well-known fact learned from the history about how nations grew rich. To solve the problems of ageing and labour shortage, both increases in productivity and immigration are needed.

1.1.6 A short summing-up of the results

- Total fertility rate (TFR) have dropped dramatically during the last decades and are now below the reproduction level in every country in EU29 and in almost every NUTS2- and NUTS-3region.
- Especially low TFRs are to be finding in Southern and Eastern Europe.
- Natural population decline is a fact in a lot of regions and migratory movements are the prime driver behind population changes.
- The age structure is important for the natural population development and which means that this is not only dependent on the TFR development.
- There are signs of a polycentric population development within Pentagon, but monocentric in areas outside.

- Young persons migrate to large urban areas and persons in the upper middle age move to areas with pleasant surroundings and some economic revival.
- Depopulation is a function a high out-migration that is reinforced by low fertility rates and a skewed age structure.
- Depopulation areas are often located in peripheral parts of the EU29.
- Expansive regions are dependent on a continuous inflow of people in the future – otherwise depopulation will be a fact.
- Immigration from other parts of the world can, however, not provide a solution to the European population problem.
- The future need of extra-European immigrants will be relatively higher in the new member states than in the old.

1.1.7 Some policy implications and policy recommendations

In the work of summarising the policy implications and policy recommendations, the point of departure has been three different levels (micro, meso and macro) and three major aims of ESDP/ESPON (sustainable development, competitiveness, and territorial and social cohesion). Policentricity is here both a way to reach these aims and an objective of its own. Polycentricity stimulates and supports a sustainable and balanced spatial development, increases the competitiveness on different levels in different ways and reinforces the territorial cohesion.

With regard to natural population development it is difficult to give any general recommendations. TFR is the crucial and central variable, but the effects of changed TFRs are a cohort phenomenon and of long-term character. This reduces the potentials for direct means in order to affect development, at least in short term.

Different parts of Europe have also differing attitudes to family policy and welfare state interventions in the private space and with regard to female labour force participation. A common social and family policy and a more active labour market policy that stimulates higher fertility is recommended.

This means that both the EU regional development policy as well as national policies must prioritise an economic and social policy (family policy) in order to stimulate a rise in TFR. This will be of utmost importance even in order to stimulate the preconditions for endogenous growth that probably will stimulate competitiveness at all levels. From a cohesion point of view this is of great importance if the risk for future concentration and social exclusion shall be avoided. As much of the social policy – including family policy - still is of national character, it is of utmost importance to coordinate these means within the EU in order to increase TFR and stimulate natural population development.

Regarding migration, to achieve a sustainable development at a micro-perspective it is important to limit urban sprawl because of its environmental cost. At a macro-perspective it is important to limit east-west migrations: out-migration of qualified workforce can impose negative consequences on regional development. Regarding the issue on competitiveness, the qualified and skilled population and workforce should be spread evenly over the EU29 area, and not be kept inside metropolitan areas. To achieve the political aim of competitiveness it is essential for the economic development that as many regions as possible are competitive, not only in a meso and macro perspective, but also in a global perspective.

To close the gap in living standard and income levels is of utmost importance in creating a polycentric development and then a more balanced development that stimulates the territorial cohesion both on meso- and macro level. Temporary rules and regulations are perhaps in some cases necessary in order to hamper a large drain from east to west in short term – the fear of mass migration are probably overvalued - but this is not a solution in long term. Instead a policy that supports symmetrical migratory movements should be of great importance and prioritised on the political and social agenda. This will also stimulate polycentricity and territorial cohesion.

With respect to depopulation and sustainable development in a micro perspective a multifunctional perspective on primary sector policies combined with infrastructural and service related policies may seem appropriate to maintain a critical mass of population in these types of communities. In a meso perspective, a sustainable use of resources and the avoidance of excessive environmental/ecological pressure in certain central/expanding regions may depend on the success of policies to reverse negative population trends/depopulation in especially the larger sparsely populated areas of Europe. This will probably have to involve policies to establish a functional system of sufficiently large and accessible urban settlements (towns/cities) throughout these regions - capable of forming larger integrated regions and attracting migrants/maintaining strategic population groups. Local and regional service provision should target these population segments according to reproduction and the labour force to attract migrants and hamper out-migration in a micro perspective.

In a macro perspective the effects of EU agricultural and rural policies should emphasise the multifunctional perspective on these sectors in an integrated way – especially with regard to environmental concerns and the preservation of the cultural heritage related to depopulation areas of the often wide, remote and sparsely populated parts of Europe.

Concerning replacement migration, policies shall be focused on selection of immigrants with the skills and competence needed within the countries of the EU29 area. An immigration policy based on a simple head counting will neither promote productivity nor competitiveness.

In order to promote social and territorial cohesion, immigration policies must promote immigration to peripheral regions. Policies, in a micro perspective, to promote social and territorial cohesion shall try to attract the persons and competences they need. Policies aim at spreading the population evenly in the EU29 area must be prioritised. Promoting social and territorial cohesion in a meso perspective can be done through policies aiming at making peripheral, and depopulating, areas more attractive.

Persons who have been unemployed on a long term basis can be given job opportunities in peripheral areas through labour market schemes. This will increase the number of persons in the labour force and decrease the social welfare spending. It may also promote regional specialisation and competitiveness. In a meso and macro perspective, "Green Cards" could be issued to a specific geographical area. If an immigrant is unwilling to settle down in unattractive areas, no "Green Card" will be permitted.

The political goal of sustainable development will not be achieved if immigrants are free to settle down wherever they want in the EU29 area. The depopulation process in the periphery will continue without abruption. A free immigration, with no settlement restrictions, will counteract the goal to attain a sustainable development. To realise a sustainable development, in a broad sense, policies must aim at making the periphery more attractive.

1.2 Networking

Most frequent contacts and cooperation has been undertaken with ESPON 1.1.3 "Particular effects of enlargement and beyond for the polycentric spatial tissue". In this project ITPS is participating as ECP. In January 2004, ESPON 1.1.3 and 1.1.4 had a joint meeting in Budapest where both projects had seminars and project meetings. A joint meeting has also been organised with ESPON 1.1.1 and ESPON 1.1.3 in the autumn of 2003. Otherwise most contacts have been taken via e-mails.

Inputs from 1.1.1, 1.1.2 and 3.1 have been taken from their previous interim final reports (1.1.1 and 1.1.2). Deliveries of data have been done to 1.1.2 (urban-rural relations) and 1.3.1 (natural hazards).

1.3 Data Gaps and Further Research Issues

1.3.1 Missing data

The proposed indicators for this study were based on the official statement on data coverage and availability in the *Eurostat Regional Statistics Reference Guide (2003)*, and a presumption of only a limited effort of possible supplements from other sources. In reality, the description of New Cronos contents concealed several shortcomings with regard to period and general national/regional coverage. Considerable supplementary activities have been necessary to fill the holes in the data covering most subjects/indicators listed.

Some examples can be given on the consequences of the missing data. Data on international migration exists only at NUTS 2 level, but without any information on the place of origin and the place of destination of the migrants. Without this information it is impossible to distinguish an intra-EU29 migrant from an extra-EU29 migrant, and if the migratory movements are caused by labour migration between the countries of EU29 area or by refugees and return migration by refugees. Without information on the place of origin and the place of destination it will be impossible to analyse the international migration flows and to analyse of the processes of convergence/divergence within EU29.

We find it especially troublesome that the REGIO-database, as well as most of the national statistics offices in the new member countries, only publish an age-group of 70+ years: it is impossible to calculate the share of the total population over the age of 80 due to this. At the same time, research has pointed out the growth in the share of persons over the age of 80 as one of the major challenges in the future for the welfare states. Data for a related indicator, life expectancy, only exist at a national level (NUTS 0), which has limited the analysis on ageing.

When it comes to the territorial scale we have faced methodological problems. We are convinced that large migration flows take place below the NUTS2-level, but, unfortunately, it is impossible for us to analyse them due to the fact that migration data at NUTS 3 level has not been found. Analyses on depopulation is fully dependent on what scale the analyses are undertaken. At NUTS 3 level there may be no signs of depopulation, but analyses at NUTS 5 level can reveal the opposite.

1.3.2 Further Research

We have identified some areas where further research should be undertaken.

1. The data available for domestic/national migration, where the regions of origin and destination are known, is on the NUTS2 level. We are convinced that most migratory flows actually exist within the NUTS2-level. To be able to analyse these migratory flows data on the NUTS3-level is necessary.
2. Regarding the international migration two urgent research efforts are necessary: (a) the region of origin and the region of destination must be identified for the international migrants, and (b) in the case of extra-European immigration or emigration, the country of origin or destination must be identified. These two

research efforts are needed to distinguish an intra-EU29 labour migrant from the refugee immigrants and return migration of refugees. When it is possible to distinguish the different types of migrants, it is also possible to analyse e.g. the integration of the common labour market and the intra-EU29 migrations caused by the common labour market.

3. So far, most academic research regarding the implications of ageing, labour shortage, depopulation and the, eventual, need for replacement migration, is undertaken at a macro (country) level. However, we have reason to believe that the local and regional implications of this process can be somewhat different; the characteristics of the regions within the EU29 countries are heterogeneous, which means that the tools to handle the problems of ageing, labour shortage and depopulation may be completely different for different regions, and so is the need for replacement migration. More knowledge is needed regarding the local and regional implications, and the interaction between the problems of ageing, labour shortage and depopulation.
4. The final proposed area for further research deals with methodology. During the work the scale dimension has turned out to be a central issue: NUTS2 is a far too wide scale to analyse problems regarding migration and depopulation, and for depopulation even NUTS3 is a too wide scale. Furthermore, the NUTS3 regions are not compatible. The result of these two addressed problems may be, but does not have to be, that the conclusions are misleading; the analyses will be just as god as the data, and if the data is shaky…?

PART TWO

2 Framework of analysis

2.1 Project Design

The main objective in this ESPON project is the description of the variety of demographic situations in Europe differentiated by regions. The study draws the complex demographic landscape of Europe with areas of stagnation and depopulation on the one hand and population growth on the other hand. But the project will not only describe these landscapes, it will also try to explain the different demographic situations by external economical, political and geographical factors.

The pure and general demographic changes have consequences on regional development in various ways. Regions characterised by depopulation are often associated with stagnation and retardation, while regions that experience a positive population development are regarded as expansive and dynamic. These differing processes have effects on investment and location patterns, as well as on renewal and expansion of the local or regional economy. The labour force – and especially the highly educated part – has increasingly been a location factor in the post-industrial society with respect to mobile capital and the `new´ economy. Regional labour markets diverge and new 'mental maps' are created. This could be a hampering factor with regard to localisation of new firms and in-migration in depopulation and ageing areas, but also a reinforcing factor for in-migration areas that are considered dynamic and expansive with young inhabitants and many possibilities. In this way, demographic development with population redistribution as one result accentuates the polarisation process between various regions and then hampers a development towards polycentricism and territorial cohesion.

The fact that population development affects economic development is well confirmed by many studies and theories (See e.g. Hansen 1939; Myrdal 1940, Kuznets 1958, Easterlin 1968 1980). As mentioned above, large cohorts have stronger effects on the development than smaller ones and this phenomenon has a tendency to follow the cohorts over the life cycle. Large cohorts give rise to spin-off effects on the economy from birth to death – from childcare to elderly care and other things in between, e.g. the building and construction cycles. Large cohorts in the ages of 20-30 act also as a reinforcing factor with regard to mobility and migration and then also as fuel and lubricant in the economic machinery. People in the upper middle ages and active pensioners are consumers with high purchasing power and have in this sense positive effects on both the regional and national economic development. This approach also has similarities with the 'long wave' theories that put demography in focus with regard to long-term economic development. Population growth is in general related to expansion and economic growth, and population decrease with stagnation and retardation. The problems of population growth has often been discussed as a Third World problem in line with Malthus' reasoning, while problems with population decline instead have been seen as problems for the well-developed world. The problem with population decline is also often discussed with the fear of an ageing population and an eroding reproduction potential. The problem with an ageing population is not so much related to their incomes or purchasing power, which instead can have positive effects in line with the above reasoning, but rather with medical and health care and higher dependency rates. These negative aspects have also increasingly been an issue on the European development agenda.

The developments in different regions regarding economic and labour market performance, education possibilities and values have impacts on geographic mobility and birth rates – crude birth rates (CBR) as well as total fertility rates (TFR). The impact on migratory movements is most pronounced in younger ages. Moreover, many of the internal migrants today seem to move for other reasons than labour market ones. These reasons are primarily higher education and changed 'mental maps' among younger people. The consequence is that many regions are drained of younger people. On the other hand, some other regions – metro areas and university towns – gain with regard to these ages where the migration propensities are highest. This also has impacts on the gender distribution, since younger women have higher migration intensities than men, especially in traditional out-migration and depopulation areas. The shortage of women will moreover have impacts on the marital status in these regions, as a higher share of the women includes those married or living in cohabiting relation. From a demographic point of view, the effects of these inter-regional processes are thus that the gender, marital and age structure are changed in both the out- and in-migration areas. The reasoning above is also a good illustration to the necessity of integrating economic, social and cultural factors in analyses of demographic trends and changes.

Traditionally, rural and sparsely populated areas have had higher birth rates than metropolitan areas, university towns and regional centres. Many of the first type of regions and municipalities have also gone through a structural crisis, causing high unemployment, a shortage of jobs and low female labour force participation rates. It is not uncommonly suggested that these factors have positive effects on fertility and the number of births. During the past decades (see chapter 3.3), the TFR gap between different types of regions was, however, diminished.[1] These migratory factors have also impact on the natural population increase. Even if TFR still is somewhat higher in out-migration areas compared to in-migration ones, the number of women of childbearing age is so small that it is difficult to maintain the lead of births over deaths. The effects of ageing and lop-sided age structure in these areas have also been reinforced by the decline of TFR during the past decades. These factors have also a negative effect on the image of these regions as out-migration and ageing areas create an image of unattractiveness for young people, which reinforces out-migration, depopulation and then the ageing process. The age structure is thus a central ingredient in analyses of both migratory movements and natural population development.

Factors that have contributed to a decrease in TFR are changed values and new family patterns. Women consciously avoid more and more childbearing and children-dependency in order to improve their career possibilities, enable them to invest in higher education and follow a more independent life-style even if this differs greatly among regions and nations. This new family pattern seems to be more frequent in metro areas and university towns than in rural and sparsely populated areas, where the rural or industrial family patterns are still more predominant. In pre-industrial society, childlessness was more a consequence of infertility or a low degree of marriages. Women had very few career possibilities and the homemaker-wife ideology was at its peak at that time. The fact that the new family pattern is more observable in metro and university areas as compared to old industrial or rural ones thus has implications for the demographic development in differing regions.

Even if TFR is below the reproduction rate, there remain regions, towns and municipalities that experience a natural population increase – especially in the metropolitan and big city areas. The reason is not a high TFR – this rather is very low in many of these areas - but rather the fact that the proportion of women of childbearing age is over-represented compared to the other regions as a consequence of in-migration of young people. The beneficial age structure in these areas is, as mentioned above, hampered by the fact that relatively many of the women of childbearing age are living as 'singles'. Despite this, as mentioned above, there has been a natural population increase in many of these expanding and fast growing regions.

[1] This is at least very obvious in Sweden. For an analysis of the Swedish case, see Johansson (2000).

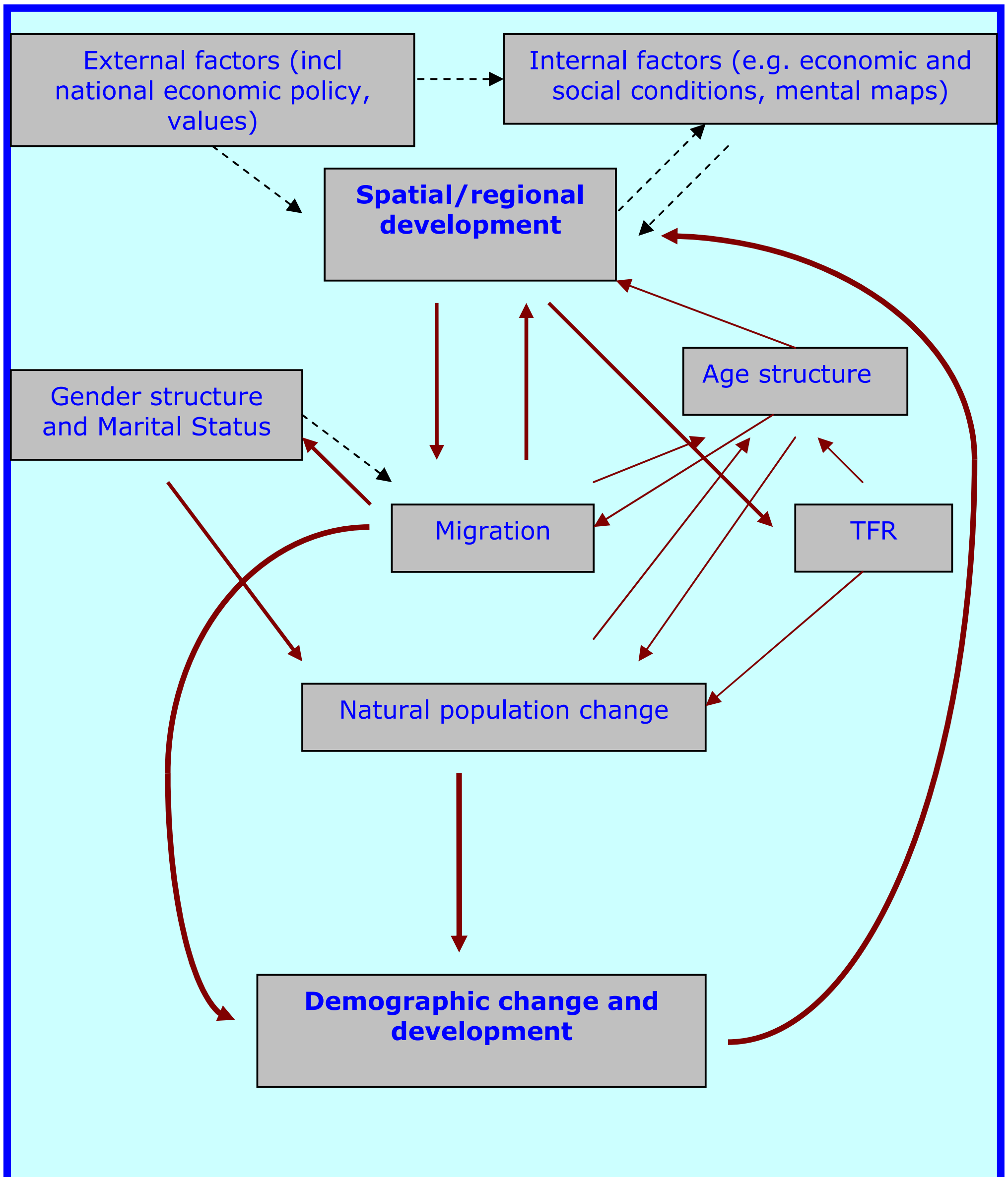


Figure 2.1 Application of the MGP-graph with regard to demographic change and spatial development

The connections discussed above are illustrated in a schematic way in Figure 2.1 where the impact of migration on age structure and gender distribution is explicitly mentioned, as well as the consequences for natural population development. Figures 2.1 and 2.2 are schematic applications of the MGP-graph with regard to demographic development and where economic and social factors also are included as explanatory factors as well as dependent factors. It should be noticed that the processes in Figure 2.1 illustrate both vicious and virtuous circles with regard to regional development and natural population change.

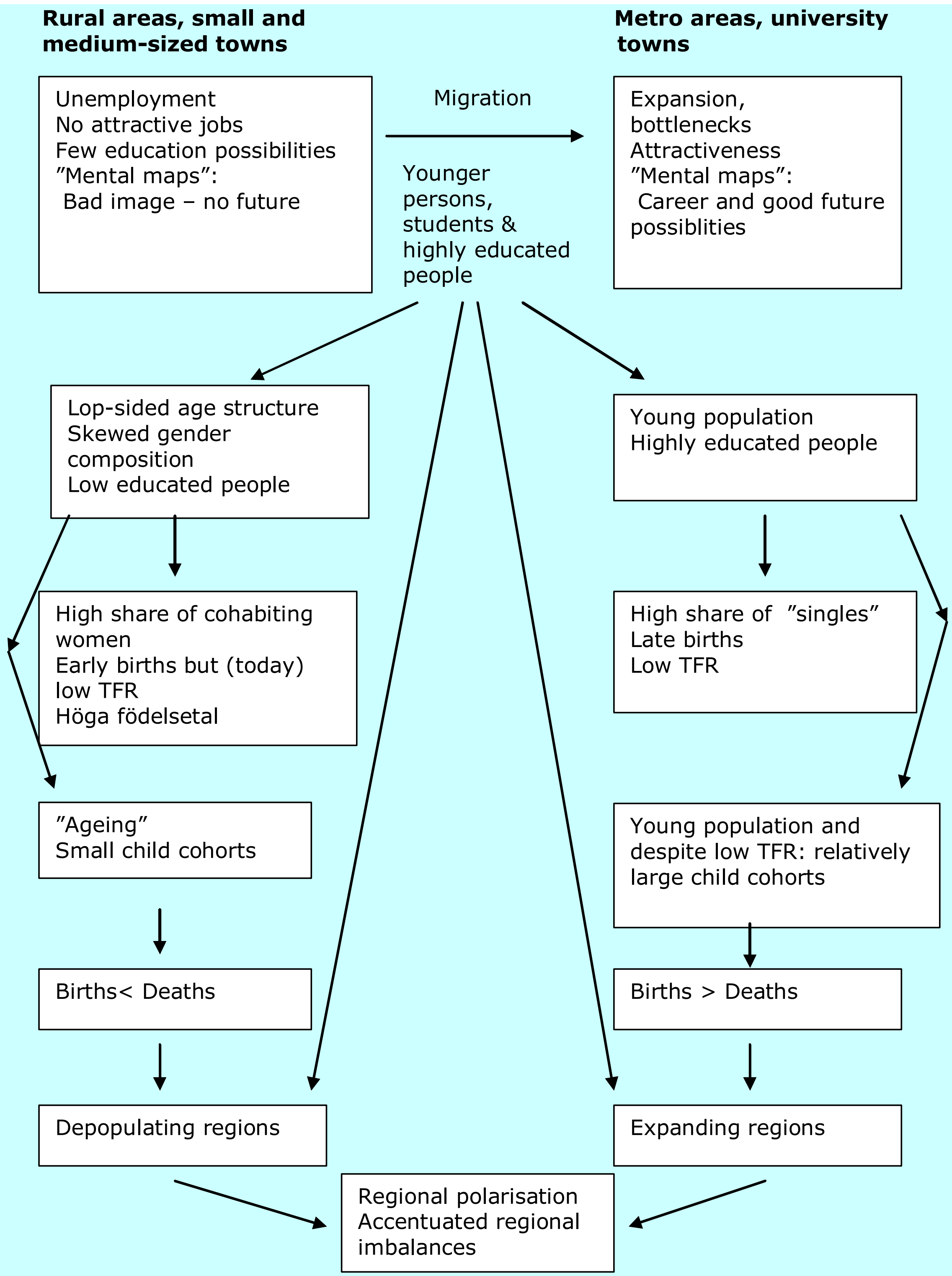


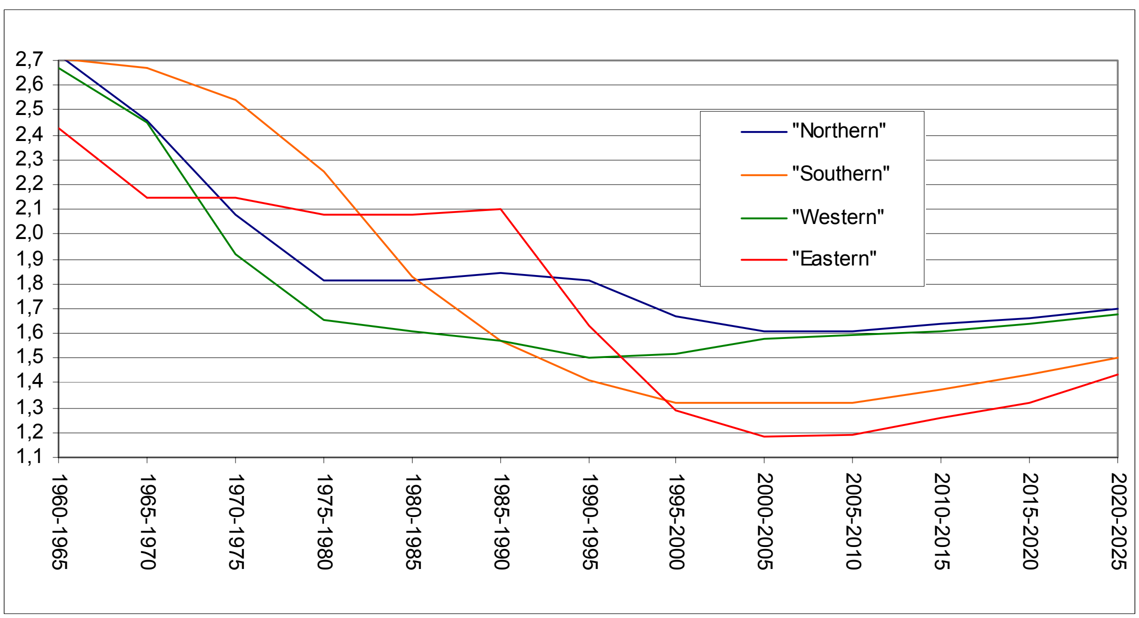
Figure 2.2 A schematic view of the regional problems with regard to economic development, values, and population changes – an application of the MPG-graph development towards monocentrism and imbalances.

2.1.1 Background

The forces and trends related to European demographic development are partly common and partly specific to different parts of Europe. Moreover, similar forces may lead to different impacts depending on timing and socio-demographic context. The immediate general background of the renewed interest in phenomena like depopulation and demographic ageing is the recent or "modern" fertility decline which in most European (and several other) countries took place from the middle of the 1960s to the middle of the 1970s (with some earlier as well as some later starters among the countries). After a major fall in fertility rates, fertility tended to remain stable or to decline more slowly. There are no European examples of enduring upward shifts although some fluctuations have taken place (cf. figure 2.3).

Some rather recent demographic period-specific events impact demographic structures in our time and in the near future in more immediately visible ways as the age cohorts they affected most continuously reshape age pyramids. Such events are the relatively high numbers of births between the middle of the 1940s and the middle of the 1960s, in some countries right up to the beginning of the 1970s – known as the *baby-boom* – and the entering of longer periods of below replacement level fertility apparently in more and more countries in the years from the end of the 1960s, none of which events were foreseen at the time of their commencement.

Figure 2.3 Total fertility rates (TFR) for groups of European countries 1960-2025 (UN regional definition). Five years average. Historical numbers and medium variant projections.



Source: World Population Prospects, the 2002 Revision. UNs Population Division, Population Database.

The numerically large "baby-boom" generation as a share of the most economically active population segment of the respective countries, will gradually drop from around the year 2010 and be close to zero around 2040. On the other hand this generation will constitute an increasing share of the population above 65/66 years of age, and in most countries reach more than 90 percent of this population segment around 2040. The much-discussed phenomenon of "ageing" in this specific historical period will to an increasing extent be about the conditions and behaviours of the members of the "baby-boom" generation. This situation will, however, change rapidly in the following two decades.

It appears that these are far from uniform demographic trends when we shift focus to populations of sub-national territorial entities within national populations. Studies in several countries indicate considerable territorial variation in fertility levels and timing of fertility trends among different types of local communities and regions – not seldom according to dimensions associated with rural-urban, centre-periphery etc. At sub-national levels the mechanisms of regional-demographic change – especially the role of migration – in many places have become strongly influenced by the emergence of a regional-demographic zero-sum or minus-sum game as national total populations gradually grew more slowly, stopped growing altogether, or even started to decline.

The potential for depopulation and ageing may be expected to be found particularly among the regions where long-term weakening of the natural growth potential is at work, indicated in a direct but insufficient way by a negative rate of natural population change. However, certain regions may be able to permanently compensate – and possibly in the long run even remedy – the loss of natural growth potential by attracting migrants, potentially at the cost of other regions which are becoming increasingly sensitive to negative migration balances.

2.1.2 Briefly on the historical context

The recent trends and events mentioned above may be linked to long-term demographic development, dating back at least a couple of centuries. This period includes what is known as "the demographic transition"; a major and lasting shift from high to low mortality and fertility that was most pronounced in the nations of Europe, North America, Japan, Australia and New Zealand. Increments in human longevity culminated in an unparalleled rise in life expectancy during the first sixty years of the twentieth century. Fertility declined substantially in the countries of transition; on the order of 50 percent between 1870 and 1940. The former century as a whole by and large saw a continuation of this tendency, although significant fluctuations occurred with the world economic crises in the 1930s and the World War II, as indicated above. The development since the middle of the 1960s in many countries took fertility levels back to the long-term downward trend.

From around 1870 to 1935 population growth in the western countries in general were gradually reduced due to falling marital rates, reduced marital fertility and considerable emigration. Most remarkable was the fall in fertility rates within marriage, indicating that a change was taking place in the preference of and ability to choose the family size. The exceptions – with a twenty years lag – were Spain, Portugal and Italy. As is well known the fertility decline eventually stopped and the subsequent rise in fertility displayed an even more remarkably parallel course of events among all the western countries than did the preceding decline, which had its exceptions and deviants. In this phase several factors contributed, like increasing marital rates and decreasing marital age, decreasing number of childless women and women with only one child. The number of large families declined and the number of families with two or three children increased. The intervals between births became shorter. The total fertility rate grew to around 3,0 in several countries. Then the next period of fertility decline set off – in Europe from around 1965, in North America five years earlier. The general decline lasted till the end of the 1970s and after that phase the development has been more differentiated among the western countries, although fertility has generally been kept at a low level.

Population ageing is said to have been the most pronounced demographic change in the 20th century. It is not a new or emerging tendency, or a tendency currently entering or characterized by a particularly intensive phase in an historical perspective. The population of the European and other western countries has become gradually "older" for a very long time as an inherent aspect of a characteristic phase of the 'demographic transition'. The periods of transformation varied in length from country to country, usually taking from around one to around two centuries[2]. The present general debate on the implications of demographic ageing is thus probably more related to other aspects of social change than demography.

The primary *related* processes to demographic ageing – usually assigned a causal status – are the decline in fertility and mortality. Especially in the early stages of the demographic transition fertility decline is asserted to have been the main determinant of the timing and extent of population ageing, although a fall in mortality usually marked the commencement of the transition as such. At the later stages of the transition mortality declines at all ages, but gradually more at older ages, thus increasingly enhancing its influence on the development of the relative size of the older age groups in the population.

In some European countries even the waves of overseas emigration in the latter two centuries – and especially the levelling out of these waves in the beginning of the 20th century – influenced demographic structure with an ageing "bias", particularly in the first half of the former century. *All the three main determinant factor mentioned above, are unfortunately highly unpredictable, which makes future demographic development much less foreseeable than we like to think – even at rather aggregate territorial levels like the nations.*

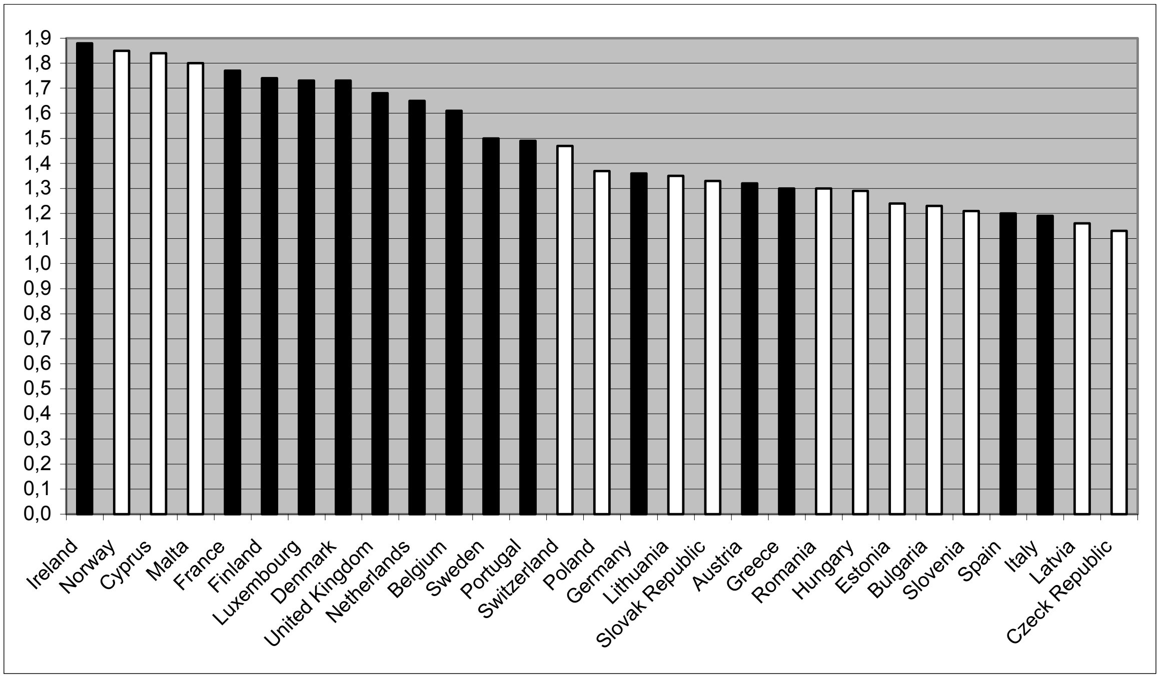
2.1.3 Aspects of the demographic situation and prospects

Even if many common national demographic trends among the European countries are well documented, we should remember that the extent to which the various countries experienced these trends is not always the same, and that the outcomes may differ in important ways. During the period from the late 1960s to the early 1980s fertility fell well below replacement level (ca. 2,1) in most European countries. However, the courses of decline differed and the fertility levels varied substantially among the countries in the decades following the steepest decline, pointing towards much differentiated demographic prospects in the years to come (cf. figure 2.4).

Eurostat compiled regional population scenarios (projections) at NUTS 2 level in 1997, covering the period 1995-2025. According to the so-called base-line scenario, described as a continuation of current trends, the EU-15 population as a whole should continue to grow at a very low rate, and start declining around 2020. While around thirty NUTS 2 regions faced a declining population in the latter half of the 1990s, mostly concentrated to the former eastern Germany and southern Europe, the number of regions with a negative rate of population change was expected to have tripled by the year 2025. Regions experiencing population decline will by then be widely spread across the EU territory, comprising around half of the EU population. The scenario clearly illustrates the implications of uneven regional-demographic processes and the growing sensitivity to migration balances.

[2] Japan marked an exception from this pattern, with most of the demographic transition covered in a few decades. Today Japan has the highest life-expectancy of all countries and has had very little time to adjust to this new frame condition

Figure 2.4 Total fertility rate (TFR) 1999 in the countries of "Europe 29". Black = EU-members before the last enlargement.



Source: Recent Demographic Developments in Europe 2000. Council of Europe.

In the entire Europe – the Europe stretching from Lisbon to Vladivostok – the recent rapid drop in the rate of population growth is remarkable. In the period 1950-1975 the average annual rate of growth was 8,3 per 1000 population. In the most recent quarter-century the rate had fallen to 2,9 per 1000. Around the turn of the century negative natural population growth rates appeared in 17 European countries (the number of deaths exceeded the number of births). These countries were Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Moldova, Romania, Russia, Slovenia, Sweden and Ukraine. In addition the following countries had close to zero natural growth: Austria, Poland, Slovakia and Spain (Demeny 2003).

Among the 29 ESPON-countries as many as 17 countries were within the span of Total Fertility Rates (TFR) by the end of the former century, that – according to the short-hand description by the French demographer Jean-Claude Chesnais – may have the following implications: "Heavy and structural contradiction, which digs a deep hole at the basis of the age pyramid and consequently compromises the future of the society at large. Limited chance to get a return to equilibrium; evaporation of population number" (Chesnais 2000).

According to the present study of 1326 regions at NUTS 3 level in 27 European countries[3] as many as 531 regions experienced a total fall in population numbers from the middle to the end of the 1990s. The median growth rate was 0,5 percent and one fourth of the regions had a total population decline of more than one percent. The growth rates varied from -13 to +31 percent among the 1326 regions (regional coefficient of variation[4] = 520). It is important to notice that the NUTS 3 division represents very different levels of territorial detail in the different countries and a tremendous range of sizes (population and area) and other characteristics between as well as within the particular countries.

[3] Cyprus and Malta are not included here due to insufficient data at the time of analysis
[4] RCV = Standard deviation as a percentage of the mean growth rate

In the Nordic countries there is a pattern where the less central regions have the most negative development and the most central ones the strongest growth (cf. box 1). In Germany the most marked regional differentiation is between the western part, with generally positive development, and the former GDR, where the development is mostly negative, except for the suburban belt around the major cities. In the western part of Germany, in the Be-Ne-Lux-countries, Ireland, southern England, southern and western France and coastal Portugal most of the regions are within the two top quartiles regarding population growth in the late 1990s.

In Italy the regions with the most "negative" tendencies regarding ageing and other indirect depopulation indicators (cf. below) are to a great extent the ones with the most positive population development in the latter half of the 1990s. Much of Poland shows a very positive population change, not least the regions around Warsaw and Gdansk and south of Krakow. *The most negative population change rates are found in the least densely populated regions in France, Spain and Portugal, the northern and southern parts of east Europe, and not least in peripheral regions of Sweden and Finland.*

Box 1.1: The Nordic periphery and depopulation

In a Nordic context, the geographical periphery is constituted by distant, sparsely populated areas. With the exception of Denmark, the countries have a population density of up to 22 inhabitants per square kilometre. Regional policy has aimed at supporting the periphery, and the Nordic periphery was acknowledged by the EU in the membership discussions with Finland, Sweden and Norway in preparation for the 1995 EU enlargement. A separate structure fund was implemented for geographical areas with low population density and peripheral location.

In a recent study (Foss & Juvkam 2004) a delimitation of the periphery and a typology of peripheral areas have been developed, based on the municipal division. The criteria have taken into account the population density of NUTS 3 regions, and chosen to delimit the most peripheral part of the countries. The periphery is defined by some characteristics of the municipalities, and adjusted by the location of the municipalities relative to the major urban centres of each country. The criteria are:

- NUTS 3 regions with less than 10 inhabitants per square kilometre are included
- Municipalities with less than 2,5 inhabitants per square kilometre are included
- Municipalities located in archipelagos are included
- Municipalities located close to a city of national importance (>100 000inhabitants in the urban settlement) are excluded

The typology distinguished between i) centres, ii) hinterland, iii) independent municipalities and iv) independent centres, within the periphery. According to this delimitation and subdivision the Nordic periphery comprises almost 2,5 million inhabitants corresponding to just above ten percent of the total Nordic population in 2003. Denmark has no periphery in a Nordic perspective by these criteria, while the entire territories of the Faroe Islands, Greenland and Åland are classified as periphery. Almost one third of the Icelandic population live in the periphery and from almost one tenth to 16 percent of the populations of Finland, Sweden and Norway. However, the peripheral regions cover a considerable part of each country's – and the total Nordic – territory.

In the countries with peripheral as well as non-peripheral areas, the peripheral populations declined from 1993 to 2003. In Iceland and Sweden the peripheral population in 2003 were between four and five percent below the population ten years earlier. In Norway the reduction was just above one percent. However, the population development varied considerably among the different types of periphery within each country. The general pattern was a marked redistribution from the peripheral to the more central areas within the peripheries – the centres in average growing within the range of ca. 5-10 percent, while the hinterlands and independent municipalities in some countries declined by 6-10 percent. In the Swedish periphery even the centres in average experienced stagnation or a slight decline, while the population of the rest of the Swedish periphery declined by 7-10 percent. The population redistribution within the periphery was most pronounced in Iceland.

When we rank the regions within the ESPON-Space according to their population growth rates we find that the German NUTS 3 regions (especially the former eastern German regions) are remarkably well represented at the extremes. Many of the fastest growing and fastest declining regions are German. Within all the three neighbouring "declining" NUTS 2 regions of Chemnitz, Dresden and Leipzig we find NUTS 3 regions that rank among the ten percent fastest *growing* as well as among the ten percent fastest *declining* regions among the 1326 regions. Dresden is ranked in the class 71-80, Chemnitz in the class 201-230 and Leipzig in the class 211-240 in the overall ranking of the 280 NUTS 2 regions according to the Regional Classification of Europe (RCE), carried out by ESPON project 3.1 (cf. Final Report Part C-Annex).

The largest *share* of declining regions and affected populations are found in the ten countries Latvia, Bulgaria, Hungary, Sweden, Romania, Czech Republic, Estonia, Finland, Lithuania and the Slovak Republic (in this order). In the Nordic countries far smaller shares of the populations than of the regions and areas were affected due to the very low population density in the greater part of the area outside the few larger urban regions. In many other countries the situation seemed to be reverse. In several countries the major part of the national area and populations were affected by population decline – measured at the territorial scale of the NUTS 3 regions.

Among the ten percent *most declining* NUTS 3 regions in the latter half of the 1990s the regions of 18 countries are represented. Of the 133 "most declining regions" as many as 64 regions are *German*, 18 regions are *Bulgarian*, 8 regions are part of *United Kingdom*, 6 regions are *Romanian* and 5 regions are *Portuguese*. The rest of the 18 countries are represented with 1-4 regions (Austria, Switzerland, Estonia, Spain, Finland, Greece, Hungary, Italy, Latvia, Netherlands, Norway, Poland and Sweden). *A large share of the regions of population decline may be characterised as relatively rural – in many cases sparsely populated and geographically remote, but even old industrial areas and relatively central towns seem to be affected.*

2.2 The Theoretical Background

2.2.1 Theories on Fertility, Mortality and the Demographic Transition

Births, deaths and migration are analysed in demography by differing theories and models. This implies that a unified and general theory of these demographic processes does not exist. Although the theoretical approaches to births, deaths and migration are quite different in terms of explanatory power and nomothetic value, all of them are important to select indicators and to argue for certain analyses. In the pre-industrial society with small migratory movements the population increase was predominantly a function of the natural population increase. Today, with higher mobility, low fertility rates, and in many cases natural population decreases, the population development with regard to size and structure have increasingly been dependent on external migratory movements.

From a natural population development point of view the "demographic transition" has been a central ingredient in analysing the population development from the agricultural society through the industrial society and up to the post-industrial society of today. The relations between the crude birth and death rates are here of utmost importance in explaining the various stages – especially with regard to the European development – in the development and transformation of the population in differing countries and regions. In the earlier stages both birth and death rates were high and the population increase/decrease was greatly dependent on variations in the death rates. The development of birth is the central explanandum in the model of fertility decline and this is thus essential in the model of the demographic transition (See e.g. Leibenstein 1954, 1957, 1974; Becker 1960, 1965, 1993; Schultz 1974; Woods 1982; Schmid 1984; Birg 1996). It argues that with the change of the economic structure from an agrarian to an industrial and post-industrial society, the value of having many children has fundamentally changed. In the pre-industrial period children were useful and welcome additions to the work force. The "population explosion" occurred when the death rates started to decrease but the birth rates still were at a high level. In the next phase even the birth rates began to drop and the population increase slowed down and thus both birth and death rates were stabilised at a lower level. This is a well-known story but the interesting part for this study is the variations in the birth rates that are the dominant factor with regard to the natural population development. In the industrial and post-industrial societies children are cost factors in a twofold way: there are direct costs for schooling and maintaining children up to the time when they leave the common household and there are indirect costs when the mother (in rare cases the father) has to give up their employment to stay at home and to take care of the child. With the ongoing rationalisation process in the modern society, the changing function and societal value of children has become apparent and reduction of births the consequence. Modern contraceptives are instruments not the cause for the reduction of the birth that is of more economic and social character (Van de Kaa 1987).

Death rates are today thus relatively stable but the birth rates fluctuate in many parts of Europe and are so low that the result will be a natural population decline. The strategic variable in the post-industrial society is thus fluctuations in birth rates and not in the death rates in analyses of natural population variations. At regional levels the age structure has of course much influence on these variations and it is of utmost importance to differ between the crude birth rate and the total fertility rate (TFR) and consequently also between the crude death rates and the age-specific death rates. Population increase/decrease is thus not only dependent on the TFR but also on the age structure of women – a precondition for natural population growth is also dependent on the number of women in childbearing ages.

The ongoing rationalisation process does not lead to the reduction of fertility only, but also to postpone the first birth. The average age of women having their first baby has increased trendily during the past decades. Women consciously avoid childbearing and 'children-dependency' in young ages in order to improve career possibilities, investment in higher education and a more independent life-style. The rise of the female labour force participation and investment in higher education has resulted in higher family incomes and also has two contradictory effects with regard to childbearing – an income effect and a price or substitution effect. According to the Noble Prize winner Gary Becker, the income effect should result in higher fertility as households with higher incomes have more money to spend on children than households with lower incomes. The price or substitution effect, however, implies that higher incomes also result in an increase in the relative price of children. This, in its turn, reduces the demand for children and increases the demand for other commodities (Becker 1960, 1965, 1993).[5]

Becker discusses also - in line with the income and substitution effects - the difference between the quality and quantity elasticity. Higher incomes result in an increased demand for children but also in an increased demand for children of 'better quality'. This means also higher expenditures to raising children and this has a negative effect on the fertility development and hampers the quantity effect (Overbeck 1974). This can explain the variations between different types of households and in various types of societies. According to this reasoning, the impact of the quality and quantity elasticity is different in regions characterised by different economic structure – the quantity elasticity is higher in agricultural regions than in urban and more post-industrial ones with higher income levels. This is also in line with the theory of demographic transition that is sketched above.

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[5] A central ingredient in Becker´s theory is that demand for children is treated in the same way as the demand for consumer durables.

In reality the substitution effect seems to have had a greater impact on childbirth than the income effect, at least during the past decades. Investment in higher education also has a decreasing effect of its own: having invested in a higher education, you are more oriented to capitalise your investment in human capital, even if the return is not as high, *ex post*, as it was supposed to be, *ex ante*. Education and working life should consequently also be included in the utility functions that differ between various categories on the labour market. This also means that the same income increase/decrease or the same income levels have different effects on TFR depending on the satisfaction with the working life.

Another trend factor is the increase of "singles" or one-person households.[6] The proportion of 'singles' or one-person households is significantly higher in the post-industrial than in the industrial and agrarian one – the share of one-person households has increased during the past decades in most parts of Europe. The life-long marriage has dropped during the past decades as a consequence of the rise in divorces. On the other hand, there has been a sharp rise in non-marital cohabitation. This looser relation results also in a rise in the share of 'singles' since many of these relations are not as long-lived as the traditional marital cohabitation. For this category the substitution effect seems to be higher than for married or cohabited people. The obvious significant negative correlation between the share of singles and childbirth is according to this reasoning not surprising.[7]

Following these theoretical thoughts it is essential to include several indicators in the analyses in order to measure the number of births in a valid manner and to explain it in a theoretically satisfying way. It is necessary to use age-standardised indicators – e.g. TFR – for the level of birth. Other indicators like a CBR (Crude Birth Rate) are sensitive concerning the age structure of mothers. For the number of birth it is essential if the potential mothers are relatively young or old. Therefore CBR could be more affected by the age structure than by fertility. The theoretical construct of a total fertility rate expressing how many children a female will bear in her life is therefore a very useful indicator in analyses of natural population development.

The development of death is conceptualised in the model of epidemiological transition, which can be also seen as a part of the model of demographic transition (see Phillips 1994, Rockett 1999. It explains the very characteristic decline of several diseases (like infectious diseases), the increase of other diseases (like cancer, heart diseases) and the overall decline of mortality. Better nutrition and the improvement of the public infrastructure (water, waste and sewage) were the main factors in the fight against epidemics. The progress in medicine leads to a significant expansion of the life expectancy. In particular, the decline of the infant mortality and death in the first year of a child's life, were essential to explain the increasing life expectancy.

Similar to birth, it is important to define a death rate that eliminates the effect of the age structure. If not, age structure will be measured rather than different mortality in the regions. A crude death rate is therefore not the proper measurement, but the given life expectancy at birth or at a specific age can be used for regional disparities in mortality. To integrate mortality into an explanatory model following the theoretical ideas it is necessary

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[6] The rise in the share of 'singles' is, however, not only an effect of changed values, urbanisation and higher female labour force participation. Instead, much of the rise in the share of 'singles' is a function of the ageing process with its implication on the household structure: there has been a long-term rise especially in the share of widows. This has, however, no consequences for migration and fertility.

[7] This is at least very obvious in Sweden but ought to be valid even in other parts of Europe. In the Swedish case, there are differences between various regions. In metropolitan areas and university regions, the share of "singles" is higher than in industrial or rural areas especially in childbearing ages. The 'single' gap has, however, also diminished during the recent decades as a consequence of the societal transformation in all regions. The fact that rural families always have been larger than urban ones is partly a consequence of a higher share of "singles" in urban areas, especially the metropolitan ones (see e.g. Johansson, 1999).

to use relevant indicators like nutrition, lifestyle habits, medical infrastructure and the healthcare system.

The third demographic event with regard to regional and national natural population development is migration as it has consequences for age and gender structure in various regions. Theories of migration will not be presented in this section as it is a central ingredient in other parts of the report. It is, however, necessary to be aware of its implications on the natural population development as migration has impact both on TFR and the age and gender structure.

The differences in the population structure are thus not only a function of the differences in fertility rates. It is rather the migratory movements that cause the regional differences in age structure. Migration intensities are highest in ages 20-30, which have differing impacts on in- or out-migration regions. This also means that the "population crisis" can take quite different shapes in various parts of a country or within the EU. In some regions, low fertility rates have traditionally dominated, while in other parts the problems have been connected with out-migration and lopsided age structures – out-migration of especially younger women. During the 1990s, declining TFR and out-migration have, however, reinforced each other in many European regions and communities resulting in an accentuated population decrease. The opposite however, is also valid – traditional in-migration areas have low TFRs as a consequence of a high share of singles and a high female labour force participation rate. This results in a situation where the reproduction potential is eroded and the population growth is dependent on a continuous in-migration. This is an obvious fact in many expansive in-migration areas in Europe where the future reproduction potential is weak. There is thus a connection between natural population development and migration – a fact that often is neglected or downgraded in the analyses of the 'population crisis'.

2.2.2 Theories on Migration

The *neoclassical macro-economic* theory on migration focuses on labour markets and wage differentials in the country of origin and in destination countries, and the process of economic development can explain the development of labour migration (e.g. Lewis 1954, Ranis & Fei 1961, Harris & Todaro 1970, Todaro 1976). Wage differentials induce persons, especially workers, to move from low wage countries to high wage countries, resulting in a decreased wage differential between the two countries (Massey et al. 1993).

In the *neoclassical micro-economic* theory individuals are assumed to undertake cost-benefit calculations, not only about deciding whether to move or not, but also where to move. The decision on when and where to move include variables such as wage differentials, unemployment rates, travel costs, efforts in adapting to a new country, psychological aspects of leaving friends and family etc. (Sjaastad 1962, Todaro 1969, 1976, 1989, Burda 1993). Individual characteristics (education, experience, training, language skills etc) produce different outcomes regarding the decisions to migrate and where to migrate (Schoorl 1995).

According to the *new economics of migration*, families and household, rather than individuals induce migration (Lauby & Stark 1988). The aim with migrating is not only to maximise the income, but also to minimise risks (Stark 1984, 1991, Katz & Stark 1986, Taylor 1986). In the absence of collective and social insurances, as well as inefficient markets, a diversification of household resources through migration will create a diversification of risks. The family members abroad will bring in remittances to the family or household. Economic development will not necessarily reduce the pressure on international migration, since a second distinguished characteristic of migration, according to the new economics of migration theory, is relative deprivation. The need of risk diversification and minimisation is dependent on the perceived functioning of markets and the perceived relative deprivation (Stark & Levhari 1982, Stark & Taylor 1989, 1991, Stark & Yitzhaki 1988, Stark, Taylor & Yitzhaki 1986).

The *dual labour market theory* stresses the intrinsic demand of labour in modern industrial societies that creates a constant need for workers at the bottom of the social hierarchy (e.g. Piore 1979). The labour market is divided in two sectors, one with formal and secure high-skilled jobs, and a second with informal low-status, insecure and low-skilled jobs as well as wages, work conditions etc. (Doeringer & Piore 1971). When natives leave the bottom of social hierarchy, and thereby leave the low paid, low status jobs without social mobility perspectives, somebody must fill the vacancies. Only immigrants are willing to accept these jobs since they want to improve their social status in their country of origin rather than at destination (Piore 1979). The need of labour at the bottom of the social hierarchy induces migration, international as well as national and regional (Massey et al. 1993).

So far only voluntary migration, in the form of an economically motivated movement of workers, has been discussed. The politically induced *movement of refugees* is usually seen as an involuntarily migration. In most cases the classification of economic and political migrants is an oversimplification, since political and economic causes of migration often stem from the same factors. Besides this, the freedom of choice has many gradations, which makes it difficult to fix how voluntary a voluntary movement is and how involuntary an involuntary move is (e.g. Kunz 1981, Zolberg et al. 1989). Underlying predisposing factors (e.g. extreme inequalities between countries and political instability) and structural constraints (e.g. border controls) influence reactive migration, as well as immediate precipitating events (e.g. war, ethnical conflicts, and violations of human rights) and enabling circumstances (e.g. individual resources) will influence the volume and destination of migration (Richmond 1993).

The factors initiating migration can be quite different from those that perpetuate migration over time and space. Schoorl points out that the direction of migration is a relatively neglected research field (Schoorl 1995). Former colonial bonds, family reunion, migrant networks and former migration usually trigger continued migration (e.g. Castles & Miller 1993).

In the *network theory*, migrant networks are usually defined as sets of interpersonal ties that connect migrants, former migrants and non-migrants in areas of origin and destination through kinship, friendship and shared community origin (Boyd 1989, Massey et al. 1993). Network connections can be regarded as a form of social capital that people can use to gain access to foreign employment. When the number of migrants reaches a critical threshold, the expansion of the network will reduce the costs and risks of migration, which causes the likelihood of migration to rise. This will cause additional migration, which further expands the networks and so on (Hugo 1981, Taylor 1986, Massey & García España 1987, Massey 1990, Gurak & Caces 1992).

The *institutional theory* points out that the flows of immigrants become more institutionalised and independent of the factors that originally induced it when private institutions, entrepreneurs and voluntary organisations develop to satisfy the demand of moving to certain countries. The process of institutionalisation of migration is difficult for governments to regulate since a part of the immigration is illegal (Massey et al. 1993).

Once started, the migration process alters circumstances both at origin and destination, which often increases the probability of future migration. This phenomenon is termed *cumulative causation* (Massey 1990b). There are six major socio-economic factors potentially affected by migration in a cumulative fashion: the distribution of income, the distribution of land, the organisation of agriculture, culture, the regional distribution of human capital, and the social meaning of work (Stark, Taylor & Yitzhaki 1986, Taylor 1992).

The network theory, institutional theory and the theory of cumulative causation suggest that migration flows need stability and a structure over space and time to enable an identification of international migration systems. According to the *migration systems theory*, these systems are characterised by a relatively intense exchange of goods, capital and people between some countries and less intense exchanges between others. The migration systems are characterised by a core receiving region (one country or a group of countries) and a set of countries linked to it by unusually large flows of immigrants (Fawcett 1989, Zlotnik 1992). Multi-polar systems are possible and when economic and political conditions change, systems will evolve. Countries will drop out or join a migration system as a response to social, economic or political change (Massey et al. 1993).

2.2.3 Theoretical Considerations on Migration

Related to the discussion of replacement migration, and its social and economic consequences, is the use of traditional and new theories on migration movements relevant. The neoclassical macro-economics and micro-economics approaches, as the new economics of migrations or the dual labour market theory will be fundamental to this discussion.

2.2.3.1 Theories on the Economic Benefits of Migration

There is no general consensus regarding the economic benefits of migration. Different theories, based on different assumptions, reach different conclusions on the impact of international migration on economic growth, unemployment, labour force participation, wages, taxes, and transfers.

According to *neoclassical macroeconomics* immigration will promote economic growth (Simon 1999, Friedberg & Hunt 1995. See also Borjas 1995). Immigrants will constitute substitutive labour. Given than the number of jobs is constant, the wages will be lowered and the native workforce will have difficulties competing with cheep immigrant labour (Fassmann & Münz 1995). If the number of jobs is constant, adding more workers on the labour market will lead to a competition of the jobs. The equilibrium on the market will be changed, resulting in lower wages (Fassmann & Münz 1995. See also Zimmermann 1995 and OECD 2002). Low-income earners are the ones who will be hit most severely (Johnson 1980). The capital owners in the country of destination will gain from immigration (Layard et al. 1994) as well as the well educated (Johnson 1980). If the immigrant is young, well educated, has no dependents and get a job immediately at arrival, the country of destination will gain of immigration: the tax contributions of this immigrant will exceed the transfers from the public (Layard et al. 1994). This kind of immigration ought to be encouraged. If the transfers to immigrants exceed their tax contributions, filters are needed in the immigration policy to only accept the most profitable immigrants are allowed to immigrate (Borjas 1995).

According to neoclassical macroeconomics a completely different scenario of the economic benefits of immigration is also possible: immigration can slow down a structural change in the economy. Economically stagnating sectors can survive by employing cheaper immigrants, preserving and maintaining the existing economic structure (Maillat 1974). An access to immigrant labour may also lead to labour intensive investment, keeping productivity down (Wadensjö 1981, Elliott 1991).

According to the *dual labour market theory* we are accustomed to thinking of industrialisation and economic growth as a process that in some basic way involves increasingly sophisticated technologies and progressively more highly educated and well-trained labour force. At the same time unskilled and cheap labour is needed to do hard work under bad working conditions and low salaries, a kind of work the native labour does not want to do. According to this theory, immigrant labour constitutes a complementary work force. If labour at the lower segment of the labour market is missing, economic growth will slow down. Substituting labour with capital is one solution, but since it is not possible to substitute labour with capital in labour intensive sectors hiring immigrants is another solution. Immigrant labour can keep up the economic growth on a short-term basis; on a long-term basis changes in society is needed. Since the immigrants work in the low-paid sectors their tax contributions will be lower than the tax contributions of the natives. A physically hard and monotonous job will affect the health, resulting in a need for public transfers. Since the immigrants usually end up in hard and monotonous jobs, their need for public transfers will be bigger than for the natives (Piore 1979. See also Schoorl 1995).

According to the *new economics of migration* a continued immigration will lead to a lower economic growth, depending on that the amount of low productive work increases and that the immigrants send home remittances to the family (Stark & Yitzhaki 1982). Immigrants will take jobs in sectors with many immigrants, which usually mean sectors in which the natives do not want to work (Stark 1991). If the salary in the country of destination is much higher than in the country of origin, *low-quality migrants* are the ones who are most willing to migrate (Stark & Katz 1989). Since these immigrants usually are low educated and low skilled workers they will "experience higher unemployment rate and have fewer hours of work per year" (Stark 1991, p. 393). The employers have asymmetric information of the productivity of the immigrant workers, and, together with the fact that immigrants in general do low qualified jobs, this is the reason why the immigrants receive lower salaries until the employers have improved the knowledge about their workers. As a result of having a low salary, or working in the informal sector, the tax contribution of the immigrants will be lower than the natives'. If the immigrants work in the informal sector they are not entitled to any public transfers. If they work in the formal sector they have low salaries, and they will receive less in public transfers than the natives (Stark 1991).

2.2.3.2 Empirical Evidence

The gains of immigration are difficult to calculate, and results depend very much on the used method (see Kelly & Schmidt 1994). and in the spatial context. In general, immigration confers small net gains, in terms of per capita output, to the host country. However, the distribution of the benefits is not even and depends, to a large extent, on the qualifications structure of the immigrants and the native workforce. So far the net impact at national levels on government expenditures and revenues seems to have been negligible for most countries (see Rauhut & Blomberg 2003).

Only a limited number of studies have been made on the income transfers from immigrants to natives for Western countries or on the impact on economic growth by immigration. During the period 1950-1980 the income transfers from immigrants to natives in *Sweden* reached approximately 1 per cent of the GDP annually (Ekberg 1999). They peaked around 1970, when the transfers barely reached 2 per cent of the GDP (Ekberg 2002)[8]. The income transfers were even 1980-1985, i.e. the immigrants paid as much in tax as they received in transfers (Gustafsson 1990. See also Gustafsson et al. 1990). During the 1990's the income transfers have changed direction: the immigrants are now net receivers and the natives are net payers. The transfer of incomes to the immigrants was about 0,9 per cent of the Swedish GDP in 1991, and in 1994 the transfers to the immigrants reached 2 per cent of the GDP. The income transfers from natives to immigrants have remained at that level throughout the 1990's (Ekberg 1999. See also Gustafsson & Österberg 2001).

A simulation study on the long-term gains on economic growth by immigration to Sweden concluded that the plausible economic gains were insignificant (Ekberg 1977). An estimation

[8] In Ekberg (1999) the income transfers from the immigrants to the natives are estimated to about 1 per cent of the GDP.

on the economic surplus of immigration to Sweden shows that it has been negligible (Ekberg 1998).

Two studies on the income transfers have been made for *Denmark*, and they show that the income transfers from natives to immigrants was close to 1 per cent of the GDP in the 1990's (Christensen 1998, Økonomiministeriet 1997). In one study on *Norway* for 1993 showed that the refugees received income transfers close to 0,9 per cent of the GDP (Larsen & Bruce 1996). In another Norwegian study concluded that the annual income transfers from natives to immigrants were approximately 1 per cent of the GDP in the mid 1990's (Larsen 1996).

In *Canada* a positive net income transfer from the immigrants to the natives has been found (Akbari 1989), which is also the case for *Australia* (Kakwani 1986) and *Switzerland* (Straubhaar & Weber 1994). One study on *Germany* shows net income transfers from immigrants to natives (Miegel 1984), but another shows the opposite result (Ulrich 1994). The changed direction of the income transfers can be explained by the changed employment patterns for the immigrants since the 1960's, as well as the changed age structure among the immigrants (Ibid.).

Some studies for the *USA* show a positive correlation between immigration and economic growth. The most well-known study is made by Julian Simon, and he argues that immigration has a significant positive impact on economic growth (Simon 1999). Other studies on how immigration affects the American economy shows that the economic impact of immigration depends on the human capital of the immigrants, their geographic and social mobility. Estimations show that a 1 per cent increase of the immigration to the USA leads to a 0,1 per cent increase of the economic growth (Friedberg & Hunt 1995).

The estimations of the size and direction of the income transfers between immigrants and natives in the USA show divergent results. Some studies find net income transfers from immigrants to natives, and in 1998 the income transfer to the natives was about 0,1 per cent of the GDP or USD 30 per native person (Borjas 2001). A newly made study concluded that the income transfer from immigrants to natives in 1996 was USD 166-226 per native household (Hanson et al. 2002). Other studies find negative income transfers from the immigrants to the natives in the USA (Blau 1984, and Weintraub 1984). A study for 1990 finds that the income transfers from natives to immigrants reached USD 16 billion, which is close to 0,3 per cent of the American GDP (Borjas 1994).

2.3 Concepts and definitions

2.3.1 Definitions and concepts on migration

- *Mobility* is a general term to describe the intensity of migratory movements of a population. In this study, it will be measured for each region by the sum of out-migration and immigration divided by the population. It gives us the part of the population that has migrated at a certain scale.
- *Migratory balance* is a measure for a territorial unit of the difference between arrivals and departures (immigration – emigration). It is a synthetic indicator that allows measuring how attractive (or unattractive) a region is. But this balance hides contradictory movements or levels of mobility that can be very diverse and can only be measured through flows. The migratory balance can also be segmented so that we can evaluate how attractive a territory is for different categories of the population: migratory balances by ages, or by socio-economic status. The migratory balance can also be segmented geographically: internal balance (balance of a region with the rest of the country), external balance (balance of a region with foreign countries).

- *Migratory flows* are exchanges of population between different territories. They allow us to better apprehend the complexity of migratory processes. For example, a migratory balance near to zero can in fact hide intense migratory movements with the rest of the country and with foreign countries. These exchanges can be very unbalanced and compensate each other: the same region can be attractive for one part of the country and send part of its population to other regions. Every country presents a pattern of migratory flows which indicates among other things the spatial pattern of the country. If we compare France to Germany, it is quite relevant: in France, the Ile-de-France region includes alone more than 40% of migratory flows of the country; in Germany, these flows are much more balanced.

2.3.2 The concept and phenomenon of 'depopulation'

The concept of 'depopulation' is far from clear. Most often the word is used almost synonymously to population decline, but sometimes it is reserved for population decline of a certain enduring nature, or even more narrowly confined to processes that carry ominous signs of socio-economic impacts.[9] In one or more of these senses of the concept, 'depopulation' has been discussed from time to time during most of the former century – in national and European terms as well as with reference to sub-national uneven territorial development.

Depopulation may be regarded as a special course of development in the process of population change, often indicated by certain probable demographic implications or impacts *with a problem potential* (for instance so-called ageing of the population and the labour force, increasing dependency ratios, labour shortage, decreasing demographic vitality and natural growth potential etc.) and associated with long-term demographic process (notably the "modern" fertility decline and sometimes – and even combined with – enduring territorial patterns of uneven selective migration). To be able to indicate the presence of processes with a depopulation potential, we need a relevant territorial scale and a reasonable temporal perspective.[10]

In this project we take an open and pragmatic view of the concept and phenomenon of depopulation and assume that further conceptual elaboration will profit from the empirical analysis of the present and other studies. The empirical analysis in this chapter is dependent on the state of comparable European regional data at the time it was carried out and the frame of available time resources. However, based on the aspects mentioned here and the more immediate background of the current interest in depopulation as a spatial phenomenon at the European level (cf. above), we may keep in mind that depopulation may be associated with certain:

- Levels or degrees of demographic change (relatively significant rates of population decline)
- Durations of demographic change (population decline as a relatively stable trend and prospect)
- Dynamics (or relative components) of demographic change (e.g. long period of uncompensated excess of deaths over births)

[9] These kinds of concern may, as already indicated, relate to socio-economic implications of distortions of the age-pyramid, or of demographical "thinning-out" of already sparsely populated (and often remotely located) areas, or even – as was the case in some peripheral parts of the Nordic area from the 1960s on – complete depopulation in the sense that entire local communities are emptied of population and literally die out.

[10] Historical occurrences of population decline with a possible depopulation potential have probably most typically been a small area phenomenon in Europe, although some of the implications as well as some causes may be related to larger regions and even entire nations. The Eurostat scenarios seem to indicate that ever larger contiguous territories will be affected, but a hypothesis of increasing disparities in demographic development within the larger regions may still be plausible.

- Population-structure aspects of demographic change (causing demographic imbalances like e.g. ageing, potential labour shortage)
- Implications/potential implications of demographic change (entailing needs for significant socio-economic adjustments; problems of service supply, problems of recruitment; negative effects on demographic, social and economic vitality of communities/regions)
- Territorial contexts of demographic change and of implications of demographic change (e.g. population density, settlement pattern, location/remoteness, regional integration/functional status)

A reasonable (an ideal) point of departure seems to be to regard depopulation as population decrease i) of a certain enduring – and potentially territorially comprehensive – nature, ii) which is related to long-term fertility decline, and where iii) the structural demographic implications of which are inadequately counteracted, and sometimes even reinforced, by lasting patterns of net migration. In its turn the inherent demographic dynamics imply iv) particular age-pyramid effects, which entail v) a problem potential *depending on qualities of the regional context*. However, in order to determine whether observable (negative) demographic trends imply depopulation or potential depopulation in this sense of the term, a comprehensive empirical analysis *far beyond the frames of this project* is necessary.

The picture of the geography of "depopulating" Europe is of course highly sensitive to territorial scale. The NUTS 2 level (and even the NUTS 3 level) is far from appropriate for the task of identifying and explaining depopulation processes, although it may be a useful perspective for mapping crude demographic imbalances at the European level in order to establish the macro-picture of the demographics of growth and decline as an important context for understanding demographic dynamics at a more detailed territorial scale.[11]

2.4 Methods

2.4.1 Measuring migration

The migratory analysis is confronted by various difficulties, both on a conceptual point as on a statistical basis. Some of the methodological difficulties are increasing:
- Western Europe has increasingly more clandestine immigration;
- Since the start of the 90s, a large number of nationals from Central and Eastern Europe work and live during most of the year in the European Union, covered by tourist visas, and even now as "tourists" without any need of a visa;
- the increasing mobility of the European population and the development of second residences, both in their country as abroad, can weaken the pertinence of population count based on the so called main residence, which moreover can be chosen not in function of main residence but for fiscal reasons.

The correct taking into account of migrations and their quality of follow-up varies according to whether countries work uniquely by census or, on the contrary, keep a population register. In the latter case, the entries from foreign countries are in general well registered, as long as they are of legal origin, but on the other hand those leaving abroad are often under-stated; those leaving often omitting to notify the local authorities. In addition, the assessment

[11] Norway is among the countries that came out with the highest fertility levels "at the end of" the recent phase of fertility decline, but every year since the late 1980s around half of the Norwegian municipalities ("NUTS 5"-level) experienced population decline. In more than one third of the municipalities the population declined in more than ten of the fifteen years covered; in two thirds the population declined in more than five years of the period. At the NUTS 3 compatible level in Norway (counties) only two regions would display a declining population during the 1980s as a total, and only one region during the 1990s. At a NUTS 2 compatible level the statistics show no sign of population decline in Norway.

methods, very different from country to country, can make international comparisons uneasy.

The methodology here adopted to make up an assessment of the migration balances at the regional level is the natural movement method. The principle is simple: one calculates the difference between, on the one hand, population at the end and at the beginning of a period, and the natural balance (births less deaths) during that very period, on the other hand. This method is relatively safe as the statistics on these three indicators are globally reliable. Nevertheless "some relatively small errors relating to the population at the beginning and the end of the period, above all in the countries with no population register, can bring about a much bigger error on the assessment of the final balance, especially if they are of opposite mathematical signs" (Decroly & Vanlaer 1991)

A general matrix of migratory balances at nuts-3 level and for the all Europe has been made for the second half of the 90s. Before this date, the matrix includes only Western Europe. We also dispose of a matrix of the previous decades, which permits to describe the evolution in a long term perspective. Following the same method, a matrix and maps concerning the first half of the nineties and the eighties was made.[12] Moreover, the modifications in the administrative divisions of United Kingdom and Italy force us to use different NUTS levels (NUTS 1 and 2 for United Kingdom, NUTS 2 and 3 for Italy).

When analysing migratory balances, the territorial division is very important and may change if not the result at least its interpretation.[13] There is no simple solution to the heterogeneity of the geographic divisions but we have to be very careful in the interpretation of the data and the maps.

Data on the external migratory balance are very poor and not reliable. We, therefore, made an indirect evaluation based on a very simple equation:

Total migratory balance = external migratory balance + internal migratory balance.

The external migratory balance can be evaluated by the difference between the total and the internal balance, which are much more reliable data.

We have assessed the migratory balances from the age structures (by groups of 5 years) and the mortality data by age. The principle consists in following an age group on a 5-year interval and deducting the deaths from the final population: the comparison between real and assessed final population represents the migratory balance by age. Nevertheless, the balance does not relate to the initial or final age group but to the average of both.

This estimation can be formalised as follows[14]:

Migratory balance of the n age group = population (n+1,a+1) – population (n,a) + (deaths (n+1) + deaths (n))/2

n = age group
a = year

[12] For these maps, we only used the data from Eurostat and it appears very incomplete. In particular, all Eastern Europe, including East Germany, is excluded.

[13] For example, in some countries or some towns of a country, the central towns are separated from their suburbs while for most towns this is not the case. Most of these centers have negative migratory balances and therefore can give the impression that the metropolitan area is not attractive.

[14] The statistical problems mentioned above, especially second homes and clandestine immigration, gain significance as the populations concerned are concentrated in some age groups: clandestine immigrants are mainly young, while the owners of second homes are above all active older people or pensioners.

The matrix of migratory balances by age groups at NUTS-2 level is completed for the 1995-2000 period and for the whole of Europe. This method is quite indirect but the results are very coherent and the image provided is comparable with other, more direct, sources available in some countries. However, certain problems remain when going into detail, especially in Slovakia and in Slovenia where the data on elderly mortality lack coherence, so that migration data are uncertain for those age categories.

Migratory balances could be the same for regions with many arrivals and departures and for regions with very little movements and the implications could be very different. The mobility of the population of a region is measured dividing arrival and departures by the total population. So, we know the part of the population which is moving at a given scale.

Mobility = (immigration + emigration)/ total population

The mobility at a given scale does not consider the internal mobility of each region. Moreover, given that the data on external flows are poor, we will only measure the interregional mobility in a systematic way. So, the mobility will be reduced to all the movements between a region and all the other regions of the country.

Unfortunately, the level of mobility is also very dependent on the scale and the administrative divisions which is very important to keep in mind. This is why we made a standardisation which allows us to eliminate the influence of the size of the unities. We chose to keep the simplest indicator because it appears that the results and the image are quite similar, except for the big towns included in a administrative unit of a little size. We also made a third indicator of mobility, which evaluates the mobility in comparison to the national average. The reasons are that we only take into account the internal mobility and that the national administrative divisions are more homogeneous. Nevertheless, the divisions are still very unequal and the mobility is highly overstimated when towns and suburbs are included in different territorial units.

The data concerning international migrations are relatively poor at regional level (see section on data). In the Eurostat database, immigration data exist only for some countries but are not available for the most populated ones (UK, Germany, France). These data do not distinguish the immigrants in function of their origins, even only from inside or outside the EU.[15]

The evaluation of the external migratory balance is a first approach of this question of international migrations at regional level. It gives an idea of how attractive the regions are at the international level and allows us to show the huge difference with how attractive some areas are for internal migrants.

2.4.2 Territorial scales

Analysis of demographic depopulation at the European level will have to focus on the territorial scales that are functional in an operational sense, which are not always the scientifically adequate scales. This may be compensated to some degree by looking closer into a few carefully selected geographical areas, chosen with reference to the outcome of prior typological and analytical effort.

The arguments pro and con different choices of territorial scale for focussing on demographic changes and migration in a European perspective is not easy to evaluate.

[15] The data of emigration are also incomplete but also much less sure and reliable. They are in most of the cases based on the declaration of the emigrants before they leave the countries! For example, for all Spain, the emigration doesn't exceed 400 persons in 1999.

However, practical questions on data availability, stability of territorial grids over time, comparability across national borders etc. may anyway be the most determinate factors. Except for exemplifications the territorial levels of NUTS 2 and NUTS 3 (were feasible) are employed in this study.

The geographical scale is also essential when explaining migratory movements; in other words what is the spatial level where the migratory process is determined and characterized at best? An analysis of the variance[16] will enable us to answer this question. This analysis should be seen as helping the comprehension of migratory processes: it is important to realize that any change in the divisions will affect the results.

Following the principle of association, the total variance between the migratory balances of all region at NUTS 3 level thus corresponds to the sum of variances within the groups of NUTS 2 level, NUTS 1[17], of countries and finally of countries amongst themselves, being:
(NUTS 3 - Europe) = (NUTS 3 - NUTS 2) + (NUTS 2 – NUTS 1) + (NUTS 1 – NUTS 0) + (NUTS 0 - Europe)

Table 2.1 Analysis of variances of migratory balances between the regions of the European Union, 1996 – 1999.

	1996-99
Part of the variance NUTS 3 - NUTS 2 (%)	56,65
Part of the variance NUTS 2 - NUTS 1 (%)	14,64
Part of the variance NUTS A - NUTS 0 (%)	23,41
Part of the variance NUTS 0 - Europe (%)	5,31
NUTS 3 - Europe (total variance)	100,00

One should pay attention to the fact that the most discriminating 2 levels (NUTS 1 and NUTS 3) are not necessarily those between which flows are the most intense, but the flows at NUTS 1 and NUTS 3 levels are those which result in the most differentiated migratory balances.

The most discriminating scale, NUTS 3, accounts for more than half of the variance of the migratory balances in Europe. To interpret this figure, it is first necessary to stress the fact that the NUTS levels correspond to units of different sizes according to the countries: the German *kreise* or the Belgian *arrondissements* have much less population than the French *départements* or the Spanish provinces. In the case of very fine divisions, intra-urban migrations are quite visible because the urban centres and their suburbs often make part of units, whereas in rougher divisions, such flows remain within the administrative units and therefore do not result in differentiated migratory balances, except as far as large cities such as Paris or Madrid are concerned. Consequently, it is the intra-urban flows that

[16] The analysis of variance underscores the part of variation of a quantitative variance (here the rate of migration which will be called Y) in function of the sets compared and of which this variant has issued. The total variance of the grouping of the statistical population is defined as VAR =…
Or p(i) is the coefficient of weighting (the population) for the place i, y(i) the value of the viable for the place i.
If we divide this variable up between different groups, for example here into the different geographical levels "NUTS" of the analysis, the total variance (YG) can be decomposed into two parts: that which corresponds to the variations within each group, that is to say the intra-group variance, and that which corresponds to the variations amongst the groups, the inter-group variance.
Following the principle of associability, the total variation can thus be broken down as follows: (formula), that is to say total variance (Vtot) = intra-group variance (Vi) + inter-group variance (Ve).
When the intergroup variation (Ve/Vtot) is strongly greater than the intra-group variation (Vi/Vtot), we can conclude that the variation of Y can be explained in principle by the spatial logics that differentiate the groups amongst each other. On the contrary, if the intra-group variation is greater, the migratory logics have to be interpreted at a finer detail and the major aggregates do not provide a level sufficiently pertinent to conduct investigations on migratory logics.

[17] To achieve this analysis, we have created a nuts1 level for Eastern Europe.

account for the big part of the variance resulting from the finest division level. In a previous analysis (Vandermotten et al. 2004) limited to Western Europe, we had excluded too fine levels of division, and this level appears as definitely less decisive when explaining the variance.

The second most discriminating scale is that of NUTS 1 level, the one with a high number of macro-geographic entities, in the determination of the big migratory contrasts in the European Union territory. This scale in itself takes up almost a quarter of the total variance. This main macro-geographic level corresponds to the dominant structuring flows within the major European states, perceptible at least as early as the 1970s and often long before (except, of course, the East-West movements in Germany), in spite of the economic fluctuations: for example the migrations from the South to the North of Italy, from the North and the North-East of France to the Eastern and Southern parts of the country, in particularly the coastal areas, from the new German *länder* to the West (and in general in the FGR from the North to the South), from the North to the South of the U.K.; from the interior to the coastal areas in Spain. It often expresses major contrasts in economic dynamism, sometimes combined with differences in environment quality.

These major migratory trends do remain within the essential internal logics of the countries within which they occur, as underlined by the weak part of the international level in the global variance (only 6%). The borders are still determining as regards migration flows, for it is inside the national space that the economic or environmental differences still account for contrasted migration balances between regions, while inequalities between two countries, though often more important, do not generate such intense flows.

2.5 Data and indicators

2.5.1 Data

The work done in this project is mainly based on data prepared and collected for and by ESPON Projects, the BBR and the NewCronos REGIO-database. Still data is missing for entities and years for different countries. Furthermore, the NewCronos REGIO-database contains no data for Norway and Switzerland. The data for Cyprus and Malta is also incomplete.

To deal with data containing errors and gaps, information from other sources have been needed to fulfil the matrices needed for the territorial demographic modelling. The use of other sources raises the problem of data compatibility, but since there was no alternative, it is better to have non-perfectly compatible data that to have nothing at all. The most important sources are the National Statistics Offices, the United Nations Population Department (UNPD) and the OECD Territorial Data Base.

The creation of a relevant data set for this project has been quite time consuming, but rewarding. Each partner in this project has analysed what data they needed to conduct their work and whether it is possible to obtain the group of variables listed in the First Interim Report – all of them or just some – for the countries of its area of influence. As a result, we have created an inventory of the available variables, indicating the level of disaggregation and the years (or time periods) for which the data is available. In some cases it has been necessary to adjust the requirements somewhat with regard to temporal scope and territorial level. For the stated time periods (temporal scope), the selection of a few "representative" years may prove necessary and satisfactory in relation to the overall purpose. When it comes to the territorial level some indicators, e.g. data on life expectancy, only exist at a national level (NUTS 0), something which has hampered the analysis.

A simple scheme for the indicators, regional level and temporal scope was presented in the First Interim Report. Table 2.2 summarises the work we have done on indicators, scale and temporal scope. However, the list is not complete due to missing data for entities and years for different countries. A comprehensive discussion on missing data is found in the appendix on missing data and indicators.

Table 2.2 Indicators, Scale and Temporal Scope

	Territory: EU27+2*	**Temporal scope**
Basic indicators (depopulation process):		
Total population	NUTS 3 (2)	1980/90-1999 (latest)
Area	NUTS 3 (2)	---
Total area of urban settlements	NUTS 3 (2)	1999 (latest)
Population in urban settlements	NUTS 3 (2)	1990-1999 (latest)
Indicators on degree of urbanisation	NUTS 3 (2)	1990-1999 (latest)
In-migration	NUTS 2	1990-1999 (latest)
Out-migration	NUTS 2	1990-1999 (latest)
Net migration	NUTS 2	1960, 1980, 1990-1999 (latest)
Number of births	NUTS 3	1990-1999 (latest)
Number of deaths	NUTS 3	1990-1999 (latest)
Natural population growth	NUTS 3	1990-1999 (latest)
Population in age groups	NUTS 0 NUTS 3	1960-1999 (latest) 1990-1999 (latest)
Total Fertility Rate	NUTS 3 or 2	1960,1980,1988,1990-1999/2000
Life expectancy	NUTS 0	1960-2000 (latest)
Indicators of territorial characteristics/regional context (vulnerability):		
Population density	NUTS 3	1980/1990-2001
Indicators on relative remoteness, central/peripheral location (natural geography, travelling distances)	NUTS 3 (2)	2000 (latest)
Indicators on degree of rural-urban structure	NUTS 3 (2)	2000 (latest)
Indicators on causal and effect processes:		
Demographic change rates, components of demographic change, recruitment (net migration/natural growth), population potential/fertility (see above)	NUTS 3	1990-1999 (latest)
Socio-demographic performance ratios (ageing, dependency, sex composition, labour market pressure), educational level	NUTS 3	1990-1999 (latest)
Indicators on economic and socioeconomic performance (participation rate/employment, unemployment, GDP, labour productivity, sector mix/restructuring)	NUTS 3	1980/1990-2001

* The 25 member countries, Bulgaria, Romania, Norway and Switzerland

Few data is published by Eurostat regarding migration at regional level (NUTS 2). Some sources provide data only at national level, particularly the OECD and the European Labour

Force Survey. However, some national data allow us to go a little further in the understanding of the process, especially in Spain and United Kingdom. These data are very dependant of the way the migrants are registered. The British data are based on the declarations of the travellers which are going into the country, while in most of the countries the data come from state population registers. However, the available data only covers legal immigration; regarding illegal immigration, which does take place, no data is available.

2.5.2 Indicators

2.5.2.1 Indicators for direct measurement of depopulation

We take as a rather obvious point of departure that regional population change in a particular period is the sum of the regions' natural population change (excess of births) and net migration in that period. The long term general trend in Europe is that the natural change component gradually turns from being a positive to being a negative contributor to regional population change as a consequence of fertility decline and population ageing (cf. above), altering the "rules" of regional-demographic distributive games – especially the role of migration. The Eurostat baseline scenario mentioned above, projects that this trend will continue and leave the EU with a negative average contribution from the natural change component as early as 2010.

Below we have displayed some results (a simple typological approach and a map displaying a combination of NUTS 2 and NUTS 3 regions for the purpose of comparability) based on data on the main components of regional population change in the latter half of the 1990s (for description of data for this typology, cf. Working package 3). The map which is based on this typology shows the geographical pattern of the mix of contributions to negative change in population numbers in the period, from the two crude demographic components of change.[18] In principle the different crude types of regional population change may be described like this:

Total population decline (Tneg) due to:

- negative natural change and negative net migration (NnegMneg)
- negative natural change alone (NnegMpos)
- negative net migration alone (NposMneg)

Total population growth (Tpos) due to:

- positive net migration alone (NnegMpos)
- positive natural change alone (NposMneg)
- positive natural change and positive net migration (NposMpos)

"Negative natural change" indicates a possible long-term weakening of the natural growth potential, including low/declining fertility rates and structural demographic changes towards a less "vital" population. The potential for problematic depopulation processes may be expected to occur among regions where this type of situation is uncompensated – or even reinforced – by migration over longer periods of time. At the other end of the scale certain regions will be able to compensate or remedy low fertility and structural deficiency through selective in-migration. In a regional-demographic situation close to a zero-sum game, or even minus-sum game, the demographic "winners" necessarily entail demographic "losers".

[18] A special illustration – based on a longer time period (1980-2000) is given in a selection of figures exemplifying crude regional demographic change dynamics, using French and Spanish NUTS 3 regions as examples. These two countries represent the "high" and "low" end of the range of national fertility levels following the period of the most pronounced fertility decline (cf. above). The figures in this section are based on the OECD Territorial Data Base.

Table 2.3 Proposed indicators (statement of realistic temporal scope and territorial scale based on actual data coverage at the time of analysis, cf. below. More ideal temporal scope is indicated in parenthesis):

Indicator	Temporal scope	Territorial scale
1. Crude rate of total population change	(1980-2000) ca. 1995-2000 (latest	NUTS 3 and NUTS 2
2. Crude rate of natural population change (excess of births)	(1980-2000) ca. 1995-2000 (latest	NUTS 3 and NUTS 2
3. Crude birth rate (ideally TFR at regional level)	(1980-2000) ca. 1995-2000 (latest)	NUTS 3 and NUTS 2
4. Crude rate of change in strategic age groups (0-14, 20-64, 64+, women 20-34)	(1980-2000) ca. 1995-2000 (latest)	NUTS 2
5. Periods of occurrence of negative rates (1, 2)	During (1980-1990) ca. 1995-2000 (latest)	NUTS 3 and NUTS 2

Above we have briefly summarized some ideal, but still pragmatic suggestion of basic direct indicators of depopulation at a territorial level, given this project's stage and resources. The proposed indicators were based mainly on the official statement on data coverage and availability in the Eurostat Regional Statistics Reference Guide (2003), and a presumption of only a limited effort of possible supplements from other sources. The set may be successively operationalised and/or supplemented to the degree that data is actually made available.

Some efforts to indicate and describe possible depopulation processes in a direct way, based on relatively readily available data, are displayed below, including typological approach and mapping of results.

2.5.2.2 Indicators for indirect measurement of depopulation

The tendencies towards stable and declining populations affect population structure in characteristic ways, *and these structural changes are frequently the main focus of concern rather than the drop in total population numbers*. The most obvious consequence of the general shift from high to low mortality and the fall in fertility rates, are changes in the age structure of populations, and particularly the phenomenon of demographic ageing. The main cause of ageing is the change in fertility. While improved mortality generally operates at all ages, fertility changes initially affect the size of one age group only, the very young. An indirect way to indicate *relative degree of "depopulation"* is to employ some common indicators on demographic structure, like for instance the "dependency ratio". Depopulation and ageing are interconnected by definition.

The most demographically aged populations were found in North and West Europe by the time the decline in fertility rates started to level off in most countries, usually around mid-1980s. Demographers often speak of «young», «mature» and «aged» populations by whether the share of persons aged 65 or over is less than 4 per cent, 4-7 per cent, or over 7 percent, respectively. By this measure all Europe 29 countries and all but two NUTS 2 regions in these countries are rather "aged". In most of the regions the share of elderly people is more than the double of this ageing threshold.

As indicated above, ageing is not a uniform trend within ageing national populations. This is due to territorial differences in fertility levels and timing of fertility trends, modified in different ways by age-selective rural-urban migration patterns. The phenomena and territorial patterns of demographic ageing and related changes in age structures associated with population decline, concern i.a. the regions' reproduction potential and the mechanisms of territorial population re-distribution, as well as the labour supply and the composition of the labour force.

Below we have briefly summarised some suggestions of potential indirect indicators of depopulation situation (or rather: "level of depopulation") at a territorial level. *The indicators are all intended to be measured against the "Europe 29" average in order to express the relative state-of-affairs of the different regions, rather than their absolute state of depopulation* (indexes: "Europe 29" = 100). *They are also grouped into four categories by degree of "negative" deviation from the "Europe 29" average* (half standard deviations are used). Some maps are presented in a sub-chapter below together with a table displaying for each indicator the weighted and un-weighted mean values, the median values, the standard deviations and the regional coefficients of variation, to help in the interpretation of the information.

The indicators have a relevant interpretation even when measured at only one point in time, but may also be used to indicate the process. The individual indicator as well as the fruitfulness of the exact definition of each indicator may vary among countries and between different purposes, and are of course subject to discussion. *The indicator values that are displayed in a series of maps in the results section below are measured at the NUTS 2 level in all the Europe 29 countries and mostly for the year 2000*. Like the direct indicators of depopulation (cf. above) the indicators proposed here are mainly based on the statement on data availability in the *Eurostat Regional Statistics Reference Guide* (2003).

Table 2.4 Proposed indicators (statement of present realistic temporal scope and territorial scale based on actual data coverage, cf. below. Question mark indicates "to be considered in a follow-up study").

Indicator	**Temporal scope**	**Territorial scale**
Structural indicators:		
1. Share of children: 0-14/Tot.pop	1990?, 2000	NUTS 2
2. Ageing Population: 65+/Tot.Pop	1990?, 2000	NUTS 2
3. Ageing "Labour Force": 55-64/20-64	1990?, 2000	NUTS 2
4. "Labour Force" Replacement Ratio: 10-19/55-64	1990?, 2000	NUTS 2
5. Post-Active Dependency Ratio: 65+/20-64	1990?, 2000	NUTS 2
6. Aged People vs. Youth: 65+/15-24	1990?, 2000	NUTS 2
7. Changes in Natural Growth Potential: 20-29 years in 2020 (born 1991-2000)/20-29 years in 2000 (born 1971-1980)	1990?, 2000	NUTS 2

Indicator 4 tells us if the ten-years cohort potentially entering the labour force (rather, the usually most economically active population segment) from the bottom of the age pyramid during the next ten years, is smaller or larger than the ten years cohort potentially leaving the labour force (rather, the usually most economically active population segment) from the top of the age pyramid during the same period – assuming no deaths and migrations in the period. With the same assumptions indicator 7 tells us if the cohort constituting the 20-29 years olds in 2020 (born 1991-2000) is smaller or larger than the cohort constituting the 20-29 years olds in 2000 (born 1971-1980). In most countries this age-span contains the most reproductive ages. Per 1980 this age group was constituted by one of the wider post-war baby-boom cohorts (born 1951-1960).

2.5.2.3 Total fertility rate

The total fertility rate is a theoretical measure and is defined as the number of birth related to the number of women in the childbearing ages and is standardised for variances in cohort sizes. TFR is in most cases defined in the following way:

$$TFR_t = \sum_{x=16}^{49} f_x$$

where t = year and x = age. This measure differs thus from the crude birth rate (CBR) that is defined as the number of births per thousands of total population.

2.5.2.4 Indicators on migration

The indicators on migration used in this study are m*obility*, which is a general term to describe the intensity of migratory movements of a population. A second indicator is *Migratory balance* (or net migration) and this measures the difference between arrivals and departures for a territorial unit. *Migratory flows* are exchanges of population between different territories.

3 Demographic Trends

3.1 Population Change and Typologies

In drawing a European demographic landscape it is necessary to start with population change. Map 3.1 shows the areas of demographic growth and decline. One can clearly see the central European growth zones and the areas of declining population at the edges of Europe. This pattern on EU29-level is the consequence of low and decreased fertility rates and migratory movements. From the EU29 point of view there seems to be more indications of population concentration and monocentric development than a polycentric development. Signs of polycentric development are evident within Pentagon, but outside this area there are instead indications of monocentric development with regard to the demographic development. This phenomenon is especially strong in the Northern countries and in Eastern Europe. From a functional urban areas´ point of view there are, however, instead some signs of peri-urbanisation – only indicated in this study but known from other studies - as well as signs of a more polycentric urban development in differing parts of Europe, but on a lower regional level. This peri-urbanisation process can, however, also be seen as a monocentric development as it is dependent on the economic and social development in the centre.

European growth zones are affected by a surplus of migration. Population growth can only be explained by migration because the balance of birth and death is negative or - in the best case – very small with regard to the natural population change. This can be observed in Germany, in the Scandinavian countries, in northern Italy and southern England. In these areas the population dynamic is more and more driven by migration and less by the surplus of birth. These areas are attractive for migrants in great numbers, which fills out all gaps.

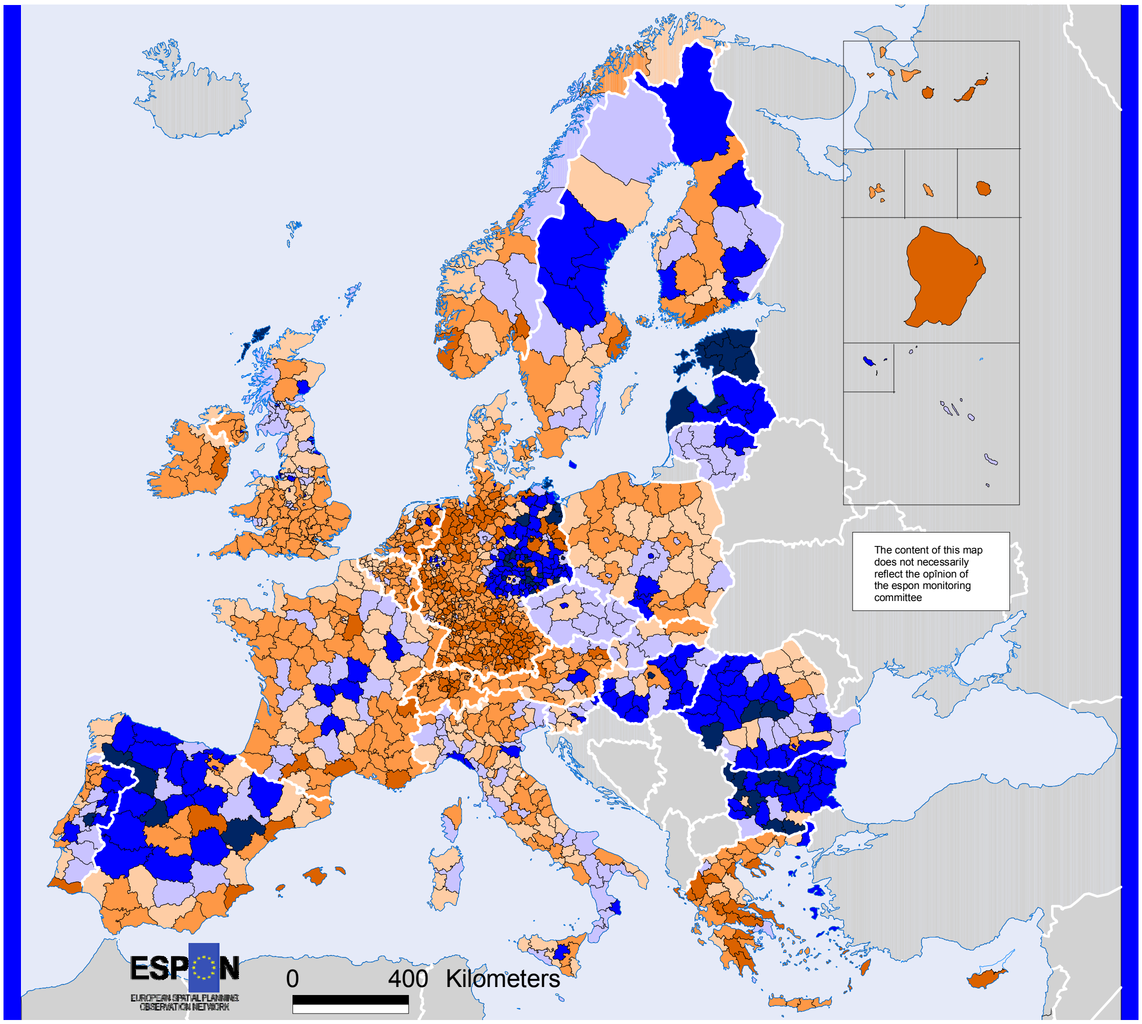
Some European peripheries are affected by population decline due to a negative migration balance and a surplus of deaths over births. These peripheries are not attractive enough for migrants and therefore the population change is dramatic in some parts: In Bulgaria, for example, the overlay of a negative migration balance and a significant drop in fertility produce a sharp decline in the population number. The same is true for the Baltic regions, for regions in Hungary but also for the northern part of Spain and some peripheral areas in Greece.

In contrast to this situation the response to economic decline in some European peripheries is a surprising increase in births. The crises regions seem thus to be more sensitive to changing labour market conditions than the metro areas less. In the first mentioned regions, the image of apathy and resignation is often a central ingredient. As a consequence of this reasoning, higher unemployment results in higher fertility since one solution for many younger women seems to be marriage or non-marital cohabitation as well as motherhood. This phenomenon can, however, be hampered by the "income effect" – a reduction in incomes and wages and subsequently the standard of living may result in more hesitation to childbearing and more children. With regard to this it can be supposed that the different traditions and family networks in various parts of Europe have impact on the fertility development.

It can also be assumed that short-term unemployed persons have another approach to childbirth than long-term unemployed. If childbearing and children are hampering factors with regard to a 'come-back' on the labour market it can be presumed that women in this category are more hesitating to give birth than others. For many of the short-term

Map 3.1

Evolution of the population between 1990 and 2000



LEGEND

average annual growth (%)

- no data
- < -1.00
- -1 - -0.3
- -0.3 - 0
- 0 - 0.3
- 0.3 - 1
- > 1

Origin of data : EU 15 and CC's : Eurostat
Norway and Switzerland : National statistics office
Source : ESPON Database
Cartography : IGEAT- ULB

unemployed it is very important to get a foothold on the labour market as soon as possible in order to avoid stigmatisation and the problems of returning to work that often are consequences of long-term unemployment. This also means that long-term unemployed is not so sensitive to changing labour market conditions, since these potential parents have already given up re-entering the labour market and, as a result, also are more disposed to childbirth.

3.1.1 A typology with regard to natural population change and migration

In order to classify the regions with respect to total population development, natural In order to classify the regions with respect to total population development, natural population development and migration, six different combinations are constructed. In the right column an attempt to characterise the different cases has been done and in Appendix, Table A4.3. Different NUTS2 and NUTS3 are characterised according to this scheme. The six cases are illustrated in Table 3.1 and Map 3.2.

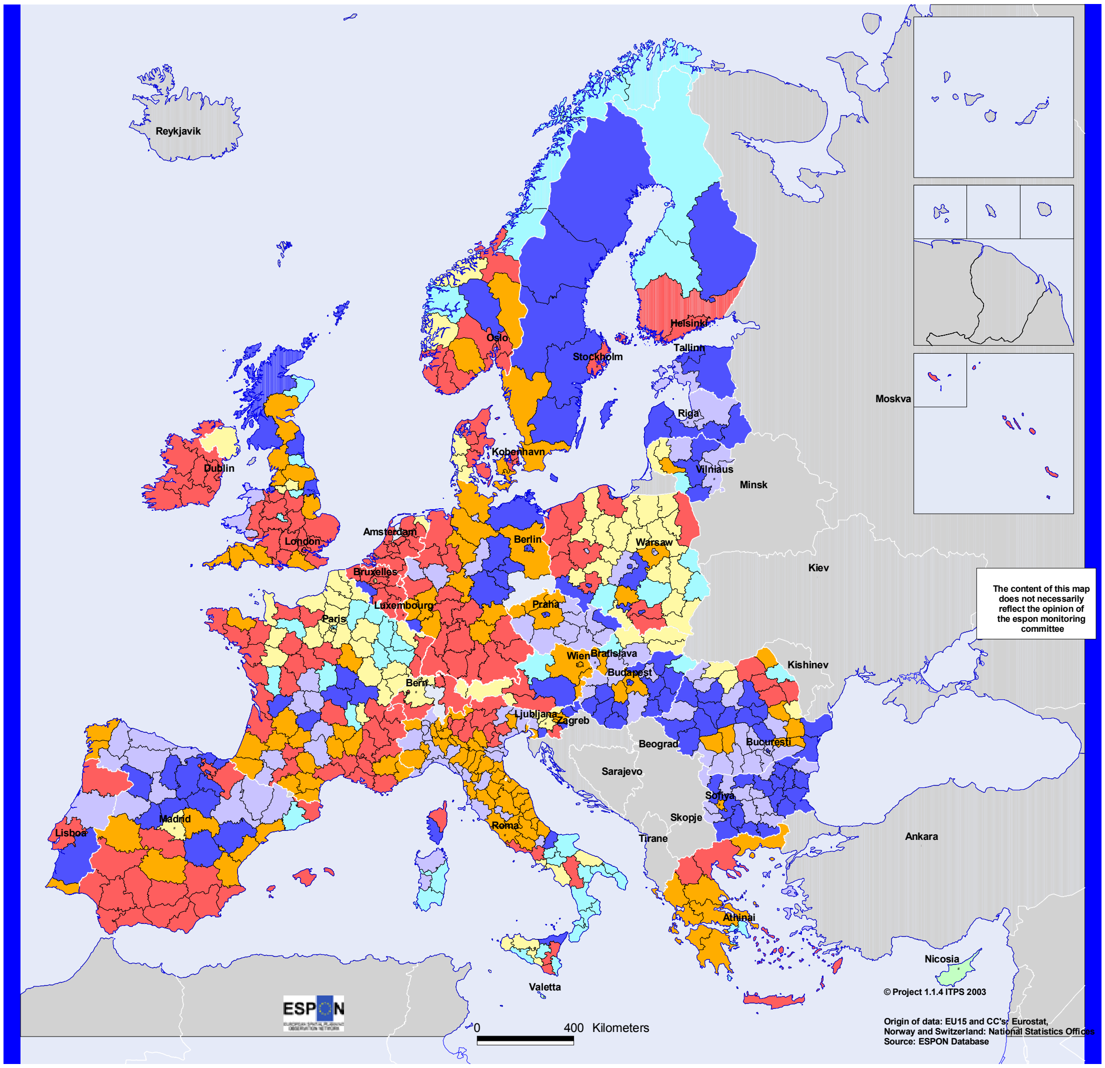
The first three categories have experienced a positive population development in the sense that the population has increased. The most favourable case is the first one where both the natural population change and the net-migration were positive and reinforced each other with the result that population increased. Automatically, this does not lead to the conclusion that the regions in type 1 have the fastest population increase – instead this is a function of the both the natural population change and net-migration and their development. From a sustainable point of view this case is, however, the most favourable one and the only that is sustainable in the long term. Much of the long-term sustainability depends on the relation between the natural population change and in-migration.

Table 3.1 Six types with regard to total population change, natural population and net migration 1996-1999.

1	PT>0	PM>0	PN>0	In-migration and young population/"high" TFR. High sustainability both in short and long term. The most favourable case.
2	PT>0	PM>0	PN<0	Out-migration and young population/"high" TFR. Short term – sustainability. Long term – eroding sustainability because of lopsided age structure (out-migration).
3	PT>0	PM<0	PN>0	In-migration of people with low TFR. Natural population decrease because of lopsided age structure and/or low TFR. Dependent on in-migration. No sustainability in long term – weak reproduction potential.
4	PT<0	PM<0	PN<0	Out-migration and old population/"low" TFR, depopulation. No sustainability both in short and long term. The worst case.
5	PT<0	PM>0	PN<0	Out-migration but still young population/"high" TFR. Traditionally high fertility regions. Falling TFR -> low sustainability.
6	PT<0	PM<0	PN>0	In-migration and old population/"low" TFR. In-migration of elderly people and/or singles, low reproduction potential. Dependent on in-migration. Low sustainability both in short and long run.
PT=Total population development PM=Net migration PN=Natural population development				

Map 3.2

Components of population increase, 1996-99



form of increase

- Total evolution>0; Migratory B>0; Natural B>0
- Total evolution>0; Migratory B>0; Natural B<0
- Total evolution>0; Migratory B<0; Natural B>0
- Total evolution<0; Migratory B<0; Natural B<0
- Total evolution<0; Migratory B>0; Natural B<0
- Total evolution<0; Migratory B<0; Natural B>0
- no data

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Offices
Own estimation for migratory balance

In the second type, the positive effect of natural population change neutralised the negative in-migration effect. Even in this case, preconditions for a sustainable population development are good – at least in short term - as the population base still is favourable because of natural population development. In long term, continuing out-migration may erode the reproduction potential and the good sustainability prospects. One of the results of out-migration is a drain of younger people and a lopsided age structure with its negative impact on the reproduction potential and then consequently on sustainability.

The third case shows the opposite phenomenon. Here, population increase is dependent on in-migration as natural population change is negative. This phenomenon is often the case in expanding regions where many household consists of singles and small households, especially then among the in-movers. The result is a weak and eroding reproduction potential and then a low sustainability in long term. This phenomenon is obvious in e.g. the expanding parts of Italy.

The same reasoning is valid with respect to the next three types – any conclusions about the strongest population decline can't be drawn. Instead, only the preconditions about population development differ. The least favourable case with regard to development and dynamics is type 4 where the natural population decrease reinforces by out-migration, which can result in a viscous circle and a negative spiral process. The regions in type 4 can be characterised as depopulation areas as both natural population change and net-migration are negative. This is also the worst case and these regions are in a very bad situation with an unsustainable population development as one central ingredient. The preconditions for changing this process are neither not so good. Instead, it seems as many of these regions are going to be depopulation areas even in the future if nothing happens that reverse the negative spiral.

Even the regions in type 5 and type 6 can be considered as depopulation areas, but here the preconditions are different to some degree. Type 6 is an in-migration area despite that the natural population change is negative and type 5 experiences positive natural population change that, however, is counterbalanced by negative net migration.

Type 6 has experienced a total population decrease as an effect of natural population decline even if net out-migration is positive. This is typical for a region that is attractive with regard to settlement patterns and amenities – in-migration of elderly people – but also for areas that are dynamic with a lot of singles and highly educated people among the in-movers. This results in a negative natural population development that is large enough to counteract the positive sign of net migration. This case is similar to type 3 where net in-migration is large enough to compensate for loss created by the surplus of deaths vs. births. These regions are in a problematic situation in the long term with regard to sustainable population development. The lopsided age structure in combination with low fertility rates will result in an accentuated depopulation.

Type 5 experiences a reverse situation even if both types have a negative population development. In this case, the negative net migration is larger than the positive natural population change. This case is similar to type 2 with the exception the latter has a population increase. It is thus the strength of the components that – as in all other cases – are of importance. In the long run there is, however, an obvious risk that this phenomenon will change in the future as a consequence of out-migration of young people and the preconditions for a future natural population increase will then be eroded and the situation will be similar to type 6.

The majority of the regions – 60 percent – at NUTS1, NUTS2 and NUTS3 level experienced a population increase between 1996 and 1999. Most of the growing regions can be placed in type 1, where both the natural population change and net-migration were positive (28 percent). Type 2 involves 20 percent of the regions and 12 percent are placed in type 3. Among the retarding regions, most regions are classified in type 4. This is the most unfavourable type and can be characterised as a depopulation type. 17 percent of the regions are classified in this category. 15 percent are in type 5 and the rest – 8 percent – in type 6. More than half of the regions – 52 percent – had a natural population decrease during the second half of the 1990s. 20 percent of the regions were expansive regions in the sense that they experienced a population increase as a consequence of net in-migration. This means that 32 percent were regions where natural population decrease was also combined with a net out-migration that accentuated the population decrease in these regions. These regions are in a problematic situation and can also be characterised as depopulation areas.

3.1.2 The typology extended with OECD:s urban-rural categories

In order to analyse and describe the typology estimations have been done the OECD:s definitions of predominantly urban (SR), significantly rural (SR) and predominantly rural areas (PR) have been the point of departure.[19] Estimations from year 2000 have been done in order to examine how the urban areas and the two kinds of rural areas are represented in the various categories. Table IV.2 shows the distribution of the six types with regard to PR and SR as well as PU and total distribution. This has been done both with regard to the numbers of regions at NUTS3-level and the size of population in the various categories and types. It must be kept in mind that the amount and size of the differing areas are of utmost importance from an analytical point of view. The scale dimension is here of very great importance.

From tables 3.2 and 3.3 it seems obvious that type 1 is the most frequent type both with regard to the number of regions and size of population. At first glance, it can perhaps be surprising that this is more pronounced in SR than in the urban areas (PU). As mentioned above, many big city regions are also out-migration regions and this may illustrate the decentralisation process and developments in a more polycentric direction that can be seen in some parts of Europe. From the data that is used in these estimations it seems obvious that type 1 are frequent in Pentagon, metropolitan areas in the Nordic countries and regions with good climate and amenities – e.g the southern part of Spain. As was indicated above this type is from a sustainable point of view the most favourable one and especially then in the long-term. In this case the rural areas have the same preconditions for a sustainable population development as the urban ones. Especially SR is in a more favourable position with regard to the future population development.

Table 3.2 A schematic typology with regard to sustainable demographic development based on total population change, natural population change and net-migration. Based on number of regions. Year 2000. Distribution in percent.

				Tot	PU	SR	PR
1	PT>0	PN>0	PM>0	31,1	30,3	36,1	26,4
2	PT>0	PN>0	PM<0	5,2	4,5	5,0	5,7
3	PT>0	PN<0	PM>0	22,6	19,3	24,4	24,5
4	PT<0	PN<0	PM>0	11,1	8,8	10,0	14,7
5	PT<0	PN>0	PM<0	10,4	14,8	9,1	7,5
6	PT<0	PN<0	PM<0	19,6	22,3	15,3	21,2

Source. Estimations based on Eurostat data.

[19] This part of the study is based on a first draft of a part of the EU-project "Study on employment in rural areas (demographic and employment trends – in particular for young people and women – and typologies of rural areas)" – SERA. This project is supported by DG AGRI and headed by SAC (Scottish Agricultural College), Edinburgh. Project leader is Andrew Copus. The part in the draft version of the SERA-report is written by Mats Johansson.

Table 3.3 A schematic typology with regard to sustainable demographic development based on total population change, natural population change and net-migration. Based on population size. Year 2000. Distribution in percent.

				Tot	PU	SR	PR
1	PT>0	PN>0	PM>0	34,1	33,2	38,9	27,1
2	PT>0	PN>0	PM<0	9,8	10,0	8,6	11,0
3	PT>0	PN<0	PM>0	18,3	16,7	20,2	19,2
4	PT<0	PN<0	PM>0	8,2	4,2	9,7	14,5
5	PT<0	PN>0	PM<0	13,3	17,1	11,4	8,8
6	PT<0	PN<0	PM<0	16,3	18,8	11,2	19,4

Source. Estimations based on Eurostat data.

Type 2 is not frequently represented among either in urban or rural regions. Only around 5 percent of the regions in the differing categories had a total population increase combined with natural population increase and out-migration. The low frequency in type is not surprising as the main factor behind the total population change is migratory movements and not natural population change. That out-migration rural areas should experience a natural population increase so large that it resulted in a total population increase is thus not to be expected. Regions with a large population are however overrepresented – the relation between the size and the number of regions is around 2 to 1. The lowest level in this sense is shown for the significantly rural regions (SR). Type 2 is concentrated to Poland and central parts of France.

An indication of rural areas in the role of in-migration areas – at least to some degree - is that both SR and PR are overrepresented in type 3. This is the same phenomenon as the development in type 1 with the difference that natural population change is negative. This is a consequence of low TFRs and/or lopsided age structure that hamper childbearing and erode the reproduction potential. It must be kept in mind that regions with traditionally high TFR have experienced a sharp drop in the fertility rates during the 1990s. The fertility gap between urban and rural areas has diminished drastically during the last decades even if the gap is not yet completely closed. The lowest levels are to be found in the Southern and Eastern parts of Europe consisting of a lot of rural areas. The highest fertility rates are to be found in the Northern parts of Europe and Ireland – also countries with a large part of rural regions. The pattern is thus not straightforward with regard to interpretation of the development of TFRs in different kinds of regions. Type 3 areas are concentrated to the Southern parts.

Type 4 is the worst case from a sustainable point of view. Total population decrease in combination with natural population decrease and net out-migration is not a good starting point in order to create good possibilities for sustainable population development. As much as 20 percent of the regions in EU25 are in this situation and especially PU and PR are overrepresented compared to the total figures. This is valid both for number of regions and population size. SR is in a a "better" situation – 15 percent of the regions representing 11 percent of the population in SR are categorised as type 4. This contrasts against the situation in PR where the corresponding figures are 21 and 19 percent. Many of these regions are located in the European periphery. Large parts of Sweden, Baltic States, Hungary, Northern Spain and even Northern England are in this category. Many of these areas are also categorised as PR.

The type 5 regions are in a transition situation if the low fertility rates will continue to drop in these areas in the future. This will result in a change from type 5 to type 4 and a worsen situation with regard to reproduction potential and sustainable population development. The prerequisites for reproduction will be eroded as the migratory movements are negative and if TFR will continue to fall. The rural areas are not overrepresented in this category – especially predominantly rural regions (PR) seem to be in a favourable situation both concerning the number of regions and populations size. Type5-regions are to be finding in the parts of Finland and in the relatively densely populated part of England west and southwest of London.

Rural areas are overrepresented in type 6 at least with respect to population size. PR is even overrepresented considering the number of regions. Especially the urban areas seem to be small regions with respect to the population size. The relation between number of regions and population size is 1 to 2. The rural areas are more equal distributed between big and small regions.

From a sustainable point of view this type is not favourable as the reproduction potential is eroding. If this is a consequence of its attractiveness concerning settlement patterns and amenities and then in-migration of elderly and middle-aged people, the development is not promising in the long run from a sustainable population point of view. If the negative population trend shall be reversed the dependency of in-migration may be stronger. If this will be a result of in-migration of elderly or middle-aged people, the reproduction potential consequently will be weaker. Type 6 regions are predominately localised to Southern Europe but even in Eastern Europe there a lot of regions in this category.

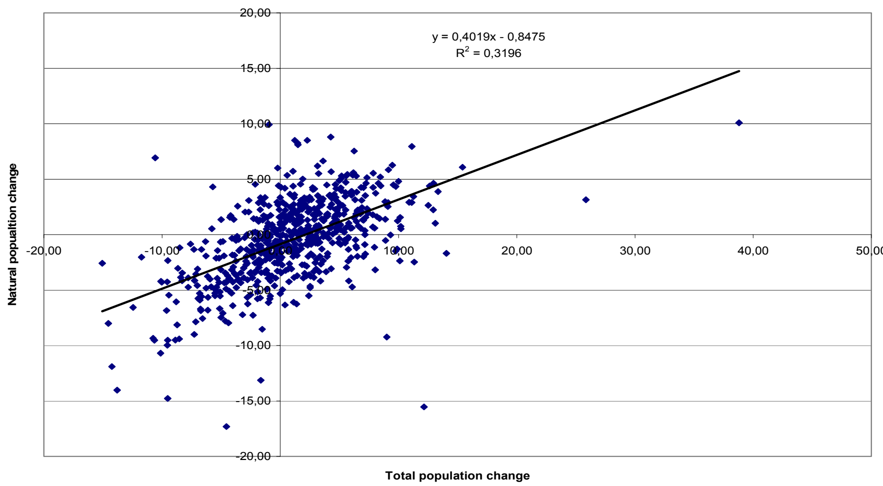
3.1.3 Population change: natural population development or migration?

In order to get a hint of the "explanatory power' of migration and natural population development, some straightforward regressions have been done including only two factors and based on cross-section data at NUTS1-3 level. These correlations are presented in Figure 3.1–3.3 between total population change, migratory movements and natural population development. As can be seen, the strongest correlation is between net migration and total population change. This is not especially surprising as in-migration areas are supposed to be dynamic and expansive while out-migration areas stagnating and retarding. It must, however, be kept in mind that these estimations are no indications of the income level or standard of living in the different regions, as most of the migratory movements are domestic and not international. This means that there are large differences in GDP/cap between different regions in EU29 depending of the localisation of the regions. Instead the correlation between net migration and total population change is rather an illustration of differences in living conditions within the countries than between them. Anyhow, it is obvious that regions that have experienced a population increase are also in-migration areas and vice versa, even if there are large differences in income and standard of living.

Even the correlation between total population and natural population development must be handled with utmost care. As mentioned before it is not only the TFR that are of importance for the natural population development. Even age and gender structure influence the natural population development. A lop-sided age structure and a skewed gender structure with a small share of women in fertile ages may result in a natural population decrease even if TFR is high. The same is of course valid in the opposite direction – even if TFR is low the age and gender structure can have a positive impact on the natural population development and consequently on the total population change.

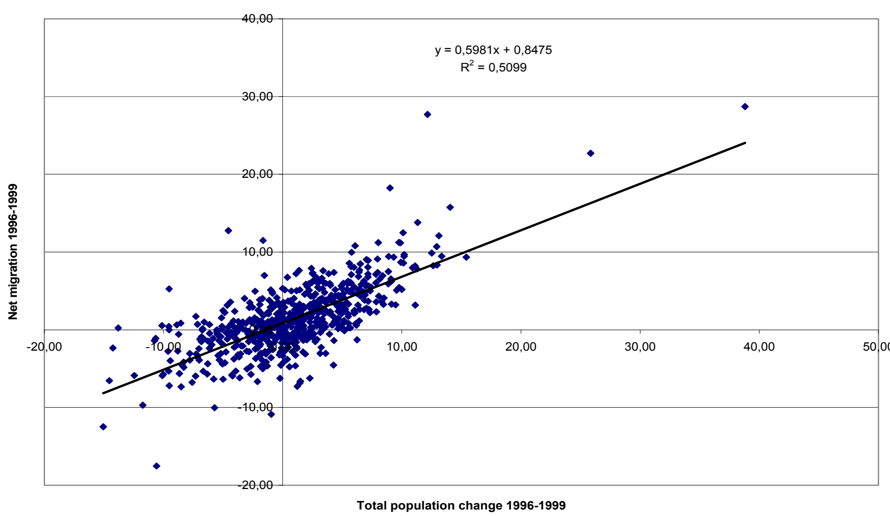
The correlation between natural population change and migration seems to be negative – even if the R^2 is small and almost negligible. It is not the size of the R2 that is of interest in this case - instead it is the negative slope of the 'trend line'. This is, however, not as surprising as in-migration areas consists of both ageing areas and more dynamic and expansive ones and in both cases the impact on the natural population development is negative. In ageing regions this is a consequence of the lop-sided age structure and in the 'dynamic case' a result of the low TFRs, even if the age structure here is positive from a reproduction point of view. Many expansive in-migration areas in Europe are also characterised by very low reproduction potential. This is one of the consequences of earlier in-migration as many of the in-movers had very small families and the regions then became more and more characterised as regions with low TFRs. Even out-migration areas are in many cases ageing regions with negative consequences for the natural population change.

Figure 3.1 The correlation between total population change (x) and natural population change (y) 1996-1999. NUTS1-3, not overlapping. N=638. Per mille.



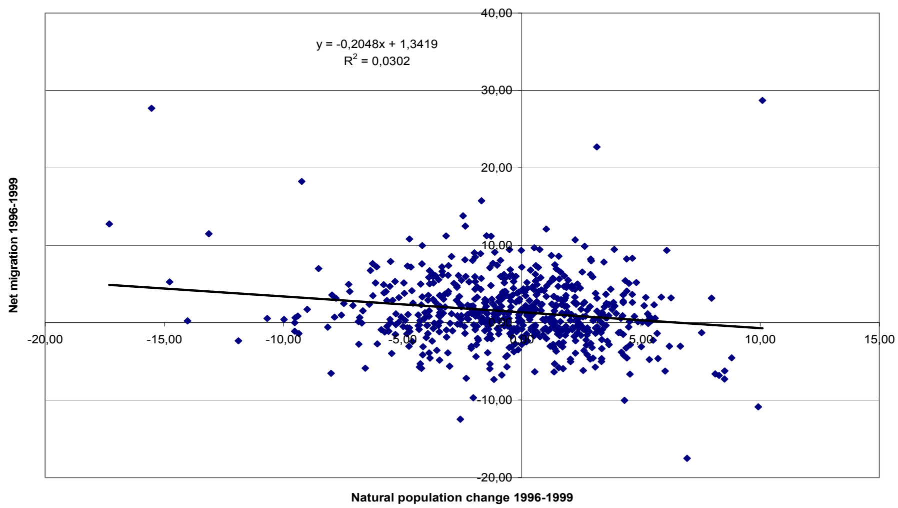
Source: Estimations from New Cronos

Figure 3.2 The correlation between total population change (x) and net migration (y) 1996-1999. NUTS1-3, not overlapping. N=638. Per mille.



Source: Estimations from New Cronos

Figure 3.3 The correlation between natural population change (x) and net migration (y) 1996-1999. NUTS 1-3, not overlapping. N=638. Per mille.



Source: Estimations from New Cronos

3.2 Population development and age structure

In the entire Europe – even outside EU29 – the recent rapid drop in the rate of population growth is remarkable. In the period 1950-1975 the average annual rate of growth was 8,3 per 1000 population. In the most recent quarter-century this index had fallen to 2,9 per 1000. Around the turn of the century negative natural population growth rates appeared in 17 European countries (the number of deaths exceeded the number of births). These countries were Byelorussia, Bulgaria, Croatia, the Czech Republic, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Moldova, Romania, Russia, Slovenia, Sweden and Ukraine. In addition the following countries had close to zero natural growth: Austria, Poland, Slovakia and Spain (Demeny 2003).

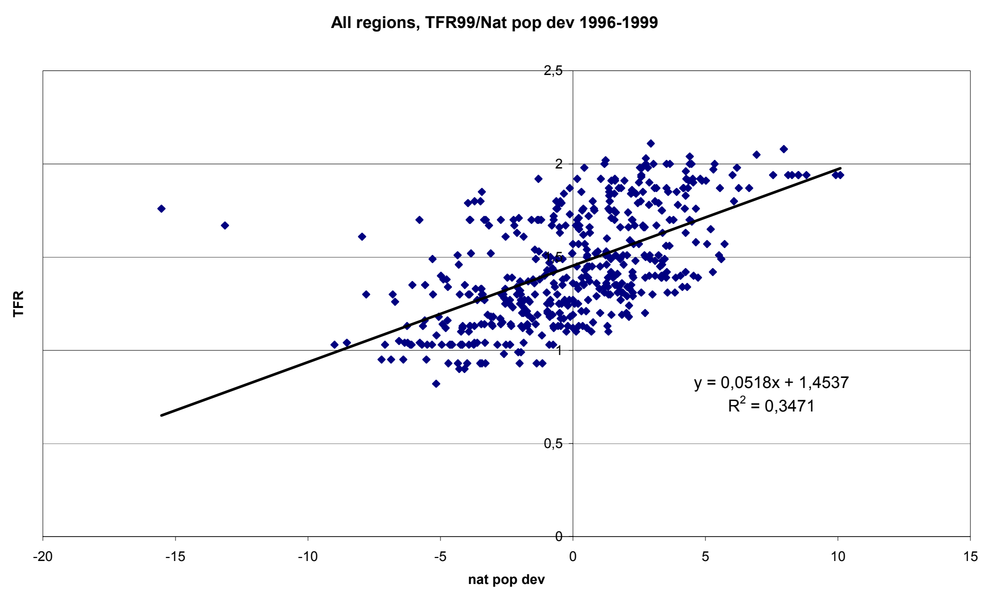
Among the 29 ESPON-countries as many as 17 countries were within the span of TFRs by the end of the former century, which – according to the short-hand description by the French demographer Jean-Claude Chesnais – may have the following implications: "Heavy and structural contradiction, which digs a deep hole at the basis of the age pyramid and consequently compromises the future of the society at large. Limited chance to get a return to equilibrium; evaporation of population number" (Chesnais 2000). As mentioned above changes in the number of births are a consequence of the development of the birth rates and of the size of the cohorts of childbearing age. Standardised for changes in age-specific fertility rates, large cohorts of childbearing age result in large new cohorts and vice versa. Consequently, the number of births fluctuates as a function of the size of the cohorts in cycles of 20/25 years. From a regional perspective, age structure and the size of the cohorts are of great importance for natural population development – the difference between births and deaths – since the age structure varies in different regions. Depopulation areas have e.g. much larger proportions of elderly compared to metropolitan areas or university towns, where the proportion of persons aged 20-30 years is much larger.

This means also that natural population development often is a cohort phenomenon – large cohorts reproduce large cohorts and vice versa. The strategic variable here is then TFR that varies both with regard to time and place. Another lesson to learn from this elementary reasoning is that changes in population size and structure often are connected to long term changes in economic and social conditions but even attitudes and values are of great importance. The problem for this project is, however, that long-term series don't exist at regional level – only the second half of the 90s are in a condition that data can be used for time-series analysis at regional level within EU29. This is not enough to analyse the regional population development from a long wave perspective – instead cross-section analyses must be used to get a hint about what is happening or what has happened.

In order to get a hint about the correlation between TFR and natural population development two regressions have been done (figure 3.4 and 3.5). These results must be interpreted with utmost care as some regions within EU29 are missing as a consequence of lack of regional data with regard to both variables and problems with the correspondence between the regions. The R^2-coefficients and the slope of the trend line shall thus be interpreted as an indication of connection between the size of TFR and natural population development. The natural population development is calculated as the average change rate between 1996 and 1999 and is presented in the statistical appendix. Both regional TFR and natural population change have been regionally adjusted to match each other and avoid mismatch as far as possible. After adjustment and exclusion of some countries and regions, the total number of observations is 488.[20]

As can be seen from the figures there is a positive correlation between the size of TFR and natural population change, even if the age structure of course also has impact on the natural population change It must however, be considered that the positive correlation also tells us that low TFR results in a slow natural population increase or even a decrease. This phenomenon is probably most pronounced in out-migration and depopulation areas where low TFR and lop-sided age structure reinforce each other.

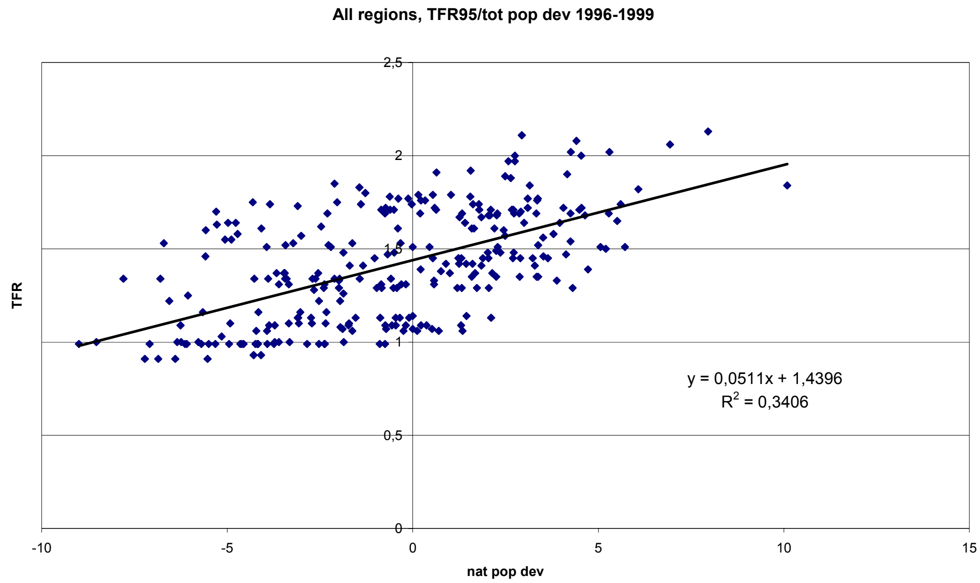
Figure 3.4 The correlation between TFR 1995 and natural population change 1996-1999.



Source: Estimations based on data in the statistical annex.

[20] The countries that are excluded are UK, EE, LT, LV, CZ, SK, SL, CY, MT, and BG.

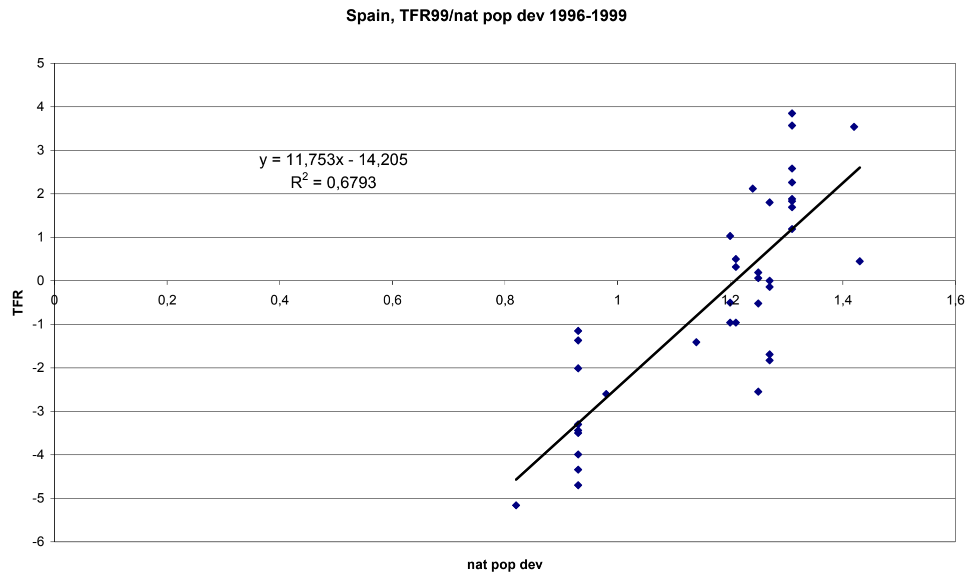
Figure 3.5 The correlation between TFR 1999 and natural population change 1996-1999.



Source: Estimations based on data in the statistical annex.

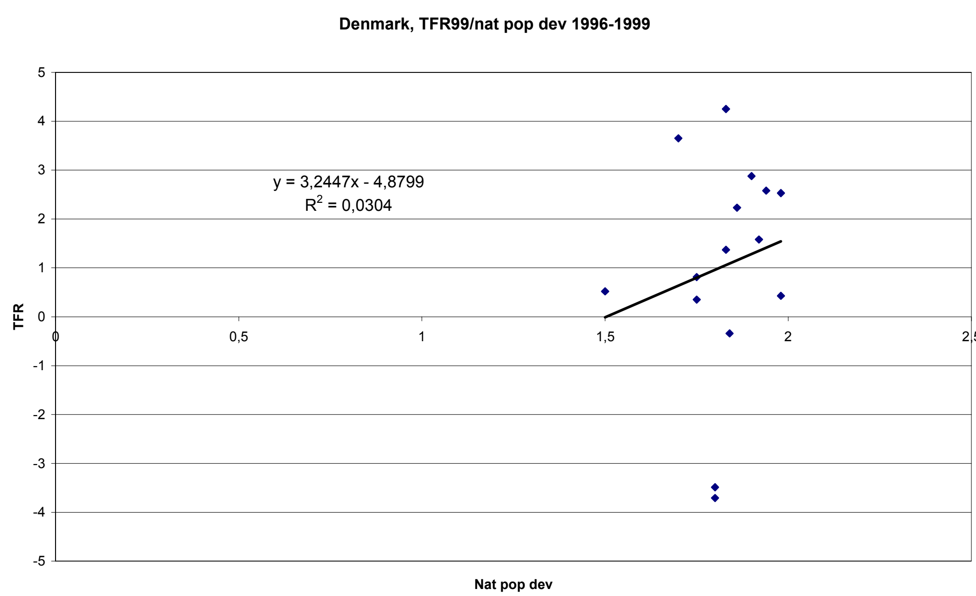
In order to see if there are any national differences, some estimations have also been done on regional data for selected countries. Denmark, Germany, Spain, France, Italy, Hungary, Poland, Romania and Norway have been tested. The same pattern also seems to be valid on national level even if there are some exceptions (see annexes). Denmark and Poland are the two most pronounced exceptions in the sense that the correlation between TFR and natural population growth is more or less absent. The highest correlations among the countries that are investigated are for Spain, Italy and Germany. The latter seems perhaps surprising but here the low TFR in the Eastern Germany combined with a skewed age structure can be one reason for the high correlation between the variables. The two extremes – Spain and Denmark – are shown in Figure 3.6 – 3.7.

Figure 3.6 The correlation between TFR 1999 and natural population change in Spain 1996-1999.



Source: Estimations based on data in the statistical annex.

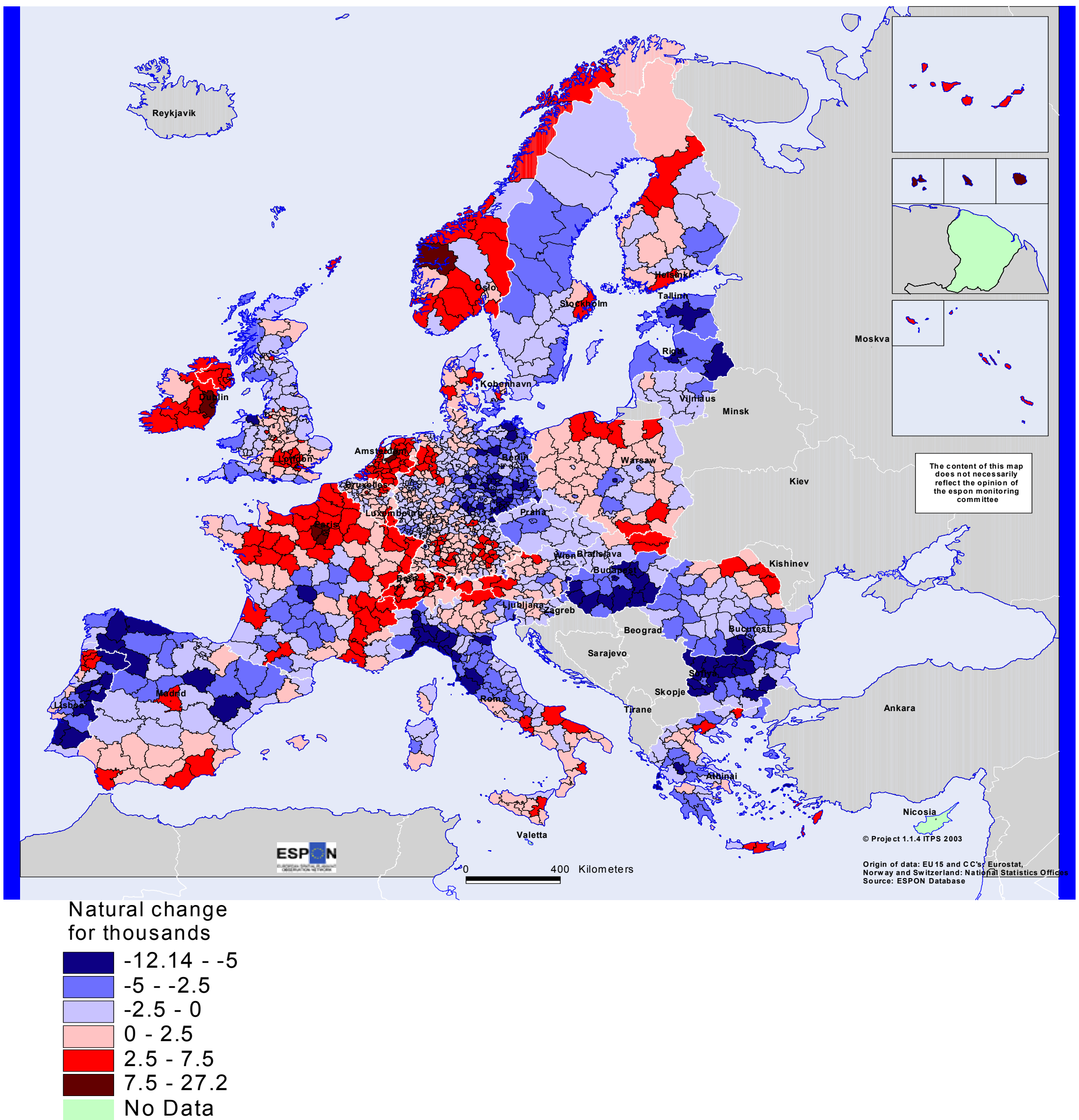
Figure 3.7 The correlation between TFR 1999 and natural population change in Denmark 1996-1999



Source: Estimations based on data in the statistical annex.

Map 3.3

Natural population development in 1999



3.3 Fertility and the natural population development

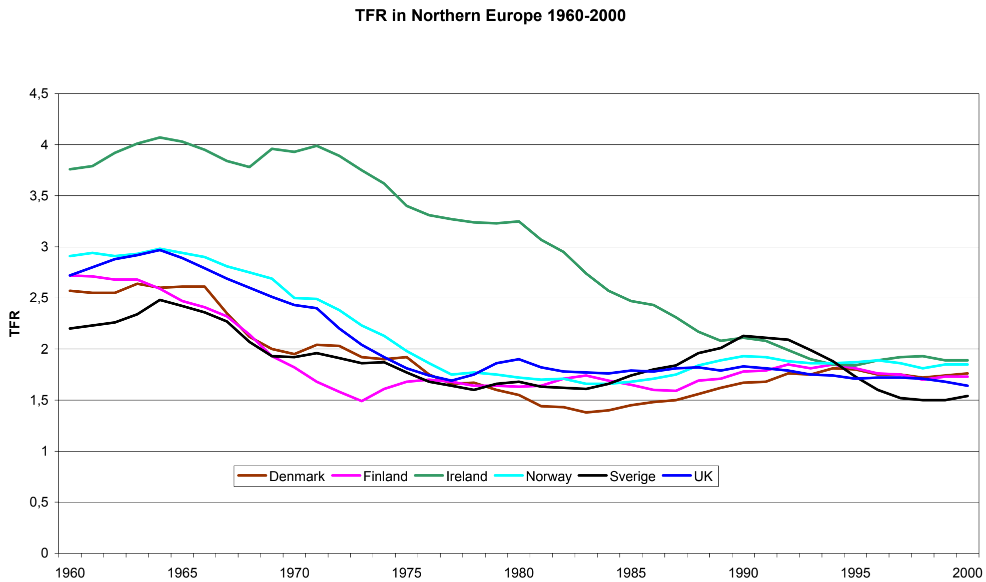
The tendencies of fertility decline and the growing negative population change started in Europe during the 60s and 70s and low TFRs were established at a low level during the 80s and 90s. Even if the age and gender structure both have great impact on the natural population development, it is the total fertility rate that has been in focus when the natural population development is discussed. The general background of the "renewed" interest in population decline and depopulation is the recent fertility decline that in most countries took place from the middle of the 1960s to the middle of the 1970s (with some earlier as well as some later starters among the countries of the "different Europe's"). After a major fall in fertility rates, fertility tended to remain stable or to decline more slowly. There are not yet any European examples of enduring upward shifts – instead the TFR changes seem to be of short term and temporary character (see Figures 3.8-3.11).

The recent events may be linked to long-term demographic development, dating back at least a couple of centuries. This period includes what is known as 'the demographic transition' (as is presented above); a major and lasting shift from high to low mortality and fertility that was most pronounced in the nations of Europe, North America, Japan, Australia and New Zealand. Increments in human longevity culminated in an unparalleled rise in life expectancy during the first sixty years of the twentieth century. Fertility declined dramatically in the countries of transition; on the order of 50 percent between 1870 and 1940.The former century as a whole by and large saw a continuation of this tendency, although significant fluctuations occurred with the world economic crises in the 1930s and the World War II. The development since the middle of the 1960s in many countries brought an end to almost two decades of post-war «baby-boom» and took fertility levels back to the long-term downward trend.

Even if many common national demographic trends among the European countries are well documented, it should be remembered that the extent to which the various countries experienced these trends is not always the same, and that the outcomes may differ in important ways. During the period from the late 1960s to the early 1980s fertility fell well below replacement level (ca. 2,1) in most European countries. However, the courses of decline differed and the fertility levels varied substantially among the countries in the decades following the steepest decline, pointing towards very differentiated demographic prospects in the years to come.

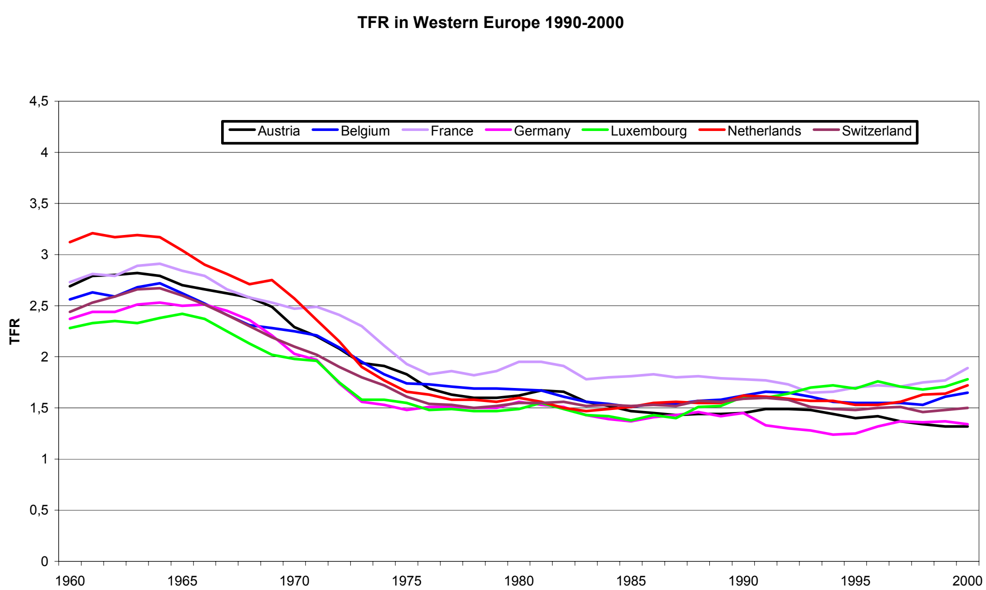
From Figure 3.8-3.11 it seems that the national TFRs have been converging during the period after 1960. The patterns are, however, more heterogeneous when we move to sub-national territorial entities (with regard to the development during the 90s, see Map 3.4-3.6 For the period 1960-1999, see also the maps in annex A8). Studies in several countries have documented that the timing, pace and courses of development in fertility change varied substantially between different types of local communities and regions, for instance according to dimensions commonly associated with rural-urban, centre-periphery etc. At sub-national levels the mechanisms of regional-demographic change – especially the phenomenon and role of migration – in many places were strongly influenced by the emergence of a regional-demographic zero-sum, or even minus-sum, game.

Figure 3.8 Total fertility rates (TFR) for Northern Europe 1960-2000.



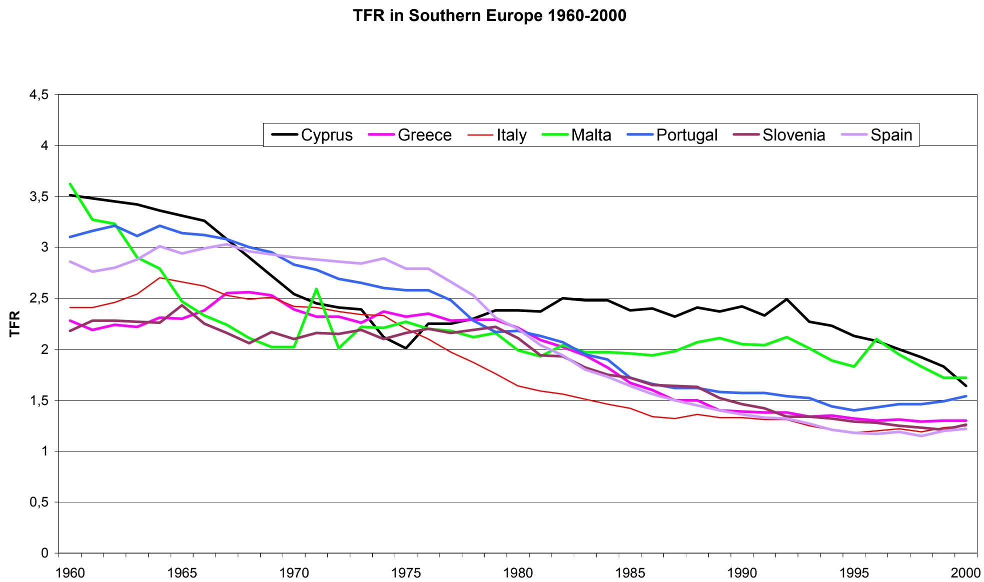
Source: UNs Population Division, Population Database.

Figure 3.9 Total fertility rates (TFR) for Western Europe 1960-2000.



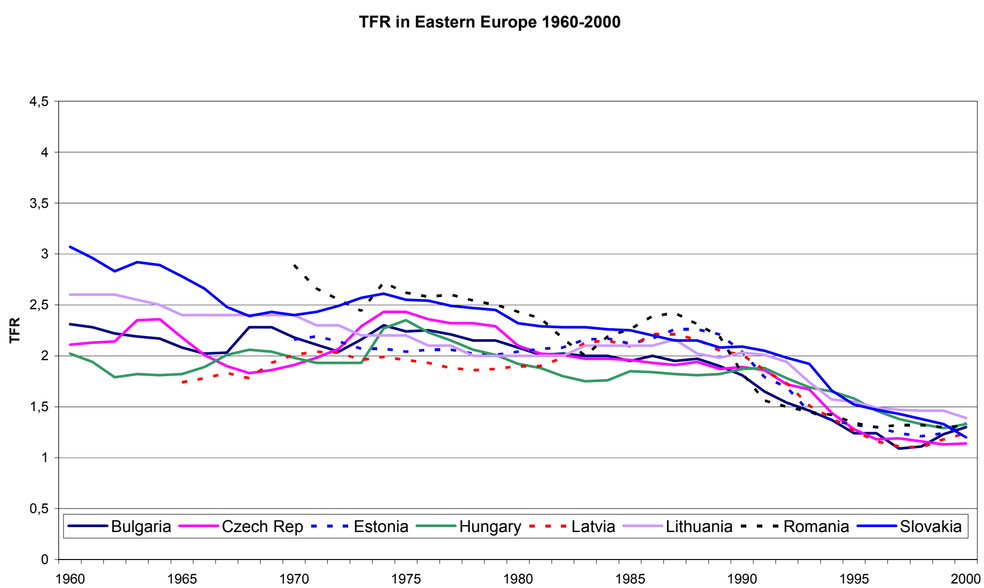
Source: UNs Population Division, Population Database.

Figure 3.10 Total fertility rates (TFR) for Southern Europe 1960-2000.



Source: UNs Population Division, Population Database.

Figure 3.11 Total fertility rates (TFR) for the Eastern Europe 1960-2000.



Source: UNs Population Division, Population Database.

The TFR development between 1960 and up today is not only characterised by a long-term and continuous drop. The development is also characterised by drastic changes in the levels of TFR different parts of Europe. During the 1960s and 1970s the Southern parts of Europe had higher TFRs than the other parts. Today the situation is diametrically opposed - the lowest levels are to be found in the Southern parts and the highest in the Northern. Especially the Nordic countries have today the highest TFRs in Europe and Sweden had the largest fluctuations during the 1990s.

Data indicate that the end of the 1980s was notably good concerning labour market conditions in the Nordic countries and especially then for women (Hoem 1998). After topping the European fertility league in the beginning of the 1990s there was a sharp drop up the end of the decade (see also Maps 3.4-3.6 that also illustrate TFRs at regional level). At least in the Swedish case the connection to economic cycles and fluctuations in labour market conditions during the 1980s and 1990s has been confirmed and especially then outside the metropolitan areas. The metropolitan areas are not so vulnerable to economic fluctuations and the labour market conditions are in regular better off with lower unemployment rates. This has resulted in a diminished gap in the regional TFRs and the regional gaps have almost been closed (Johansson 2000).

Fertility changes seem, thus, to be effected by changing labour market conditions. When youth unemployment and job opportunities decrease the entrance on labour market will be delayed. There exist two ways of reaction with respect to this situation. One alternative is to prioritise motherhood and early childbearing. The other is to postpone the childbearing as the economic conditions are uncertain and instead continue with education. In this case the effect on TFR will be negative. There are a lot of indications that the latter effect dominates – the income effect will as a consequence of bad economic times hamper childbearing and early motherhood. With regard to postponement of childbearing, the publicly financed child facilities also are of importance and they differ a lot among the European countries. It should also be noticed that countries with the highest female labour force participation rate also had the highest fertility. These are indications that countries with a well developed welfare system (child care, paid paternal leave) also have the highest fertility rates (Vogel 2003).

Another aspect is the transition of the family patterns in Europe. There exist a lot of variations with regard to family structure, family formations and separations, age of leaving home, caring of elderly and young people within EU29. There are family-based welfare systems as well publicly financed ones. These phenomena have impact on the fertility development in different ways.

It is a well known fact that marriage –at least in the formal way - is more frequent in Southern Europe than in the Nordic countries. Even in this sense there seems, however, be indications of a convergent process in the sense that families over all Europe seem to live more and more in cohabiting relations or as singles. The process behind the convergence of the total fertility rates following three "development paths" - marriage without children and children even without marriage and singles with or without children has obvious consequences with regard to the TFR. Table 3.4 differentiates among 16 countries in Europe with regard to extramarital births and TFR by 1990. During the 90s the table has probably been developed in a converging direction as the share of singles and one-person households has increased (Micheli, 2000). The common trend is towards smaller households and a higher share of singles even in the Southern part of Europe (Vogel 2003).

Table 3.4 Sixteen European countries by 1990 shares (%) of extramarital births and TFR.

	% extramarital births		
TFR	Less than 10%	10% - 30%	30% – 50%
1,25-1,50	Greece, Italy, Spain	Austria, (West)Germany	
1,50-1,75	Belgium, Switzerland	Netherlands, Portugal, Scotland	Denmark
Over 1,75		England, Finland, France	Norway, Sweden

Source: Micheli, 2000.

In order to examine the convergence/divergence processes at a more disaggregated level, comparisons between the coefficients of variance have been done for some years between 1960 and 2000. The coefficient of variance is a better measurement than the standard deviation as the mean value is changing over time and is independent of the size of the mean value. The regional definitions have changed over time, but despite this some hints about the development can be telling. The results are presented in Table 3.5.

During the 60s and 70s there are signs of a divergent development even if the TFRs are dropping. This was a period in Europe – at least in the market economies - with both good and bad times. The year of 1960 can be seen as the end of the reconstruction period after the second world war while 1980 was characterised by oil chocks and slow growth rates in many Western European economies, particularly during the second half of 70s.

During the 80s and 90s there are instead indications of a convergent development – with the exception of 1995 - and then in combination with a continuous fall in TFR. TFR was below the reproduction rate in the end of the 90s in every country within EU29 and this was also the case for most of the regions – only some regions in Finland and Norway (see map 3.4) that had a TFR that was over the reproduction rate. As the data for most of the new EU members are on national level there can of course be regions in these countries with TFR over the reproduction level but it seems not to be the fact from the sharp decrease even in these countries during the 90s.

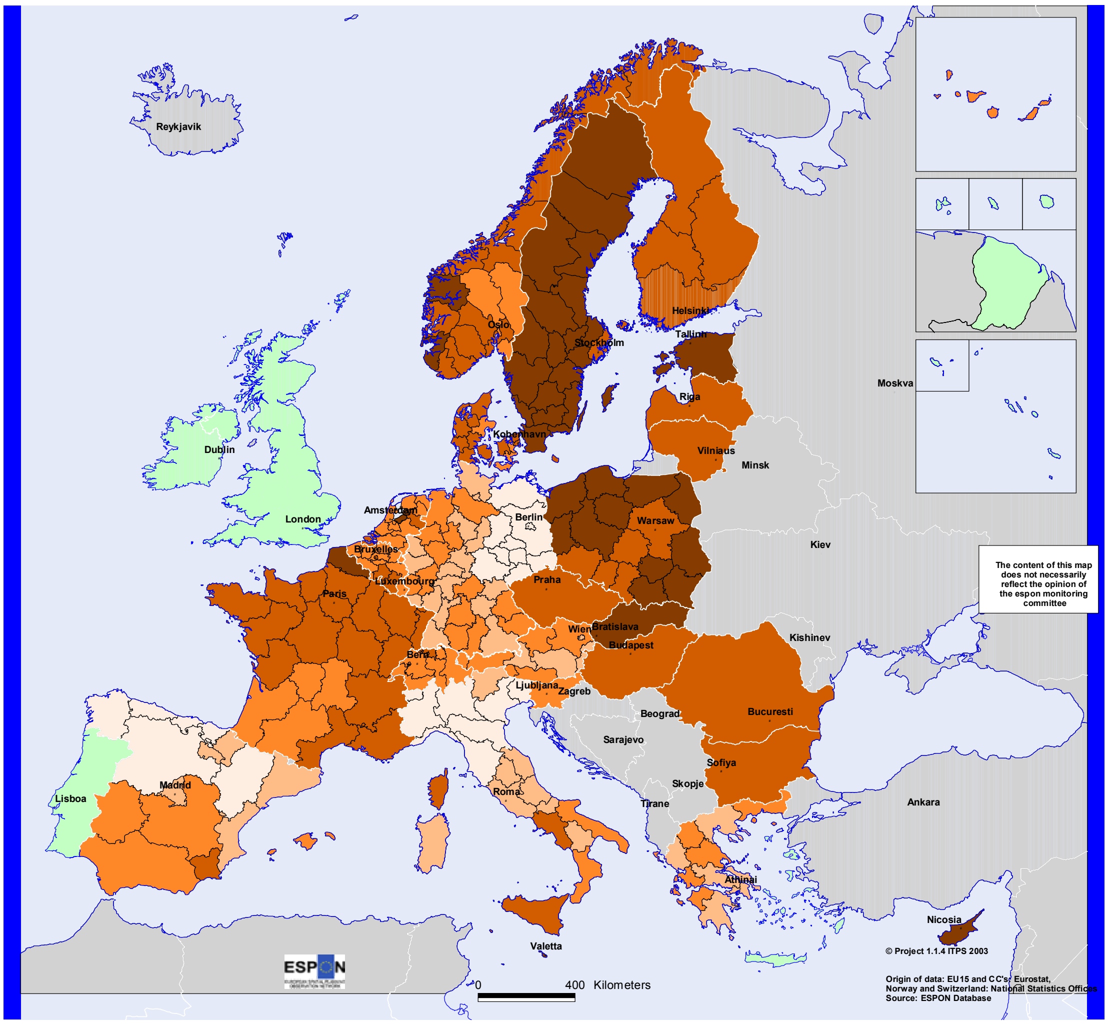
Table 3.5 Some measures with regard to convergence/divergence in the TFR development 1960-2000. Different regional definitions, not overlapping.

Year	N	Min	Max	Mean	Std	Coef. of var.
1960	564	1,20	4,71	2,69	0,335	0,215
1980	571	1,00	4,13	1,92	0,493	0,256
1980	832	1,00	4,46	2,04	0,500	0,246
1988	832	0,81	3.95	1.81	0,414	0,229
1990	297	0,97	2,42	1,68	0,310	0,185
1995	297	0,77	2,13	1,52	0,292	0,192
1999	300	0,82	2,11	1,50	0,274	0,182

Source: Estimation based on data in the statistical appendix.

Map 3.4

Fertility rate in 1990



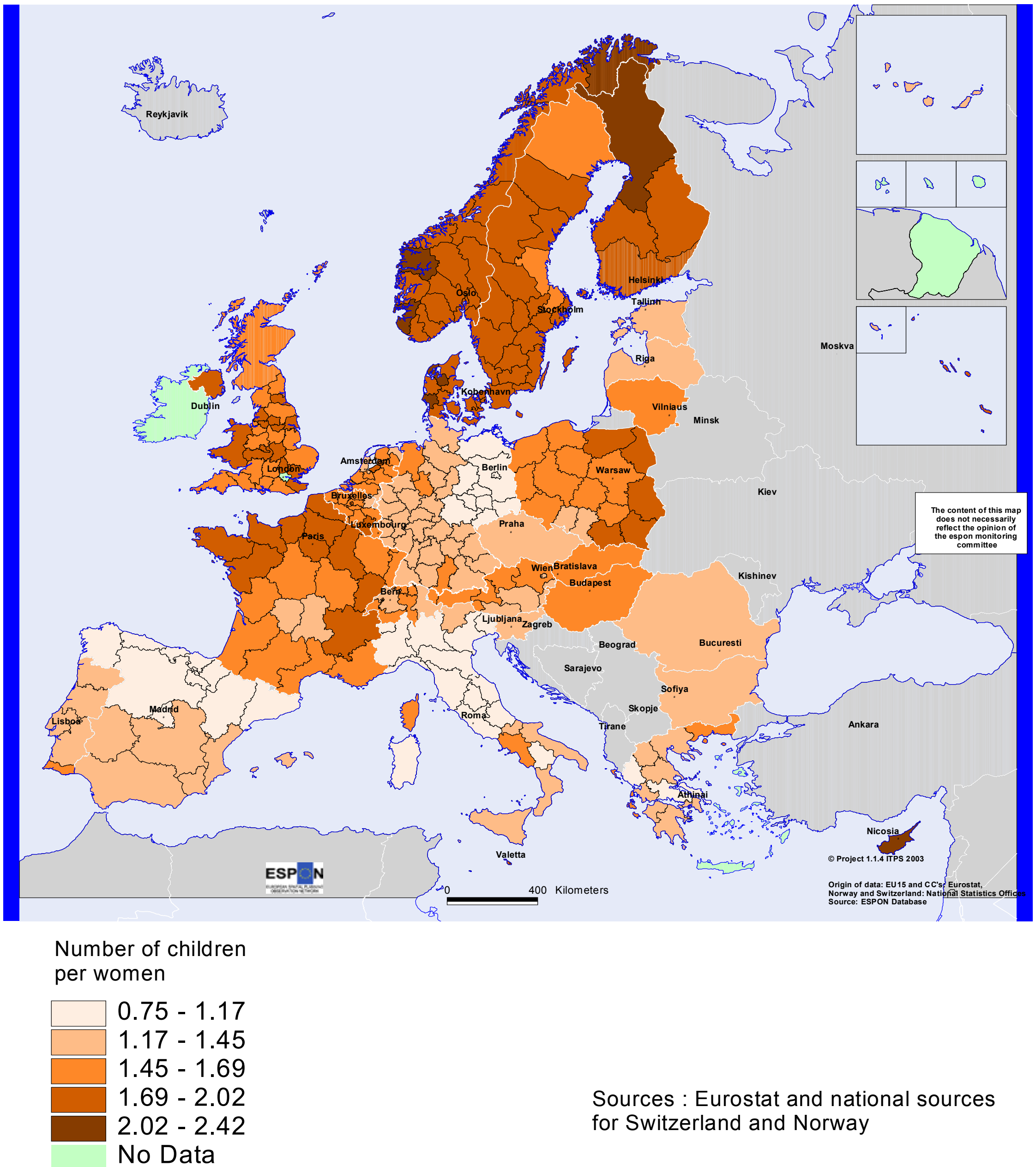
Number of children per women

- 0.97 - 1.17
- 1.17 - 1.45
- 1.45 - 1.69
- 1.69 - 2.02
- 2.02 - 2.42
- No Data

Sources : Eurostat and national sources for Switzerland and Norway

Map 3.5

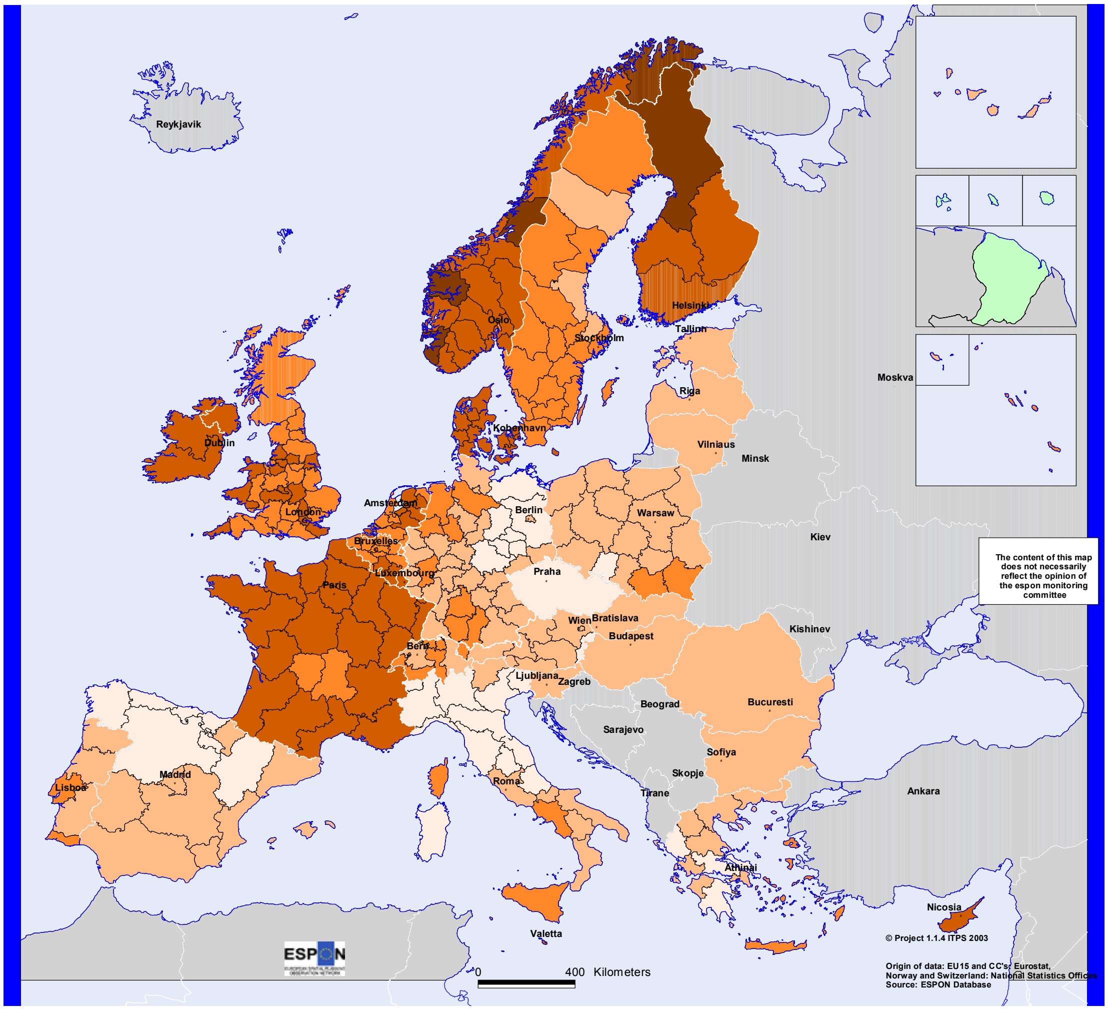
Fertility rate in 1995



Sources : Eurostat and national sources for Switzerland and Norway

Map 3.6

Fertility rate in 1999



Number of children per women

- 0.75 - 1.17
- 1.17 - 1.45
- 1.45 - 1.69
- 1.69 - 2.02
- 2.02 - 2.42
- No Data

Sources : Eurostat and national sources for Switzerland and Norway + own estimate

The regional disparities during the 1990s are also shown in Maps 3.4- 3.6. Here the low TFRs especially in the Southern parts of Europe and in some parts of the Eastern Europe are obvious. This phenomenon is perhaps even more pronounced in TFR-tables in the statistical annex where it can be seen that there are only few regions that are over or around the reproduction rate (2,1) today. As data are missing at the regional level from most of the new EU countries (forthcoming in the final interim report), there may be some other regions that have TFRs over the reproduction rate. However it is not probable - as mentioned above - that this will change the picture of a Europe that is going to experience a population decline in the future.

Eurostat compiled regional population scenarios (projections) at NUTS 2 level in 1997, covering the period 1995-2025. According to the so-called base-line scenario, described as a continuation of current trends, the EU-15 population as a whole will continue to grow at a very low rate, and start declining around 2020. While around thirty NUTS 2 regions faced a declining population in the latter half of the 1990s, mostly concentrated to the former Eastern Germany and Southern Europe, the number of regions with a negative rate of population change is expected to have tripled by the year 2025. Regions experiencing population decline will be widely spread across the EU territory, comprising around half of the EU population. The scenario clearly illustrates the implications of uneven regional-demographic processes and the growing sensitivity to migration balances that also have impacts on the natural population development.

3.4 Ageing, Dependency Ratios and Life Expectancy

3.4.1 Ageing

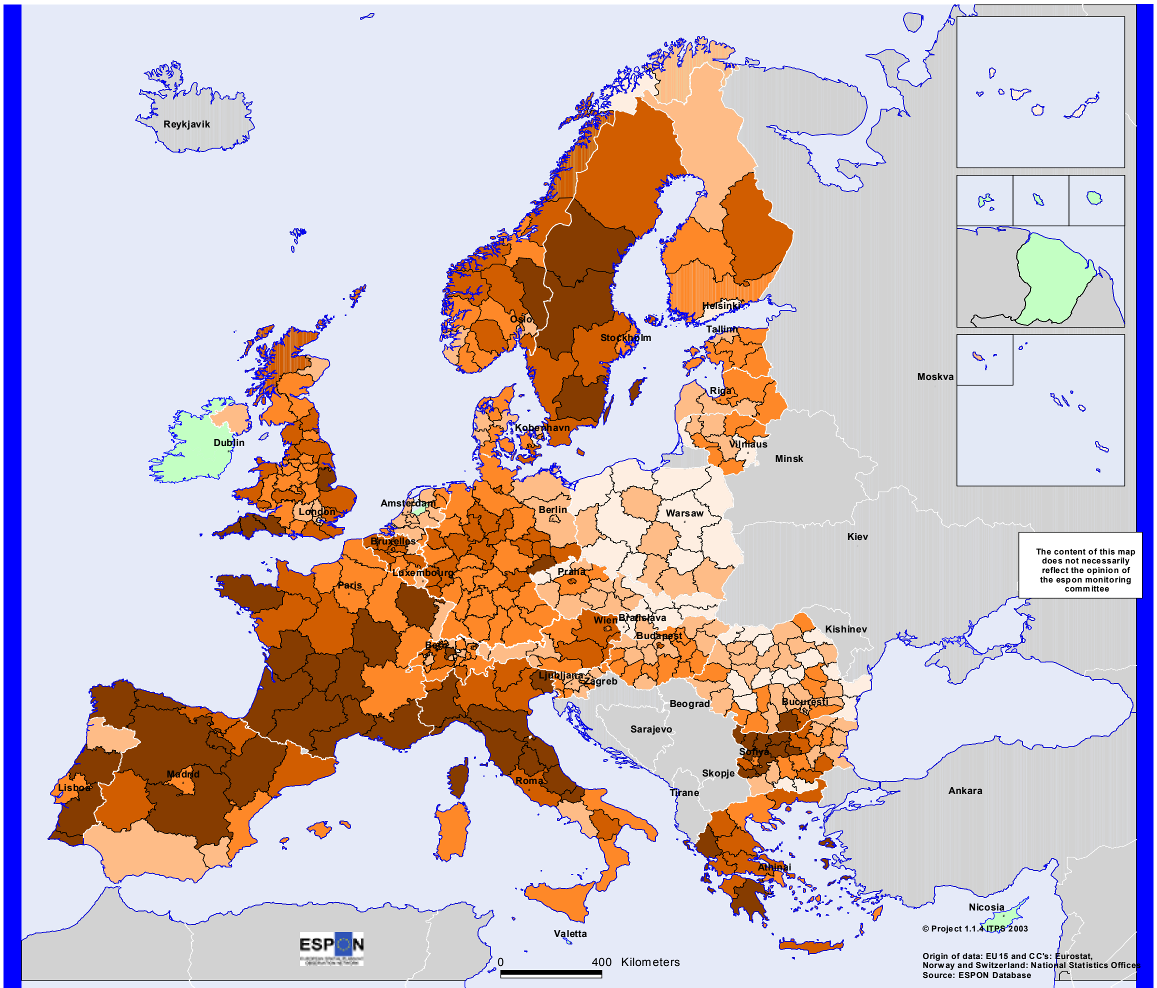
As mentioned above, birth rates are so low today that they would result in a population decrease within the European territory without in-migration - the number of deaths is larger than the number of births. This is, however, not only a result of the low birth rates – instead it is in many cases a consequence of the lopsided age structure that hampers the natural population increase. Even if ageing is a more or less a general ingredient in the population development in Europe, this process has progressed to various stages in different regions and nations. Ageing and its relation to the labour force is also one of the most discussed topics today with respect to labour market problems of today and in the future.

The ageing process was associated with a continuous population growth during the past century and the at least during the period after WWII. Today and tomorrow the situation seems to be quite different – ageing will happen together with population stagnation and decline of the European population. This is both a function of low fertility rates and longer life expectancies. Ageing will thus be accentuated and the dependency ratio will shift in the sense that a higher share is composed of elderly people and a lower share children and youngsters (see e.g. Johnsson 1992).

This process is also a cohort phenomenon as the consequence of cohorts moving up through the age pyramid over time. Large cohorts will have more children than small ones and vice versa with the age-specific fertility rates. Aging in Europe is thus, at least partly, an effect of falling and low TFRs during the past decades and that cohorts in reproductive ages have diminished. The consequences of the ‘baby bust’ of past decades are more and more pronounced and will be accentuated in the future. Ageing is thus a long term process and without migratory movements it is in such a cohort phenomenon. In order to analyse the ageing process over time it is thus necessary to have long time series over both cohort sizes, birth rates and migratory movements and this is very difficult to get on regional level within EU29.

Map 3.7

Elderly people (>65 years) in 2000



Part of the people over 65 years old in the population
%

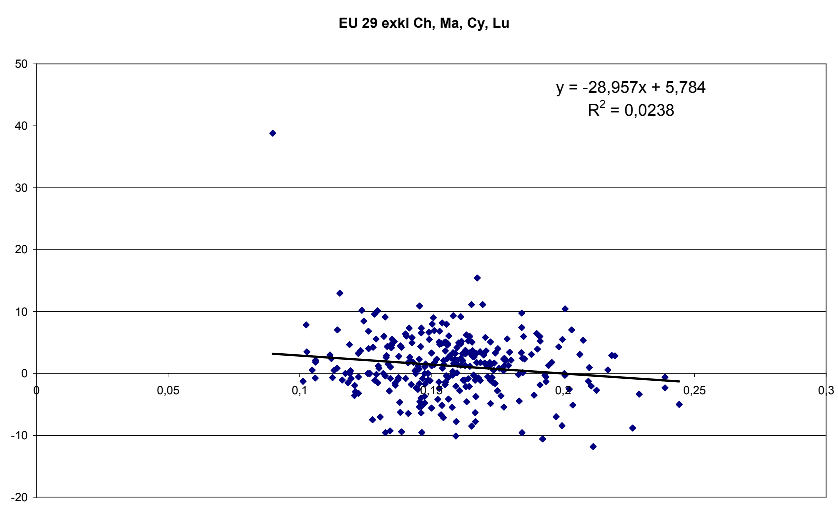
9.04 - 12.1
12.1 - 14.3
14.3 - 16.3
16.3 - 18.6
18.6 - 24.5
No Data

The ageing process is thus a consequence of different development patterns that are not only of demographic character. One reason is of course the low fertility rates that in the long run will result in a lopsided age structure with a lot of elderly people in the population structure. This is lopsided age structure is also – in many cases – reinforced by out-migration of young people for reasons that are largely of economic, social and cultural character. This means that regions with a high share of elderly people also are out-migration areas. Lower fertility and higher mobility has thus resulted in a situation where the ageing process in many cases is more of a function of out-migration of young people than of low fertility. Migratory movements affect, as mentioned earlier, the age structure and the ageing process more than natural population change - births and deaths – which also increasingly has been a consequence of in- and out-migration of people in younger and fertile ages.

On the other side, many regions with a high share of elderly people are also in-migration areas with regard to this category – many of these regions can be characterised as 'retirement paradises' that attract people who have been pensioners and then move to areas where the climate and other amenities are favourable for elderly people. These areas differ thus a lot from the traditional ageing areas that instead may be characterised as depopulation areas. From this map 5.5 it can be seen that ageing is a phenomenon both in expansive in-migration areas and traditionally out-migration ones.

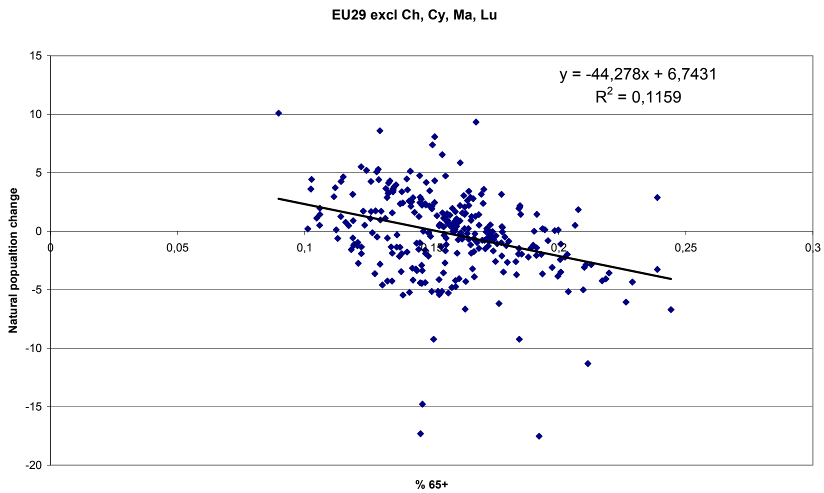
As can be seen from figures 3.12 - 3.14 there seems to be no correlation at all between ageing and total population change and also between ageing and net-migration. Besides this unexpected result and even if there is no significant correlation between ageing and net-migration, the β-sign is "wrong" – the slope of the trend line is positive. Between ageing and natural population change there may be some tendency to a correlation even if it is very weak. Here the β-sign is also "right" in the sense that the slope is negative. It should, however, be kept in mind that these regressions cover the whole EU29 with the exception of Cyprus, Malta, Luxemburg, Ireland, Switzerland and some parts of United Kingdom. In order to check if the pattern changes with a split in other regional categories, other regressions have been done.

Figure 3.12 The connection between ageing (percent 65+ in population) 1999/2000 and total population change 1996-1999 (y). NUTS 1-3, not overlapping. N=277. Per mille.



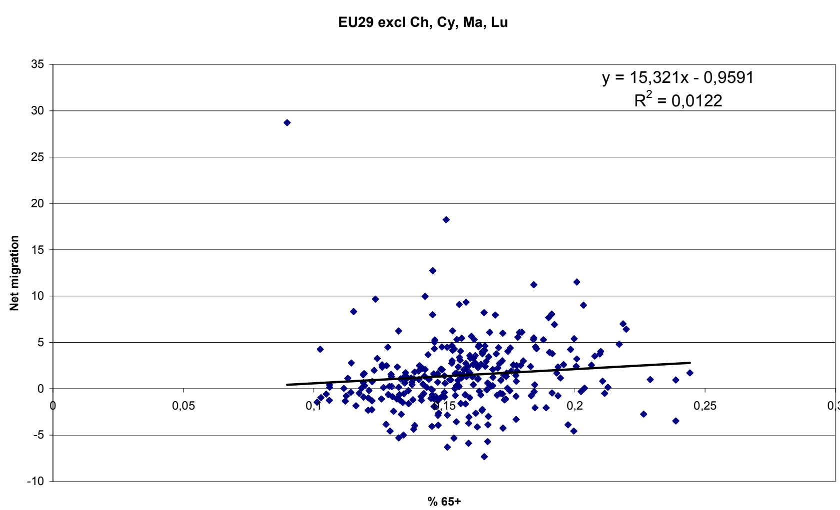
Source: Estimations from New Cronos and from various national statistic bureaus.

Figure 3.13 The connection between ageing (percent 65+ in population) 1999/2000 and natural population change 1996-1999 (y). NUTS 1-3, not overlapping. N=277. Per mille.



Source: Estimations from New Cronos and from various national statistic bureaus.

Figure 3.14 The connection between ageing (percent 65+ in population) 1999/2000 and net migration 1996-1999 (y). NUTS 1-3, not overlapping. N=277. Per mille.



Source: Estimations from New Cronos and from various national statistic bureaus.

The above regressions have been split up with regard to four other regional levels. These are the Northern Europe, Central Europe, southern Europe and the Eastern Europe. The latter group have also been estimated with regard to the Northern, Central European and the Balkan countries. The results are shown on in the equations and R^2-coeffeficients below (Table 3.6).

As can be seen from Table 3.6, the pattern will be quite different when the above estimations are broken up in new regional ones. In the new EU member countries, and in Northern and Southern Europe the ageing process seems to have impact on total population change, but the impact on the components seems to differ between them. With regard to natural populations change the ageing process seems to be especially significant for the development in Southern Europe where ageing and low TFR seem to reinforce each other. The impact on net-migration is, however, not so pronounced. It is only in the Nordic countries that there may be a small connection between ageing and net-migration in the sense that ageing regions also are out-migration regions. This is, however, more pronounced if Norway is excluded in the estimations – this is also valid with regard to both total and natural population change.

With a split of Eastern Europe it is obvious that the Baltic States are more like Central Europe than Northern Europe. There seems not be any connection at all between ageing on the one hand and total and natural population on the other. The same is valid with regard to net-migration. Instead the central East-European countries remind of the development pattern in Southern Europe and the same is also applicable to the Balkan countries. In both cases it is especially the impact on natural population change that is of importance for the total population development in the ageing regions.

Table 3.6 The correlation between ageing (% 65+) 1999 (x) and total population change, natural population change and net migration (y). 1996-1999.

Regions	**Ageing vs.**	**Constant**	**β-coefficient**	**R^2**	**N**
EU27+2	Total population	5,78	-28,96	0,024	296
Excl Ch, Cy, Ma, Lu	Natural population	6,74	-44,28	0,116	296
	Net migration	-1,15	15,88	0,013	296
Northern Europe	Total population	29,38	-170,59	0,435	48
	Natural population	18,35	-112,68	0,327	48
	Net migration	11,03	-57,91	0,124	48
Central Europe	Total population	7,43	-31,76	0,034	90
	Natural population	8,61	-47,44	0,166	90
	Net migration	-1,18	15,68	0,011	90
Southern Europe	Total population	11,77	-58,84	0,259	54
	Natural population	14,26	-84,35	0,849	54
	Net migration	-2,49	25,51	0,069	54
Eastern Europe	Total population	12,78	-111,46	0,304	72
	Natural population	15,00	-127,46	0,417	72
	Net migration	-2,22	16,00	0,009	72
Balticum: Ee, Lt, Lv	Total population	-2,66	-9,44	0,001	15
	Natural population	8,36	-93,20	0,057	15
	Net migration	-11,02	83,76	0,027	15
Central: Cz, Hu, Pl, Sk	Total population	10,48	-87,35	0,344	35
	Natural population	12,80	-105,31	0,466	35
	Net migration	-2,33	17,96	0,065	35
Balkan: Bg, Ro, Si	Total population	12,50	-114,29	0,406	21
	Natural population	14,28	-120,55	0,665	21
	Net migration	-1,78	6,26	0,004	21

Source: Estimations from New Cronos and from various national statistic bureaus.

Shown below are six different types of regions that illustrate the ageing process within EU29 1999 where the share (%) of people of 65+ are combined with total population change, net-migration and natural population change. The ageing process is illustrated by the percentage of the ages 65+. This results, thus, in six different types where the ageing regions are defined as regions where the share of people of 65+ is 18 percent or more. In Table 3.6 these six types of ageing regions are shown with regard to the year 1999.

Table 3.7 A typology with regard to total population change, natural population and net migration 1996-1999 for regions with a high share of elderly people (at least 20 percent of the population 65+).

Type	Total	Migration	Natural	% (N=49)
1	PT>0	PM>0	PN>0	20,5
2	PT>0	PM>0	PN<0	32,6
3	PT>0	PM<0	PN>0	0,0
4	PT<0	PM<0	PN<0	18,4
5	PT<0	PM>0	PN<0	22,4
6	PT<0	PM<0	PN>0	6,1
PT=Total population development				
PM=Net migration				
PN=Natural population development				

Source: Estimations from New Cronos. See also the statistical annex.

As can be seen from Table 3.7 about half the ageing regions experience population increase and half the opposite between 1996 and 1999. A third of the regions are in the category 2; population increase, negative natural population change and in-migration. The opposite is true for the combination of total population increase, positive natural population change and out-migration (no observation)**.** The latter demonstrates the fact that ageing has a negative impact on the natural population development partly as a consequence of low fertility rates, partly of the lop-sided age structure that many cases is an effect of out-migration since long time.

Among the regions with population decrease the most observations are found in type 5 – population decrease, in-migration and natural population decrease. This type is probably regions that attract elderly people as a consequence of climate and other amenities that are pull-factors for elderly people. This can probably be explained by the fact that the age structure hampers the natural increase.

Type 4 seems on the other hand to be typically depopulation areas. Almost one fifth of the ageing regions are localised in this category. Here a combination of out-migration and natural decrease reinforce the negative population development.

3.4.2 Dependency Ratios

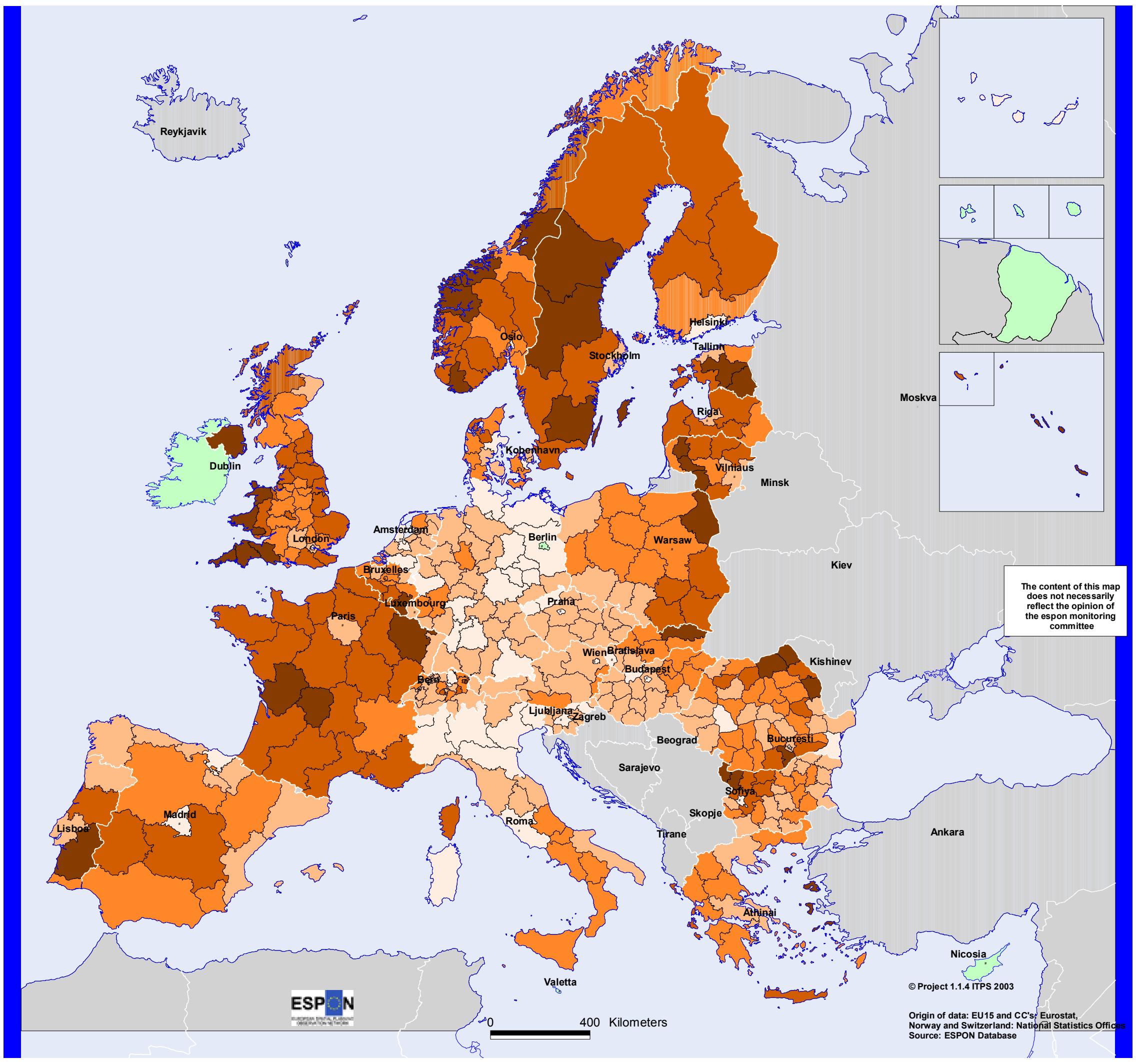
The dependency rate is a function of the size of the young age groups (0-19) and the older age groups (65+).[21] This means that the effect of ageing can be neutralised by low fertility rates in the estimation of dependency rates. With regard to estimations and scenarios of future population development this is an important thing to keep in mind – the same dependency rates can be a function of different demographic processes.

A high dependency rate often implies that the precondition for economic growth is weaker than a low dependency rate. One reason is that the part of population that is in productive ages is low and this means also that the economic "burden" is higher. This must be compensated by a larger labour supply and/or higher productivity. The dependency rates have also consequences for e.g. taxes, social welfare, care and schooling. High dependency rates imply that fewer people take care of more people compared to the opposite situation.

[21] The dependency ratio is sometimes defined as the total population divided by the number of persons aged 20-64, and sometimes it is defined as the number of persons aged 0-19 plus the number of persons aged 65+ divided by the number of persons aged 20-64. In this study we have used the first definition.

Map 3.8

Dependancy ratio in 1999



Total population/
population aged 20 to 64 years

- 1.51 - 1.59
- 1.59 - 1.65
- 1.65 - 1.7
- 1.7 - 1.75
- 1.75 - 1.85
- No Data

Source : Eurostat, national sources for Switzerland and Norway

From a regional point of view this means, *ceteris paribus*, that regions with high dependency rates are in an economically more problematic situation than regions with low dependency rates. It can also be shown that there seems to be a connection between regions with high dependency rates and stagnating or depopulation areas (see also WP4). One explanation to this is the fact that these areas have a lop-sided age structure with a high share of elderly people, out-migration of younger people in active ages (18-30 years) and, today, low TFRs. These processes reinforce each other and accentuate the ageing process and thus also the dependency rates in the out-migration regions.

High dependency rates are associated with the arguments for replacement migration. The labour demand will rise, ceteris paribus, with higher dependency rates.[22]The shortage of labour as a consequence of population stagnation or decline and of a lopsided age structure is a question that more and more has coming up on the political agenda in Europe and the need of 'replacement migration' will be discussed more in detail in chapter 3.7.

However, what does the dependency ratio really show? Rauhut and Malmberg (2003) analyses the different kind of measurements used to quantify the burden the persons who are working carry for those not working.[23] The results clearly shows that the dependency ratio as a measurement *exaggerates* the burden since it does not control for the number of persons in the age group 20-64 who is not working. The dependency ratio only tells us the ratio between the total population and the number of persons in the age group 20-64. If the female labour force participation rate doubles or triples will have no effect on the dependency ratio, although the number of persons in the work force increases significantly!

The study by Rauhut and Malmberg (2003) also shows that the correlation between the dependency ratio and economy growth is vague. Theoretically, a high dependency ratio, whether caused by an increasing number of children and elderly or by a decreasing number of persons aged 20-64, causes a lower economic growth, and vice versa. However, the empirical evidence from Sweden shows the opposite: periods of a relatively bad dependency ratio are periods of relatively good economic growth and vice versa.

The apocalyptic forecasts of the effects of ageing are not necessarily true, on the contrary. Several studies question the 'dark' future caused by aging and a worsened dependency ratio. Brown (2002, p. 52) says, "the prospect of an ageing society fills many otherwise rational people with dread. They worry about a graying world, a stagnant place bereft of youthful vigour with unsupportable numbers of dribbling pensioners packing out care homes on every street corner, bleeding the small number of workers dry of every penny of wealth they slave away to generate. If you suffer from this fear, you've been reading too many newspapers. It is just ageist hysteria. /…/ People are frightened of an ageing society because it is a step into the unknown, and because we have a youth-obsessed culture and ageist prejudices. But almost all our fears are totally unfounded". Furthermore, "Canadian social scientists have created a considerable body of research that shows apocalyptic demography for what it is – a set of beliefs that does not stand up to empirical examination" (Gee & Gutman 2002, p. 2).[24]

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[22] It should be noted that the theoretical review of the economic effects of immigration (chapter 2.2.3.1) and the empirical evidence (chapter 2.2.3.2) do not unanimously confirm that immigration can solve this problem.

[23] The other measurements analysed in this study are the post-active dependency ratio, the maintenance ratio and the modified maintenance ratio. The post-active dependency ratio is defined as the ratio between the number of persons aged 65+ divided by the number of persons aged 20-64. The maintenance ratio is the ratio between the total population and the number of persons in the work force, and the modified maintenance ratio is the ratio between the total population and the number of persons who actually are working (i.e. persons who are unemployed, on sick leave and on parental leave are excluded from the working population).

[24] Rauhut & Malmberg (2003) also analyse the ideological roots of the apocalyptic demography and find that it contains a clear libertarian and ultra-liberal political message. The concepts dependency ratio and replacement migration are highly political, and since they are so politically they should be treated with caution and not as an axiomatic truth.

3.4.3 Life Expectancy

Which factors, in general, have contributed to the increased life expectancy? On one side of the increased life expectancy can be attributed to changes in mortality. Some scholars believe that the decline in mortality, the so-called Mortality Revolution, is the most important explanation for the increased life expectancy and population increase. The decline in mortality in lower age groups has been followed by a fall in morbidity, i.e. the frequency of decease and poor health. This fall is related to the successful treatment of an increasing number of diseases. "The Mortality Revolution, like the Industrial Revolution, marks the onset of major technological change, with the Mortality Revolution reflecting a breakthrough in the technology of disease control. Both revolutions occur largely independently from each other, the later occurrence of the Mortality Revolution being due chiefly the later development of the medical vis-à-vis the physical sciences" (Easterlin 1986, p. 80f).

According to other scholars, the decline in mortality and increased life expectancy has to be attributed largely to the rising standard of living. Ohlsson states, "during the first half of [the 20th century], the increased living standard combined with advances in medicine have successfully overcome the infectious diseases resulting in a significant fall in mortality among children and young people. After 1950, the decline in mortality among old people has been the main reason for the increase in life expectancy" (Ohlsson 1995, p. 7. See also Ohlsson 1996, 1998). The improved standard of living is directly related to good economic growth (Schön 2000). The fact that life expectancy has increased among the old people in Sweden can be attributed to the considerable improvement in the standard of living of pensioners since the Second World War (Ohlsson, 1995, 1996, 1998).

In the old industrialised countries the life expectancy at birth approaches or exceeds 79 years. Three general trends in the increasing life expectancy are observable: (1) the relative difference in life expectancy at birth has narrowed with time; (2) the difference in female versus male longevity has widened with time. It is possible to say that there is a feminisation of old age; (3) the improvement of the life expectancy has not been linear, especially not for males. "From the early 1950s to the early 1970s, for example, there was little or no change in male life expectancy in Australia, the Netherlands, Norway and the United States; in Eastern Europe and much of the former Soviet Union, male life expectancy declined in the 1970s and early 1980s, and again in some countries in the early 1990s" (National Research Council 2001, p. 49).

In table 3.8 the life expectancy at NUTS O level for the EU29 countries are shown for 1950/1955 and 1995/2000 together with a prognosis for 2045/2050.[25] For the period 1950/1955 to 1995/2000 the trends in life expectancy, mentioned earlier, can be observed. The relative differences in life expectancy has narrowed between the countries, the difference in female versus male longevity has widened, and the improvement of the male life expectancy is not linear, and especially not in the new member countries.

The prognosis for 2045/2050 indicates that the relative difference in life expectancy between the countries of EU29 will continue to narrow. However, the difference in female versus male longevity will narrow for the coming 45 years in the prognosis, which indicates that the old trend is broken. Furthermore, the improvement of male life expectancy is more rapid in the new EU member countries than in the EU15 countries. This, however, confirms the trend that the improvement of the male life expectancy has not been linear, and definitely not in Eastern Europe.

[25] No data at NUTS 2 or NUTS 3 level has been found for an analysis of life expectancy at birth. We expect that there are very big differences in life expectancy at birth between different regions within one and the same country.

Table 3.8 Life expectancy at NUTS0 level for EU29 1950-2000, and a prognosis for 2045/50

	1950/1955		1995/2000		2045/2050	
	male	female	male	female	male	female
BE	65	70,2	74,7	81,1	81,1	86,7
DK	69,6	72,4	73,4	78,3	80	84,6
DE	65,3	69,6	74,2	80,4	80,9	86,5
GR	64,3	67,5	75,3	80,4	79,6	84,5
ES	61,6	66,3	74,9	82	81,4	88,3
FR	63,7	69,5	74,6	82,3	81,5	88
IE	65,7	68,2	73,5	78,8	81	86,1
IT	64,3	67,8	75,7	81,8	82,2	88,1
LU	63,1	68,9	74,1	80,6	80,8	86,5
NL	70,9	73,4	75,1	80,5	80,6	85,8
AT	63,2	68,4	74,3	80,5	82,7	87,1
PT	56,9	61,9	72,1	79,2	79,4	85,4
FI	63,2	69,6	73,4	80,7	82,1	87,1
SE	70,4	73,3	76,8	81,8	83,4	87,6
UK	66,7	71,8	74,7	79,7	81,5	85,4
BG	62,2	66,1	67,7	74,7	75,9	81,6
CY	65,1	69	75,5	80,5	80,9	85,8
CZ	64,5	70,3	70,8	77,7	78,3	84,3
EE	61,7	68,3	64,5	75,6	75,1	82,5
HU	61,5	65,8	66,5	75,3	76,4	83
LT	61,5	67,8	65,5	76,5	75,5	83,5
LV	62,5	69	64	75,6	75,2	83,1
MT	64,2	67,7	75	79,8	81,5	86,3
PL	58,6	64,2	68,5	77	77,2	83,8
RO	59,4	62,8	66,1	73,5	75,4	83,1
SL	63	68,1	71,2	78,7	78,9	85,4
SK	62,4	66,2	68,8	76,9	76,6	83,1
NO	70,9	74,5	75,2	81,1	82,7	87,2
CH	67	71,6	76,3	82,3	82,8	88,3

Source: UNPD World Population Prospects Database

Table 3.9 The five countries with the highest and the lowest life expectancy for 1950/1955, 1995/2000 and 2045/2050

	1950/1955		1995/2000		2045/2050	
	Male	Female	Male	Female	Male	Female
Highest	NL 70.9 NO 70.9 SE 70.4 DK 69.6 CH 67.0	NO 74.1 NL 73.4 SE 73.3 DK 72.4 CH 71.6	SE 76.8 CH 76.3 IT 75.7 CY 75.5 GR 75.3	CH 82.3 FR 82.3 ES 82.0 SE 81.8 IT 81.8	SE 83.4 CH 82.8 NO 82.7 AT 82.7 IT 82.2	CH 88.3 ES 88.3 IT 88.1 FR 88.0 SE 87.6
Lowest	PT 56.9 PL 58.1 RO 59.4 HU 61.5 LT 61.5 LV 61.5	PT 61.9 RO 62.8 PL 64.2 HU 65.8 BG 66.1	LV 64.0 EE 64.5 LT 65.5 RO 66.1 HU 66.5	RO 73.5 BG 74.7 HU 75.3 EE 75.6 LV 75.6	EE 75.1 LV 75.2 RO 75.5 LT 75.5 BG 75.9	BG 81.6 EE 82.5 HU 83.0 LV 83.1 RO 83.1 SK 83.1

In table 3.9 the life expectancy at birth has been ranked: the five countries with the highest and the lowest life expectancy for 1950/1955, 1995/2000 and 2045/2050. With the exception of Portugal 1950/1955, the countries with the lowest life expectancy at birth in the EU29 area are East European, both for males and females. When it comes to the highest life expectancy at birth, rich North-west and Central European countries were in top, both for males and females, in 1950/1955. In 1995/2000 three Mediterranean countries were among the top five for both males and females, which indicates significant changes regarding standard of living, welfare schemes and an improved health. The prognosis for female life expectancy 2045/2050 show that the same five countries that were in the top 1995/2000 also are in top. For men, the prognosis for 2045/2050 shows that only one Mediterranean country is among the five countries with the highest life expectancy; two are from Northern Europe and two are Central European.

The conclusions from tables 3.5 and 3.6 are, unfortunately, vague. People in West European countries have a higher life expectancy at birth than in East European countries. South European countries have improved their relative position amongst the countries in the EU29 area.

3.5 The migration trends in Europe since the 1960s

From the overall analysis of the migratory balances since the sixties, the following conclusions on the main evolution of migration balances can be made (King 1993):

- The 1960s balances (see map 1 in annex A8) show a relatively simple pattern with, on the one hand, a quite pronounced contrast between peripheral areas of Europe, whose balances are very negative (a belt from southern Italy to Ireland, along Iberian peninsula), and on the other hand, rich central regions, where full employment reigns. The contrast is the result of migratory movements between these two parts of Western Europe. Inside each country, the metropolitan areas are the most attractive, although they start experiencing peri-urbanisation process. Central industrial areas also show very positive balances (Rhine valley, north-west Italy). As for rural areas, especially the peripheral ones, these are still affected by a strong exodus towards national or North-Western European metropolitan areas. In central countries, old industrial areas already record negative balances, despite full employment. The map complies roughly to a "logic" that corresponded, in spite of significant nuances to the logics described by the neo-classic models of regional growth. According to these models migration is a consequence of regional disparities in the labour market. In communist Europe, the pattern is nearly the same as the one observed in Mediterranean countries. The contrast is clear between metropolitan but also main industrial areas with positive balances whilst rural ones have negative balances. However, unlike southern Europe, there is no massive emigration from those countries.

- In the second half of the seventies and during the eighties (see map 2 in annex A8), migratory flows weakened while new trends appeared. The central metropolitan areas refrained from acting as immigration cores; peri-urbanisation occurred, sometimes temporarily hindered by the effects of the crisis on the urban populations' income rather than as a response to a real reversal of the trends; the negative balance of the areas of old heavy industrialisation grew higher since the internal balance, which remained negative, was no longer partly offset by foreign immigration; the big European periphery ceased to be a core of mass departure where some of its areas (like the tourist districts such as the Mediterranean coast of Spain) instead started to attract a wealthy aged population from Europe's centre. Extra-European immigration was strongly slowed down at this time by the economic crisis combined with the closure of borders. As a consequence, it appears that the relationship between regional economic inequalities and migratory movements decreased strongly, at least in the European Union where the economic disparities no longer sufficed to explain individual migration decisions. In Eastern Europe, the evolutions were much slower, and we can still observe the main contrast between rural areas on the one hand and metropolitan on the other hand and, to a lesser extent, old industrial areas. Migrations in Romania show however a more dramatic pattern;

- The 1990s' decade (see map 3 in annex A8) however is characterised by a revival of the international migratory movements, though differently featured (immigration from Eastern Europe, sometimes temporary; strengthening of the immigration from Third World countries, bound to a de facto "expulsion" from the country of origin, for economic and/or political reasons, and no longer bound to a concerted call from European countries, etc.). These new immigration forms were in search of metropolitan locations, damaged central neighbourhoods or large peripheral housing estates according to the countries where they could live on informal economic resources, sometimes on an ethnic basis, and find insertion niches. Those areas crystallize the urban problems. Although internal migrations mostly explain the migratory balances at regional level, if at such a level dominant trends of rural exodus generally belong to the past and some rural areas even show positive balances, their complex nature (reduced departure rates, return of retired populations or alternatively of young active people, etc.) deserves a closer analysis. While the central metropolitan areas reinforce their relative economic position again, the big cities seem to show demographic behaviours more favourable than in the previous decades (1975-95), despite the permanent peri-urbanisation and the land use planning problems it attracts. In Eastern Europe however, the pattern has completely changed in relation with the end of the communist period. Firstly, except for the Czech Republic, the migratory balance has been negative for most of the countries. Secondly, if the metropolitan areas remain the most attractive ones, the process of suburbanisation appeared very soon after the communist collapse and has been very vigorous. Thirdly, this implies that rural peripheral areas retain a negative migratory balance. Fourthly, old industrial areas are now going through a period of crisis and emigration (Silesia, north-eastern Hungary). Finally, in the eastern countries nearest Western Europe, the most occidental regions have a positive migratory balance.

The main evolutions of the geography of migrations in Europe can thus be summarised as follows:

- Mass migration flows from poor peripheral countries to central rich areas, which used to be quite significant up to the 1970s, have ceased. The east-west migration, very vigorous in the first half of the 1990s has rapidly decreased since that time;
- The attractiveness of metropolitan areas has tended to wane, in spite of some revival in 1990s, and id accompanied by an intense peri-urbanisation process;
- Rural areas still affected by a considerable exodus during the course of the 1960s, particularly in the peripheries, have experienced a certain revival, especially in the North-Western Europe;
- Balances of the early industrial areas, already negative during the 1960s full employment period, have deteriorated with the crisis, which has brought about a high level of unemployment in these regions;
- Some leisure areas, most of them coastal, have become increasingly attractive (Mediterranean coast of France and Spain, southern coast of England).

Beyond this global evolution, the maps show the persistence of internal macro-regional contrasts: this remains the most pertinent scale to explain the migratory balances at a European level. These internal contrasts will be analyzed below.

3.5.1 Migratory balances at the end of the nineties

As we notice above, the main processes of migratory flows in the nineties are a continuation of processes that appeared during or before the seventies; (see map 3.8) where intra-European flows have been balanced since that period; flows between rich and poor regions inside each country are still provoking big contrasts in the migratory balances; suburbanisation, which began in the sixties in north-western Europe continues across Europe; the rural exodus still very visible in the sixties has weakened in peripheral Europe (with the exception of northern regions of Scandinavia) and is even reversed in North-western Europe (counter-urbanisation).

The resumption of massive immigration to Western Europe, including Mediterranean Europe and Ireland, did not considerably alter the geographic pattern. However, most of this immigration is passing through metropolitan areas, whose migratory balance is less negative than in the past or even positive. Despite of all the evolutions observed since the 1960s, the main elements that explain the late nineties migration's map are the border effect. It is within the national borders that the flows are the most intense and the migration balances contrasts most significantly, and secondly, as they essentially play a role within national spaces. Such a reality can be expressed through some examples.

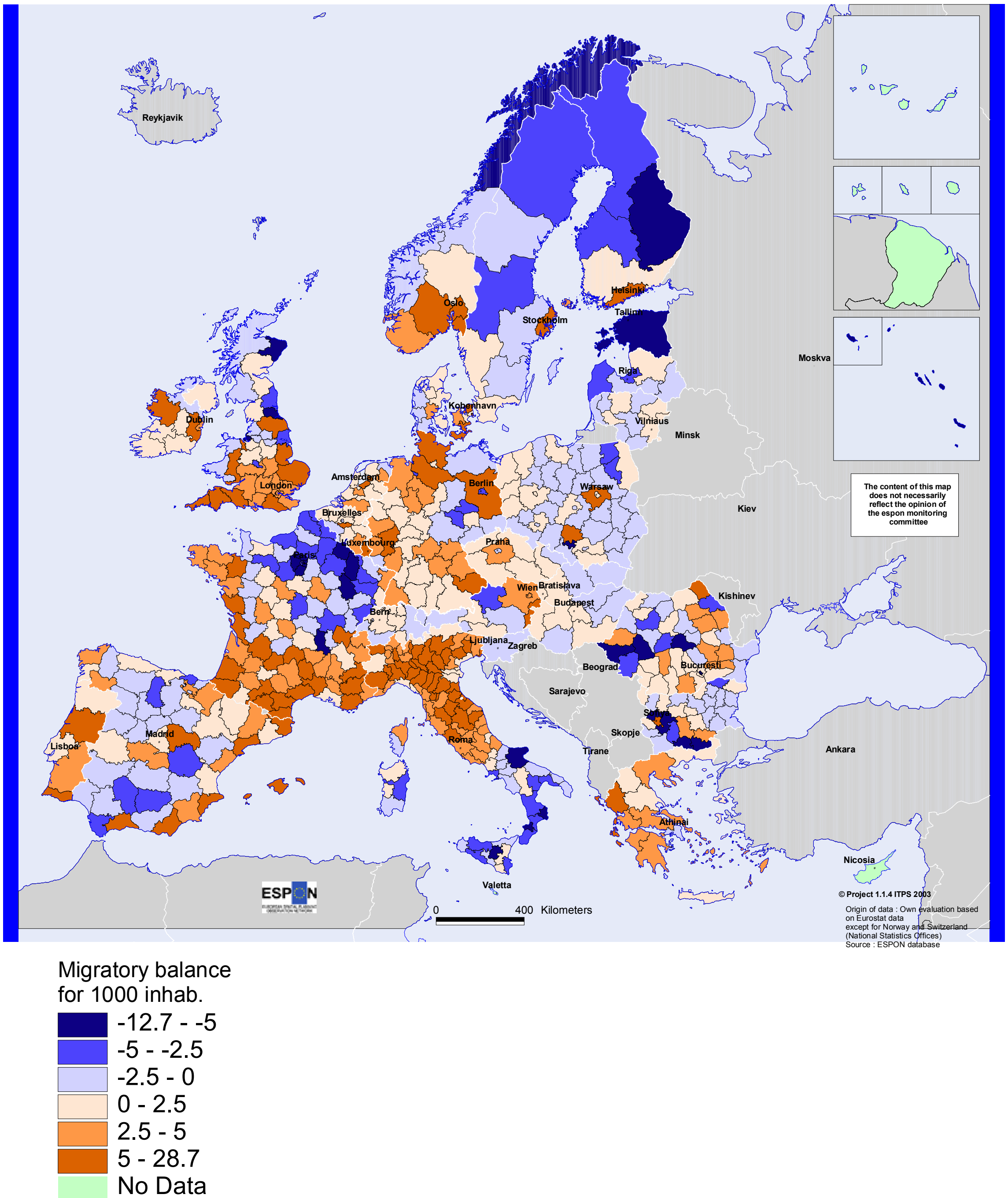
In Germany with regard to the East to West migration and in the U.K. North to South balance can be attributed to the huge economic gap between these regions. In the U.K. the older industrial regions of the North, including certain parts of Scotland, are still undergoing a structural crisis, whereas the service sector economies of the South, in particular that of the greater London region, is visibly more dynamic. This results in a relatively important migration from the North to the South. The importance of the economic factor is confirmed by the weight of the young people in these movements; more 90% of the north-south flow in England (Vandermotten et al. 2004). The Italian case is quite similar, the gaps between the development in the North – one of the richest regions in the European Union – and the South explain the persisting net migration in favour of the North. The development policies installed in favour of the Mezzogiorno could not reduce those gaps in development.

The case is France can be closely compared. The crisis in the old industrial regions of the North, as in the Nord-Pas-de-Calais or the Lorraine, can explain a net migratory balance there whereas the middle South has positive balances. Nevertheless these migration patterns appear to be less direct in the case where residents of the old industrial regions migrate toward the Paris region compared to the inhabitants of the latter who tend to migrate to the South or to the West. In France, the southern regions (with of course sub-regional nuances) benefit at the same time from a good image in terms of quality of life and of a relative economic dynamism.

This is true especially in comparison with the old industrial regions of the North. They attract all age classes, in particular the young pensioners, but also young families with children. They are only less attractive, and sometimes repulsive for the youth between 20 and 30 years because they offer little possibilities of higher education and insertion in the job market. South-west Germany, the South of England or coastal Spain equally combines both favourable factors. In Italy, there is more of a contradiction between the environmental and economic factors, where the lower standard of living and higher unemployment rate in the South explain a very negative balance there for the active ages. The quality of life, sometimes better in the South (environment, climate) does not bring about important North-South movements, apart from the return of pensioners with origins in the South.

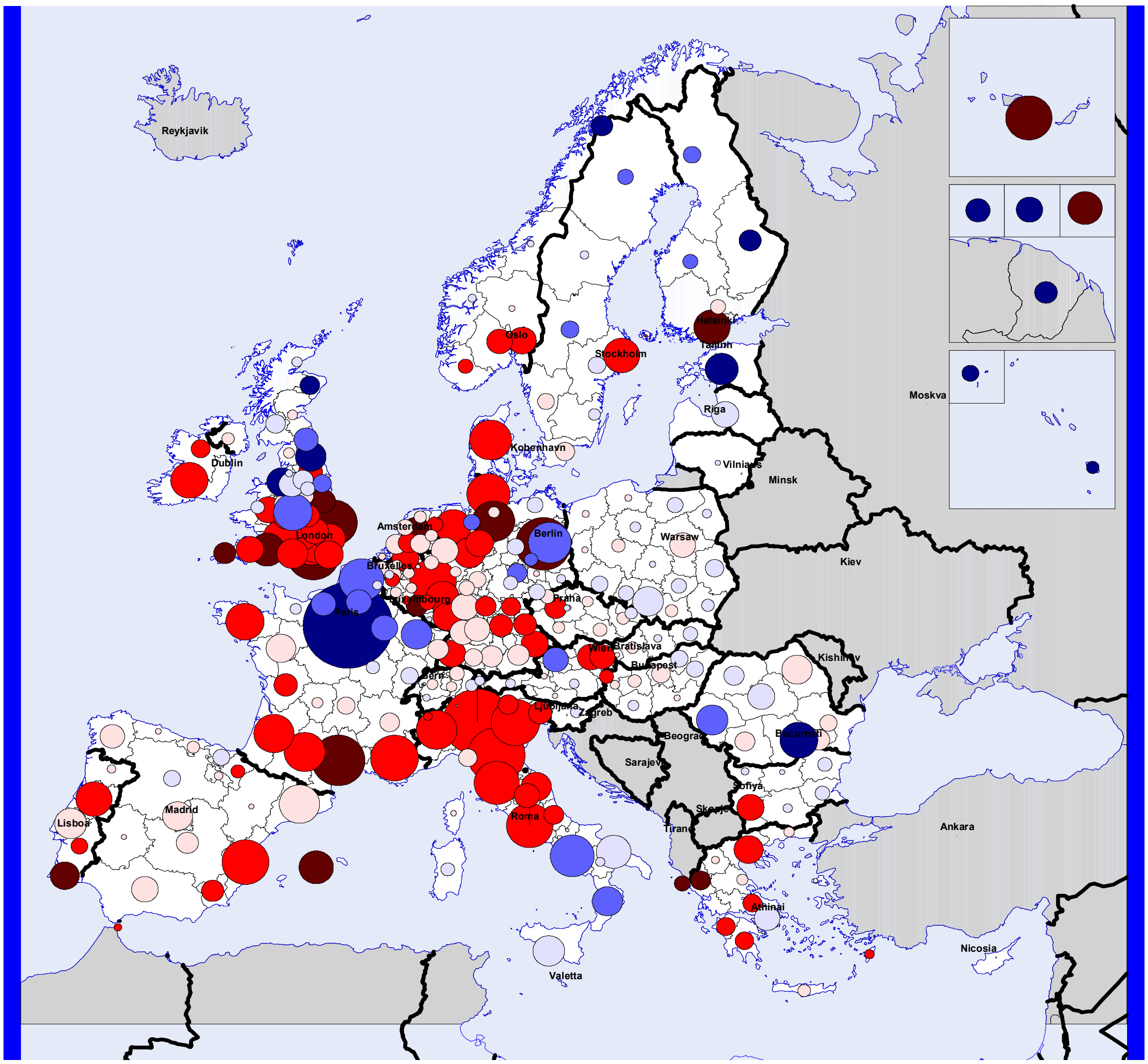
Map 3.9

Migratory balance between 1996 and 1999



Map 3.10

Migratory balance by regions between 1996 and 1999



Absolute migratory balance

66000

10000

1000

Annual average balance
for thousand inhab.

-30--5
-5--2.5
-2.5-0
0 - 2.5
2.5 - 7.5
7.5 - 30

Source : evaluation based on Eurostat data
and national statistical institue of Switzerland and Norway

Another process can be observed in some cases. When the administrative division separates central towns and their peripheries, a negative migratory balance in the centre and a positive migratory balance in the periphery can be observed. This process of suburbanisation is active across Europe but can only be observed where permitted by the administrative division.

With regard to the macro-regional flows, the Scandinavian countries set out an original model, similar to the one generally familiar to most of the European countries in the 1960s. Indeed, migration remained dominated by the movements between peripheral regions, in particular the Great North, towards metropolitan zones. These flows have rather been reinforced in the 1990s; they have become more extensive in the second half of this decade.

In Eastern Europe also the model is very simple: the metropolitan region (in all cases mostly the capital) comprises the attractive regions whereas rural isolated regions (eastern Poland for example) and industrial regions (such as Silesia) have negative migratory balances. Inside metropolitan areas, however all centres have a rapid suburbanisation process.

3.5.2 Intra-national and extra-national migration

Intra-national migration reveals two major processes explaining the internal migrations at NUTS 2 level (see map 4 in annex A8). First, the internal migratory flows illustrate the big divisions inside national spaces that we already described earlier. They correspond to differences in economic growth and in the environment that are sufficiently strong to induce migratory flows. Second, this map shows the big metropolitan areas (e.g. Paris, London, Madrid, Berlin, Rome) as attractive places, from which the population leaves for the suburbs or to regions with more pleasant surroundings inside the national space. However, there are some differences between metropolises; in Scandinavia for example, the capitals remain very attractive areas for the rest of the country.

The extra-national migration[26] shows a very different pattern compared to the map of internal balance (see map 5 in annex A8). It brings to the fore some important aspects:

- Europe has become globally attractive, even in spaces of traditional emigration, such as Spain, Southern Italy, Greece;
- Metropolitan areas are the most attractive areas for external immigration. The presence of immigrant communities and the importance and the diversity of the employment market explain why they are attractive;
- In Eastern Europe, there is a difference between the richest countries that become attractive, especially the Czech Republic, and countries such as Poland or Romania which remain countries of emigration although in a much more moderate rhythm than in the beginning of the nineties;
- Some tourist areas, such as southern France, the Algarve and the Mediterranean coast of Spain increasingly become regions of exterior immigration. Most of this immigration is coming from northern Europe, among others retired people with a high standard of living. However, the global growth of these areas related to their tourist function also attracts immigration of people from poor countries. These international level tourist places can clearly be distinguished from tourist areas of northern Europe, whose influence is mostly national (southern coast of England for example).

[26] Extra-national migration does not equal extra-European migration.

3.5.3 Migratory balances by ages

A statistical analysis permits us to gather together some age classes characterized by the same behaviour: students and young active people (17,5-27,5 years old), middle age classes (32,5-37,5 years old), and old active people and pensioners (52,5-67,5 years old).

The age group 17.5-27.5 years old is characterized by a very high mobility and the spatial pattern of their migratory balances is therefore characterized by very important contrasts, especially inside countries. This age group has thus a very different behaviour from the others in terms of the region they are attracted to. In fact, most of the young people are attracted to towns, in particular big university metropolitan areas. This age group is the one that best illustrates infra national economic contrasts, for example between the North and South of Italy, between the East and West of Germany, or between the North and South of England (the young represent 90 % of the migratory deficit of the North with the South at the end of the nineties). The spatial pattern is also heavily influenced by exterior migration, which mostly concern young population. The young foreigners are attracted to big metropolitan areas because they can find a large range of jobs, higher education opportunities and often the presence of fellow countrymen who can facilitate their integration (see map 6 in annex A8).

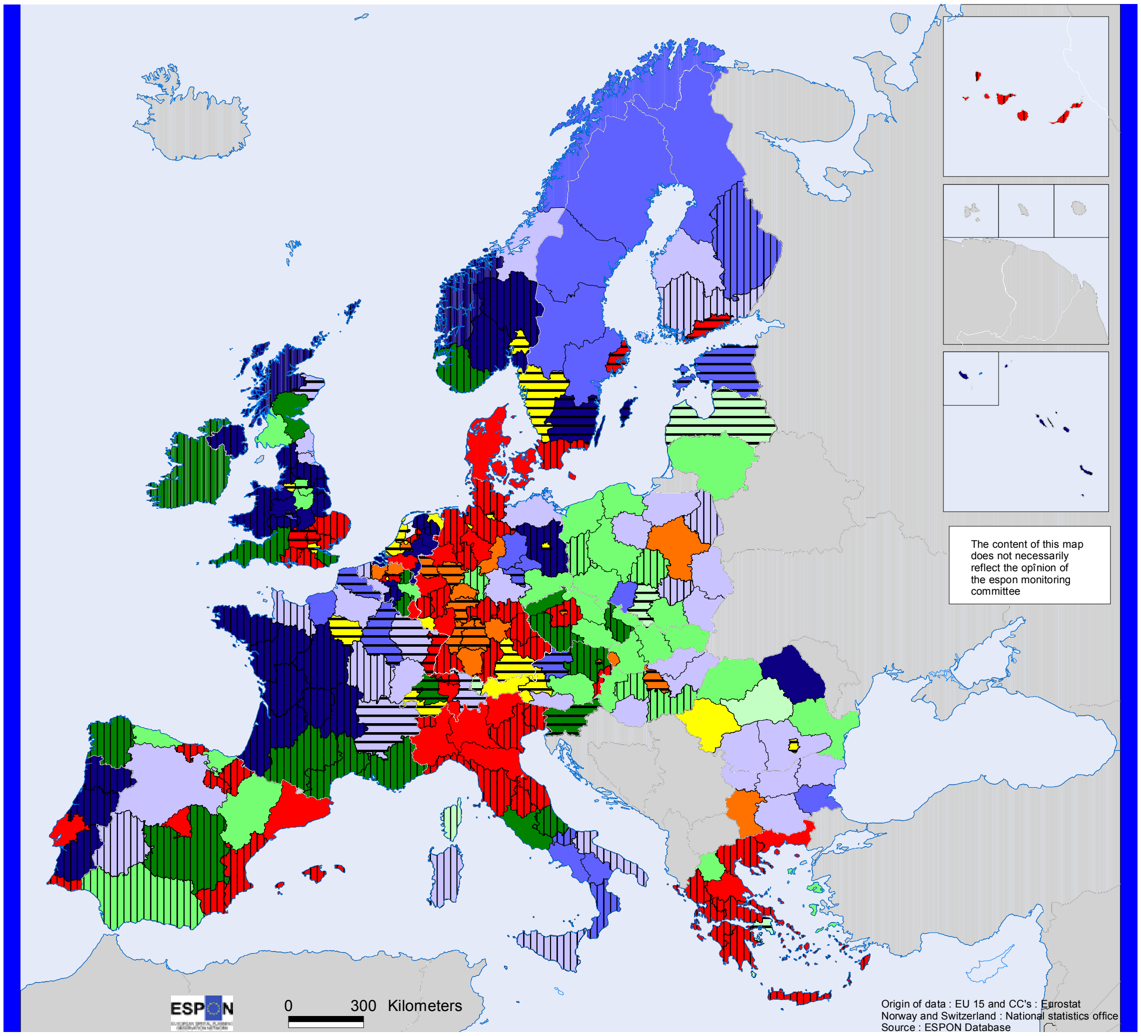
The weaker mobility of the age group 32.5-42.5 years old, in comparison to the younger age group, is illustrated by lower geographical contrasts. The geography of migratory balances of this age group is also very different. In fact, it is more similar to the geographic pattern of the total migratory balance. Migration involving this age group is greatly related to that of their children and has some correlation with older age groups attracted to the same kind of environment. Urban areas repel these age categories looking for less expensive space and a more pleasant environment. However, this age group in contrast to young pensioners is still constrained by the labour market. They settle in the peripheries of the towns, keeping their jobs in the centres or in economically dynamic regions offering high environmental quality (south of France and England, Mediterranean coast of Spain…). In Eastern Europe and Scandinavia, the metropolitan areas are the only attractive regions for this age group, even if centres are indeed avoided (see map 7 in annex A8).

Persons in the age group 52.5-67.5 years old, i.e. pensioners, or people close to retirement, tend to leave large cities; The larger the city, the higher this trend (Cribier & Kych 1993). This age group favours areas with pleasant surroundings in terms of climatic conditions, landscape, seaside proximity, typically for example the southern coasts of England and France and the Spanish Mediterranean coast. In many cases they do not move too far away from urban areas and favour remote and green peripheries close to their original urban area (Belgian Ardenne, Niederbayern, Brandenburg). In some cases, the positive balances correspond to return migration to the country of origin after a working life in national or foreign urban areas. Here the most obvious example is Portugal (see map 8 in annex A8).

A cartographic synthesis can be made, which is based on the most significant ages in terms of migratory balances: young people (17,5-27,5 years old), middle age people (32,5-42,5 years old) and old active people and pensioners (52,5-67,5 years old). These age groups have been defined on the basis of a factor analysis (see figure 3.12.). It clearly opposes the young (17,5-22,5) and all the other age groups on the first component, and the young, middle-aged and their children (27,5-47,5; 2,5-17,5) to the old on the second component. For each age group, the balance can be positive (more than 1.5 for thousands for middle and old people, and more than 2 for young people), negative (less than –1.5 for thousands for middle and old, or less than –2 for thousands for the young) or neutral. Combining those data, there are 27 possible types although two of them don’t exist.

Map 3.11

Synthetic cartography of migratory balances for the main age classes, 1995-2000



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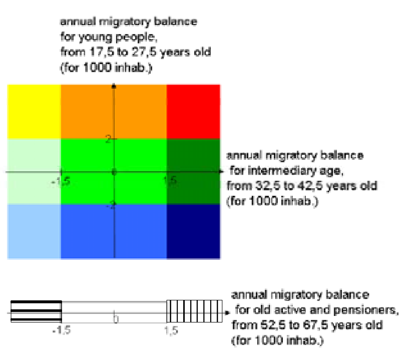


The warm tints reflecting attractiveness to the young are dominant in the central spaces (Germany, Northern and central Italy, South-western England), the large cities of more peripheral areas (Stockholm, Lisbon, Warsaw…) the quasi-totality of Greece, the Mediterranean coast of Spain and the Basque Country. The yellow tint is mainly present in the large cities attracting young people but repelling other age groups (Brussels, London, Paris, Randstad Holland, Munich, Hamburg, Berlin), whereas the areas in red are central dynamic areas attracting simultaneously young and active populations from other parts of the country (Eastern Germans in West Germany, Southern Italians in Northern Italy, Northern English people in the south of England), or from outside the European Union. The capitals of peripheral Europe often belong to that category: Scandinavian capitals, Lisbon, Eastern Europe's capitals.

Blue and cyan tints are characteristic of the areas that repel the young: some peripheral areas on European or national scale, and old industrial areas. Nevertheless, dark blue areas also show negative balances for middle age people (northern Scandinavia, industrial regions of northern France, southern Italy) unlike the cyan regions, which show positive balance for this age group (western France, some suburban regions such as Brandenburg). Other tints characterize the areas with more indefinite age profiles: the dark green areas attract all age groups, but less the young people than middle age group (areas combining pleasant surroundings and a certain economic dynamism: Southern France, South-western England, Ireland…); light green areas are characterized by balances close to nil for the 3 age groups and are mostly localized in Eastern Europe.

The third diagnostic is the migratory balance for the 52.5-67.5 age group and is superimposed with hatchings: horizontal hatchings mean negative balance for this age group, and vertical ones mean positive balances. It is interesting to note that, in geographic terms, the migratory behaviour of pensioners is relatively close to the behaviour of the middle age, which means an attraction to less dense and more pleasant environment. The difference between older and middle age people can often be explained by economic regional profile: pensioners show some indifference to the economic position of the areas (positive balance in southern Italy for example), which is clearly not the case for middle age group.

3.4.4 Typology of migratory balances by age

The first step consists in carrying out a principal component analysis based upon migratory balances by age. Only the first two components have been used as they account for 75% of the information: on the first component (57% of the information) young people's behaviour (17,5-27,5 age group) is opposed to all the other age groups; on the second (18% of the information), the score is all the more negative as the age group is high (see figure 3.15).[27]

The regions have been grouped together according to their proximity to the two components (see graph) by means of an ascending cluster analysis, from which the 20 groups typology was selected. Certain groups containing one or two units have then been merged on the basis of their age profile, so as to make the reading of the document easier. Finally, we made a simplification on the basis of the age profiles of the different groups (14) to derive 6 main types. The different types can be described as follows:

[27] This issue is discussed more thoroughly in e.g. Rodgers (1992) and Johnson & Zimmermann (1993).

Figure 3.15 Age groups position on the first two components of the PCA

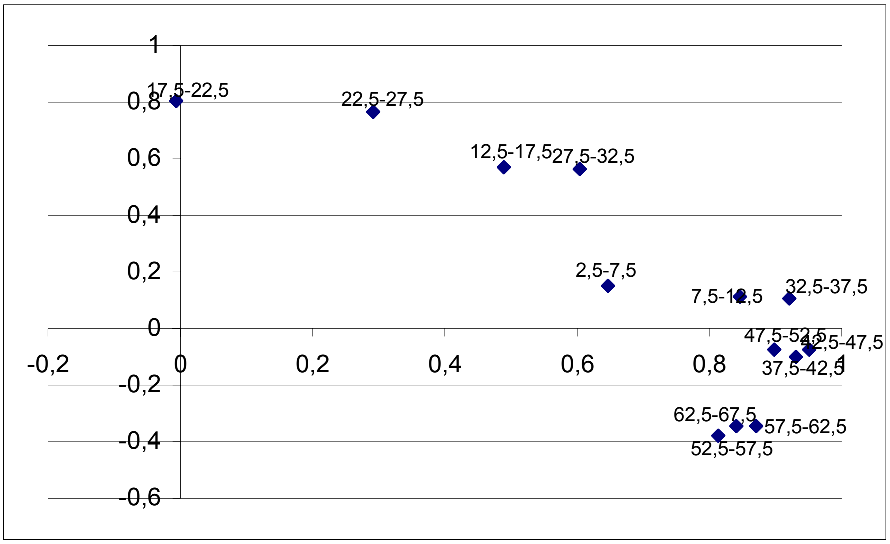
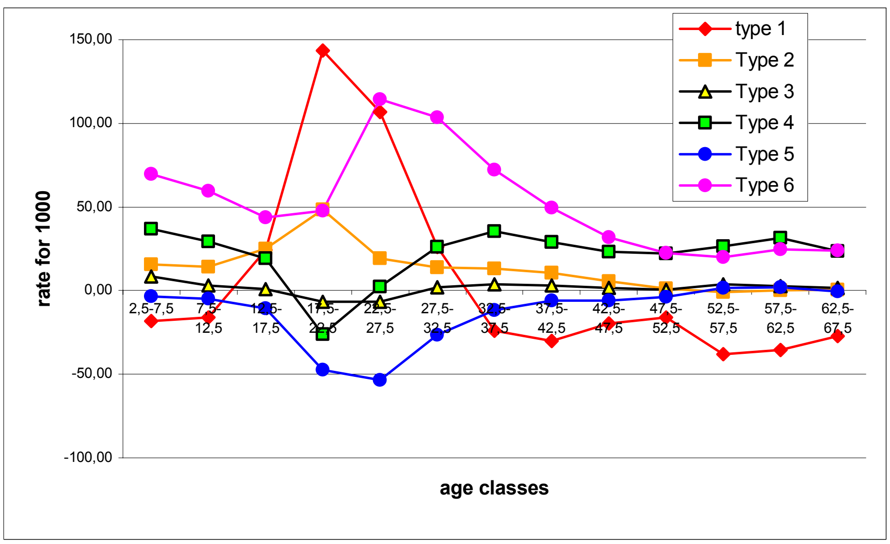


Figure 3.16 Migratory profile by age classes for the 6 main types,1995-2000

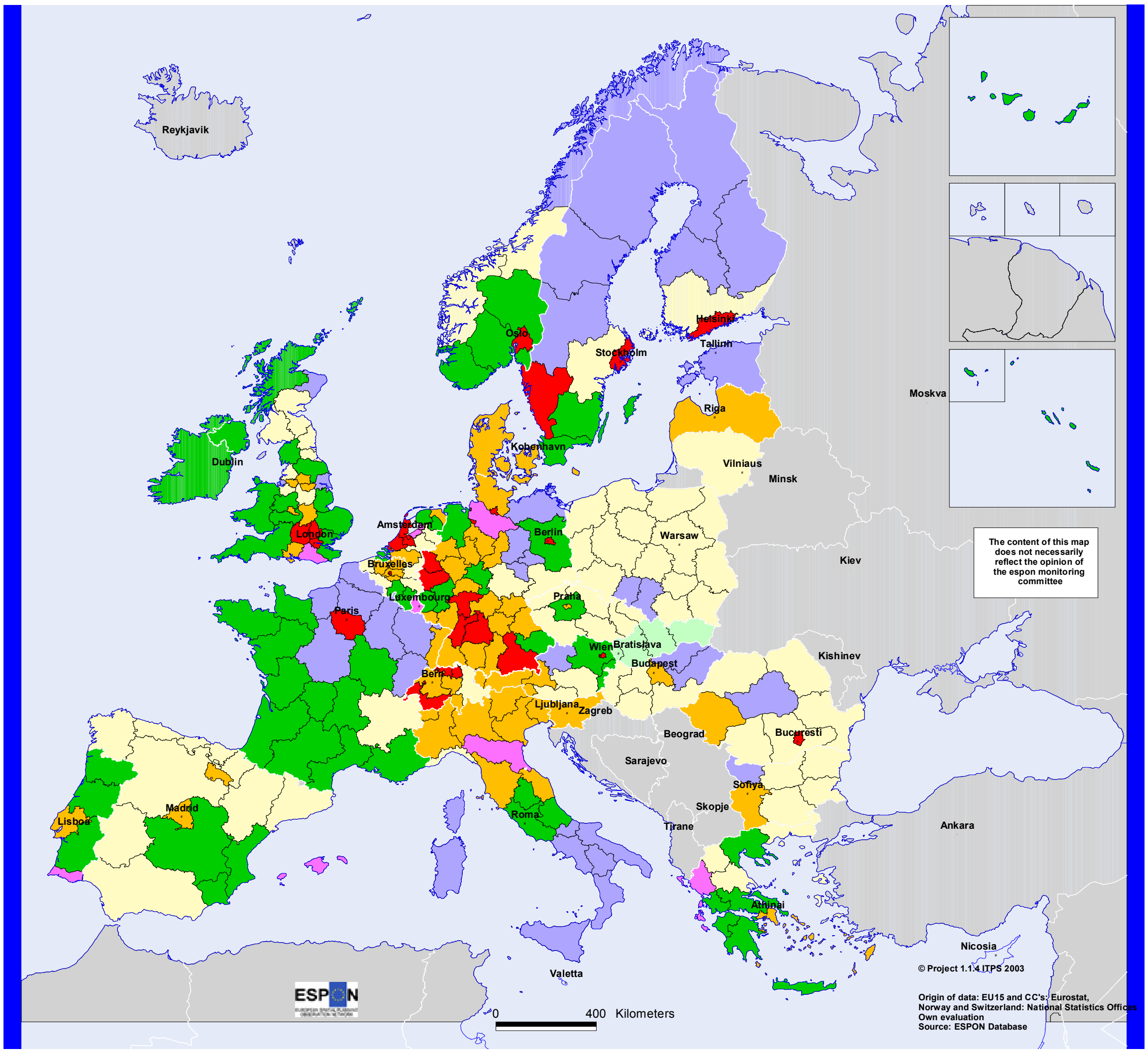


1 Areas attractive to young people: these are above all the large urban areas and some very attractive central spaces, such as a large part of Germany, northern Italy, Switzerland… Among these, two types stand out:

- *Type 1* groups most of the biggest central urban areas and is attractive to young people but repels other age classes. The suburbanisation process that affects them concerns mainly families with active parents, but these spaces also have negative balances for retired. Some of these urban areas have less negative balances because the administrative unit includes most of the suburbs (Randstad Holland, Munich, …), or because these metropolitan areas are still attractive to active people (Scandinavian capitals) ;

Map 3.12

Typology of migratory balances by age classes, 1995-2000



Age profile of the different types

- Type 1 : big towns with very positive balance for the young, and negative (or less positive) for all other age classes
- Type 2 : dense central areas with positive balances for young and mostly neutral for other age classes
- Type 3 : most of eastern Europe and peripheral areas characterized by a very neutral age profile
- Type 4 : touristic areas and suburbs, with positive balance for all the age classes, except young people
- Type 5 : peripheral areas, old industrial areas and parisian basin with very negative balance for young and neutral (or positive) for other age classes
- Type 6 : touristic regions and suburbs, very attractive for all age classes, especially young active.
- no data

- *Type 2* (Lisbon, northern Italy, Denmark,…) is attractive to all the age groups but more particularly to the young. The large size of the unit compared with the urban spaces accounts for the non-negative balances in active age groups, more so because suburbanisation is sometimes offset by mass external immigration (as is the case in Switzerland, Lombardy, Lisbon…). Some of these areas (Madrid, Slovenia, Manchester) show a more indefinite profile, but still positive regarding to the young.

2 Areas repulsive for the young: large urban suburbs, peripheral and not very dynamic areas:

- T*ype 3* includes most of the regions with clear negative balances for young people. Most of these regions have to face difficult economic conditions that could explain the departure of young active people (Northern Scandinavia, East Germany, Northern France, southern Italy). In the case of the Parisian basin, the positive balance for middle age and negative for young people should be explained by suburbanisation on a very large scale more than by difficult economic conditions.
- T*ype 4* differs from the previous one in a strong attractiveness to middle and high age groups, and generally a positive migratory balance. Those areas often combine pleasant surroundings and a certain economic revival (western and southern France, northern Portugal, northern Scotland, Frisian area in Holland). Some of the regions are even characterized by positive balances in all age groups, although slightly less for the young (southern France, Spanish coast, south-west England). These are very tourist rich areas combining economic dynamism and environmental qualities, although some also take advantage of the relative proximity to very large towns (Oslo's great suburbs, Brandenburg, Vienna area);

3 - T*ype 5* is characterized by balances close to nil for all the age groups, and very slightly negative for the 17,5-27,5 age group. This group prevails in Eastern Europe and is characterized by a very limited internal mobility and some departures of young people toward Western Europe;

4 - T*ype 6* corresponds to economically dynamic areas of very high immigration, especially for the relatively young active people (such as Tuscany, Flevoland, Luxembourg, the Algarve, Baleares, Epirus in Greece).

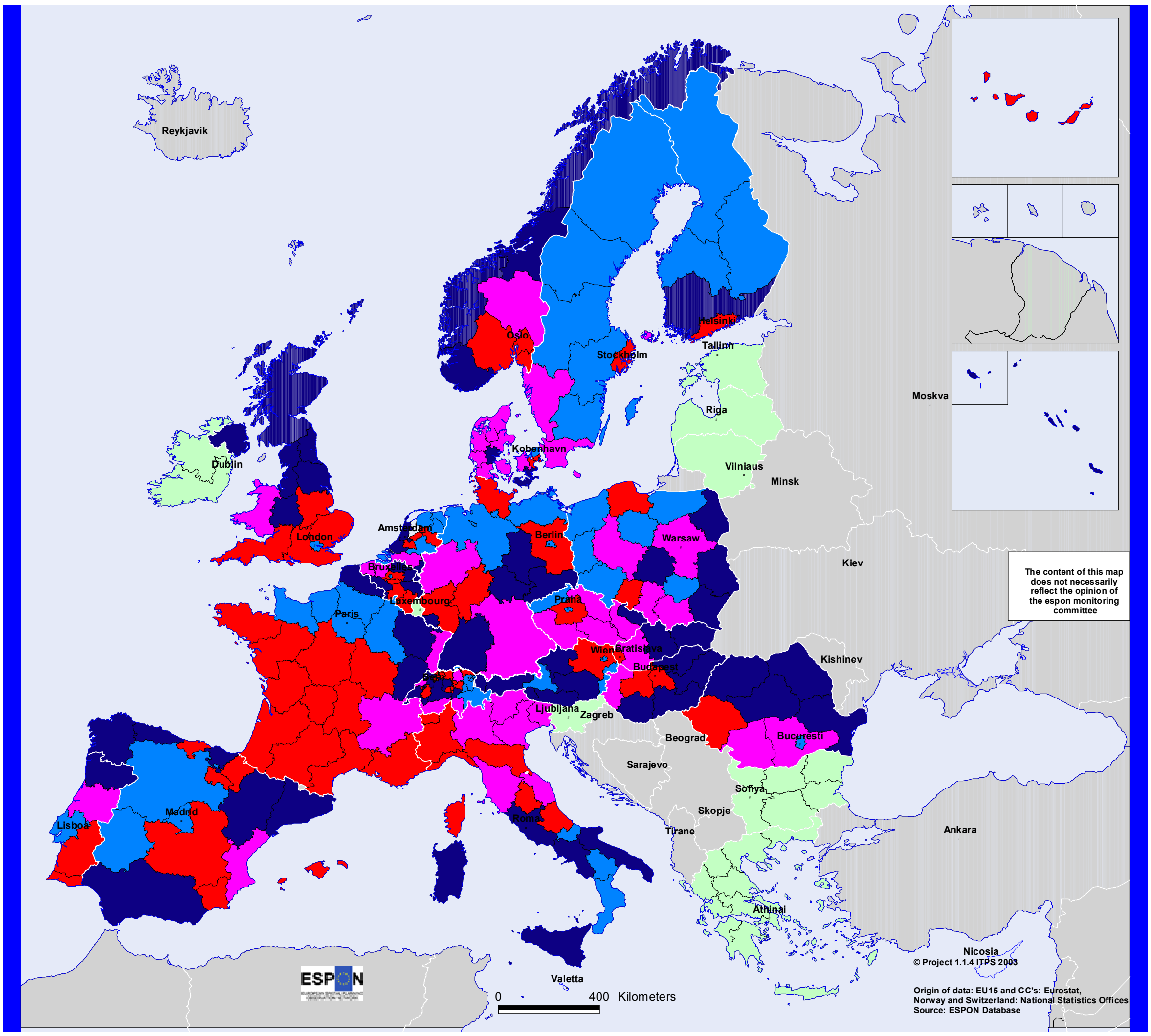
3.5.5 Mobility

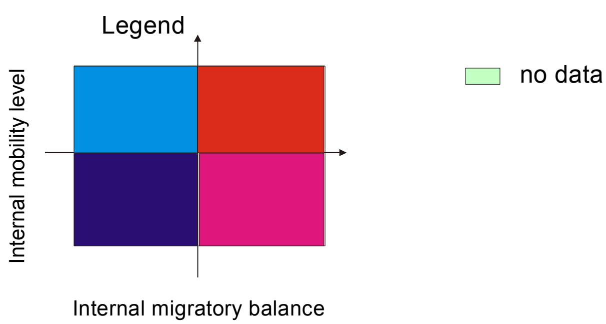
The size of the territorial scale has a big influence when analysing the level of mobility. Some important aspects must be discussed regarding mobility (see maps 9 and 10 in annex A8).

- The weak mobility in Eastern Europe, although to a lesser extend in Hungary. This could be explained amongst other factors by the weak development of the real estate market which forces people to keep their housing;
- The weak mobility of Italy and Spain;
- The strong mobility in and around metropolitan areas. These metropolises are characterized by high migratory movement between central towns and suburbs but also between the entire metropolitan area, as attractive locations for young people, and the rest of the territory, which receives active and retired people from the metropolises;
- The weak mobility of most of the old industrial regions, marked by the numeric importance of an active or non-active working force, often with low qualifications and limited mobility from a social point of view.

Map 3.13

Typology crossing mobility and migratory balances





The objective is to distinguish between attractive regions with many movements or few movements. The mobility can measured as the sum of inflow and the outflow in function of the total population. Some types can be distinguished as shown in the table below:

Table 3.10 Migratory balances and level of mobility

Migratory balances/ Level of mobility	Negative	Positive
Low	Old industrial regions, rural regions of Eastern Europe,…	Northern Italia, Bavaria, …
High	Some metropolitan areas (Paris, Berlin), Northern England, Northern Scandinavia,…	Peri-urban zones (Brandenburg), Western and Southern France, Southern England,...

3.5.6 Explanatory factors

On the whole, correlations between the economic situation and migratory balance are few important. The standard of living, for instance, does not explain the migratory balances at NUTS 3 level while it does, to a small but significant extent, at NUTS 2. Similarly, the economic dynamism accounts relatively improperly, though more significantly, for NUTS 2 migratory balances. Unemployment has a weak but significant negative correlation with the migratory balances, both at NUTS 2 and 3 levels.

Table 3.11 Correlation between the 1996-1999 migratory balances and socioeconomic variables

	Migratory balance	
	NUTS3	NUTS2
GDP/inhabitant 2000	0,005	0,201*
Average annual growth (1995-2000)	0,072	0,235*
Density of population 1999	-0,153*	-0,030
Unemployment 2000	-0,103*	-0,326*
Number of observations	1258	265

* the correlation is significant at 0,01 level

Unlike the economic variables, population densities are more correlated at NUTS 3 than at NUTS 2 level. At NUTS 3 level, this is even the highest correlation of the table. How can these results be interpreted? First of all, the weakness of the links between attractiveness of an area and economic reality should be highlighted. This statement questions the classic models that link migratory flows to the different economic potentials of the territories and to the imbalances of the labour market that migrations are supposed to offset. Moreover, it has been demonstrated that this model had much more significance in the 1960s (see table 3.12), when according to both national and European scales, dominant flows were oriented from poor peripheral toward wealthy central places (Vandermotten et al. 2004). In each country, metropolitan areas were the most attractive poles and absorbed the workforce from the less developed parts of the country. The evolution of the relation between the migratory balances and the GNP/inhabitant is the most significant given inside the Western Europe regions. Although there clearly was a relation in the 1960s, it becomes negligible as of the 1980s. After the 1960s the simple relation between the migratory process and the economic realities, in particular the standard of living and the job market, have the tendency to even out (see e.g. Vandermotten 1997). In the 1990s however, the flows have definitely become more complex and contradictory.

In the 1990s, the strongest (negative) correlation occurs with the unemployment rate. But it is strongly determined by very specific local factors, which are the high unemployment levels in regions of mass emigration, former GDR and the South of Italy. It would be hazardous to generalize this conclusion for all of Europe (Cf. Fassmann 1997, Shuttleworth & Shirlow 1997). It is not surprising that this correlation is stronger at the scale of units Nuts 2, given the strong macro-geographic character of the unemployment levels and the migratory balance.

Table 3.12 Correlation coefficients between the migratory balance and the socio-economic variables at NUTS3 level in Western Europe (UE15+Norway and Switzerland)

Socio-economic variable	60s	70s	80s	90s	1997-99
Density	-0.098	-0.418	-0.126	-0.123	-0.314
GNP/inhab.	0.255	-0.174	-0.061	0.108	0.041

The negative correlation between the migratory balance of 1996-99 and the density measured at NUTS 3 level should be noted, indicating amongst other things the relative deficit on most of the central cities to the benefit of their peripheries. As those flows only produce effects at fine spatial levels, the only correlation is to be found at Nuts 3 level. At higher levels, there is no link between population density and area attractiveness. This is an equally discernable phenomenon in the 1970s (see table 3.12), with the onset of the massive phase of sub-urbanisation, before slowing to a certain degree as a result of economic rather than structural fluctuations during the 1980s. It shows that population movements between cities and countryside are another major evolution of the last decades: while the dense metropolitan areas would still be the most attractive in the 1960s today, at least in the European centre, the relationship has reversed itself between population density and migration balance. In other words, in the dense areas of the European centre, all other things being equal, territories with lower densities are all the more attractive (suburbanisation and counter-urbanisation process). Environmental factors (sea, sun, and mountains seen as positive factors, industrial landscapes as a repelling one for instance), along with the lower cost of land, explain this reversed movement.[28]

Yet the old mechanisms of rural exodus are still a reality in some peripheral parts of Europe such as the centre of Spain, the inner part of Portugal, the North of Scandinavia and in a large part of Eastern Europe. In those low density areas, the opposite flows are too weak to make up for the departure of young active people to the dense active areas of the country. This opposite flow weakens the global correlation between densities and migratory balances.

It would be wrong however to deduct from the above that the economic factors have lost all their explicative values of those big structuring waves which are the principal components of the intra-European migratory flows at a macro-geographic scale. They rather come increasingly from within the scope of a complexity that includes the determinants of standard of living, environment, etc. Yet the differences of standard of living and the gaps between the unemployment levels remain important explicative factors of the major intra-national flows at the macro-geographic level. To confirm this assertion, we will calculate the correlations by age group rather than on the basis of global migratory balances, which will be possible at NUTS 2 level only. Indeed, a globally nil correlation can turn out to be the result of correct but contradictory correlations, for instance between young and old people.

[28] But these environmental factors are more and more intrinsically related to economic factors in order to explain the big macro-geographic tendencies of the interior migratory flows. Increasingly activities are implanted in function of qualitative environmental considerations, when it is not the case where they directly live of them, as is the case for tourism. Migrants privilege environmental factors before looking for employment or favour regions with a good, agreeable reputation in case of equal economic conditions. To this we have to add the increasingly more numerous migrations of young pensioners.

Table 3.13 Correlation between migratory balances by age group and some socioeconomic variables (265 observations)

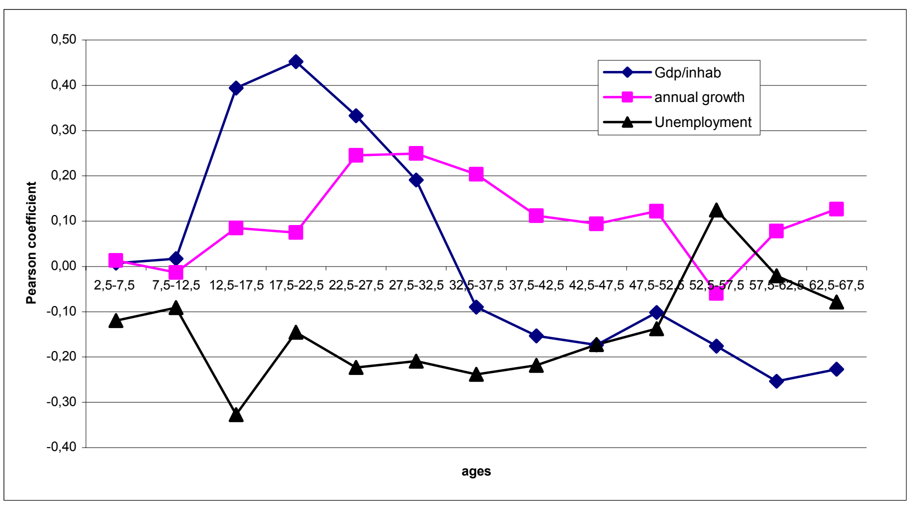
	Migratory balance 1995-2000			
	total	17,5-22,5 years	32,5-37,5 years	57,5-62,5 years
GDP/inhabitant 2000	*0,20	*0,46	-0,07	*-0,25
Average annual growth (1995-2000)	*0,24	0,07	*0,20	0,08
Density of population 1999	-0,03	*0,53	*-0,33	*-0,29
Unemployment 2000	*-0,33	-0,15	*-0,24	-0,02
Dependency ratio 2000	-0,07	*-0,41	0,13	*0,33

* The correlation is significant at 0,01 level

The strong correlation between young people's migratory balances and standards of living should be interpreted with caution. Young people are attracted by the big cities because of higher education opportunities and flexible insertion in the job market rather than for reasons of higher standards of living. Indeed, a high GDP per inhabitant does not always mean high incomes for the residents insofar as a growing part of qualified and well paid employment is occupied by people residing in the suburbs. In the central town, which still concentrates a big part of the metropolitan employment, remains only a population with low incomes (poor immigrants, students). On the other hand, the correlation is negative in the case of retired populations, who leave the large cities in search of green surroundings.[29]

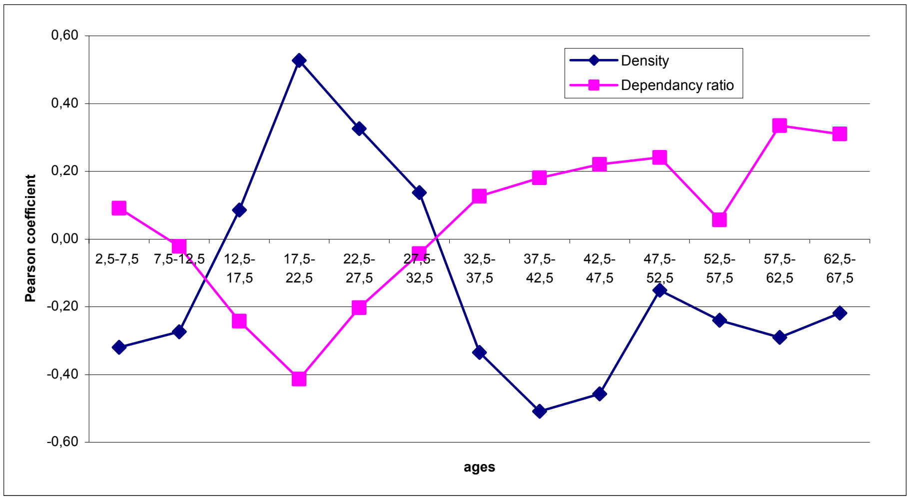
As far as economic dynamism is concerned, it appears to make no difference in most age groups' eyes, except to young active people (22,5 to 37,5 age group), obviously attracted by the most dynamic areas.

Figure 3.17 Correlation between migratory balances by age group and economic factors



[29] Such an interpretation is confirmed by the correlations between migratory balances and population densities: negative for the young and positive for middle or high age groups.

Figure 3.18 Correlation between migratory balances by age group and demographic factors

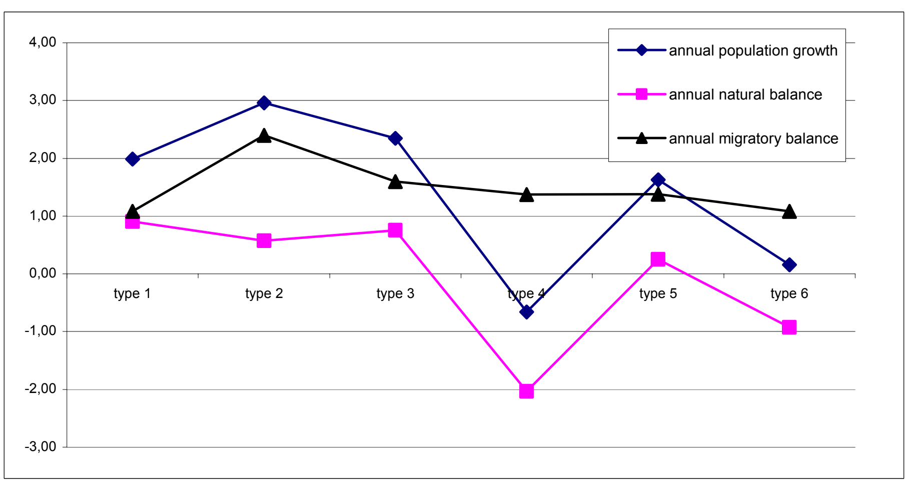


These calculations highlight above all the fact that weak global links between migratory flows and economic realities are very relative when considering migratory balances by age groups. Indeed, the age groups that are most affected by socio-economic disparities, such as young active people, definitely seem attracted by the wealthiest or most dynamic areas. In older age groups (late active age groups or young pensioners), the living environment seems to be clearly more decisive (corresponding here to low population densities).

3.4.7 The relevance of urban-rural typology of ESPON 1.1.2. on migration

We use here the ESPON 1.1.2. typology which is dividing Europe into 6 types (at nuts 3 level) from the most urban to the most rural type. We wanted to test the relevance of this typology to apprehend demographic facts, especially migrations. In order to do this, we focus on three main demographic indicators at nuts 3 level, all for the period 1996-1999: total growth of population, natural growth, and migratory balance.

Figure 3.19 Natural, migratory and global balances according to the urban-rural types



Firstly, we will compare the means of the indicators for each type. Secondly, we will measure deviations inside and between each type. If the deviations are bigger between each type than inside, we should consider that this division is relevant to explain part of the diversity of demographic behaviour in Europe. The graph here under allows us to visualize the means of the demographic indicators according to the 6 urban-rural types.

As far as migratory balances are concerned, some coherence exists in the results. Type 1 has the most negative balances, Type 2 has the most positive balances and there is a decline in the balance from Type 2 to Type 6. The most rural (Type 6) and the most urban types (Type 1) have similar balances, around 1 for thousand inhabitants, while the Type 2 reaches 2.4 per thousand 1000 inhabitants. However, this result is quite difficult to interpret if you take into account the fact that Types 2 and 3 present very low geographical coherence. To confirm the relevance of this result, we need a more complete analysis. For natural growth, we don't find the same coherence observed for migratory balance.

The analysis of variance allows us to evaluate if most of the deviations are to be found inside or between the main types. If the biggest part of the information is to be found between the types, we could consider that these are relevant to explain diversity of demographic behaviour. The results are shown in the following table.

Table 3.14 Part of the variance taken into account inside and between the urban-rural types.

	Natural balance	Migratory balance	Global growth
Part of the variance inside each type	94,1	94,3	94,0
Part of the variance between the types	5,9	5,7	6,0
	100	100	100

As we can observe, most of the information is taken into account inside the 6 Types. It means that the deviations between the regions and the average of each type are much bigger than the deviations between the types and European average. We have to conclude from this observation that such a typology is irrelevant in explaining demographic variations inside Europe. However, although migration is linked to the level of urbanisation this typology is inappropriate for demonstrating this link. In no case does this result call into question the global relevance of the typology. Instead it just underlines its irrelevance to explain the demographic diversity of Europe.

3.6 International migration

Since the late 1980s international migration has become an issue of rising importance with respect to both foreign and domestic policy agendas in most industrialised nations. In a growing number of European countries migration has a bigger impact on population size and structure than the balance of births and deaths. During the beginning of the nineties the inflow of asylum seekers, labour migrants and family members grew quickly. Most western societies are frightened by the possibility of mass immigration from Central and Eastern Europe, the Balkans, North Africa and Western Asia. The inflow of poor or persecuted citizens from these and other regions of the world is perceived as a threat. The fact that at least in the past, the country of destination generally profited demographically and economically from immigrants hardly plays a role in current public debate. Instead, migration has become and is still one of the main topics of Western European domestic and security policy.

International migration to Europe constitutes an immense field of investigation and a major political issue that cannot be dealt with within the scope of this study. The main difficulty relates to the lack of reliable and homogeneous data at regional, or even national levels. As a result our ambitions will be limited to other aspects that we believe to be essential to better understanding important European issues related to international migration at national or regional levels. The main aspects explored include regional destinations of international migration, the evolution of the intensity and the origins of immigration in a long-term perspective at national level, and some specific aspects addressed in relevant literature.

The methodology adopted reflects a hybrid nature; quantitative evaluations of the specific destinations of international migrations, examination of characteristics and origins of the migrants according to various statistical sources (Eurostat, OECD, and national statistics), and a selection of some aspects of the recent evolutions in international migration according to literature.

3.6.1 The recent flow of international migration in Europe

The annual inflow of immigrants in one of the 15 EU member states from outside or from other countries of the EU is 1,87 million for the period 1995 to 1999. At the same time 1,26 million persons left one of the 15 EU member states and migrated into another country or emigrated from the entire EU region. The positive net migration per year for the EU15 was around 610.000. This figure probably represents more than the net migration from and to the US where the official number of immigration per year in the US is approximately 700.000. Taking into account simultaneous emigration, it is clear that net migration is much below the EU15 figure. EU15 is still an attractive continent for immigration developing without any official recognition as a new immigration country.

Flow data on the national level clearly illustrates that migration is more important for total population development than the natural increase (birth and death). The annual gain due to the surplus in migration inflows is much higher than that of the natural increase. During the second half of the nineties the natural increase for the whole EU15 reached approximately +300.000; the number of births exceeded the number of deaths by approximately 300.000. Whilst this is a considerable number, it is just half of the sum of positive net migration. Thus population dynamics are increasingly influenced by in- and out-migration and less by natural increase. This especially holds true for countries like Germany and Austria.

3.6.2 Long term evolution of international migration in Europe

The temporal fluctuation of in- and outflows – parallel to economic cycles - is a significant phenomenon and allow us to divide the history of international migration in Europe since the World War 2 into three periods; 1950-1975, 1975-1990 and the period after 1990.

The period 1950 - 1975 is characterized by important intra-European migratory movements between the poor peripheral countries and the rich central countries where growth has created an important demand for labour. The main flows occur between the European Mediterranean countries and north-western Europe, although movements from Ireland to United Kingdom or from Finland to Sweden were also observed (King 1973). Within the same period, migration between Eastern and Western Europe were very weak because of closed borders, where passing was limited to some political refugees, mostly intellectuals. Progressively in the sixties and the first half of the seventies, the extra-European flows exceeded migration from southern to northern Europe, but narrowly delimited origins i.e. Maghreb (to France, Belgium and the Netherlands) and Turkey (especially to western Germany).

During *the period 1975 – 1990*, migration flows to Europe dramatically decreased. It should be noted that most immigration became illegal during this period, which could explain the decrease observed in official data but not necessarily reality. Nevertheless, even if less immigrants were counted compared to the past, there are other reasons suggesting there was indeed a clear decrease of immigration during that period. Firstly, in the nineties, we can observe a dramatic increase without any change in the legislation (in fact, legal conditions to enter the EU have become more restrictive). Secondly, other evaluations, especially the indirect evaluation of immigration by the natural balance method, confirm the trends identified by official data. In Europe, declining gaps in living standards and the crisis in the central countries explain the absence of clear imbalances in intra-European migratory movements. However it should be recognised that the quantitative balance of intra-European migratory flows does not mean these flows are balanced in a qualitative point of view (age, diploma). With the extra-European countries, the closing of the borders to immigration and the economic crisis have considerably reduced migratory flows to Europe. Entries related to family grouping, the only immigrations still allowed, still exist to countries of ancient immigration (north-western countries) whilst economic immigration to southern Europe is additionally beginning.

The *period after 1990* has witnessed Europe in its entirety become a continent of immigration after decades (centuries) of global emigration. The economic recovery, the collapse of communism in Eastern Europe, and the opening of the border between the two parts of the continent on one hand and the political and economic chaos – part of the Third World countries on the other are the primary causes of this major evolution. This increasing flow to Europe should be regarded in parallel with so called globalisation and the related increasing mobility.

If the intra-European mobility (EU 15) has increased, it no longer implies quantitative imbalances between countries as was case in the past. But there is clear evidence indicating that these flows take different forms according to their orientations: for example, the flow of retired persons is mostly oriented from northern to southern Europe but may be compensated by the persisting, limited flow of young active people in the opposite direction.

Table 3.15 Evolution of the national migratory balance by decades since the 60's in the EU15

	Migratory Balance 60s (Mig/pop*1000)	Migratory Balance 70s (Mig/pop*1000)	Migratory Balance 80s (Mig/pop*1000)	Migratory Balance 90s (Mig/pop*1000)
Austria	2,13	0,04	0,29	4,33
Belgium	1,45	0,42	-0,09	1,40
Denmark	2,31	1,53	0,21	2,64
Spain	-1,15	1,72	-1,52	0,49
Finland	-3,64	-0,16	0,73	1,34
France	2,63	1,68	-0,02	0,19
Greece	-4,70	3,93	1,04	3,84
Ireland	-4,54	3,97	-7,44	5,91
Italy	-1,34	1,15	0,66	1,12
Luxemburg	4,93	7,06	2,38	10,23
Norway	0,50	0,60	1,22	2,25
Netherlands	0,96	1,28	1,49	1,92
Portugal	-13,09	5,88	0,40	-0,21
F.R. Germany	4,03	1,94	1,67	7,88
Sweden	3,77	0,85	1,63	2,50
Switzerland	6,83	-3,18	3,10	3,24
United Kingdom	-0,07	-2,16	-0,07	1,95

Source: Calculations from data from Eurostat, New Cronos

At the beginning of the nineties, a first migratory shock appeared mainly from Eastern Europe. The sudden opening of the borders and the collapse of communism in the eastern countries induced massive flows to Western Europe. But these flows rapidly decreased and changed in terms of nature and geography in the second half of the nineties. Temporary migrations supplanted definitive migrations, where the flows from ex-USSR exceeded those coming from central and Eastern Europe.

Turkey and Maghreb remain (or become again after the relative interruption of the eighties) the major extra-European suppliers to north-western countries, and also to southern Europe, which has an important need of low qualified workforce in certain economic sectors (agriculture, tourism, industry). But behind this southern and eastern ring, flows of immigrants are nowadays coming from most of the third-world countries as clearly demonstrated by the growth in numbers and origins of the asylum seekers.

3.6.3 The "Geography" of international migration

At the end of the nineties, Germany was still the first receiving country for foreigners (see table 3.16). Germany welcomed more than one third of all immigrants entering EU15. Germany has also the highest rate of immigration from national or extra-European origin (with the exception of Luxembourg). Germany is subsequently followed by the United Kingdom, Italy, and Spain. Even if their immigration rates are at EU15 average, the massive immigration to these countries constitutes a recent evolution. Immigration to France is comparatively very weak, a fact confirmed by data derived from different sources. Admittedly illegal immigration has not considered however there is no reason to suggest the French illegal immigration level is higher than in the rest of Europe. Although the intra-EU 15 is ineffectively measured this factor still does not sufficiently explain the major gap between France and the other European major countries. The long history of immigration and restrictive migratory policies are similarly insufficient in explaining this low rate of immigration. Southern European countries, for which massive immigration is a new reality show a large diversity concerning migrant origin, where with the exception of Portugal (due to retired migrations and return migrations), a weak part is traced from inside EU 15.

As we outlined previously, most of immigration in the "central" region of the European Union came from European countries, such as the Maghreb or Turkey (or in the United Kingdom of the Commonwealth countries) until the seventies. Most European countries have maintained privileged migratory relations with their ex colonies for a long time, which significantly explains the specific nature of laborers inflows, for example Algerians and Moroccans to France, nationals of the Commonwealth to Great Britain, and Surinam and Malaysia to the Netherlands. Belgium however closed its borders to immigration coming from their colony and even after independence; the Congolese residents in Belgium were awarded student, businessmen, or political refugee status, never immigrant. For the rest, the specific national origins of immigrants were related to other factors such as proximity and/or linguistic affinities (the Finnish in Sweden; the Irish in the United Kingdom; etc.), political choice and recruitment missions (the Italians first, after that the Moroccans in Belgium), or by constraints, in the absence of a colonial heritage (the Italians, Spanish and Greeks in Germany, but also Yugoslavians – the majority of which came from the developed north of the country; catholic and more open to the German culture, Slovenia and Croatia, and the Turkish).

Table 3.16 Total immigration in the EU15, from inside and outside EU15

	Annual average of immigration 1995-99	Annual rate of immigration 1995-99	Share of immigrant from EU 15 1995-99	Rate of immigration from outside EU15 1995-99
Belgium	52540	5,18	50,97	2,16
Denmark	24850	4,74	26,26	3,37
Finland	7820	1,53	15,86	1,25
France**	99480	1,72	6,37	1,54
Germany	678200	8,29	22,92	6,19
Greece	38200	3,65	8,38	3,21
Ireland	25020	6,92	63,55	1,61
Italy	189500	3,30	16,51	2,67
Luxembourg	10120	24,52	70,16	6,69
Netherlands	76200	4,92	24,83	3,42
Norway	22920	5,24	43,11	2,76
Portugal*	105705	10,53	46,73	5,17
Sweden	33820	3,83	23,71	2,79
Switzerland	79140	11,21	46,50	5,54
United Kingdom	238900	4,07	17,30	2,46
Spain	162399	4,14	21,77	3,20

* only for the year 1999

** in France, the underestimation is partly to an underestimation of intra-EU15 immigration

no data for Austria

Source: OECD, except for Spain (INE)

The extensive mix in the nature of migratory flows to the European Union as observed at the end of the eighties and nineties has partially faded the specifics schemes evoked above, all the while transforming the European Mediterranean countries into immigration lands. A greater geographical diversity in immigrants' countries of origin is particularly visible in the statistics of the new immigration countries. These are not superposed to an older pattern of immigration, and are thus more geographically targeted. However the new immigration has equally specific directions: either it stops in the country of first arrival (the immigrants of Central and Eastern Europe are in particular present in Germany, Austria or again in Italy and in Greece for those coming from the Balkans; the illegal North Africans are numerous in Spain and in Italy, tables 3.17 and 3.19); or it is based on historical reasons.[30]

The massive inflow in Germany of nationals of the Central-Eastern and East European countries claiming Germanic ancestry (the "Aussiedler" or exiled) constitutes an original variant in cultural references in order to justify migration which, without doubt has it origins more closely tied to economic factors. This immigration follows the same direction of population movements that took place en masse at the end of the Second World War. It forms part of the German concept of nationality (linked to the rights of kinship). As a direct consequence of the opening of the East borders, this immigration is far from negligible during the nineties (200 000 immigrants per year).

[30] The flow of immigrants from the Commonwealth to Great Britain is still generally very much in vogue owing to the absence of a national identity card and because of the international character of the English language. A similar situation can be observed through the cultural affinities of Spain or Italy for Latin American immigration. At least it uses ethnical relations which already exist (the Turkish in Germany; the Moroccans in Belgium) or builds upon new networks more or less clandestine (the cleaning ladies coming from the North-East of Poland in Belgium; the first penetration of Senegalese in Europe via Italy and not via France; the agricultural wagers and the Rumanian hotel workers in Spain).

Table 3.17 Nationality of immigrants and residence permits given out in Italy, 2000

Country of origin	Arrivals	Residence permits
Albania	17 000	133 000
Morocco	13 700	156 000
Romania	11 400	61 000
Chine	5 400	57 000
Philippines	5 200	67 000
India	4 400	
Poland	4 100	29 000
Tunisia	3 800	47 000
Sri Lanka	3 400	32 000
Ukraine	2 800	
Brazil	2 700	
Peru	2 700	29 000
Yugoslavia		41 000
Senegal		41 000
Egypt		34 000
TOTAL	160 000	

Source: ITSTAT

Table 3.18 Evolution of the origins of the foreign population in Spain, as a share of the total foreign population, 1990-1999.

Origin	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
America	23,15	22,74	22,52	22,41	21,81	22,52	20,84	20,47	20,82	22,35
Asia	8,89	8,47	8,04	7,75	7,65	8,07	8,06	8,44	8,28	7,93
África	17,49	18,15	18,47	17,92	19,17	18,35	23,44	24,97	26,61	29,21
Europa	50,25	50,44	50,78	51,73	51,21	50,89	47,52	45,97	44,16	40,41
Oceanía	0,21	0,18	0,18	0,18	0,17	0,17	0,14	0,14	0,12	0,11
TOTAL	359 691	392 734	430 057	461 020	499 438	538 575	609 268	718 952	800 630	894 703

Source: INE (2004)

Table 3.19 United Kingdom: Total international migration inflows, outflows and net balance, by citizenship, 1991-95 and 1996-2000, annual average, thousands.

Citizenship	Inflow		Outflow		Net inflow		Shift in net inflow
	91-95	96-00	91-95	96-00	91-95	96-00	
All	307.6	401.1	235.3	255.6	72.3	145.5	+73.2
British	103.4	107.1	129.3	134.1	-25.9	-27.1	-1.2
Non-British	204.2	294.0	106.0	121.5	98.2	172.6	+74.4
European Union	48.3	69.4	40.8	51.1	7.5	18.3	+10.8
Commonwealth	80.8	113.4	28.1	34.4	52.8	78.9	+26.1
Other foreign	75.0	111.2	37.1	35.9	37.9	75.4	+37.5
Old Commonwealth	25.9	48.7	15.4	22.5	10.5	26.3	+15.8
New Commonwealth	54.9	64.7	12.7	12.0	42.2	52.6	+10.4

Note : EU European Union, CW Commonwealth. Data may not sum exactly due to rounding.
Source: ONS (2002)

3.6.4 Characteristics of immigrants.

Europe's immigrant population (as identified by the LFS[31]) is older than the EU 15 average. This is directly related to the age structure upon arrival. Children are less likely to be geographically mobile than adults of working age whilst newborns by definition cannot be counted as part of the foreign-born population. As a direct result, children are underrepresented among the immigrant population (0-14: 5%; EU 15 average: 17%; Table 3.20). The same is true for people of early working age (age group 15-24 – immigrants: 9%; EU 15 average: 12%). The majority of immigrants are at prime working age (25-55: 56%, EU 15 average: 44%). Migrants from southern Europe living in another EU country represent the oldest immigrant population. This clearly shows that out-migration from southern Europe has come to an end where an ageing stock of migrants has become visible. A similar though delayed ageing tendency can be found among migrants from north-western Europe living in another EU country. The youngest group is immigrants from other industrialized world regions, namely North America and Australia/New Zealand. Many of them are so-called "expatriates" and members of internationally mobile elites who have a greater chance of migrating together with their children, but who often re-migrate or eventually move on to a job outside EU 15. This explains the low proportion of people above age 55 in this group.

Table 3.20 Age Structure of the Foreign Resident Population by Nationality, EU 15 (1)

	EU West (2)	EU South (3)	CEEC (4)	Turkey (others)	Africa, Middle East	USA, Canada, Australia	Latin America, Caribbean	Asia	Total	EU 15
0-14	9.1	10.9	15.7	25.6	15.6	11.6	12.6	15.4	15.3	16.59
15-24	8.5	10.8	15.1	16.2	12.3	8.0	15.6	13.4	12.5	12.01
25-54	54.3	53.9	56.5	46.2	55.1	66.0	68.1	63.4	53.9	43.42
55-64	14.0	13.5	7.5	8.9	10.6	7.0	2.2	4.2	10.5	11.37
65+	14.1	10.9	5.2	3.1	6.4	7.4	1.5	3.5	7.8	16.60
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2,640	2,955	2,351	2,975	1,760	473	135	648	13,937	374,849

Source: Münz & Fassmann (2004).

The foreign population in Europe has a gender proportion different to that of total EU population where 51 percent are men and 49 percent women. The gender ratio of the EU15 population is exactly the other way around. Migrating women are over-represented among immigrants from north-western Europe living in another EU country as well as among immigrants from the Balkans, Central and Eastern Europe and from Latin America. Men are over-represented among immigrants from southern Europe living in another EU country as well as among immigrants from Turkey, North Africa/Middle East and sub-Saharan Africa.

Table 3.21 Gender Ratio of the Foreign Resident Population by Nationality, EU 15 (1)

	EU West (2)	EU South (3)	CEEC (4)	Turkey (others)	Africa, Middle East	USA, Canada, Australia	Latin America, Caribb.	Asia	Total	EU 15
Female	51.9	44.9	54.0	46.6	45.1	49.2	56.3	53.9	48.8	51.1
Male	48.1	55.1	46.0	53.4	54.9	50.8	43.7	46.1	51.2	48.9
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2,640	2,954	2,352	2,975	1,760	474	135	648	13,938	374,849

Source: Münz & Fassmann (2004).

[31] The European Labour Force Survey (LFS) is used as the main data base for this chapter. For the first time, the LFS offers a comparable source to characterize the foreign population in Europe. It should be mentioned that not all foreigners are migrants and that not all migrants are foreigners, nevertheless this source is useful.

The skills profile of the foreign population from specific regions of origin diverges markedly from that of the total EU population. Both people with low skills (immigrants: 45%; EU 15 average: 43) and with high skills (immigrants: 27; EU 15 average: 17%) are over-represented among immigrants. People with medium skills are under-represented (immigrants: 28%; EU 15 average: 39%). This is mainly a result of labour markets creating demand for high and low skilled migrants. Immigrants from southern Europe living in another EU country as well as from Turkey, North Africa/Middle East and sub-Saharan Africa have relatively high proportions of people with low skills. In contrast immigrants from north-western Europe living in another EU country and in particular immigrants from other industrialized world regions (North America, Australia/New Zealand) evidence a higher proportion of highly skilled people.

The characteristics of the foreign population are not sufficient to understand the recent evolutions of the social composition of immigrants. Whilst statistics do not allow comparisons at international levels to characterize recent immigration, partial data collected at the national level and relevant literature help us draw some conclusions about the major characteristics of immigration.

Table 3.22 Education of the Foreign Resident Population by Nationality, EU 15 (1)

	EU-west	EU-south	CEEC	Turkey (others)	N.Africa, Middle East	N. Am., Australia	S. America	Asia	total	EU 15
Low	33,7	61,7	24,4	43,3	74,1	70,5	10,5	31,5	45,4	43,4
Medium	39,2	29,1	49,0	41,4	23,3	19,6	30,8	36,1	27,7	39,4
High	27,1	9,2	26,6	15,3	2,6	9,9	58,6	32,4	26,9	17,2
total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0		100,0
total	2774	2801	1628	766	3084	346	224	96	14778	374.849

Source: Münz & Fassmann (2004).

If we consider migrant age, the data are very clear: the majority of migrants are young, active and aged 20 to 40 years old. In Spain, the 25-34 class represents more than one third of the immigrants while the 15-24 class constitutes about one fifth. Most are thus young job seekers looking for better paid jobs, irrespective of whether they are qualified or not. We should not neglect the importance of students but it is not easy to distinguish them from others migrants as they often stay on after completing their studies or even work during their studies in order to finance it.

If we consider migrant gender, men are still most numerous: nearly 57 percent in the UK and 54 percent in Spain for the year 2000. This majority is not as clear as in the past, especially if we take into account the fact that in the old immigration countries of north-western Europe, migration related to family grouping is the only type of immigration allowed. The growing importance of women in migration patterns reflects a much more profound change. Some studies have shown that this female immigration has become more independent, probably due to the changing conditions and the growing difficulties that women have to face within the countries of emigration (King 2000).

Table 3.23 Characteristics of international migrants in UK, 2000

Characteristic	Share of total (%) Inflow	Outflow	Net inflow
Sex	*100.0*	*100.0*	*100.0*
Male	56.8	55.1	59.5
Female	43.2	44.9	40.5
Age	*100.0*	*100.0*	*100.0*
Under 15	5.8	8.3	2.1
15-24	33.7	25.5	48.3
25-44	51.5	57.4	44.7
45-64(m)/59(f)	7.0	10.3	2.2
65(m)/60(f) and over	2.0	0.7	2.8
Marital status	*100.0*	*100.0*	*100.0*
Single	57.6	58.3	56.4
Married	39.4	37.4	42.4
Widowed or divorced	3.0	4.2	1.2
Usual occupation	*100.0*	*100.0*	*100.0*
Professional/managerial	39.3	45.9	28.7
Manual/clerical	17.5	21.1	11.6
Students	21.7	18.9	26.2
Housewives	8.3	4.0	15.4
Other adults	6.4	1.6	14.1
Children	6.8	8.5	4.0
Main reason for migration	*100.0*	*100.0*	*100.0*
Work-related	23.4	34.2	5.8
Accompany/join	18.6	18.1	19.5
Formal study	19.6	3.9	45.2
Other	31.9	27.9	38.3
No reason stated	6.5	15.9	-8.8

Note: Totals for each characteristic are shown in italics. Data for marital status is for those aged 15 and over. Net flow shares shown for illustrative purposes.

Source: (ONS 2002).

Table 3.24 Age of the immigrants to Spain

immigration in 2000	Spanish immigration	Foreigner immigration	Total immigration	Total immigration in absolute terms
less than 16	21,27	11,91	12,73	46.129
16 to 24 years old	10,13	21,31	20,34	73.720
25 to 34 years old	17,17	35,12	33,56	121.638
35 to 44 years old	13,79	18,32	17,93	64.981
45 to 54 years old	11,04	7,29	7,61	27.601
55 to 64 years old	13,34	3,84	4,67	16.927
more than 65 years old	13,26	2,20	3,16	11.472
Total	100	100	100	362.468

Source: INE (2004)

Table 3.25 Qualification of the immigrants to Spain

Immigration 2000	Share	Total
Illiterate	12,0	43 371
Less than primary school	35,6	128 950
Primary school	27,9	100 978
Secondary school	24,6	89 137
Total	100,00	362468

Source: INE (2004)

Compared to age and gender, it is more difficult to draw any conclusion about the qualification of immigrants. The data provided by INE (Spain) are nevertheless interesting where according to INE, a quarter of immigrants to Spain have at least secondary school education. However we cannot be sure that the registration of the diploma is equal at each education level as the most qualified are probably more registered since they have more hope to get papers. It should be noted that qualifications are relatively similar across all origins, only the migrants from Maghreb have a much lower average diploma. This result is surprising: the relatively high qualifications of people from Latin America were expected (often a kind of intellectual immigration), but the level of diploma of Eastern Europe migrants is more surprising as this finding contradicts other studies for example Polish immigration in western Europe (see Okolski 2004). Nevertheless qualification levels do not infer anything about the type of jobs migrants will work in. They are often employed in very low qualified jobs even with a high diploma education.

3.6.5 International migration at the regional level

At present Western Europe (EU15) has a population of about 378 million, the EU (25) of 450 million. Around 20 million are foreign citizens. The proportion of foreigners is especially high in large metropolitan areas.

One possibility to prove the importance of migration for the demography of the European population is to look at the number and percentage of foreigners. The criterion of citizenship remains the lowest common denominator offering a basis for comparison beyond the statistical problems. Citizenship is a clearly defined legal concept everywhere, although access to citizenship varies. In many countries not all immigrants are counted in the relevant statistics as foreigners and not all foreign citizens are immigrants. Privileged groups, (e.g. ethnic Germans from Russia) immediately receive citizenship from receiver countries and thus "disappear" from the relevant statistics. On the other hand, in nearly all European countries children of migrants receive the citizenship of their parents by virtue of "ius sanguinis." If their parents are foreigners the children also count as part of the foreign population, even if they have never seen their parents' country of origin. Nevertheless the concept of foreign population defined by citizenship offers one possibility to show the growing importance of migration for the European population.

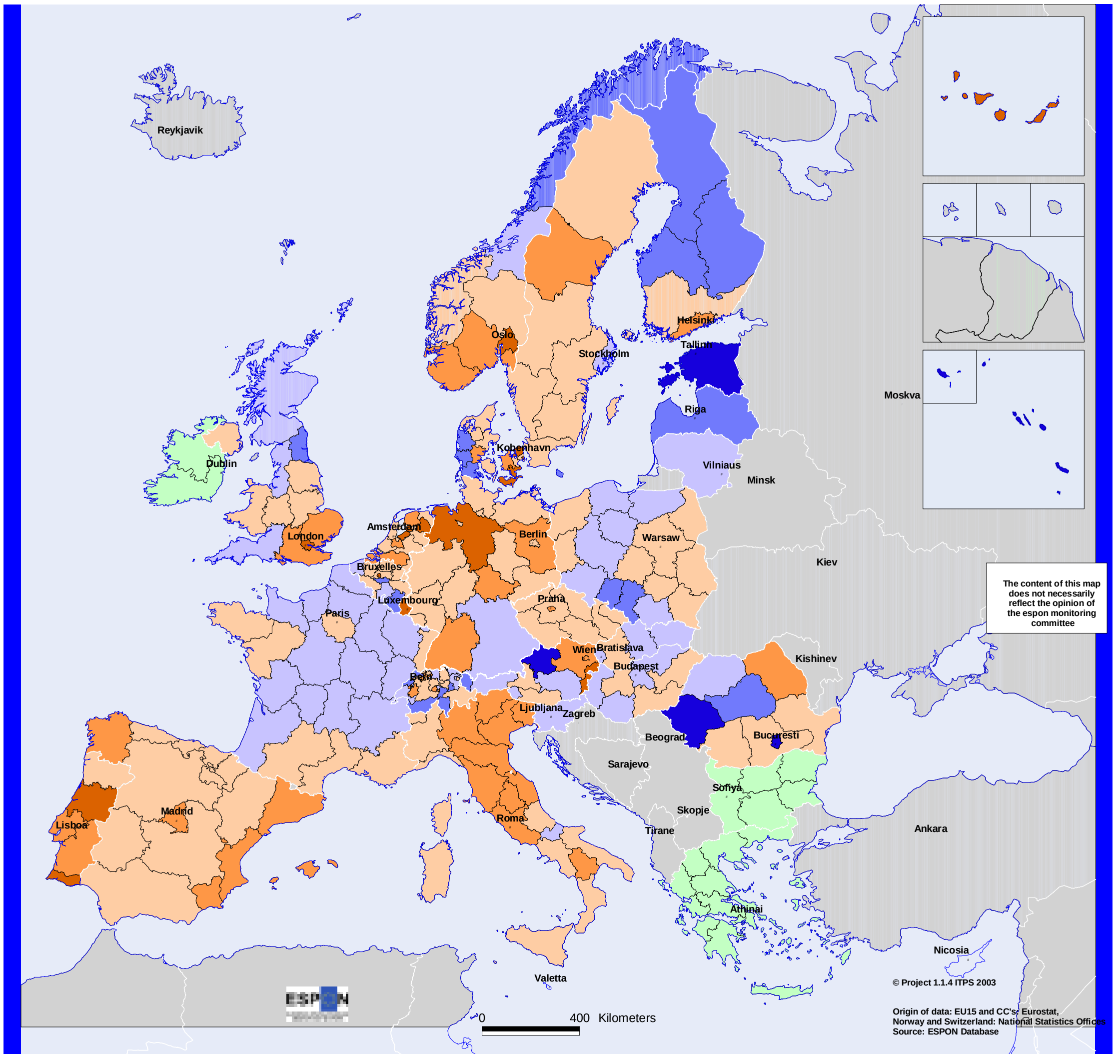
To develop the analysis further it is possible to study the external migratory balance, but data are very poor and unreliable. Additionally, the calculations are based on an indirect method.[32] Total migratory balance is evaluated by the natural movement method, and the balance is evaluated by calculating the difference between the total population growth and the natural growth of the population.[33]

[32] Total migratory balance = external migratory balance + internal migratory balance

[33] The internal migratory balance of each region was calculated from the data of migratory flows between regions within each country. It, therefore, evaluates the migratory balance of a region with all the other regions of the same country.

Map 3.14

External migratory balance, 1996-1999



annual average balance
for 1000 inhab.

- -50 - -3
- -3 - -1
- -1 - 0
- 0 - 2
- 2 - 5
- 5 - 20
- no data

Source : Eurostat, except for Switzerland and Norway (national statistical institute)

We should first recall that these balances concern extra-national migration, not extra-European migration. Nevertheless, the geographic contrasts arise mostly from immigration from outside the EU inasmuch as the intra-European migrations are globally balanced, at least between the countries. This map shows a very different pattern compared to the map of internal balance. It brings to the fore some important aspects:

- Europe has become globally attractive, even in spaces of traditional emigration, such as Spain, Southern Italy, Greece, Ireland;
- Metropolitan areas are the most attractive areas for external immigration. The presence of communities of immigrants and the importance and the diversity of the employment market explain this attractiveness;
- In Eastern Europe, there is a difference between the richest countries that become attractive, especially the Czech Republic, and countries such as Poland or Romania which remain countries of emigration although in a much more moderate rhythm than in the beginning of the nineties;
- Some tourist areas, such as southern France, the Algarve and the Mediterranean coast of Spain increasingly become regions of exterior immigration. Most of this immigration is coming from northern Europe, among others retired people with a high standard of living. However, the global growth of these areas related to their tourist function also attracts immigration of people from poor countries. These international level tourist places can clearly be distinguished from tourist areas of northern Europe, whose influence is mostly national (southern coast of England for example).

Stock data of foreign population for several years are not able to show the dynamics of the migration system within Europe. But data on the inflow of the foreign population are available only for a limited number of years and countries of the EU15. However, there is a tendency to build up flow statistics that are more relevant and sensitive to describe the process of migration.[34]

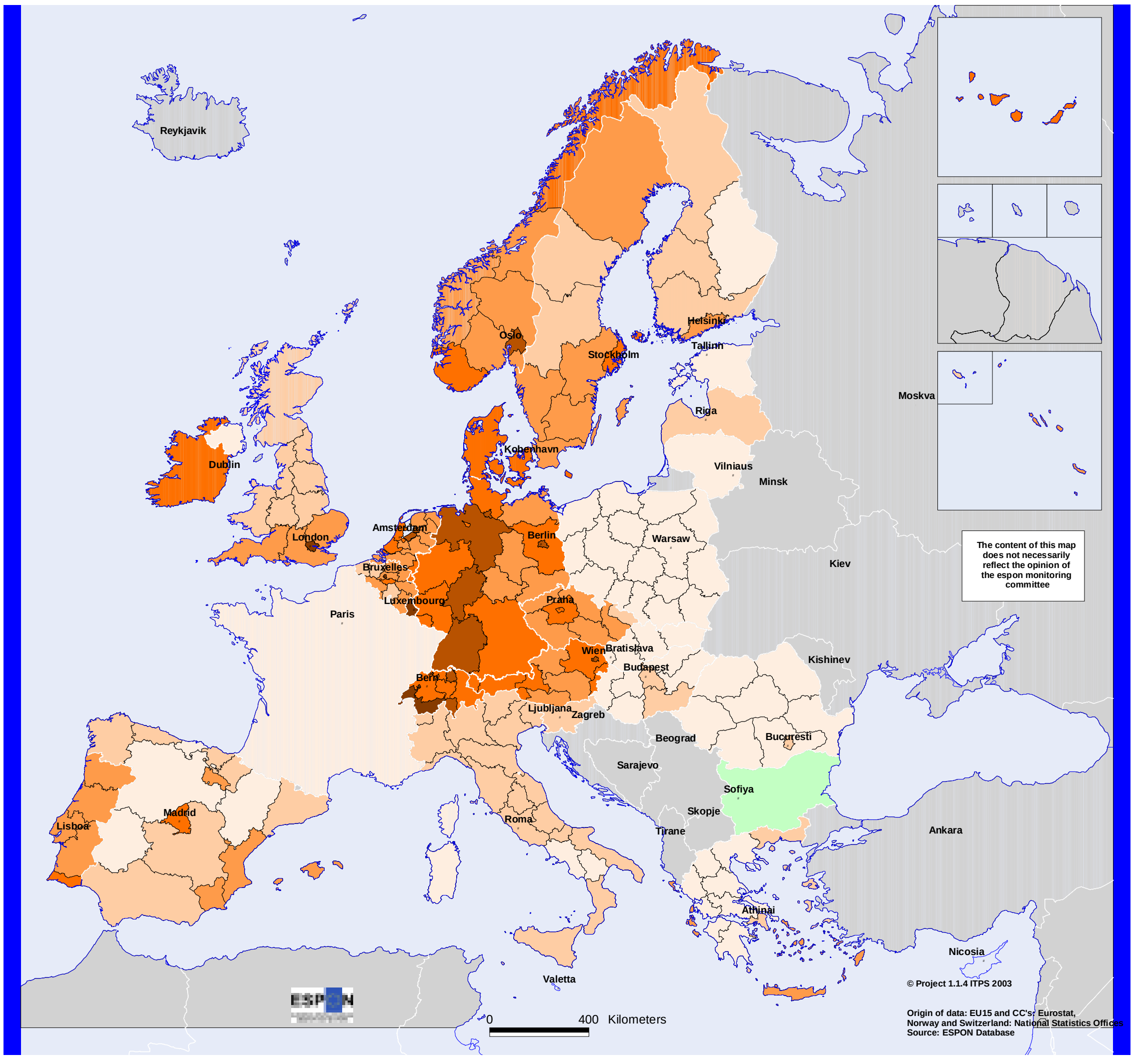
This picture confirms the geographical pattern of the precedent maps. The difference between countries is still clear: France seems to have few immigrants during this period, while United Kingdom, Benelux and Germany are still very attractive to foreigners; southern and northern Europe also became very attractive. In Eastern Europe, most of the countries attract very few immigrants with the exception of Czech Republic.

The geographical pattern of external immigration inside each country seems clear. The big towns are the most attractive areas for foreigners, both in absolute and relative terms. We can observe this very clearly for London, Vienna, Madrid, and the Scandinavian capitals. Indeed, big towns offer a large range of employment and also the presence of communities of the same origin that make the process of immigration easier. We also observe common geographical division in some countries, such as the division between the attractive south and less popular north which receives fewer immigrants In England. Dynamic tourist areas are also very attractive, as observed through the high rates gauged by the Mediterranean coast of Spain, and the Algarve in Portugal.

[34] These flow data are the official data of Eurostat. The flow statistics should be treated with great caution because the real amount of emigration especially is underestimated. Emigrants are leaving a country without registering. Some countries of the EU15 started later to implement a system to register emigration and therefore the “outflow” and the net migration does not reflect the real numbers. Immigration flows are also underestimated and subject to caution but are globally more coherent. This underestimation is not homogeneous in space. For example, the data on external immigration rates (see map) for Greece and Italy are very doubtful, compared to what we know about immigration in those countries from others sources (from the OECD for example)! We have no regional data for France and no data at all for Bulgaria.

Map 3.15

External immigration



exterior immigration rate
for 1000 inhab.

- 0 - 1.5
- 1.5 - 3.5
- 3.5 - 7
- 7 - 12
- 12 - 20
- 20 - 30
- no data

3.6.6 International migrations: some specific issues

3.6.6.1 East-west migratory flows in Europe

European East-West migration includes the migration from East Central and Eastern Europe, the former Soviet Union and the Balkans to Western Europe, overseas countries and some countries belonging geo-politically to the West (e.g. Turkey). Until 1950 the dominant migration flows in Europe were East-West. After 1950 the Cold War reduced this pattern to a flow between the two German countries. All in all migration from southern to western Europe became more important after the mid 1950s. This was the case both within Europe and for immigration from several countries of the 'Third World' to western Europe. After the fall of the Iron Curtain Poland, the former Soviet Union/CIS, the collapsing GDR and parts of the Balkans again became main sources of migrants and European East-West migration gained importance.

The main countries of origin within the framework of European East-West migration were the former GDR, Poland, former Yugoslavia, the former USSR and other countries, mainly Bulgaria and Romania. Within the framework of European East-West migration Germany was and remains the main country of destination. Between 1950 and the present some two thirds of all East-West migrants moved to Germany. Most immigrants were either ethnic Germans or labour migrants and family dependents. No other European country has played a comparable role in this process. Another receiving country – but of minor importance - is Austria (Cf. Fassmann 1997).

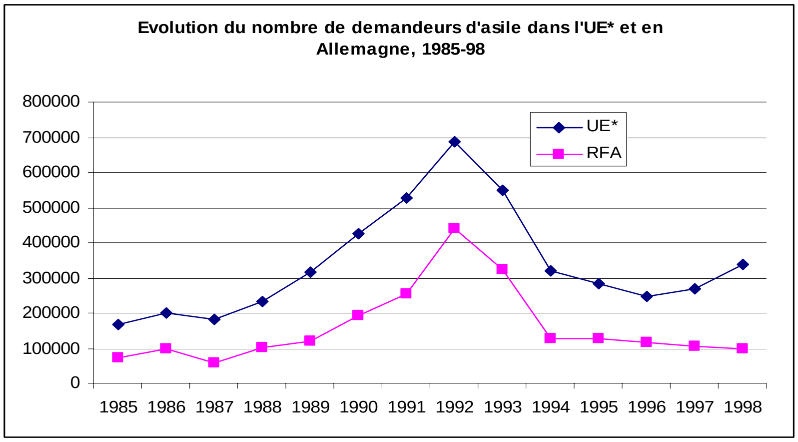
During the last decade a shift of the East-West migration has occurred. The traditional countries of origin in Eastern Europe such as Poland, Hungary or Slovakia became increasingly countries of destination. With the shift of the border after the accession of the new member countries and the implementation of the transitional rules, the East-West migration of the post-war Europe came to an end (see e.g. Vandermotten et al. 2004).

3.6.5.2 Asylum seekers from the third world

Until the middle of the seventies, the asylum seeker phenomenon had remained relatively marginal. It did not really take effect until the end of the eighties, to the extent where Germany has now applied more restrictive laws. The number of asylum seeks peaked at the beginning of the nineties (almost 700.000 requests in 1992 of which half of them from Germany) when the Eastern frontiers were opened, before decreasing. Since 1994 the number of asylum requests is in the area of 300.000 where the part attributed to Germany although still very high, has a tendency to decline (a little less than a third in 1998). After Germany, the United Kingdom and the Netherlands far ahead of France and Belgium receive the most asylum requests, despite France having been the second greatest country of reception some years before.

In comparison with the total flow of immigration in the European Union, the asylum requests remain a minority. Nevertheless their share has a tendency to grow: in 1996, on almost 1.400.000 immigrant in the European Union, 300.000 were asylum seekers. Of course, the majority of asylum seekers do not obtain the status which permits them to remain in Europe: their acceptance rate, although very variable from one country to the other (for example 9% in Belgium compared to 31% in the Netherlands in 1996) are in general very weak and have a general tendency to the decrease. Moreover most countries do not hesitate to bring certain asylum seekers to their borders once their dossiers have been refused; however, a lot of them have remained in the country, becoming illegal immigrants.

Figure 3.20 Evolution of the number of asylum seekers in Europe (1985-98)



Source: Wendt (2001)

The national origin of the asylum seekers is very diverse. The Central-Eastern and Eastern European countries however represent the most important part, especially in the median European countries, due to the fact of proximity. They represent more than half of the asylum seekers but their number diminishes after 1993, the rest is divided between Asia, the Middle East and Africa. More specifically, the main countries of origin in the 90's have been through severe political unrests: ex-Yugoslavia, with relation to the civil war which has cut through the country; Turkey, especially with the Kurdish question, the ex Soviet Union (Vandermotten et al.2004).

3.6.5.3 Migrations of retired people

The International Retirement Migration (IRM) phenomenon is relatively new in Europe (King, Warnes & Williams 1998). It stems above all from the ageing of the population (Demeny 2003). In the year 2000, Ireland, the Netherlands, Luxembourg, Denmark and the majority of countries that entered the EU in 2004, had a population of over 65s – the elderly – representing between 10 and 15 percent of the total. The remainder of the EU countries had an elderly population ranging between Finland's 15 percent and Italy's 18.2 percent. Furthermore, improved living conditions have led to a shift in the cause of death from the consequences of infective diseases to material deterioration due to ageing. This means that in the EU the young elderly – those aged between 65 and 75 – reach the third age in good health and for the most part also with economic security. In the over 75s, state of health and economic conditions vary significantly from case to case. Meanwhile, retirement age has remained stable even though between the 1970s and 1990s pensions diminished progressively. In Germany, for example, the percentage of working men aged between 55 and 59 has fallen from 90 to 75 percent during the last thirty years. In the 60 to 64 age group, the percentage dropped from 70 to 40 percent between 1970 and 1980, and subsequently to below 30 percent in the last twenty years (Morris & Mallier 2003).

Until the beginning of the Nineties at least three types of settlements were recorded in Europe for retired people: (i) in the suburbs of large cities, in areas served by public transport; (ii) in tourist areas near to the coast, in the UK, France, Belgium, Spain and Italy, and to the lakes, in Germany, Switzerland, France and Northern Italy; (iii) in rural zones close to places of origin with a quality landscape and pleasant climate (Cribier & Dieleman 1993).

Therefore, IRM in Europe began in the eighties to nineties and constituted an evolved form of the third type from previous decades where the attraction capacity of the landscape and climate remains constant and the familiarity of the place of origin is substituted by that of the tourist locations visited during holidays taken in working age. It was during these years that international mass tourism began to develop, especially by the citizens of Western and Northern Europe, along the coasts of the four EU Mediterranean countries: Portugal, Spain, France and Italy (King, Warnes & Williams 2000; Rodriguez, Fernandez-Mayoralas & Rojo 1998).

Certain authors justify the relative scarcity of research on this subject, despite the huge significance of the phenomenon from an economic and social viewpoint, by the lack of adequate and comparable statistical data. IRMs consist of permanent flows and in these cases it is possible to at least find parallels in the primary or even temporary statistics of a few weeks or even months spent wintering in the Mediterranean and then a return to the place of origin in the summer, maybe even renting out one's own home to fellow countrymen. In this second case, statistical information is either non-existent or suggests unreliable superimpositions between tourist flow and traditional migratory flow due to the necessity, or convenience, for each emigrant to register in the municipality of temporary residence. Almost all the scientific work carried out on this subject points out the need to gather primary statistical data in order to improve the possibility of better understanding the phenomenon and thereby managing it in a more rational way. It is perhaps because of these reasons that the scientific literature is more extensive on the mobility of the elderly within national borders rather than at an international level. In a phenomenon of this kind, it has been estimated that in Northern America there are approximately three million "snowbirds" which move to the sunbelt regions every winter.

On the other hand, there is evidence of studies carried out in specific locations upon the initiative of individual researchers, the request of administrations allocating pensions or for market survey strategies. These studies refer to certain Spanish locations, to the prevalence of the British in the purchase of second homes in France, or to British pensioners in the Algarve, the Costa del Sol, Tuscany and Malta. A phenomenon that is not quantifiable via statistical data does not even attract interest as a subject to be studied or researched, and therefore ends up being ignored by the large European institutions which do not stimulate the attention of administrations and politicians, thus contributing to perpetuating ignorance. In 2003, the Council of Europe published a volume entitled "Active ageing in Europe" in which the IRM phenomenon was not even taken into account (Avramov & Maskova 2003).

The case studies show certain qualitative considerations regarding the modalities of the IRM phenomenon, which is activated in working age during the yearly holiday period, when new areas, new cultures, a new language and new eating habits are discovered and experimented. It is during this time that plans are made to purchase a property in a foreign country where a shorter or longer period of life will be spent. Between 70 and 80 years of age, some decide to return to their place of origin in order to rejoin the rest of the family and, in case of necessity, access a familiar health service.

In the meantime, the decision of an individual family can contribute to the relocation of other people, with different ideas and diverse cultural conduct. For example, IRMs, if sufficiently enterprising, can initiate a new employment activity in the new place of residence, perhaps linked to the presence of a foreign community which has established itself in the area and which therefore requires new and more sophisticated services.

The fact that IRMs follow a route that was previously a tourist itinerary and that therefore is connected to tourist locations enables them to maintain certain infrastructures and services that are also open and available during the winter season, thus activating a virtuous circle to which other low season tourist flows are attracted. The manpower in tourist structures can therefore work for longer intervals and reduce the period of off-season employment. The case studies of some locations along the Spanish Mediterranean coast indicate that for the foreign community, which has more or less legally immigrated, exists in two age pyramids: the communities from other EU countries show a majority presence in the over 50s group, whereas those communities from non-EU countries have a majority presence in the 20-50 age-group. Some researchers have defined the first category as "consumption mobility" and the second as "production mobility".

It emerges from other case studies that IRM settlements do not always coincide with coastal areas. In Spain, "back-from-coast" locations have also been singled out, that is, abandoned or semi-abandoned rural areas, such as can also be found in Italy, from where the original inhabitants have emigrated for work motives, and the presence of new communities can represent, in some cases, the only possibility for a renewal of the building heritage.

3.6.5.4 Migrations of highly qualified persons

The migration of highly qualified people needs certain introductive explanations (Koser & Salt 1997). Migrations of skilled labour have an impact both on the country of origin and that of destination. In the former, generally developing countries, this has caused a loss in specialised work force and has led to the phenomenon that is referred to in the literature as "brain drain", with the risk of a generalised impoverishment of the potential for innovation and thus for growth. The European countries which have been on the receiving end of these flows have, instead, profited in terms of innovation and specialisation, and thus in productivity and economic growth, the reduction in the shortage of qualified work, and the decrease in training costs. In the literature, these phenomena have been referred to as "brain gain" (Montanari 1993, 1996). Other than these negative or positive aspects, depending on one's point of view, the phenomenon, with its commuter and temporary movements, contributes to the international circulation of knowledge, also known as "brain circulation" (Salt & Ford 1993).

Following the fall of the Berlin Wall, in Europe there were migrations towards the West of highly qualified people coming from Eastern European countries. Before 1989, Eastern Europe had the highest percentage of scientists in the world, but it invested little in research tools. This situation, along with the need for an intense restructuring of the economy, caused a considerable drop in qualified people. Intellectual unemployment thus spilled over into the more industrialised Western countries and, faced with the inability to find adequate employment corresponding to their qualifications, these people accepted any other kind of manual activity, leading to the phenomenon that is known in the literature as "brain waste" (Rhode 1993; Salt, Clarke & Wanner 2004).

The phenomenon of the migration of highly qualified people, such as researchers, engineers and Information Technology experts, intensified during the nineties following an evolution in the world economy which was increasingly geared towards innovation and innovatory processes (OECD, 2002). The causes of these migratory flows include amongst others: (i) the shortage of skilled labour, due to the continuous growth in demand; (ii) the international circulation of knowledge and thus of those professional figures which have the greatest expertise; (iii) a knowledge of culture, languages, markets and international processes. At the same time, there was an increase in studies and observations and policies were sought in order to better manage the phenomenon (Raghuram & Montiel 2003). Therefore, it became necessary to obtain more precise definitions than those of the Human Resources Devoted to Science and Technology (HRST), subsequently collected in the "Canberra Manual", which could contribute to the identification of more effective statistical indicators and more efficient policies. In terms of recording the phenomenon, apart from the difficulties encountered in the interpretation of the definition of the immigrant population, which varies from country to country, there is also the problem of unequivocally defining immigrant skills. Scientific research which is based on quantitative data is relatively undeveloped precisely because of the difficulty in retrieving data which is appropriate to the complexity the phenomenon has now assumed and due to the unreliability of the available data, at least in terms of comparability.

On the basis of the EU Labour Force Survey, the percentage of non-nationals employed in a wide range of highly qualified activities in the fourteen EU countries, excluding Ireland, corresponds to 4.5 percent of the total number of employees in these sectors. There is a significant difference between the various countries. In Finland, Italy, Spain and Portugal, the numbers are considerably lower than the average; in Denmark and The Netherlands, they are lower than average. They are more or less average in Greece, Sweden, the UK and France, and above average in Belgium, Germany and Austria. In Luxembourg, non-nationals represent 40.2 percent.

There are significant results from studies carried out on the mobility of university students and those taking post-graduate courses, both during the study and recruitment phases. Student mobility can foster scale economies in education systems and can thus enable the financing of teaching activities in sectors that are particularly innovative but otherwise in little demand, having a positive effect on local economies due to the related accommodation and consumer fees (Jallade & Gordon 1996). For the countries of origin, mention is made of the advantages gained relative to the mobility of ideas and to the transfer of technologies, but mostly training in a foreign country leads to a temporary or permanent move, which places the experience in the brain drain category.

For example, approximately half of the students from the UK, Germany, Spain, Italy and France who go to the USA to finish their PhD receive an offer of work from an American employer. In the EU-15 countries, 7.7 percent of the students are foreigners, and of these less than half are from an EU country. The percentages relating to Germany, the UK and Austria are higher than the average. Foreign presence in Italy and Spain, however, constitutes barely over 1 percent.

Net student mobility, immigrant and emigrant, is positive. It shows a surplus for the UK, Austria, Germany, France, Denmark and Spain, is balanced in the case of Sweden and Belgium, and is negative, i.e. shows a deficit, for Italy, Ireland and Luxembourg. These differing situations are justified by the presence of high-quality research centres, by the existence of cultural factors, by the use of languages such as English, French and German, which are important in the historical and economic role of the countries in which these are used, and by the presence of cooperation agreements. On the basis of data published in 1998 for the OECD Education database, in the UK the main groups were represented by students from Greece, Malaysia, Ireland, Germany and France, in Austria by those from Italy, Germany, Turkey, Bulgaria and Iran, and in Germany by those from Turkey, Iran, Greece, Austria, Italy and Poland.

The differences in lack of curricula are highlighted by the OECD Education database which indicates the Tertiary-level graduates in computing as a percentage of all fields of study. For 1999, the percentages varied between Ireland (9.5%), the UK (5.1%), France (4.1%), and Spain (3.1%) and lower values for Germany (2.1%), The Netherlands (1.5%) and Italy (1.1%). This situation has no doubt contributed to the migration of the highly qualified in this field. From the beginning of the nineties onwards, with the growth of the IT sector, migrations from India, a country particularly doted with highly skilled people in this sector, significantly increased in the UK, a traditional migration country for the Indians, but also in Germany and the Netherlands and, more recently, in the Northern countries too. To be mentioned in this context is Germany's policy, introduced in the year 2000, aimed at reducing the manpower deficit in certain strategic sectors of German industry, such as IT specialists, which enables the migration of the highly skilled for a period of five years – a policy also known as “green card”.[35]

3.6.7 Concluding Remarks

The migratory movements in the European space constitute a very complex issue. Indeed, migration is nowadays the addition of a vast number of often contradictory movements as much inside Europe as with the rest of the world. The economic determinism remains quite strong but is no longer the dominating factor explaining main migratory movements. Indeed, facts related to the quality of life are of growing importance to explain the choice of households’ residence. However, we have to notice that these two kinds of explanatory factors are not always easy to distinguish.

To understand better these movements, it is essential to distinguish them regarding to their geographic scale because migration within short, middle or long distances have different causes. For example, immigration to Europe is still mainly determined by economic gaps between Europe and the third world, while movements between countries inside the European Union or urban sprawl are not mainly caused by economic considerations.

From these numerous movements, the main components according to the scale of migration can be summarised as; (1) after decades (centuries) of global emigration, Europe as a whole has become a continent of immigration in the nineties. The economic recovery, the collapse of communism in Eastern Europe and the opening of the border between the two parts of the continent, on one hand, the political and economic chaos in a part of the Third World countries, on the other hand, are the major causes of this major evolution. This increasing flow to Europe can be paralleled with so called globalisation processes and the related increasing mobility.

(2) If the intra-European mobility (EU 15) has increased, it no longer implies quantitative imbalances between countries, as was case in the past. But there is clear evidence indicating that these flows take different forms according to their orientations: for example, the retired people’s flow is mostly oriented from northern to southern Europe but may be compensated by the persisting but limited flow of young active people in the opposite direction.

(3) Inside each nation, interregional movements remain very intense. Socio-economic disparities between the regions are still essential to explain these migrations (from north to south in England and France, in the opposite direction in Italy, from rural isolated areas to main urban areas in Nordic countries), especially if one considers the young active migrant group. However, environmental factors are playing a growing role to explain the movements of active households and pensioners. For example, movements to southern England and France can be explained by the combination of a strong economy and a pleasant environment.

(4) Since the seventies, a global process of counter-urbanisation has developed, i.e. a general movement of de-concentration from the urban areas, especially from the biggest ones. For example, in England, to a very large extent, each district type gained population from net migration from all the levels of the urban hierarchy above it and recorded net out-migration to all those below it. In Northern and central Italy, while the internal migration balances of the provinces with high densities are negative, they are the most positive in the provinces with very low population densities. This process fuels the revival of rural areas, especially those well located into the dense urban networks of north-western Europe. In the

[35] According to Werner (2002), the “Green Card” system failed to attract the groups it aimed to attract during the first years of existence, e.g. the IT-specialists from India used Germany as a transit country to the UK, Canada and the USA.

southern Europe, the same process is clearly at play but is still counterbalanced by the out-migration of young people from the isolated rural areas (centre of Spain, interior Portugal). In our view, the suburbanisation, i.e. migratory flows from urban centres towards their green suburbs, is only one but the main aspect of counter-urbanisation, since it concerns more people and provokes big contrasts of migratory balances on short distances. Counter-urbanisation and suburbanisation also entail big contrasts in migratory behaviours by ages. For example, the flows of young people (18-25 years old) to urban centres is more than compensated by the opposite flows of all other age classes, especially middle age active households with children.

How to synthesise the spatial outcomes of these migratory flows? Metropolitan areas have contrasted evolutions according to their position within the European space. If suburbanisation is a general process all over Europe, we can distinguish Nordic, Eastern European and Mediterranean urban areas from north-western ones: the first are still attractive within their national space which is not the case for the others. However, big towns across Western Europe receive big flows of persons from outside Europe. The result is often a dual process inside metropolitan areas: on one hand, some areas concentrate poverty, new and old immigrants, and social difficulties and, on the other, others areas, often located in the suburbs, benefit from the relocation of a wealthy population.

Rural spaces also have different destinies regarding to their degree of isolation and their position within the European space. In the central areas of Europe, the famous blue banana, rural zones are repopulating thanks to the counter-urbanisation process, which concern mainly active households and pensioners. On the other hand, isolated rural areas in Eastern and northern Europe have often negative migratory balances. In Mediterranean Europe, the rural exodus ends up globally: the departure of the young are more and more compensated by return migration and a beginning of counter urbanisation process.

3.7 Scenarios until 2050

3.7.1 Introduction

This is a summary of the Annex A “Ageing, Labour shortage and ‘Replacement Migration’ ”. As indicated in the title, the main goal of this part of the project is to elaborate on the phenomenon of ageing and on the related processes of “labour shortage” and “replacement migration” in Europe. Finding out the actual magnitude of these processes in the various countries and regions of Europe and identifying the main future trends in an integrated perspective should provide the basis for better policies in the fields of migration flow management and regional development, especially in those areas where the problem of depopulation is present.

The ageing trend in Europe is a much more present and intense fact than is commonly acknowledged, even among the academics and policy-makers that are not directly concerned with demographic issues. Despite its strong intensity, it assumes different spatial expressions: a) within the space of the former European Union configuration (15 countries); b) in the ten countries of the enlargement; c) in Romania and Bulgaria; and d) in Norway and Switzerland. It must be pointed that the reasons for the current and future ageing of the European population lie in the demographic performance of the last few decades, as well as in the fact that many of the policy measures taken now will only be effective, in terms of beginning to change the demographic characteristics of the European population, in a few decades’ time.

There are two main reasons for this process of demographic ageing. The most important is the sharp general decline in fertility that Europe, like other regions in the world, has experienced since the 1960s. The other important factor in explaining the current ageing process is the increase in the life expectancy of the population, due to the medical progresses and the improved social support and care for the elderly. The association of these two effects has sped up the pace and increased the intensity of this process in the present.

It then appears that immigration, for the experts as well as for many policy-makers and managers, provides an answer to the twin problems of lack of population and lack of labour force in many regions of the world. Consequently, Europe is, and will be so also in the future, one of the major destinations of world migration, and a continent subject to strong migratory pressure as a result of the sequential process of ageing and labour shortage. However, as was showed in chapter 2.2.3, neither the economic theories nor the empirical evidence support unanimously that a 'replacement migration' can solve the problems of ageing in Europe (or the rest of the world).

This issue was widely discussed after the publication by the United Nations, in the year 2000, of a report on immigration as a solution to the problem of ageing and labour shortage (UN 2000). In that report, the U.N. Population Division considered their own previous demographic projections (UN 2001) and five different demographic scenarios in order to forecast the total population and the amount of immigration required in a series of individual countries and groups of countries: in the case of Europe, information is provided with regard to the European Union (EU15), United Kingdom, Italy, Germany and France, as well as the Russian Federation and the continent as a whole. In this type of forecast, it is in fact common to use very large territorial units (e.g., NUT 0), in order to avoid the errors that arise from the lack of information at larger scales (e.g., NUT 4 or smaller) and from the contingency of what can happen in small and open spaces. In fact, the larger the territories under study, the more stable and significant the forecasts will be.

Since the main goal of this part of the project 1.1.4 is not to forecast, or try to guess, the future population (like the UN report does), but rather to identify and typify areas that exhibit similar demographic trends and problems, it is very important to carry out some calculations at larger scales, i.e., for smaller territories. The analysis of the current and future demographic trends and performances presented here refers to the European Union in its former form (as EU15), the post-enlargement European Union (EU25), and, finally, the EU25 plus Romania and Bulgaria (two countries that will soon join the EU), as well as Switzerland and Norway (who have for long maintained strong links with the European Union). This latter unit of analysis shall be referred to as EU29.

The methods adopted here shall enable us to have similar information and to reach comparable results for each of the 29 countries – Eurostat's NUT 0 – and for each of the 276 NUT 2 territorial units. By way of standard population projection techniques, we have calculated the number of persons in each region up until the year 2050, as well as the age structure under different scenarios and assumptions, and we have then identified the main trends in terms of ageing, labour shortage and replacement migration in the aforementioned areas.

In the first five scenarios, we only consider demographic assumptions, despite knowing that some of those assumptions rest on implicit economic ones. The first one, designated by scenario or model "A", is exclusively demographic and does not include any migratory flows; as for the other four "B" scenarios, the first one has been designed in order to determine the effects upon the demographic structure of maintaining the recent migration trends, and the other three in order to make it possible to find out the amount of replacement migration (whether positive or negative) required to maintain the following variables at the level of the reference year (2000): a) the total population (model B1); b) the population inside the working age (model B2) and c) the population required in order to maintain the same PSR - Potential Support Ratio - i.e., the same ratio of working to old age population (model B3).

The other four are concerned with economic performance and allow us to determine the migration needed to the regional economy, assuming small differences in productivity level. Four different scenarios, related to a differential productivity evolution, are developed.

In all these different population projection exercises, we assume that both the specific mortality rates and the specific fertility rates will be the same during the entire period. Naturally, things will not be exactly like that in reality, but since, for the time being, that base time period (1995-2000) is the only one for which complete data sets are available for all the 276 NUT 2 units, and since that same assumption is made for all the regions, the comparability of the results is ensured. On the other hand, since the base time period seems to be the one in which the demographic prospects are the less favourable, scenario A will be closest to the worst possible demographic situation.

Generally speaking, the results of these projections are not surprising. However, their magnitude and significance are, in some cases, quite startling. The magnitude of the phenomenon of ageing in Europe is already very significant, but it will continue to increase substantially and in a non-reversible fashion (*cf*. the extraordinary figures for the population and required migration under scenario B3, that in which the Potential Support Ratio – PSR – is kept constant). The evolution of the spatial pattern of the ageing processes shows that it will be intense not only in the more developed countries of Central Western Europe, but also in the Southern countries (where these processes have traditionally been hidden by ideological and social perspectives) and in the countries of the enlargement. Only a handful of regions will be free from the pressures of strong population ageing processes.

Although with variable patterns, depending on the characteristics of each country, the most critical period in most of the scenarios, in terms of the ratio of "elderly to working aged people" will be between 2015 and 2030, just followed after by a more stabilised variation. Of course that will not happen, because the system itself will provide solutions to this problem, both by formal or by informal ways[36], but two important aspects remain that are worthy of notice: one is the intensity of the main current demographic trends; the other is the time lag that always and also in European societies mediates between an individual's date of birth and his entrance in the active life (of labour and reproduction), which usually takes place some 25 or more years later. This means that the period between the emergence of the problems, the appropriate measures being taken and their effects being felt is not immediate and can actually take more than 30 years.

Another important result, though not fully visible due to the non-explicit integration of the regional economic performance in these models, is the unequal regional capacity to attract/repulse population. Based solely on the current demographic characteristics and assumptions, it is possible to detect those areas that exhibit strong depopulation trends. It must be pointed out that, at same time, in those areas where the ageing and depopulation process are at an advanced stage, there is a strong probability of excess manpower occurring, because the very feeble level of local development will not allow for those few that do look for jobs to be absorbed.

If we look at the regional and local reality and at the various possible future scenarios, some important questions arise, among which the following stand out: the actual importance of the ageing and depopulation trends in the various European regions; the social and economic consequences of these trends and the way in which they affect the regional and local development processes; the dimension of the migratory flows involved;

[36] That is why the future can never be fully foreseen by the experts, but rather built by all the people involved.

and the issue of which formal and informal policy mechanisms will be more suitable in order to regulate these flows.

3.7.2 Theoretical considerations on labour shortage and replacement migration

There is no general consensus regarding the economic benefits of migration. Different theories, based on different assumptions, reach different conclusions on the impact of international migration on economic growth, unemployment, labour force participation, wages, taxes, and transfers.

According to Fotakis (2000), there is growing awareness in the EU today that there are at least two major policy issues as far as population ageing is concerned, these being the ageing of the workforce and the risk of increasing imbalances in the financing of social protection. Faced with these accelerating trends, immigration is often suggested as one of the solutions to these demographic problems.

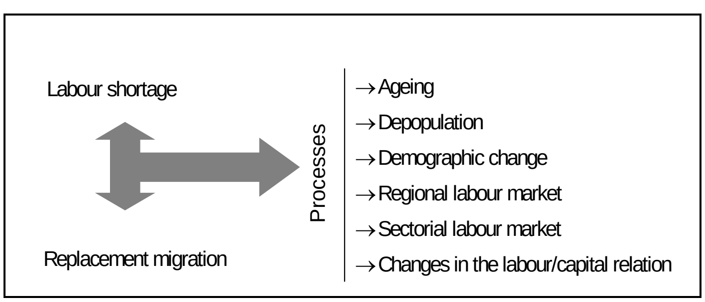
Indeed, over the last two decades, the European migratory space has undergone a clear expansion, manifest in the proliferation and diversification of the places of origin of the foreign residents. In particular, the migratory space has expanded as a consequence of the increasing liberalisation of the flows of people, goods and services from Central and Eastern European countries.

There is clearly a stark contrast between the aged demographic structures of the European countries and those in which the youth have a much more significant weight, as is the case in numerous migrant-sending countries. In this context, a host of studies have been conducted on the mutually beneficial implications that result from migrant flows. Two are particularly worthy of mention: the UN report on “replacement migration” (UN, 2000), in which the possible role of migration as a solution to the ageing problem is addressed; and the report by the Council of Europe on the characteristics of the immigrant population in several European countries (Haug et al., 2000).

> Replacement migration is referred to as “the international migration that would be needed *to offset possible population shortages*, i.e. *declines in the size of population*, the *declines in the population of working age,* as well as *to offset the overall ageing of the population*”. (UN, 2000: 5)

Hence, we find, on the one hand, a process of demographic change associated with the increase in life expectancy, low fertility rates and increasing ageing rates; and, on the other, a process of restructuring of the labour market, in which the needs are changing to accommodate the changing characteristics of society itself that are a consequence of the acceleration of technological progress (Figure 1).

Figure 3.21 Labour shortage and replacement migration



According to Tamas (2004), the demand for migrant labour is growing. “The International Labour Organisation has recently estimated the global number of migrant workers and their family members at 120 million (Taran, 2003 cf. Tamas, 2004). As the demographic changes with ageing populations and emerging labour force shortages become increasingly apparent for the economies of developed countries, further expansion of those flows appear likely (Boswell, 2003 cf. Tamas, 2004).

In economic theory, the demand for labour depends on the total demand in the economy and on the alternative cost for replacing labour with capital. A labour shortage occurs when the demand for labour is higher than the supply and when the alternative cost for substituting labour with capital is too high.

> A labour shortage occurs when demand for labour exceeds labour supply at a specific wage level. The shortage is said to be 'relative' if the imbalance can be fixed by a change in prices (wage or reservation wage). Otherwise the shortage is said to be 'absolute'. Absolute labour shortages thus reflect the impossibility to find, among the working age population, a worker with the adequate skills (without transferring him from a similar post) (EC and OECD, 2003: 27).

The demographic trends will change the conditions of the economic system that have been built up, not just in Europe, but in the entire Western World. The problem that the Western World will face around the year 2050 will be to find solutions to support a rapidly ageing population, while, in many countries in the Third World, the problem will be to find ways to feed a relatively young population.

In theory, labour migration could help the Western World to support its older population, and the young in the Third World to find a way to earn a living. This is certainly a complex issue, one for which a consensus is yet to be reached with regard to the best available solutions. Different theoretical standpoints, based on different assumptions, naturally yield different conclusions on the issue of the impact of international migration upon demographic and economic growth, unemployment, the level of participation of the work force, wages or taxes.

According to Peixoto (2004), the “mobility of labour” (migration) has a series of implications at various levels: the idea of the unequal development of space, as a consequence of the logic of the private accumulation of capital (Hudson and Lewis, 1985); the concentration of production in urban areas, which allows for the reproduction of the work force (Castells, 1981); the recent fragmentation of the activity of capital (Massey, 1984); the “hyper-mobility of capital and labour” (Hudson and Lewis, 1985: 16-7); and the contrast between “flow space” and “local space” (Castells, 1989) – all have great potential in explaining migration flows and reflect much of today’s reality (Peixoto, 2004). Labour migration can also offset structural change in the economy, as stagnant trades and sectors are kept going. Furthermore, importing labour can only solve the demographic problem in the short term because the immigrants get older as well (Coppel et al., 2001).

According to the dual labour market theory (Piore, 1977, Peixoto, 2004), the chief characteristics of the two segments of the labour market are the following: the *primary labour market* offers stable working conditions and labour relations, attractive wages, prospects of career advancement and internal promotion (within sophisticated labour markets internal to the organisations) and the guarantee of social protection. In practice, these characteristics are most common in the case of state departments and other large public and private organisations. By contrast, the *secondary labour market* is characterised by low wages, the demand for unskilled labour, scarce career opportunities, job insecurity and often a virtual lack of social protection (Rodrigues, 1992: 25-26, cf. Peixoto, 2004).

According to Portes (1981), migrants that are drawn in within the context of the primary labour market usually come in through legal channels; have access to jobs by virtue of individual qualities rather than ethnic origin; have prospects of mobility that are akin to those of the natives; and play a “complementary”/“reinforcing” role with regard to the national labour force. On the contrary, access to the secondary labour market (which accounts for the majority of the migrant workers in the international context) is chiefly characterised by the precariousness of the legal status (usually either temporary or illegal); recruitment based on ethnic origin rather than skill and qualification (as a reflection of the vulnerability of the former condition); the performance of isolated tasks, with no prospects of upward mobility; and a “disciplinary” effect upon the local labour force (by keeping the general level of wages low).

“Assessing the needs of immigration for the European Union is a quite complicated issue that cannot be treated by taking only into account the demographic trends. A lot of considerations should be taken on board. Besides, each country of the Union represents a different situation, not only because their demographic patterns are different, but also because each of them faces its own socio-economic reality. Economic and social institutions are often different too” (Fotakis, 2000).

3.7.3 Forecast Model for Demographic Evolution and Replacement Migration

3.7.3.1 Data

The data used in the model consisted chiefly of data prepared and collected for and by ESPON Projects and Working Groups, namely the Newcronos Eurostat database. Because that data contained some errors and gaps, data from other sources was required in order to fill in the matrices used for territorial demographic modelling[37]. The main source of that data was the United Nations and the various national statistics offices, through published material, internet sites and, in some cases, direct contact.

The data used consisted of the regional population, fertility and mortality rates, migration flows and basic regional economic indicators. Since the models are based on the cohort survival technique (also designated as the specific age strata), all the population data required, such as the number of residents and deaths, had to be known by age group. In order to do that, we have adopted sixteen age groups, the first fifteen consisting of 5-year age groups (from 0-4 to 65-69) and the last one including all the people aged 70 and older. For a better knowledge and management of migratory flows, in the future, it will be very important to have more age groups for the elderly, since ageing is the main process under scrutiny here. However, the required data are simply not available. In what regards the births, we have taken into account the age of the mothers using the same 5-year age groups. The calibration period should be the closest possible to the present, i.e., 1995-2000, and that period is indeed one of the few available using Eurostat data sources.

Data proved to be difficult to obtain and we are aware that the quality of the data used, while far from optimal, is a compromise between what we needed and what was possible to obtain, and that, in fact, carries over some instability to the results. However, this will not impinge significantly upon the main trends and the general results, and if and when better information is available, it will be possible to take it into consideration and thereby adjust the models.

[37] The use of other sources raises the problem of data compatibility, but since there was no alternative, it is better to have imperfectly compatible data that to have nothing at all.

In the future, should the ESPON wish to carry on this kind of work, relying more on national data (in a international and expansive network context), it will be possible to have similar data for 1990, 1985 and 1980, and thereby improve the quality of the results (including long and medium term trends for fertility and mortality), while at the same time assessing the sensibility and robustness of the results and the models. In order to predict and monitor such demographic and economic processes as depopulation, migration, ageing, GDP growth, employment and unemployment, we need a more coherent data set, not necessarily very extensive but trustworthy and exhaustive nonetheless, in order to be used not only as an input for the modelling exercises, but also to monitor the processes.

3.7.3.2 The Models

Based on the resident population and on the current specific fertility and mortality rates in each region, we have considered nine different scenarios, for each of which we have computed the migration flows required in order to achieve certain particular population targets. We present results for 29 European countries: the fifteen that were already a part of the EU before May 2004, the ten that joined the EU on the 1st of May, 2004 and Bulgaria, Romania, Norway and Switzerland. Results are also presented for their respective 276 NUT 2 regions, as well as for the EU29, EU25 and EU15 as a whole.

The mentioned nine scenarios are as follow:

<u>“A” Scenario</u> – Without migration
It is a closed model, based on the extrapolation of the present specific demographic rates in each region and allowing for zero migration. It is an indicator of the demographic potential of each region. The difference between the population forecasted for 2050 and the current population is a good indicator of the tendency towards depopulation, while the changes in the age structure give us an indication of the ageing processes going on.

“B” Scenario – With migration

<u>“B0” Scenario</u> – This model allows for the same migration rate as in the period 1995-2000. It is an indicator of the demographic potential given the present migration conditions. Unlike model A, it shows the effects and the limits of migration (at its current level) to impact upon the depopulation and ageing processes.

<u>“B1” Scenario</u> – This scenario computes and (takes as an assumption) the migration flows required in each five-year period in order to keep the total regional population unaltered (i.e., the same population stock as in the base year - 2000).

It is an indicator of the sustained effort required in order to keep the population stock at its current level. The sum of the migration flows in each five-year period has a similar meaning to the final difference in terms of population computed in Model A, but the results of the “B1” scenario do not wait until the end of the period under analysis; rather, they incorporate the migrant inflows in each period into the resident population and take into account their demographic behaviour after their arrival. It is a different way to show and improve the results of Model “A”.
Together, these two models provide an indication of the expected upper and lower limits of the ageing index in each region. Moreover, model A also provides some information about the attractive/repulsive nature of each region.

<u>“B2” Scenario</u> – This scenario computes (and takes as an assumption) the migration flows required in each five-year period in order to keep the economically active population (i.e. the population between 15 and 64 years of age) at its base year (2000) level.

It is an indication of the effort required in order to maintain the regional labour force at its current level. It is a good indicator of the "potential" shortage of labour, if we take "potential" to mean the ability to maintain the same level of production and productivity. It provides some initial information with regard to the actual "labour shortage" that will occur, all other things kept constant. It illustrates the difference between the "natural" and the "required" supply of labour, under the assumption of constant demand. Thus, high positive immigration values are an indicator of the "natural" incapacity to meet the needs of the production system and a good estimate of labour replacement migration.

"B3" Scenario – This scenario computes (and takes as an assumption) the migration flows required in each five-year period in order to keep the ratio of "working age" to "retired" population (the regional population in the 15-64 age group divided by the regional population aged 65 and plus) at the level of the base year (2000).

It is an "impossible" scenario, because of the very high level of immigration required, but it is a good indicator of the size of the problem of financing the retirement systems.

"C" Scenarios – With assumptions regarding both migration and productivity.

The "C" scenarios estimate the level of required replacement migration, based on a series of assumptions regarding the regional economic performance (which take into account the economically active population, the level of GDP and the long-term average productivity variation).

In fact, these economic scenarios cannot be considered demographic projections based on a series of predicted levels of GDP, production or output: it is obviously impossible to do that for the medium- or long-term in the case of such small regions and for a so long period. Hence, the central trend corresponds to model B2, which computes and assumes the migration levels required in order to keep the workforce at its current level. This means that each and every variation in GDP (in each given region, of course) is solely due to the productivity change in that region. For example, if in a given region GDP grows at an annual rate of 2%, holding the workforce constant implies a 2% growth in that region's productivity. The historical long-term analysis shows an average annual growth of about 1.9% in productivity, the remainder (about 0.7 to 1%) being due to employment growth.

Then, for each of the "C" scenarios, we have assumed four different values for the relation between GDP and productivity variation. While in the "B2" scenario the assumption of a constant workforce implies that all growth in GDP is due to productivity gains, in the "C" scenarios we allow for a gap to occur between productivity and employment variation, in such a way that scenario "C1" considers a differential productivity annual rate of plus 1% (which means that changes in GDP will be equal to changes in productivity plus 1%). The "C3" scenario is similar, but allows for a differential productivity value of plus 0.5%. It should be pointed that those two scenarios – "C1" and "C3" - correspond to a lesser need, by 1% and 0.5%, respectively, for labour. In turn, the "C2" and "C4" scenarios assume differential rates of annual productivity of minus 1% and minus 0.5%, respectively.

Although the comparative historical evolution of the product and productivity growth rates is more in agreement with the "C2" and especially the "C4" scenarios, in the future there may be some tendency for the variation of GDP to be more closely related to productivity changes than in the past, which would make it possible to avoid the huge immigration volumes that would be inescapable if the system were to continue to follow its past trends.

The four "C" scenarios provide us with a "fork" of possibilities in terms of variations in population, migration flows and age structure, around a central axis defined in terms of economic performance given by model B2. In the past, the historical records are more in accordance with the “C2” and “C4” models, but in the future, as a result of immigration difficulties, it is plausible to consider scenarios that allow for greater decreases in the overall volume of employment. That is why the results of the “C1” and “C3” models are of special interest. Although the actual figures are not particularly interesting *per se*, the overall results highlight the importance of the changes in productivity for the future performance of the European economic space and for all related demographic variables.

3.7.4 The Results

Maintaining the present demographic trends and allowing for no migration (Model A) Europe will in the near future experience a strong depopulation process. By the mid-21st century, the fifteen countries of the EU15 will have lost 80 million inhabitants (80,590,000), the ten countries of the enlargement about 20 millions (19,387 thousands) and all the 29 countries considered in this analysis slightly over 111 millions. Fifty years from now, the population of Europe will be under its level of the 1960s, fifty years ago. At the regional level there are significant differences between the countries. Ireland is the only one that shows a positive demographic trend, with an expected population increase of over 10% in the period (0.27% per year). The worst situations appear in the southern and eastern borders of the EU29 and the best in the North - especially in Ireland, as mentioned. At a finer level of detail, map 3.15 illustrates these demographic trends at the regional NUT 2 level. The areas where the depopulation trends are strongest are the regions in East Germany, the Baltic States, all the Balkan arch, northern Italy, northern Spain, southern and central Portugal and Scotland. Conversely, Ireland, most of Norway, Sweden and Finland, as well as urban Poland, France, southern Italy and southern Spain are the regions that exhibit the least depopulation.

Table 3.26 Model A - Without migration - Population projections (in thousands)

Region	Population			Annual average change (%)
	2000	2025	2050	
EU 15	376,539	356,074	295,949	-0.48
EU 25	451,629	425,925	351,652	-0.50
EU 29	493,878	464,781	382,839	-0.51

Source: Eurostat, model

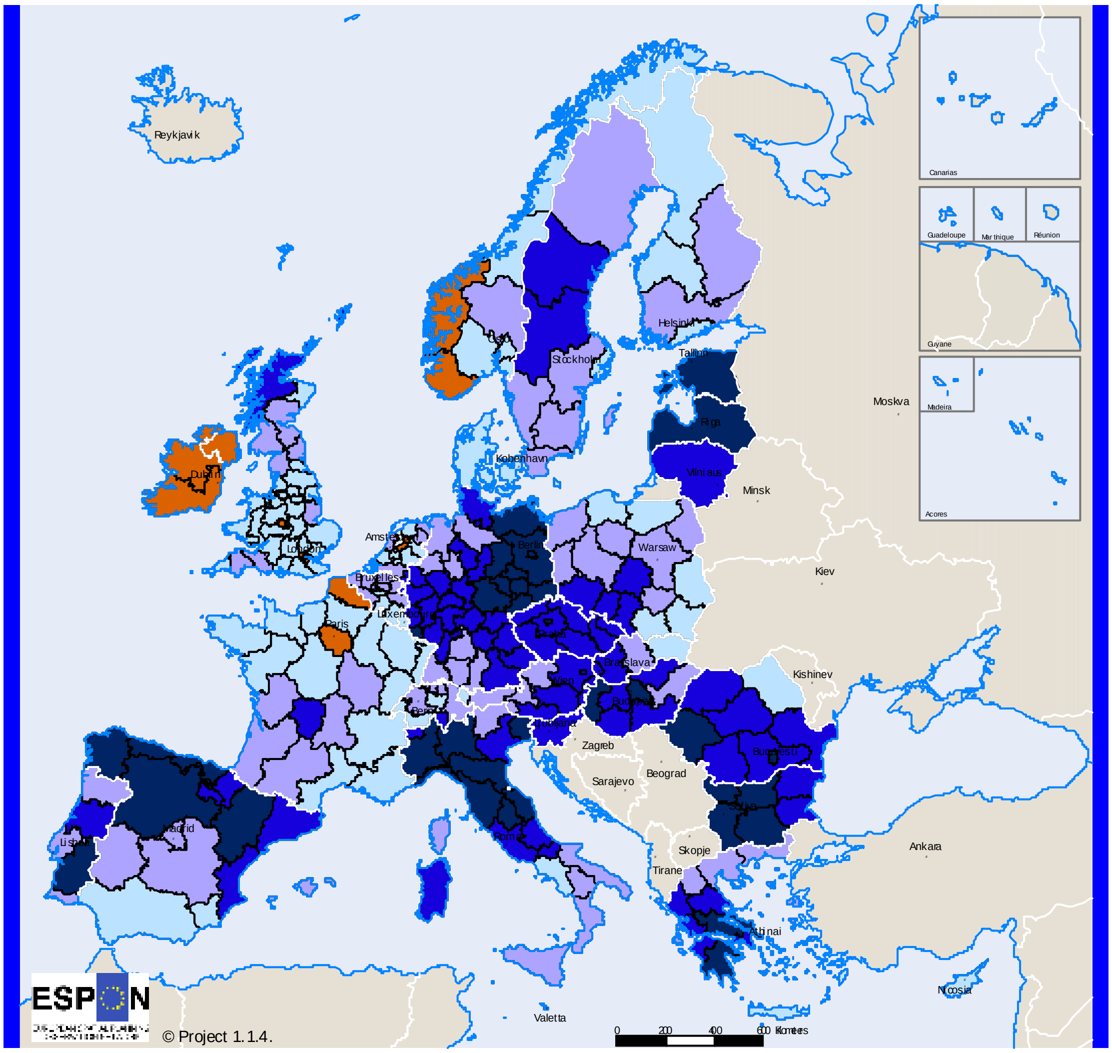
The age structure in the European space will change dramatically. The tendency for the weight of the elderly people to increase is irreversible. If nothing is done to avoid it, the extrapolation of the current trend will lead to the share of people over the age of 65 to rise to twice its current value The regional ageing process has a strong distinctive spatial pattern. The highest values in 2050 will be found in central and northern Italy, the German regions of the former DDR, Greece and northern Spain. High values will also be found in central Spain, Sweden, the Baltic States, central France and some parts of Switzerland and Slovenia.

The Potential Support Ratio (PSR), as an indicator that shows the regional capacity to support the social security retirement schemes, follows the current demographic trends, and it will strongly decline all over Europe in the near future - with even greater intensity than the ageing and depopulation processes.

Allowing both for the present demographic trends and for migrant flows akin to the recent past (Model B0), Europe will still experience a depopulation process – not as evident as in the “zero migration” model, but significant nonetheless. Indeed, under the present demographic and migratory conditions, the countries of the EU15 will lose some 36 million inhabitants (35,851 thousand), the ten accession countries about 18 million (17,509 thousand) and the countries of the EU29 taken altogether, some 65 million.

Map 3.16 Population Variation by NUT 2, 2000-2050 (Model A)

Depopulation trends by NUT2



Variation of the population, 2000-2050 (%)
Model A

	-51.1 to -36.9
	-36.9 to -25.9
	-25.9 to -16.2
	-16.2 to 0
	0 to 16.3

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Table 3.27 Model B0- constant migration rate - Population projections (in thousands)

Region	Population			Annual average change (%)
	2000	2025	2050	
EU 15	376,539	377,069	340,688	-0.20
EU 25	451,629	477,789	398,269	-0.25
EU 29	493,878	486,394	429,144	-0.28

Source: Eurostat, model

A comparison with the output of the A model shows that it is in the countries of the EU15 that migration has the most significant impact. Indeed, in the case of these countries, the population decrease is half that estimated in the A model. Conversely, in the accession countries and in the EU29 as a group, the decrease is virtually the same in the two models A and B0, since the former group is a mostly migrant sending area.

At the regional level, it is possible to discern certain distinctive patterns. First, all of southern United Kingdom and Ireland, then an area that includes parts of the Netherlands, Luxembourg and Belgium, the German border and continues all the way to Denmark, south-western Norway and urban Sweden. Western France, southern and south-western Spain, most of Greece, the Algarve, the Balearic Islands and Valencia in Spain, as well as urban areas such as Lisbon and Helsinki, will tend to experience positive population variation. Finally, Scotland and other northern peripheral areas, the Baltic countries, the former DDR, Bulgaria and Romania, parts of southern Poland, southern Italy and northern Spain will tend to undergo strong population decrease.

Even if we consider the persistence of the current migratory conditions, the age structure will still change. As in the A model, the increase in the relative weight of the elderly is huge. As compared with 2005, a quarter of the population in 2050 will be over the age of 65, instead of the current 15% or 16%. Compared with the results of the A model, we find that migration will especially affect two groups of countries. The first one consists of Latvia and Estonia, in which the ageing process will be felt more rapidly and intensely due to the out-migration flows. The second group includes Luxembourg, Cyprus, Malta, Spain, Portugal, Italy, Greece and Ireland. The projected values of the PSR for 2050, allowing for migration at the present rate, nonetheless show a steady decline. However, generally speaking, countries with relatively higher values continue in 2050 to perform better in comparison. Even so, the overall fall is impressive. Indeed, while the EU15 countries will fall from 4.1 workers for each elderly person in 2000 to 3.0 in 2025 and 2.4 in 2050, the EU10 countries of the enlargement will go from 5.4 to 3.6 and 2.6.

As previously mentioned, the B1 model assumes the constant total population in each country and region to be kept constant. In turn, the B2 model assumes a constant labour force, while model B3 holds the regional Potential Support Ratios (PSR) constant. In the B2 model the changes in the total population only reflect the changes in the age structure. It implies a slight increase of 25 million in the EU15 (6.7%), 3.5 million in the enlargement countries (4.7%), and just under 1.5 in the remaining four (3.4%).

Table 3.28 Model B2- constant labour force - Population projections (in thousands)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	389,372	401,700	0.13
EU 25	451,629	466,844	480,284	0.12
EU 29	493,878	509,327	523,973	0.12

Source: Eurostat, model

Even though holding the present labour force levels constant may appear somewhat realistic, given the ageing process currently underway in many European regions, it will be impossible to prevent the fall of the Potential Support Ratio, i.e. the relation between the individuals inside the working age and those in retirement. For equal PSR, almost 400 million people will be required in the case of the EU15 (i.e., a population increase of over 105% in the next 50 years); the enlargement countries (EU25-15) will need a further 90 million (120%); whereas the others EU4 (NO, CH, RO, BG) will need 33 millions in order to grow by 78%. At both the regional and national level, the B2 model illustrates, quite well, the future difficulties created by the effect of the age structure upon the labour force. The largest difficulties will be experienced in the southern European countries: Spain, Italy, Cyprus, Greece, Switzerland, Malta and Portugal (all between 8 and 10%) and Greece. The lowest values will be found in Latvia, Lithuania and Estonia (ranging from –1.0 to 0.6%), Sweden (1.3%) and Hungary, Bulgaria and Romania (between 1.5 and 2.5%).

Table 3.29 Model B3 - constant PSR - Population projections (in thousands)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	533,836	774,822	1.45
EU 25	451,629	649,965	940,146	1.48
EU 29	493,878	704,184	1,015,428	1.45

Source: Eurostat, model

Turning to the B3 model, the results illustrates how difficult it is for the fall in the PSR to be compensated by adding immigration to the regional population. The figures speak for themselves: the lowest values can be found in Bulgaria, Hungary, Latvia, Estonia and Romania, on the one hand, and in Belgium, Sweden and the United Kingdom, on the other. The highest values can be found in Cyprus, Malta, Ireland, Switzerland, the Netherlands and Slovenia. Hence, we find, on the one hand, countries with younger populations actually performing similarly in this respect to those that, by 2050, will have already come to the end of their ageing processes; and, on the other, countries with either small elderly population and very low birth rates (e.g., the Baltic states, Bulgaria, Romania and Hungary) or at different stages in which, for different reasons, the relative size of the two age groups balances out (e.g., Belgium, Sweden, the United Kingdom, among others).

The population over the age of 65 will increase, and at very significant rates, in all scenarios (except for the B3 model, which precisely assumes the PSR ratio, i.e., the relative weight of this age group, to be kept constant), both in the EU15, the EU25 and the EU29. Yet, even in those scenarios that do consider the possibility of immigration, as in the case of the impressive volumes computed by the B3 model, ageing will be inescapable. It is interesting to notice that the ageing process will in general tend to slow down and eventually stabilise by the year 2040. The reason behind this stabilisation in the B2 and B3 models, as well as for the relatively smaller increase in the relative weight of the elderly in the A model, is quite simply the fact that the increase in life expectancy, which has been strongly present since the year 2000, will reach an end by the end of the 2030s. From then on, the average lifetime of each individual will tend to be constant (this, of course, is what is assumed in the model; in reality, we know little about the progress of the medical sciences in the geriatric field around 2040). The B1 model always produces slightly little less pronouncedly aged populations than the B2 model, simply because the effort required in order to keep the labour force constant is lower than that required to keep the total population at its current level, due to the general ageing trend now present in all the European societies - and in the forecasts of all the models.

Turning to the results of each of the models at the national level, we find confirmation of the main overall conclusions. While always inevitable, the effect of ageing will be felt much more intensely without immigration, particularly in Italy, Spain, Slovenia and Austria. The countries where the ageing trend is more intense (indicated by the results of the Model A) are Cyprus, Slovenia, Slovakia, Czech Republic, Spain, Poland, Austria and Italy. The less one are the Nordic countries of Denmark, Norway, Sweden and United Kingdom.

The results at the NUT 2 level shows that the B1 and B2 models indicate the presence of intense ageing processes all over Europe, even though these two scenarios allow for significant migration inflows, in order to make up for that part of the current total population (B1) or labour force (B2) that will be lacking in Europe, as compared with the results yielded by the A model. Both models show an accelerating ageing process in the southern and central Europe, which is especially evident in Greece, Italy, Spain, Austria, Germany (the new eastern Lander) and Switzerland. The regions in which the process will seemingly take place at lower pace will be located in Ireland, Hungary, the United Kingdom, Romania and Bulgaria. The most obvious difference between the B1 and B2 models (constant population *versus* constant labour force) is that the intensity of the ageing process is slightly greater in the B1model, and that the most pronouncedly aged regions are located in Spain in one case (B1), and in Italy in the other (B2).

The PSR will also experience a sharp decrease. The central trend, as illustrated by the results of the A model, will lead to the ratio of people inside the working age to those in retirement to fall to almost half its present value. In the B1 and B2 models, the decrease is less intense due to the beneficial effect of the migrant newcomers, but the figures remain worrisome nonetheless. For the countries of the EU29, the ratio of the people inside the working age to those in retirement drops from 4.31 in 2000 to 2.80 and 2.93, respectively B1 and B2, in 2050. At the start of the period under analysis, i.e. in the year 2000, the best values of the PSR could be found in Ireland, south-eastern Spain and, in the eastern border of the EU29, Poland, northern Romania, the Baltic countries and southern Finland. By 2050, all the country figures will have experienced a sharp decrease, while the relative positions of the regions will have changed as well. By then, the best values of the PSR will be found in the Hungarian regions, western Romania and Latvia.

The C models are based on a series of different assumptions regarding the relative productivity changes and therefore illustrate the impact of relatively small productivity gains or losses upon the overall demographic trends. In that sense, they are complementary to the B2 model, the only one until now in which the relationship between the demographic evolution and the level of production was analysed, keeping the labour force constant. The C models yield a series of values that, for the various groups of European countries (EU15, EU25 and EU29) and for each country and NUT 2 region, show the consequences of changes in productivity levels, thereby showing the demographic limits to policy intervention that arise from productivity increases or decreases.

The results show that changes in productivity will have a relatively small impact upon the general evolution of the population stock. Indeed, our model shows that a productivity growth rate 1% above the growth rate of the product will lead to a total population decrease of 1,519 thousands (roughly one and a half million) in the EU15, 1.884 million in the EU25 and 2.054 million in the EU29. On the other hand, a negative differential of equivalent absolute size (-1%) in productivity variation will have slightly smaller absolute effects, of plus 1,504 thousands, 1,867 and 2,037, respectively.

In the second half of the period under analysis, i.e. between 2025 and 2050, we find that the effect upon the population becomes more important, which is mainly due to the reproductive effect of the new in-migrants, but continues to be quite small. In fact, the output of the models show that a positive differential of 1% between the annual growth rate of productivity and that of the product will, by 2050, lead to population decreases of 4,376 thousands in the EU15, 5,351 in the EU25 and 5,884 in the EU29. As in the previous case, the impact of the equivalent negative differential of -1% is also somewhat smaller: the population *increase* brought about in such an event will amount to 4,296, 5,256 and 2,780 millions, respectively. In general, it can be said that, by 2050, the effect of a 1% gain or a loss in the relation between the relative annual variations of productivity and product will affect the population of the EU15 by more or less 4.3 millions, and the population of the ten accession countries by nearly a million.

The four models show also little differences with regards to the strong ageing process. Assuming the B2 model as central, a 1% gain in terms of productivity, as compared with the product variation, will by 2050 have increased the population over the age of 65 by 0.2 % in the EU15 and by 0.1% in the EU25 and EU29. On the other hand, a productivity loss of 1% will decrease the elderly population by 0.1% in the EU15 and by 0.2% in the EU25 and EU29.

The reduction in the PSR, as compared to the situation in 2000, will be very significant: more than 1.4 active persons for each elderly person in the EU29 countries as a whole in the C1 scenario and close to 1.3 in the best case scenario for the EU15 – the C2 model. In all scenarios, the fall in the PSR will be around 1/3 of the figures in 2000, regardless of the group of countries considered. The enlargement countries, as well as the other four countries (Switzerland, Romania, Norway and Bulgaria) that exhibited higher PSRs in 2000, will still have higher values than the EU15 in 2050, but much more closer.

3.7.5 Some remarks from the models

The outputs of the various models provide us with a general picture of the trends in the near future, as well as an idea of the relative intensity of the phenomena in the various different regions. Considerable ageing and even more considerable decreases in the PSR (Potential Support Ratio) are certainly among the most significant of these phenomena.

Table 3.30 Crude Birth Rates in Europe

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67
2025	8.88	9.01	8.86	8.91	9.59	8.91	8.91	8.91	8.91
2050	8.62	8.85	8.95	9.09	9.56	9.07	9.10	9.08	9.05
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.48	10.48	10.48	10.48	10.48	10.48	10.48	10.48	10.48
2025	8.93	9.05	8.91	8.99	9.68	8.99	8.99	8.99	8.99
2050	8.61	8.82	8.96	9.07	9.42	9.05	9.08	9.06	9.07
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47
2025	8.93	9.04	8.91	8.99	9.66	8.99	8.99	8.99	8.99
2050	8.60	8.80	8.94	9.06	9.45	9.05	9.07	9.05	9.07

It is important to stress that the crude birth rates in the ten enlargement countries are clearly below those in the countries of the EU15. This brings the issue of the origin of the migratory flows (so necessary in the Western and Northern Europe countries) to the fore.

Another important aspect is the fact that in the A model, there is a much greater fall in the birth crude birth rate than is the case in any of the other models. This clearly illustrates the impact of the migration flows upon the characteristics of the initial population by increasing the number of births - as demonstrated by the results of the B3 model, in which significant immigrant flows also lead to larger birth rates. The results also show the limits of that impact, which are determined by the actual number of immigrants and their respective demographic characteristics. It is also worth pointing out that for all the periods under scrutiny, the B1 model tends to yield smaller values than B2, which provides an indication of the importance of the migration of labour *vis-à-vis* the total population.

Table 3.31 Crude Mortality Rate in Europe

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84
2025	13.42	12.83	12.79	12.45	9.81	12.49	12.41	12.47	12.43
2050	17.73	16.18	14.77	14.28	9.94	14.39	14.18	14.33	14.17
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	9.99	9.99	9.99	9.99	9.99	9.99	9.99	9.99	9.99
2025	13.62	13.10	12.97	12.61	9.85	12.66	12.57	12.64	12.59
2050	17.98	16.57	14.95	14.42	9.94	14.53	14.32	14.48	14.37
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.11	10.11	10.11	10.11	10.11	10.11	10.11	10.11	10.11
2025	13.71	13.22	13.04	12.70	9.95	12.74	12.66	12.72	12.68
2050	18.10	16.78	15.04	14.51	10.04	14.62	14.40	14.56	14.46

The mortality rates foreseen in Model A are indeed extraordinary, and show what will happen in the future of most of the European regions, without the immigration effect. First, a quick population ageing process, immediately followed by a strong and sudden mortality when a lot of elderly people will arrive to the new age of dying, all of them almost at same time, and taking account onto the model the present immigration rates, the mortality will be not significantly less. The other scenarios show once more the effect of selected migration, and put the mortality rate values in a more acceptable level. It must be pointed out once more that the ten enlargement countries have a worst demographic behaviour than the others, as can be seen in the Table K6, where, in 2050, the calculated compared mortality rate in the EU25 is always superior to the calculated mortality rate in the EU15, being 17.98 and 17.73 for model A, 16.57 and 16.18 for model B0 and 14.42 and 14.28 to model B2. The results are even worst to the other four countries that constitute, together with these, the EU29, as the respective mortality rates are even higher.

Table 3.32 Average annual number of migrants (in thousands)

<u>EU15</u>	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	718	718	718	718	718	718	718	718
2025	-	753	1,481	2,180	8,078	2,085	2,274	2,133	2,227
2050	-	717	2,193	1,666	9,654	1,603	1,727	1,635	1,697
<u>EU25</u>	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	747	747	747	747	747	747	747	747
2025	-	785	1,834	2,677	10,412	2,561	2,792	2,620	2,735
2050	-	749	2,706	2,422	15,040	2,325	2,518	2,374	2,470
<u>EU29</u>	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	735	735	735	735	735	735	735	735
2025	-	777	2,039	2,919	11,296	2,793	3,044	2,856	2,982
2050	-	746	3,009	2,721	16,076	2,611	2,828	2,666	2,775

The figures of migration flows are impressive. In what regards the B models, B1 (which holds the current population constant) shows that the EU15 will need some 700,000 migrants each year in the beginning of the period, double that (more or less 1.5 millions per year) in the middle of the period, and around 2.2 millions by the year 2050. If we compare these results with those from the B0 model (in which the annual migration rate is held constant), we find that the average number of migrants per year will be maintained at the level of 720-750 thousands/year in the EU15, 750-785 thousands/year in the EU25 and 735-780 thousands/year in the EU29. The B2 model (in which it is the labour force that is kept constant) shows a different pattern, with much more immigrants in the first 25 years and less immigration at the end of the period (see table 3.32). This is a consequence of the effect of the newly arrived immigrants upon the demographic characteristics of the population in general.

However, it is the B3 model – which shows the level of immigration required in order to maintain the PSR at its current levels – that seems most startling, if we try to imagine the difficulty of receiving and somehow succeeding in integrating almost ten million people *every year*. The C models show less dramatic variation, and insofar as they reflect the small variations in productivity around the B2 model, the differences in the results can be used in order to make quantitative forecasts of the effects upon the migration flows of the changes in productivity. Comparing the results of the C1 and C2 models with those of B2, it is possible to estimate the effect upon the level of migration of a 1% variation in productivity rate (whether positive or negative). Therefore, around the year 2025, an overall annual gain of 1% will imply, for the EU15, some 95,000 less immigrants every year, while an equivalent fall in productivity will call for an additional 94,000 immigrants. In the year 2050, those figures will be minus 63,000 or more 61,000, respectively. For the countries of the EU25, the effect of 1% changes in productivity will be an annual decrease of 116,000 or more 115,000 in 2025 and minus 97,000 or more 96,000 in 2050. Finally, for the EU29, a 1% variation in productivity will imply minus 126,000 or more 125,000 in 2025 and minus 110,000 or more 107,000 in 2050.

3.7.6 Labour Shortage

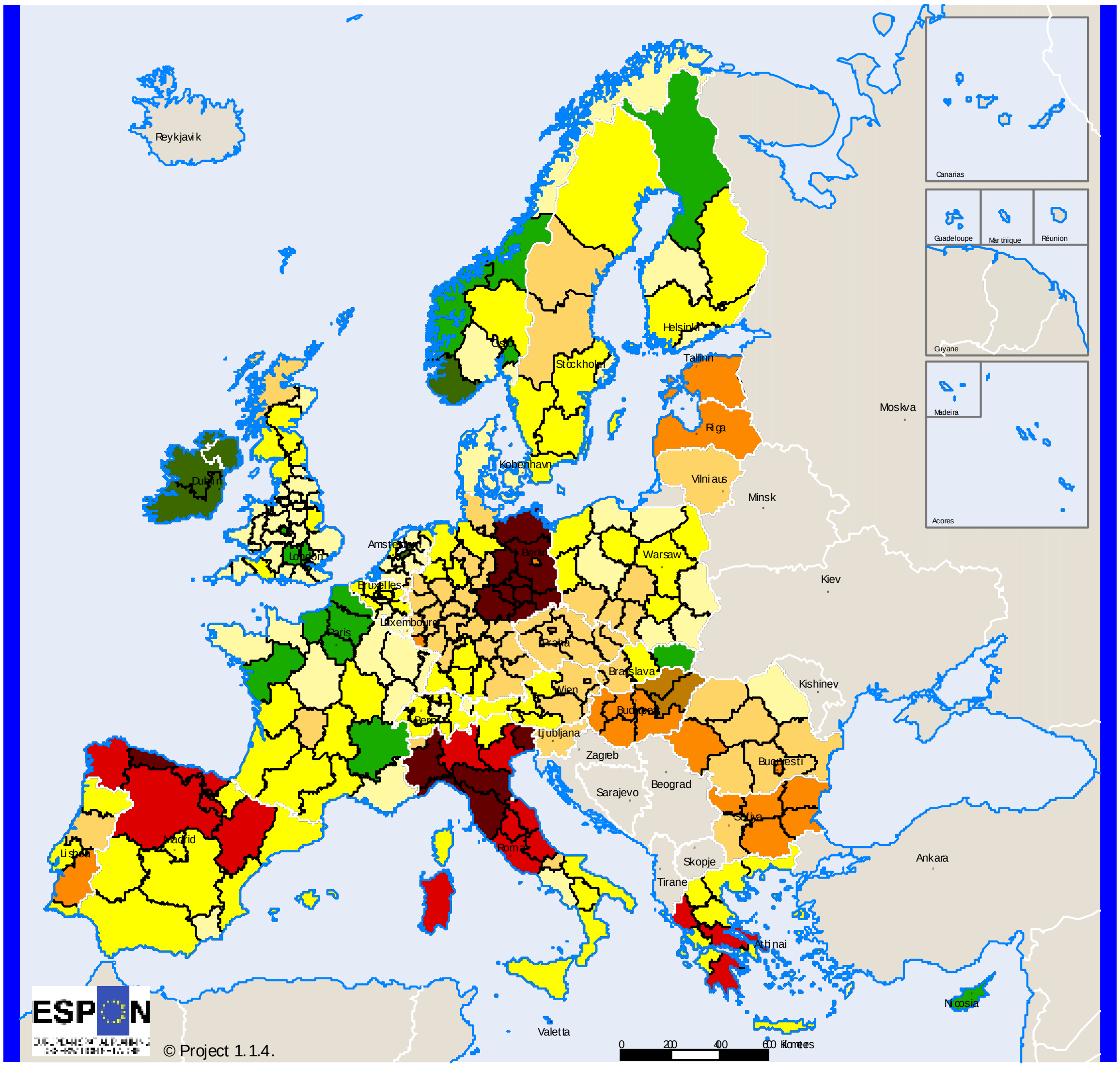
The concept of labour shortage is difficult to deal with in these models, because it is a consequence of the combination of two different elements: the number of workers present in each region, or supply, and the need for labour, or demand. Moreover, it is difficult, or even impossible, to forecast the regional evolution of these two elements in the medium and long term. To make things even more difficult, we must bear in mind that labour shortage can be absolute, i.e. the number of workers in the labour market is smaller than the needs of the regional economy, or relative, meaning that although there may be availability of workers in the regional labour market, they may be lacking in the case of some particular specialities. Yet, while it is impossible to forecast the future shortage of labour without the help of other instruments that can cast more light on the evolution of the regional labour markets and production systems, the results of our models, “more demographic”, give us some hints as to the difficulties that are to expected, apparent in the evolution of the volume and relative weight of the population inside the working age (Table 3.33).

Table 3.33 Population 15-64 years old (%)

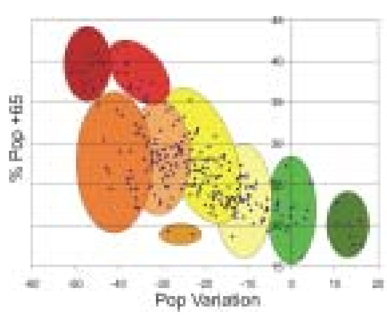
EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	66.89	66.89	66.89	66.89	66.89	66.89	66.89	66.89	66.89
2025	63.90	64.41	64.40	64.68	66.90	64.65	64.72	64.67	64.70
2050	58.88	60.45	62.00	62.70	67.00	62.58	62.81	62.64	62.76
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	67.20	67.20	67.20	67.20	67.20	67.20	67.20	67.20	67.20
2025	64.26	64.70	64.77	65.01	67.18	64.97	65.04	64.99	65.02
2050	59.37	60.72	62.50	63.19	67.41	63.07	63.30	63.13	63.24
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	67.24	67.24	67.24	67.24	67.24	67.24	67.24	67.24	67.24
2025	64.48	64.86	64.99	65.20	67.27	65.17	65.23	65.18	65.21
2050	59.58	60.79	62.72	63.38	67.48	63.26	63.49	63.32	63.43

Map 3.17 Typology based on Population variation 2000- 2050 *vs* % Population 65 + in 2050, Model A

Typology of ageing and depopulation by NUT2



Variation of the population, 2000-2050 (%)
Population with 65 years and more years (%)
Model A



© EuroGeographics Association for the administrative boundaries

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Except for the B3 model (in which a constant ratio of working to retired people is assumed), the weight of the working age groups in the total population will decrease, from 66.89% to figures that range between 62.81% (model C4) and 58.88% (model A) for the 15 countries of EU15, from 67.20% to between 63.30 and 59.57 in the EU25 and from 67.24% to between 63.49 and 59.58 in the EU29. That fall in the relative weight of the labour force is directly related with the intense ageing process that will affect all of Europe in the near future, in all possible future scenarios. We are therefore led to conclude that, generally speaking, the relative weight of the labour force will decline, and that, in any European regional development scenario, the tendency for he labour force to be unable to meet its demand will be a constant presence.

3.7.7 Concluding Remarks

It is important to compare the different types of results that are yielded by the models in order to identify the most relevant trends and to check for relations and correlations. That is the base for the taxonomic work consisting of identifying the various depopulation, ageing, immigration and labour shortage situations and processes that are currently occurring in the European context.

The spatial ageing patterns identified by the relation shown in map 3.17 and expressed in the typology show a series of different stages, in which the groups of countries range from fast-growing and relatively young areas (depicted in green in the map) to those in which the depopulation processes are most intense and the population is older (in orange in the map). Two other groups can be identified, one made up of a mere two elements, in which a relatively young population will coexist with strong population losses in (depicted in brown), and another composed of countries with simultaneous tendencies for depopulation and ageing. This sequence of stages began in the consolidated urban areas of central France and the UK as well as in certain much more peripheral regions of northern Europe, such as parts of Norway, Finland and especially Ireland. These are regions that have different characteristics with different status, but in which, generally speaking, good economic performance takes place alongside an advanced ageing process that began quite some time ago, and which are now entering another demographic cycle. The sequence ends in places like Alentejo (in southern Portugal), parts of Romania and Hungary and the Baltic States, regions which are considerably depopulated and in which the population is relatively old. As mentioned before, two distinctive groups emerge outside the most characteristic sequence representing the average relation between future ageing and future depopulation. The first is comprised of two regions in Hungary (Eszak-Magyarorszag and Eszak-Alfoeld) that are much younger than expected and should in fact be considered net out-migration areas; the other corresponds to intense depopulation and includes northern Spain, northern and central Italy, certain parts of rural Greece, Sardinia and especially the Nut 2 regions of the former DDR, parts of northern Italy such as the Piedmont, Friuli-Venezia-Giulia, Emilia-Romagna, Liguria, Tuscany, and the Asturias in northern Spain.

The problems concerning depopulation, ageing and labour shortage are identified since long (see e.g. Notestein et al. 1944, Kirk 1946, Hofstee 1950). Immigration is neither the only nor the best solution to fix the problems of ageing; the same can be said on productivity improvements. A selected immigration of specialists as well as productivity increases are needed to handle the problem of ageing and labour shortage, at least if believe in historical evidence (Dillard 1967, Cameron 1997, Rider 1995, Landes 1998, Rosenberg & Birdzell 2986) However, we must have a better and deeper knowledge about the process and to know the best solutions taken at a regional/local level to deal with depopulation, ageing and labour shortage.

4 Regional implications

4.1 Depopulation

4.1.1 Rationale and principal aims of the study of “depopulation”

The causes and possible impacts of population stagnation and decline, and the inherent changes in population structure (e.g. demographic “ageing”), are many and varied. The degree to which these kinds of changes pose different kind of problems depends among other things on the territorial scale under consideration and the characteristics of the territorial entities and their regional contexts.

In certain geographical areas – notably geographically remote and sparsely populated rural areas – demographic processes of decline may actually lead to the “thinning out” of the demographic base of both private and public services essential to basic welfare functions. They may also promote the withering of important sources of recruitment and renewal of the labour market and affect key functions in the local communities. Eventually some of these local communities may face the threat of being completely emptied of inhabitants.

In other kinds of areas and territorial contexts (notably less remote/more regionally integrated and more densely populated regions) certain imbalances may occur within particular sectors and arenas (e.g. child care, health care, elderly care, education, housing, certain labour market segments) creating pressures and needs for different degrees of medium and long term social, and economic adjustments. However, considering the usually slow evolution of demographic process, these will generally have the character of moderate incremental adjustments in societal arrangements and individual behaviour along the way.

Box 3.1: Socio-economic characteristics

”Demographic processes and socioeconomic developments are generally assumed to be interrelated. Whereas socioeconomic changes may trigger regional demographic trends, population change itself may have an impact on regional socioeconomic developments. Migration, for example, is clearly related to regional differences in economic development (migrants are often attracted to regions of rapid economic growth), whereas an increase in the population of foreign descent may, in turn, have strong social consequences. The indigenous population, for example, may adopt some of the immigrants' cultural habits and values or, conversely, they may become more ethnocentric or conservative. In this respect it is important to examine whether the socioeconomic characteristics of shrinking regions differ from the EU average.

The general conclusion is that populations grow faster in affluent regions. The most striking dissimilarities are the relatively high proportions of persons employed in the agricultural sector, the relatively high unemployment rates, especially among women, and the relatively low income levels in the shrinking regions.

Another feature of regions facing population decline is the relatively high proportion of elderly people and low proportion of children and adolescents. Shrinking regions tend to lose young people. Future shrinking regions, too, are expected to have lower percentages of young and higher shares of elderly people compared with the EU average.” (Van Der Gaag et. al. 1999, p. 7)

Box 3.2: Possible implications of declining populations

"The prospect of a declining population may have several implications. In general, the consequences are unfavourable; for instance the problem of maintaining an adequate level of services at the subnational level or the question how to deal with a downturn in economic production. On the other hand, population decline in high-density regions may help remedy congestion problems. Similarly, a regional population loss could improve, at least partially, the unfavourable consequences of high unemployment. This latter development, however, does not necessarily imply that the socioeconomic situation in these regions would improve significantly. In fact, the contrary is more likely to occur. Since shrinking regions tend to face an outflow of highly skilled young people, it is even more difficult for these regions to improve their economic situation.

Moreover, as depopulating regions tend to have relatively high proportions of elderly, the consequences of ageing are particularly strong. Ageing will no doubt have a bearing on the financial aspects of pension schemes, and health expenditures are likely to increase significantly as health care consumption by the elderly is well above average." (Van Der Gaag et. al. 1999, p.8)

Increasing territorial disparities in demographic histories and prospects of growth and decline will certainly affect the distribution of conditions for economic development, competitiveness and prosperity, and pose challenges to policies of territorial cohesion and cooperation. Moreover, in an open labour market the regional-demographic tensions and mechanisms resulting from such disparities within a generally slow- or zero-growth European population, may lead to self-perpetuating demographic processes of decline in certain geographic areas, less they are effectively counteracted by political measures.

The principle aims of this particular chapter is to i) try to detect the areas within the boundaries of Europe-29 which are facing the reality or prospect of processes of demographic decline and possible 'depopulation', and to ii) contribute to the description and understanding of the phenomenon and the processes involved. To be able to fulfil these objectives it has been necessary to consider how to *conceptualize* the phenomena of population decline and depopulation, and to establish an empirical overview of the main features and geographical patterns of their occurrence within the territory of "Europe 29", based on available data and a selection of appropriate indicators.

The empirical approach is twofold, namely i) a statistical description and analysis at the territorial scales corresponding to NUTS 2, and in some cases NUTS 3, covering in principle the entire Europe-29 territory, and ii) display some territorial examples involving finer territorial scales and more detailed descriptions of demographic components of change. A series of maps are produced, indicating the geographic patterns of different aspects of population development and decline and some structural implications. Three typologies are developed in order to illustrate the territorial pattern of i) the mix of principle demographic components of "negative" demographic change, and of the "geography of depopulation" in a i) direct as well as a ii) indirect way (cf. below).

4.1.2 Aspects of the geography of recent population decline in Europe 29

Map 4.1 displays the crude rates of total population change (percentage) at the NUTS 3 level 1995-1999, categorized (quartiles). 1326 NUTS 3 regions in 27 ESPON-countries are included[38]. The NUTS 3 division represents very different levels of territorial detail in the different countries and a tremendous range of size (population and area) and other characteristics between as well as within the particular countries. Among the more than 440

[38] Cyprus and Malta are not included due to insufficient data at the relevant time

German NUTS 3 regions the population numbers range from around 36.000 to well above 2.000.000 inhabitants in 1999 (standard deviation 182.349 around an average number of 186.229). In half of the regions the population size is higher than 135.000. Only ten percent of the regions have less than 75.000 inhabitants. The areas range from around 36 square kilometres to more than 3.058 square kilometres (mean = 810, standard deviation = 596). The map indicates a crude pattern of geographical centre-periphery polarisation at the European level, with population decline being the more typical situation in regions at the outskirts while the central areas display somewhat more mixed patterns. The most negative change is found in the least densely populated regions in France, Spain and Portugal, the northern and southern parts of east Europe, and in peripheral regions of Sweden and Finland.

In Germany the most marked regional differentiation is between the western part, with generally positive development, and the former GDR, where the development is mostly negative except for the suburban belt around the major cities. When we rank the regions within "Europe 29" according to their population growth rates from the middle to the end of the 1990s, we find that the German NUTS 3 regions (especially the former eastern German regions) are remarkably well represented at the extremes. Many of the fastest growing and declining regions in Europe 29 are German. This may relate to do the greater level of territorial detail represented by the German NUTS 3 level compared to the other countries. Within all the three neighbouring "declining" NUTS 2 regions of Chemnitz, Dresden and Leipzig we find NUTS 3 regions that rank among the top ten percent fastest *growing* as well as among the top ten percent fastest *declining* regions among the total number of 1.326 Europe 29 regions[39].

In the Nordic countries the less central regions have the most negative development and the most central ones the strongest growth. In the western part of Germany, in the Be-Ne-Lux-countries, Ireland, south England, south and western France and coastal Portugal most of the regions are within the two top quartiles (positive change rates). In Italy some regions with the most negative tendencies regarding *indirect* depopulation (cf. below) seem to be the ones with the most positive population development in the latter half of the 1990s. Southern Italy seems to a large extent to experience stagnating or slightly declining populations. The regional population change in east Europe is probably hampered by the lack of a properly functioning housing market, and is perhaps also due to a greater share of migrations not being registered, than in the rest of Europe 29. Even so, much of Poland shows a very positive population change, not least the regions around Warsaw and Gdansk and south of Krakow.

As many as 531 NUTS 3 regions experienced a total fall in population numbers from the middle to the end of the 1990s. The median growth rate was 0,5 percent and one fourth of the regions had a total population decline of more than one percent. The growth rates varied from -13 to +31 percent among the 1326 regions (regional coefficient of variation[40] = 520).

Tables 4.1 and 4.2 show a rough overview of the regional population development situation in Europe 29 in the latter half of the 1990s. Table 3.1 indicates the extent to which regional population growth rates vary among and within countries, and the share of the countries' regions, populations and areas affected by population decline between the middle and end of the decade. The largest share of declining regions (50-100 percent) and affected populations (40-100 percent) are found in the ten countries Latvia, Bulgaria, Hungary, Sweden, Romania, Czech Republic, Estonia, Finland, Lithuania and the Slovak Republic (in this order).

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[39] Cyprus and Malta not represented due to insufficient data at the relevant time
[40] RCV = Standard deviation as a percentage of the mean growth rate

Table 4.1 Regions with population change below zero 1995-1999. Median change rate (percentage) and regional variation in change rates. NUTS 3 regions. Europe 29 minus Cyprus and Malta.

Country Code	Number of NUTS 3 regions	Regions with population decline 1995-1999			Median population growth-rate	Regional coefficient of variation
		Percent of all regions	Percent of national population	Percent of national area		
AT	35	28,6	23,3	30,7	0,6	229,5
BE	43	18,6	27,0	14,4	0,8	118,4
BG	28	92,9	81,7	93,8	-3,0	159,6
CH	26	26,9	8,8	9,6	1,2	210,6
CZ	14	64,3	67,8	66,0	-0,3	242,1
DE	441	38,5	40,4	24,8	0,9	546,5
DK	15	6,7	0,8	1,4	1,0	87,2
EE	5	60,0	63,2	43,1	-0,5	1406,6
ES	52	42,3	26,2	48,7	0,2	338,3
FI	20	60,0	40,5	70,2	-0,9	906,1
FR	100	23,0	13,9	20,8	1,1	157,4
GR	51	45,1	51,9	40,6	0,4	326,2
HU	20	90,0	85,6	88,4	-2,0	219,6
IE	8	0,0	0,0	0,0	2,9	73,8
IT	103	43,7	34,1	44,5	0,2	345,7
LT	10	60,0	74,9	71,8	-0,3	220,3
LU	1	0,0	0,0	0,0	(5,5)	-
LV	5	100,0	100,0	100,0	(-3,5)	126,8
NL	40	10,0	5,4	6,0	1,8	184,2
NO	19	36,8	24,0	63,8	1,5	168,2
PL	44	31,8	36,0	21,7	0,5	405,5
PT	30	43,3	37,8	52,0	0,7	579,0
RO	42	71,4	71,8	71,7	-1,0	257,7
SE	21	76,2	43,9	86,9	-1,1	286,2
SI	12	41,7	34,5	40,3	0,0	332,0
SK	8	50,0	48,3	45,6	0,2	193,8
UK	133	36,1	26,3	30,4	0,8	255,8

Table 4.2 NUTS 3 regions and their average population numbers in 1999 by population change category 1995-1999 (according to cutting points for four equal groups of regions among all regions within Europe 29 (minus Cyprus and Malta). Percent of all regions and of the average total population in the regions in 1999 in each country.

Country code	Growth category according to percentage change in average population 1995-1999:								Total	Number of regions
	Lowest fourth (<-1 percent)		Next to lowest fourth (-1 - 0,5 percent)		Next to highest fourth (0,5-2 percent)		Highest fourth (>2 percent)			
	Regions	Population 1999	Regions	Population 1999	Regions	Population 1999	Regions	Population 1999		
AT	6	4	37	32	46	55	11	9	100	35
BE	5	5	28	29	49	53	19	13	100	43
BG	89	73	7	12	4	15	0	0	100	28
CH	15	5	27	25	35	60	23	11	100	26
CZ	7	12	93	88	0	0	0	0	100	14
DE	32	31	13	15	21	20	35	34	100	441
DK	7	1	7	5	53	54	33	41	100	15
EE	40	50	40	39	0	0	20	11	100	5
ES	27	13	33	41	17	25	23	20	100	52
FI	50	33	15	10	10	12	25	44	100	20
FR	13	6	23	26	36	37	28	30	100	100
GR	20	6	33	51	25	17	22	26	100	51
HU	75	73	20	17	0	0	5	10	100	20
IE	0	0	0	0	25	26	75	74	100	8
IT	12	6	43	39	32	41	14	14	100	103
LT	10	5	90	95	0	0	0	0	100	10
LU	0	0	0	0	0	0	100	100	100	1
LV	100	100	0	0	0	0	0	0	100	5
NL	8	4	10	8	38	42	45	46	100	40
NO	11	7	26	17	21	17	42	59	100	19
PL	7	12	43	41	43	39	7	9	100	44
PT	30	15	17	24	23	17	30	44	100	30
RO	50	51	36	32	14	17	0	0	100	42
SE	62	36	19	24	14	19	5	20	100	21
SI	25	12	58	71	17	17	0	0	100	12
SK	0	0	63	58	38	42	0	0	100	8
UK	23	14	24	24	19	17	35	46	100	133
Europe 29 minus Cyprus and Malta	25	18	25	29	25	27	25	25	100	1326

In the Nordic countries far smaller shares of the population compared to the regions were affected. In many other countries the situation seemed to be the reverse. In several countries the major part of the national area and populations were affected by population decline – measured at the territorial scale of the NUTS 3 regions. The Nordic territory is characterised by large contiguous areas with very low population densities in a European context, outside the few major urban regions. All the eight northernmost NUTS 3 regions in Norway, Sweden and Finland have less than ten inhabitants per square kilometre. Four additional counties have equally low densities. Together these regions cover a major part of the area of the three countries taken together. Of the Nordic countries only Denmark, with 124 inhabitants per square kilometre, is close to the European average. In Norway, Finland and Sweden the population densities are 15, 17 and 22, respectively. The Objective 1 regions of Sweden and Finland have a density of 4 and 5 inhabitants per square kilometre, respectively. The total built-up share (covered with roads, railways and buildings) of the Norwegian mainland area is only 1,4 percent.

In table 4.2 the 1326 NUTS 3 regions are ranked by their population growth rates in the second half of the 1990s and the cut-off points for dividing them into four equal groups according to their level of growth, are established. The table shows the distribution of the regions and populations of each country in 1999 by Europe 29 growth category. The ranks of Latvia, Bulgaria, Hungary and Sweden are confirmed. They all have very large shares of regions and populations in the category comprising the fourth of the regions with the lowest growth rates. The table even indicates that seven countries have one third or more of their regions in the category comprising the fourth of the regions with the highest growth rates, viz. Luxembourg, Ireland, Netherlands, Norway, Germany, United Kingdom and Denmark. Some of these countries also have substantial declining areas within their borders.

Among the ten percent most declining NUTS 3 regions in the last half of the 1990s the regions of 18 counties are represented. Of the 133 most declining regions as many as 64 regions are German, 18 regions are Bulgarian, 8 regions are part of United Kingdom, 6 regions are Romanian and 5 regions are Portuguese. The rest of the 18 countries are represented with 1-4 regions in this category (Austria, Switzerland, Estonia, Spain, Finland, Greece, Hungary, Italy, Latvia, Netherlands, Norway, Poland and Sweden).

4.1.3 Recent population decline and “depopulation” – direct indicators

The maps in this section are produced in order to illustrate the geographical pattern of possible depopulation or depopulation potential among regions at NUTS 3 level in the 29 countries included (direct indicators, cf. above). Based on available data present two preliminary typologies of the “geography of depopulation” are developed according to direct indicators and observations over a limited time period (the latter half of the 1990s):

i) One based on the main components of change (natural population change/excess of births and migratory balance/net migration) for a combination of NUTS 3 an NUTS 2 regions, and

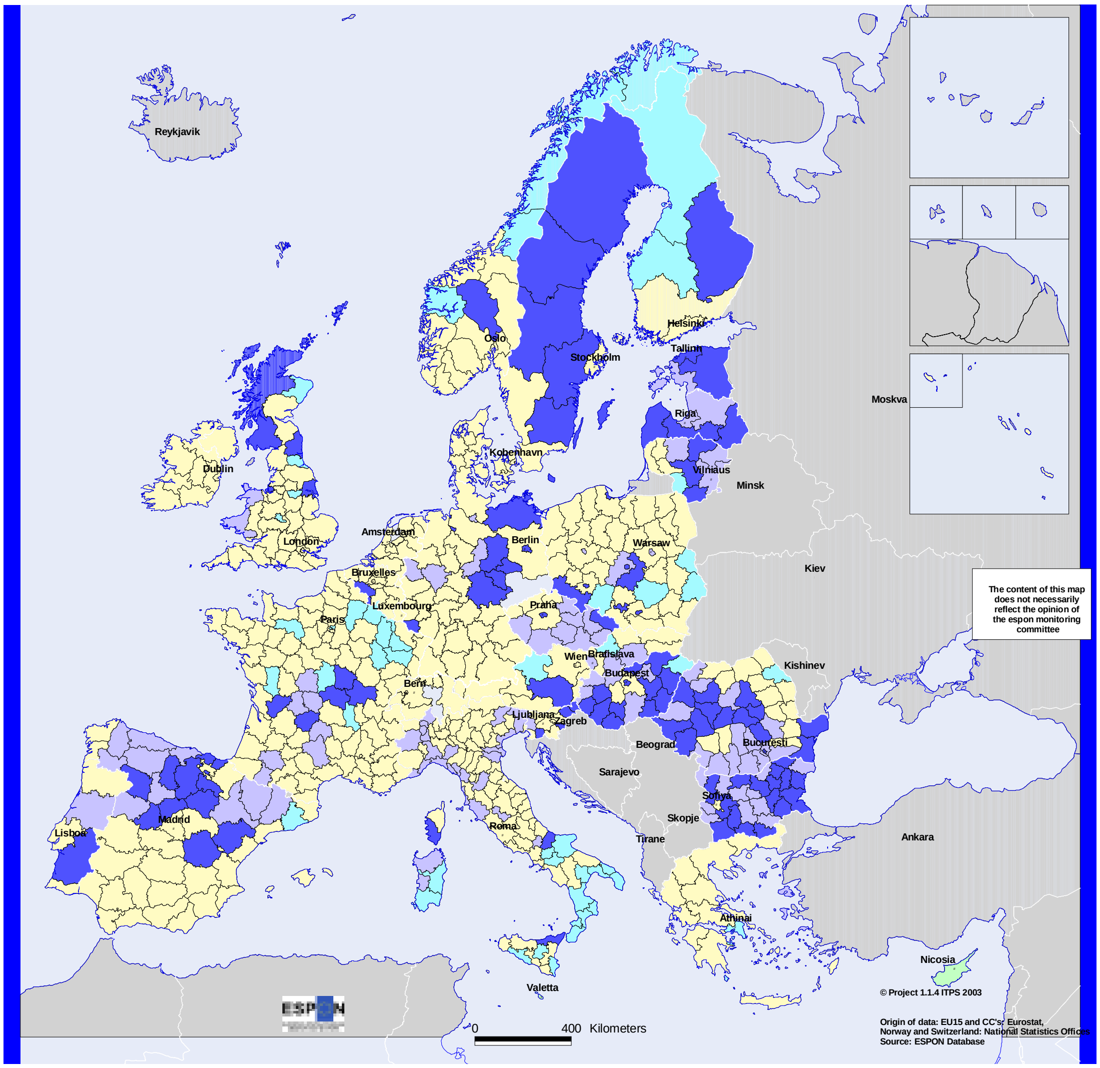
ii) One based on a combination of indicators on aspects of depopulation at three different levels of territorial scale (nation, NUTS 2, NUTS 3), produced in two alternatives.

4.1.3.1 Typology based on the main components of population change

Map 4.1 is based on data on migratory balances per 1000 inhabitants, natural population change per 1000 inhabitants and total population change per 1000 inhabitants. The typological approach is explained in the legend. Data covers demographic change for the period 1996-1999 (annual averages). The territorial scale is a combination of NUTS 3 and NUTS 4 levels, based on an evaluation of national territorial grids in a comparability perspective (cf. above).

Map 4.1

typology of depopulation, 1996-99



form of depopulation

- population increase
- Total evolution<0; Migratory B<0; Natural B<0
- Total evolution<0; Migratory B>0; Natural B<0
- Total evolution<0; Migratory B<0; Natural B>0
- no data

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Offices
Own estimation for migratory balance

The map displays all combinations of total change and the contributions (negative or positive) by the two main components of change (migratory balance and natural population change) for regions with total population decline. Total population *growth* is displayed in yellow colour. Total population *decline* is represented by blue tones, and similarly differentiated into three types according to the “demographic dynamics”. The map accentuates the *declining* regions and their combinations of components of change, while showing all *increasing* regions as a single category. This may be regarded as a first sketch or idea of a typology of depopulation areas, and should be elaborated in a follow-up project based on further decomposition and longer time series.

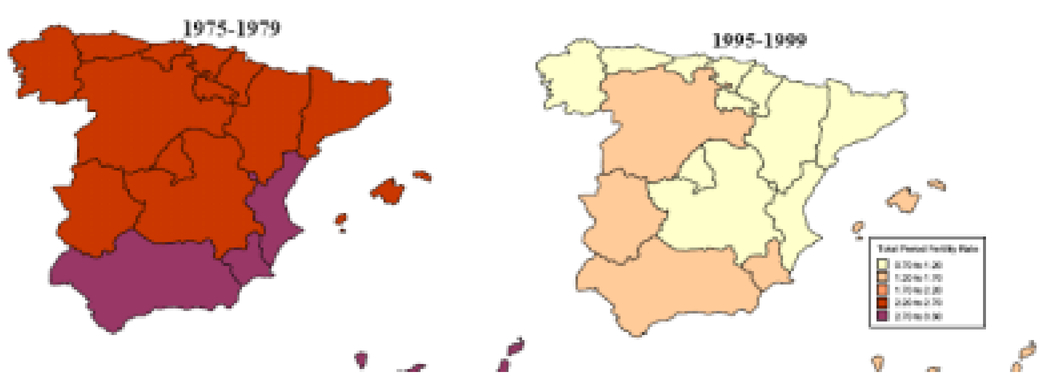
It is obvious from the map that a large share of the “depopulating” regions may be characterised as relatively rural – in many cases sparsely populated and remote – regions, but even old industrial areas and relatively central towns seem to be affected by population decline. The relative contribution by the two main components of change seems to differentiate between the types of “depopulation” areas according to location, regional context and characteristics.

The map illustrates the somewhat later commencement of fertility decline in the northernmost, more peripheral, parts of the Nordic countries. Even though fertility eventually declined relatively fast in these areas, comparatively young populations on average still characterise the areas, which therefore may display positive natural population growth even though they are long-term net out-migration areas. Further levelling out of fertility rates combined with traditional migration patterns indicates a potential for problematic depopulation in substantial parts of these regions, which are also partly characterised by internal centralisation to a few larger centres during the last couple of decades. The better part of Sweden is already subject to negative contributions from both components of change (se example study, and Box 4.3 for a Spanish illustration).

Box 3.3: The Case of Spain (Cabré, A. 2001, p.8)

“As has been pointed out by authors of theories on Second Demographic Transition, one of the characteristics of the new situation in low fertility countries is the absence of significant differences between regions or social classes. This is also true in Spain. The trends in fertility and its components that have been discussed here are common to most regions: all of them have experienced dramatic declines and delaying. As it appears in Figure 10, showing TFR values for the Spanish Regions (Comunidades Autónomas) in 1975-1999 and 1995-1999, all regions in the first period had a TFR ranging between 2.20 and 3.30 children, while in the more recent period all regions had a TFR ranging from 0.7 to 1.7 children. Southern regions have higher levels in both periods, but regional differences appear as much smaller than temporal ones. It is, by the way, amazing to realise that no region, in any period, is located in the interval of values including the mythical 2.1 children per women. They move either above or below, and quite far away from it in most cases.”

Figure 10. Total Fertility Rates by Regions. Spain (Equal Intervals)



In six figures below (figure 4-9) we have used demographic change rates for the *NUTS 3 regions of France and Spain* to illustrate i) the distribution of regions according to rates of change in the total population and in the two main components of change (natural change and net migration) in a longer time span, ii) the relationships between the regions' position in the pattern of distribution in two consecutive periods (1980-1990, 1990-2000), and iii) the regions' position according to the mix of negative/positive contributions to total population change by the two main components of change (both periods). Figure 9 shows the relative contribution of the two main components of change to population development in each of the NUTS 3 regions of *Spain* 1990-2000. The figure illustrates how net migration "operates" across the regional pattern of natural population change, exemplified by the Spanish NUTS 3 regions, displayed as a reminder for the interpretation of the relative influence and status of the two components of change in a "depopulation" perspective.

France and Spain are selected to represent cases at the high and low end of the range of national fertility levels, respectively, at the time following the main period of fertility decline[41]*.* A few aspects indicated by the figures may be pointed out:

a) Figures 4.1 and 4.2 show that the two components of change were only slightly negatively correlated in the 1980s, a bit stronger in Spain than in France, however. The pattern changes from one decade to the next. In the 1990s the Spanish regions display a negative correlation, while no correlation exists for France. However, the overall pattern of regional-demographic change became far more dispersed from one decade to the next, and many more regions entered the phase of negative natural growth.
b) Figures 4.3-4.5 indicate that regional-demographic trends seem to persist from the first to the second decade. This is more pronounced among French than among Spanish regions. The regional *pattern* of natural population change was almost the same during the 1990s as during the 1980s, but – especially in Spain – many more regions entered the negative natural population change phase in the course of these decades. The picture is more ambiguous with regard to net migration even if there is a visible tendency of repeating patterns, especially in France.

Figure 4.1 Percent total population change 1980-1990 and 1990-2000. NUTS 3 level. France and Spain (Regression fit lines)

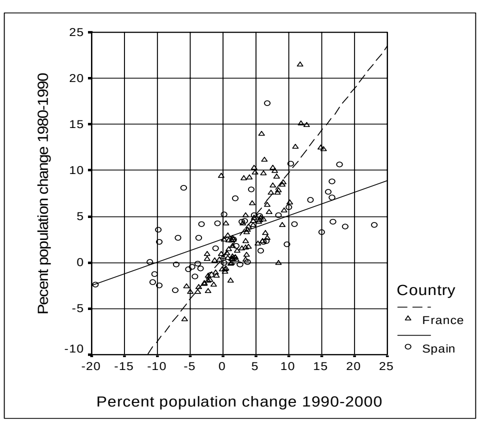
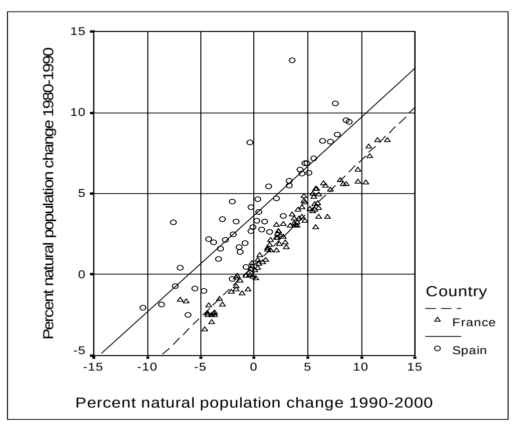


Figure 4.2 Percent natural population change 1980-1990 and 1990-2000. NUTS 3 level France and Spain



[41] The source is the OECD Territorial Data Base (TDB), covering the OECD "Territorial Level 3" (TL3) for European (and other) member countries. The territorial scales for TL3 are carefully chosen for each country to enhance comparability at sub-national level across the entire OECD territory. It is not always identical to NUTS 3. However, for France and Spain the NUTS 3 level is chosen as OECD TL3 (with a slight adjustment for France)

Figure 4.3 Percent net migration 1980-1990 and 1990-2000.NUTS 3 level. France and Spain. (Regression fit lines)

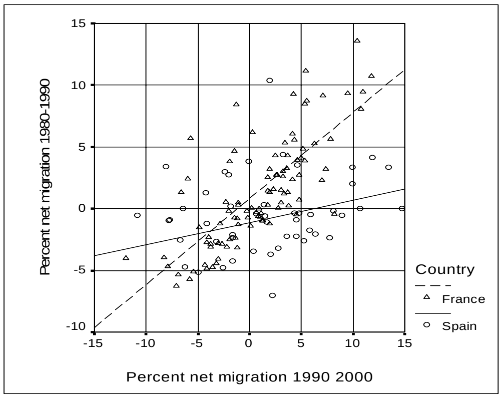


Figure 4.4 Percent natural population change and percent net migration 1980-1990. NUTS 3 level. France and Spain. (Regression fit lines)

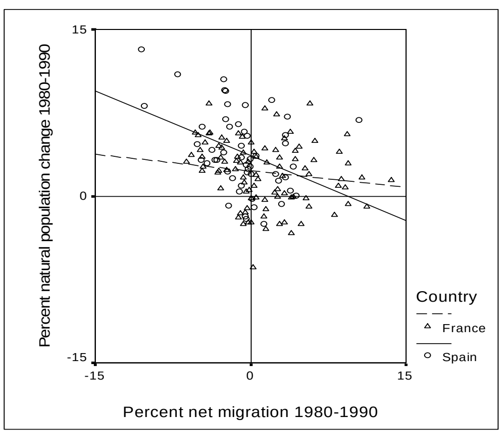


Figure 4.5 Percent natural population change and percent net migration 1990-2000. NUTS 3 level. France and Spain. (Regression fit lines)

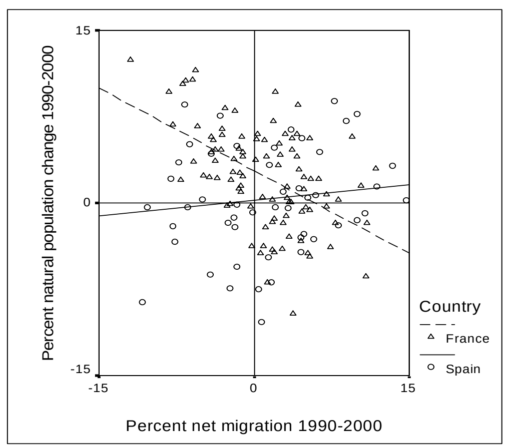


Figure 4.6 Natural population change and net migration 1990-2000. Percent of total population 1990. NUTS 3 regions in Spain.

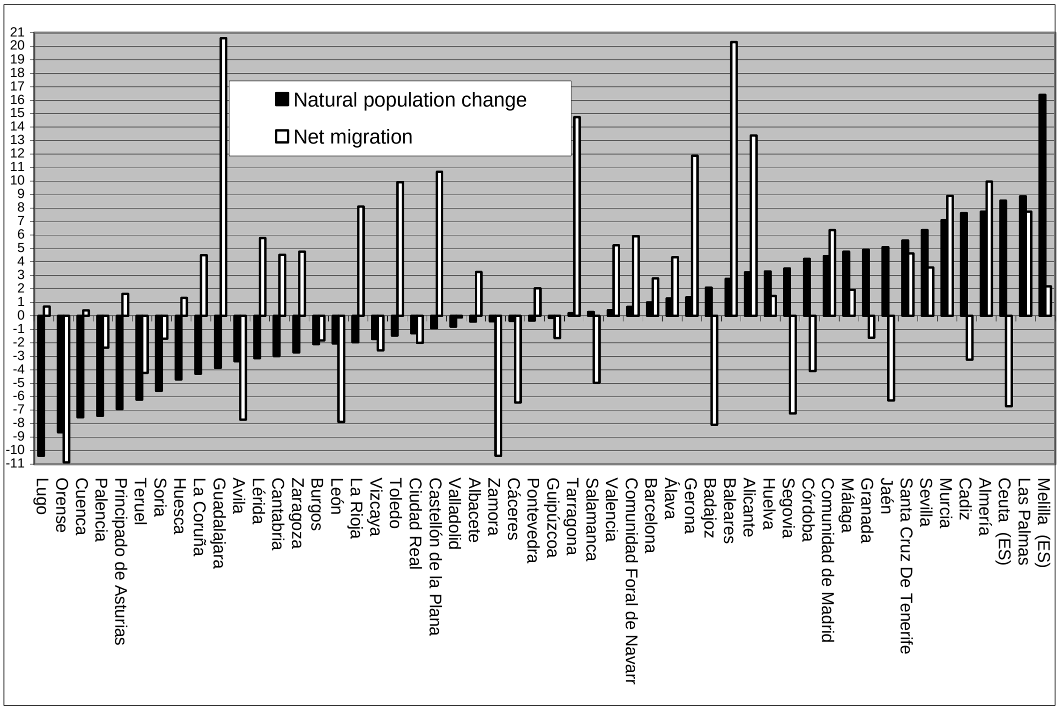


Table 4.3 Typology matrix of regional population dynamics in Spain and France in the periods 1980-1990 and 1990-2000

Regional population processes 1980-1990:	Regional population processes 1990-2000: **Tneg Nneg Mneg**	**Tneg Nneg Mpos**	**Tneg Npos Mneg**	Tpos Nneg Mpos	Tpos Npos Mneg	Tpos Npos Mpos	TOTAL
SPAIN:							
TnegNnegMneg	**2**	**1**					**3**
TnegNnegMpos	**2**	**1**					**3**
TnegNposMneg	**3**	**2**	**1**	**2**			**8**
TposNnegMpos	**1**						1
TposNposMneg	**3**		**2**	4	4	11	24
TposNposMpos	**2**		**1**	4		6	13
TOTAL	**13**	**4**	**4**	10	4	17	52
FRANCE:							
TnegNnegMneg	**1**	**4**		**1**			**6**
TnegNnegMpos		**3**		**2**			**5**
TnegNposMneg	**1**		**6**		**3**	**1**	**11**
TposNnegMpos	**1**	**1**		12		1	15
TposNposMneg	**1**		**3**		15	4	23
TposNposMpos			**1**	1	7	27	36
TOTAL	**4**	**8**	**10**	16	25	33	96

The French and Spanish NUTS 3 regions may be classified into a rough typology according to the actual results of the different types of regional-demographic dynamics during the two decades described above, cf. table 4.3 below.

The classification indicates that the results of the 1980s and 1990s regional-demographic processes for instance implies that 11 new regions in Spain had entered the TnegNnegMneg category and one region had changed from that category to another from the first to the second decade. In France 10 regions declined due to negative net migration alone during the 1990s (11 in the 1980s), while 8 regions (5 in the 1980s) declined due to negative natural change, and 4 (5 in the 1980s) due to a combination of negative components of change. In Spain 13 (3 in the 1980s) regions declined as result of a combination of negative factors and only 4 (8 in the 1980s) due to net migration alone.

All together the number of regions with negative natural population change increased in both countries from the 1980s to the 1990s. In Spain the number of regions increased from 7 to 28 (from ca. 13 to ca 52 percent of all regions), and in France the increase was from 26 (27 percent of all regions) to 28 (29 percent of all regions).

4.1.3.2 Typology based on indicators at different territorial scales

The logic behind this typology – displayed in two alternative maps below – is that the recent demographic development of a smaller territorial unit may have different interpretations according to the demographic development characteristics of the larger region of which it is a part, and even the demographic situation of the nation as a whole. In our approach the NUTS 3 level represents the smaller territorial units and the NUTS 2 level represents the larger regions. The national Total Fertility Rates (TFR) may indicate dramatically different national demographic scenarios (cf. Chesnais 2000, op.cit.) and regional-demographic dynamics, and therefore represent important framing conditions for determining prospective regional demographic change on the basis of the observed development at the NUTS 3 level and its larger regional context (NUTS 2). This indicator has therefore been given some weight in the typological approach.

The typology (or composite indicator) is based on demographic indicators at three hierarchical territorial levels:

1. The nations are classified into *three classes* according to the level of their current Total Fertility Rate (Extremely low, Very low, Low)
2. The larger regions (NUTS 2) are classified into *two classes* (Declining, Not declining) by whether i) their current total population change rate (1995-1999) are below zero *and/or* ii) the population of declining NUTS 3 regions (1995-1999) within the larger region constitutes more than a fourth of the total population of the larger region (if non of these conditions are met, the NUTS 2 region is classified as “Not declining”)
3. The smaller regions (NUTS 3) are classified into *two classes* (Declining, Not declining) by whether their current total population change rate (1995-1999) is below zero or not.

The NUTS 3 regions may be classified according to different combinations of these criteria, the potential “worst-case” scenario being declining smaller regions (NUTS 3) within the context of declining larger regions (NUTS 2) in nations with extremely low Total Fertility Rates. The approach is hierarchical in the sense that population change in small territorial units is “weighted” by the population change situation of the larger region, and in its turn by the national demographic prospects (assuming no migration), indicated by the Total Fertility Rate. Total Fertility Rates at sub-national territorial levels are very hard to come by, and are also relatively unstable figures, but some elaboration should be made in this direction in a follow-up study.

Table 4.4 Property space of indicators based on the national Total Fertility Rate and recent population change at two hierarchical levels (NUTS 2 and NUTS 3).

NATIONAL	**NUTS 2-regions**	**NUTS 3-units**	**NUMBER OF NUTS3-units**	**Code**
Total Fertility Rate	Recent population decline	Recent population decline	1995-1999 Europe 29 (excl. CY & MT)	
<1,3 (Extremely low)	Change rate <0 or share of pop. in declining units >25%	Change rate <0	**122**	111
		ELSE	46	112
	ELSE	Change rate <0	**6**	121
		ELSE	65	122
1,3 – 1,5 (Very low)	Change rate <0 or share of pop. in declining units >25%	Change rate <0	**213**	211
		ELSE	155	212
	ELSE	Change rate <0	**45**	221
		ELSE	295	222
>1,5 (<1,9) (Low)	Change rate <0 or share of pop. in declining units >25%	Change rate <0	**78**	311
		ELSE	61	312
	ELSE	Change rate <0	**15**	321
		ELSE	255	322

The figure below displays the total property space of the chosen indicators, by which the typology may be built. The next figure is a tentative combination of properties into one (of several possible examples of) typology, which is illustrated in the following map. Even an alternative map is displayed based on a slightly modified combination of indicators.

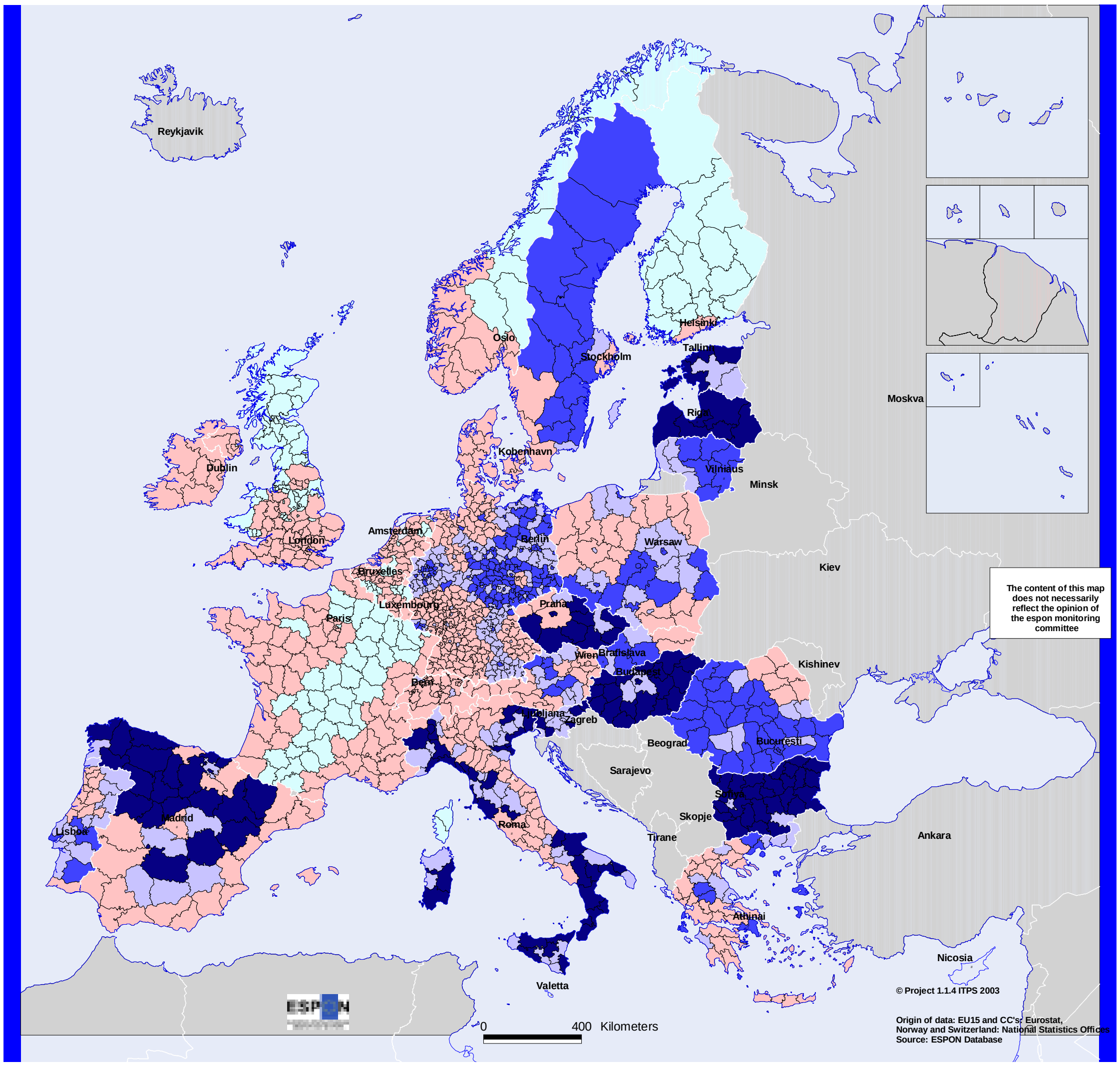
Countries with "Extremely low" Total Fertility Rates in Europe 29 (except Cyprus and Malta) comprise 239 NUTS 3 units. 708 NUTS 3 units are within countries with "Very low" fertility, and 379 units are located in "Low" fertility countries. The share of NUTS 3 units *with recent population decline within declining larger regions*, range from 51 percent among units in "Extremely Low" fertility countries, via 30 percent in "Very low" fertility countries, to 21 percent in "Low" fertility countries. Regions *with growing smaller units within growing larger regions* range from 27 percent, via 48 percent, to 63 percent, respectively.

Table 4.5 Typology based on direct indicators of "depopulation" (cf. the above scheme)

CODE, composite indicator ("typology") of "depopulation"	TERRITORIAL LEVEL/Indicator			Code, cf. scheme above
	NATION Total Fertility Rate 1999	NUTS 2 Recent population change/share of population in declining NUTS 3 units >25% of population in NUTS 2 region (1995-1999)	NUTS 3 Recent population change (1995-1999)	
1 (Very strong depopu-lation)	Extremely low	Decline	Decline	111
2 (Strong depopu-lation)	Very low	Decline	Decline	211
3 (Depopulation)	Extremely low	Decline	Not decline	112
	Extremely low	Not decline	Decline	121
	Very low	Decline	Not decline	212
	Very low	Not decline	Decline	221
4 (Possible depopulation	Low	Decline	Decline	311
	Low	Decline	Not decline	312
	Low	Not decline	Decline	321
5 (No depopulation)	Extremely low	Not decline	Not decline	122
	Very low	Not decline	Not decline	222
	Low	Not decline	Not decline	322

Map 4.2

Direct indicator of depopulation



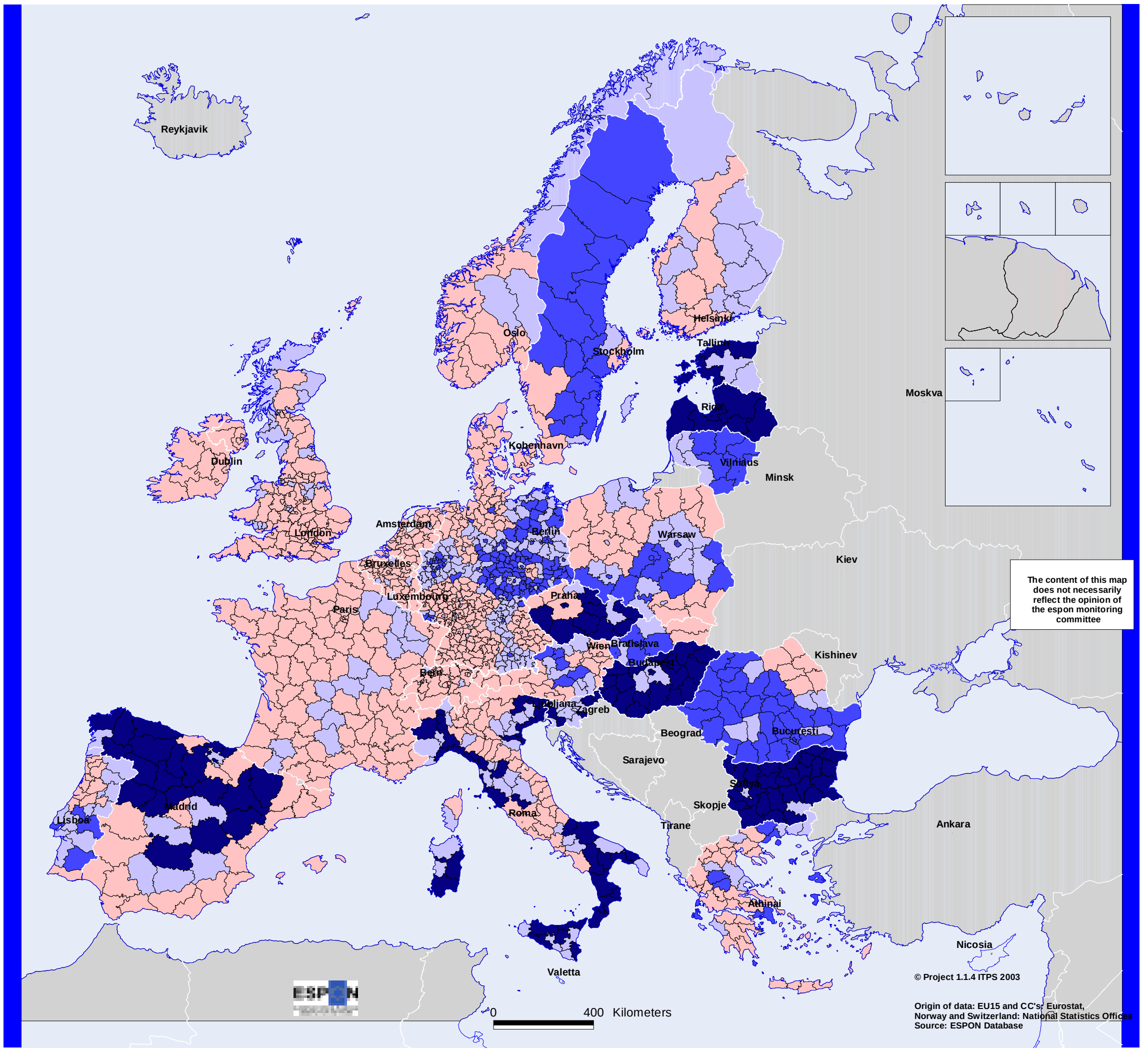
Direct indicator of depopulation

- very strong depopulation
- strong depopulation
- depopulation
- possible depopulation
- no depopulation

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Offices

Map 4.3

Direct indicator of "depopulation" - Alternative



Direct indicator of depopulation

- Depopulation 1
- Depopulation 2
- Depopulation 3
- No depopulation

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Offices

Box 3.4: The demographic situation of Southern Europe (Cabré, A. 2001, p.1)

"During the final decades of the 20th Century, the countries in Southern Europe now belonging to the European Union (Italy, Spain, Portugal and Greece) have experienced dramatic changes in all the demographic variables. Until the seventies, their mortality had been clearly worse than the European average, while nowadays their inhabitants enjoy a life expectancy ranking among the world's highest, especially for females. On the other hand, for centuries, the four countries had been the origin of substantial flows of out-migrants going mainly to the New World, while between World War II and the crisis of the seventies the migrants changed destinations and went in great numbers to prosperous European countries. After 1975, this also changed and Southern Europe progressively became a land of attraction: migratory flows reversed, former migrants returned home and increasing flows of non-European migrants started changing the human landscape of these societies of highly homogeneous ethnicity.

No matter how important the changes in mortality or in migration may have been, it is not because of them that Southern Europe is now under the microscope of demographers. Instead it is the sharp decline in fertility experienced during the seventies, the extremely low levels attained and the length of time these levels have prevailed that has captured demographers' attention. In fact, never has such a large region, with a population of over 120 millions, experienced such a low fertility for more than two decades. Recently, some new regions seem to be following in the steps of Southern Europe, such as countries in Eastern Europe, in former USSR and in Eastern and Southeast Asia. Some of them even show rates below the present data for Southern Europe and keep decreasing. Nevertheless, Southern Europe still holds the title for being considered the classical case in the study of what some authors call *lowest low* fertility, defined by a Total Fertility Rate under 1.3."

In the new member countries one cannot speak of depopulation in any strict sense, though population decline is a marked process according to our typology. Actual depopulation might occur in some of the high mountain areas of Romania and Bulgaria, however.

The countries with extremely low fertility rates are Spain, Italy, Bulgaria, Slovenia, Hungary, The Czech Republic, Estonia and Latvia. Within these countries wide "depopulation" areas exist according to our indicators, and in a few of them regional polarisation seems to be the case, declining and growing areas existing side by side (for instance Spain and Italy). The countries of Southern Europe have been experiencing substantial demographic changes during the last two centuries and are developing a particularly vulnerable situation with regard to demographic prospects of certain regions, cf. box 3.4.

In Hungary the distribution of population (apart from the concentration in the Capital Region) is relatively even, and so is the decrease in the number of inhabitants. Comparison of maps at the NUTS2, NUTS3, NUTS4 and NUTS5 area units reveals that the less detailed the territorial level of analysis, the more even is the observed process of decline. Only a most detailed map (of NUTS 5 units) will show variations particularly due to the development of urban regions and the stagnation of rural regions.

In Scandinavia, Swedish territorial units deviate from the rest. At the territorial scale employed in the typology most of the Swedish units will have to be characterized as "depopulation" areas, i.e. they are declining units within declining larger regions in a country with a "Very low" below-replacement fertility level.

According to the map no country with "only" Low Total Fertility Rate (cf. criteria above) has any region with depopulation (strong, very strong or just "depopulation"). In Ireland and Denmark all regions are in the no depopulation category, while in France, the United

Kingdom, the Be-Ne-Lux-countries, in Finland and Norway, parts of the countries are characterised as possible depopulation areas.

All the countries with Very low fertility rates (Sweden, Germany, Switzerland, Austria, Portugal, Slovakia, Greece, Rumania, Poland and Lithuania) have at least some depopulation regions, but none (per definition) with very strong depopulation. Every region in Lithuania is in the depopulation categories. With the exception of the territories around Leipzig, the whole of the former GDR shows depopulation or strong depopulation, as does the Ruhr area and territories close to the former GDR border from Lower Saxony to Bavaria.

Very strong depopulation is a situation generally found in territories in the countries with extremely low Total Fertility Rate; Spain, Italy, Slovenia, Bulgaria, Hungary, the Czech Republic, Latvia and Estonia. In the Baltic states, Hungary and Bulgaria, all regions are in one of the three depopulation categories. In Latvia, all the regions have very strong depopulation according to the typology.

Parts of northern Italy, parts of northern Spain and parts of Bulgaria are both found in the category of the highest level of relative depopulation (cf. the section on indirect/structural indicators below) and being categorised as having "very strong depopulation" according to the direct indicator. For most of Eastern Europe, there is a discrepancy between low degrees of relative depopulation (cf. below) and an often strong or very strong depopulation according to the direct indicator, even though we find a number of regions in Poland and in Rumania that combine the lowest degree of relative depopulation and no depopulation according to the direct indicator. Parts of the UK, Germany, Northern Italy and Greece combine the highest degree of relative depopulation (cf. below) with no depopulation according to the direct indicator.

4.1.4 Indirect/structural indicators on degree/state of "depopulation"

Indirect indicators 1-7 (cf. above) may serve the purpose of mapping some important *structural demographic aspects* of the type of enduring population stabilisation and decline frequently associated with the occurrence of the phenomenon of "depopulation". They indicate asserted typical structural demographic effects of depopulation processes, as well as aspects of the demographic dynamics at work and certain probable policy relevant implications and the future demographic potential of the regions. *All the indicators and maps in this section are at territorial level NUTS 2.*

The most evident indicators of depopulation in the sense mentioned above are the (shrinking respective expanding) share of children and elderly people in the population (cf. the first two maps below). Similar indicators of relative degree of depopulation – and highly policy-relevant, although controversial with regard to interpretation – are the so-called post-active dependency ratio and the ratio of young people to elderly people, and the indicator of an ageing "labour force" (cf. the next three maps below). The indicator values are divided into four categories, from Europe 29 average or "better" (for instance a lower share of elderly people, a higher share of children, a lower dependency ratio etc., are characterised as "better"), to one standard deviation (STD) or more "worse" than the Europe 29 average, although the maps are based on categorisations of the actual indicator values (cf. map legends).

The sixth map below is based on the average score on these five (relatively highly correlated) indicators, intended as a rough general *relative-level-of-depopulation indicator* – and as another tentative typological basis for a map of "the geography of depopulation" within Europe 29. The indicator is categorized into quartiles.

Eventually (the last two maps below) two indirect indicators at NUTS 2 level (indicators 4 and 7) may serve as supplementary pointers to future depopulation geography. The *first* of the last two maps indicates the potential for growth in a population segment constituting an important demographic basis for natural population change (the age-group 20-29 years) inherent in the present regional demography (the size of the cohort that will be 20-29 years of age in 2020 in relation to the size of the cohort that was 20-29 years of age in 2000). The *second* of the last two maps indicates the degree to which potential loss of "labour power" due to retirement in the course of the next ten years, may be compensated by new entrants into the labour market by the cohort leaving the educational system and reaching economically active ages during the same period. Both indicators are blind to migration and mortality. They are related to "depopulation" as indicators of structural-demographic effects of depopulation dynamics, as well as a potential prospective depopulation process. Table 4.6 displays the mean values, the median values, the standard deviations (STD) and the regional coefficient of variation for each indicator, to assist the interpretation of the maps.

Table 4.6 Selective indirect indicators of the degree/level of "depopulation" and demographic potential. Measures of central tendency and territorial variation (NUTS 2level).

	Ageing population	Ageing labour force	Labour force replacement	Post-Active dependency	Aged vs. youth	Share of children	Natural Growth potential
Un-weighted mean	15,6	17,7	1,2	0,3	1,2	17,2	0,8
Weighted mean	15,8	17,7	1,2	0,3	1,3	17,4	0,8
Median value	15,9	17,6	1,2	0,3	1,3	17,6	0,9
Standard deviation	**2,9**	**2,5**	**0,4**	**0,1**	**0,4**	**2,7**	**0,2**
Regional coefficient of variation	18,4	14,0	32,1	23,8	29,0	15,5	21,4

Not indicated in the table is the remarkably stable population share of the crude middle population segment, usually considered to be the economically active base in any population (for instance delimited to persons aged 16-66), over time (even through centuries) as well as across countries and regions (at all levels of territorial detail). In Norway this share varies slightly around 60 percent from 1845 to 2050 (according to the latest population projection), which means that the so-called total dependency ratio around the middle of the present century is expected to be the same as it was around 1925, despite considerable growth in the share of elderly persons during the same period (Foss 2004). Even among all Nordic municipalities (NUTS 5) – including the non-ESPON Nordic territory – this share at present varies only slightly around ca. 63 percent (standard deviation = 3,3) (cf. Foss and Juvkam 2005).

The table shows that the potential for replacement of the labour force in the course of a decade in average is positive among Europe 29 regions, although some regional variation is indicated. Less positive is the potential for replacement of the past and presently most reproductive age segment in the course of the next two centuries. However, the patterns of age-specific fertility rates may change over the period in both negative and positive directions, making the indicator less significant. Meanwhile the future of the general fertility level in different population segments and regions is largely unknown. Nevertheless the indicator employed is useful because it is based on cohorts that are already born, bearing in mind that the future location of the members of the cohorts will be affected by their migratory behaviour in the period.

Six maps (see maps 11-15 in appendix A8) – based on indirect/structural indicators – may be briefly commented as follows:

1. The regions with the most negative deviations from the European average regarding *the share of children* (Europe 29 average = 17,2 percent) are mostly located in northern and central Italy, northern Spain, east Germany, Greece, and Alentejo in Portugal. On The British Isles and in the Nordic and the Baltic countries, all regions are on the European average or "better", as are most of Poland, Slovakia, Rumania, Belgium and the Netherlands. The former East German case is related to a rapid fertility decline after the reunification of Germany and to migration to former West Germany. For both the Italian and Greek regions with a particularly negative position according to this indicator, we may probably seek the explanations in previous demographic occurrences, as these regions generally have a strong positive migratory balance that greatly influences the population distribution by age groups. To some extent, this is also true for Northern Spain.

2. The regions with highest *share of persons above 65 years of age* are Spanish and Portuguese regions with low population density, much of northern and central Italy, and some parts of Greece, the United Kingdom and Sweden. Even the sparsely populated in-land region of Norway is in the most negatively deviating category. The Italian regions are generally more densely populated than the other regions, and include many of that country's most important cities. Only three regions within the former east European countries are not included among regions at the Europe 29 average or better (Europe 29 average = 15,6 percent). There is little reason to assume that the same explanatory processes are at work in all these regions. The pattern is basically a result of variation in changes in fertility levels modified to some degree by differences in levels and patterns of migration.

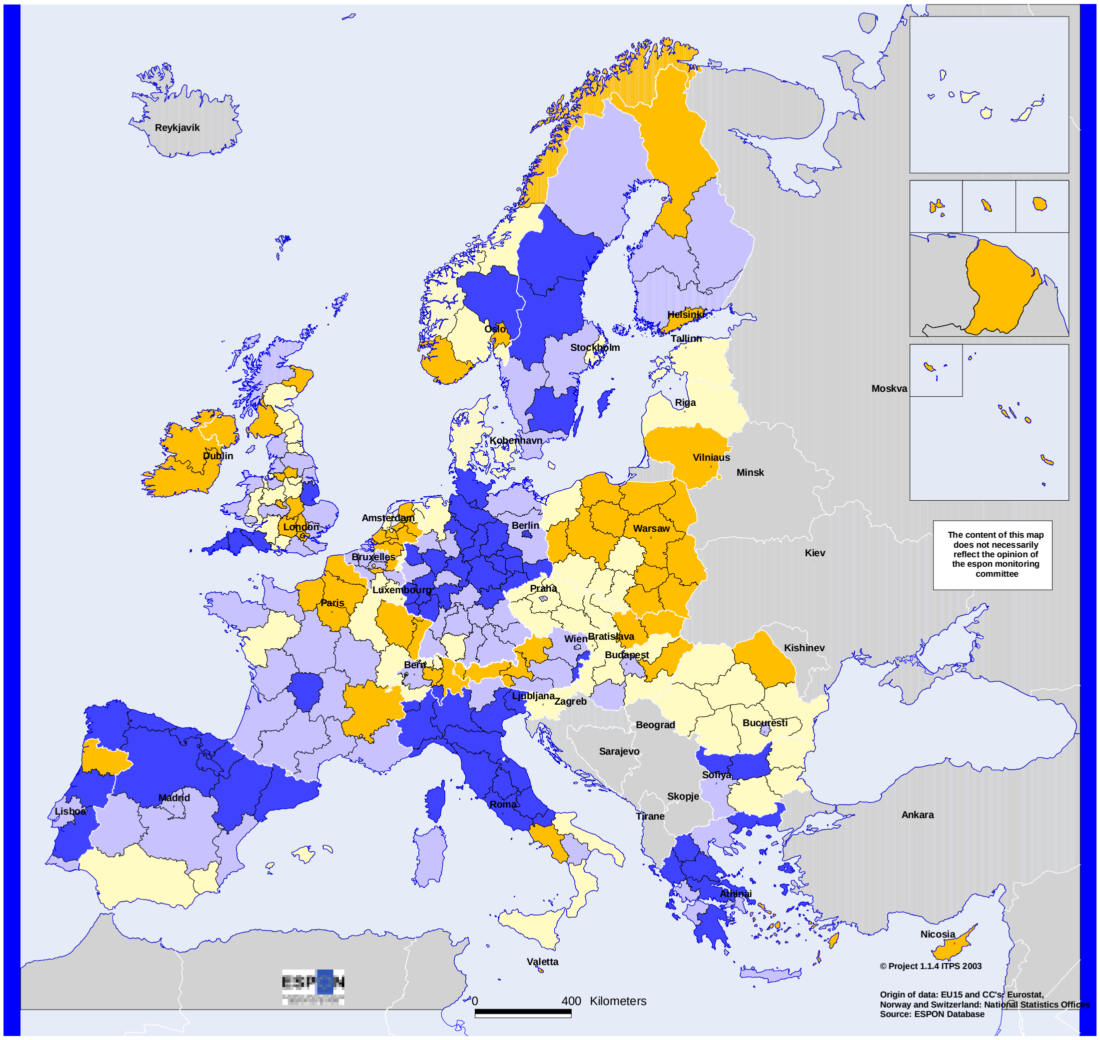
3. Very much a similar picture as the former map (the share of elderly persons) is displayed in the map showing the *post-active dependency ratio* (Europe 29 average = 0,3). This should not be taken as an indication that the distribution of children is close to being the same as the distribution of the population segment 15-64 years of age. It rather indicates that this difference is not big enough to significantly change the regional pattern when employing a rather crude demographic ratio, and the very different sizes of the two groups 0-14 and 15-64, the latter displaying a rather constant share across regions (cf. above).

4. When it comes *to the ageing of the labour force* (Europe 29 average = 17,7 percent), the northern Italian regions, most of Greece and most of Sweden are included in the two groups with *at least* a ½ standard-deviation "negative" deviation from the European average. All the German regions fall within these two groups as well. The early trend of reduced fertility in Germany is very visible in the age structure of the present labour force, creating a potential for migration from the new EU countries, where most regions have a far lower share of the cohorts near retirement age than the Europe 29 average. France, with its very early reduction in fertility, has not an ageing labour force by this measure, however; nor do the Be-Ne-Lux countries, Spain, Ireland, Norway or the Polish regions.

5. Looking at *average scores* of the five indicators, Ireland is the only country with a national subdivision that is completely within *the lowest degree of relative depopulation*. No regions in Germany, the Czech Republic, Bulgaria and Spain are within this category. The regional picture indicates an apparently significant discrepancy with the geographical pattern of migratory balances of adults in the reproductive age groups (cf. also chapter 6) in some parts of Europe. For instance the very same northern and central Italian regions that for decades have experienced a migratory surplus are in the category of *highest degree of relative depopulation*. Further, we can detect no clear north-south dimension in relative level of depopulation in the United Kingdom. The regions of France with the most positive migratory balances are also among those with high degree of relative depopulation according to this general indicator.

Map 4.4

Average score on indirect depopulation indicators in 2000



Average score on indirect depopulation indicators in 2000

- very low relative depopulation
- low relative depopulation
- high relative depopulation
- very high relative depopulation

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Office
Source : ESPON database

NOTE: Very low depopulation is synonymous with no depopulation

The maps of natural growth potential 2000 and labour force replacement ratio in 2000 (see maps 16 and 17 in Annex A8) are based on two somewhat different indirect/structural indicators, both pointing at one single aspect of demographic potential inherent in the relation between existing cohorts in the regional populations:

The first map indicates i.a the difference between the countries that since the 1970s have bettered (or stabilised at a reasonable level) their fertility rates, and those who have not. For the former east European countries, it is shown that the decline in fertility during the 1990s, make the situation generally somewhat negative with regard to prospective change in the key age group of “natural demographic growth potential” (Europe 29 average = 0,8). With the exception of the metropolitan regions of some of the east European countries, the regions with the *most* “negative” deviation from the average are almost exclusively within the EU prior to the last enlargement, in countries with very low or extremely low Total Fertility Rates. As expected, much of northern Italy, the northern half of Spain, and parts of Greece fall within this group, as do much of east Germany. For the northern Italian regions and for the Greek regions, these deviations may probably be modified by migration in the years to come. Almost all European regions within the former west bloc north of the Alps and the Pyrenees are on the European average or better. The regions of the Nordic countries seem in general to have a relatively favourable demographic structure according to this indicator. However, considerable variation is known to exist within the rather crude NUTS 2 level regions.

There are comparatively few regions with a strong negative deviation regarding the “labour-force replacement ratio” (Europe 29 average = 1,2), cf. above. More than one standard-deviation “negative” deviation from the European average are found only in regions of northern Italy and in scattered German regions. All the regions of Germany and Sweden display a negative deviation and may in certain conditions encounter relative labour-force recruitment problems, all other factors considered equal. The fact that most regions with a strong negative deviation according to the indicator “ageing labour force” (cf. above) do not display a strong negative deviation regarding the labour-force replacement ratio, indicates that the same regions have a considerable segment of people aged 10-19 alongside a relatively large segment of elderly potentially economically active population.

Generally these results demonstrate that demographic scores at any given time are highly influenced by historical demographic occurrences. The figures – and their territorial variation – are influenced by specific national and regional changes in fertility over more than a century, long-term internal and external migration patterns and their intra- and inter-country variations and changes; all related to (socio-demographic implications of) period- and country-specific events like business cycles, wars, socio-economic structural aspects and changes, policy regime differences and changes etc. These are also factors that have contributed to the specific socio-economic and regional contexts of the different demographic situations that are revealed, and to the political frameworks determining the possible responses to the challenges they pose. The degree to which “pure” demographic trends should be regarded as problematic in different socio-economic perspectives – and by which political means these problems should be met – very much depends on the contextual aspects.

4.1.5 Relative depopulation in rural areas

Rural areas – especially densely populated ones – are often synonymous with depopulation areas. In order to investigate if there are any connections between different types of rural areas and “relative” or “structural depopulation” tables 4.6 and 4.7 were constructed. Rural areas in “Europe 29” are divided into three parts – *densely populated rural*, *intermediate* *level populated* and *sparsely populated* rural regions.[42] Of 1276 regions for which data is available, almost half (612 or 48 percent) of them are characterised as rural according to the abovementioned definitions. This of course does not explain anything about the size with regard to area or population – it is only a hint of that many European regions at different NUTS-levels can be characterised as rural. It shall also be kept in mind that the definitions between different countries vary - sparsely populated regions in Sweden or Finland are not necessary the same as sparsely populated regions in e.g. UK, Germany or Italy.

The three types of rural areas are based on data on NUTS3-level but the relative depopulation data are on NUTS2-level (see text and map above). In order to combine the rural types with the relative depopulation types, it was necessary to use the NUTS2-data on depopulation as an indication of the development at NUTS3-level with regard to the rural areas. This is of course not completely scientifically correct, as there must be NUTS3-regions that are categorised wrongly with respect to depopulation as a consequence of using NUTS2 data. It was, however, the best means available and will probably not greatly disturb the results, even if they must be interpreted with some care. As indications of the connection between various types of rural regions and relative depopulation they are probably sufficient for drawing the right conclusions even if they are not completely exact estimations.

Table 4.7 Rural regions in "Europe 29". Different rural categories in combination with various groups of relative/structural depopulation.

		Densely Rural 1	*Intermediate Rural 4*	*Sparsely Rural 7*
Rural regions, total	612	89	348	175
% rural	0,48	0,07	0,27	0,14
	All regions	*Densely Rural 1*	*Intermediate Rural 4*	*Sparsely Rural 7*
1.No relative depopulation*	207	27	46	31
2. Low relative depopulation	250	31	82	20
3. High relative depopulation	407	19	119	65
4. Very high relative depopulation	412	12	101	59
	1276	89	348	175
		%	*%*	*%*
1.No relative depopulation*	16,2	30,3	13,2	17,7
2. Low relative depopulation	19,6	34,8	23,6	11,4
3. High relative depopulation	31,9	21,3	34,2	37,1
4. Very high relative depopulation	32,3	13,5	29,0	33,7
	100,0	100,0	100,0	100,0

Note: About rural categories, see text above.
* Very low relative depopulation is synonymous with no depopulation
Source: Estimations (%) based on data delivered by ESPON 1.1.2 and ESPON 1.1.4.

[42] This is a division that partly have been in used in the work in ESPON 1.1.2 "Urban-rural relations in Europe" in creating a typology with regard to urban-rural areas. This is, however, not identical to the one in the ESPON 1.1.2 Final Report consisting of six different types of urban-rural regions.

Table 4.8 Relative depopulation in all regions and in the rural ones in "Europe 29". Categories in combination with different groups of relative/structural depopulation.

	All regions	*Densely Rural 1*	*Intermediate Rural 4*	*Sparsely Rural 7*
1+2. No or low relative depopulation	35,8	65,2	36,8	29,1
3+4. High relative depopulation	64,2	34,8	63,2	70,9
	100,0	100,0	100,0	100,0

Source: Estimations (%) based on data delivered by ESPON 1.1.2 and ESPON 1.1.4.

Table 4.7 indicates that sparsely populated regions are over-represented among categories 3 and 4 and the densely populated ones are better off with regard to the structural or relative depopulation process. The intermediate level populated regions are – as the name indicates – intermediate even in this sense. Table 4.8 shows this in a more direct way.

The *densely populated rural regions* (category 1) are in a much more favourable position with regard to relative depopulation than all regions in total – almost two thirds of the regions in this category can be characterised as "low relative depopulation regions." This is not especially surprising given densely populated rural regions have experienced a relatively good population development during the past decades as residence and settlement patterns have received higher priority than before. More commuting and also over longer distances have resulted in larger local labour markets and regional enlargement. This phenomenon is very obvious in e.g. Sweden and UK – however at lower regional levels than are presented here - but even within Pentagon there is peri-urbanisation tendencies that densely populated rural regions in the heart of Europe have been aware of.

The *intermediate level populated rural regions* have almost the same distribution between low and high relative depopulation as the regions on average. As the category "all regions" they are also composite regions but with a higher rurality than the average region. They are neither in the same good position as the densely populated rural regions nor in such a bad position as the sparsely populated rural ones.

The *sparsely populated rural regions* are in the worst situation with regard to relative depopulation – more the two thirds of the regions in this category are in the category "high relative depopulation" or "very high relative depopulation." These regions are often peripheral and have for a long time been out-migration areas with a lopsided age structure as one consequence. Most of the Swedish and Finnish regions are in this category but even many regions in France, Spain and Greece are ranked here. It must be kept in mind that the number of regions between the countries is of varying size and number and there are still some missing data at NUTS3-level, which hampers of course inter-country comparisons. On the other hand, these are difficult to do even at the same NUTS-levels, as the NUTS-regions are of various sizes both with regard to area and population. Despite this, it seems as the sparsely populated rural regions are in a very bad situation with regard to "relative or structural depopulation." This is also underlined by a check with regard to the direct indicators and "direct depopulation."

The rural areas vary considerably with respect to development preconditions within the EU29 as well as within the individual countries. The *densely populated rural areas* are in many cases integrated in the urban economy. These rural areas have been characterised by population growth as – among other things – a consequence of in-migration and decentralisation of the settlement pattern (Eurostat database, see also e.g. Cross 1990, Champion 1992, Kontulay 1998). These rural areas are often located in the environs surrounding cities and have to a greater extent been integrated in the economic and spatial development of these regions. Especially families with children and middle-aged people have settled down in these rural areas with good communications to the more dynamic centres. This can be seen as a typical consequence of the rural areas integration in the polycentric development. It should be kept in mind that this decentralisation of the settlement pattern is not a new suburbanisation like the changed residence pattern of the 1970s.

The second type is *intermediate rural areas* with some distance to big cites and metropolitan areas but with good communications to them. These areas are not so dependent on the economic development in the big urban centres but – as a consequence of good communication links – they have increasingly been involved in the local labour markets of the medium-sized regional urban centres. These relatively densely populated rural areas are noticeable ingredients in the urban-rural structure. Such rural areas are located between and in the surroundings of small and medium-sized towns and can be seen as - and included in - small polycentric structures. Despite their polycentric characteristics many of them are, nevertheless, retarding out-migration local labour markets. It is not distance that is the big problem in this case – rather it is the weak diversification of the local and regional economies that hamper renewal and transformation.

The third category is *remote sparsely populated rural areas in the periphery*, and in the Northern Europe extremely sparsely populated. These regions are characterised by out-migration, ageing, low-skilled labour force and – of course – long distances and weak connections to the rest of the economy. The economy exhibits a dual character with respect to the national economy and then especially with respect to the dynamic metropolitan areas. The local labour markets are spatially large but with few inhabitants and often consist of only one municipality with a 'shaky' and undiversified economic structure. One of the consequences of the very long distances to built-up areas and small regional centres is that the preconditions for polycentric development are nonexistent. Many of these local labour markets are only labour markets in the official statistics as the long distances between the villages and built-up areas restrict the commuting and instead of being one local labour market there should in reality be two or even more very small local labour markets. The possibilities for a self-generated endogenous growth are also missing and many of these remote areas are very dependent on the official transfer system to survive. A polycentric community structure in these peripheral areas – e.g. in the Nordic countries - is thus lacking and a continued 'dependency' of a few regional centres is a more realistic alternative. These sparsely populated rural areas have also experienced a negative population development for a long time (see e.g. Johansson 2002, Westlund 2000).

4.1.6 Some aspects of the concerns with population decline and ageing

It is not evident what the implications of these demographic trends will be, nor the events for future development in different areas of society in different types of regions beyond certain immediate effects that follow the mere numerical projections of particular strategic age groups – even some of which burdened with considerable uncertainty in a future perspective. When we leave the aggregate levels of nations and large regions and move down to more detailed territorial divisions, the challenge of detecting prospects and problems is increasing in difficulty.

A limited survey of available research and literature reveals that very few projects and reports so far seem to focus specifically on population decline and ageing as a sub-national territorial phenomenon, in the sense that they explicitly set out to illuminate territorial variation in the phenomenon (the geography of depopulation and ageing) and/or especially focus the need to establish a better basis for detecting and understanding possible *non-demographic* impacts at the territorial level.

However, changes in the demographic balance of young and old – between the lower and upper part of the age pyramid[43] – as societies moved slowly through the different stages of the development known as the demographic transition, has recurrently been the subject of scientific and political consciousness and controversy over much of the former century. There is presently, as indicated, a renewed awareness and debate regarding alleged menacing aspects of such phenomena as population decline and "ageing" – especially commencing from the beginning of the 1990s and sometimes from the beginning of the 1980s.

The more recent "demographic" debate seems to have a particularly strong focus on phenomena assigned labels like *population decline*, *depopulation* and *ageing*. What in many western countries appear to be unprecedented durations of periods of fertility at below replacement level, combined with the good news of still increasing life-expectancy, inevitably will influence the development of age structures and growth levels – in several geographical areas obviously with occurrences of different variants and degrees of the mentioned types of phenomena as likely outcomes.

However, much of the discussion seems to relate to either broad, rather general questions of a macro-economic or macro-social nature, often with an intergenerational-distributive dimension, or to a group or individual perspective (Hicks 2003). The first important United Nations statements on population ageing, and the later follow-ups (e.g. 1992, 2002[44]) covered a wide range of areas and issues where ageing was assumed to pose challenges that could not have been foreseen, for instance within fields of health and welfare, family and households, education and technological change, labour market and economic growth.

Around the middle of the 1990s the public pay-as-you-go pension systems of many countries became a central issue in light of the forthcoming retirement of the so-called baby-boom generation (cf. e.g. the World Bank 1994, Orszag and Stiglitz 1999, Gillion et. al. 2000). The debate grew more polarized and became partly ideological. The perspective is still largely "macro", and neither related to the territory nor so much to individual and family welfare. The OECD picked up the ball and organized policy thinking on several of the issues and perspectives from the "ageing" debate around the turn of the century.[45]

Some of the main recurrent political concerns over the implications of demographic change related to population decline concern the development of the relative size of broad "functional" age groups. One assertion is that the share of persons within the potentially most economically active age-span need to be of a certain size in order that society may stay economically and in other ways functionally "sustainable". Another assertion concerns potential implications of the numerical relation between children/youth and elderly persons in the population; the basis for the preoccupation with "demographic ageing".

How exactly these "functional" age groups ought to be defined is not at all obvious, however, and will – moreover – vary considerably between different societies (countries and regions) as well as over time, the *rationale* nevertheless being a presumption that production as well as consumption behaviour (in a broad sense) – and particularly the

[43] The development has hardly affected the share of the large population segment often called the "active ages" or the "working ages", for instance the group of 16-66 years olds.
[44] Cf.: http://www.un.org/esa/socdev/ageing/index.html
[45] It is worth mentioning that controversies over the role and implications of demography in economic development and social change has occurred from time to time at least over a couple of centuries, cf. for instance Hofsten 1974.

relationship between, and the relative intensity of, the two modes of behaviour – are systematically and to a great extent dependent upon age[46] (Cf. Pressat 1970).

In reality of course important modifications need to be made to this kind of "single-factor" socio-demographic reasoning. One of the most obvious and necessary modifications is that the actual socio-economic significance to society of the kind of purely demographic relationship mentioned, is mediated by and through a complex set of non-demographic structures and conditions, for instance the determinant factors of actual economic activity (labour force participation etc.) for different groups, the educational and broader human capital aspects, the technology and broader productivity aspects, and the general level of income and welfare in society.

All these aspects are assigning "weights" to the individual members of the respective "functional" demographic groups with regard to their socio-economic role. At the consumption side even more mediating factors enter the arena, making the socio-economic significance of pure demographic structure even more complex to assess (Cf. Carver and Liddiard, eds. 1978, Teitelbaum and Winter 1985 and Day 1992).

A simple correlation table based on two of the indicators of change displayed in this chapter (NUTS 3 level) points to a rather strong positive association between "negative" demographic trends and the level of unemployment in the regions. The opposite seems to be the case with regard to relative "wealth" (GDP per capita), although these correlations are not equally strong. The low correlations with the population density indicator (number of inhabitants per square kilometre) may be explained partly by the crude level of territorial detail and partly by the fact that large sparsely populated areas in Europe, often peripheral and remote regions, were late starters in the trend towards declining fertility and are still characterised by comparatively young populations and until recently somewhat higher levels of fertility than the national averages. The correlations may indicate potential socio-economic problems in (some of) the demographically declining (and presently and/or prospective) ageing regions, as well as a potential driving force towards migration economically "lagging" to economically "leading" regions.

Table 4.9 Correlation between the recent population change rate (percent) and the "direct depopulation indicator" (transformed into an additive index), and certain qualities of the regions (NUTS 3 level)

	Percent population change 1995-1999	Direct depopulation index (low value = no relative depopulation)
Population density 1999	-0,070* (n=1326)	-0,076** (n=1326)
Total unemployment rate (average 1998-2001)	-0,319** (n=1243)	0,444** (n=1243)
GDP/capita EURO PPP 1999	0,139** (n=1326)	-0,380** (n=1326)

** Correlation is significant at the 0,01 level

* Correlation is significant at the 0,05 level

Migration trends seem to imply accelerating depopulation and ageing in sparsely populated rural and peripheral regions and in regions lagging in economic and labour market

[46] The average life-course has changed substantially over the last century and will probably continue to change in the years to come. The relative role of education etc, work and different family phases, and retirement at different ages have altered continuously in interaction with developments in life expectancy. Cf. Warnes and McInerney (2004).

performance. Competitiveness policy will need to recognise the regional changes of the labour supply and the actual characteristics of the labour-force available in different types of regions. As the population will be increasingly older in certain areas the labour market will need to adjust. Even consumer needs and preferences are probably changing all over in the wake of demographic transformation whilst certain areas will be relatively more influenced by the upper segment of the age-pyramid. Ageing will not impact uniformly on regions. Given the diversity of the impact on regions, the necessity to 'adapt to their demographic circumstances' will require different measures in different regions. This requires statistical analysis and research to be carried out at a more detailed territorial scale taking into account that demographic trends are only a single factor among a very large and complex set of factors influencing socio-economic development, and – after all – probably the slowest and most predictable factor, traditionally considered to be the outcome rather than the cause of socio-economic change.

4.2 Urban Sprawl and Counter-urbanisation

4.2.1 The various patterns of urban sprawl within the European space

Migratory movements of the nineties in Europe are very complex and show big contrasts from one space to another. However, we observe in all parts of Europe a similar process of emigration from the core cities, often called urban sprawl. The negative internal balances of the metropolises today have three different spatial dimensions, of which the causes are sometimes (but not always) identical, but of which the spatial consequences are very different:

- The classical phenomenon of sub-urbanisation, which can be described as migratory movements from core cities to the suburbs, sometimes very distant from urban centers ;
- The departures from the major metropolitan regions towards less important cities ;
- And finally the process called counter-urbanisation, which sees the development of migratory gains favoring rural zones which are more or less distanced from the main cities and in some cases falling out of the limits of their functional zones, which often until some decades ago themselves were the subject of mass rural exodus.

The migratory movements by age help to understand the process of urban sprawl. While urban centres and urban areas attract mainly young people, studying or still at an early stage of their professional life, suburban areas have positive balances mostly for active households with children. The more isolated rural areas have more diverse situations but often have migratory deficits for young people and positive balances for middle age and more importantly elderly people.

However, the rhythm and the consequences of this process are very different from one space to another. We can identify several models given, on the one hand, the type of urban network, and, on the other hand, the geographical situation within the European space (i.e. central, Mediterranean, Nordic or Eastern peripheries).

In the central part of Europe, often called the blue banana, characterized by dense population and a tight urban network, we can observe from the seventies a specific model of counter-urbanisation. The negative migratory balances of urban centres produce an intense suburbanisation and even the renewal of interstitial rural areas, which benefit from a very sparse counter-urbanisation. In England, it has been proved that every level of the urban hierarchy has a positive balance with the higher level and a negative one with the lower level (Champion 2004)). Such a model is not associated with an economic decline of urban areas but supposes growing commuting and, sometimes, new forms of work.

In peripheral Europe, these processes show some clear differences with central parts of Europe. The main difference is to be seen in the attraction of big metropolitan areas vis-à-vis their national space (e.g. Madrid, Stockholm, Budapest). In the same time, we can observe, as in North-western Europe, strong suburbanisation. But there are slightly different patterns in this general framework. In northern periphery, big metropolises remain very attractive, especially from isolated rural areas of northern Scandinavia. However, despite of the movements from rural areas to metropolis, the process of suburbanisation is here as intense as in central European areas. The distances between towns and low population density forbid the repopulation of the vast rural areas. Mediterranean peripheries show a similar pattern: positive balances for big metropolitan areas (e.g. Lisbon, Naples, Madrid, Athens) and suburbanisation faster than in north-western Europe because it begun later. The decline of isolated rural areas thus goes on slowly even if some signs of renewal are to be found, especially the return migrations of retired people. In East-Europe, the attraction of metropolitan areas is sufficient enough to compensate the decline of urban centres resulting from a recent but rapid suburbanisation process.

The intermediary spaces, especially in France, experience similar evolutions since the seventies (depopulation of urban centres, massive suburbanisation, counter-urbanisation). However, the monocentric urban network and the distances between towns produce large isolated rural areas (Massif Central for example). These areas show some signs of renewal, with positive migratory balances though not enough to compensate the negative natural development. Indeed, in such sparse urban networks, the dynamic of rural spaces increases when distance from towns decreases (Hilal et al. 2001).

4.2.2 The evolution of urban areas: suburbanisation process and the decline of the urban centres

Suburbanisation can be defined as a migration from urban centres towards their peripheries. However, it cannot be assimilated to a simple spatial extension of the existing town, because it takes some specific forms, especially sparse housing developments within areas that keep a semi-rural character.

As shown above, the suburbanisation is a general process inside Europe even if it does not have the same intensity everywhere and does not occur within the same timeframe in the various parts of Europe. It occurred at an earlier state in the cities of the north-west of Europe, but started later in Paris and in the Mediterranean countries, where residence in the city center was related to strong values of attachment on behalf of the dominant classes to city-life. It was almost non existent in the old socialist countries, and thus in East Germany, but from then on the process has shown a real explosion in the 1990’s, often encouraged by the public authorities and reinforced by the city through the increase in rents and the imposition of a revenue tax which until then was non-existent.

The phenomenon of suburbanisation thus persists in spite of the discourse on urban revival and certain manifestations thereof. It progressively covers areas increasingly further away from the metropolitan center and which, in the economic and functional field, become up to a certain level independent from it while owing its dynamism to the presence of a major metropolitan core. The sub-urbanisation thus becomes more and more diffuse. Indeed, the first inner suburbs have now come under a real estate strain causing a loss of all initial advantages. Young families with children, essentially belonging to the middle class, who have chosen a suburban residence, are now compelled to move still further away from the urban centers. The driving force behind them is the wish to have a bigger house in an agreeable environment, which, in the urban center remains out of reach for most of them due to the high price of land. Although this may not be the major cause and whilst the official discourse increasingly calls for a “re-urbanisation”, we have to underline that various measures, indeed even urban development policies, are far from reversing the process. The situations are very diverse, but measures like the reimbursement or fiscal deductions of traveling expenses between the working-place and place of residence, the differences in the fiscal systems of the city-center and the suburbs (to the advantage of suburban living) or more indulgent policies in suburban development are as much incentives to suburbanisation observed in varying ways throughout most of the European countries. The real estate pressure in the inner suburbs also explains why some young local families in turn have to migrate away from the integrated inner suburbs to the more remote suburban zones, where real estate prices are lower.

It thus appears that the major metropolises at the same time see upper classes move away toward increasingly more remote suburbs whilst at the same time remaining very attractive to professions of high standing, as is the case for professionals and engineers. But the suburbanisation and the resumption of foreign immigration towards major metropolises globally accompany the impoverishment of the city-centers. As we have said, the middle and wealthy classes have a strong tendency to leave the cities from a certain age upwards (around 30 years of age) and the urban centers thus regroup a growing part of the weak income populations, being families of low income, the youth coming from the middle- or wealthy class with a strong cultural potential but a student or artist profile or those at the very early stage of professional life.

The intra-urban geography of migratory movements that often induce a modification of social structures in the urban landscape is complex. However they should be taken into account in order to avoid urban renal policies leading to an aggravation of intra-urban social inequalities. Indeed, we can observe spectacular movements of social upgrading in certain central areas of one or another metropolis, where these often exist as the biggest and most prestigious. These movements underline and sustain the discourse on “return to the city”. Even in metropolises that have been largely effected by suburbanisation and where the upper-class has shown less attachment to urban values, some districts noted better migratory balances and have been socially transformed. These movements, which should be measured on very fine scales, are however not sufficiently strong to reverse the global internal balances of the city, all the more since in other districts the urban population is ageing considerably and such phenomena of urban “re-conquest” often only concern some members of the isolated youth.

Thus, even if the average revenue of the inhabitants in the city center does not increase – and even decreases in comparison with that of the suburban zones - the increase in rents induced both by the real estate pressure of offices and of urban renewal which we have evoked above, and quite often the weakness of the social housing sector or its inaccessibility to the most disadvantaged foreigners, has further reinforced the concentration of the most unfavoured in the most dilapidated central districts, or in other countries, in the suburban dwellings. It is in those areas and for the same reasons that the new arrivals stemming from the resumption of foreign immigration are also concentrated now. This reality only shows up very lightly in the statistics, but its impact is nonetheless very important and favors the formation of ethnical quasi-ghettos in a considerable number of metropolises.

4.2.3 The contrasting situations of isolated rural areas

The process of counter-urbanisation is the most important in the dense strongly urbanized areas of Central Europe. It starts as early as the 1970’s, but its development accelerates and becomes general during the 1990’s.

This process of counter-urbanisation can be distinguished from suburbanisation by the age groups concerned: while the suburbs of the big cities mainly receive households with children, the more remote rural areas, remain less attractive to the very young (18-24) and attractive to elderly populations (especially from 50 years old) (Bucher & Heins 2001). The amelioration of migratory balances of these remote areas is the result of simultaneously lower negative balance for the youth and the arrival of families with children or young pensioners.

This process thus has a consequence of repopulating the interstitial rural areas within the very strongly urbanized center-European territory. Finding general explanations to this demographic renewal of rural areas for the central European regions is not easy. It has been established that this demographic dynamism is part of a general renewal of these regions: the economic growth is at the same time a cause and a consequence of this demographic renewal. The economic dynamism of these zones fall within the global economic evolution of the developed world and the transition towards a flexible economy has twice valorized these isolated rural zones: the strong proportion of self-employed forms a reservoir of small enterprises; factors of quality of the environment, the cost of land, the higher flexibility of the labor force are equally very strong points to the investors. Clearly, one does not find any massive investments here, but a multiplication of small and medium investments are often enough to boost employment in these relatively sparsely populated zones. We should however take into account the increase in mobility in relationship with distances covered – not in actual distances but in travel time: a large number of this new rural population still maintains employment in the cities. Within the densely populated areas of the European territory, with a very elaborated road and urban network system, the isolation of the rural zones has become increasingly more relative. The propagation of cars and the importance of family budgets that have been allocated to them accompany this opening up (Thomsin 2000). The increased attractiveness of rural life can also be allocated to the general ideological ecological movement that started in the 70's. Indeed, it no longer has its intransigence, but has been diffused in lesser ideological aspects amongst a main part of the population: refusal to certain ways of life imposed by cities and the search for more agreeable ways of life.

In terms of development of the territory, the local development has become a major axis: the districts increasingly pay more attention to drawing the attention to the benefits of their communities and the maintenance of a young population in particular by housing policies (cheap housing projects) (Thomsin 2000). This process of counter-urbanisation partially thus extends, with the same causes but within a context of increased mobility, the process of sub-urbanisation. Keeping a daily contact with the city is however no longer the general rule, a fact which differentiates the two processes.

Nuances should however be brought into the importance of the counter-urbanisation process. The rural zones in general have weaker population growth than the big dynamic suburban peripheries.

Indeed, outside of the very densely populated areas of central Europe, counter-urbanisation is not as easily perceived, even though the process still exists. In the often more isolated zones of France we can also note a demographic revival, including sometimes areas which are very far from urban centers. Here again, this revival starts as early as the 70's and has had the tendency to become generalized during the two following decades, with however strong local diversities. But here, after decades of massive rural exodus, the positive migratory balances do not often compensate for the naturally negative balances linked to an aged population. Being less general and less clear than in central Europe, the counter-urbanisation comprises thus rural territories that are increasingly more isolated from the intermediate areas.

In the Mediterranean peripheral territories, the rural exodus that was massive until the 1970's evened out progressively. One does not however find any clear signs here of a counter-urbanisation process and of renewal of rural territories, leaving aside the growing suburban areas. There is however a return migration, which consists of pensioners who have lived in the major urban axes during their active life, but the balances of the rural zones remain mostly negative.

This is even more stressed still for the empty peripheral Scandinavian areas. The exodus from the peripheral areas did not stop, but has even been particularly intense from the middle of the 1990's. The population leaves these isolated areas, primarily because they have a more northern location, and move towards the southern metropolises. We can however not assimilate this exodus to being a classical rural depression. Indeed, these peripheral areas of strong emigration have recently undergone a deep crisis, which is not in as much those of the traditional activities in the rural areas but the activities which had permitted a certain level of population in those very isolated areas: industrial activities, very present in certain areas of the Great North, and predominantly a fall back in non-merchandising activities which permitted the maintenance of employment by massive transfers from the richer and denser southern areas.

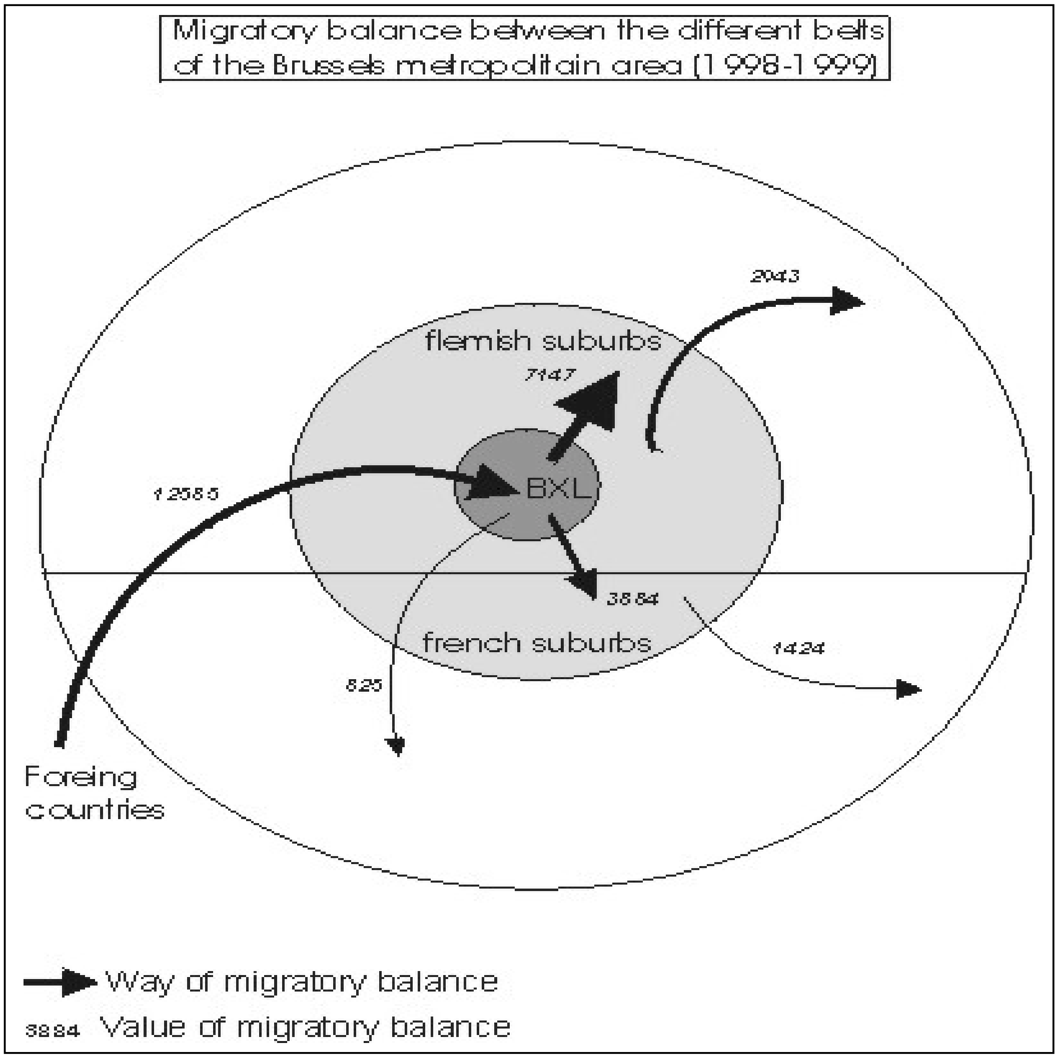
4.2.4 Depopulation in Town Centers and Urban Sprawl: The Case of Brussels

The figure synthesises the main migratory balance between the different Brussels rings, and between these rings and the rest of Belgium and also with the foreigner countries, for the years 1998-99. It can be summarized as follow:

1. Brussels as a metropolitan region has received a positive balance with outer countries as it has been the case in the all after-war period, especially in benefit of the Region Bruxelles-Capitale (in 1999, this positive balance was 6,7 for thousand inhabitants). Most of the positive balance is due to immigration from outside the European Union, so the impact of the status of European capital should not be overruled as far as the migrations are concerned.
2. The Brussels metropolitan area has a negative balance with the rest of Belgium in the late nineties. Most of this balance is due to the outskirts, because it is too tight and people migrate to the neighbouring areas just outside the outskirt but inside functional periphery.
3. The balance is quite negative between central town and suburbs. This process can be described as "peri-urbanisation". This process can be explained by global socio-economic evolution and by individual motivation. The post-war economic growth was largely based on mass consumption. It has been accompanied by the generalisation of the automobiles in the middle-class and the preference for individual housing in the outskirts, where the real estate prices are much lower, so middle class can buy it. The actors of peri-urbanisation are mostly households with children (positive balance for the periphery between 0-9 and 30-39), while young people, students or newly active, are attracted by Brussels.
4. Migration inside the administrative region is largely driven by neighbourhoods moving but is also influenced by urban renewal dynamics during the last 20 years. Those dynamics induced social structures shifts in the central part of the city rather than it significantly suppress migrations to the outskirts (the public authority's goal).

This migratory model is not specific to Brussels even if there are some differences between north-western metropolitan areas. Social and spatial planning implications are more specific in the Belgian capital. The administrative context of Brussels, limited to an area much less extensive than the metropolitan area, and explains some social, fiscal ands spatial planning issues.

Figure 4.7 Migratory balance between the different belts of the Brussels metropolitan areas (1998-1999)



The implications of peri-urbanisation are important, especially in social as well as fiscal terms. The Region views the middle class moving out and poor foreigner migrants moving into the administrative Brussels; as a consequence, the fiscal entries of the administrative entities are decreasing while the social needs are exploding. Brussels Region is often considered as one of the richest of European Union: it is true if we consider the richness produced in Brussels but a different picture evolves if looking at the wealth of its inhabitants. Indeed, most of the qualified jobs in the Brussels administrative regions are occupied by commuters and Brussels is the poorest area of Belgium in terms of earnings and has the highest unemployment level (more than 20% of active population).

So, the Region tries to keep the middle class population, especially with a politics of urban renewal. If this political path is not successful in retaining middle class households, it transforms the internal socio-spatial landscape of Brussels. Actually, in some restored districts like Saint-Gilles, young middle class people are now replacing low income households who lived there previously. Poor population is now concentrated more and more in other non-restored districts (e.g. Molenbeek).

4.3 Urbanised interaction zones: The Case of Vienna

Census data in Vienna proved it the point again: The city of Vienna does not end at the city boundary. The city spreads more and more into the surrounding countryside. The administrative area of Vienna does not coincide with the functional unit. Vienna ends not at the city boundary, but in reality forty or fifty miles outside.

The spread of the city into the surrounding countryside is generally called as suburbanisation. It is carried by the desire of many households to live in their own home located in a healthy, "green" and secure environment. Due to the financial restrictions most households have to leave the city if they want to realize their ideal living sphere and have to settle down at those places far away from the city where lot prices are low. With the enforcement of the automobile as the dominant means of transportation the households are not constrained to live nearby their work places. Working in the city and living far outside became compatible with reality. In 1971 approximately 20% of the population of the Vienna region lived in the surrounding countryside and 80% in the city. By 2001 this share changed to 30% in the urban fringe and 70% in the core of Vienna and projections show future changes to 40% to 60% in 2031.

Following suburbanisation of the resident population the retail, service sector and industry sectors shifted into the urban fringe. Shopping centres are established outside the city, industries prefer to relocate their production sites and facilities for the leisure society (entertainment parks, golf courts etc) in the open space at the urban outskirts. With the relocation of enterprises into the urban fringe the population receives an additional motivation to move into the suburbs and to leave the city centre. The process of suburbanisation is still going on and in contrary to the predictions, development towards re-urbanisation remains in quantitative terms of no importance.

Table 4.10 Population development of the city of Vienna and of the agglomeration

	Population		Change
	2001	in %	1961–2001 (%)
City region	2,163.703	100,0	3,6
Vienna	1,550.123	71,6	-4,8
Inner suburban fringe	275.164	12,7	42,3
Outer suburban fringe	338.416	15,6	26,7

Source: Census of the Statistic Austria; own calculation

Is suburbanisation problematic? Due to several reasons this question has to be affirmatively answered. Suburbanisation leads generally to a loss of a compact city shape. Instead becoming a diffuse settlement with a lower density and a mixture of urban and rural landscapes. The increasing diameter of the city displaces the bicycle or public transport. The car becomes the necessary and alternative means of transport. Groups unable to afford a car are excluded socially. Suburbanisation leads to a loss of population, tax payers and purchasing power. Additionally given the limited persons able to move to the urban fringe and buy a house and garden, a social selection is connected with the migration of population. Qualified and higher income brackets are living in the south of Vienna whereas the poorer, the older and the foreign population remain in the core of the city. Suburbanisation is connected with large scale social segregation, destroying something typical for European metropolitan areas: a social mix in residential areas and a certain degree of solidarity between social classes.

5 Policy implications and recommendations

It is important the keep in mind that with regard to demographic development it is easier to see the policy implications than to make policy recommendations. Demographic processes are not analogous with other social and economic processes that more easily can be handled by political and economic means. Especially with regard to migratory movements and international migration, rules and regulations can have an immediate effect on the future demographic development.

In the work of summarising the policy implications and policy recommendations, the point of departure has been the matrix below (table 5.1). The matrix covers the three different levels (micro, meso and macro) and the three major aims of the ESPON project (sustainable development, competitiveness, and territorial and social cohesion).

Table 5.1 Matrix for policy implications and policy recommendations

Levels Objectives	Micro or regional	Meso or national	Macro or EU
Sustainable development			
Competitiveness			
Territorial and social cohesion			

The points of departure for the policy implications are the objectives of ESDP and ESPON with regard to sustainable and balanced spatial development, competitiveness and territorial and social cohesion. Policentricity is here both a way to reach these aims and an objective of its own. Polycentricity stimulates and supports a sustainable and balanced spatial development, increases the competitiveness on different levels in different ways and reinforces the territorial cohesion. These aims are discussed from mirco, meso and macro points of view. This also means that there can be some goal conflicts as it is not necessary that recommendations that have some impact on the micro level have the same effect on a higher level.

One of the central aspects of demographic changes is that it has consequences on regional and spatial development that are central for sustainability, competitiveness, cohesion and polycentricity. Regions characterised by depopulation are often associated with stagnation and retardation, while regions that experience a positive population development are regarded as expansive and dynamic. In this way, demographic development with population redistribution as a consequence of natural population decrease and low TFRs, ageing and out-migration accentuates the polarisation process between various regions and undermine territorial cohesion.

5.1 Natural population decline and policy recommendations – mission impossible?

With regard to natural population development it is difficult to give any general recommendations. If wars, famines and other catastrophes are excluded, death rates will probably not be changed in a way that has impact on natural population development in the long-term even if life expectancy increases. Instead it is the total fertility rate that is the crucial and central variable here, but the effects of changed TFRs are of long-term character. This reduces the potentials for direct means in order to affect development, at least in short term.

Different parts of Europe have also differing attitudes to family policy and welfare state interventions in the private space and with regard to female labour force participation (see e.g. Vogel 2003). The consequence of this reasoning is that it is easier to get a hint of the implications of the demographic development than to make any policy recommendations that will have any immediate effects.

The primary policy implications with regard to the ESDP/ESPON intentions are that demographic processes often hamper the development towards a polycentric development in Europe and reinforce the monocentric tendencies at the macro level. From an ESDP/ESPON point of view a polycentric and balanced development is desirable but the population redistribution will result in a regional polarisation instead of a balanced and sustainable development. With regard to territorial and social cohesion this is not a recommendable development path as territorial cohesion is undermined both as a consequence of low TFRs and asymmetrical migratory movements. This is valid on micro-level as well as meso and macro. The same is valid with regard to competitiveness – lagging regions are hampering factors with regard to economic growth at least at meso- and macro-level. At micro-level a lagging region is a lagging region and here it is important to find ways out of this situation.

This means that both the EU regional development policy as well as national policies must prioritise an economic and social policy (family policy) in order to stimulate a rise in TFR. This will be of utmost importance even in order to stimulate the preconditions for endogenous growth that probably will stimulate competitiveness at all levels. From a cohesion point of view this is of great importance if the risk for future concentration and social exclusion shall be avoided. As much of the social policy – including family policy - still is of national character, it is of utmost importance to coordinate these means within the EU in order to increase TFR and stimulate natural population development. This means also that politicians and policy makers must be aware of the effects of “demographic cycles” and their impact on regional and spatial development and see these processes in a long wave perspective in order to separate short and long term effects.

5.2 Symmetrical migratory movements and territorial cohesion

Different levels in income and education are strong push and pull factors with respect to migratory movements. This is well-known facts, both theoretically and empirically. With regard to young people the urban lifestyle and education possibilities in the metropolitan and university areas are also pull-factors of great importance. The metropolitan regions are also in-migration areas with regard to foreigners and immigrants. Here there are a lot of signs of ghetto living and segregation that also results in social conflicts and problems.

By reducing the regional and national differences regarding income and education, more balanced migratory movements will take place, promoting a more symmetrical economic development in the EU29-area. Furthermore, reducing regional and national differences in income and education will be effective means to promote a polycentric development and even stimulate symmetrical migration flows even within different age groups and social categories. Regional enlargement with larger local labour markets and functional urban areas will also stimulate a polycentric development where infrastructure and accessibility will be even more important and a precondition for and a "driving force" in this development.

Regarding migration, to achieve a sustainable development at a micro-perspective it is important to limit urban sprawl because of its environmental cost. At a macro-perspective it is important to limit east-west migrations: out-migration of qualified workforce can impose negative consequences on regional development. Regarding the issue on competitiveness, the qualified and skilled population and work force should be spread evenly over the EU29 area, and not be kept inside metropolitan areas. To achieve the political aim of competitiveness it is essential for the economic development that as many regions as possible are competitive, not only in a meso- and macro-perspective, but also in a global perspective. The territorial and social cohesion must be promoted, and in a micro-perspective we find it important that the young population in rural isolated areas has possibilities to stay there, which implies job opportunities and spatial financial transfers to these regions. At the same time we are very well aware of the crude fact that in these areas few options are available regarding higher education and good jobs. If this vicious circle should be broken it is necessary to create higher education possibilities and good jobs also in the peripheral Europe. In a macro-perspective a massive east-west migration would counteract against the intentions of creating territorial as well as social cohesion within the EU29 area.

To close the gap in living standard and income levels is thus of utmost importance in creating a polycentric development and then a more balanced development that stimulates the territorial cohesion both on meso- and macro level. The gap between the new EU-members and the old ones are much more pronounced than the gap within the various countries. Temporary rules and regulations are perhaps in some cases necessary in order to hamper a large drain from east to west in short term – the fear of mass migration are probably overvalued - but this is not a solution in long term. Instead a policy that supports symmetrical migratory movements should be of great importance and prioritised on the political and social agenda. This will also stimulate polycentricity and territorial cohesion.

5.3 Depopulation – an irreversible process?

Depopulation is often a function of low fertility rates, natural population decrease and net out-migration. For many depopulation regions this results in vicious circles that erode the preconditions for endogenous growth and development. From a policy point of view this is problematic as many of these regions have for long time been out-migration regions and the policy means have not been succeeded to change this negative spiral. These development paths, however, are undesirable from a cohesion point of view even if there can be conflicts with regard to the growth perspective, especially then in short term. This dilemma is of great importance with regard to the EU cohesion policy. The concept of territorial cohesion is a central ingredient in ESDP/ESPON and a policy that reduces the eventual goal conflict between growth and territorial cohesion and where lagging as well as depopulation regions are stimulated – but not at the cost of economic growth and competitiveness – must be discussed explicitly among politicians and policy-makers and not be a topic only for "regional economists". Otherwise, the depopulation of many areas will continue and if this will be the case, the welfare state must intervene in the sense that it will be a "civilised depopulation".

When it comes to sustainable development in a micro perspective, in (smaller) remote and sparsely populated areas the preservation of cultural landscapes and other components of cultural heritage may be threatened by the thinning out of population, possible total depopulation, and even by decline and structural change in the primary sector. A multifunctional perspective on primary sector policies combined with infrastructural and service related policies may seem appropriate to maintain a critical mass of population in these types of communities. In a meso perspective, a sustainable use of resources and the avoidance of excessive environmental/ecological pressure in certain central/expanding regions may depend on the success of policies to reverse negative population trends/depopulation in especially the larger sparsely populated areas of Europe. This will probably have to involve policies to establish a functional system of sufficiently large and accessible urban settlements (towns/cities) throughout these regions - capable of forming larger integrated regions and attracting migrants/maintaining strategic population groups. In a macro perspective the effects of EU agricultural and rural policies should emphasise the multifunctional perspective on these sectors in an integrated way – especially with regard to environmental concerns and the preservation of the cultural heritage related to depopulation areas of the often wide, remote and sparsely populated parts of Europe.

Competitiveness in a micro perspective regarding depopulation implies structural changes of regional populations, decline/slower growth in regional labour supplies, and a potentially less dynamic labour force. It is a political challenge to develop measures in order to enhance the process of adaptation/matching of regional labour supply and demand given the reality of a numerically and structurally changing labour supply. Local and regional service provision should target strategic population segments according to reproduction and the labour force to attract migrants and hamper out-migration in a micro perspective.

In a meso and macro perspective, uneven regional population development - with depopulation in remote, sparsely populated areas - is related to uneven socioeconomic development and calls for political measures to create more equal competitive conditions (infrastructure, education, industrial mix, service provision for strategic population segments etc). Furthermore, policies of education and learning should be made less age- and life-stage dependent and encourage more dynamic and adaptive life-courses of persons in accordance with increased longevity and changing individual organisation of life-spans. Structural policies should emphasise stronger the typical depopulation areas and differentiated by specific characteristics/types of depopulation processes and types of regions (rural/remote, urban, industrial centres).

Social and territorial cohesion in a micro perspective require other measures: To maintain adequate service provision and quality of life in different types of depopulation regions/communities, policies have to take into account the differentiated and changing population structures of these areas, and target different groups in flexible and dynamic ways. Developing and trying out of new and more integrated/flexible models of service provision may be necessary to utilize resources more efficiently, compensate for limited markets and enable more dynamic adaptation to demographic change. Furthermore, depopulation areas pose challenges in coping with the needs and behavioural requirements of ageing populations and relatively large segments of old people. This is especially the case in remote, peripheral areas. In a meso perspective policies aimed at enhancing territorial accessibility, regional enlargement around small and medium sized urban settlements (towns, cities), promote parity of infrastructure and education etc., will also benefit territorial and social cohesion and in the long run probably counteract/neutralize the effects of depopulation in certain areas. The policy recommendations for the macro perspective regarding social and territorial cohesion are the same as for competitiveness - political measures to create more equal competitive conditions (infrastructure, education, industrial mix, service provision for strategic population segments, etc).

5.4 The need for replacement migration?

The need for replacement migration has more and more been discussed as a solution of the "population crisis" and a way to get rid of a future labour shortage or at least hamper the effects of it. An increased immigration would certainly have an immediate impact on the working-age population. However, in the long-term, migration is not a solution to the population ageing, because immigrants themselves age and need to be replaced. Furthermore, although the fertility rates of immigrant women are higher compared to native women, the fertility level tends to converge in the long term. There also are indications that immigrant women are going to be disabled and retired earlier than the native women as a consequence of harder and dirtier jobs.

The European immigration need is more urgent in the 10 new EU-members and the two Candidate Countries (EU12) than in the "old" 15 member states. The EU12 do, however, have large possibilities of improving the labour productivity and labour force participation rates – as many of the EU15 –countries also have – that will lower the need of immigration.

In general, an increased competitiveness is related to an increased productivity. In a micro perspective competitiveness can be achieved through policies promoting regional specialisation, and in a meso perspective policies should focus on promoting the overall productivity and to promote the competitiveness in the EU29 area. At a macro level immigration policies should aim at the selection of the immigrants with the skills and competence needed within the countries of the EU29 area; in some cases immigrants with high skills and education are needed, in other cases other categories of immigrants are needed. An immigration policy based on a simple head count will neither promote productivity nor competitiveness.

The analysis in this study shows that depopulation, direct as well as indirect depopulation are of great importance especially in the periphery of the countries in the EU29 area. To promote social and territorial cohesion, immigration policies must aim to promote immigration to peripheral regions, which are regions that most extra-European immigrants find unattractive. Policies, in a micro perspective, to promote social and territorial cohesion should aim at attracting the persons and competences they need. It can be immigrants or natives. The important is that policies aim at spreading the population evenly in the EU29 area. Promoting social and territorial cohesion in a meso perspective can be done through policies aiming at making peripheral, and depopulating, areas more attractive. If these areas become more attractive out-migration of young people will be hampered and return-migration of higher educated people stimulated. Persons who have been unemployed on a long term basis can be given job opportunities in peripheral areas through labour market schemes. This will increase the number of persons in the labour force and decrease the social welfare spending. It may also promote regional specialisation and competitiveness. In a meso and macro perspective, "Green Cards" could be issued to a specific geographical area. If an immigrant is unwilling to settle down in unattractive areas, e.g. north of the Artic Circle, the Romanian countryside or a Spanish mountain village, no "Green Card" will be permitted.

Policy recommendations regarding sustainable development and immigration are closely related to the issues of social and territorial cohesion. The political goal of sustainable development will not be achieved if immigrants are free to settle down wherever they want in the EU29 area; most extra-European immigrants are headed for the 'heptagon' or areas close to the 'heptagon'. The depopulation process in the periphery will continue without abruption, and the population pressure in the heptagon and major metropolitan areas will become absurd. Important functions, such as e.g. infrastructure, will be challenged: in the peripheral Europe by depopulation and insufficient maintenance, and in the densely populated areas by such large population volumes that the infrastructure will not be able to handle. The environmental pollution in the heptagon and metropolitan areas will be even more difficult to handle than today, and in the periphery an insufficient number of persons is unable to maintain a good environmental standard. A free immigration, with no settlement restrictions, will counteract on the goal to achieve a sustainable development. To achieve a sustainable development, in a broad sense, policies must aim at making the periphery more attractive; either through job possibilities and educational possibilities, or through attracting companies to stay or start up new plants there.

Governments and policy-makers can respond to demographic change and to potential labour shortage with a variety of policies and instruments, depending on the specificities of each particular country or region. Five broad categories of interventions are available:

1. Encouraging higher workforce participation through retraining unemployed, discouraging early retirement, increase female labour force participation, by making it easier for women to combine work with childcare;
2. Postponing retirement ages, a process facilitated by longer active lives;
3. Improve labour productivity levels, by increasing investment in tangible as well as intangible capital, promoting innovations both in technology and organisation capacity;
4. Immigration policies;
5. Encouraging increase in fertility

It is also important to distinguish between short-term from long-term policy responses to a labour shortage. Immigration can only offer a short-term solution to the consequences of ageing. Long-term solutions, such as higher labour force participation rates or a higher retirement age, increased TFRs and higher the labour productivity are necessary to deal with concerning the consequences of ageing.

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

ESPON project 1.1.4

ANNEX A
Data, Indicators, Maps and Case Studies

Co-financed by the European Community through the Interreg III ESPON Programme

ESPON project 1.1.4

ANNEX A

Data, Indicators, Maps and Case Studies

This report represents the final results of a research project conducted within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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This report does not necessarily reflect the opinion of the members of the Monitoring Committee.

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Population and Area

The data for population and area in the NewCronos REGIO-database contain information about the population by sex and age on 1 January each year. For the old 15 member countries the NewCronos REGIO-database claims to have data at NUTS2-level for the period 1980-2001, and for the candidate countries (all except Cyprus and Malta) the NewCronos REGIO-database claims to have data at NUTS2- and NUTS3-level for the period 1990-2001. In reality there is a lot of missing data for different entities and years for the old member countries as well as for the candidate countries. Complementary data from other sources are needed to create an appropriate set of data for all EU29 countries at the NUTS3-level.

The missing data for different age-groups result in difficulties to calculate *the share of the population over the age of 80*. We find it troublesome that the REGIO-database as well as most of the national statistics offices in the new member countries only publish an age-group of 70+ years: it is impossible for us to calculate the share of the total population that is over the age of 80 due to this.

The collected data enables us to calculate indicators such as the *share of children* (0-14 years/total population), *ageing population* (65+ years/total population), *ageing labour force* (55-64 years/20-64 years), *labour force replacement ratio* (10-19 years/55-64 years), *post-active dependency ratio* (65+ years/20-64 years), *dependency ratio* (total population/20-64 years), and *aged vs. youth* (65+ years/15-24 years) at the NUTS2 level. It is also possible to calculate the *active population* (15-64 years old) at NUTS3-level.

The *population density* at the NUTS3 level is available for the EU15 countries from 1980 to 2001. However, some entities are missing in the UK before 1993, and some entities are missing in Germany for areas in the former DDR for the period before 1991. For the new member countries this data is available from 1990 to 2001: Data for Hungary, Latvia, Romania and Slovenia cover the period 1990-2001, Lithuania 1991-2001, Czech Republic 1993-2001, and, finally, Bulgaria, Estonia, Poland and Slovakia 1995-2001. No data for Cyprus, Malta, Norway and Switzerland.

Population Change

The data for population change contain information on births, deaths, and deaths by age. For the old member countries the NewCronos REGIO-database claims to have data at NUTS2- and NUTS3-level for the period 1977-2000, and for the 12 new member countries at NUTS2- and NUTS3-level for the period 1989-2000. In reality there is a lot of missing data for different entities and years. Complementary data from other sources are needed to create an appropriate set of data.

Calculations for the *natural population change* (births and deaths) have been made at NUTS3-level 1990, 1995 and 1999 for most countries in the EU29 area. Missing data exist for entities and years on births and deaths are shown in the tables of missing data below.

Calculations for the *total population change* have been made at NUTS3-level 1990, 1995 and 1999 for most countries in the EU29 area. Missing data exists for entities and years for the total population change are shown in the tables of missing data below.

A structural indicator as the *changes in natural growth potential* (20-29 years old in 2020 [born 1991-2000]/ 20-29 years old in 2000 [born 1971-1980]) at the NUTS2-level is possible to calculate, but not on the NUTS3-level.

In the case of *total fertility rate* (TFR) there is no data at all on the TFR in the NewCronos REGIO-database. Some national statistics offices have calculated the TFR at NUTS2- and NUTS3-levels, others have not. For most of the old member countries, data on the number of births by the age of the mother at NUTS2 and NUTS3 is available in the NewCronos REGIO-database, as well as the number of females by age at NUTS2 and NUTS3. This enables us to calculate the TFR for these countries. Only a few of the national statistics offices in the new member countries have calculated TFR at NUTS2- or NUTS3-levels. For many of the new member countries (except Cyprus and Malta) relevant data from the national statistics offices is missing to enable us to calculate the TFR. Data on TFR at the national level only is available for Estonia, Latvia, Lithuania, Slovakia and Slovenia. The national statistics office of Bulgaria is unwilling to make data on the TFR at NUTS2 and NUTS3 levels available, unless we pay for it.[1] The data collected and still missing are shown in the tables of missing data below

Migration

The migration statistics are troublesome. The NewCronos REGIO-database contain information on internal migration for 11 old member countries (France, Greece, Ireland and Luxembourg excluded) and 7 new member countries (Bulgaria, Cyprus, Latvia, Lithuania and Malta excluded) at NUTS2-level by age and sex for the period 1990-1999. This data enables us to detect the internal migration flows between NUTS2-regions within a country. Beside the missing data for different entities and years, the NUTS2-scale is too large: we are convinced that large migration flows take place below the NUTS2-level, but, unfortunately, it is impossible for us to detect all of them.

The migration statistics on international migration contain data for 13 old EU member countries (France and Luxembourg excluded) and 7 new member countries (Bulgaria, Cyprus, Latvia, Malta and Poland) at NUTS2-level by age and sex for the period 1990-2000. Beside missing data for different entities and years, this data do not contain any information from which NUTS2-region of another EU29 country an immigrant comes from or if it is immigrant from outside the EU29 area. The same problem is present for emigrants: we know how many people at NUTS2-level who emigrated during the year, but not the place of destination. This is a restriction especially in estimating changed flows and then also with regard to analyses of the convergence/divergence processes within EU29.[2]

Without any data on the place of origin and the place of destination it is very difficult to distinguish an intra-EU29 migrant from an extra-EU29 migrant, and if the migratory movements are caused by labour migration between the countries of EU29 area or by refugees and return migration by refugees. Without information on the place of origin and the place of destination it will be impossible to analyse the international migration flows. At present we investigate the possibilities of doing case-studies: if we can find a few NUTS2 areas where data on the place of origin and the place of destination is available we can calculate the intra-EU29 migratory movements for these regions.

Without the net migration rate for all entities and years it is difficult to calculate the total population change. However, there is a way to estimate the net migration. The methodology used to make an assessment of the migration balances at the regional level (NUTS2 and/or

[1] Since we have had no resources in our budget to buy data, data on the TFR in Bulgaria is still not available.
[2] This is a problem that also has been discussed with the members in the “enlargement project”, ESPON action 1.1.3.

NUTS3) is the natural movement method. The principle is simple: one calculates the difference between, on the one hand, population at the end and at the beginning of a period, and the natural population development (births minus deaths) during that very period, on the other hand. This method provides us with the *net migration rate* on NUTS2 and NUTS3-levels, and this method is relatively safe as the statistics on these three indicators are reliable. The net migration rate during 1960, 1980 and 1996-1999 has been calculated for all NUTS2 or NUTS3-regions in the EU29 area (depending on the availability on data on births and deaths).

Socio-economic indicators

Some socio-economic indicators have been used in this project. The indicators for *GDP/capita* and *annual economic growth* contain information at the NUTS3 level for the period 1981-2001 for the 15 old member countries and Norway.[3] For the new member countries the data is more meagre, but exist, in general from 1995/1999 to 2001 for most countries.[4] No data for Switzerland so far.

Data for *unemployment* at the NUTS2 and NUTS3 levels for the period 1998-2001 has been collected. Data for Portugal and Greece is missing and data for Switzerland is missing at NUTS2 and NUTS3 levels.

Data for the absolute number of *employed persons* at NUTS2 and NUTS3 has been collected for the old 15 countries and Norway, data starting in the 1980's to 2001.[5] The data for the new member countries cover the period 1999-2001 at the national level and at NUTS2 level.[6] No data for Malta and Switzerland. Using the population data (see the section on Population and Area above) it is also possible to calculate the relative number of employed persons at the NUTS2 and NUTS3 levels.

List of data

The demographic data used in this study is listed in the tables below. The availability of data, in regard to missing years and entities, is indicated. Regarding on what NUTS-level data is available at is also indicated.

The data is collected from *the NewRegio database*, the national statistics offices, the BBR, *the UN Population Division Population database*, and *the OECD Territorial Database*.

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[3] Data for Belgium and Spain cover the period 1981-2001, France 1982-2001, United Kingdom 1983-2001, Italy and Sweden 1985-2001, the Netherlands 1988-2001, Denmark, Austria, Finland and Portugal 1989-2001, Luxembourg 1990-2001, and Germany, Greece, Ireland and Norway 1992-2001.

[4] Data for Bulgaria, Cyprus, Hungary, Latvia, Lithuania, Slovenia and Slovakia cover the period 1995 to 2001, for Estonia 1996-2001, and for Czech Republic, Malta, Poland, and Romania 1999-2001.

[5] Data for Belgium, Spain and Luxembourg cover the period 1980-2001, France 1981-2001, the United Kingdom 1982-2001, Italy and Sweden 1985-2001, the Netherlands 1987-2001, Denmark, Austria, Portugal and Finland 1988-2001, and Germany, Greece, Ireland and Norway 1991-2001.

[6] Data for Slovakia, Romania, Poland, Hungary and Czech Republic exist at NUTS2 level 1999-2001, data for Bulgaria exists at NUTS2 level 2000-2001, and data for Slovenia, Estonia, Latvia, Lithuania and Cyprus exist at the national level 1999-2001.

Table A3.1 Data for TFR 1960-1999

Country	**NUTS-level***	**Time**	**Remarks**
BE	2 3	1960 1980, 1990, 1995, 1999	
DK	0 3	1960 1980, 1990, 1995, 1999	
DE	2	1960, 1980, 1990, 1995, 1999	
GR	0 3	1960 1980, 1990, 1995, 1999	
ES	2 1	1960, 1980, 1990, 1995, 1995	
FR	3 2	1960, 1980 1990, 1995, 1995	
IE	3 2	1960, 1980 1999	No data for 1990 and 1995
IT	3 2	1960, 1980 1990, 1995, 1995	
LU	3	1960, 1980, 1990, 1995, 1999	
NL	2	1960, 1980, 1990, 1995, 1995	
AT	2	1960, 1980, 1990, 1995, 1999	
PT	0 2	1960, 1980 1990, 1995, 1995	
FI	0 2	1980 1960, 1990, 1995, 1999	
SE	3	1960, 1980, 1990, 1995, 1999	
UK	1 2 3	1960 1990, 1995, 1999 1980	Data for ukm1, ukm2, ukm3 and ukm4 are missing for 1990
BG	0	1990, 1995, 1999	No data for 1960 and 1980
CY	0	1990, 1995, 1999	No data for 1960 and 1980
CZ	0 2	1990, 1995, 1999 1960, 1980	
EE	0	1960, 1980, 1990, 1995, 1999	
HU	2 3	1990, 1995, 1999 1960, 1980	
LT	0	1960, 1980, 1990, 1995, 1999	
LV	0	1960, 1980, 1990, 1995, 1999	
MT	0	1990, 1995, 1999	No data for 1960 and 1980
PL	2 3	1960, 1990, 1995, 1999 1980	
RO	0 1 3	1960 1990, 1995, 1999 1980	
SL	0	1960, 1980, 1990, 1995, 1999	
SK	0 2	1990, 1995, 1999 1960, 1980	
NO	3	1960, 1980, 1990, 1995, 1999	
CH	2 3	1990, 1995, 1999 1960, 1980	

* or similar division

Table A3.2 Data for net migration 1960-1999

Country	**NUTS-level***	**Time**	**Remarks**
BE	2 3	1990, 1995, 1999 1960, 1980	
DK	3	1980, 1990, 1995, 1999	Data at NUTS 0 for 1960
DE	2	1960, 1980, 1990, 1995, 1999	Data missing for ded1-ded3 1990 and 1995, dee1-dee3 1990
GR	2	1980, 1990, 1995, 1999	Data at NUTS 0 for 1960
ES	2 3	1960, 1980 1990, 1995, 1999	
FR	3		
IE	3	1960, 1980, 1990, 1995, 1999	Data missing for ie012, ie021-ie022 1995, and ie011-ie013 and ie021-ie022 1990.
IT	2	1960, 1980, 1990, 1995, 1999	
LU	0	1960, 1980, 1990, 1995, 1999	
NL	2	1960, 1980, 1990, 1995, 1999	
AT	2	1960, 1980, 1990, 1995, 1999	
PT	2	1990, 1995, 1999	Data at NUTS 0 1960 and 1980
FI	2	1960, 1990, 1995, 1999	Data at NUTS 0 1980
SE	2 3	1990, 1995, 1999 1960, 1980	
UK	1 2 3	1960 1990, 1995 1980, 1999	Data missing for uki1-uki2, ukk3-ukk4 1990 and 1995. Data at NUTS 1 for ukl, ukm and ukn 1990 and 1995.
BG	3	1995, 1999	No data 1960, 1980, 1990
CY	0	1995, 1999	No data 1960, 1980, 1990
CZ	2	1960, 1980, 1995, 1999	Data at NUTS 0 1990
EE	3	1990, 1995, 1999	Data at NUTS 0 1960 and 1980. Data missing for ee006-ee008 1990.
HU	2	1960, 1980, 1990, 1995, 1999	
LT	3	1990, 1995, 1999	Data at NUTS 0 1960, 1980.
LV	3	1990, 1995, 1999	Data at NUTS 0 1960, 1980
MT	0	1990, 1995, 1999	No data 1960, 1980
PL	2 3	1960 1980, 1990, 1995, 1999	
RO	2 3	1980, 1990, 1995, 1999	Data at NUTS 0 1960.
SL	3	1990, 1995, 1999	Data at NUTS 0 1960, 1980
SK	2 3	1960, 1980 1990, 1995, 1999	
NO	3	1960, 1980, 1990, 1995, 1999	
CH	3	1960, 1980, 1990, 1995, 2000	

* or similar division

Table A3.3 Data for 5 year-age groups 1990-1999

Country	**NUTS-level**	**Time**	**Age group 65+, 80+ available**	**Remarks**
BE	2	1995, 1999	both	No data 1990
DK	3	1990, 1995, 1999	both	
DE	2	1995, 1999	both	Data missing for ded1-ded3 1995 No data 1990
GE	2	1995, 1999	both	
ES	2	1995, 1999	both	
FR	2	1995	both	Data missing for fr9 1995. No data 1990, 1999
IE	2	1995, 2000	both	No data 1990
IT	2	1995, 1999	both	No data 1990
LU	0	1995, 1999	both	No data 1990
NL	2	1995, 1999	both	No data 1990
AT	2	1995, 1999	both	No data 1990
PT	2	1995, 1999	both	No data 1990
FI	2	1990, 1995, 1999	both	
SE	3	1990, 1995, 1999	both	
UK	2	1995, 1999	both	No data 1990
BG	3	1995, 1999	only 65+	No data 1990
CY				No data
CZ	3	1990, 1995, 1999	only 65+	Data missing for cz031-cz032, cz041-cz042, cz051-cz053, cz061-cz062, cz071-cz072 and cz08 in 1990
EE	3	1990, 1995, 1999	only 65+	
HU	2 3	1990, 1995 1999	only 65+	
LT	3	1995, 1999	only 65+	No data 1990
LV	3	1995, 1999	only 65+	Data at NUTS 0 1990
MT				No data
PL	2	1990, 1995, 1999	only 65+	
RO	2 3 3	1990, 1995 1999 2000	for 65+ for 65+ for 80+	
SL	3	1990, 1995, 1999	only 65+	
SK	3	1999	only 65+	Data at NUTS 0 1990, 1995
NO	3	1990, 1995, 1999	both	
CH	3	1990, 1995, 1999	both	No data 1990

Table A3.4 Data for total population 1990-1999

Country	NUTS-level	Time	Remarks
BE	3	1990, 1995, 1999	
DK	3	1990, 1995, 1999	
DE	3	1990, 1995, 1999	Data missing for de301, de302, ded12-ded13, ded15-ded16, ded18-ded1c, ded23-ded26, ded28-ded2b, ded32, ded34-ded36, dee12-dee14, dee16, dee22-dee25, dee27, dee32-dee33, dee35-dee3b, deg0n-deg0p in 1990. Data missing for deg0n-deg0p in 1995.
GR	3	1990, 1995, 1999	
ES	3	1990, 1995, 1999	
FR	3	1990, 1995, 1999	
IE	3	1990, 1995, 1999	
IT	3	1990, 1995, 1999	Data missing for it112-it115, it202-it203, it205, it209, it408-it409, it514-it515, it932-it934 in 1990.
LU	0	1990, 1995, 1999	
NL	3	1990, 1995, 1999	
AT	3	1990, 1995, 1999	
PT	3	1990, 1995, 1999	
FI	3	1990, 1995, 1999	
SE	3	1990, 1995, 1999	
UK	2 3	1990 1995, 1999	Data for ukl at NUTS 1 1990. Data for uki1 and uki2 missing 1990.
BG	3	1995, 1999	No data for 1990
CY	0	1995, 1999	Data for 1992 is available.
CZ	3	1995, 1999	Data at NUTS 0 for 1990
EE	3	1990, 1995, 1999	
HU	3	1990, 1995, 1999	
LT	3	1995, 1999	No data 1990
LV	3	1990, 1995, 1999	
MT	3	1990, 1995, 1999	
PL	3	1990, 1995, 1999	
RO	3	1990, 1995, 1999	
SL	3	1990, 1995, 1999	
SK	3	1995, 1999	No data 1990
NO	3	1990, 1995, 1999	
CH	3	1990, 1995, 2000	

Table A3.5 Data for the number of births 1990-1999

Country	NUTS-level	Time	Remarks
BE	3	1990, 1995, 1999	
DK	3	1990, 1995, 1999	
DE	3	1990, 1995, 1999	Data missing for de301, de302, all areas within de4 and dee, ded12-ded13, ded16-ded16, ded10-ded1c, ded23-ded26, ded28-ded2b,ded32, deg0n-deg0p in 1990. Data missing for ded12, ded13, ded1c, ded23, ded25-ded26, ded28-ded2b, deg0n-deg0p in 1995
GR	3	1990, 1995, 1999	
ES	3	1990, 1995, 1999	
FR	3	1990, 1995, 1999	
IE	3	1990, 1995, 1999	Data missing for ie012, ie021-ie022 1995, and ie011-ie013 and ie021-ie022 1990.
IT	3	1990, 1995, 1999	
LU	3	1990, 1995, 1999	
NL	3	1990, 1995, 1999	
AT	3	1990, 1995, 1999	
PT	3	1990, 1995, 1999	
FI	3	1990, 1995, 1999	
SE	3	1990, 1995, 1999	
UK	2 3	1990, 1995 1999	Data at NUTS 1 for ukl, ukm, and ukn 1990 and 1995.
BG	3	1995, 1999	No data 1990
CY			No data
CZ	3	1995, 2000	Data at NUTS 0 1990
EE	3	1990, 1995, 2000	
HU	3	1990, 1995, 2000	
LT	3	1990, 1995, 2000	
LV	3	1990, 1995, 2000	
MT			No data
PL	3	1990, 1995, 2000	
RO	3	1990, 1995, 2000	
SL	3	1990, 1995, 2000	
SK	2 3	1995 2000	No data 1990.
NO	3	1990, 1995, 1999	
CH	3	1990, 1995, 2000	

Table A3.6 Data for the number of deaths 1990-1999

Country	NUTS-level	Time	Remarks
BE	3	1990, 1995, 1999	
DK	3	1990, 1995, 1999	
DE	3	1990, 1995, 1999	Data missing for de301, de302, all areas within de4 and dee, ded12-ded13, ded16-ded16, ded10-ded1c, ded23-ded26, ded28-ded2b,ded32, deg0n-deg0p in 1990. Data missing for ded12, ded13, ded1c, ded23, ded25-ded26, ded28-ded2b, deg0n-deg0p in 1995
GR	3	1990, 1995, 1999	
ES	3	1990, 1995, 1999	
FR	3	1990, 1995, 1999	
IE	3	1990, 1995, 1999	Data missing for ie012, ie021-ie022 1995, and ie011-ie013 and ie021-ie022 1990.
IT	3	1990, 1995, 1999	
LU	3	1990, 1995, 1999	
NL	3	1990, 1995, 1999	
AT	3	1990, 1995, 1999	
PT	3	1990, 1995, 1999	
FI	3	1990, 1995, 1999	
SE	3	1990, 1995, 1999	
UK	2 3	1990, 1995 1999	Data at NUTS 1 for ukl, ukm, and ukn 1990 and 1995
BG	3	1995, 2000	No data 1990
CY			No data
CZ	3	1995, 2000	Data at NUTS 0 1990
EE	3	1990, 1995, 2000	
HU	3	1990, 1995, 2000	
LT	3	1990, 1995, 2000	
LV	3	1990, 1995, 2000	
MT			No data
PL	3	1990, 1995, 2000	
RO	3	1990, 1995, 2000	
SL	3	1990, 1995, 2000	
SK	2 3	1995 2000	No data 1990
NO	3	1990, 1995, 1999	
CH	3	1990, 1995, 2000	

Table A3.7 Data for the number domestic immigrants 1990-1999

Country	**NUTS-level**	**Time**	**Remarks**
BE	2	1990, 1995, 1999	
DK	3	1990, 1995, 1999	
DE	1	1995, 1999	No data 1990
GR			No data
ES	2	1990, 1995, 1999	
FR	2	1995, 1999	
IE			No data
IT	2	1990, 1995, 1999	
LU			No data
NL	2	1990, 1995, 1999	
AT	2	1996, 1999	No data 1990
PT	2	1996, 1999	No data 1990
FI	2	1990, 1995, 1999	
SE	3	1990, 1995, 1999	
UK	1 2	1995 1999	No data 1990
BG			No data
CY			No data
CZ	2	1995, 1999	No data 1990
EE	3	1995, 1999	No data 1990
HU	2	1995, 1999	No data 1990
LT			No data
LV			No data
MT			No data
PL	2	1996, 1999	No data 1990
RO	2	1996, 2000	No data 1990
SL	3	2000	No data 1990, 1995
SK	2	1996, 2000	No data 1990
NO	3	1990, 1995, 1999	
CH	3	1990, 1995, 1999	

Table A3.8 Data for the number domestic emigrants 1990-1999

Country	**NUTS-level**	**Time**	**Remarks**
BE	2	1990, 1995, 1999	
DK	3	1990, 1995, 1999	
DE	1	1995, 1999	No data 1990
GR			No data
ES	2	1990, 1995, 1999	
FR	2	1995, 1999	No data 1990
IE			No data
IT	2	1990, 1995, 1999	
LU			No data
NL	2	1990, 1995, 1999	
AT	2	1996, 1999	No data 1990
PT	2	1996, 1999	No data 1990
FI	2	1990, 1995, 1999	
SE	3	1990, 1995, 1999	
UK	1 2	1995 1990	No data 1999
BG			No data
CY			No data
CZ	2	1995, 1999	No data 1990
EE	3	1995, 1999	No data 1990
HU	2	1995, 1999	No data 1990,
LT			No data
LV			No data
MT			No data
PL	2	1996, 1999	No data 1990
RO	2	1996, 2000	No data 1990
SL	3	2000	No data 1990, 1995
SK	2	1996, 2000	No data 1990
NO	3	1990, 1995, 1999	
CH	3	1990, 1995, 1999	

Table A3.9 Data for the number international immigrants 1990-1999

Country	**NUTS-level**	**Time**	**Remarks**
BE	2	1995, 1999	No data 1990
DK	3	1990, 1995, 1999	
DE	1	1995, 1999	No data 1990
GR	2	1990, 1995	No data 1999
ES	2	1990, 1995, 1999	
FR	2	1995, 1999	No data 1990
IE			No data
IT	2	1990, 1995, 1999	
LU			No data
NL	2	1990, 1995, 1999	
AT	2	1996, 1999	No data 1990
PT	2	1995, 1999	No data 1990
FI	2	1990, 1995, 1999	
SE	2	1990, 1995, 1999	
UK	1	1996, 1999	No data 1990
BG			No data
CY			No data
CZ	2	1995, 1999	No data 1990
EE	3	1995, 1999	No data 1990
HU	2	1995, 1999	No data 1990
LT	0 3	1996, 1999 2000	No data 1990, 1995
LV	0	1996, 1999	No data 1990
MT	0	1990, 1995, 1999	
PL	2	1996, 1999	No data 1990
RO	2	1996, 2000	No data 1990, 1995
SL	0	1996, 1999	No data 1990
SK	2	1996, 2000	No data 1990, 1995
NO	2	1990, 1995, 1999	
CH	3	1996, 1999	No data 1990

Table A3.10 Data for the number international emigrants 1990-1999

Country	**NUTS-level**	**Time**	**Remarks**
BE	2	1995, 1999	No data 1990
DK	3	1990, 1995, 1999	
DE	1	1995, 1999	No data 1990
GR			No data
ES	2	1990, 1995, 1999	
FR	2	1995, 1999	No data 1990
IE			No data
IT	2	1990, 1995, 1999	
LU			No data
NL	2	1990, 1995, 1999	
AT	2	1996, 1999	No data 1990
PT	2	1996, 1999	No data 1990
FI	2	1990, 1995, 1999	
SE	2	1990, 1995, 1999	
UK	1	1996, 1999	No data 1990
BG			No data
CY			No data
CZ	2	1995, 1999	No data 1990
EE	3	1995, 1999	No data 1990
HU	2	1995, 1999	No data 1990
LT	0 3	1996, 1999 2000	No data 1990, 1995
LV	0	1996, 1999	No data 1990
MT	0	1990, 1995, 1999	
PL	2	1996, 1999	No data 1990
RO	2	1996, 2000	No data 1990, 1995
SL	0	1996, 1999	No data 1990
SK	2	1996, 2000	No data 1990, 1995
NO	2	1990, 1995, 1999	
CH	3	1996, 1999	No data 1990

ANNEX A.4 Indicators

Table A4.1 Core indicators with regard to population, ageing and depopulation		Indexes (ratio/share E29 total = 100)						
NUTS 2	REGION NAME	Ageing Population 65+/Tot. Pop	Ageing "Labour Force" 55-64/20-64	"Labour Force" Replace-ment 10-19/55-64	Post-Active Dependency 65+/20-64	Aged People vs. Youth 65+/15-24	Share of children 0-14/Tot. pop	Changes in Natural Growth Potential: 20-29 years in 2020 (born 1991-2000)/20-29 years in 2000 (born 1971-1980)
NUTS2	Region	2000	2000	2000	2000	2000	2000	
AT11	BURGENLAND	116,0	103,2	90,6	116,5	125,1	88,5	93,1
AT12	NIEDEROESTERREICH	106,1	111,4	85,1	106,5	121,0	98,0	113,6
AT13	WIEN	100,9	105,1	69,8	95,3	128,5	87,2	97,5
AT21	KAERNTEN	104,0	101,9	96,5	104,5	111,5	98,6	108,8
AT22	STEIERMARK	105,8	103,1	90,9	105,1	115,0	94,5	100,8
AT31	OBEROESTERREICH	95,6	99,5	101,8	95,9	103,1	104,9	118,5
AT32	SALZBURG	86,9	97,4	99,6	85,0	90,7	104,2	110,3
AT33	TIROL	86,1	96,1	102,7	84,8	89,6	107,3	111,1
AT34	VORARLBERG	79,6	95,6	108,3	78,6	78,4	111,6	114,4
BE1	REG.BRUXELLES-CAP./BRUSSELS HFDST.GEW.	107,7	87,1	102,6	109,4	115,3	103,7	102,4
BE21	ANTWERPEN	108,5	100,9	94,0	110,1	120,9	100,1	117,2
BE22	LIMBURG (B)	88,8	95,3	102,4	86,8	88,4	101,2	108,2
BE23	OOST-VLAANDEREN	109,6	99,5	90,7	110,2	120,6	96,8	108,2
BE24	VLAAMS BRABANT	107,6	99,0	93,0	108,4	122,7	99,6	119,8
BE25	WEST-VLAANDEREN	116,0	106,8	91,1	119,8	126,5	99,1	114,7
BE31	BRABANT WALLON	94,5	93,3	116,0	97,1	98,8	114,4	134,4
BE32	HAINAUT	110,8	89,2	113,7	115,1	120,1	105,8	116,5
BE33	LIEGE	110,7	94,9	105,9	114,8	121,3	105,4	118,2
BE34	LUXEMBOURG (B)	103,7	87,4	131,7	110,8	106,7	118,7	130,7
BE35	NAMUR	104,7	89,2	119,9	109,3	109,4	110,8	123,2
BG01	SEVEROIZTOCHEN (NORTH-WEST)	136,7	117,2	87,8	145,3	144,7	89,1	93,0
BG02	SEVEREN TSENTRALEN (NORTH CENTRAL)	120,3	113,6	88,5	121,9	115,4	86,0	80,0
BG03	SEVEROZAPADEN (NORTH-EAST)	92,8	104,3	104,1	91,7	82,5	98,5	85,4
BG04	YUGOIZTOCHEN (NORTH-EAST)	99,8	98,2	99,1	96,4	88,4	86,7	68,5
BG05	YUZHEN TSENTRALEN (SOUTH CENTRAL)	99,0	104,0	107,3	98,9	87,3	95,6	83,2
BG06	YUGOZAPADEN (SOUTH-EAST)	96,7	103,9	110,7	97,8	84,9	101,2	91,0
CH01	REGION LEMANIQUE	96,0	98,6	88,6	94,4	110,1	103,1	117,1
CH02	ESPACE MITTELLAND	104,1	99,8	94,9	104,7	119,7	101,5	120,7
CH03	SUISSE DU	98,1	101,8	87,9	95,9	113,1	97,4	114,3

	NORD-EST							
CH04	ZUERICH	99,4	100,7	87,6	97,6	114,8	98,9	114,5
CH05	SUISSE ORIENTALE	94,6	95,6	111,5	96,5	104,4	111,8	133,6
CH06	SUISSE CENTRALE	87,3	91,6	112,5	87,4	93,0	112,1	126,9
CH07	TICINO	111,2	111,5	67,1	107,5	138,8	85,9	100,7
CY	KIBRIS	74,8	90,7	141,0	77,2	63,6	125,1	119,6
CZ01	PRAHA	104,9	100,0	86,1	100,0	97,4	80,8	68,1
CZ02	STREDNÍ CECHY	92,4	94,7	104,4	89,7	79,8	94,8	78,1
CZ03	JIHOZÁPAD	88,9	94,0	107,6	86,1	75,9	96,5	78,7
CZ04	SEVEROZÁPAD	77,2	90,4	112,5	73,7	64,0	100,7	79,2
CZ05	SEVEROVYCHOD	88,9	92,0	111,5	86,8	75,1	99,3	80,2
CZ06	JIHOVYCHOD	90,5	94,5	110,8	88,7	76,0	98,2	80,2
CZ07	STREDNI MORAVA	87,2	92,8	113,4	84,9	71,9	98,6	78,3
CZ08	OSTRAVSKY	78,4	94,4	111,2	75,4	66,5	102,7	83,0
DE11	STUTTGART	98,1	118,2	72,3	95,4	117,4	97,6	115,0
DE12	KARLSRUHE	102,8	115,6	70,7	99,5	126,3	92,7	110,9
DE13	FREIBURG	101,8	113,8	79,6	100,9	119,8	99,5	118,9
DE14	TUEBINGEN	95,2	111,3	85,1	94,4	108,7	104,6	122,2
DE21	OBERBAYERN	98,5	120,0	62,7	93,5	125,6	91,3	111,0
DE22	NIEDERBAYERN	102,0	107,8	85,9	101,4	116,5	99,7	116,1
DE23	OBERPFALZ	102,1	109,1	84,4	101,4	119,0	99,8	117,6
DE24	OBERFRANKEN	111,8	117,1	75,9	111,7	133,7	93,9	113,4
DE25	MITTELFRANKEN	105,0	118,1	70,5	102,4	130,4	93,0	113,7
DE26	UNTERFRANKEN	103,4	111,8	84,0	103,1	119,4	99,3	118,5
DE27	SCHWABEN	103,3	117,1	78,1	103,2	122,9	101,5	123,6
DE3	BERLIN	91,0	120,1	65,0	83,0	105,3	80,1	82,2
DE4	BRANDENBURG	95,4	128,7	85,7	91,1	94,4	82,0	78,6
DE5	BREMEN	115,9	126,5	58,3	111,8	146,3	81,4	96,3
DE6	HAMBURG	107,2	118,1	56,4	99,9	135,8	78,7	85,8
DE71	DARMSTADT	100,8	117,6	62,8	95,2	131,0	87,6	108,3
DE72	GIESSEN	104,2	109,8	80,7	102,5	119,1	95,5	107,7
DE73	KASSEL	114,5	120,9	73,4	114,9	140,0	93,4	115,2
DE8	MECKLENBURG VORPOMMERN	93,0	122,1	96,0	89,5	86,3	84,4	75,5
DE91	BRAUNSCHWEIG	113,8	124,1	66,7	112,3	140,8	90,0	109,2
DE92	HANNOVER	112,4	125,9	62,5	110,0	144,6	89,3	113,0
DE93	LUENEBURG	103,3	125,3	69,5	102,2	132,4	99,7	132,9
DE94	WESER-EMS	97,6	113,8	84,4	97,8	111,4	106,3	124,7
DEA1	DUESSELDORF	110,6	126,0	63,6	108,1	145,9	90,2	116,8
DEA2	KOELN	100,8	117,8	68,8	97,2	126,5	93,7	114,9
DEA3	MUENSTER	101,8	111,7	83,3	101,6	118,5	102,1	120,3
DEA4	DETMOLD	107,7	117,3	81,0	109,4	125,7	102,3	122,6
DEA5	ARNSBERG	109,8	121,5	71,4	108,8	134,6	93,9	115,4
DEB1	KOBLENZ	112,6	119,9	76,8	113,8	138,9	97,6	126,4
DEB2	TRIER	113,5	112,6	81,3	114,8	132,1	96,1	114,1
DEB3	RHEINHESSEN-PFALZ	105,8	116,5	73,0	103,6	132,0	93,5	116,8
DEC	SAARLAND	114,3	123,7	67,0	112,2	146,2	87,3	113,5
DED1	CHEMNITZ	122,8	135,2	73,9	121,3	131,0	73,7	73,8
DED2	DRESDEN	111,7	134,5	78,7	109,2	110,8	77,7	70,9
DED3	LEIPZIG	110,3	130,7	74,3	105,6	115,4	74,4	68,6
DEE1	DESSAU	109,9	136,2	76,5	106,4	114,4	76,4	74,0

DEE2	HALLE	110,7	131,9	77,9	107,3	114,7	76,3	72,1
DEE3	MAGDEBURG	105,7	129,5	82,4	102,6	110,0	80,5	79,0
DEF	SCHLESWIG-HOLSTEIN	105,1	130,1	61,8	102,2	136,1	93,5	119,4
DEG	THUERINGEN	104,4	126,4	83,9	100,6	104,2	78,4	72,4
DK	DANMARK	95,2	102,7	83,3	94,1	107,6	107,1	119,9
EE	EESTI	93,0	104,9	116,9	94,2	83,7	104,6	90,3
ES11	GALICIA	126,7	100,1	89,0	125,4	114,2	71,6	58,8
ES12	ASTURIAS	133,2	95,8	82,5	129,7	128,7	63,5	53,8
ES13	CANTABRIA	119,0	87,3	101,1	116,2	107,4	73,9	61,1
ES21	PAIS VASCO	110,2	96,4	78,8	103,2	105,9	70,4	60,3
ES22	NAVARRA	115,6	92,1	89,1	112,6	113,4	79,9	73,0
ES23	RIOJA	123,7	95,4	89,3	122,5	119,5	77,2	69,6
ES24	ARAGON	137,2	100,0	82,1	138,6	141,1	74,2	70,3
ES3	MADRID	98,6	92,8	92,8	94,0	89,9	84,9	72,0
ES41	CASTILLA-LEON	138,9	97,5	88,6	140,8	136,4	71,9	64,1
ES42	CASTILLA-LA MANCHA	123,3	91,4	112,5	129,1	114,3	93,9	84,7
ES43	EXTREMADURA	115,9	91,2	119,2	120,8	103,7	96,6	84,0
ES51	CATALUNA	112,0	95,9	86,9	108,8	106,2	81,1	72,1
ES52	COMUNIDAD VALENCIANA	103,0	91,2	103,2	100,7	90,3	87,6	72,8
ES53	BALEARES	98,2	87,3	106,9	96,4	91,5	95,2	85,0
ES61	ANDALUCIA	90,5	84,7	131,1	90,8	73,4	103,3	82,9
ES62	MURCIA	91,4	84,6	128,2	92,1	75,1	104,7	85,7
ES63	CEUTA Y MELILLA	78,1	79,7	149,6	80,7	65,2	124,2	111,1
ES7	CANARIAS	76,6	79,3	127,7	73,1	63,8	99,3	76,3
FI13	IT--SUOMI	109,1	106,8	102,3	113,2	114,7	102,4	136,9
FI14	VALI-SUOMI	105,1	101,2	112,0	110,4	103,1	109,2	131,5
FI15	POHJOIS-SUOMI	84,6	94,1	129,2	87,8	77,7	120,2	139,0
FI16	UUSIMAA (SUURALUE)	74,1	87,3	99,6	70,3	77,7	108,2	117,0
FI17	ETELA-SUOMI	105,4	103,8	92,6	106,5	112,9	100,4	123,8
FI2	AALAND	104,3	101,5	96,9	106,9	124,8	108,6	139,0
FR1	ILE DE FRANCE	77,4	79,3	127,7	76,3	76,3	115,3	110,9
FR21	CHAMPAGNE-ARDENNE	100,6	87,0	133,4	105,4	98,9	111,9	116,4
FR22	PICARDIE	91,1	82,7	146,9	95,6	90,2	120,1	127,9
FR23	HAUTE-NORMANDIE	93,3	84,9	142,9	98,0	91,0	117,9	124,8
FR24	CENTRE	114,2	93,9	117,1	121,3	122,9	107,1	121,7
FR25	BASSE-NORMANDIE	111,1	91,5	129,0	119,4	112,1	111,1	123,6
FR26	BOURGOGNE	121,5	97,8	111,5	129,8	131,6	102,9	118,7
FR3	NORD-PAS-DE-CALAIS	89,3	78,6	166,7	95,3	79,1	123,7	120,8
FR41	LORRAINE	98,8	89,2	128,2	102,5	97,2	110,5	115,1
FR42	ALSACE	89,4	86,3	123,1	90,3	90,1	112,0	115,5
FR43	FRANCHE-COMTE	101,8	91,9	124,6	106,7	101,8	111,1	120,0
FR51	PAYS DE LA LOIRE	105,5	89,0	131,7	112,2	101,8	111,8	118,9
FR52	BRETAGNE	115,3	94,3	118,9	123,0	116,8	106,4	116,8
FR53	POITOU-CHARENTES	127,8	99,4	106,9	137,0	138,7	98,6	114,5
FR61	AQUITAINE	122,6	97,1	105,5	129,1	133,0	98,2	111,7
FR62	MIDI-PYRENEES	123,3	96,3	102,7	129,4	133,6	97,4	109,9

FR63	LIMOUSIN	147,8	103,6	90,6	158,8	171,8	85,1	101,0
FR71	RHONE-ALPES	96,0	90,2	123,3	99,4	95,9	113,7	120,8
FR72	AUVERGNE	125,6	99,6	100,7	131,6	137,0	94,1	107,2
FR81	LANGUEDOC-ROUSSILLON	123,7	100,4	106,3	132,3	131,1	101,8	115,9
FR82	PROVENCE-ALPES-COTE D'AZUR	118,1	102,1	103,0	125,0	130,3	104,5	122,7
FR83	CORSE	120,0	107,2	92,7	124,9	142,9	98,5	120,0
FR91	GUADELOUPE	65,7	75,5	182,0	68,9	59,5	137,6	134,4
FR92	MARTINIQUE	78,5	82,7	159,9	82,0	76,0	128,2	128,6
FR93	GUYANE	9,0	49,2	373,3	10,4	7,3	199,1	201,4
FR94	REUNION	26,2	66,4	241,8	28,0	20,4	157,4	141,1
GR11	ANATOLIKI MAKEDONIA, THRAKI	114,8	117,9	86,7	117,7	107,9	92,8	93,1
GR12	KENTRIKI MAKEDONIA	103,1	108,4	84,2	100,8	98,5	89,2	81,7
GR13	DYTIKI MAKEDONIA	114,6	110,6	96,1	117,4	105,0	91,8	85,9
GR14	THESSALIA	116,7	118,3	86,4	118,8	106,0	88,2	82,2
GR21	IPEIROS	126,0	110,5	87,8	126,8	115,1	76,7	65,9
GR22	IONIA NISIA	131,4	102,7	97,5	137,3	127,6	86,4	85,1
GR23	DYTIKI ELLADA	111,5	100,8	107,2	113,4	96,2	90,4	76,1
GR24	STEREA ELLADA	122,6	115,6	84,1	122,3	114,7	76,9	66,8
GR25	PELOPONNISOS	137,7	114,8	84,0	142,1	135,2	76,8	72,1
GR3	ATTIKI	102,2	97,8	90,0	99,4	99,3	89,0	84,6
GR41	VOREIO AIGAIO	147,6	113,6	95,1	163,3	147,5	89,8	99,7
GR42	NOTIO AIGAIO	96,4	93,2	111,9	96,8	89,5	101,7	99,1
GR43	KRITI	109,4	96,9	111,7	112,9	97,1	98,5	88,3
HU01	KOEZEP-MAGYARORSZAG	97,7	100,7	87,4	93,9	85,8	90,2	75,6
HU02	KOEZEP-DUNANTUL	84,5	98,7	102,6	82,0	71,9	101,1	84,7
HU03	NYUGAT-DUNANTUL	95,0	98,2	101,8	93,0	81,8	95,1	81,2
HU04	DEL-DUNANTUL	94,2	101,4	97,5	92,8	84,4	99,3	89,0
HU05	ESZAK-MAGYARORSZAG	94,9	106,8	99,4	95,8	85,0	106,1	99,2
HU06	ESZAK-ALFOELD	86,7	95,5	116,7	87,8	74,6	113,1	100,9
HU07	DEL-ALFOELD	99,2	104,2	95,1	98,7	89,8	99,5	89,2
IE01	BORDER, MIDLAND AND WESTERN	82,4	87,0	179,7	90,5	60,6	129,9	118,8
IE02	SOUTHERN AND EASTERN	68,3	80,8	165,3	70,4	52,0	126,3	104,8
IT11	PIEMONTE	131,0	118,9	53,6	125,8	171,0	69,4	77,1
IT12	VALLE D'AOSTA	119,8	110,1	56,6	113,0	158,1	73,6	79,7
IT13	LIGURIA	158,6	129,6	43,3	157,4	244,2	60,4	74,8
IT2	LOMBARDIA	112,1	111,6	59,6	105,1	138,0	75,8	80,0
IT31	TRENTINO-ALTO ADIGE	106,7	102,9	77,9	104,3	124,3	92,4	99,1
IT32	VENETO	114,0	107,5	63,4	107,9	138,0	77,3	80,2
IT33	FRIULI-VENEZIA GIULIA	135,5	121,4	48,4	129,3	186,8	64,9	72,5
IT4	EMILIA-ROMAGNA	141,5	116,7	49,7	137,0	198,3	65,3	74,3
IT51	TOSCANA	140,5	117,8	53,7	137,1	186,3	67,2	74,5
IT52	UMBRIA	142,6	117,3	61,0	142,5	176,8	71,0	77,5
IT53	MARCHE	136,9	113,6	64,8	136,6	164,1	74,9	80,5

IT6	LAZIO	109,3	108,5	70,0	104,5	126,2	82,5	86,1
IT71	ABRUZZO	126,8	105,8	81,6	128,0	137,3	83,5	84,5
IT72	MOLISE	131,8	102,6	90,1	136,1	138,8	85,4	85,5
IT8	CAMPANIA	87,2	90,3	124,3	88,4	77,1	112,1	100,9
IT91	PUGLIA	96,8	95,8	107,5	96,8	86,8	100,4	88,9
IT92	BASILICATA	114,1	97,4	104,3	116,7	109,8	94,8	87,8
IT93	CALABRIA	104,7	95,0	115,6	107,3	95,1	101,2	91,0
ITA	SICILIA	103,5	97,8	109,5	106,4	97,5	104,8	99,2
ITB	SARDEGNA	98,1	97,7	91,8	93,5	92,9	84,6	72,9
LT	LIETUVA	85,7	101,1	121,8	87,5	79,0	115,1	103,6
LU	LUXEMBOURG (GRAND-DUCHE)	91,6	93,0	95,7	90,9	107,1	110,2	128,6
LV	LATVIJA	94,1	111,9	109,7	95,3	87,8	103,7	92,1
MT	MALTA	79,1	95,1	123,2	79,5	69,2	114,9	109,2
NL11	GRONINGEN	93,0	89,2	100,3	90,3	88,3	97,8	92,3
NL12	FRIESLAND	92,0	98,2	106,0	93,0	97,4	110,7	126,0
NL13	DRENTHE	98,4	102,8	94,5	99,3	121,6	108,1	140,9
NL21	OVERIJSSEL	87,6	92,4	110,2	87,9	90,9	113,3	119,0
NL22	GELDERLAND	87,3	92,8	103,7	86,4	95,7	110,3	123,4
NL23	FLEVOLAND	56,8	65,2	177,3	57,1	59,9	138,8	156,0
NL31	UTRECHT	79,8	82,6	110,2	77,3	85,2	110,3	111,3
NL32	NOORD-HOLLAND	86,4	86,5	95,5	82,8	102,3	103,5	112,2
NL33	ZUID-HOLLAND	88,5	87,7	107,0	87,3	96,4	108,4	114,7
NL34	ZEELAND	105,0	103,7	95,2	107,8	125,0	107,6	136,6
NL41	NOORD-BRABANT	82,1	94,4	96,9	79,5	92,4	108,4	121,5
NL42	LIMBURG (NL)	93,4	102,2	86,3	90,6	112,5	100,3	124,3
NO01	OSLO OG AKERSHUS	88,4	81,2	101,9	86,5	106,2	111,0	115,1
NO02	HEDMARK OG OPPLAND	119,0	100,4	97,7	125,7	135,7	105,5	126,9
NO03	SOR-OSTLANDET	104,6	94,6	105,5	108,2	114,9	111,0	125,7
NO04	AGDER OG ROGALAND	86,7	84,6	136,1	91,4	84,7	128,2	135,6
NO05	VESTLANDET	99,7	88,0	126,5	106,0	101,5	121,4	131,9
NO06	TRONDELAG	99,3	90,9	114,3	103,8	106,6	118,5	131,3
NO07	NORD-NORGE	95,1	92,1	113,3	98,8	102,3	119,8	133,0
PL01	DOLNOSLASKIE	79,6	74,9	162,3	78,3	61,1	100,1	82,1
PL02	KUJAWSKO-POMORSKIE	73,3	76,2	173,1	74,0	56,0	113,2	95,4
PL03	LUBELSKIE	87,3	84,3	165,7	92,0	67,0	115,2	98,9
PL04	LUBUSKIE	69,3	69,4	194,8	69,6	50,9	112,9	91,6
PL05	LÓDZKIE	91,9	83,4	139,2	92,0	76,3	99,1	88,1
PL06	MALOPOLSKIE	79,2	83,0	160,6	81,6	61,1	116,4	98,1
PL07	MAZOWIECKIE	89,5	84,0	144,1	90,6	72,7	103,5	90,5
PL08	OPOLSKIE	75,2	85,0	150,9	74,3	59,3	105,2	87,5
PL09	PODKARPACKIE	76,0	79,0	186,9	80,2	57,5	124,4	104,1
PL0A	PODLASKIE	86,6	84,3	169,8	91,7	67,5	117,2	101,0
PL0B	POMORSKIE	68,9	75,6	175,2	69,1	52,0	115,5	94,5
PL0C	SLASKIE	73,6	88,6	136,8	71,4	57,9	100,7	84,1
PL0D	SWIETOKRZYSKIE	88,9	83,0	158,9	92,1	70,1	109,4	95,8
PL0E	WARMINSKO-MAZURSKIE	66,6	71,0	201,8	68,1	48,3	120,2	97,8
PL0F	WIELKOPOLSKIE	72,6	72,7	184,1	73,5	54,7	115,1	94,4

PL0G	ZACHODNIOPOMORSKIE	69,7	71,5	177,1	68,8	52,5	108,9	88,8
PT11	NORTE	90,0	89,2	116,3	89,4	76,5	101,8	89,6
PT12	CENTRO (P)	125,5	109,1	89,4	129,5	119,1	86,9	84,8
PT13	LISBOA E VALE DO TEJO	104,8	106,8	77,6	101,5	101,0	86,5	80,2
PT14	ALENTEJO	150,9	116,6	79,9	161,5	150,5	79,1	80,3
PT15	ALGARVE	105,4	105,2	82,2	105,8	106,6	85,3	86,5
PT2	ACORES	79,2	84,0	174,1	84,6	60,1	127,1	111,3
PT3	MADEIRA	85,6	89,1	150,9	89,0	66,0	112,8	95,8
RO01	NORD-EST	80,8	96,1	143,1	84,6	61,5	123,5	94,0
RO02	SUD-EST	80,8	95,4	130,2	80,5	65,5	109,2	81,6
RO03	SUD	94,5	105,1	111,6	95,6	82,3	106,2	82,9
RO04	SUD-VEST	93,0	106,8	111,0	94,4	80,4	107,4	87,4
RO05	VEST	82,8	93,9	120,5	80,8	70,8	103,2	78,9
RO06	NORD-VEST	79,4	95,4	128,8	79,3	62,9	110,6	83,8
RO07	CENTRU	78,7	91,0	136,5	78,1	61,3	107,8	78,6
RO08	BUCURESTI	87,4	85,8	123,1	82,0	69,0	83,2	54,9
SE01	STOCKHOLM LAEN	92,1	96,5	89,4	90,5	109,6	108,3	115,3
SE02	OESTRA MELLANSVERIGE	111,1	109,7	93,6	116,1	122,6	108,8	122,3
SE04	SYDSVERIGE	115,3	110,8	89,7	120,4	129,0	105,7	119,3
SE06	NORRA MELLANSVERIGE	126,6	117,2	89,7	136,2	151,4	104,4	133,3
SE07	MELLERSTA NORRLAND	128,5	117,9	87,5	137,6	150,5	101,6	125,2
SE08	OEVRE NORRLAND	111,9	110,8	94,9	117,1	119,0	106,9	119,2
SE09	SMAALAND MED OEARNA	121,5	113,1	97,6	131,5	135,5	109,1	132,5
SE0A	VASTSVERIGE	111,1	105,5	96,4	116,3	126,4	109,9	125,8
SI	SLOVENIJA	88,9	96,7	106,1	85,9	79,8	93,8	84,3
SK01	BRATISLAVSKÝ	77,2	80,6	138,8	73,7	61,1	95,2	74,8
SK02	Z-PADN+ SLOVENSKO	76,9	84,9	143,4	76,2	59,7	107,9	85,9
SK03	STREDN+ SLOVENSKO	73,6	80,8	158,3	74,5	57,0	117,2	95,7
SK04	VÝCHODN+ SLOVENSKO	66,6	77,4	180,6	69,1	50,1	130,5	107,8
UKC1	TEES VALLEY AND DURHAM	99,8	101,8	110,1	103,8	108,4	112,2	130,5
UKC2	NORTHUMBERLAND AND TYNE AND WEAR	106,2	99,4	107,5	110,0	108,9	106,5	118,6
UKD1	CUMBRIA	115,0	112,3	88,9	119,6	153,1	103,3	132,1
UKD2	CHESHIRE	99,2	105,1	98,7	101,4	117,3	110,4	133,9
UKD3	GREATER MANCHESTER	93,0	95,4	115,2	96,0	95,9	116,8	124,7
UKD4	LANCASHIRE	105,4	103,6	106,4	110,7	118,3	112,2	130,9
UKD5	MERSEYSIDE	103,5	101,0	111,7	108,7	107,8	112,7	123,9
UKE1	EAST RIDING AND NORTH LINCOLNSHIRE	106,3	104,0	106,1	111,7	117,2	112,0	133,0
UKE2	NORTH YORKSHIRE	114,5	109,7	94,2	119,6	138,5	103,4	134,7
UKE3	SOUTH YORKSHIRE	101,3	98,5	104,6	104,2	109,9	110,0	124,0
UKE4	WEST YORKSHIRE	94,5	92,7	117,3	97,6	93,2	115,6	124,1
UKF1	DERBYSHIRE AND	102,4	99,9	102,1	105,0	115,4	108,4	124,1

	NOTTINGHAMSHIRE							
UKF2	LEICESTERSHIRE, RUTLAND AND NORTHAMPTONSHIRE	93,2	94,2	114,9	95,5	93,9	113,9	125,8
UKF3	LINCOLNSHIRE	121,9	115,9	88,9	129,2	159,3	102,8	133,3
UKG1	HEREFORDSHIRE, WORCESTERSHIRE AND WARWICKSHIRE	106,0	108,6	91,4	108,6	136,3	106,6	134,6
UKG2	SHROPSHIRE AND STAFFORDSHIRE	99,9	105,4	98,8	102,0	114,1	108,5	127,5
UKG3	WEST MIDLANDS	98,2	98,1	115,7	103,8	97,7	119,5	130,5
UKH1	EAST ANGLIA	110,1	101,8	99,1	114,5	130,4	107,3	122,2
UKH2	BEDFORDSHIRE AND HERTFORDSHIRE	90,8	92,6	109,0	92,0	106,6	115,7	132,2
UKH3	ESSEX	104,7	100,0	98,4	107,6	125,2	108,6	124,8
UKI1	INNER LONDON	70,2	67,5	123,1	66,3	63,6	111,8	95,0
UKI2	OUTER LONDON	87,0	84,0	112,2	86,3	88,3	112,6	112,7
UKJ1	BERKSHIRE, BUCKINGHAMSHIRE AND OXFORDSHIRE	82,7	88,6	116,1	82,3	87,9	114,3	122,3
UKJ2	SURREY, EAST AND WEST SUSSEX	118,2	101,2	96,9	123,9	145,4	104,2	130,0
UKJ3	HAMPSHIRE AND ISLE OF WIGHT	102,9	97,7	106,3	105,9	112,2	108,2	121,6
UKJ4	KENT	105,0	102,3	102,2	109,4	127,8	112,2	133,5
UKK1	GLOUCESTERSHIRE, WILTSHIRE AND NORTH SOMERSET	103,3	97,2	103,8	106,1	115,5	108,6	122,8
UKK2	DORSET AND SOMERSET	133,1	110,2	94,6	144,5	170,8	101,2	128,6
UKK3	CORNWALL AND ISLES OF SCILLY	128,1	118,6	88,6	137,4	168,4	101,4	134,3
UKK4	DEVON	127,5	112,5	94,0	137,1	143,9	101,8	129,9
UKL1	WEST WALES AND THE VALLEYS	115,0	111,0	101,0	123,0	127,0	109,1	131,6
UKL2	EAST WALES	103,3	101,1	109,5	108,1	110,0	112,6	128,6
UKM1	NORTH EASTERN SCOTLAND	92,1	91,9	110,3	91,9	95,8	106,8	120,4
UKM2	EASTERN SCOTLAND	100,3	97,8	100,6	101,1	105,2	104,3	112,1
UKM3	SOUTH WESTERN SCOTLAND	97,2	98,7	105,7	98,8	100,5	107,9	117,0
UKM4	HIGHLANDS AND ISLANDS	106,8	112,9	93,8	110,9	125,6	108,3	139,8
UKN	NORTHERN IRELAND	83,6	93,3	139,9	89,1	78,0	130,7	131,9
E-29	**E-29**	100,0	100,0	100,0	100,0	100,0	100,0	100,0
E-29	**E-29**	**15,6**	**17,7**	**1,2**	**0,3**	**1,2**	**17,2**	**0,8**

Table A4.2 Core indicators with regard to population, ageing and depopulation.								
		4 groups (4 = most "ageing"/"depopulating" = one STD or more from E29 average).						
NUTS 2	REGION NAME	Ageing Population 65+/Tot. Pop	Ageing "Labour Force" 55-64/20-64	"Labour Force" Replace-ment 10-19/55-64	Post-Active Depen-dency 65+/20 -64	Aged People vs. Youth 65+/15 -24	Share of children 0-14/Tot. pop	Changes in Natural Growth Potential: 20-29 years in 2020 (born 1991-2000)/20-29 years in 2000 (born 1971-1980)
NUTS2	REGION	2000	2000	2000	2000	2000	2000	
AT11	BURGENLAND	3	2	2	3	3	3	2
AT12	NIEDEROESTERREICH	2	3	2	2	3	2	1
AT13	WIEN	2	2	3	1	3	3	2
AT21	KAERNTEN	2	2	2	2	2	2	1
AT22	STEIERMARK	2	2	2	2	3	2	1
AT31	OBEROESTERREICH	1	1	1	1	2	1	1
AT32	SALZBURG	1	1	2	1	1	1	1
AT33	TIROL	1	1	1	1	1	1	1
AT34	VORARLBERG	1	1	1	1	1	1	1
BE1	REG.BRUXELLES-CAP./BRUSSELS HFDST.GEW.	2	1	1	2	3	1	1
BE21	ANTWERPEN	2	2	2	3	3	1	1
BE22	LIMBURG (B)	1	1	1	1	1	1	1
BE23	OOST-VLAANDEREN	2	1	2	3	3	2	1
BE24	VLAAMS BRABANT	2	1	2	2	3	2	1
BE25	WEST-VLAANDEREN	3	2	2	3	3	2	1
BE31	BRABANT WALLON	1	1	1	1	1	1	1
BE32	HAINAUT	3	1	1	3	3	1	1
BE33	LIEGE	3	1	1	3	3	1	1
BE34	LUXEMBOURG (B)	2	1	1	3	2	1	1
BE35	NAMUR	2	1	1	2	2	1	1
BG01	SEVEROIZTOCHEN (NORTH-WEST)	4	4	2	4	4	3	2
BG02	SEVEREN TSENTRALEN (NORTH CENTRAL)	4	3	2	4	3	3	3
BG03	SEVEROZAPADEN (NORTH-EAST)	1	2	1	1	1	2	3
BG04	YUGOIZTOCHEN (NORTH-EAST)	1	1	2	1	1	3	4
BG05	YUZHEN TSENTRALEN (SOUTH CENTRAL)	1	2	1	1	1	2	3
BG06	YUGOZAPADEN (SOUTH-EAST)	1	2	1	1	1	1	2
CH01	REGION LEMANIQUE	1	1	2	1	2	1	1
CH02	ESPACE MITTELLAND	2	1	2	2	3	1	1
CH03	SUISSE DU NORD-EST	1	2	2	1	2	2	1
CH04	ZUERICH	1	2	2	1	2	2	1
CH05	SUISSE ORIENTALE	1	1	1	1	2	1	1
CH06	SUISSE CENTRALE	1	1	1	1	1	1	1
CH07	TICINO	3	3	3	2	4	3	1

CY	KIBRIS	1	1	1	1	1	1	1
CZ01	PRAHA	2	1	2	1	1	4	4
CZ02	STREDNÍ CECHY	1	1	1	1	1	2	3
CZ03	JIHOZÁPAD	1	1	1	1	1	2	3
CZ04	SEVEROZÁPAD	1	1	1	1	1	1	3
CZ05	SEVEROVYCHOD	1	1	1	1	1	2	3
CZ06	JIHOVYCHOD	1	1	1	1	1	2	3
CZ07	STREDNI MORAVA	1	1	1	1	1	2	3
CZ08	OSTRAVSKY	1	1	1	1	1	1	3
DE11	STUTTGART	1	4	3	1	3	2	1
DE12	KARLSRUHE	2	4	3	1	3	2	1
DE13	FREIBURG	2	3	3	2	3	2	1
DE14	TUEBINGEN	1	3	2	1	2	1	1
DE21	OBERBAYERN	1	4	4	1	3	3	1
DE22	NIEDERBAYERN	2	3	2	2	3	2	1
DE23	OBERPFALZ	2	3	2	2	3	2	1
DE24	OBERFRANKEN	3	4	3	3	4	2	1
DE25	MITTELFRANKEN	2	4	3	2	3	2	1
DE26	UNTERFRANKEN	2	3	2	2	3	2	1
DE27	SCHWABEN	2	4	3	2	3	1	1
DE3	BERLIN	1	4	4	1	2	4	3
DE4	BRANDENBURG	1	4	2	1	1	4	3
DE5	BREMEN	3	4	4	3	4	4	2
DE6	HAMBURG	2	4	4	1	4	4	3
DE71	DARMSTADT	2	4	4	1	4	3	1
DE72	GIESSEN	2	3	3	2	3	2	1
DE73	KASSEL	3	4	3	3	4	2	1
DE8	MECKLENBURG VORPOMMERN	1	4	2	1	1	3	4
DE91	BRAUNSCHWEIG	3	4	3	3	4	3	1
DE92	HANNOVER	3	4	4	3	4	3	1
DE93	LUENEBURG	2	4	3	2	4	2	1
DE94	WESER-EMS	1	3	2	1	2	1	1
DEA1	DUESSELDORF	3	4	4	2	4	3	1
DEA2	KOELN	2	4	3	1	3	2	1
DEA3	MUENSTER	2	3	2	2	3	1	1
DEA4	DETMOLD	2	4	3	2	3	1	1
DEA5	ARNSBERG	2	4	3	2	4	2	1
DEB1	KOBLENZ	3	4	3	3	4	2	1
DEB2	TRIER	3	3	3	3	4	2	1
DEB3	RHEINHESSEN-PFALZ	2	4	3	2	4	2	1
DEC	SAARLAND	3	4	3	3	4	3	1
DED1	CHEMNITZ	4	4	3	4	4	4	4
DED2	DRESDEN	3	4	3	2	2	4	4
DED3	LEIPZIG	3	4	3	2	3	4	4
DEE1	DESSAU	2	4	3	2	2	4	4
DEE2	HALLE	3	4	3	2	2	4	4
DEE3	MAGDEBURG	2	4	3	2	2	4	3
DEF	SCHLESWIG-HOLSTEIN	2	4	4	2	4	2	1
DEG	THUERINGEN	2	4	2	2	2	4	4
DK	DANMARK	1	2	2	1	2	1	1
EE	EESTI	1	2	1	1	1	1	2

ES11	GALICIA	4	2	2	4	2	4	4
ES12	ASTURIAS	4	1	3	4	3	4	4
ES13	CANTABRIA	4	1	1	3	2	4	4
ES21	PAIS VASCO	3	1	3	2	2	4	4
ES22	NAVARRA	3	1	2	3	2	4	4
ES23	RIOJA	4	1	2	4	3	4	4
ES24	ARAGON	4	1	3	4	4	4	4
ES3	MADRID	1	1	2	1	1	3	4
ES41	CASTILLA-LEON	4	1	2	4	4	4	4
ES42	CASTILLA-LA MANCHA	4	1	1	4	2	2	3
ES43	EXTREMADURA	3	1	1	4	2	2	3
ES51	CATALUNA	3	1	2	2	2	4	4
ES52	COMUNIDAD VALENCIANA	2	1	1	2	1	3	4
ES53	BALEARES	1	1	1	1	1	2	3
ES61	ANDALUCIA	1	1	1	1	1	1	3
ES62	MURCIA	1	1	1	1	1	1	3
ES63	CEUTA Y MELILLA	1	1	1	1	1	1	1
ES7	CANARIAS	1	1	1	1	1	2	4
FI13	IT--SUOMI	2	2	1	3	2	1	1
FI14	VALI-SUOMI	2	2	1	3	2	1	1
FI15	POHJOIS-SUOMI	1	1	1	1	1	1	1
FI16	UUSIMAA (SUURALUE)	1	1	2	1	1	1	1
FI17	ETELA-SUOMI	2	2	2	2	2	1	1
FI2	AALAND	2	2	2	2	3	1	1
FR1	ILE DE FRANCE	1	1	1	1	1	1	1
FR21	CHAMPAGNE-ARDENNE	2	1	1	2	1	1	1
FR22	PICARDIE	1	1	1	1	1	1	1
FR23	HAUTE-NORMANDIE	1	1	1	1	1	1	1
FR24	CENTRE	3	1	1	4	3	1	1
FR25	BASSE-NORMANDIE	3	1	1	3	2	1	1
FR26	BOURGOGNE	4	1	1	4	4	1	1
FR3	NORD-PAS-DE-CALAIS	1	1	1	1	1	1	1
FR41	LORRAINE	1	1	1	2	1	1	1
FR42	ALSACE	1	1	1	1	1	1	1
FR43	FRANCHE-COMTE	2	1	1	2	2	1	1
FR51	PAYS DE LA LOIRE	2	1	1	3	2	1	1
FR52	BRETAGNE	3	1	1	4	3	1	1
FR53	POITOU-CHARENTES	4	1	1	4	4	2	1
FR61	AQUITAINE	4	1	1	4	4	2	1
FR62	MIDI-PYRENEES	4	1	1	4	4	2	1
FR63	LIMOUSIN	4	2	2	4	4	3	1
FR71	RHONE-ALPES	1	1	1	1	1	1	1
FR72	AUVERGNE	4	1	1	4	4	2	1
FR81	LANGUEDOC-ROUSSILLON	4	2	1	4	4	1	1
FR82	PROVENCE-ALPES-COTE D'AZUR	3	2	1	4	3	1	1
FR83	CORSE	4	3	2	4	4	2	1
FR91	GUADELOUPE	1	1	1	1	1	1	1

FR92	MARTINIQUE	1	1	1	1	1	1	1
FR93	GUYANE	1	1	1	1	1	1	1
FR94	REUNION	1	1	1	1	1	1	1
GR11	ANATOLIKI MAKEDONIA, THRAKI	3	4	2	3	2	2	2
GR12	KENTRIKI MAKEDONIA	2	3	2	2	1	3	3
GR13	DYTIKI MAKEDONIA	3	3	2	3	2	3	3
GR14	THESSALIA	3	4	2	3	2	3	3
GR21	IPEIROS	4	3	2	4	3	4	4
GR22	IONIA NISIA	4	2	2	4	3	3	3
GR23	DYTIKI ELLADA	3	2	1	3	1	3	4
GR24	STEREA ELLADA	4	4	2	4	2	4	4
GR25	PELOPONNISOS	4	4	2	4	4	4	4
GR3	ATTIKI	2	1	2	1	1	3	3
GR41	VOREIO AIGAIO	4	3	2	4	4	3	2
GR42	NOTIO AIGAIO	1	1	1	1	1	1	2
GR43	KRITI	2	1	1	3	1	2	3
HU01	KOEZEP-MAGYARORSZAG	1	2	2	1	1	3	4
HU02	KOEZEP-DUNANTUL	1	1	1	1	1	1	3
HU03	NYUGAT-DUNANTUL	1	1	1	1	1	2	3
HU04	DEL-DUNANTUL	1	2	2	1	1	2	3
HU05	ESZAK-MAGYARORSZAG	1	2	2	1	1	1	2
HU06	ESZAK-ALFOELD	1	1	1	1	1	1	1
HU07	DEL-ALFOELD	1	2	2	1	1	2	2
IE01	BORDER, MIDLAND AND WESTERN	1	1	1	1	1	1	1
IE02	SOUTHERN AND EASTERN	1	1	1	1	1	1	1
IT11	PIEMONTE	4	4	4	4	4	4	4
IT12	VALLE D'AOSTA	4	3	4	3	4	4	3
IT13	LIGURIA	4	4	4	4	4	4	4
IT2	LOMBARDIA	3	3	4	2	4	4	3
IT31	TRENTINO-ALTO ADIGE	2	2	3	2	3	2	2
IT32	VENETO	3	3	4	2	4	4	3
IT33	FRIULI-VENEZIA GIULIA	4	4	4	4	4	4	4
IT4	EMILIA-ROMAGNA	4	4	4	4	4	4	4
IT51	TOSCANA	4	4	4	4	4	4	4
IT52	UMBRIA	4	4	4	4	4	4	4
IT53	MARCHE	4	3	4	4	4	4	3
IT6	LAZIO	2	3	3	2	3	4	3
IT71	ABRUZZO	4	2	3	4	4	4	3
IT72	MOLISE	4	2	2	4	4	3	3
IT8	CAMPANIA	1	1	1	1	1	1	1
IT91	PUGLIA	1	1	1	1	1	1	3
IT92	BASILICATA	3	1	1	3	2	2	3
IT93	CALABRIA	2	1	1	2	1	1	2
ITA	SICILIA	2	1	1	2	1	1	2
ITB	SARDEGNA	1	1	2	1	1	3	4
LT	LIETUVA	1	2	1	1	1	1	1

LU	LUXEMBOURG (GRAND-DUCHE)	1	1	2	1	2	1	1
LV	LATVIJA	1	3	1	1	1	1	2
MT	MALTA	1	1	1	1	1	1	1
NL11	GRONINGEN	1	1	1	1	1	2	2
NL12	FRIESLAND	1	1	1	1	1	1	1
NL13	DRENTHE	1	2	2	1	3	1	1
NL21	OVERIJSSEL	1	1	1	1	1	1	1
NL22	GELDERLAND	1	1	1	1	1	1	1
NL23	FLEVOLAND	1	1	1	1	1	1	1
NL31	UTRECHT	1	1	1	1	1	1	1
NL32	NOORD-HOLLAND	1	1	2	1	2	1	1
NL33	ZUID-HOLLAND	1	1	1	1	1	1	1
NL34	ZEELAND	2	2	2	2	3	1	1
NL41	NOORD-BRABANT	1	1	2	1	1	1	1
NL42	LIMBURG (NL)	1	2	2	1	2	1	1
NO01	OSLO OG AKERSHUS	1	1	1	1	2	1	1
NO02	HEDMARK OG OPPLAND	4	2	2	4	4	1	1
NO03	SOR-OSTLANDET	2	1	1	2	2	1	1
NO04	AGDER OG ROGALAND	1	1	1	1	1	1	1
NO05	VESTLANDET	1	1	1	2	2	1	1
NO06	TRONDELAG	1	1	1	2	2	1	1
NO07	NORD-NORGE	1	1	1	1	2	1	1
PL01	DOLNOSLASKIE	1	1	1	1	1	1	3
PL02	KUJAWSKO-POMORSKIE	1	1	1	1	1	1	2
PL03	LUBELSKIE	1	1	1	1	1	1	2
PL04	LUBUSKIE	1	1	1	1	1	1	2
PL05	LÓDZKIE	1	1	1	1	1	2	3
PL06	MALOPOLSKIE	1	1	1	1	1	1	2
PL07	MAZOWIECKIE	1	1	1	1	1	1	2
PL08	OPOLSKIE	1	1	1	1	1	1	3
PL09	PODKARPACKIE	1	1	1	1	1	1	1
PL0A	PODLASKIE	1	1	1	1	1	1	1
PL0B	POMORSKIE	1	1	1	1	1	1	2
PL0C	SLASKIE	1	1	1	1	1	1	3
PL0D	SWIETOKRZYSKIE	1	1	1	1	1	1	2
PL0E	WARMINSKO-MAZURSKIE	1	1	1	1	1	1	2
PL0F	WIELKOPOLSKIE	1	1	1	1	1	1	2
PL0G	ZACHODNIOPOMORSKIE	1	1	1	1	1	1	3
PT11	NORTE	1	1	1	1	1	1	2
PT12	CENTRO (P)	4	3	2	4	3	3	3
PT13	LISBOA E VALE DO TEJO	2	2	3	2	2	3	3
PT14	ALENTEJO	4	4	3	4	4	4	3
PT15	ALGARVE	2	2	3	2	2	3	3
PT2	ACORES	1	1	1	1	1	1	1
PT3	MADEIRA	1	1	1	1	1	1	2
RO01	NORD-EST	1	1	1	1	1	1	2
RO02	SUD-EST	1	1	1	1	1	1	3
RO03	SUD	1	2	1	1	1	1	3

RO04	SUD-VEST	1	2	1	1	1	1	3
RO05	VEST	1	1	1	1	1	1	3
RO06	NORD-VEST	1	1	1	1	1	1	3
RO07	CENTRU	1	1	1	1	1	1	3
RO08	BUCURESTI	1	1	1	1	1	4	4
SE01	STOCKHOLM LAEN	1	1	2	1	2	1	1
SE02	OESTRA MELLANSVERIGE	3	3	2	3	3	1	1
SE04	SYDSVERIGE	3	3	2	4	3	1	1
SE06	NORRA MELLANSVERIGE	4	4	2	4	4	1	1
SE07	MELLERSTA NORRLAND	4	4	2	4	4	1	1
SE08	OEVRE NORRLAND	3	3	2	3	3	1	1
SE09	SMAALAND MED OEARNA	4	3	2	4	4	1	1
SE0A	V-STSVERIGE	3	2	2	3	3	1	1
SI	SLOVENIJA	1	1	1	1	1	2	3
SK01	BRATISLAVSKÝ	1	1	1	1	1	2	4
SK02	Z-PADN+ SLOVENSKO	1	1	1	1	1	1	3
SK03	STREDN+ SLOVENSKO	1	1	1	1	1	1	2
SK04	VÝCHODN+ SLOVENSKO	1	1	1	1	1	1	1
UKC1	TEES VALLEY AND DURHAM	1	2	1	2	2	1	1
UKC2	NORTHUMBERLAND AND TYNE AND WEAR	2	1	1	3	2	1	1
UKD1	CUMBRIA	3	3	2	3	4	1	1
UKD2	CHESHIRE	1	2	2	2	3	1	1
UKD3	GREATER MANCHESTER	1	1	1	1	1	1	1
UKD4	LANCASHIRE	2	2	1	3	3	1	1
UKD5	MERSEYSIDE	2	2	1	2	2	1	1
UKE1	EAST RIDING AND NORTH LINCOLNSHIRE	2	2	1	3	3	1	1
UKE2	NORTH YORKSHIRE	3	3	2	3	4	1	1
UKE3	SOUTH YORKSHIRE	2	1	1	2	2	1	1
UKE4	WEST YORKSHIRE	1	1	1	1	1	1	1
UKF1	DERBYSHIRE AND NOTTINGHAMSHIRE	2	1	1	2	3	1	1
UKF2	LEICESTERSHIRE, RUTLAND AND NORTHAMPTONSHIRE	1	1	1	1	1	1	1
UKF3	LINCOLNSHIRE	4	4	2	4	4	1	1
UKG1	HEREFORDSHIRE, WORCESTERSHIRE AND WARWICKSHIRE	2	3	2	2	4	1	1
UKG2	SHROPSHIRE AND STAFFORDSHIRE	1	2	2	2	2	1	1
UKG3	WEST MIDLANDS	1	1	1	2	1	1	1
UKH1	EAST ANGLIA	3	2	2	3	3	1	1
UKH2	BEDFORDSHIRE AND HERTFORDSHIRE	1	1	1	1	2	1	1
UKH3	ESSEX	2	1	2	2	3	1	1

UKI1	INNER LONDON	1	1	1	1	1	1	2
UKI2	OUTER LONDON	1	1	1	1	1	1	1
UKJ1	BERKSHIRE, BUCKINGHAMSHIRE AND OXFORDSHIRE	1	1	1	1	1	1	1
UKJ2	SURREY, EAST AND WEST SUSSEX	3	2	2	4	4	1	1
UKJ3	HAMPSHIRE AND ISLE OF WIGHT	2	1	1	2	2	1	1
UKJ4	KENT	2	2	1	2	3	1	1
UKK1	GLOUCESTERSHIRE, WILTSHIRE AND NORTH SOMERSET	2	1	1	2	3	1	1
UKK2	DORSET AND SOMERSET	4	3	2	4	4	1	1
UKK3	CORNWALL AND ISLES OF SCILLY	4	4	2	4	4	1	1
UKK4	DEVON	4	3	2	4	4	1	1
UKL1	WEST WALES AND THE VALLEYS	3	3	1	4	3	1	1
UKL2	EAST WALES	2	2	1	2	2	1	1
UKM1	NORTH EASTERN SCOTLAND	1	1	1	1	1	1	1
UKM2	EASTERN SCOTLAND	2	1	1	2	2	1	1
UKM3	SOUTH WESTERN SCOTLAND	1	1	1	1	2	1	1
UKM4	HIGHLANDS AND ISLANDS	2	3	2	3	3	1	1
UKN	NORTHERN IRELAND	1	1	1	1	1	1	1

Table A4.3 Core indicators with regard to population, ageing and depopulation

NUTS 2	REGION NAME	Average score on indirect "ageing"/ "depopu-lating" indicators	Average score on indirect "ageing"/ "depopu-lating" indicators, Grouped (quartiles)	National Total Fertility Rates 1999-2000 CODE
NUTS_2	REGION			
AT11	BURGENLAND	2,6	4	2
AT12	NIEDEROESTERREICH	2,1	3	2
AT13	WIEN	2,3	3	2
AT21	KAERNTEN	1,9	3	2
AT22	STEIERMARK	2,0	3	2
AT31	OBEROESTERREICH	1,1	1	2
AT32	SALZBURG	1,1	1	2
AT33	TIROL	1,0	1	2
AT34	VORARLBERG	1,0	1	2
BE1	REG.BRUXELLES-CAP./BRUSSELS HFDST.GEW.	1,6	2	3
BE21	ANTWERPEN	2,0	3	3
BE22	LIMBURG (B)	1,0	1	3
BE23	OOST-VLAANDEREN	2,0	3	3
BE24	VLAAMS BRABANT	1,9	3	3
BE25	WEST-VLAANDEREN	2,3	3	3
BE31	BRABANT WALLON	1,0	1	3
BE32	HAINAUT	1,9	3	3
BE33	LIEGE	1,9	3	3
BE34	LUXEMBOURG (B)	1,6	2	3
BE35	NAMUR	1,4	2	3
BG01	SEVEROIZTOCHEN (NORTH-WEST)	3,3	4	1
BG02	SEVEREN TSENTRALEN (NORTH CENTRAL)	3,1	4	1
BG03	SEVEROZAPADEN (NORTH-EAST)	1,6	2	1
BG04	YUGOIZTOCHEN (NORTH-EAST)	1,9	3	1
BG05	YUZHEN TSENTRALEN (SOUTH CENTRAL)	1,6	2	1
BG06	YUGOZAPADEN (SOUTH-EAST)	1,3	2	1
CH01	REGION LEMANIQUE	1,3	2	2
CH02	ESPACE MITTELLAND	1,7	3	2
CH03	SUISSE DU NORD-EST	1,6	2	2
CH04	ZUERICH	1,6	2	2
CH05	SUISSE ORIENTALE	1,1	1	2
CH06	SUISSE CENTRALE	1,0	1	2
CH07	TICINO	2,7	4	2
CY	KIBRIS	1,0	1	3
CZ01	PRAHA	2,1	3	1
CZ02	STREDNÍ CECHY	1,4	2	1
CZ03	JIHOZÁPAD	1,4	2	1
CZ04	SEVEROZÁPAD	1,3	2	1
CZ05	SEVEROVYCHOD	1,4	2	1
CZ06	JIHOVYCHOD	1,4	2	1
CZ07	STREDNI MORAVA	1,4	2	1

CZ08	OSTRAVSKY	1,3	2	1
DE11	STUTTGART	2,1	3	2
DE12	KARLSRUHE	2,3	3	2
DE13	FREIBURG	2,3	3	2
DE14	TUEBINGEN	1,6	2	2
DE21	OBERBAYERN	2,4	3	2
DE22	NIEDERBAYERN	2,1	3	2
DE23	OBERPFALZ	2,1	3	2
DE24	OBERFRANKEN	2,9	4	2
DE25	MITTELFRANKEN	2,4	3	2
DE26	UNTERFRANKEN	2,1	3	2
DE27	SCHWABEN	2,3	3	2
DE3	BERLIN	2,7	4	2
DE4	BRANDENBURG	2,3	3	2
DE5	BREMEN	3,4	4	2
DE6	HAMBURG	3,1	4	2
DE71	DARMSTADT	2,7	4	2
DE72	GIESSEN	2,3	3	2
DE73	KASSEL	2,9	4	2
DE8	MECKLENBURG VORPOMMERN	2,3	3	2
DE91	BRAUNSCHWEIG	3,0	4	2
DE92	HANNOVER	3,1	4	2
DE93	LUENEBURG	2,6	4	2
DE94	WESER-EMS	1,6	2	2
DEA1	DUESSELDORF	3,0	4	2
DEA2	KOELN	2,3	3	2
DEA3	MUENSTER	2,0	3	2
DEA4	DETMOLD	2,3	3	2
DEA5	ARNSBERG	2,6	4	2
DEB1	KOBLENZ	2,9	4	2
DEB2	TRIER	2,7	4	2
DEB3	RHEINHESSEN-PFALZ	2,6	4	2
DEC	SAARLAND	3,0	4	2
DED1	CHEMNITZ	3,9	4	2
DED2	DRESDEN	3,1	4	2
DED3	LEIPZIG	3,3	4	2
DEE1	DESSAU	3,0	4	2
DEE2	HALLE	3,1	4	2
DEE3	MAGDEBURG	2,9	4	2
DEF	SCHLESWIG-HOLSTEIN	2,7	4	2
DEG	THUERINGEN	2,9	4	2
DK	DANMARK	1,4	2	3
EE	EESTI	1,3	2	1
ES11	GALICIA	3,1	4	1
ES12	ASTURIAS	3,3	4	1
ES13	CANTABRIA	2,7	4	1
ES21	PAIS VASCO	2,7	4	1
ES22	NAVARRA	2,7	4	1
ES23	RIOJA	3,1	4	1

ES24	ARAGON	3,4	4	1
ES3	MADRID	1,9	3	1
ES41	CASTILLA-LEON	3,3	4	1
ES42	CASTILLA-LA MANCHA	2,4	3	1
ES43	EXTREMADURA	2,3	3	1
ES51	CATALUNA	2,6	4	1
ES52	COMUNIDAD VALENCIANA	2,0	3	1
ES53	BALEARES	1,4	2	1
ES61	ANDALUCIA	1,3	2	1
ES62	MURCIA	1,3	2	1
ES63	CEUTA Y MELILLA	1,0	1	1
ES7	CANARIAS	1,6	2	1
FI13	IT--SUOMI	1,7	3	3
FI14	VALI-SUOMI	1,7	3	3
FI15	POHJOIS-SUOMI	1,0	1	3
FI16	UUSIMAA (SUURALUE)	1,1	1	3
FI17	ETELA-SUOMI	1,7	3	3
FI2	AALAND	1,9	3	3
FR1	ILE DE FRANCE	1,0	1	3
FR21	CHAMPAGNE-ARDENNE	1,3	2	3
FR22	PICARDIE	1,0	1	3
FR23	HAUTE-NORMANDIE	1,0	1	3
FR24	CENTRE	2,0	3	3
FR25	BASSE-NORMANDIE	1,7	3	3
FR26	BOURGOGNE	2,3	3	3
FR3	NORD-PAS-DE-CALAIS	1,0	1	3
FR41	LORRAINE	1,1	1	3
FR42	ALSACE	1,0	1	3
FR43	FRANCHE-COMTE	1,4	2	3
FR51	PAYS DE LA LOIRE	1,6	2	3
FR52	BRETAGNE	2,0	3	3
FR53	POITOU-CHARENTES	2,4	3	3
FR61	AQUITAINE	2,4	3	3
FR62	MIDI-PYRENEES	2,4	3	3
FR63	LIMOUSIN	2,9	4	3
FR71	RHONE-ALPES	1,0	1	3
FR72	AUVERGNE	2,4	3	3
FR81	LANGUEDOC-ROUSSILLON	2,4	3	3
FR82	PROVENCE-ALPES-COTE D'AZUR	2,1	3	3
FR83	CORSE	2,9	4	3
FR91	GUADELOUPE	1,0	1	3
FR92	MARTINIQUE	1,0	1	3
FR93	GUYANE	1,0	1	3
FR94	REUNION	1,0	1	3
GR11	ANATOLIKI MAKEDONIA, THRAKI	2,6	4	2
GR12	KENTRIKI MAKEDONIA	2,3	3	2
GR13	DYTIKI MAKEDONIA	2,7	4	2
GR14	THESSALIA	2,9	4	2
GR21	IPEIROS	3,4	4	2

GR22	IONIA NISIA	3,0	4	2
GR23	DYTIKI ELLADA	2,4	3	2
GR24	STEREA ELLADA	3,4	4	2
GR25	PELOPONNISOS	3,7	4	2
GR3	ATTIKI	1,9	3	2
GR41	VOREIO AIGAIO	3,1	4	2
GR42	NOTIO AIGAIO	1,1	1	2
GR43	KRITI	1,9	3	2
HU01	KOEZEP-MAGYARORSZAG	2,0	3	1
HU02	KOEZEP-DUNANTUL	1,3	2	1
HU03	NYUGAT-DUNANTUL	1,4	2	1
HU04	DEL-DUNANTUL	1,7	3	1
HU05	ESZAK-MAGYARORSZAG	1,4	2	1
HU06	ESZAK-ALFOELD	1,0	1	1
HU07	DEL-ALFOELD	1,6	2	1
IE01	BORDER, MIDLAND AND WESTERN	1,0	1	3
IE02	SOUTHERN AND EASTERN	1,0	1	3
IT11	PIEMONTE	4,0	4	1
IT12	VALLE D'AOSTA	3,6	4	1
IT13	LIGURIA	4,0	4	1
IT2	LOMBARDIA	3,3	4	1
IT31	TRENTINO-ALTO ADIGE	2,3	3	1
IT32	VENETO	3,3	4	1
IT33	FRIULI-VENEZIA GIULIA	4,0	4	1
IT4	EMILIA-ROMAGNA	4,0	4	1
IT51	TOSCANA	4,0	4	1
IT52	UMBRIA	4,0	4	1
IT53	MARCHE	3,7	4	1
IT6	LAZIO	2,9	4	1
IT71	ABRUZZO	3,4	4	1
IT72	MOLISE	3,1	4	1
IT8	CAMPANIA	1,0	1	1
IT91	PUGLIA	1,3	2	1
IT92	BASILICATA	2,1	3	1
IT93	CALABRIA	1,4	2	1
ITA	SICILIA	1,4	2	1
ITB	SARDEGNA	1,9	3	1
LT	LIETUVA	1,1	1	2
LU	LUXEMBOURG (GRAND-DUCHE)	1,3	2	3
LV	LATVIJA	1,4	2	1
MT	MALTA	1,0	1	3
NL11	GRONINGEN	1,3	2	3
NL12	FRIESLAND	1,0	1	3
NL13	DRENTHE	1,6	2	3
NL21	OVERIJSSEL	1,0	1	3
NL22	GELDERLAND	1,0	1	3
NL23	FLEVOLAND	1,0	1	3
NL31	UTRECHT	1,0	1	3

NL32	NOORD-HOLLAND	1,3	2	3
NL33	ZUID-HOLLAND	1,0	1	3
NL34	ZEELAND	1,9	3	3
NL41	NOORD-BRABANT	1,1	1	3
NL42	LIMBURG (NL)	1,4	2	3
NO01	OSLO OG AKERSHUS	1,1	1	3
NO02	HEDMARK OG OPPLAND	2,6	4	3
NO03	SOR-OSTLANDET	1,4	2	3
NO04	AGDER OG ROGALAND	1,0	1	3
NO05	VESTLANDET	1,3	2	3
NO06	TRONDELAG	1,3	2	3
NO07	NORD-NORGE	1,1	1	3
PL01	DOLNOSLASKIE	1,3	2	2
PL02	KUJAWSKO-POMORSKIE	1,1	1	2
PL03	LUBELSKIE	1,1	1	2
PL04	LUBUSKIE	1,1	1	2
PL05	LÓDZKIE	1,4	2	2
PL06	MALOPOLSKIE	1,1	1	2
PL07	MAZOWIECKIE	1,1	1	2
PL08	OPOLSKIE	1,3	2	2
PL09	PODKARPACKIE	1,0	1	2
PL0A	PODLASKIE	1,0	1	2
PL0B	POMORSKIE	1,1	1	2
PL0C	SLASKIE	1,3	2	2
PL0D	SWIETOKRZYSKIE	1,1	1	2
PL0E	WARMINSKO-MAZURSKIE	1,1	1	2
PL0F	WIELKOPOLSKIE	1,1	1	2
PL0G	ZACHODNIOPOMORSKIE	1,3	2	2
PT11	NORTE	1,1	1	2
PT12	CENTRO (P)	3,1	4	2
PT13	LISBOA E VALE DO TEJO	2,4	3	2
PT14	ALENTEJO	3,7	4	2
PT15	ALGARVE	2,4	3	2
PT2	ACORES	1,0	1	2
PT3	MADEIRA	1,1	1	2
RO01	NORD-EST	1,1	1	2
RO02	SUD-EST	1,3	2	2
RO03	SUD	1,4	2	2
RO04	SUD-VEST	1,4	2	2
RO05	VEST	1,3	2	2
RO06	NORD-VEST	1,3	2	2
RO07	CENTRU	1,3	2	2
RO08	BUCURESTI	1,9	3	2
SE01	STOCKHOLM LAEN	1,3	2	2
SE02	OESTRA MELLANSVERIGE	2,3	3	2
SE04	SYDSVERIGE	2,4	3	2
SE06	NORRA MELLANSVERIGE	2,9	4	2
SE07	MELLERSTA NORRLAND	2,9	4	2
SE08	OEVRE NORRLAND	2,3	3	2

SE09	SMAALAND MED OEARNA	2,7	4	2
SE0A	VASTSVERIGE	2,1	3	2
SI	SLOVENIJA	1,4	2	1
SK01	BRATISLAVSKÝ	1,6	2	2
SK02	Z-PADN+ SLOVENSKO	1,3	2	2
SK03	STREDN+ SLOVENSKO	1,1	1	2
SK04	VÝCHODN+ SLOVENSKO	1,0	1	2
UKC1	TEES VALLEY AND DURHAM	1,4	2	3
UKC2	NORTHUMBERLAND AND TYNE AND WEAR	1,6	2	3
UKD1	CUMBRIA	2,4	3	3
UKD2	CHESHIRE	1,7	3	3
UKD3	GREATER MANCHESTER	1,0	1	3
UKD4	LANCASHIRE	1,9	3	3
UKD5	MERSEYSIDE	1,6	2	3
UKE1	EAST RIDING AND NORTH LINCOLNSHIRE	1,9	3	3
UKE2	NORTH YORKSHIRE	2,4	3	3
UKE3	SOUTH YORKSHIRE	1,4	2	3
UKE4	WEST YORKSHIRE	1,0	1	3
UKF1	DERBYSHIRE AND NOTTINGHAMSHIRE	1,6	2	3
UKF2	LEICESTERSHIRE, RUTLAND AND NORTHAMPTONSHIRE	1,0	1	3
UKF3	LINCOLNSHIRE	2,9	4	3
UKG1	HEREFORDSHIRE, WORCESTERSHIRE AND WARWICKSHIRE	2,1	3	3
UKG2	SHROPSHIRE AND STAFFORDSHIRE	1,6	2	3
UKG3	WEST MIDLANDS	1,1	1	3
UKH1	EAST ANGLIA	2,1	3	3
UKH2	BEDFORDSHIRE AND HERTFORDSHIRE	1,1	1	3
UKH3	ESSEX	1,7	3	3
UKI1	INNER LONDON	1,1	1	3
UKI2	OUTER LONDON	1,0	1	3
UKJ1	BERKSHIRE, BUCKINGHAMSHIRE AND OXFORDSHIRE	1,0	1	3
UKJ2	SURREY, EAST AND WEST SUSSEX	2,4	3	3
UKJ3	HAMPSHIRE AND ISLE OF WIGHT	1,4	2	3
UKJ4	KENT	1,7	3	3
UKK1	GLOUCESTERSHIRE, WILTSHIRE AND NORTH SOMERSET	1,6	2	3
UKK2	DORSET AND SOMERSET	2,7	4	3
UKK3	CORNWALL AND ISLES OF SCILLY	2,9	4	3
UKK4	DEVON	2,7	4	3
UKL1	WEST WALES AND THE VALLEYS	2,3	3	3
UKL2	EAST WALES	1,6	2	3
UKM1	NORTH EASTERN SCOTLAND	1,0	1	3
UKM2	EASTERN SCOTLAND	1,4	2	3
UKM3	SOUTH WESTERN SCOTLAND	1,1	1	3
UKM4	HIGHLANDS AND ISLANDS	2,1	3	3
UKN	NORTHERN IRELAND	1,0	1	3

Table A4.4 Core indicators with regard to population, ageing and depopulation.					
NUTS 2	REGION NAME	Percent population change 1995-1999	Share of NUTS 2 average population 1999 living in NUTS 3 regions with population decline 1995-1999	Share of NUTS 2 area comprising NUTS 3 regions with population decline 1995-1999	Population density 1999 (ihabitants/ square kilometers)
NUTS_2	REGION	1995-1999			1999
AT11	BURGENLAND	1,1	0,0	0,0	70,1
AT12	NIEDEROESTERREICH	1,4	14,4	24,1	80,3
AT13	WIEN	0,6	0,0	0,0	3862,7
AT21	KAERNTEN	0,5	0,0	0,0	59,2
AT22	STEIERMARK	-0,2	24,1	38,5	73,4
AT31	OBEROESTERREICH	-0,6	69,3	56,8	114,9
AT32	SALZBURG	1,6	0,0	0,0	72,0
AT33	TIROL	1,2	0,0	0,0	52,7
AT34	VORARLBERG	1,5	0,0	0,0	133,8
BE1	REG.BRUXELLES-CAP./BRUSSELS HFDST.GEW.	0,5	0,0	0,0	5931,7
BE21	ANTWERPEN	0,6	56,8	34,9	572,0
BE22	LIMBURG (B)	1,7	0,0	0,0	324,9
BE23	OOST-VLAANDEREN	0,5	0,0	0,0	455,4
BE24	VLAAMS BRABANT	1,4	0,0	0,0	480,1
BE25	WEST-VLAANDEREN	0,4	0,0	0,0	359,5
BE31	BRABANT WALLON	2,7	0,0	0,0	318,1
BE32	HAINAUT	-0,3	57,9	32,8	338,4
BE33	LIEGE	0,3	57,7	20,6	263,6
BE34	LUXEMBOURG (B)	1,7	0,0	0,0	55,2
BE35	NAMUR	1,4	0,0	0,0	120,3
BG01	SEVEROIZTOCHEN (NORTH-WEST)	-4,5	100,0	100,0	55,6
BG02	SEVEREN TSENTRALEN (NORTH CENTRAL)	-3,7	100,0	100,0	68,7
BG03	SEVEROZAPADEN (NORTH-EAST)	-2,5	100,0	100,0	67,4
BG04	YUGOIZTOCHEN (NORTH-EAST)	-0,9	43,7	93,4	105,7
BG05	YUZHEN TSENTRALEN (SOUTH CENTRAL)	-2,2	85,9	79,9	75,3
BG06	YUGOZAPADEN (SOUTH-EAST)	-2,4	100,0	100,0	56,5
CH01	REGION LEMANIQUE	1,3	0,0	0,0	148,0
CH02	ESPACE MITTELLAND	0,7	4,2	8,3	164,4
CH03	SUISSE DU NORD-EST	1,1	19,3	1,9	503,8
CH04	ZUERICH	1,4	0,0	0,0	690,0
CH05	SUISSE ORIENTALE	0,7	3,7	5,9	90,3
CH06	SUISSE CENTRALE	2,4	0,0	0,0	150,3
CH07	TICINO	0,3	0,0	0,0	109,2
CY	KIBRIS				
CZ01	PRAHA	-1,9	100,0	100,0	2399,2
CZ02	STREDNÍ CECHY	0,2	0,0	0,0	100,8
CZ03	JIHOZÁPAD	-0,4	100,0	100,0	66,9
CZ04	SEVEROZÁPAD	0,1	0,0	0,0	130,9
CZ05	SEVEROVYCHOD	-0,3	71,2	74,6	119,8

CZ06	JIHOVYCHOD	-0,3	100,0	100,0	118,7
CZ07	STREDNI MORAVA	-0,2	48,2	56,5	136,2
CZ08	OSTRAVSKY	-0,9	100,0	100,0	231,0
DE11	STUTTGART	1,5	18,0	2,9	370,2
DE12	KARLSRUHE	1,1	15,9	3,5	386,2
DE13	FREIBURG	2,0	0,0	0,0	226,7
DE14	TUEBINGEN	1,9	0,0	0,0	196,6
DE21	OBERBAYERN	1,2	29,7	1,8	229,1
DE22	NIEDERBAYERN	2,6	4,3	0,7	113,0
DE23	OBERPFALZ	2,2	15,7	1,4	110,7
DE24	OBERFRANKEN	0,6	29,3	19,6	154,1
DE25	MITTELFRANKEN	1,1	29,0	2,6	232,2
DE26	UNTERFRANKEN	1,4	13,7	1,5	156,1
DE27	SCHWABEN	1,4	20,6	2,5	174,2
DE3	BERLIN	-2,2	100,0	100,0	3804,9
DE4	BRANDENBURG	2,0	40,5	38,7	88,0
DE5	BREMEN	-2,1	100,0	100,0	1644,4
DE6	HAMBURG	-0,2	100,0	100,0	2255,6
DE71	DARMSTADT	0,9	21,1	5,0	498,5
DE72	GIESSEN	1,0	0,0	0,0	197,5
DE73	KASSEL	0,4	34,9	26,9	153,3
DE8	MECKLENBURG VORPOMMERN	-1,8	55,4	38,1	77,5
DE91	BRAUNSCHWEIG	-0,4	58,7	51,4	206,4
DE92	HANNOVER	0,7	35,3	18,7	237,8
DE93	LUENEBURG	3,9	0,0	0,0	106,6
DE94	WESER-EMS	2,8	15,8	2,7	161,0
DEA1	DUESSELDORF	-0,4	61,7	27,8	995,8
DEA2	KOELN	1,9	32,1	8,8	578,0
DEA3	MUENSTER	1,6	36,2	12,5	377,4
DEA4	DETMOLD	2,2	15,7	4,0	314,1
DEA5	ARNSBERG	-0,3	57,6	30,0	476,6
DEB1	KOBLENZ	2,3	0,0	0,0	187,8
DEB2	TRIER	1,2	0,0	0,0	103,8
DEB3	RHEINHESSEN-PFALZ	1,2	15,5	4,1	292,0
DEC	SAARLAND	-1,0	66,5	43,5	417,9
DED1	CHEMNITZ	-2,8	89,9	93,9	270,5
DED2	DRESDEN	-1,8	65,2	86,2	218,2
DED3	LEIPZIG	7,4	15,2	36,3	272,6
DEE1	DESSAU	-3,6	100,0	100,0	129,9
DEE2	HALLE	-3,5	90,9	85,8	198,9
DEE3	MAGDEBURG	-2,9	75,4	68,4	104,4
DEF	SCHLESWIG-HOLSTEIN	2,1	22,2	2,9	175,9
DEG	THUERINGEN	-2,1	82,0	83,0	152,0
DK	DANMARK	1,8	0,0	0,0	123,4
EE	EESTI	-1,0	63,2	43,1	33,0
ES11	GALICIA	-0,7	66,6	84,8	91,9
ES12	ASTURIAS	-1,9	100,0	100,0	100,0
ES13	CANTABRIA	0,0	0,0	0,0	99,5
ES21	PAIS VASCO	-0,7	86,4	58,0	284,0
ES22	NAVARRA	1,5	0,0	0,0	51,3
ES23	RIOJA	0,8	0,0	0,0	52,2
ES24	ARAGON	-1,0	100,0	100,0	24,6
ES3	MADRID	1,6	0,0	0,0	636,3

ES41	CASTILLA-LEON	-1,6	100,0	100,0	26,3
ES42	CASTILLA-LA MANCHA	1,1	39,5	46,5	21,5
ES43	EXTREMADURA	0,0	0,0	0,0	25,7
ES51	CATALUNA	0,9	0,0	0,0	191,9
ES52	COMUNIDAD VALENCIANA	2,0	0,0	0,0	171,1
ES53	BALEARES	6,1	0,0	0,0	153,6
ES61	ANDALUCIA	1,4	19,6	31,2	82,4
ES62	MURCIA	3,1	0,0	0,0	98,2
ES63	CEUTA Y MELILLA	4,5	0,0	0,0	4451,6
ES7	CANARIAS	6,1	0,0	0,0	227,3
FI13	IT--SUOMI	-2,5	100,0	100,0	9,8
FI14	VALI-SUOMI	-0,6	38,3	43,9	16,5
FI15	POHJOIS-SUOMI	0,2	35,1	72,5	4,3
FI16	UUSIMAA (SUURALUE)	5,4	0,0	0,0	150,6
FI17	ETELA-SUOMI	0,4	42,0	46,0	34,6
FI2	AALAND	4,0	0,0	0,0	17,0
FR1	ILE DE FRANCE	0,8	12,6	2,0	912,8
FR21	CHAMPAGNE-ARDENNE	-0,4	36,1	44,7	52,4
FR22	PICARDIE	0,6	28,8	38,0	95,9
FR23	HAUTE-NORMANDIE	0,6	0,0	0,0	144,8
FR24	CENTRE	0,9	22,3	35,8	62,4
FR25	BASSE-NORMANDIE	1,0	20,5	34,7	81,0
FR26	BOURGOGNE	-0,2	47,8	48,7	51,0
FR3	NORD-PAS-DE-CALAIS	0,3	0,0	0,0	322,3
FR41	LORRAINE	-0,2	55,7	73,6	98,2
FR42	ALSACE	2,7	0,0	0,0	210,1
FR43	FRANCHE-COMTE	0,5	0,0	0,0	69,1
FR51	PAYS DE LA LOIRE	2,4	0,0	0,0	100,7
FR52	BRETAGNE	2,2	0,0	0,0	107,0
FR53	POITOU-CHARENTES	1,4	20,7	23,1	63,7
FR61	AQUITAINE	1,9	0,0	0,0	70,6
FR62	MIDI-PYRENEES	2,3	25,8	42,9	56,4
FR63	LIMOUSIN	-0,7	50,2	67,4	42,0
FR71	RHONE-ALPES	2,2	12,9	10,9	129,5
FR72	AUVERGNE	0,0	37,8	50,2	50,4
FR81	LANGUEDOC-ROUSSILLON	3,8	0,0	0,0	84,1
FR82	PROVENCE-ALPES-COTE D'AZUR	2,3	0,0	0,0	143,9
FR83	CORSE	0,4	45,4	46,2	30,0
FR91	GUADELOUPE	1,0	0,0	0,0	248,7
FR92	MARTINIQUE	-1,0	100,0	100,0	338,7
FR93	GUYANE	3,9	0,0	0,0	1,9
FR94	REUNION	7,7	0,0	0,0	281,7
GR11	ANATOLIKI MAKEDONIA, THRAKI	0,2	42,1	39,4	39,8
GR12	KENTRIKI MAKEDONIA	2,1	4,6	13,4	96,0
GR13	DYTIKI MAKEDONIA	0,3	13,8	24,2	32,2
GR14	THESSALIA	0,1	36,1	42,9	52,9
GR21	IPEIROS	2,7	0,0	0,0	40,9
GR22	IONIA NISIA	2,5	26,5	54,6	88,4
GR23	DYTIKI ELLADA	1,4	24,6	23,1	65,2
GR24	STEREA ELLADA	1,4	0,0	0,0	42,6
GR25	PELOPONNISOS	1,2	0,0	0,0	43,3
GR3	ATTIKI	-0,4	100,0	100,0	906,0

GR41	VOREIO AIGAIO	-1,1	79,3	79,7	48,0
GR42	NOTIO AIGAIO	3,0	0,0	0,0	51,6
GR43	KRITI	1,8	0,0	0,0	67,8
HU01	KOEZEP-MAGYARORSZAG	-1,6	64,0	7,6	412,0
HU02	KOEZEP-DUNANTUL	-0,6	61,6	61,2	98,6
HU03	NYUGAT-DUNANTUL	-1,5	100,0	100,0	88,1
HU04	DEL-DUNANTUL	-2,2	100,0	100,0	69,0
HU05	ESZAK-MAGYARORSZAG	-2,2	100,0	100,0	94,7
HU06	ESZAK-ALFOELD	-1,2	100,0	100,0	86,0
HU07	DEL-ALFOELD	-2,0	100,0	100,0	73,4
IE01	BORDER, MIDLAND AND WESTERN	2,8	0,0	0,0	29,7
IE02	SOUTHERN AND EASTERN	4,4	0,0	0,0	74,5
IT11	PIEMONTE	-0,1	70,4	52,7	168,8
IT12	VALLE D'AOSTA	0,8	0,0	0,0	36,8
IT13	LIGURIA	-1,9	86,7	78,7	300,6
IT2	LOMBARDIA	1,4	0,0	0,0	378,9
IT31	TRENTINO-ALTO ADIGE	2,4	0,0	0,0	68,6
IT32	VENETO	1,6	28,2	43,2	245,0
IT33	FRIULI-VENEZIA GIULIA	-0,5	64,8	65,1	150,9
IT4	EMILIA-ROMAGNA	1,2	15,5	23,6	179,5
IT51	TOSCANA	0,2	58,8	52,9	153,7
IT52	UMBRIA	1,2	26,7	25,1	98,6
IT53	MARCHE	1,1	0,0	0,0	150,4
IT6	LAZIO	1,2	0,0	0,0	305,3
IT71	ABRUZZO	0,7	0,0	0,0	118,4
IT72	MOLISE	-0,9	72,0	65,5	74,1
IT8	CAMPANIA	0,6	12,7	35,8	425,6
IT91	PUGLIA	0,2	41,5	59,2	211,1
IT92	BASILICATA	-0,3	100,0	100,0	60,8
IT93	CALABRIA	-0,9	100,0	100,0	136,5
ITA	SICILIA	0,1	58,4	62,1	198,1
ITB	SARDEGNA	-0,4	62,7	40,2	68,7
LT	LIETUVA	-0,4	74,9	71,8	56,6
LU	LUXEMBOURG (GRAND-DUCHE)	5,6	0,0	0,0	167,4
LV	LATVIJA	-3,3	100,0	100,0	37,7
MT	MALTA				
NL11	GRONINGEN	0,7	9,4	11,4	240,1
NL12	FRIESLAND	2,0	0,0	0,0	185,4
NL13	DRENTHE	2,9	26,7	26,0	176,9
NL21	OVERIJSSEL	2,1	0,0	0,0	321,9
NL22	GELDERLAND	2,3	0,0	0,0	383,4
NL23	FLEVOLAND	16,4	0,0	0,0	219,1
NL31	UTRECHT	3,4	0,0	0,0	808,7
NL32	NOORD-HOLLAND	1,9	9,3	6,9	944,3
NL33	ZUID-HOLLAND	1,8	0,0	0,0	1182,1
NL34	ZEELAND	1,1	0,0	0,0	207,1
NL41	NOORD-BRABANT	2,8	18,7	18,3	475,8
NL42	LIMBURG (NL)	0,7	0,0	0,0	525,6
NO01	OSLO OG AKERSHUS	5,5	0,0	0,0	180,0
NO02	HEDMARK OG OPPLAND	-0,5	100,0	100,0	7,0
NO03	SOR-OSTLANDET	2,9	0,0	0,0	23,4
NO04	AGDER OG ROGALAND	3,3	0,0	0,0	24,3

NO05	VESTLANDET	1,6	0,0	0,0	15,9
NO06	TRONDELAG	1,0	32,7	54,3	9,4
NO07	NORD-NORGE	-1,3	100,0	100,0	4,1
PL01	DOLNOSLASKIE	-0,3	68,2	53,5	149,4
PL02	KUJAWSKO-POMORSKIE	0,4	0,0	0,0	116,9
PL03	LUBELSKIE	-0,3	44,9	60,8	89,1
PL04	LUBUSKIE	0,9	0,0	0,0	73,2
PL05	LÓDZKIE	-1,2	100,0	100,0	145,8
PL06	MALOPOLSKIE	1,1	23,0	2,2	212,6
PL07	MAZOWIECKIE	0,2	31,9	1,4	142,3
PL08	OPOLSKIE	-0,5	100,0	100,0	115,7
PL09	PODKARPACKIE	1,0	0,0	0,0	118,5
PL0A	PODLASKIE	0,2	0,0	0,0	60,6
PL0B	POMORSKIE	1,2	34,5	2,3	119,6
PL0C	SLASKIE	-0,8	43,6	9,9	396,6
PL0D	SWIETOKRZYSKIE	-0,5	100,0	100,0	113,4
PL0E	WARMINSKO-MAZURSKIE	1,0	0,0	0,0	60,5
PL0F	WIELKOPOLSKIE	0,7	17,2	0,9	112,4
PL0G	ZACHODNIOPOMORSKIE	0,8	0,0	0,0	75,6
PT11	NORTE	1,3	19,4	68,1	169,8
PT12	CENTRO (P)	1,9	16,5	51,4	74,1
PT13	LISBOA E VALE DO TEJO	1,1	61,7	30,4	285,3
PT14	ALENTEJO	-0,4	49,6	53,6	19,5
PT15	ALGARVE	7,6	0,0	0,0	73,8
PT2	ACORES	-1,2	100,0	100,0	103,0
PT3	MADEIRA	-3,1	100,0	100,0	318,4
RO01	NORD-EST	1,3	0,0	0,0	104,0
RO02	SUD-EST	-0,3	64,8	73,9	82,4
RO03	SUD	-1,1	91,2	87,1	101,2
RO04	SUD-VEST	-0,8	65,5	61,1	82,7
RO05	VEST	-2,6	100,0	100,0	63,4
RO06	NORD-VEST	-1,3	88,4	84,3	83,3
RO07	CENTRU	-1,4	100,0	100,0	77,4
RO08	BUCURESTI	-3,3	100,0	100,0	1238,3
SE01	STOCKHOLM LAEN	3,9	0,0	0,0	276,3
SE02	OESTRA MELLANSVERIGE	-0,6	80,4	81,8	38,8
SE04	SYDSVERIGE	0,6	11,9	21,1	91,1
SE06	NORRA MELLANSVERIGE	-2,3	100,0	100,0	13,2
SE07	MELLERSTA NORRLAND	-3,0	100,0	100,0	5,4
SE08	OEVRE NORRLAND	-1,9	100,0	100,0	3,3
SE09	SMAALAND MED OEARNA	-1,2	92,8	90,6	24,1
SE0A	VASTSVERIGE	0,6	0,0	0,0	59,9
SI	SLOVENIJA	-0,2	34,5	40,3	97,9
SK01	BRATISLAVSKÝ	-0,3	100,0	100,0	300,5
SK02	Z-PADN+ SLOVENSKO	0,0	70,6	72,3	125,1
SK03	STREDN+ SLOVENSKO	0,3	48,9	58,2	83,4
SK04	VÝCHODN+ SLOVENSKO	1,2	0,0	0,0	98,2
UKC1	TEES VALLEY AND DURHAM	-0,6	67,7	83,4	381,7
UKC2	NORTHUMBERLAND AND TYNE AND WEAR	-1,6	78,2	9,7	254,9
UKD1	CUMBRIA	0,2	48,0	30,4	72,1
UKD2	CHESHIRE	0,5	0,0	0,0	421,7
UKD3	GREATER MANCHESTER	-0,2	53,8	42,6	2003,9
UKD4	LANCASHIRE	-0,1	20,2	5,6	464,2

UKD5	MERSEYSIDE	-2,0	100,0	100,0	2140,2
UKE1	EAST RIDING AND NORTH LINCOLNSHIRE	-1,0	64,2	31,7	241,1
UKE2	NORTH YORKSHIRE	2,5	0,0	0,0	90,0
UKE3	SOUTH YORKSHIRE	-0,3	59,2	76,5	835,8
UKE4	WEST YORKSHIRE	0,3	0,0	0,0	1040,3
UKF1	DERBYSHIRE AND NOTTINGHAMSHIRE	0,8	34,4	41,3	419,1
UKF2	LEICESTERSHIRE, RUTLAND AND NORTHAMPTONSHIRE	2,4	18,7	1,5	316,4
UKF3	LINCOLNSHIRE	3,1	0,0	0,0	106,2
UKG1	HEREFORDSHIRE, WORCESTERSHIRE AND WARWICKSHIRE	1,6	0,0	0,0	206,0
UKG2	SHROPSHIRE AND STAFFORDSHIRE	1,2	16,8	1,5	240,9
UKG3	WEST MIDLANDS	-0,4	80,6	69,4	2915,6
UKH1	EAST ANGLIA	3,7	7,1	2,6	174,8
UKH2	BEDFORDSHIRE AND HERTFORDSHIRE	3,2	0,0	0,0	558,5
UKH3	ESSEX	2,6	0,0	0,0	440,3
UKI1	INNER LONDON	5,4	0,0	0,0	8778,8
UKI2	OUTER LONDON	3,3	0,0	0,0	3537,6
UKJ1	BERKSHIRE, BUCKINGHAMSHIRE AND OXFORDSHIRE	4,0	0,0	0,0	368,7
UKJ2	SURREY, EAST AND WEST SUSSEX	3,6	0,0	0,0	474,9
UKJ3	HAMPSHIRE AND ISLE OF WIGHT	2,4	10,6	1,0	426,7
UKJ4	KENT	2,3	0,0	0,0	424,9
UKK1	GLOUCESTERSHIRE, WILTSHIRE AND NORTH SOMERSET	2,6	0,0	0,0	286,7
UKK2	DORSET AND SOMERSET	2,3	0,0	0,0	194,1
UKK3	CORNWALL AND ISLES OF SCILLY	2,7	0,0	0,0	139,1
UKK4	DEVON	1,6	23,5	1,2	160,4
UKL1	WEST WALES AND THE VALLEYS	-0,6	70,2	41,0	142,3
UKL2	EAST WALES	2,7	0,0	0,0	139,9
UKM1	NORTH EASTERN SCOTLAND	-1,6	100,0	100,0	68,7
UKM2	EASTERN SCOTLAND	0,3	34,3	20,7	105,6
UKM3	SOUTH WESTERN SCOTLAND	-0,8	72,9	82,8	180,0
UKM4	HIGHLANDS AND ISLANDS	-0,5	58,9	76,2	9,3
UKN	NORTHERN IRELAND	2,4	16,8	0,8	119,5

Table A4.5a Total Fertility Rate 1990-1995

		1990		1995		1999	
BE	**BE Belgium**	**1,62**		**1,55**		**1,61**	
BE1	BE1 Région BXL-capitale	1,78		1,77		1,84	a
BE2	BE2 Vlaams Gewest	1,55		1,5		1,56	a
BE21	BE21 Antwerpen	1,58		1,54		1,60	a
BE22	BE22 Limburg	1,49		1,41		1,46	a
BE23	BE23 Oost-Vlaanderern	1,51		1,48		1,54	a
BE24	BE24 Vlaams Brabant	1,5		1,47		1,53	a
BE25	BE25 West-Vlaanderen	1,63		1,56		1,62	a
BE3	BE3 Région Wallonne	1,7		1,61		1,67	a
BE31	BE31 Brabant Wallon	1,68		1,61		1,67	a
BE32	BE32 Hainaut	1,66		1,57		1,63	a
BE33	BE33 Liège	1,69		1,59		1,65	a
BE34	BE34 Luxembourg (BE)	1,82		1,77		1,84	a
BE35	BE35 Namur	1,78		1,65		1,71	a
DK	**DK Denmark**	**1,68**		**1,81**		**1,74**	
DK001	DK001 København og Frederiksberg	1,33		1,51		1,50	
DK002	DK002 Københavns amt	1,70		1,92		1,83	
DK003	DK003 Frederiksborg amt	1,78		1,99		1,90	
DK004	DK004 Roskilde amt	1,68		1,92		1,83	
DK005	DK005 Vestsjællands amt	1,73		1,90		1,84	
DK006	DK006 Storstrøms amt	1,67		1,84		1,80	
DK007	DK007 Bornholms amt	1,77		1,98		1,80	
DK008	DK008 Fyns amt	1,72		1,81		1,75	
DK009	DK009 Sønderjyllands amt	1,93		1,96		1,92	
DK00A	DK00A Ribe amt	1,94		2,03		1,98	
DK00B	DK00B Vejle amt	1,77		1,90		1,86	
DK00C	DK00C Ringkøbing amt	1,84		2,01		1,94	
DK00D	DK00DE Århus amt	1,63		1,79		1,70	
DK00E	DK00 Viborg amt	1,95		2,07		1,98	
DK00F	DK00F Nordjyllands amt	1,75		1,84		1,75	
DE	**DE Federal Rep of Germany (incl x-GDR from 1991)**	**1,45**	b	**1,25**		**1,36**	
DE1	DE1 Baden-Württemberg	NA		NA		NA	
DE11	DE11 Stuttgart	1,49	b	1,44		1,46	
DE12	DE12 Karlsruhe	1,37	b	1,31		1,35	
DE13	DE13 Freiburg	1,43	b	1,37		1,39	
DE14	DE14 Tübingen	1,55	b	1,45		1,50	
DE2	DE2 Bayern	NA		NA		NA	
DE21	DE21 Oberbayern	1,39	b	1,32		1,39	
DE22	DE22 Niderbayern	1,50	b	1,37	b	1,45	
DE23	DE23 Oberpfalz	1,49	b	1,38		1,45	
DE24	DE24 Oberfranken	1,44	b	1,31		1,38	
DE25	DE25 Mittelfranken	1,41	b	1,32		1,39	
DE26	DE26 Unterfranken	1,49	b	1,36		1,37	
DE27	DE27 Schwaben	1,59	b	1,47		1,52	
DE3	DE3 Berlin	1,10	b	1,06		1,20	
DE4	DE4 Brandenburg	0,97	b	0,83		1,12	
DE5	DE5 Bremen	1,30	b	1,28		1,34	

DE6	DE6 Hamburg	1,24	b	1,16		1,21	
DE7	DE7 Hessen	NA		NA		NA	
DE71	DE71 Darmstadt	1,29	b	1,27		1,36	
DE72	DE72 Gießen	1,35	b	1,28		1,35	
DE73	DE73 Kassel	1,42	b	1,39		1,40	
DE8	DE8 Mecklenburg-Vorpommern	1,01	b	0,82		1,14	
DE9	DE9 Nidersachsen	NA		NA		NA	
DE91	DE91 Braunschweig	1,37	b	1,29		1,37	
DE92	DE92 Hannover	1,35	b	1,31		1,38	
DE93	DE93 Lüneburg	1,48	b	1,43		1,52	
DE94	DE94 Weser-ems	1,57	b	1,47		1,59	
DEA	DEA Nordrhein-Westfalen	NA		NA		NA	
DEA1	DEA1 Düsseldorf	1,42	b	1,33		1,36	
DEA2	DEA2 Köln	1,41	b	1,34		1,40	
DEA3	DEA3 Münster	1,50	b	1,40		1,46	
DEA4	DEA4 Detmold	1,53	b	1,49		1,53	
DEA5	DEA5 Arnsberg	1,48	b	1,38		1,43	
DEB	DEB Rheinland-Pfalz	NA		NA		NA	
DEB1	DEB1 Koblenz	1,52	b	1,39		1,47	
DEB2	DEB2 Trier	1,48	b	1,38		1,36	
DEB3	DEB3 Rheinhessen-Pfalz	1,41	b	1,32		1,38	
DEC	DEC Saarland	1,32	b	1,24		1,28	
DED	DED Sachsen	NA		NA		NA	
DED1	DED1 Chemnitz	1,02	b	0,86		1,18	
DED2	DED2 Dresden	1,01	b	0,84		1,18	
DED3	DED3 Leipzig	0,98	b	0,77		1,10	
DEE	DEE Sachsen-Anhalt	NA		NA		NA	
DEE1	DEE1 Dessau	0,97	b	0,81		1,08	
DEE2	DEE2 Halle	0,99	b	0,81		1,13	
DEE3	DEE3 Magdeburg	1,02	b	0,84		1,16	
DEF	DEF Schleswig-Holstein	1,44	b	1,34		1,43	
DEG	DEG Thüringen	0,97	b	0,84		1,12	
GR	**GR Greece**	**1,39**		**1,38**		**1,31**	
GR1	GR1 Voreia Ellada	1,41		1,35		1,33	
GR11	GR11 Anatoliki Makedonia, Thraki	1,49		1,46		1,44	
GR12	GR12 Kentriki Makedonia	1,33		1,3		1,3	
GR13	GR13 Dytiki Makedonia	1,49		1,41		1,36	
GR14	GR14 Thessalia	1,54		1,4		1,31	
GR2	GR2 Kentriki Ellada	1,41		1,18		1,11	
GR21	GR21 Ipeiros	1,36		1,1		0,99	
GR22	GR22 Ionia Nisia	1,51		1,49		1,32	
GR23	GR23 Dytiki Ellada	1,51		1,28		1,19	
GR24	GR24 Sterea Ellada	1,31		1,04		0,99	
GR25	GR25 Peloponnisos	1,37		1,18		1,14	
GR3	GR3 Attiki	1,3		1,3		1,36	
GR4	GR4 Nisia Aigaiou, Kriti	1,42		1,42		1,49	e
GR41	GR41 Voreio Aigaio	1,44		1,44		1,51	e
GR42	GR42 Notio Aigaio	1,42		1,42		1,49	e
GR43	GR43 Kriti	1,42		1,42		1,49	e
EES	**ES Spain**	**1,36**		**1,18**		**1,2**	
ES1	ES1 Noroeste	NA		NA		NA	

ES11	ES11 Galicia	1,17		0,94		0,91	
ES12	ES12 Principado de Asturias	0,98		0,83		0,82	
ES13	ES13 Cantabria	1,15		0,92		0,98	
ES2	ES2 Noreste	NA		NA		NA	
ES21	ES21 Pais Vasco	0,99		0,91		1,01	
ES22	ES22 Comunidad Foral de Navarra	1,23		1,12		1,21	
ES23	ES23 La Rioja	1,21		1,05		1,14	
ES24	ES24 Aragón	1,16		1,08		1,11	
ES3	ES3 Comunidad de Madrid	1,27		1,15		1,24	
ES4	ES4 Centro (E)	NA		NA		NA	
ES41	ES41 Castilla y León	1,17		0,96		0,93	
ES42	ES42 Castilla-la Mancha	1,61		1,36		1,27	
ES43	ES43 Extremadura	1,63		1,32		1,21	
ES5	ES5 Este	NA		NA		NA	
ES51	ES51 Cataluña	1,25		1,16		1,25	
ES52	ES52 Comunidad Valenciana	1,38		1,19		1,20	
ES53	ES53 Baleares	1,62		1,35		1,43	
ES6	ES6 Sur	NA		NA		NA	
ES61	ES61 Andalucia	1,66		1,37		1,31	
ES62	ES62 Murcia	1,73		1,43		1,42	
ES63	ES63 Ceuta y Melilla	1,93		1,96		1,91	
ES7	ES7 Canarias	1,48		1,24		1,29	
FR	**FR France (*)**	**1,88**		**1,70**		**1,86**	**d**
FR1	FR1 Île de France	1,89		1,74		1,94	d
FR2	FR2 Bassin Parisien	1,92		1,72		1,89	d
FR21	FR21 Champagne-Ardenne	1,88		1,71		1,87	d
FR22	FR22 Picardie	2,02		1,78		1,98	d
FR23	FR23 Haute-Normandie	1,98		1,78		1,92	d
FR24	FR24 Centre	1,86		1,66		1,85	d
FR25	FR25 Basse-Normandie	1,90		1,77		1,91	d
FR26	FR26 Bourgogne	1,84		1,64		1,79	d
FR3	FR3 Nord - Pas-de-Calais	2,14		1,87		2	d
FR4	FR4 Est	1,87		1,68		1,79	d
FR41	FR41 Lorraine	1,88		1,65		1,75	d
FR42	FR42 Alsace	1,85		1,67		1,76	d
FR43	FR43 Franche-Comté	1,91		1,75		1,91	d
FR5	FR5 Ouest	1,90		1,70		1,92	d
FR51	FR51 Pays de la Loire	1,95		1,76		2	d
FR52	FR52 Bretagne	1,93		1,70		1,92	d
FR53	FR53 Poitou-Charentes	1,74		1,58		1,76	d
FR6	FR6 Sud-Ouest	1,65		1,50		1,69	d
FR61	FR61 Aquitaine	1,68		1,50		1,7	d
FR62	FR62 Midi-Pyrénées	1,65		1,52		1,7	d
FR63	FR63 Limousin	1,50		1,43		1,61	d
FR7	FR7 Centre-Est	1,89		1,66		1,83	d
FR71	FR71 Rhône-Alpes	1,95		1,71		1,87	d
FR72	FR72 Auvergne	1,64		1,44		1,67	d
FR8	FR8 Méditerranée	1,84		1,67		1,76	d
FR81	FR81 Languedoc-Roussillon	1,81		1,65		1,7	d
FR82	FR82 Provence-Alpes-Côte d'Azur	1,86		1,69		1,8	d
FR83	FR83 Corse	1,76		1,57		1,67	d

IE	**IE011 Ireland**	**2,11**		**1,84**		**1,89**	**d**
IE01	IE012 Border, Midlands and Western	NA		NA		2,02	d
IE02	IE013 Southern and Eastern	NA		NA		1,85	d
IT	**IT Italy**	**1,33**		**1,18**		**1,23**	e
IT1	IT1 Nord Ovest	1,07		0,98		1,02	e
IT11	IT11 Piemonte	1,08		1,00		1,04	e
IT12	IT12 Valle d'Aosta	1,10		1,08		1,13	e
IT13	IT13 Liguria	1,02		0,91		0,95	e
IT2	IT2 Lombardia	1,13		1,09		1,13	e
IT3	IT3 Nord Est	1,17		1,08		1,13	e
IT31	IT31 Trentino-Alto Adige	1,40		1,33		1,39	e
IT32	IT32 Veneto	1,14		1,06		1,10	e
IT33	IT33 Friuli-Venezia Giulia	1,08		0,99		1,03	e
IT4	IT4 Emilia-Romagna	1,04		0,99		1,03	e
IT5	IT5 Centro (I)	1,14		1,03		1,08	e
IT51	IT51 Toscana	1,09		0,99		1,03	e
IT52	IT52 Umbria	1,21		1,10		1,14	e
IT53	IT53 Marche	1,24		1,10		1,14	e
IT6	IT6 Lazio	1,28		1,13		1,18	e
IT7	IT7 Abruzzo-Molise	1,33		1,14		1,19	e
IT71	IT71 Abruzzo	1,32		1,13		1,17	e
IT72	IT72 Molise	1,34		1,22		1,27	e
IT8	IT8 Campania	1,81		1,51		1,57	e
IT9	IT9 Sud	1,57		1,31		1,37	e
IT91	IT91 Puglia	1,60		1,35		1,40	e
IT92	IT92 Basilicata	1,40		1,14		1,19	e
IT93	IT93 Calabria	1,56		1,29		1,34	e
ITA	ITA Sicilia	1,74		1,45		1,51	e
ITB	ITB Sardegna	1,35		1,07		1,12	e
LU	**LU Luxembourg**	**1,61**		**1,69**		**1,73**	
NL	**NL Netherlands**	**1,62**		**1,53**		**1,64**	
NL1	NL1 Noord-Nederland	1,59		1,56		1,69	
NL11	NL11 Groningen	1,48		1,42		1,52	
NL12	NL12 Friesland	1,68		1,69		1,78	
NL13	NL13 Drenthe	1,64		1,60		1,79	
NL2	NL2 Oost-Nederland	1,71		1,62		1,75	
NL21	NL21 Overijssel	1,77		1,64		1,78	
NL22	NL22 Gelderland	1,65		1,58		1,70	
NL23	NL23 Flevoland	2,05		1,84		1,94	
NL3	NL3 West-Nederland	1,61		1,50		1,61	
NL31	NL31 Utrecht	1,59		1,50		1,65	
NL32	NL32 Noord-Holland	1,54		1,45		1,56	
NL33	NL33 Zuid-Holland	1,66		1,52		1,63	
NL34	NL34 Zeeland	1,75		1,68		1,74	
NL4	NL4 Zuid-Nederland	1,59		1,50		1,59	
NL41	NL41 Noord-Brabant	1,62		1,54		1,63	
NL42	NL42 Limburg (NL)	1,52		1,42		1,51	
AT	**AT Austria**	**1,45**		**1,40**		**1,31**	
AT1	AT10 Ostösterreich	1,41		1,34		1,26	
AT11	AT11 Burgenland	1,34		1,28		1,15	
AT12	AT12 Niederösterreich	1,50		1,47		1,34	

AT13	AT13 Wien	1,36		1,26		1,23
AT2	AT20 Sudösterreich	1,42		1,35		1,26
AT21	AT21 Kärnten	1,46		1,42		1,29
AT22	AT22 Steiermark	1,40		1,31		1,24
AT3	AT30 Westösterreich	1,52		1,50		1,40
AT31	AT31 Oberösterreich	1,51		1,49		1,42
AT32	AT32 Salzburg	1,45		1,46		1,39
AT33	AT33 Tirol	1,51		1,47		1,34
AT34	AT34 Vorarlberg	1,66		1,65		1,51
PT	**PT Portugal**	**1,57**	**e**	**1,40**		**1,48**
PT1	PT1 Portugal (Continent)	1,56	e	1,39		1,48
PT11	PT11 Norte	1,59	e	1,41		1,45
PT12	PT12 Centro (P)	1,50	e	1,33		1,37
PT13	PT13 Lisboa e Vale do Tejo	1,56	e	1,39		1,57
PT14	PT14 Alentejo	1,40	e	1,25		1,35
PT15	PT15 Algarve	1,69	e	1,51		1,67
PT2	PT2 Açores (PT)	2,07	e	1,84		1,67
PT3	PT3 Madeira (PT)	1,54	e	1,37		1,41
FI	**FI Finland**	**1,77**		**1,79**		**1,72**
FI1	FI1 Manner-Suomi	1,77		1,79		1,72
FI13	FI13 Itä-Suomi	1,76		1,78		1,76
FI14	FI14 Väli-Suomi	1,94		1,92		1,84
FI15	FI15 Pohjois-Suomi	2,01		2,08		2,04
FI11	FI16 Uusimaa (suuralue)	1,67		1,68		1,58
FI12	FI17 Etelä-Suomi	1,73		1,76		1,71
FI2	FI2 Åland	2,01		1,88		1,67
SE	***se* Sweden**	**2,12**	**b**	**1,74**		**1,50**
SE01	*se01* Stockholm	1,95	b	1,70		1,49
SE02	*se02* Östra Mellansverige	2,15	b	1,77		1,49
SE021	*se021* Uppsala län	2,11	b	1,69		1,37
SE022	*se022* Södermanlands län	2,23	b	1,83		1,60
SE023	*se023* Östergötlands län	2,15	b	1,81		1,49
SE024	*se024* Örebro län	2,12	b	1,75		1,55
SE025	*se025* Västmanlands län	2,17	b	1,79		1,50
SE04	*se04* Sydsverige	2,05	b	1,71		1,50
SE041	*se041* Blekinge län	2,22	b	1,76		1,50
SE044	*se044* Skåne län	2,04	b	1,71		1,50
SE06	*se06* Norra Mellansverige	2,28	b	1,73		1,52
SE061	*se061* Värmlands län	2,26	b	1,74		1,54
SE062	*se062* Dalarnas län	2,34	b	1,79		1,56
SE063	*se063* Gävleborgs län	2,25	b	1,67		1,45
SE07	*se07* Mellersta Norrland	2,20	b	1,74		1,52
SE071	*se071* Västernorrlands län	2,18	b	1,76		1,55
SE072	*se072* Jämtlands län	2,24	b	1,70		1,46
SE08	*se08* Övre Norrland	2,28	b	1,71		1,49
SE081	*se081* Västerbottens län	2,37	b	1,73		1,43
SE082	*se082* Norrbottens län	2,21	b	1,69		1,55
SE09	*se09* Småland med öarna	2,26	b	1,83		1,54
SE091	*se091* Jönköpings län	2,35	b	1,87		1,59
SE092	*se092* Kronobergs län	2,16	b	1,81		1,54
SE093	*se093* Kalmar län	2,26	b	1,83		1,49

SE094	*se094* Gotlands län	2,17	b	1,72		1,53
SE0A	*se0a* Västsverige	2,13	b	1,74		1,52
SE0A1	*se0a1* Hallands län	2,20	b	1,84		1,60
SE0A2	*se0a2* Västra Götalands län	2,13	b	1,75		1,51
UK	***uk* United Kingdom**	**1,83**		**1,70**		**1,68**
UKC	*ukc* North East	1,78	f	1,66		1,62
UKC1	*ukc1* Tees Valley and Durham	1,84	f	1,71		1,69
UKC2	*ukc2* Northumberland, Tyne and Wear	1,74	f	1,62		1,57
UKD	*ukd* North West (including Merseyside)	1,84	f	1,71		1,70
UKD1	*ukd1* Cumbria	1,73	f	1,61		1,64
UKD2	*ukd2* Cheshire	1,81	f	1,69		1,71
UKD3	*ukd3* Greater Manchester	1,87	f	1,74		1,74
UKD4	*ukd4* Lancashire	1,89	f	1,76		1,77
UKD5	*ukd5* Merseyside	1,79	f	1,67		1,59
UKE	*uke* Yorkshire and The Humber	1,87	f	1,74		1,72
UKE1	*uke1* East Riding and North Lincolnshire	1,87	f	1,74		1,70
UKE2	*uke2* North Yorkshire	1,80	f	1,67		1,63
UKE3	*uke3* South Yorkshire	1,83	f	1,70		1,66
UKE4	*uke4* West Yorkshire	1,92	f	1,79		1,80
UKF	*ukf* East Midlands	1,80	f	1,68		1,65
UKF1	*ukf1* Derbyshire and Nottinghamshire	1,79	f	1,66		1,63
UKF2	*ukf2* Leicestershire, Rutland and Northants	1,82	f	1,70		1,70
UKF3	*ukf3* Lincolnshire	1,82	f	1,69		1,67
UKG	*ukg* West Midlands	1,91	f	1,78		1,78
UKG1	*ukg1* Herefordshire, Worcestershire and Warks	1,83	f	1,71		1,70
UKG2	*ukg2* Shropshire and Staffordshire	1,81	f	1,68		1,67
UKG3	*ukg3* West Midlands	1,99	f	1,86		1,87
UKH	*ukh* Eastern	1,84	f	1,71		1,66
UKH1	*ukh1* East Anglia	1,79	f	1,67		1,59
UKH2	*ukh2* Bedfordshire, Hertfordshire	1,90	f	1,77		1,73
UKH3	*ukh3* Essex	1,83	f	1,70		1,67
UKI	*uki* London	1,88	f	1,75	f	1,73
UKI1	*uki1* Inner London	1,88	f	1,75	f	1,73
UKI2	*uki2* Outer London	1,89	f	1,76	f	1,74
UKJ	*ukj* South East	1,82	f	1,70		1,65
UKJ1	*ukj1* Berkshire, Bucks and Oxfordshire	1,79	f	1,67		1,67
UKJ2	*ukj2* Surrey, East and West Sussex	1,80	f	1,67		1,58
UKJ3	*ukj3* Hampshire and Isle of Wight	1,82	f	1,69		1,64
UKJ4	*ukj4* Kent	1,90	f	1,77		1,77
UKK	*ukk* South West	1,79	f	1,67		1,64
UKK1	*ukk1* Gloucestershire, Wiltshire and North Somerset	1,81	f	1,69		1,66
UKK2	*ukk2* Dorset and Somerset	1,77	f	1,64		1,58
UKK3	*ukk3* Cornwall and Isles of Scilly	1,92	f	1,79	f	1,76
UKK4	*ukk4* Devon	1,78	f	1,65	f	1,63
UKL	*ukl* Wales	1,90	f	1,77		1,73
UKL1	*ukl1* West Wales and The Valleys	1,92	f	1,79	f	1,76
UKL2	*ukl2* East Wales	1,83	f	1,70	f	1,68
UKM	*ukm* Scotland	1,67	f	1,55		1,53
UKM1	*ukm1* North Eastern Scotland	NA		NA		NA

UKM2	*ukm2* Eastern Scotland	NA		NA		NA	
UKM3	*ukm3* South Western Scotland	NA		NA		NA	
UKM4	*ukm4* Highlands and Islands	NA		NA		NA	
UKN	*ukn* Northern Ireland	2,05	f	1,91		1,88	
BG	**Bulgaria**	**1,81**		**1,24**		**1,23**	
CY	**Cyprus**	**2,42**		**2,13**		**1,83**	
CZ	**Czech Republic**	**1,89**		**1,28**		**1,13**	
EE	**Estonia**	**2,05**		**1,32**		**1,24**	
HU	**Hungary**	**1,87**		**1,58**		**1,31**	**d**
HU01	Közép-Magyarország	N.A.		N.A.		1,17	d
HU011	Budapest	1,46		1,22		1,05	d
HU012	Pest	1,85		1,62		1,39	d
HU02	Közép-Dunántúl	N.A.		N.A.		1,22	d
HU021	Fejér	1,98		1,52		1,23	d
HU022	Komárom-Esztergom	1,89		1,52		1,28	d
HU023	Veszprém	1,89		1,57		1,18	d
HU03	Nyugat-Dunántúl	N.A.		N.A.		1,18	d
HU031	Gyor-Moson-Sopron	1,86		1,53		1,19	d
HU032	Vas	1,75		1,55		1,18	d
HU033	Zala	1,79		1,46		1,16	d
HU04	Dél-Dunántúl	N.A.		N.A.		1,34	d
HU041	Baranya	1,77		1,51		1,3	d
HU042	Somogy	1,93		1,64		1,4	d
HU043	Tolna	2		1,58		1,34	d
HU05	Észak-Magyarország	N.A.		N.A.		1,54	d
HU051	Borsod-Abaúj-Zemplén	2,12		1,85		1,63	d
HU052	Heves	1,82		1,55		1,38	d
HU053	Nógrád	1,91		1,7		1,49	d
HU06	Észak-Alföld	N.A.		N.A.		1,55	d
HU061	Hajdú-Bihar	2,02		1,8		1,53	d
HU062	Jász-Nagykun-Szolnok	2,09		1,75		1,46	d
HU063	Szabolcs-Szatmár-Bereg	2,13		1,91		1,63	d
HU07	Dél-Alföld	N.A.		N.A.		1,35	d
HU071	Bács-Kiskun	2,01		1,64		1,38	d
HU072	Békés	1,9		1,6		1,35	d
HU073	Csongrád	1,75		1,63		1,3	d
LT	**Lithuania**	**2**		**1,49**		**1,35**	
LV	**Latvia**	**2,02**		**1,25**		**1,18**	
MT	**Malta**	**2,05**		**1,83**		**1,72**	
PL	**Poland**	**2,06**		**1,62**		**1,34**	
PL01	Dolnoslaskie	1,89		1,48		1,20	
PL02	Kujawsko-Pomorskie	2,12		1,67		1,36	
PL03	Lubelskie	2,34		1,79		1,45	
PL04	Lubuskie	2,08		1,68		1,29	
PL05	Lódzkie	1,88		1,53		1,26	
PL06	Malopolskie	2,19		1,74		1,49	
PL07	Mazowieckie	2,01		1,61		1,35	
PL08	Opolskie	1,85		1,38		1,15	
PL09	Podkarpackie	2,41		1,77		1,48	
PL0A	Podlaskie	2,29		1,76		1,39	
PL0B	Pomorskie	2,15		1,69		1,42	

PL0C	Slaskie	1,75		1,41		1,19	
PL0D	Swietokrzyskie	2,16		1,69		1,33	
PL0E	Warminsko-Mazurskie	2,22		1,72		1,40	
PL0F	Wielkopolskie	2,19		1,69		1,39	
PL0G	Zachodniopomorskie	2,06		1,64		1,30	
RO	**Romania**	**1,83**		**1,34**		**1,3**	
RO01	Nord-Est	2,34		1,71		1,66	e
RO02	Sud-Est	1,79		1,31		1,27	e
RO03	Sud	1,83		1,34		1,3	e
RO04	Sud-Vest	1,83		1,34		1,3	e
RO05	Vest	1,59		1,16		1,13	e
RO06	Nord-Vest	1,87		1,37		1,33	e
RO07	Centru	1,76		1,29		1,25	e
RO08	Bucuresti	1,27		0,93		0,9	e
SI	**Slovenia**	**1,46**		**1,29**		**1,21**	
SK	**Slovak Republic**	**2,09**		**1,52**		**1,33**	
NO	**NORWAY©**	**1,93**	**c**	**1,87**	**c**	**1,84**	**c**
N010	AKERSHUS	1,78	c	1,82	c	1,8	c
N011	AUST-AGDER	1,87	c	1,89	c	1,9	c
N012	BUSKERUD	1,72	c	1,74	c	1,74	c
N013	FINNMARK	1,93	c	2,06	c	2,05	c
N014	HEDMARK	1,65	c	1,75	c	1,71	c
N015	HORDALAND	1,98	c	2,02	c	1,97	c
N016	MORE OG ROMSDAL	1,95	c	1,97	c	2	c
N017	NORDLAND	1,9	c	1,97	c	1,93	c
N018	NORD-TRONDELAG	1,94	c	2	c	2,03	c
N019	OPPLAND	1,65	c	1,72	c	1,72	c
N020	OSLO	1,63	c	1,71	c	1,69	c
N021	OSTFOLD	1,66	c	1,72	c	1,72	c
N022	ROGALAND	2,07	c	2,13	c	2,08	c
N023	SOGN OG FJORDANE	2,04	c	2,11	c	2,11	c
N024	SOR-TRONDELAG	1,82	c	1,9	c	1,87	c
N025	TELEMARK	1,78	c	1,77	c	1,73	c
N026	TROMS	1,87	c	2	c	1,9	c
N027	VEST-AGDER	1,98	c	2,02	c	1,96	c
N028	VESTFOLD	1,76	c	1,78	c	1,75	c
CH	**Switzerland**	**1,59**		**1,48**		**1,48**	
CH01	NORDOSTSCHWEIZ	1,56		1,48		1,48	a
CH02	NORDWESTSCHWEIZ-BERN	1,54		1,42		1,42	a
CH03	SUDSCHWEIZ	1,81		1,57		1,57	a
CH04	WESTSCHWEIZ	1,64		1,56		1,56	a
CH05	SUDSCHWEIZ	1,56		1,39		1,39	a

a Estimated according to the national change 1995-1999

b Data for 1991

c Average values for 1986-1990, 1991-1995 and 1996-2000

d Values for 2000

e Estimated

f Estimated according to the national change 1990-1995, 1995-1999

(*) excluding overseas departments

Table A4.5b TFR 1960, 1980 and 1988

REGION	CODE	1960	REGION	CODE	1980.
SCHLESWIG-HOLSTEIN	R11	2,39	SCHLESWIG-HOLSTEIN	R11	1,43
HAMBURG	R12	1,82	HAMBURG	R12	1,22
BRAUNSCHWEIG	R13A10A	2,19	BRAUNSCHWEIG	R13A	1,39
HILDESHEIM	R13A10B	2,38	HANNOVER	R13B	1,36
HANNOVER	R13B	2,14	LUNEBURG	R13C	1,52
LUNEBURG	R13C10A	2,60	WESER-EMS	R13D	1,67
STADE	R13C10B	2,69	BREMEN	R14	1,25
AURICH	R13D10A	2,72	DUSSELDORF	R151	1,36
OLDENBURG	R13D10B	2,82	KOLN	R152	1,34
OSNABRUCK	R13D10C	2,93	MUNSTER	R153	1,51
BREMEN	R14	2,14	DETMOLD	R154	1,51
DUSSELDORF	R151	2,20	ARNSBERG	R155	1,49
AACHEN	R15210A	2,45	DARMSTADT	R161	1,35
KOLN	R15210B	2,19	KASSEL	R162	1,44
MUNSTER	R153	2,62	KOBLENZ	R171	1,54
DETMOLD	R154	2,39	TRIER	R172	1,66
ARNSBERG	R155	2,30	RHEINHESSEN-PFALZ	R173	1,41
DARMSTADT	R16110A	2,39	STUTTGART	R181	1,55
WIESBADEN	R16110B	2,11	KARLSRUHE	R182	1,36
KASSEL	R162	2,46	FREIBURG	R183	1,45
KOBLENZ	R17110A	2,61	TUBINGEN	R184	1,61
MONTABAUR	R17110B	2,70	OBERBAYERN	R191	1,32
TRIER	R172	2,95	NIEDERBAYERN	R192	1,71
PFALZ	R17310A	2,55	OBERPFALZ	R193	1,66
RHEINHESSEN	R17310B	2,44	OBERFRANKEN	R194	1,57
NORDWURTTEMBERG	R181	2,45	MITTELFRANKEN	R195	1,42
NORDBADEN	R182	2,37	UNTERFRANKEN	R196	1,60
SUDBADEN	R183	2,65	SCHWABEN	R197	1,65
SUDWURTENBERG-HOHENZOLLERN	R184	2,67	SAARLAND	R1A	1,37
OBERBAYERN	R191	2,12	WEST-BERLIN	R1B1	1,55
NIEDERBAYERN	R192	3,00	HAUPTSTADT BERLIN	R1B2	1,93
OBERPFALZ	R193	2,83	COTTBUS	R1CA	2,06
OBERFRANKEN	R194	2,49	FRANKFURT	R1CB	1,98
MITTELFRANKEN	R195	2,25	POTSDAM	R1CD	1,93
UNTERFRANKEN	R196	2,84	NEUBRANDENBURG	R1DA	2,15
SCHWABEN	R197	2,61	ROSTOCK	R1DB	2,05
SAARLAND	R1A	2,59	SCHWERIN	R1DC	2,07
WEST-BERLIN	R1B1	1,60	CHEMNITZ	R1EA	1,82
HAUPTSTADT BERLIN	R1B2	2,09	DRESDEN	R1EB	2,02
COTTBUS	R1CA	2,50	LEIPZIG	R1EC	1,84
FRANKFURT	R1CB	2,56	HALLE	R1FA	1,88
POTSDAM	R1CD	2,49	MAGDEBURG	R1FB	1,90
NEUBRANDENBURG	R1DA	2,90	ERFURT	R1GA	1,95
ROSTOCK	R1DB	2,68	GERA	R1GB	1,88
SCHWERIN	R1DC	2,79	SUHL	R1GC	1,90
CHEMNITZ	R1EA	2,03	PARIS	R2101	1,66
DRESDEN	R1EB	2,25	SEINE-ET-MARNE	R2102	2,00
LEIPZIG	R1EC	2,16	YVELINES	R2103	2,05
HALLE	R1FA	2,32	ESSONNE	R2104	1,92
MAGDEBURG	R1FB	2,48	HAUTS-DE-SEINE	R2105	1,88
ERFURT	R1GA	2,41	SEINE-ST-DENIS	R2106	2,12
GERA	R1GB	2,26	VAL-DE-MARNE	R2107	1,87
SUHL	R1GC	2,32	VAL-D'OISE	R2108	2,04

SEINE	R21A11	2,13	ARDENNES	R2211	2,11
SEINE ET OISE	R21A12	2,64	AUBE	R2212	1,93
SEINE-ET-MARNE	R21B	2,82	MARNE	R2213	2,01
ARDENNES	R2211	3,47	HAUTE-MARNE	R2214	2,16
AUBE	R2212	2,91	AISNE	R2221	2,13
MARNE	R2213	2,98	OISE	R2222	2,07
HAUTE-MARNE	R2214	3,41	SOMME	R2223	2,00
AISNE	R2221	3,26	EURE	R2231	2,08
OISE	R2222	3,26	SEINE-MARITIME	R2232	2,13
SOMME	R2223	3,16	CHER	R2241	1,83
EURE	R2231	3,18	EURE-ET-LOIR	R2242	2,12
SEINE MARITIME	R2232	3,03	INDRE	R2243	1,75
CHER	R2241	2,69	INDRE-ET-LOIRE	R2244	1,82
EURE-ET-LOIR	R2242	2,95	LOIR-ET-CHER	R2245	1,90
INDRE	R2243	2,69	LOIRET	R2246	2,03
INDRE-ET-LOIRE	R2244	2,96	CALVADOS	R2251	1,99
LOIR-ET-CHER	R2245	2,87	MANCHE	R2252	2,17
LOIRET	R2246	2,82	ORNE	R2253	2,11
CALVADOS	R2251	3,09	COTE-D'OR	R2261	1,84
MANCHE	R2252	3,04	NIEVRE	R2262	1,87
ORNE	R2253	3,01	SAONE-ET-LOIRE	R2263	1,95
COTE D'OR	R2261	2,86	YONNE	R2264	2,08
NIEVRE	R2262	2,72	NORD	R2301	2,27
SAONE-ET-LOIRE	R2263	2,83	PAS-DE-CALAIS	R2302	2,29
YONNE	R2264	2,97	MEURTHE-ET-MOSELLE	R2411	1,93
NORD	R2301	3,15	MEUSE	R2412	2,14
PAS-DE-CALAIS	R2302	3,23	MOSELLE	R2413	1,93
MEURTHE-ET-MOSELLE	R2411	3,01	VOSGES	R2414	2,13
MEUSE	R2412	3,42	BAS-RHIN	R2421	1,78
MOSELLE	R2413	3,31	HAUT-RHIN	R2422	1,94
VOSGES	R2414	3,00	DOUBS	R2431	2,10
BAS-RHIN	R2421	2,89	JURA	R2432	2,04
HAUT-RHIN	R2422	2,78	HAUTE-SAONE	R2433	2,07
DOUBS	R2431	3,06	TERRITOIRE-DE-BELFORT	R2434	2,12
JURA	R2432	2,87	LOIRE-ATLANTIQUE	R2511	2,07
HAUTE-SAONE	R2433	3,14	MAINE-ET-LOIRE	R2512	2,23
TERRITOIRE DE BELFORT	R2434	2,94	MAYENNE	R2513	2,17
LOIRE-ATLANTIQUE	R2511	2,96	SARTHE	R2514	1,95
MAINE-ET-LOIRE	R2512	3,14	VENDEE	R2515	2,18
MAYENNE	R2513	2,90	COTES-DU-NORD	R2521	2,02
SARTHE	R2514	3,12	FINISTERE	R2522	2,00
VENDEE	R2515	3,13	ILLE-ET-VILAINE	R2523	1,95
COTES-DU-NORD	R2521	2,84	MORBIHAN	R2524	2,13
FINISTERE	R2522	2,83	CHARENTE	R2531	1,84
ILLE-ET-VILAINE	R2523	2,77	CHARENTE-MARITIME	R2532	1,89
MORBIHAN	R2524	3,00	DEUX-SEVRES	R2533	2,00
CHARENTE	R2531	2,79	VIENNE	R2534	1,72
CHARENTE-MARITIME	R2532	2,98	DORDOGNE	R2611	1,71
DEUX-SEVRES	R2533	3,02	GIRONDE	R2612	1,74
VIENNE	R2534	2,89	LANDES	R2613	1,73
DORDOGNE	R2611	2,50	LOT-ET-GARONNE	R2614	1,82
GIRONDE	R2612	2,51	PYRENEES-ATLANTIQUES	R2615	1,74
LANDES	R2613	2,67	ARIEGE	R2621	1,68
LOT-ET-GARONNE	R2614	2,58	AVEYRON	R2622	1,76
PYRENEES-ATLANTIQUES	R2615	2,71	HAUTE-GARONNE	R2623	1,55
ARIEGE	R2621	2,43	GERS	R2624	1,59

AVEYRON	R2622	2,47	LOT	R2625	1,70
HAUTE-GARONNE	R2623	2,42	HAUTES-PYRENEES	R2626	1,63
GERS	R2624	2,58	TARN	R2627	1,80
LOT	R2625	2,60	TARN-ET-GARONNE	R2628	1,73
HAUTES-PYRENEES	R2626	2,51	CORREZE	R2631	1,69
TARN	R2627	2,44	CREUSE	R2632	1,62
TARN-ET-GARONNE	R2628	2,71	HAUTE-VIENNE	R2633	1,52
CORREZE	R2631	2,32	AIN	R2711	2,05
CREUSE	R2632	2,39	ARDECHE	R2712	1,90
HAUTE-VIENNE	R2633	2,24	DROME	R2713	2,04
AIN	R2711	2,72	ISERE	R2714	1,93
ARDECHE	R2712	2,64	LOIRE	R2715	2,02
DROME	R2713	2,73	RHONE	R2716	2,02
ISERE	R2714	2,68	SAVOIE	R2717	1,87
LOIRE	R2715	2,60	HAUTE-SAVOIE	R2718	1,96
RHONE	R2716	2,51	ALLIER	R2721	1,74
SAVOIE	R2717	2,73	CANTAL	R2722	1,86
HAUTE-SAVOIE	R2718	2,74	HAUTE-LOIRE	R2723	1,90
ALLIER	R2721	2,48	PUY-DE-DOME	R2724	1,73
CANTAL	R2722	2,75	AUDE	R2811	1,76
HAUTE-LOIRE	R2723	2,50	GARD	R2812	1,88
PUY-DE-DOME	R2724	2,50	HERAULT	R2813	1,69
AUDE	R2811	2,41	LOZERE	R2814	1,95
GARD	R2812	2,67	PYRENEES-ORIENTALES	R2815	1,82
HERAULT	R2813	2,35	ALPES-DE-HAUTE-PROVENCE	R2821	1,73
LOZERE	R2814	2,64	HAUTES-ALPES	R2822	1,91
PYRENEES-ORIENTALES	R2815	2,67	ALPES-MARITIMES	R2823	1,75
ALPES-HAUTE-PROVENCE	R2821	2,66	BOUCHES-DU-RHONE	R2824	1,83
HAUTES-ALPES	R2822	2,75	VAR	R2825	1,93
ALPES-MARITIMES	R2823	2,01	VAUCLUSE	R2826	1,94
BOUCHES-DU-RHONE	R2824	2,54	CORSE-DU-SUD	R2831	2,01
VAR	R2825	2,61	HAUTE- CORSE	R2832	1,86
VAUCLUSE	R2826	2,66	TORINO	R3111	1,33
CORSE	R283	3,21	VERCELLI	R3112	1,30
TORINO	R3111	1,76	NOVARA	R3113	1,38
VERCELLI	R3112	1,59	CUNEO	R3114	1,50
NOVARA	R3113	1,83	ASTI	R3115	1,24
CUNEO	R3114	1,83	ALESSANDRIA	R3116	1,17
ASTI	R3115	1,69	AOSTA	R312	1,32
ALESSANDRIA	R3116	1,64	IMPERIA	R3131	1,20
AOSTA	R312	1,76	SAVONA	R3132	1,12
IMPERIA	R3131	1,83	GENOVA	R3133	1,09
SAVONA	R3132	1,65	LA SPEZIA	R3134	1,19
GENOVA	R3133	1,63	VARESE	R3201	1,42
LA SPEZIA	R3134	1,73	COMO	R3202	1,47
VARESE	R3201	2,10	SONDRIO	R3203	1,65
COMO	R3202	1,93	MILANO	R3204	1,31
SONDRIO	R3203	2,61	BERGAMO	R3205	1,56
MILANO	R3204	1,85	BRESCIA	R3206	1,54
BERGAMO	R3205	2,38	PAVIA	R3207	1,20
BRESCIA	R3206	2,31	CREMONA	R3208	1,36
PAVIA	R3207	1,62	MANTOVA	R3209	1,28
CREMONA	R3208	1,94	BOLZANO	R3311	1,81
MANTOVA	R3209	2,00	TRENTO	R3312	1,46
BOLZANO	R3311	2,77	VERONA	R3321	1,49
TRENTO	R3312	2,38	VICENZA	R3322	1,53

VERONA	R3321	2,28	BELLUNO	R3323	1,35
VICENZA	R3322	2,49	TREVISO	R3324	1,46
BELLUNO	R3323	1,87	VENEZIA	R3325	1,28
TREVISO	R3324	2,39	PADOVA	R3326	1,43
VENEZIA	R3325	2,35	ROVIGO	R3327	1,39
PADOVA	R3326	2,50	PORDENONE	R3331	1,38
ROVIGO	R3327	2,37	UDINE	R3332	1,28
GORIZIA	R333A	1,83	GORIZIA	R3333	1,13
TRIESTE	R333B	1,48	TRIESTE	R3334	1,01
UDINE	R333C	1,86	PIACENZA	R3401	1,17
PIACENZA	R3401	1,62	PARMA	R3402	1,18
PARMA	R3402	1,68	REGGIO NELL EMILIA	R3403	1,31
REGGIO NELL'EMILIA	R3403	1,74	MODENA	R3404	1,21
MODENA	R3404	1,93	BOLOGNA	R3405	1,00
BOLOGNA	R3405	1,65	FERRARA	R3406	1,08
FERRARA	R3406	1,94	RAVENNA	R3407	1,13
RAVENNA	R3407	1,92	FORLI	R3408	1,37
FORLI	R3408	2,09	MASSA-CARRARA	R3511	1,41
MASSA-CARRARA	R3511	1,87	LUCCA	R3512	1,40
LUCCA	R3512	1,99	PISTOIA	R3513	1,33
PISTOIA	R3513	1,75	FIRENZE	R3514	1,21
FIRENZE	R3514	1,79	LIVORNO	R3515	1,33
LIVORNO	R3515	1,85	PISA	R3516	1,36
PISA	R3516	1,81	AREZZO	R3517	1,37
AREZZO	R3517	1,90	SIENA	R3518	1,28
SIENA	R3518	1,59	GROSSETO	R3519	1,23
GROSSETO	R3519	1,77	PERUGIA	R3521	1,53
PERUGIA	R3521	1,89	TERNI	R3522	1,42
TERNI	R3522	1,78	PESARO E URBINO	R3531	1,53
PESARO E URBINO	R3531	2,07	ANCONA	R3532	1,47
ANCONA	R3532	1,90	MACERATA	R3533	1,49
MACERATA	R3533	1,91	ASCOLI PICENO	R3534	1,54
ASCOLI PICENO	R3534	2,08	VITERBO	R3601	1,69
VITERBO	R3601	2,06	RIETI	R3602	1,72
RIETI	R3602	2,06	ROMA	R3603	1,46
ROMA	R3603	2,33	LATINA	R3604	1,88
LATINA	R3604	2,71	FROSINONE	R3605	1,96
FROSINONE	R3605	2,52	CASERTA	R3701	2,45
CASERTA	R3701	3,13	BENEVENTO	R3702	2,19
BENEVENTO	R3702	2,58	NAPOLI	R3703	2,37
NAPOLI	R3703	3,49	AVELLINO	R3704	2,10
AVELLINO	R3704	2,62	SALERNO	R3705	2,15
SALERNO	R3705	2,95	L AQUILA	R3811	1,78
L'AQUILA	R3811	2,20	TERAMO	R3812	1,88
TERAMO	R3812	2,20	PESCARA	R3813	1,65
PESCARA	R3813	2,22	CHIETI	R3814	1,77
CHIETI	R3814	2,04	ISERNIA	R3821	1,88
ISERNIA	R382	2,42	CAMPOBASSO	R3822	1,84
FOGGIA	R3911	3,29	FOGGIA	R3911	2,29
BARI	R3912	3,27	BARI	R3912	2,08
TARANTO	R3913	2,89	TARANTO	R3913	2,17
BRINDISI	R3914	3,06	BRINDISI	R3914	2,18
LECCE	R3915	2,72	LECCE	R3915	2,24
POTENZA	R3921	3,01	POTENZA	R3921	2,00
MATERA	R3922	2,98	MATERA	R3922	2,13
COSENZA	R3931	3,07	COSENZA	R3931	2,06
CATANZARO	R3932	3,54	CATANZARO	R3932	2,29

REGGIO DI CALABRIA	R3933	3,10	REGGIO DI CALABRIA	R3933	2,34
TRAPANI	R3A01	2,76	TRAPANI	R3A01	2,17
PALERMO	R3A02	3,09	PALERMO	R3A02	2,21
MESSINA	R3A03	2,56	MESSINA	R3A03	1,93
AGRIGENTO	R3A04	2,76	AGRIGENTO	R3A04	2,34
CALTANISSETTA	R3A05	3,43	CALTANISSETTA	R3A05	2,26
ENNA	R3A06	2,94	ENNA	R3A06	2,27
CATANIA	R3A07	3,30	CATANIA	R3A07	2,20
RAGUSA	R3A08	2,67	RAGUSA	R3A08	2,12
SIRACUSA	R3A09	2,91	SIRACUSA	R3A09	2,08
CAGLIARI	R3BA	3,35	SASSARI	R3B01	1,79
NUORO	R3BB	2,95	NUORO	R3B02	1,97
SASSARI	R3BC	2,93	ORISTANO	R3B03	1,93
GRONINGEN	R411	2,91	CAGLIARI	R3B04	1,91
FRIESLAND	R412	3,49	GRONINGEN	R411	1,52
DRENTHE	R413	3,28	FRIESLAND	R412	1,91
OVERIJSSEL	R42A	3,38	DRENTHE	R413	1,70
GELDERLAND	R42B	3,34	OVERIJSSEL	R42A	1,87
NOORD-BRABANT	R451	3,36	GELDERLAND	R42B	1,65
LIMBURG	R452	3,29	NOORDBRABANT	R451	1,62
UTRECHT	R471	3,11	LIMBURG	R452	1,45
NOORD-HOLLAND	R472	2,86	UTRECHT	R471	1,53
ZUID-HOLLAND	R473	2,90	NOORDHOLLAND	R472	1,43
ZEELAND	R474	3,10	ZUIDHOLLAND	R473	1,60
ANTWERPEN	R511	2,67	ZEELAND	R474	1,77
VLAAMS-BRABANT	R512	2,44	ANTWERPEN	R511	1,67
LIMBURG	R515	3,33	LIMBURG	R515	1,78
OOST-VLAANDEREN	R518	2,55	OOST-VLAANDEREN	R518	1,68
WEST-VLAANDEREN	R519	2,67	WEST-VLAANDEREN	R519	1,77
BRABANT WALLON	R5224	2,24	BRABANT WALLON	R5224	1,61
HAINAUT	R523	2,55	HAINAUT	R523	1,63
LIEGE	R524	2,37	LIEGE	R524	1,61
LUXEMBOURG (B)	R526	2,91	LUXEMBOURG	R526	1,92
NAMUR	R527	2,76	NAMUR	R527	1,77
BRUXELLES	R53	2,01	BRUXELLES	R53	1,64
LUXEMBOURG	R6	2,31	VLAAMS BRABANT	R5512	1,58
CUMBERLAND	R710A1	2,77	GRAND-DUCHE	R6	1,51
WESTMORLAND	R710A2	2,49	CLEVELAND	R7111	2,03
YORKSHIRE - EAST RIDING	R710B	2,77	DURHAM	R7112	1,88
DURHAM	R710C11	2,79	CUMBRIA	R712	1,84
NORTHUMBERLAND	R710C12	2,69	NORTHUMBERLAND	R7131	1,87
YORKSHIRE - NOTH RIDING	R710D11	3,02	TYNE AND WEAR	R7132	1,87
YORKSHIRE - WEST RIDING	R710D12	2,71	HUMBERSIDE	R721	1,91
DERBYSHIRE	R7311	2,59	NORTH YORKSHIRE	R722	1,79
NOTTINGHAMSHIRE	R7312	2,77	SOUTH YORKSHIRE	R723	1,83
LEICESTERSHIRE	R7321A	2,75	WEST YORKSHIRE	R724	2,03
RUTLAND	R7321B	3,08	DERBYSHIRE	R7311	1,89
NORTHAMPTONSHIRE	R7322	2,86	NOTTINGHAMSHIRE	R7312	1,85
LINCOLNSHIRE -P. OF HOLLAND	R733A	2,40	LEICESTERSHIRE	R7321	1,97
LINCOLNSHIRE -P. OF KESTEVEN	R733B	2,70	NORTHAMPTONSHIRE	R7322	1,96
LINCOLNSHIRE -P. OF LINDSEY	R733C	2,94	LINCOLNSHIRE	R733	1,84
CAMBRIDGESHIRE	R7401A	2,47	CAMBRIDGESHIRE	R7401	1,94
HUNTINGDONSHIRE	R7401B	2,98	NORFOLK	R7402	1,84

ISLE OF ELY	R7401C	2,60	SUFFOLK	R7403	1,98
SOKE OF PETERBOROUGH	R7401D	2,86	BEDFORDSHIRE	R7511	2,12
NORFOLK	R7402	2,55	HERTFORDSHIRE	R7512	1,83
EAST SUFFOLK	R7403A	2,71	BERKSHIRE	R7521	1,95
WEST SUFFOLK	R7403B	2,75	BUCKINGHAMSHIRE	R7522	1,98
BEDFORDSHIRE	R7511	3,01	OXFORDSHIRE	R7523	1,91
HERTFORDSHIRE	R7512	2,61	EAST SUSSEX	R7531	1,77
BERKSHIRE	R7521	2,92	SURREY	R7532	1,75
BUCKINGHAMSHIRE	R7522	2,78	WEST SUSSEX	R7533	1,86
OXFORDSHIRE	R7523	2,76	ESSEX	R754	1,88
EAST SUSSEX	R7531	2,39	GREATER LONDON	R755	1,80
SURREY	R7532	2,39	HAMPSHIRE	R7561	1,92
WEST SUSSEX	R7533	2,53	ISLE OF WIGHT	R7562	1,84
ESSEX	R754	2,54	KENT	R757	1,93
LONDON	R755A	2,47	AVON	R7611	1,80
MIDDLESEX	R755B	2,44	GLOUCESTERSHIRE	R7612	1,86
HAMPSHIRE	R7561	2,81	WILTSHIRE	R7613	1,91
ISLE OF WIGHT	R7562	2,47	CORNWALL	R7621	1,93
KENT	R757	2,62	DEVON	R7622	1,86
CORNWALL AND THE ISLES OF SCILLY	R76A	2,50	DORSET	R7631	1,78
DEVON	R76B	2,59	SOMERSET	R7632	1,88
DORSET	R76C	2,70	HEREFORD AND WORCESTER	R7711	1,88
GLOUCESTERSHIRE	R76D11	2,70	WARWICKSHIRE	R7712	1,82
SOMERSET	R76D12	2,66	SALOP	R7721	1,88
WILTSHIRE	R76E	2,99	STAFFORDSHIRE	R7722	1,90
HEREFORDSHIRE	R77A1	2,79	WEST MIDLANDS	R773	2,05
WORCESTERSHIRE	R77A2	2,54	CHESHIRE	R781	1,88
SHROPSHIRE	R77B	2,71	GREATER MANCHESTER	R782	1,99
STAFFORDSHIRE	R77C11	2,63	LANCASHIRE	R783	2,00
WARWICKSHIRE	R77C12	2,90	MERSEYSIDE	R784	1,92
CHESIRE	R78A	2,75	CLWYD	R7911	1,95
LANCASHIRE	R78B	2,87	DYFED	R7912	2,01
DENBIGHSHIRE	R7911A	2,63	GWYNEDD	R7913	2,06
FLINTSHIRE	R7911B	2,87	POWYS	R7914	1,97
CARDIGANSHIRE	R7912A	2,37	GWENT	R7921	1,96
CARMARTHENSHIRE	R7912B	2,35	MID-GLAMORGAN	R7922	2,08
PEMBROKESHIRE	R7912C	2,87	SOUTH-GLAMORGAN	R7923	1,97
ANGLESEY	R7913A	3,01	WEST-GLAMORGAN	R7924	1,96
CAERNARVONSHIRE	R7913B	2,49	BORDERS	R7A11	1,87
MERIONETHSHIRE	R7913C	2,83	CENTRAL SCOTLAND	R7A12	1,88
BRECONSHIRE	R7914A	2,54	FIFE	R7A13	2,06
MONTGOMERYSHIRE	R7914B	2,63	LOTHIAN	R7A14	1,69
RADNORSHIRE	R7914C	2,77	TAYSIDE	R7A15	1,88
GLAMORGAN	R792A	2,69	DUMFRIES AND GALLOWAY	R7A21	1,95
MONMOUTHSHIRE	R792B	2,81	STRATHCLYDE	R7A22	1,95
BORDER COUNTIES	R7AA	2,50	HIGHLAND	R7A31	2,22
REMAINDER OF SOUTH DIVISION	R7AB	2,89	ISLANDS	R7A32	2,26
EAST CENTRAL DIVISION	R7AC	2,80	GRAMPIAN	R7A4	1,96
REMAINDER OF NORTHERN DIVISION	R7AD	2,64	NORTHERN IRELAND	R7B	2,52
CROFTING COUNTIES	R7AE	2,90	DUBLIN	R8001A	2,67
CENTRAL CLYDESIDE CONURBATION	R7AF1	3,05	KILDARE	R8001B	3,85
REMAINDER OF WEST	R7AF2	2,96	MEATH	R8001C	3,66

CENTRAL DIVISION					
NORTHERN IRELAND	R7B	3,38	WICKLOW	R8001D	3,59
DUBLIN	R8001A	3,31	CORK	R8002A	3,27
KILDARE	R8001B	4,50	KERRY	R8002B	3,45
MEATH	R8001C	4,15	CARLOW	R8003A	4,02
WICKLOW	R8001D	3,85	KILKENNY	R8003B	3,26
CORK	R8002A	3,68	WEXFORD	R8003C	3,82
KERRY	R8002B	3,92	WATERFORD	R8003D	3,31
CARLOW	R8003A	4,71	TIPPERARY	R8003E	3,68
KILKENNY	R8003B	3,90	LOUTH	R8004A	3,43
WEXFORD	R8003C	4,04	CAVAN	R8004B	4,13
WATERFORD	R8003D	3,73	MONAGHAN	R8004C	3,53
TIPPERARY	R8003E	4,40	CLARE	R8005A	3,68
LOUTH	R8004A	3,74	LIMERICK	R8005B	3,35
CAVAN	R8004B	4,10	DONEGAL	R8006	3,69
MONAGHAN	R8004C	4,06	ROSCOMMON	R8007A	3,32
CLARE	R8005A	4,07	LADIS	R8007B	3,62
LIMERICK	R8005B	3,99	LONGFORD	R8007C	3,89
DONEGAL	R8006	3,48	OFFALY	R8007D	3,70
ROSCOMMON	R8007A	3,77	WESTMEATH	R8007E	3,95
LADIS	R8007B	4,24	GALWAY	R8008A	3,35
LONGFORD	R8007C	4,33	MAYO	R8008B	3,72
OFFALY	R8007D	4,52	LEITRIM	R8009A	3,72
WESTMEATH	R8007E	4,32	SLIGO	R8009B	3,22
GALWAY	R8008A	3,98	KOBENHAVN-HOVESTADE	R9011	1,20
MAYO	R8008B	3,93	KOBENHAVN-AMT	R9012	1,42
LEITRIM	R8009A	4,09	FREDERIKSBORG	R9013	1,49
SLIGO	R8009B	3,90	ROSKILDE	R9014	1,44
FREDERIKSBORG	R901A	2,62	VEST-SJAELLAND	R9021	1,55
KOBENHAVN - HOVESTADE	R901B	2,18	STORSTROM	R9022	1,55
ROSKILDE	R901C	2,58	BORNHOLM	R9023	1,83
HOLBAEK	R9021A	2,65	FYN	R9031	1,56
SORO	R9021B	2,55	SONDERJYLLAND	R9032	1,79
MARIBO	R9022A	2,57	RIBE	R9033	1,80
PRAESTO	R9022B	2,72	VEJLE	R9034	1,68
BORNHOLM	R9023	2,99	RINGKOBING	R9035	1,81
ODENSE	R9031A	2,51	ARHUS	R9036	1,50
SVENDBORG	R9031B	2,62	VIBORG	R9037	1,82
ABENRA - SONDERBORG	R9032A	2,74	NORDJYLLAND	R9038	1,69
HADERSLEV	R9032B	2,79	EVROS	RA111	2,27
TONDER	R9032C	3,02	XANTHI	RA112	2,82
RIBE	R9033	3,06	RODOPI	RA113	2,38
VEJLE	R9034	2,62	DRAMA	RA114	2,53
RINGKOBING	R9035	3,09	KAVALA	RA115	2,20
ARHUS	R9036A	2,26	IMATHIA	RA121	2,25
RANDERS	R9036B	2,76	SALONIKA (THESSALONIKI)	RA122	2,06
SKANDERBORG	R9036C	2,60	KILKIS	RA123	1,99
THISTED	R9037A	3,03	PELLA	RA124	2,35
VIBORG	R9037B	2,94	PIERIA	RA125	2,21
ALBORG	R9038A	2,64	SERRES	RA126	2,06
HJORRING	R9038B	3,03	CHALKIDIKI	RA127	2,14
GREC CENTRALE ET EUBEE	RAA	1,93	GREVENA	RA131	2,03
PELOPONESE	RAB	2,56	KASTORIA	RA132	2,27
ILES IONIENNES	RAC	2,34	KOZANI	RA133	2,66

EPIRE	RAD	2,61	FLORINA	RA134	2,60
THESSALIE	RAE	2,26	KARDITSA	RA141	2,41
MACEDOINE	RAF	2,23	LARISSA	RA142	2,49
THRACE	RAG	2,75	MAGNISIA	RA143	2,34
ILES EGEENNES	RAH	2,40	TRIKALA	RA144	2,49
CRETE	RAI	2,42	ARTA	RA211	2,30
CORUNA (LA)	RB111	2,38	THESPROTIA	RA212	2,47
LUGO	RB112	2,21	YANINA (IOANNINA)	RA213	2,32
ORENSE	RB113	2,10	PREVEZA	RA214	2,50
PONTEVEDRA	RB114	2,79	ZANTE (ZAKYNTHOS)	RA221	2,28
OVIEDO	RB12	2,55	CEPHALONIA	RA222	2,04
SANTANDER	RB13	2,89	CORFU (KERKYRA)	RA223	2,18
ALAVA	RB211	2,94	LEVKAS	RA224	2,22
GUIPUZCOA	RB212	2,98	AETOLIA-AKARNANIA	RA231	2,60
VIZCAYA	RB213	2,99	AKHAIA	RA232	2,64
NAVARRA	RB22	2,85	ILIA	RA233	2,24
LOGRONO	RB23	2,62	BEOTIA	RA241	2,13
HUESCA	RB241	2,20	EUBOEA	RA242	2,52
TERUEL	RB242	2,53	EVRYTANIA	RA243	1,80
ZARAGOZA	RB243	2,57	PHTHIOTIS	RA244	2,09
MADRID	RB3	2,68	PHOCIS	RA245	1,69
AVILA	RB411	2,95	ARGOLIS	RA251	2,27
BURGOS	RB412	3,01	ARKADIA	RA252	2,03
LEON	RB413	2,91	KORINTHIA	RA253	2,21
PALENCIA	RB414	3,13	LAKONIA	RA254	2,13
SALAMANCA	RB415	3,01	MESSINIA	RA255	2,43
SEGOVIA	RB416	2,90	ATTIKI	RA3	2,05
SORIA	RB417	2,50	LESVOS	RA411	2,28
VALLADOLID	RB418	3,15	SAMOS	RA412	2,47
ZAMORA	RB419	2,80	CHIOS	RA413	2,53
ALBACETE	RB421	3,36	DODECANESOS	RA421	2,33
CIUDAD REAL	RB422	3,22	CYCLADES	RA422	1,95
CUENCA	RB423	3,10	IRAKLIO	RA431	2,65
GUADALAJARA	RB424	2,63	LASITHI	RA432	2,28
TOLEDO	RB425	2,84	RETHYMNO	RA433	2,75
BADAJOZ	RB431	3,12	CANEA	RA434	2,28
CACERES	RB432	3,18	LA CORUNA	RB111	2,10
BARCELONA	RB511	2,29	LUGO	RB112	2,00
GERONA	RB512	2,26	ORENSE	RB113	1,46
LERIDA	RB513	2,64	PONTEVEDRA	RB114	2,29
TARRAGONA	RB514	2,47	OVIEDO	RB12	1,78
ALICANTE	RB521	2,77	SANTANDER	RB13	2,11
CASTELLON	RB522	2,33	ALAVA	RB211	1,98
VALENCIA	RB523	2,62	GUIPUZCOA	RB212	1,69
BALEARES	RB53	2,34	VIZCAYA	RB213	1,84
ALMERIA	RB611	3,41	NAVARRA	RB22	1,92
CADIZ	RB612	3,45	LOGRONO	RB23	2,00
CORDOBA	RB613	3,15	HUESCA	RB241	1,88
GRANADA	RB614	3,43	TERUEL	RB242	2,00
HUELVA	RB615	2,91	ZARAGOZA	RB243	1,87
JAEN	RB616	3,39	MADRID	RB3	2,06
MALAGA	RB617	2,87	AVILA	RB411	2,00
SEVILLA	RB618	3,05	BURGOS	RB412	1,80
MURCIA	RB62	3,07	LEON	RB413	2,03
PALMAS (LAS)	RB701	3,63	PALENCIA	RB414	1,95
SANTA CRUZ DE TEN.	RB702	2,88	SALAMANCA	RB415	2,00
BRAGA	RC1A1	4,52	SEGOVIA	RB416	2,10

BRAGANCA	RC1A2	3,84	SORIA	RB417	1,71
PORTO	RC1A3	3,74	VALLADOLID	RB418	2,03
VIANA DO CASTELO	RC1A4	3,14	ZAMORA	RB419	1,92
VILA REAL	RC1A5	4,17	ALBACETE	RB421	2,49
AVEIRO	RC1B1	3,66	CIUDAD REAL	RB422	2,33
CASTELO BRANCO	RC1B2	2,63	CUENCA	RB423	2,12
COIMBRA	RC1B3	2,48	GUADALAJARA	RB424	2,07
GUARDA	RC1B4	3,19	TOLEDO	RB425	2,37
SETUBAL	RC1B4	2,18	BADAJOZ	RB431	2,56
VISEU	RC1B5	3,59	CACERES	RB432	2,29
LEIRIA	RC1C1	2,89	BARCELONA	RB511	1,71
LISBOA	RC1C2	2,00	GERONA	RB512	2,09
SANTAREM	RC1C3	2,45	LERIDA	RB513	1,91
BEJA	RC1D1	2,32	TARRAGONA	RB514	2,19
EVORA	RC1D2	2,04	ALICANTE	RB521	2,41
PORTALEGRE	RC1D3	2,19	CASTELLON	RB522	2,22
FARO	RC1E	2,15	VALENCIA	RB523	2,19
ACORES	RC2	4,10	BALEARES	RB53	2,20
MADEIRA	RC3	3,70	ALMERIA	RB611	2,77
BURGENLAND	AT01	2,77	CADIZ	RB612	2,92
KARNTEN	AT02	3,13	CORDOBA	RB613	2,51
NIEDEROSTERREICH	AT03	2,83	GRANADA	RB614	2,50
OBEROSTERREICH	AT04	3,00	HUELVA	RB615	2,82
SALZBURG	AT05	2,89	JAEN	RB616	2,53
STEIERMARK	AT06	2,88	MALAGA	RB617	2,50
TIROL	AT07	3,12	SEVILLA	RB618	2,78
VORARLBERG	AT08	3,11	MURCIA	RB62	2,79
WIEN	AT09	1,77	LAS PALMAS	RB701	2,59
BLAGOEVGRAD	BGA	3,21	TENERIFE	RB702	2,43
BURGAS	BGB	2,52	BRAGA	RC1A1	2,64
VARNA	BGC	2,35	BRAGANCA	RC1A2	2,58
VRATSA	BGD	1,94	PORTO	RC1A3	2,18
KOLAROVGRAD	BGE	2,73	VIANA DO CASTELO	RC1A4	2,41
PLEVEN	BGF	2,01	VILA REAL	RC1A5	2,76
PLOVDIV	BGG	2,36	AVEIRO	RC1B1	2,27
RUSE	BGH	2,58	CASTELO BRANCO	RC1B2	2,09
SOFIA-VILLE	BGI	1,59	COIMBRA	RC1B3	2,12
SOFIA-REGION	BGJ	2,25	GUARDA	RC1B4	2,28
STARA ZAGORA	BGK	2,15	SETUBAL	RC1B4	1,93
TARNOVO	BGL	1,82	VISEU	RC1B5	2,77
CHASKOVO	BGM	3,31	LEIRIA	RC1C1	2,21
VALAIS	CH0A	3,21	LISBOA	RC1C2	1,85
TICINO	CH0B	1,91	SANTAREM	RC1C3	2,07
GRAUBUNDEN	CH0C	2,87	BEJA	RC1D1	2,29
BERN	CH0D	2,52	EVORA	RC1D2	2,16
GLARUS	CH0E1	2,50	PORTALEGRE	RC1D3	2,16
ST-GALLEN	CH0E2	2,84	FARO	RC1E	2,14
APPENZELL R.A.	CH0E31	2,68	ACORES	RC2	3,13
APPENZELL R.I.	CH0E32	2,68	MADEIRA	RC3	2,35
THURGAU	CH0E4	2,84	BURGENLAND	AT01	1,66
SCHAFFHAUSEN	CH0E5	2,51	KARNTEN	AT02	1,69
ZURICH	CH0E6	2,14	NIEDEROSTERREICH	AT03	1,68
ZUG	CH0E7	2,61	OBEROSTERREICH	AT04	1,77
LUZERN	CH0F1	3,13	SALZBURG	AT05	1,75
SCHWYZ	CH0F2	3,41	STEIERMARK	AT06	1,65
NIDWALDEN	CH0F3	3,53	TIROL	AT07	1,78
OBWALDEN	CH0F4	3,58	VORARLBERG	AT08	1,95

URI	CH0F5	3,70	WIEN	AT09	1,36
VAUD	CH0G1	1,93	BURGAS	BG0101	2,32
FRIBOURG	CH0G2	3,02	JAMBOL	BG0102	2,38
NEUCHATEL	CH0G3	1,92	SLIVEN	BG0103	2,48
GENEVE	CH0G4	1,64	HASKOVO	BG0201	2,29
AARGAU	CH0H1	2,83	KARDZALI	BG0202	2,69
BASEL-LAND	CH0H21	2,60	STARA ZAGORA	BG0203	2,07
BASEL-STADT	CH0H22	1,84	GABROVO	BG0301	1,82
SOLOTHURN	CH0H3	2,67	LOVEC	BG0302	2,03
PRAHA	CS01	1,33	PLEVEN	BG0303	1,99
JIHOCESKY	CS02	2,24	VELIKO TARNOVO	BG0304	1,82
JIHOMORAVSKY	CS03	2,24	MIHAHLOVGRAD	BG0401	2,06
SEVEROCESKY	CS04	2,07	VIDIN	BG0402	2,18
SEVEROMORAVSKY	CS05	2,38	VRACA	BG0403	2,15
STREDOCESKY	CS06	1,90	PAZARDZIK	BG0501	2,44
VYCHODOCESKY	CS07	2,11	PLOVDIV	BG0502	1,92
ZAPADOCESKY	CS08	2,22	SMOLJAN	BG0503	1,92
BRATISLAVA	CS09	2,71	RAZGRAD	BG0601	2,45
STREDOSLOVENSKY	CS10	3,10	RUSE	BG0602	1,90
VYCHODOSLOVENSKY	CS11	3,40	SILISTRA	BG0603	2,13
ZAPADOSLOVENSKY	CS12	2,71	TARGOVISTE	BG0604	2,37
ESTONSKAJA SSR	EE	1,95	SOFIA-VILLE	BG07	1,59
ALAND	FI01	2,57	BLAGOEVGRAD	BG0801	2,41
HAME	FI02	2,45	KJUSTENDIL	BG0802	2,03
KESKI-SUOMI	FI03	2,86	PERNIK	BG0803	1,94
KUOPIO	FI04	3,01	SOFIA-CAMPAGNE	BG0804	2,00
KYMI	FI05	2,58	SUMEN	BG0901	2,27
LAPPI	FI06	3,82	TOLBUHIN	BG0902	2,20
MIKKELI	FI07	2,91	VARNA	BG0903	1,89
OULU	FI08	3,56	AARGAU	CH01	1,69
POHJOIS-KARJALA	FI09	3,40	APPENZELL R.A.	CH02	2,05
TURKU-PORI	FI10	2,40	APPENZELL R.I.	CH03	2,05
UUSIMAA	FI11	2,26	BASEL-LAND	CH04	1,51
VAASA	FI12	2,67	BASEL-STADT	CH05	1,14
BARANYA	HU01	2,20	BERN	CH06	1,56
BACS-KISKUN	HU02	2,11	FRIBOURG	CH07	1,63
BEKES	HU03	2,00	GENEVE	CH08	1,29
BORSOD-ABAUJ-ZEMPLEN	HU04	2,40	GLARUS	CH09	1,92
BUDAPEST	HU05	1,20	GRAUBUNDEN	CH10	1,66
CSONGRAD	HU06	1,82	JURA	CH11	1,73
FEJER	HU07	2,29	LUZERN	CH12	1,75
GYOR-SOPRON	HU08	2,15	NEUCHATEL	CH13	1,39
HAJDU-BIHAR	HU09	2,49	NIDWALDEN	CH14	1,92
HEVES	HU10	1,93	OBWALDEN	CH15	2,21
SZOLNOK	HU11	2,10	ST-GALLEN	CH16	1,81
KOMAROM	HU12	2,18	SCHAFFHAUSEN	CH17	1,63
NOGRAD	HU13	2,16	SCHWYZ	CH18	1,99
PEST	HU14	1,99	SOLOTHURN	CH19	1,62
SOMOGY	HU15	2,07	THURGAU	CH20	1,89
SZABOLCS-SZATMAR	HU16	2,87	TICINO	CH21	1,37
TOLNA	HU17	2,11	URI	CH22	2,04
VAS	HU18	2,19	VALAIS	CH23	1,75
VESZPREM	HU19	2,28	VAUD	CH24	1,39
ZALA	HU20	2,21	ZUG	CH25	1,60
LITOVSKAJA SSR	LT	2,56	ZURICH	CH26	1,39
LATVIISKAJA SSR	LV	1,92	PRAHA	CS01	1,86

AUST-AGDER	NO01	3,14	JIHOCESKY	CS02	2,11
BUSKERUD	NO02	2,64	JIHOMORAVSKY	CS03	2,15
FINNMARK	NO03	3,51	SEVEROCESKY	CS04	2,06
HEDMARK	NO04	2,75	SEVEROMORAVSKY	CS05	2,05
HORDALAND	NO05	3,07	STREDOCESKY	CS06	2,03
MORE OG ROMSDAL	NO06	3,38	VYCHODOCESKY	CS07	2,07
NORDLAND	NO07	3,27	ZAPADOCESKY	CS08	1,99
NORD-TRONDELAG	NO08	3,28	BRATISLAVA	CS09	2,24
OPPLAND	NO09	2,82	STREDOSLOVENSKY	CS10	2,38
OSLO	NO10A	2,07	VYCHODOSLOVENSKY	CS11	2,55
AKERSHUS	NO10B	2,72	ZAPADOSLOVENSKY	CS12	2,24
OSTFOLD	NO11	2,72	ESTONSKAJA SSR	EE	2,04
ROGALAND	NO12	3,20	ALAND	FI01	1,58
SOGN OG FJORDANE	NO13	3,64	HAME	FI02	1,52
SOR-TRONDELAG	NO14	2,90	KESKI-SUOMI	FI03	1,67
TELEMARK	NO15	2,75	KUOPIO	FI04	1,70
TROMS	NO16	3,39	KYMI	FI05	1,52
VEST-AGDER	NO17	3,13	LAPPI	FI06	1,76
VESTFOLD	NO18	2,83	MIKKELI	FI07	1,50
BIALYSTOK	PLA	3,45	OULU	FI08	2,05
BYDGOSZCZ	PLB	3,39	POHJOIS-KARJALA	FI09	1,64
GDANSK	PLC	3,09	TURKU-PORI	FI10	1,61
KATOWICE	PLD	2,51	UUSIMAA	FI11	1,49
KIELCE	PLE	3,25	VAASA	FI12	1,93
KOSZALIN	PLF	3,78	BARANYA	HU01	1,81
KRAKOW-VILLE	PLG11	1,83	BACS-KISKUN	HU02	1,98
KRAKOW-CAMPAGNE	PLG12	3,30	BEKES	HU03	1,93
LODZ-VILLE	PLH11	1,67	BORSOD-ABAUJ-ZEMPLEN	HU04	2,07
LODZ-CAMPAGNE	PLH12	2,95	BUDAPEST	HU05	1,59
LUBLIN	PLI	3,03	CSONGRAD	HU06	1,76
OLSZTYN	PLJ	3,88	FEJER	HU07	2,05
OPOLE	PLK	3,11	GYOR-SOPRON	HU08	2,05
POZNAN-VILLE	PLL11	1,95	HAJDU-BIHAR	HU09	2,05
POZNAN-CAMPAGNE	PLL12	3,42	HEVES	HU10	1,91
RZESZOV	PLM	3,23	SZOLNOK	HU11	2,17
SZEZECIN	PLN	3,09	KOMAROM	HU12	1,93
WARSZAWA-VILLE	PLO11	1,59	NOGRAD	HU13	1,90
WARSZAWA-CAMPAGNE	PLO12	3,13	PEST	HU14	1,89
WROCLAW-VILLE	PLP11	1,93	SOMOGY	HU15	1,89
WROCLAW-CAMPAGNE	PLP12	3,08	SZABOLCS-SZATMAR	HU16	2,21
ZIELONA-GORA	PLQ	3,30	TOLNA	HU17	1,97
BACAU	ROA	3,08	VAS	HU18	1,98
BAIA MARE	ROB	2,74	VESZPREM	HU19	2,20
BUCURESTI-VILLE	ROC1	1,23	ZALA	HU20	1,91
BUCURESTI-REGION	ROC2	2,20	LITOVSKAJA SSR	LT	1,98
CLUJ	ROD	2,43	LATVIISKAJA SSR	LV	1,89
CONSTANTA	ROE	2,96	AUST-AGDER	NO01	1,88
CRAIOVA	ROF	2,14	BUSKERUD	NO02	1,58
GALATI	ROG	2,87	FINNMARK	NO03	1,76
HUNEDOARA	ROH	1,98	HEDMARK	NO04	1,50
IASI	ROI	3,31	HORDALAND	NO05	1,89
ORADEA	ROJ	2,22	MORE OG ROMSDAL	NO06	1,90
PITESTI	ROK	2,28	NORDLAND	NO07	1,88
PLOIESTI	ROL	2,31	NORD-TRONDELAG	NO08	1,87
STALIN	ROM	2,09	OPPLAND	NO09	1,57
SUCEAVA	RON	2,84	OSLO	NO10A	1,42
TIMISOARA	ROO	1,67	AKERSHUS	NO10B	1,55

REG. AUT. MAGHIARA	ROP	2,66	OSTFOLD	NO11	1,61
ALVSBORG	SE01	2,12	ROGALAND	NO12	2,08
BLEKINGE	SE02	2,13	SOGN OG FJORDANE	NO13	2,02
GOTEBORG-BOHUS	SE03	2,18	SOR-TRONDELAG	NO14	1,72
GAVLEBORG	SE04	2,25	TELEMARK	NO15	1,67
GOTLAND	SE05	2,58	TROMS	NO16	1,79
HALLAND	SE06	2,21	VEST-AGDER	NO17	2,05
JAMTLAND	SE07	2,22	VESTFOLD	NO18	1,60
JONKOPING	SE08	2,19	BIALA PODLASKA	PL01	2,83
KALMAR	SE09	2,18	BIALYSTOK	PL02	2,32
KOPPARBERG	SE10	2,33	BIELSKO BIALA	PL03	2,36
KRISTIANSTAD	SE11	2,18	BYDGOSZCZ	PL04	2,25
KRONOBERG	SE12	2,12	CHELM	PL05	2,62
MALMOHUS	SE13	2,09	CIECHANOW	PL06	2,64
NORRBOTTEN	SE14	2,58	CZESTOCHOWA	PL07	2,26
OREBRO	SE15	2,14	ELBLAG	PL08	2,54
OSTERGOTLAND	SE16	2,18	GDANSK	PL09	2,16
SKARABORG	SE17	2,29	GORZOW WIELKOPOLSKI	PL10	2,40
SODERMANLAND	SE18	2,27	JELENIA GORA	PL11	2,16
STOCKHOLM STAD	SE19A	1,93	KALISZ	PL12	2,43
STOCKHOLM LAN	SE19B	2,33	KATOWICE	PL13	2,00
UPPSALA	SE20	2,28	KIELCE	PL14	2,47
VARMLAND	SE21	2,15	KONIN	PL15	2,58
VASTERBOTTEN	SE22	2,20	KOSZALIN	PL16	2,29
VASTERNORRLAND	SE23	2,10	KRAKOW	PL17	1,94
VASTMANLAND	SE24	2,34	KROSNO	PL18	2,75
SLOVENIJA	SI	2,32	LEGNICA	PL19	2,24
			LESZNO	PL20	2,57
			LODZ	PL21	1,61
			LOMZA	PL22	3,01
			LUBLIN	PL23	2,20
			NOWY SACZ	PL24	3,05
			OLSZTYN	PL25	2,46
			OPOLE	PL26	2,28
			OSTROLEKA	PL27	2,90
			PILA	PL28	2,58
			PIOTRKOW TRYBUNALSKI	PL29	2,45
			PLOCK	PL30	2,33
			POZNAN	PL31	2,06
			PRZEMYSL	PL32	2,80
			RADOM	PL33	2,63
			RZESZOW	PL34	2,64
			SIEDLCE	PL35	2,79
			SIERADZ	PL36	2,43
			SKIERNIEWICE	PL37	2,28
			SLUPSK	PL38	2,46
			SUWALKI	PL39	2,76
			SZCZECIN	PL40	2,11
			TARNOBRZEG	PL41	2,67
			TARNOW	PL42	2,91
			TORUN	PL43	2,29
			WALBRZYCH	PL44	2,15
			WARSZAWA	PL45	1,65
			WLOCLAWEK	PL46	2,44
			WROCLAW	PL47	1,90
			ZAMOSC	PL48	2,75
			ZIELONA GORA	PL49	2,37

			ALBA	RO01	2,59
			ARAD	RO02	1,87
			ARGES	RO03	2,52
			BACAU	RO04	2,99
			BIHOR	RO05	2,29
			BISTRITA-NASAUD	RO06	3,10
			BOTOSANI	RO07	3,71
			BRASOV	RO08	1,87
			BRAILA	RO09	2,57
			BUCURESTI	R0C1	1,35
			BUZAU	RO11	2,70
			CARAS-SEVERIN	RO12	1,99
			CLUJ	RO14	2,10
			CONSTANTA	RO15	1,94
			COVASNA	RO16	2,70
			DIMBOUITA	RO17	2,84
			DOLJ	RO18	2,23
			GALATI	RO19	2,64
			GORJ	RO21	2,71
			HARGHITA	RO22	2,63
			HUNEDOARA	RO23	2,09
			IASI	RO25	2,98
			MARAMURES	RO26	2,68
			MEHEDINTI	RO27	2,67
			MURES	RO28	2,50
			NEAMT	RO29	2,97
			OLT	RO30	2,81
			PRAHOVA	RO31	2,43
			SATU MARE	RO32	2,70
			SALAJ	RO33	2,86
			SIBIU	RO34	2,42
			SUCEAVA	RO35	3,03
			TIMIS	RO37	1,62
			TULCEA	RO38	2,78
			VASLUI	RO39	4,07
			VILCEA	RO40	2,69
			VRANCEA	RO41	2,95
			TELEORMAN	ROC23	2,69
			ALVSBORG	SE01	1,72
			BLEKINGE	SE02	1,78
			GOTEBORG-BOHUS	SE03	1,58
			GAVLEBORG	SE04	1,57
			GOTLAND	SE05	1,80
			HALLAND	SE06	1,79
			JAMTLAND	SE07	1,70
			JONKOPING	SE08	1,78
			KALMAR	SE09	1,76
			KOPPARBERG	SE10	1,76
			KRISTIANSTAD	SE11	1,80
			KRONOBERG	SE12	1,83
			MALMOHUS	SE13	1,63
			NORRBOTTEN	SE14	1,72
			OREBRO	SE15	1,66
			OSTERGOTLAND	SE16	1,72
			SKARABORG	SE17	1,82
			SODERMANLAND	SE18	1,69
			STOCKHOLM	SE19	1,61

			UPPSALA	SE20	1,69
			VARMLAND	SE21	1,66
			VASTERBOTTEN	SE22	1,80
			VASTERNORRLAND	SE23	1,71
			VASTMANLAND	SE24	1,62
			SLOVENIJA	SI	2,00

Table A4.5b continued

REGION	CODE	1988
SCHLESWIG-HOLSTEIN	R11	1,44
HAMBURG	R12	1,24
BRAUNSCHWEIG	R13A	1,35
HANNOVER	R13B	1,29
LUNEBURG	R13C	1,44
WESER-EMS	R13D	1,52
BREMEN	R14	1,28
DUSSELDORF	R151	1,39
KOLN	R152	1,37
MUNSTER	R153	1,49
DETMOLD	R154	1,47
ARNSBERG	R155	1,43
DARMSTADT	R16A	1,31
KASSEL	R16C	1,40
KOBLENZ	R171	1,46
TRIER	R172	1,46
RHEINHESSEN-PFALZ	R173	1,39
STUTTGART	R181	1,52
KARLSRUHE	R182	1,36
FREIBURG	R183	1,46
TUBINGEN	R184	1,59
OBERBAYERN	R191	1,37
NIEDERBAYERN	R192	1,46
OBERPFALZ	R193	1,51
OBERFRANKEN	R194	1,47
MITTELFRANKEN	R195	1,45
UNTERFRANKEN	R196	1,52
SCHWABEN	R197	1,60
SAARLAND	R1A	1,27
WEST-BERLIN	R1B1	1,34
HAUPTSTADT BERLIN	R1B2	1,64
COTTBUS	R1CA	1,68
FRANKFURT	R1CB	1,70
POTSDAM	R1CD	1,70
NEUBRANDENBURG	R1DA	1,85
ROSTOCK	R1DB	1,73
SCHWERIN	R1DC	1,84
CHEMNITZ	R1EA	1,57
DRESDEN	R1EB	1,69
LEIPZIG	R1EC	1,61
HALLE	R1FA	1,66
MAGDEBURG	R1FB	1,70
ERFURT	R1GA	1,67
GERA	R1GB	1,60
SUHL	R1GC	1,66
PARIS	R2101	1,67
SEINE-ET-MARNE	R2102	2,02
YVELINES	R2103	2,06
ESSONNE	R2104	1,92
HAUTS-DE-SEINE	R2105	1,87

SEINE-ST-DENIS	R2106	2,11
VAL-DE-MARNE	R2107	1,87
VAL-D'OISE	R2108	2,04
ARDENNES	R2211	1,93
AUBE	R2212	1,75
MARNE	R2213	1,83
HAUTE-MARNE	R2214	1,98
AISNE	R2221	2,02
OISE	R2222	1,96
SOMME	R2223	1,90
EURE	R2231	1,90
SEINE-MARITIME	R2232	1,93
CHER	R2241	1,69
EURE-ET-LOIR	R2242	1,95
INDRE	R2243	1,62
INDRE-ET-LOIRE	R2244	1,68
LOIR-ET-CHER	R2245	1,75
LOIRET	R2246	1,86
CALVADOS	R2251	1,80
MANCHE	R2252	1,97
ORNE	R2253	1,90
COTE-D'OR	R2261	1,67
NIEVRE	R2262	1,70
SAONE-ET-LOIRE	R2263	1,77
YONNE	R2264	1,89
NORD	R2301	2,12
PAS-DE-CALAIS	R2302	2,13
MEURTHE-ET-MOSELLE	R2411	1,75
MEUSE	R2412	1,94
MOSELLE	R2413	1,74
VOSGES	R2414	1,93
BAS-RHIN	R2421	1,70
HAUT-RHIN	R2422	1,84
DOUBS	R2431	1,84
JURA	R2432	1,80
HAUTE-SAONE	R2433	1,82
TERRITOIRE-DE-BELFORT	R2434	1,84
LOIRE-ATLANTIQUE	R2511	1,81
MAINE-ET-LOIRE	R2512	1,95
MAYENNE	R2513	1,89
SARTHE	R2514	1,71
VENDEE	R2515	1,90
COTES-DU-NORD	R2521	1,81
FINISTERE	R2522	1,79
ILLE-ET-VILAINE	R2523	1,75
MORBIHAN	R2524	1,90
CHARENTE	R2531	1,62
CHARENTE-MARITIME	R2532	1,68
DEUX-SEVRES	R2533	1,77
VIENNE	R2534	1,53
DORDOGNE	R2611	1,58
GIRONDE	R2612	1,59

LANDES	R2613	1,61
LOT-ET-GARONNE	R2614	1,69
PYRENEES-ATLANTIQUES	R2615	1,63
ARIEGE	R2621	1,63
AVEYRON	R2622	1,72
HAUTE-GARONNE	R2623	1,52
GERS	R2624	1,55
LOT	R2625	1,66
HAUTES-PYRENEES	R2626	1,58
TARN	R2627	1,73
TARN-ET-GARONNE	R2628	1,68
CORREZE	R2631	1,52
CREUSE	R2632	1,45
HAUTE-VIENNE	R2633	1,37
AIN	R2711	1,90
ARDECHE	R2712	1,77
DROME	R2713	1,91
ISERE	R2714	1,80
LOIRE	R2715	1,89
RHONE	R2716	1,89
SAVOIE	R2717	1,73
HAUTE-SAVOIE	R2718	1,79
ALLIER	R2721	1,53
CANTAL	R2722	1,63
HAUTE-LOIRE	R2723	1,69
PUY-DE-DOME	R2724	1,52
AUDE	R2811	1,66
GARD	R2812	1,76
HERAULT	R2813	1,60
LOZERE	R2814	1,84
PYRENEES-ORIENTALES	R2815	1,71
ALPES-DE-HAUTE-PROVENCE	R2821	1,71
HAUTES-ALPES	R2822	1,87
ALPES-MARITIMES	R2823	1,73
BOUCHES-DU-RHONE	R2824	1,80
VAR	R2825	1,90
VAUCLUSE	R2826	1,91
CORSE-DU-SUD	R2831	1,74
HAUTE- CORSE	R2832	1,61
TORINO	R3111	1,09
VERCELLI	R3112	1,07
NOVARA	R3113	1,14
CUNEO	R3114	1,24
ASTI	R3115	1,03
ALESSANDRIA	R3116	0,97
AOSTA	R312	1,21
IMPERIA	R3131	1,05
SAVONA	R3132	0,98
GENOVA	R3133	0,95
LA SPEZIA	R3134	1,04
VARESE	R3201	1,18
COMO	R3202	1,23

SONDRIO	R3203	1,37
MILANO	R3204	1,09
BERGAMO	R3205	1,30
BRESCIA	R3206	1,28
PAVIA	R3207	1,00
CREMONA	R3208	1,13
MANTOVA	R3209	1,06
BOLZANO	R3311	1,51
TRENTO	R3312	1,23
VERONA	R3321	1,20
VICENZA	R3322	1,22
BELLUNO	R3323	1,08
TREVISO	R3324	1,17
VENEZIA	R3325	1,02
PADOVA	R3326	1,15
ROVIGO	R3327	1,12
PORDENONE	R3331	1,14
UDINE	R3332	1,05
GORIZIA	R3333	0,93
TRIESTE	R3334	0,83
PIACENZA	R3401	0,95
PARMA	R3402	0,96
REGGIO NELL EMILIA	R3403	1,06
MODENA	R3404	0,98
BOLOGNA	R3405	0,81
FERRARA	R3406	0,87
RAVENNA	R3407	0,92
FORLI	R3408	1,11
MASSA-CARRARA	R3511	1,16
LUCCA	R3512	1,15
PISTOIA	R3513	1,09
FIRENZE	R3514	1,00
LIVORNO	R3515	1,09
PISA	R3516	1,11
AREZZO	R3517	1,12
SIENA	R3518	1,05
GROSSETO	R3519	1,01
PERUGIA	R3521	1,19
TERNI	R3522	1,11
PESARO E URBINO	R3531	1,19
ANCONA	R3532	1,15
MACERATA	R3533	1,17
ASCOLI PICENO	R3534	1,20
VITERBO	R3601	1,36
RIETI	R3602	1,39
ROMA	R3603	1,18
LATINA	R3604	1,51
FROSINONE	R3605	1,58
CASERTA	R3701	1,96
BENEVENTO	R3702	1,75
NAPOLI	R3703	1,89
AVELLINO	R3704	1,68

SALERNO	R3705	1,72
L AQUILA	R3811	1,34
TERAMO	R3812	1,41
PESCARA	R3813	1,24
CHIETI	R3814	1,33
ISERNIA	R3821	1,48
CAMPOBASSO	R3822	1,45
FOGGIA	R3911	1,74
BARI	R3912	1,58
TARANTO	R3913	1,65
BRINDISI	R3914	1,66
LECCE	R3915	1,70
POTENZA	R3921	1,59
MATERA	R3922	1,69
COSENZA	R3931	1,63
CATANZARO	R3932	1,81
REGGIO DI CALABRIA	R3933	1,86
TRAPANI	R3A01	1,71
PALERMO	R3A02	1,74
MESSINA	R3A03	1,52
AGRIGENTO	R3A04	1,85
CALTANISSETTA	R3A05	1,78
ENNA	R3A06	1,79
CATANIA	R3A07	1,73
RAGUSA	R3A08	1,67
SIRACUSA	R3A09	1,64
SASSARI	R3B01	1,18
NUORO	R3B02	1,29
ORISTANO	R3B03	1,27
CAGLIARI	R3B04	1,25
GRONINGEN	R411	1,39
FRIESLAND	R412	1,65
DRENTHE	R413	1,59
OVERIJSSEL	R42A	1,70
GELDERLAND	R42B	1,62
NOORDBRABANT	R451	1,53
LIMBURG	R452	1,45
UTRECHT	R471	1,52
NOORDHOLLAND	R472	1,46
ZUIDHOLLAND	R473	1,60
ZEELAND	R474	1,62
ANTWERPEN	R511	1,47
LIMBURG	R515	1,48
OOST-VLAANDEREN	R518	1,46
WEST-VLAANDEREN	R519	1,61
BRABANT WALLON	R5224	1,70
HAINAUT	R523	1,66
LIEGE	R524	1,67
LUXEMBOURG	R526	1,92
NAMUR	R527	1,77
BRUXELLES	R53	1,62
VLAAMS BRABANT	R5512	1,58

GRAND-DUCHE	R6	1,41
CLEVELAND	R7111	1,94
DURHAM	R7112	1,70
CUMBRIA	R712	1,64
NORTHUMBERLAND	R7131	1,65
TYNE AND WEAR	R7132	1,76
HUMBERSIDE	R721	1,88
NORTH YORKSHIRE	R722	1,60
SOUTH YORKSHIRE	R723	1,75
WEST YORKSHIRE	R724	1,91
DERBYSHIRE	R7311	1,76
NOTTINGHAMSHIRE	R7312	1,76
LEICESTERSHIRE	R7321	1,81
NORTHAMPTONSHIRE	R7322	1,87
LINCOLNSHIRE	R733	1,67
CAMBRIDGESHIRE	R7401	1,77
NORFOLK	R7402	1,71
SUFFOLK	R7403	1,82
BEDFORDSHIRE	R7511	1,96
HERTFORDSHIRE	R7512	1,86
BERKSHIRE	R7521	1,81
BUCKINGHAMSHIRE	R7522	1,77
OXFORDSHIRE	R7523	1,64
EAST SUSSEX	R7531	1,71
SURREY	R7532	1,81
WEST SUSSEX	R7533	1,77
ESSEX	R754	1,83
GREATER LONDON	R755	1,90
HAMPSHIRE	R7561	1,83
ISLE OF WIGHT	R7562	1,68
KENT	R757	1,87
AVON	R7611	1,75
GLOUCESTERSHIRE	R7612	1,73
WILTSHIRE	R7613	1,82
CORNWALL	R7621	1,82
DEVON	R7622	1,73
DORSET	R7631	1,64
SOMERSET	R7632	1,80
HEREFORD AND WORCESTER	R7711	1,76
WARWICKSHIRE	R7712	1,68
SALOP	R7721	1,77
STAFFORDSHIRE	R7722	1,82
WEST MIDLANDS	R773	1,98
CHESHIRE	R781	1,79
GREATER MANCHESTER	R782	1,91
LANCASHIRE	R783	1,94
MERSEYSIDE	R784	1,91
CLWYD	R7911	1,80
DYFED	R7912	1,67
GWYNEDD	R7913	1,83
POWYS	R7914	1,79
GWENT	R7921	1,96

MID-GLAMORGAN	R7922	1,95
SOUTH-GLAMORGAN	R7923	1,91
WEST-GLAMORGAN	R7924	1,84
BORDERS	R7A11	1,66
CENTRAL SCOTLAND	R7A12	1,67
FIFE	R7A13	1,83
LOTHIAN	R7A14	1,51
TAYSIDE	R7A15	1,67
DUMFRIES AND GALLOWAY	R7A21	1,73
STRATHCLYDE	R7A22	1,73
HIGHLAND	R7A31	1,97
ISLANDS	R7A32	2,01
GRAMPIAN	R7A4	1,74
NORTHERN IRELAND	R7B	2,41
DUBLIN	R8001A	1,84
KILDARE	R8001B	2,43
MEATH	R8001C	2,34
WICKLOW	R8001D	2,30
CORK	R8002A	2,19
KERRY	R8002B	2,23
CARLOW	R8003A	2,74
KILKENNY	R8003B	2,24
WEXFORD	R8003C	2,42
WATERFORD	R8003D	2,19
TIPPERARY	R8003E	2,40
LOUTH	R8004A	2,14
CAVAN	R8004B	2,66
MONAGHAN	R8004C	2,43
CLARE	R8005A	2,39
LIMERICK	R8005B	2,16
DONEGAL	R8006	2,59
ROSCOMMON	R8007A	2,36
LADIS	R8007B	2,39
LONGFORD	R8007C	2,50
OFFALY	R8007D	2,34
WESTMEATH	R8007E	2,44
GALWAY	R8008A	2,27
MAYO	R8008B	2,52
LEITRIM	R8009A	2,48
SLIGO	R8009B	2,30
KOBENHAVN-HOVESTADE	R9011	1,27
KOBENHAVN-AMT	R9012	1,56
FREDERIKSBORG	R9013	1,68
ROSKILDE	R9014	1,57
VEST-SJAELLAND	R9021	1,61
STORSTROM	R9022	1,64
BORNHOLM	R9023	1,74
FYN	R9031	1,54
SONDERJYLLAND	R9032	1,72
RIBE	R9033	1,76
VEJLE	R9034	1,63
RINGKOBING	R9035	1,78

ARHUS	R9036	1,51
VIBORG	R9037	1,76
NORDJYLLAND	R9038	1,64
EVROS	RA111	1,55
XANTHI	RA112	1,93
RODOPI	RA113	1,63
DRAMA	RA114	1,73
KAVALA	RA115	1,51
IMATHIA	RA121	1,54
SALONIKA (THESSALONIKI)	RA122	1,41
KILKIS	RA123	1,36
PELLA	RA124	1,61
PIERIA	RA125	1,51
SERRES	RA126	1,41
CHALKIDIKI	RA127	1,47
GREVENA	RA131	1,39
KASTORIA	RA132	1,55
KOZANI	RA133	1,82
FLORINA	RA134	1,78
KARDITSA	RA141	1,65
LARISSA	RA142	1,70
MAGNISIA	RA143	1,60
TRIKALA	RA144	1,70
ARTA	RA211	1,57
THESPROTIA	RA212	1,69
YANINA (IOANNINA)	RA213	1,59
PREVEZA	RA214	1,71
ZANTE (ZAKYNTHOS)	RA221	1,56
CEPHALONIA	RA222	1,40
CORFU (KERKYRA)	RA223	1,49
LEVKAS	RA224	1,52
AETOLIA-AKARNANIA	RA231	1,78
AKHAIA	RA232	1,81
ILIA	RA233	1,53
BEOTIA	RA241	1,46
EUBOEA	RA242	1,73
EVRYTANIA	RA243	1,23
PHTHIOTIS	RA244	1,43
PHOCIS	RA245	1,16
ARGOLIS	RA251	1,55
ARKADIA	RA252	1,39
KORINTHIA	RA253	1,51
LAKONIA	RA254	1,46
MESSINIA	RA255	1,66
ATTIKI	RA3	1,40
LESVOS	RA411	1,56
SAMOS	RA412	1,69
CHIOS	RA413	1,73
DODECANESOS	RA421	1,60
CYCLADES	RA422	1,34
IRAKLIO	RA431	1,81
LASITHI	RA432	1,56

RETHYMNO	RA433	1,88
CANEA	RA434	1,56
LA CORUNA	RB111	1,19
LUGO	RB112	1,21
ORENSE	RB113	0,92
PONTEVEDRA	RB114	1,30
OVIEDO	RB12	1,14
SANTANDER	RB13	1,22
ALAVA	RB211	1,15
GUIPUZCOA	RB212	1,09
VIZCAYA	RB213	1,07
NAVARRA	RB22	1,20
LOGRONO	RB23	1,19
HUESCA	RB241	1,26
TERUEL	RB242	1,43
ZARAGOZA	RB243	1,18
MADRID	RB3	1,31
AVILA	RB411	1,38
BURGOS	RB412	1,22
LEON	RB413	1,26
PALENCIA	RB414	1,30
SALAMANCA	RB415	1,30
SEGOVIA	RB416	1,27
SORIA	RB417	1,32
VALLADOLID	RB418	1,14
ZAMORA	RB419	1,29
ALBACETE	RB421	1,61
CIUDAD REAL	RB422	1,63
CUENCA	RB423	1,43
GUADALAJARA	RB424	1,39
TOLEDO	RB425	1,58
BADAJOZ	RB431	1,70
CACERES	RB432	1,63
BARCELONA	RB511	1,23
GERONA	RB512	1,27
LERIDA	RB513	1,19
TARRAGONA	RB514	1,35
ALICANTE	RB521	1,52
CASTELLON	RB522	1,38
VALENCIA	RB523	1,33
BALEARES	RB53	1,54
ALMERIA	RB611	1,74
CADIZ	RB612	1,83
CORDOBA	RB613	1,68
GRANADA	RB614	1,65
HUELVA	RB615	1,75
JAEN	RB616	1,79
MALAGA	RB617	1,51
SEVILLA	RB618	1,71
MURCIA	RB62	1,70
LAS PALMAS	RB701	1,60
TENERIFE	RB702	1,44

BRAGA	RC1A1	1,83
BRAGANCA	RC1A2	1,79
PORTO	RC1A3	1,51
VIANA DO CASTELO	RC1A4	1,67
VILA REAL	RC1A5	1,91
AVEIRO	RC1B1	1,57
CASTELO BRANCO	RC1B2	1,45
COIMBRA	RC1B3	1,47
GUARDA	RC1B4	1,58
SETUBAL	RC1B4	1,34
VISEU	RC1B5	1,92
LEIRIA	RC1C1	1,53
LISBOA	RC1C2	1,28
SANTAREM	RC1C3	1,43
BEJA	RC1D1	1,59
EVORA	RC1D2	1,50
PORTALEGRE	RC1D3	1,50
FARO	RC1E	1,48
ACORES	RC2	2,17
MADEIRA	RC3	1,63
BURGENLAND	AT01	1,34
KARNTEN	AT02	1,38
NIEDEROSTERREICH	AT03	1,44
OBEROSTERREICH	AT04	1,51
SALZBURG	AT05	1,47
STEIERMARK	AT06	1,38
TIROL	AT07	1,49
VORARLBERG	AT08	1,65
WIEN	AT09	1,40
BURGAS	BG0101	2,09
JAMBOL	BG0102	2,21
SLIVEN	BG0103	2,25
HASKOVO	BG0201	2,02
KARDZALI	BG0202	2,04
STARA ZAGORA	BG0203	1,94
GABROVO	BG0301	1,72
LOVEC	BG0302	2,07
PLEVEN	BG0303	2,10
VELIKO TARNOVO	BG0304	1,84
MIHAHLOVGRAD	BG0401	2,10
VIDIN	BG0402	2,19
VRACA	BG0403	2,03
PAZARDZIK	BG0501	2,23
PLOVDIV	BG0502	1,86
SMOLJAN	BG0503	2,01
RAZGRAD	BG0601	1,89
RUSE	BG0602	1,83
SILISTRA	BG0603	1,95
TARGOVISTE	BG0604	2,16
SOFIA-VILLE	BG07	1,72
BLAGOEVGRAD	BG0801	2,16
KJUSTENDIL	BG0802	1,99

PERNIK	BG0803	1,75
SOFIA-CAMPAGNE	BG0804	1,93
SUMEN	BG0901	1,92
TOLBUHIN	BG0902	2,04
VARNA	BG0903	2,03
AARGAU	CH01	1,58
APPENZELL R.A.	CH02	2,03
APPENZELL R.I.	CH03	2,03
BASEL-LAND	CH04	1,49
BASEL-STADT	CH05	1,17
BERN	CH06	1,47
FRIBOURG	CH07	1,60
GENEVE	CH08	1,37
GLARUS	CH09	1,92
GRAUBUNDEN	CH10	1,71
JURA	CH11	1,68
LUZERN	CH12	1,68
NEUCHATEL	CH13	1,54
NIDWALDEN	CH14	1,94
OBWALDEN	CH15	2,16
ST-GALLEN	CH16	1,74
SCHAFFHAUSEN	CH17	1,61
SCHWYZ	CH18	1,84
SOLOTHURN	CH19	1,61
THURGAU	CH20	1,93
TICINO	CH21	1,14
URI	CH22	1,74
VALAIS	CH23	1,64
VAUD	CH24	1,55
ZUG	CH25	1,46
ZURICH	CH26	1,32
PRAHA	CS01	1,78
JIHOCESKY	CS02	1,94
JIHOMORAVSKY	CS03	1,95
SEVEROCESKY	CS04	1,99
SEVEROMORAVSKY	CS05	1,99
STREDOCESKY	CS06	1,90
VYCHODOCESKY	CS07	1,97
ZAPADOCESKY	CS08	1,91
BRATISLAVA	CS09	1,96
STREDOSLOVENSKY	CS10	2,16
VYCHODOSLOVENSKY	CS11	2,37
ZAPADOSLOVENSKY	CS12	1,96
ESTONSKAJA SSR	EE	1,93
ALAND	FI01	1,55
HAME	FI02	1,51
KESKI-SUOMI	FI03	1,63
KUOPIO	FI04	1,59
KYMI	FI05	1,47
LAPPI	FI06	1,65
MIKKELI	FI07	1,50
OULU	FI08	1,96

POHJOIS-KARJALA	FI09	1,65
TURKU-PORI	FI10	1,55
UUSIMAA	FI11	1,49
VAASA	FI12	1,82
BARANYA	HU01	1,67
BACS-KISKUN	HU02	1,96
BEKES	HU03	1,96
BORSOD-ABAUJ-ZEMPLEN	HU04	2,11
BUDAPEST	HU05	1,39
CSONGRAD	HU06	1,64
FEJER	HU07	1,91
GYOR-SOPRON	HU08	1,84
HAJDU-BIHAR	HU09	1,98
HEVES	HU10	1,83
SZOLNOK	HU11	2,21
KOMAROM	HU12	1,91
NOGRAD	HU13	1,97
PEST	HU14	1,83
SOMOGY	HU15	1,79
SZABOLCS-SZATMAR	HU16	2,24
TOLNA	HU17	1,86
VAS	HU18	1,84
VESZPREM	HU19	1,88
ZALA	HU20	1,84
LITOVSKAJA SSR	LT	2,16
LATVIISKAJA SSR	LV	2,15
AUST-AGDER	NO01	1,88
BUSKERUD	NO02	1,72
FINNMARK	NO03	1,94
HEDMARK	NO04	1,65
HORDALAND	NO05	1,99
MORE OG ROMSDAL	NO06	1,95
NORDLAND	NO07	1,94
NORD-TRONDELAG	NO08	1,93
OPPLAND	NO09	1,69
OSLO	NO10A	1,63
AKERSHUS	NO10B	1,81
OSTFOLD	NO11	1,68
ROGALAND	NO12	2,09
SOGN OG FJORDANE	NO13	2,02
SOR-TRONDELAG	NO14	1,88
TELEMARK	NO15	1,84
TROMS	NO16	1,86
VEST-AGDER	NO17	2,03
VESTFOLD	NO18	1,78
BIALA PODLASKA	PL01	2,67
BIALYSTOK	PL02	2,21
BIELSKO BIALA	PL03	2,17
BYDGOSZCZ	PL04	2,11
CHELM	PL05	2,38
CIECHANOW	PL06	2,35
CZESTOCHOWA	PL07	2,05

ELBLAG	PL08	2,26
GDANSK	PL09	2,14
GORZOW WIELKOPOLSKI	PL10	2,24
JELENIA GORA	PL11	1,94
KALISZ	PL12	2,24
KATOWICE	PL13	1,91
KIELCE	PL14	2,18
KONIN	PL15	2,30
KOSZALIN	PL16	2,14
KRAKOW	PL17	2,00
KROSNO	PL18	2,48
LEGNICA	PL19	2,06
LESZNO	PL20	2,40
LODZ	PL21	1,60
LOMZA	PL22	2,67
LUBLIN	PL23	2,15
NOWY SACZ	PL24	2,65
OLSZTYN	PL25	2,22
OPOLE	PL26	1,99
OSTROLEKA	PL27	2,56
PILA	PL28	2,35
PIOTRKOW TRYBUNALSKI	PL29	2,18
PLOCK	PL30	2,10
POZNAN	PL31	2,11
PRZEMYSL	PL32	2,61
RADOM	PL33	2,40
RZESZOW	PL34	2,43
SIEDLCE	PL35	2,57
SIERADZ	PL36	2,22
SKIERNIEWICE	PL37	2,14
SLUPSK	PL38	2,33
SUWALKI	PL39	2,59
SZCZECIN	PL40	1,99
TARNOBRZEG	PL41	2,41
TARNOW	PL42	2,55
TORUN	PL43	2,16
WALBRZYCH	PL44	1,98
WARSZAWA	PL45	1,64
WLOCLAWEK	PL46	2,19
WROCLAW	PL47	1,86
ZAMOSC	PL48	2,48
ZIELONA GORA	PL49	2,22
ALBA	RO01	2,26
ARAD	RO02	1,88
ARGES	RO03	2,17
BACAU	RO04	2,73
BIHOR	RO05	2,18
BISTRITA-NASAUD	RO06	2,69
BOTOSANI	RO07	3,27
BRASOV	RO08	1,53
BRAILA	RO09	2,13
MUNICIPALI BUCURESTI	RO10	1,59

BUZAU	RO11	2,55
CARAS-SEVERIN	RO12	1,92
CLUJ	RO14	1,88
CONSTANTA	RO15	1,94
COVASNA	RO16	2,34
DIMBOUITA	RO17	2,45
DOLJ	RO18	2,16
GALATI	RO19	2,52
GORJ	RO21	2,48
HARGHITA	RO22	2,19
HUNEDOARA	RO23	2,04
IASI	RO25	2,83
MARAMURES	RO26	2,50
MEHEDINTI	RO27	2,39
MURES	RO28	2,26
NEAMT	RO29	2,55
OLT	RO30	2,65
PRAHOVA	RO31	2,11
SATU MARE	RO32	2,44
SALAJ	RO33	2,75
SIBIU	RO34	1,94
SUCEAVA	RO35	2,78
TIMIS	RO37	1,58
TULCEA	RO38	2,58
VASLUI	RO39	3,71
VILCEA	RO40	2,53
VRANCEA	RO41	2,72
ALVSBORG	SE01	2,07
BLEKINGE	SE02	1,93
GOTEBORG-BOHUS	SE03	1,90
GAVLEBORG	SE04	2,02
GOTLAND	SE05	2,12
HALLAND	SE06	2,03
JAMTLAND	SE07	2,10
JONKOPING	SE08	2,12
KALMAR	SE09	2,05
KOPPARBERG	SE10	2,09
KRISTIANSTAD	SE11	2,11
KRONOBERG	SE12	2,02
MALMOHUS	SE13	1,89
NORRBOTTEN	SE14	1,98
OREBRO	SE15	1,93
OSTERGOTLAND	SE16	2,01
SKARABORG	SE17	2,09
SODERMANLAND	SE18	2,02
STOCKHOLM	SE19	1,84
UPPSALA	SE20	1,94
VARMLAND	SE21	2,00
VASTERBOTTEN	SE22	2,08
VASTERNORRLAND	SE23	1,97
VASTMANLAND	SE24	2,00
SLOVENIJA	SI	1,75

Table A4.5c TFR (national) 1960-2000

	AT	BE	BG	CY	CZ	DK	EE	FI
1960	2,69	2,56	2,31	3,51	2,11	2,57	n.a.	2,72
1961	2,79	2,63	2,28	3,48	2,13	2,55	n.a.	2,71
1962	2,8	2,59	2,22	3,45	2,14	2,55	n.a.	2,68
1963	2,82	2,68	2,19	3,42	2,35	2,64	n.a.	2,68
1964	2,79	2,72	2,17	3,36	2,36	2,6	n.a.	2,59
1965	2,7	2,62	2,08	3,31	2,18	2,61	n.a.	2,47
1966	2,66	2,52	2,02	3,26	2,01	2,61	n.a.	2,41
1967	2,62	2,41	2,03	3,08	1,9	2,35	n.a.	2,32
1968	2,58	2,31	2,28	2,9	1,83	2,12	n.a.	2,14
1969	2,49	2,28	2,28	2,72	1,86	2	n.a.	1,93
1970	2,29	2,25	2,18	2,54	1,91	1,95	2,16	1,82
1971	2,2	2,21	2,11	2,45	1,98	2,04	2,19	1,68
1972	2,08	2,09	2,04	2,41	2,07	2,03	2,14	1,58
1973	1,94	1,95	2,16	2,39	2,29	1,92	2,07	1,49
1974	1,91	1,83	2,3	2,12	2,43	1,9	2,07	1,61
1975	1,83	1,74	2,24	2,01	2,43	1,92	2,04	1,68
1976	1,69	1,73	2,25	2,25	2,36	1,75	2,06	1,7
1977	1,63	1,71	2,21	2,25	2,32	1,66	2,06	1,68
1978	1,6	1,69	2,15	2,3	2,32	1,67	2,02	1,64
1979	1,6	1,69	2,15	2,38	2,29	1,6	2,01	1,64
1980	1,62	1,68	2,08	2,38	2,1	1,55	2,04	1,63
1981	1,67	1,67	2,01	2,37	2,02	1,44	2,07	1,64
1982	1,66	1,61	2,02	2,5	2,01	1,43	2,08	1,71
1983	1,56	1,56	2	2,48	1,97	1,38	2,16	1,74
1984	1,52	1,54	2	2,48	1,97	1,4	2,17	1,69
1985	1,47	1,51	1,95	2,38	1,96	1,45	2,12	1,65
1986	1,45	1,54	2	2,4	1,93	1,48	2,17	1,6
1987	1,43	1,54	1,95	2,32	1,91	1,5	2,26	1,59
1988	1,44	1,57	1,97	2,41	1,94	1,56	2,26	1,69
1989	1,44	1,58	1,9	2,37	1,87	1,62	2,21	1,71
1990	1,45	1,62	1,81	2,42	1,89	1,67	2,04	1,78
1991	1,49	1,66	1,65	2,33	1,86	1,68	1,79	1,79
1992	1,49	1,65	1,54	2,49	1,72	1,76	1,69	1,85
1993	1,48	1,61	1,46	2,27	1,67	1,75	1,45	1,81
1994	1,44	1,56	1,37	2,23	1,44	1,81	1,37	1,85
1995	1,4	1,55	1,24	2,13	1,28	1,8	1,32	1,81
1996	1,42	1,55	1,24	2,08	1,18	1,75	1,3	1,76
1997	1,37	1,55	1,09	2	1,19	1,75	1,24	1,75
1998	1,34	1,53	1,11	1,92	1,16	1,72	1,21	1,7
1999	1,32	1,61	1,23	1,83	1,13	1,74	1,24	1,73
2000	1,32	1,65	1,3	1,64	1,14	1,76	1,34	1,73

Table 5c continued

	FR	DE	GR	HU	IE	IT	LV	LT
1960	2,73	2,37	2,28	2,02	3,76	2,41	n.a.	2,6
1961	2,81	2,44	2,19	1,94	3,79	2,41	n.a.	2,6
1962	2,79	2,44	2,24	1,79	3,92	2,46	n.a.	2,6
1963	2,89	2,51	2,22	1,82	4,01	2,54	n.a.	2,55
1964	2,91	2,53	2,31	1,81	4,07	2,7	n.a.	2,5
1965	2,84	2,5	2,3	1,82	4,03	2,66	1,74	2,4
1966	2,79	2,51	2,38	1,89	3,95	2,62	1,78	2,4
1967	2,66	2,45	2,55	2,01	3,84	2,53	1,83	2,4
1968	2,58	2,36	2,56	2,06	3,78	2,49	1,78	2,4
1969	2,53	2,21	2,53	2,04	3,96	2,51	1,93	2,4
1970	2,47	2,03	2,39	1,98	3,93	2,42	2,01	2,4
1971	2,49	1,97	2,32	1,93	3,99	2,41	2,04	2,3
1972	2,41	1,74	2,32	1,93	3,89	2,37	2,03	2,3
1973	2,3	1,56	2,26	1,93	3,75	2,34	1,96	2,2
1974	2,11	1,53	2,37	2,27	3,62	2,33	1,99	2,2
1975	1,93	1,48	2,32	2,35	3,4	2,2	1,96	2,2
1976	1,83	1,51	2,35	2,23	3,31	2,1	1,93	2,1
1977	1,86	1,51	2,28	2,15	3,27	1,97	1,88	2,1
1978	1,82	1,5	2,29	2,06	3,24	1,87	1,86	2
1979	1,86	1,5	2,29	2,01	3,23	1,76	1,87	2
1980	1,95	1,56	2,21	1,92	3,25	1,64	1,9	2
1981	1,95	1,53	2,09	1,88	3,07	1,59	1,9	2
1982	1,91	1,51	2,02	1,8	2,95	1,56	1,98	2
1983	1,78	1,43	1,94	1,75	2,74	1,51	2,13	2,1
1984	1,8	1,39	1,82	1,76	2,57	1,46	2,15	2,1
1985	1,81	1,37	1,67	1,85	2,47	1,42	2,09	2,1
1986	1,83	1,41	1,6	1,84	2,43	1,34	2,21	2,1
1987	1,8	1,43	1,5	1,82	2,31	1,32	2,21	2,16
1988	1,81	1,46	1,5	1,81	2,17	1,36	2,16	2,02
1989	1,79	1,42	1,4	1,82	2,08	1,33	2,05	1,98
1990	1,78	1,45	1,39	1,87	2,11	1,33	2,01	2,03
1991	1,77	1,33	1,38	1,88	2,08	1,31	1,86	2,01
1992	1,73	1,3	1,38	1,78	1,99	1,31	1,73	1,94
1993	1,65	1,28	1,34	1,69	1,9	1,25	1,51	1,74
1994	1,66	1,24	1,35	1,65	1,85	1,21	1,39	1,57
1995	1,7	1,25	1,32	1,58	1,84	1,18	1,26	1,55
1996	1,72	1,32	1,3	1,46	1,89	1,2	1,16	1,49
1997	1,71	1,37	1,31	1,38	1,92	1,22	1,11	1,47
1998	1,75	1,36	1,29	1,33	1,93	1,19	1,1	1,46
1999	1,77	1,37	1,3	1,29	1,89	1,23	1,18	1,46
2000	1,89	1,34	1,3	1,33	1,89	1,25	1,24	1,39

Table 5c continued

	LU	MT	NL	NO	PL	PT	RO	SK
1960	2,28	3,62	3,12	2,91	2,98	3,1	2,33	3,07
1961	2,33	3,27	3,21	2,94	2,83	3,16	2,17	2,96
1962	2,35	3,23	3,17	2,91	2,72	3,21	2,04	2,83
1963	2,33	2,9	3,19	2,93	2,7	3,11	2,01	2,92
1964	2,38	2,79	3,17	2,98	2,57	3,21	1,96	2,89
1965	2,42	2,47	3,04	2,94	2,52	3,14	1,91	2,78
1966	2,37	2,33	2,9	2,9	2,34	3,12	1,9	2,66
1967	2,25	2,24	2,81	2,81	2,33	3,08	3,66	2,48
1968	2,13	2,11	2,71	2,75	2,24	3	3,63	2,39
1969	2,02	2,02	2,75	2,69	2,2	2,95	3,19	2,43
1970	1,98	2,02	2,57	2,5	2,2	2,83	2,89	2,4
1971	1,96	2,59	2,36	2,49	2,25	2,78	2,66	2,43
1972	1,75	2,01	2,15	2,38	2,24	2,69	2,55	2,49
1973	1,58	2,22	1,9	2,23	2,26	2,65	2,44	2,57
1974	1,58	2,21	1,77	2,13	2,26	2,6	2,72	2,61
1975	1,55	2,27	1,66	1,98	2,27	2,58	2,62	2,55
1976	1,48	2,2	1,63	1,86	2,3	2,58	2,58	2,54
1977	1,49	2,18	1,58	1,75	2,23	2,48	2,6	2,49
1978	1,47	2,12	1,58	1,77	2,21	2,28	2,54	2,47
1979	1,47	2,16	1,56	1,75	2,28	2,17	2,5	2,45
1980	1,49	1,99	1,6	1,72	2,28	2,18	2,43	2,32
1981	1,55	1,93	1,56	1,7	2,24	2,13	2,37	2,29
1982	1,49	2,04	1,5	1,71	2,34	2,07	2,17	2,28
1983	1,43	1,97	1,47	1,66	2,42	1,95	2	2,28
1984	1,42	1,97	1,49	1,66	2,37	1,9	2,19	2,26
1985	1,38	1,96	1,51	1,68	2,33	1,72	2,26	2,25
1986	1,43	1,94	1,55	1,71	2,22	1,66	2,39	2,2
1987	1,4	1,98	1,56	1,75	2,15	1,62	2,42	2,15
1988	1,51	2,07	1,55	1,84	2,13	1,62	2,31	2,15
1989	1,52	2,11	1,55	1,89	2,08	1,58	2,19	2,08
1990	1,61	2,05	1,62	1,93	2,04	1,57	1,83	2,09
1991	1,6	2,04	1,61	1,92	2,05	1,57	1,56	2,05
1992	1,64	2,12	1,59	1,88	1,93	1,54	1,5	1,98
1993	1,7	2,01	1,57	1,86	1,85	1,52	1,45	1,92
1994	1,72	1,89	1,57	1,86	1,8	1,44	1,42	1,66
1995	1,69	1,83	1,53	1,87	1,61	1,4	1,34	1,52
1996	1,76	2,1	1,53	1,89	1,58	1,43	1,3	1,47
1997	1,71	1,95	1,56	1,86	1,51	1,46	1,32	1,43
1998	1,68	1,83	1,63	1,81	1,44	1,46	1,32	1,38
1999	1,71	1,72	1,64	1,85	1,37	1,49	1,3	1,33
2000	1,78	1,72	1,72	1,85	1,34	1,54	1,31	1,2

Table 5c continued

	SI	ES	SE	CH	UK
1960	2,18	2,86	2,2	2,44	2,72
1961	2,28	2,76	2,23	2,53	2,8
1962	2,28	2,8	2,26	2,59	2,88
1963	2,27	2,88	2,34	2,66	2,92
1964	2,26	3,01	2,48	2,67	2,97
1965	2,43	2,94	2,42	2,6	2,89
1966	2,25	2,99	2,36	2,51	2,79
1967	2,16	3,03	2,27	2,41	2,69
1968	2,06	2,96	2,07	2,3	2,6
1969	2,17	2,93	1,93	2,19	2,51
1970	2,1	2,9	1,92	2,1	2,43
1971	2,16	2,88	1,96	2,02	2,4
1972	2,15	2,86	1,91	1,9	2,2
1973	2,19	2,84	1,86	1,8	2,04
1974	2,1	2,89	1,87	1,72	1,92
1975	2,16	2,79	1,77	1,61	1,81
1976	2,2	2,79	1,68	1,54	1,74
1977	2,16	2,66	1,64	1,53	1,69
1978	2,19	2,53	1,6	1,5	1,75
1979	2,22	2,31	1,66	1,52	1,86
1980	2,11	2,2	1,68	1,55	1,9
1981	1,94	2,04	1,63	1,55	1,82
1982	1,93	1,94	1,62	1,56	1,78
1983	1,82	1,8	1,61	1,52	1,77
1984	1,75	1,73	1,66	1,53	1,76
1985	1,72	1,64	1,74	1,52	1,79
1986	1,65	1,56	1,8	1,53	1,78
1987	1,64	1,5	1,84	1,52	1,81
1988	1,63	1,45	1,96	1,57	1,82
1989	1,52	1,4	2,01	1,56	1,79
1990	1,46	1,36	2,13	1,59	1,83
1991	1,42	1,33	2,11	1,6	1,81
1992	1,34	1,32	2,09	1,58	1,79
1993	1,34	1,27	1,99	1,51	1,75
1994	1,32	1,21	1,88	1,49	1,74
1995	1,29	1,18	1,73	1,48	1,71
1996	1,28	1,17	1,6	1,5	1,72
1997	1,25	1,19	1,52	1,51	1,72
1998	1,23	1,15	1,5	1,46	1,71
1999	1,21	1,2	1,5	1,48	1,68
2000	1,26	1,22	1,54	1,5	1,64

Table A4.6 Population change 1996-1999 with regard to total and natural development and net-migration

Cyprus and Malta have been excluded

NUTS	REGION	Tot pop dev/ pop	Nat pop dev/ pop	Net mig/ pop
BE1	BE1 RÉGION BXL-CAPITALE	1,68	2,38	-0,70
BE21	BE21 ANTWERPEN	1,75	1,28	0,47
BE22	BE22 LIMBURG	4,69	3,37	1,32
BE23	BEE23 OOST-VLAANDERERN	1,75	0,52	1,23
BE24	BE24 VLAAMS BRABANT	3,68	1,26	2,42
BE25	BE25 WEST-VLAANDEREN	1,19	0,39	0,80
BE31	BE31 BRABANT WALLON	7,34	2,33	5,00
BE32	BE32 HAINAUT	-1,05	-0,49	-0,56
BE33	BE33 LIÈGE	1,15	0,23	0,92
BE34	BE34 LUXEMBOURG (BE)	4,80	2,19	2,60
BE35	BE35 NAMUR	3,73	1,45	2,28
DK001	DK001 KØBENHAVN OG FREDERIKSBERG	10,20	0,52	9,68
DK002	DK002 KØBENHAVNS AMT	2,90	1,37	1,53
DK003	DK003 FREDERIKSBORG AMT	9,12	2,88	6,23
DK004	DK004 ROSKILDE AMT	7,04	4,25	2,79
DK005	DK005 VESTSJÆLLANDS AMT	4,97	-0,34	5,32
DK006	DK006 STORSTRØMS AMT	2,07	-3,49	5,56
DK007	DK007 BORNHOLMS AMT	-4,45	-3,71	-0,74
DK008	DK008 FYNS AMT	1,66	0,35	1,31
DK009	DK009 SØNDERJYLLANDS AMT	0,85	1,58	-0,72
DK00A	DK00A RIBE AMT	2,01	2,53	-0,52
DK00B	DK00B VJL AMT	6,55	2,23	4,32
DK00C	DK00C RINGKØBING AMT	1,72	2,58	-0,86
DK00D	DK00D ÅRHUS AMT	6,00	3,65	2,35
DK00E	DK00E VIBORG AMT	2,15	0,43	1,72
DK00F	DK00F NORDJYLLANDS AMT	2,37	0,81	1,56
DE11	DE11 STUTTGART	3,31	1,91	1,39
DE12	DE12 KARLSRUHE	2,46	0,41	2,04
DE13	DE13 FREIBURG	4,60	1,51	3,09
DE14	DE14 TÜBINGEN	4,34	2,74	1,60
DE21	DE21 OBERBAYERN	2,30	1,32	0,98
DE22	DE22 NIDERBAYERN	6,06	0,61	5,45
DE23	DE23 OBERPFALZ	4,78	0,72	4,06
DE24	DE24 OBERFRANKEN	1,23	-1,50	2,72
DE25	DE25 MITTELFRANKEN	2,42	-0,24	2,66
DE26	DE26 UNTERFRANKEN	3,36	0,63	2,73
DE27	DE27 SCHWABEN	3,24	0,85	2,40
DE3	DE3 BERLIN	-6,28	-1,92	-4,37
DE4	DE4 BRANDENBURG	5,79	-4,17	9,97
DE5	DE5 BREMEN	-5,42	-2,12	-3,30
DE6	DE6 HAMBURG	-1,11	-1,74	0,62
DE71	DE71 DARMSTADT	2,08	0,38	1,70
DE72	DE72 GIEßEN	2,03	0,13	1,90
DE73	DE73 KASSEL	0,84	-1,07	1,91
DE8	DE8 MECKLENBURG-VORPOMMERN	-4,64	-3,46	-1,19
DE91	DE91 BRAUNSCHWEIG	-1,63	-1,69	0,06
DE92	DE92 HANNOVER	1,76	-1,26	3,02

DE93	DE93 LÜNEBURG	9,32	-0,02	9,34
DE94	DE94 WESER-EMS	6,65	2,15	4,50
DEA1	DEA1 DÜSSELDORF	-1,13	-1,46	0,33
DEA2	DEA2 KÖLN	4,79	0,50	4,29
DEA3	DEA3 MÜNSTER	3,63	1,27	2,36
DEA4	DEA4 DETMOLD	5,07	0,94	4,14
DEA5	DEA5 ARNSBERG	-0,71	-0,97	0,26
DEB1	DEB1 KOBLENZ	5,10	-0,89	5,99
DEB2	DEB2 TRIER	3,31	-0,72	4,03
DEB3	DEB3 RHEINHESSEN-PFALZ	3,19	-0,38	3,57
DEC	DEC SAARLAND	-2,80	-2,59	-0,22
DED	DED SACHSEN	-5,52	-5,51	-0,01
DEE1	DEE1 DESSAU	-8,51	-1,17	-7,34
DEE2	DEE2 HALLE	-7,78	-3,89	-3,89
DEE3	DEE3 MAGDEBURG	-7,78	-4,73	-3,05
DEF	DEF SCHLESWIG-HOLSTEIN	4,92	-0,73	5,65
DEG	DEG THÜRINGEN	-5,46	-4,80	-0,66
GR11	GR11 ANATOLIKI MAKEDONIA, THRAKI	0,53	-0,77	1,31
GR12	GR12 KENTRIKI MAKEDONIA	4,73	1,34	3,38
GR13	GR13 DYTIKI MAKEDONIA	1,49	0,00	1,49
GR14	GR14 THESSALIA	0,45	-0,99	1,44
GR21	GR21 IPEIROS	5,98	-2,07	8,04
GR22	GR22 IONIA NISIA	7,03	-1,99	9,02
GR23	GR23 DYTIKI ELLADA	2,99	-0,77	3,76
GR24	GR24 STEREA ELLADA	2,36	-1,96	4,33
GR25	GR25 PELOPONNISOS	0,94	-3,08	4,03
GR3	GR3 ATTIKI	-0,70	0,89	-1,59
GR41	GR41 VOREIO AIGAIO	-3,35	-4,35	1,00
GR42	GR42 NOTIO AIGAIO	5,50	3,46	2,04
GR43	GR43 KRITI	3,50	1,43	2,08
ES111	ES111 LA CORUÑA	0,08	-3,45	3,52
ES112	ES112 LUGO	-6,58	-7,57	0,99
ES113	ES113 ORENSE	-4,99	-7,47	2,47
ES114	ES114 PONTEVEDRA	0,61	-0,88	1,49
ES12	ES12 PRINCIPADO DE ASTURIAS	-5,10	-5,16	0,06
ES13	ES13 CANTABRIA	-0,19	-2,60	2,41
ES211	ES211 ÁLAVA	2,34	0,60	1,74
ES212	ES212 GUIPÚZCOA	-3,65	-0,15	-3,50
ES213	ES213 VIZCAYA	-5,30	-1,43	-3,88
ES22	ES22 COMUNIDAD FORAL DE NAVARRA	2,24	0,32	1,93
ES23	ES23 LA RIOJA	-1,86	-1,41	-0,45
ES241	ES241 HUESCA	-2,35	-3,89	1,54
ES242	ES242 TERUEL	-6,27	-4,82	-1,45
ES243	ES243 ZARAGOZA	-1,24	-2,28	1,04
ES3	ES3 COMUNIDAD DE MADRID	1,21	2,12	-0,90
ES411	ES411 AVILA	-4,74	-4,34	-0,39
ES412	ES412 BURGOS	-2,30	-2,01	-0,29
ES413	ES413 LEÓN	-3,34	-3,44	0,10
ES414	ES414 PALENCIA	-3,87	-3,50	-0,37
ES415	ES415 SALAMANCA	-2,07	-3,30	1,22
ES416	ES416 SEGOVIA	-1,49	-1,37	-0,11
ES417	ES417 SORIA	-4,35	-3,99	-0,36
ES418	ES418 VALLADOLID	-0,34	-1,15	0,81

ES419	ES419 ZAMORA	-5,84	-4,70	-1,13
ES421	ES421 ALBACETE	3,93	1,80	2,13
ES422	ES422 CIUDAD REAL	0,49	-0,14	0,63
ES423	ES423 CUENCA	-4,07	-1,83	-2,24
ES424	ES424 GUADALAJARA	14,06	-1,69	15,75
ES425	ES425 TOLEDO	7,17	0,00	7,17
ES431	ES431 BADAJOZ	2,87	0,50	2,36
ES432	ES432 CÁCERES	1,77	-0,96	2,73
ES511	ES511 BARCELONA	-2,30	0,19	-2,48
ES512	ES512 GERONA	4,44	0,06	4,38
ES513	ES513 LÉRIDA	-0,33	-2,55	2,22
ES514	ES514 TARRAGONA	8,91	-0,52	9,43
ES521	ES521 ALICANTE	4,42	1,03	3,39
ES522	ES522 CASTELLÓN DE LA PLANA	2,32	-0,96	3,27
ES523	ES523 VALENCIA	1,01	-0,50	1,50
ES53	ES53 BALEARES	5,09	0,45	4,64
ES611	ES611 ALMERÍA	6,47	3,85	2,62
ES612	ES612 CADIZ	4,19	3,57	0,62
ES613	ES613 CÓRDOBA	2,94	1,69	1,25
ES614	ES614 GRANADA	4,00	1,88	2,12
ES615	ES615 HUELVA	1,75	1,19	0,56
ES616	ES616 JAÉN	2,54	2,26	0,28
ES617	ES617 MÁLAGA	5,01	1,83	3,18
ES618	ES618 SEVILLA	5,03	2,58	2,46
ES62	ES62 MURCIA	6,03	3,54	2,49
FR101	FR101 PARIS	-0,22	6,02	-6,24
FR102	FR102 SEINE-ET-MARNE	6,25	7,55	-1,29
FR103	FR103 YVELINES	1,46	8,27	-6,82
FR104	FR104 ESSONNE	1,22	8,50	-7,28
FR105	FR105 HAUTS-DE-SEINE	4,27	8,81	-4,54
FR106	FR106 SEINE-SAINT-DENIS	-0,96	9,92	-10,88
FR107	FR107 VAL-DE-MARNE	1,50	8,12	-6,62
FR108	FR108 VAL-D'OISE	2,29	8,51	-6,22
FR211	FR211 ARDENNES	-2,66	3,08	-5,74
FR212	FR212 AUBE	0,20	1,82	-1,62
FR213	FR213 MARNE	0,38	4,18	-3,80
FR214	FR214 HAUTE-MARNE	-5,00	1,36	-6,35
FR221	FR221 AISNE	-0,98	2,61	-3,58
FR222	FR222 OISE	3,15	6,19	-3,04
FR223	FR223 SOMME	1,70	2,83	-1,13
FR231	FR231 EURE	4,66	4,52	0,14
FR232	FR232 SEINE-MARITIME	0,06	4,28	-4,22
FR241	FR241 CHER	-3,93	1,37	-5,31
FR242	FR242 EURE-ET-LOIR	1,21	3,59	-2,39
FR243	FR243 INDRE	-2,15	-3,44	1,29
FR244	FR244 INDRE-ET-LOIRE	4,80	2,30	2,50
FR245	FR245 LOIR-ET-CHER	3,18	0,32	2,86
FR246	FR246 LOIRET	6,06	3,91	2,16
FR251	FR251 CALVADOS	4,99	4,87	0,12
FR252	FR252 MANCHE	0,90	1,94	-1,04
FR253	FR253 ORNE	-1,22	1,59	-2,81
FR261	FR261 CÔTE-D'OR	2,24	3,23	-0,99
FR262	FR262 NIÈVRE	-4,29	-3,96	-0,33

FR263	FR263 SAÔNE-ET-LOIRE	-3,52	-0,43	-3,10
FR264	FR264 YONNE	2,81	-0,50	3,31
FR301	FR301 NORD	0,58	5,35	-4,77
FR302	FR302 PAS-DE-CALAIS	0,83	3,66	-2,83
FR411	FR411 MEURTHE-ET-MOSELLE	-1,29	3,35	-4,65
FR412	FR412 MEUSE	-4,26	1,55	-5,81
FR413	FR413 MOSELLE	1,16	3,36	-2,20
FR414	FR414 VOSGES	-2,00	1,39	-3,40
FR421	FR421 BAS-RHIN	7,25	4,64	2,62
FR422	FR422 HAUT-RHIN	5,11	4,22	0,89
FR431	FR431 DOUBS	1,91	5,02	-3,11
FR432	FR432 JURA	0,47	1,46	-1,00
FR433	FR433 HAUTE-SAÔNE	0,47	1,45	-0,98
FR434	FR434 TERRITOIRE DE BELFORT	1,09	4,37	-3,28
FR511	FR511 LOIRE-ATLANTIQUE	8,50	4,41	4,09
FR512	FR512 MAINE-ET-LOIRE	3,94	4,48	-0,55
FR513	FR513 MAYENNE	3,17	3,53	-0,35
FR514	FR514 SARTHE	3,51	3,04	0,47
FR515	FR515 VENDÉE	6,44	1,19	5,25
FR521	FR521 CÔTE-DU-NORD	3,52	-1,30	4,81
FR522	FR522 FINISTÈRE	3,63	0,16	3,48
FR523	FR523 ILLE-ET-VILAINE	9,99	4,81	5,19
FR524	FR524 MORBIHAN	5,79	1,05	4,75
FR531	FR531 CHARENTE	-1,03	-0,59	-0,44
FR532	FR532 CHARENTE-MARITIME	6,61	0,79	5,82
FR533	FR533 DEUX-SÈVRES	-0,56	0,39	-0,94
FR534	FR534 VIENNE	4,75	1,34	3,40
FR611	FR611 DORDOGNE	1,16	-3,87	5,03
FR612	FR612 GIRONDE	5,52	2,23	3,30
FR613	FR613 LANDES	5,76	-1,34	7,10
FR614	FR614 LOT-ET-GARONNE	1,18	-1,20	2,38
FR615	FR615 PYRÉNÉES-ATLANTIQUES	4,41	-0,73	5,14
FR621	FR621 ARIÈGE	1,95	-3,90	5,86
FR622	FR622 AVEYRON	-0,88	-5,79	4,91
FR623	FR623 HAUTE-GARONNE	12,63	4,40	8,23
FR624	FR624 GERS	-0,24	-3,29	3,04
FR625	FR625 LOT	3,87	-3,35	7,21
FR626	FR626 HAUTES-PYRÉNÉES	-1,79	-2,24	0,45
FR627	FR627 TARN	1,00	-1,56	2,56
FR628	FR628 TARN-ET-GARONNE	2,35	0,16	2,19
FR631	FR631 CORRÈZE	-3,89	-1,86	-2,03
FR632	FR632 CREUSE	-4,38	-7,96	3,58
FR633	FR633 HAUTE-VIENNE	-0,49	-2,54	2,05
FR711	FR711 AIN	9,77	4,34	5,43
FR712	FR712 ARDÈCHE	3,84	-0,12	3,95
FR713	FR713 DRÔME	6,32	3,15	3,17
FR714	FR714 ISÈRE	7,86	5,55	2,31
FR715	FR715 LOIRE	-4,20	1,73	-5,93
FR716	FR716 RHÔNE	3,61	6,65	-3,04
FR717	FR717 SAVOIE	7,19	3,53	3,66
FR718	FR718 HAUTE-SAVOIE	9,47	6,26	3,21
FR721	FR721 ALLIER	-4,10	-3,17	-0,94
FR722	FR722 CANTAL	-1,64	-13,13	11,49

FR723	FR723 HAUTE-LOIRE	3,17	-0,80	3,97
FR724	FR724 PUY-DE-DÔME	1,73	0,11	1,62
FR811	FR811 AUDE	12,16	-15,53	27,70
FR812	FR812 GARD	7,22	1,57	5,64
FR813	FR813 HÉRAULT	12,94	2,24	10,70
FR814	FR814 LOZÈRE	2,04	-2,72	4,77
FR815	FR815 PYRÉNÉES-ORIENTALES	9,88	-1,29	11,17
FR821	FR821 ALPES-DE-HAUTE-PROVENCE	6,36	-0,48	6,84
FR822	FR822 HAUTES-ALPES	8,87	1,39	7,49
FR823	FR823 ALPES-MARITIMES	2,88	-0,63	3,51
FR824	FR824 BOUCHES-DU-RHÔNE	3,32	2,56	0,76
FR825	FR825 VAR	10,19	0,75	9,44
FR826	FR826 VAUCLUSE	6,89	3,10	3,79
FR831	FR831 CORSE-DU-SUD	-3,02	-0,28	-2,74
FR832	FR832 HAUTE-CORSE	4,68	0,24	4,44
IE001	IE011 BORDER	1,68	1,23	0,45
IE004	IE012 MIDLANDS	6,44	1,77	4,67
IE008	IE013 WEST	13,11	1,03	12,09
IE002	IE021 DUBLIN	12,51	2,64	9,87
IE003	IE022 MID-EAST	25,85	3,14	22,71
IE005	IE023 MIDWEST	7,83	1,79	6,04
IE006	IE024 SOUTH-EAST (IE)	6,42	1,87	4,55
IE007	IE025 SOUTH-WEST (IE)	4,63	1,65	2,99
IT111	IT111 TORINO	-0,92	-1,86	0,94
IT112	IT112 VERCELLI	-2,75	-6,24	3,49
IT113	IT113 BIELLA	-1,93	-5,78	3,86
IT114	IT114 VERBANO-CUSIO-OSSOLA	-0,72	-3,72	3,00
IT115	IT115 NOVARA	2,83	-3,32	6,16
IT116	IT116 CUNEO	2,44	-3,61	6,05
IT117	IT117 ASTI	0,40	-6,35	6,74
IT118	IT118 ALESSANDRIA	-1,54	-8,53	6,99
IT12	IT12 VALLE D'AOSTA	3,35	-1,95	5,30
IT131	IT131 IMPERIA	-0,85	-5,53	4,69
IT132	IT132 SAVONA	-3,20	-7,22	4,02
IT133	IT133 GENOVA	-6,71	-6,86	0,14
IT134	IT134 LA SPEZIA	-4,02	-6,40	2,38
IT201	IT201 VARESE	2,57	-0,74	3,31
IT202	IT202 COMO	3,65	-0,19	3,84
IT203	IT203 LECCO	5,40	0,22	5,19
IT204	IT204 SONDRIO	0,56	-0,56	1,13
IT205	IT205 MILANO	2,36	-0,46	2,82
IT206	IT206 BERGAMO	7,04	1,30	5,74
IT207	IT207 BRESCIA	7,15	0,37	6,78
IT208	IT208 PAVIA	1,38	-6,26	7,64
IT209	IT209 LODI	7,19	-1,73	8,92
IT20A	IT20A CREMONA	2,21	-3,72	5,93
IT20B	IT20B MANTOVA	2,84	-3,87	6,71
IT311	IT311 BOLZANO-BOZEN	6,00	3,88	2,12
IT312	IT312 TRENTO	5,94	0,57	5,37
IT321	IT321 VERONA	5,75	-0,25	6,00
IT322	IT322 VICENZA	6,97	1,34	5,63
IT323	IT323 BELLUNO	-1,02	-3,93	2,91
IT324	IT324 TREVISO	7,83	0,70	7,13

IT325	IT325 VENEZIA	-1,06	-1,63	0,57
IT326	IT326 PADOVA	4,07	0,12	3,95
IT327	IT327 ROVIGO	-1,91	-4,22	2,31
IT331	IT331 PORDENONE	2,95	-2,53	5,48
IT332	IT332 UDINE	-0,83	-4,17	3,34
IT333	IT333 GORIZIA	0,00	-5,32	5,32
IT334	IT334 TRIESTE	-7,28	-9,00	1,72
IT401	IT401 PIACENZA	-1,00	-6,14	5,14
IT402	IT402 PARMA	2,41	-5,50	7,91
IT403	IT403 REGGIO NELL'EMILIA	10,12	-2,37	12,48
IT404	IT404 MODENA	5,74	-2,38	8,13
IT405	IT405 BOLOGNA	2,53	-4,65	7,18
IT406	IT406 FERRARA	-4,87	-7,09	2,22
IT407	IT407 RAVENNA	0,19	-4,95	5,14
IT408	IT408 FORLÌ-CESENA	2,23	-2,85	5,07
IT409	IT409 RIMINI	5,49	-0,75	6,24
IT5	IT5 CENTRO (I)	1,43	-3,70	5,14
IT511	IT511 MASSA-CARRARA	-1,91	-5,15	3,24
IT512	IT512 LUCCA	-0,49	-4,61	4,13
IT513	IT513 PISTOIA	2,56	-3,74	6,30
IT514	IT514 FIRENZE	-0,39	-3,92	3,54
IT515	IT515 PRATO	7,16	-0,89	8,05
IT516	IT516 LIVORNO	-2,03	-4,56	2,53
IT517	IT517 PISA	0,74	-4,24	4,98
IT518	IT518 AREZZO	3,40	-4,19	7,59
IT519	IT519 SIENA	1,13	-6,09	7,21
IT51A	IT51A GROSSETO	-1,70	-5,70	4,01
IT521	IT521 PERUGIA	4,31	-3,07	7,38
IT522	IT522 TERNI	-1,12	-4,92	3,80
IT531	IT531 PESARO E URBINO	3,62	-2,35	5,97
IT532	IT532 ANCONA	1,85	-2,72	4,57
IT533	IT533 MACERATA	3,28	-3,34	6,62
IT534	IT534 ASCOLI PICENO	2,58	-1,72	4,31
IT601	IT601 VITERBO	3,04	-3,09	6,13
IT602	IT602 RIETI	0,66	-3,10	3,76
IT603	IT603 ROMA	2,97	-0,10	3,07
IT604	IT604 LATINA	6,51	2,11	4,39
IT605	IT605 FROSINONE	2,61	-0,88	3,49
IT711	IT711 L'AQUILA	0,16	-2,74	2,90
IT712	IT712 TERAMO	4,10	-0,35	4,45
IT713	IT713 PESCARA	1,59	-0,46	2,05
IT714	IT714 CHIETI	1,46	-1,54	3,00
IT721	IT721 ISERNIA	-1,63	-2,53	0,90
IT722	IT722 CAMPOBASSO	-2,87	-1,96	-0,91
IT801	IT801 CASERTA	5,14	5,06	0,08
IT802	IT802 BENEVENTO	-1,86	0,00	-1,86
IT803	IT803 NAPOLI	1,08	5,72	-4,63
IT804	IT804 AVELLINO	-0,60	0,45	-1,06
IT805	IT805 SALERNO	1,82	2,29	-0,47
IT911	IT911 FOGGIA	-1,67	3,34	-5,01
IT912	IT912 BARI	2,49	3,38	-0,89
IT913	IT913 TARANTO	-1,83	2,88	-4,71
IT914	IT914 BRINDISI	-0,08	2,25	-2,33

IT915	IT915 LECCE	-0,08	1,59	-1,67
IT921	IT921 POTENZA	0,21	0,00	0,21
IT922	IT922 MATERA	-2,25	1,45	-3,69
IT931	IT931 COSENZA	-1,84	1,20	-3,03
IT932	IT932 CROTONE	-5,71	4,31	-10,02
IT933	IT933 CATANZARO	-0,82	1,73	-2,56
IT934	IT934 VIBO VALENTIA	-2,98	2,05	-5,03
IT935	IT935 REGGIO DI CALABRIA	-1,73	1,32	-3,05
ITA01	ITA01 TRAPANI	0,50	1,23	-0,73
ITA02	ITA02 PALERMO	0,21	2,90	-2,68
ITA03	ITA03 MESSINA	-1,78	-1,03	-0,76
ITA04	ITA04 AGRIGENTO	-2,67	2,04	-4,71
ITA05	ITA05 CALTANISSETTA	0,47	2,70	-2,23
ITA06	ITA06 ENNA	-5,79	0,54	-6,33
ITA07	ITA07 CATANIA	3,61	3,23	0,38
ITA08	ITA08 RAGUSA	4,00	1,89	2,11
ITA09	ITA09 SIRACUSA	-1,48	1,31	-2,79
ITB01	ITB01 SASSARI	-0,14	-0,72	0,58
ITB02	ITB02 NUORO	-2,82	0,00	-2,82
ITB03	ITB03 ORISTANO	-0,53	-1,89	1,37
ITB04	ITB04 CAGLIARI	-1,17	0,52	-1,69
LU	LU LUXEMBOURG	13,34	3,88	9,46
NL11	NL11 GRONINGEN	1,22	1,25	-0,03
NL12	NL12 FRIESLAND	4,95	2,87	2,08
NL13	NL13 DRENTHE	6,91	2,45	4,47
NL21	NL21 OVERIJSSEL	5,15	3,96	1,19
NL22	NL22 GELDERLAND	5,51	3,79	1,72
NL23	NL23 FLEVOLAND	38,80	10,09	28,71
NL31	NL31 UTRECHT	8,46	5,20	3,26
NL32	NL32 NOORD-HOLLAND	4,56	3,64	0,91
NL33	NL33 ZUID-HOLLAND	4,45	3,38	1,06
NL34	NL34 ZEELAND	3,16	2,08	1,08
NL41	NL41 NOORD-BRABANT	6,83	4,25	2,58
NL42	NL42 LIMBURG (NL)	1,76	1,61	0,15
AT11	AT11 BURGENLAND	3,44	-2,66	6,10
AT12	AT12 NIEDERÖSTERREICH	3,32	-0,68	4,00
AT13	AT13 WIEN	1,42	-1,87	3,29
AT21	AT21 KÄRNTEN	1,33	0,89	0,44
AT22	AT22 STEIERMARK	-0,86	-0,19	-0,66
AT31	AT31 OBERÖSTERREICH	-1,69	2,25	-3,94
AT32	AT32 SALZBURG	4,14	3,52	0,62
AT33	AT33 TIROL	2,90	4,13	-1,23
AT34	AT34 VORARLBERG	3,24	5,51	-2,27
PT11	PT11 NORTE	4,35	3,29	1,06
PT12	PT12 CENTRO (P)	-0,29	-1,99	1,70
PT13	PT13 LISBOA E VALE DO TEJO	1,57	0,21	1,36
PT14	PT14 ALENTEJO	-8,80	-6,06	-2,74
PT15	PT15 ALGARVE	3,08	-2,21	5,29
PT2	PT2 AÇORES (PT)	4,66	3,15	1,51
PT3	PT3 MADEIRA (PT)	3,99	1,68	2,32
FI13	FI13 ITÄ-SUOMI	-6,32	-0,62	-5,70
FI14	FI14 VÄLI-SUOMI	-1,09	1,56	-2,65
FI15	FI15 POHJOIS-SUOMI	-0,15	4,41	-4,56

FI11	FI16 UUSIMAA (SUURALUE)	12,96	4,64	8,32
FI12	FI17 ETELÄ-SUOMI	1,26	0,22	1,04
FI2	FI2 ÅLAND	5,27	2,64	2,64
SE01	STOCKHOLM	10,90	2,91	7,99
SE02	OSTRA MELLANSVERIGE	-1,51	-0,39	-1,12
SE04	SYDSVERIGE	2,15	-0,85	3,01
SE06	NORRA MELLANSVERIGE	-6,99	-3,10	-3,89
SE07	MELLERSTA NORRLAND	-8,42	-3,85	-4,57
SE08	OVRE NORRLAND	-4,85	-0,61	-4,24
SE03	SMALAND MED OARNA	-3,49	-1,44	-2,05
SE05	VASTSVERIGE	1,67	-0,03	1,69
UKB	UKN NORTHERN IRELAND	6,13	5,36	0,77
UK111	CLEVELAND	-1,41	1,71	-3,12
UK112	DURHAM	-0,36	-0,60	0,24
UK12	CUMBRIA	1,29	-1,23	2,52
UK131	NORTHUMBERLAND	2,75	-1,87	4,63
UK132	TYNE AND WEAR	-5,05	-0,66	-4,39
UK21	HUMBERSIDE	-2,11	0,24	-2,35
UK22	NORTH YORKSHIRE	5,58	-0,49	6,07
UK23	SOUTH YORKSHIRE	-0,27	0,39	-0,66
UK24	WEST YORKSHIRE	1,07	2,34	-1,28
UK311	DERBYSHIRE	4,19	0,61	3,58
UK312	NOTTINGHAMSHIRE	0,10	1,07	-0,97
UK321	LEICESTERSHIRE	2,31	2,43	-0,12
UK322	NORTHAMPTONSHIRE	9,09	2,54	6,56
UK33	LINCOLNSHIRE	6,46	-1,20	7,66
UK401	CAMBRIDGESHIRE	11,12	2,90	8,22
UK402	NORFOLK	7,96	-1,14	9,10
UK403	SUFFOLK	6,83	0,57	6,26
UK511	BEDFORDSHIRE	7,33	5,14	2,20
UK512	HERTFORDSHIRE	8,07	3,73	4,34
UK521	BERKSHIRE	5,56	5,29	0,27
UK522	BUCKINGHAMSHIRE	8,29	4,64	3,65
UK523	OXFORDSHIRE	11,27	3,44	7,83
UK531	EAST SUSSEX	8,03	-3,18	11,21
UK532	SURREY	7,43	1,94	5,48
UK533	WEST SUSSEX	9,76	-1,48	11,23
UK54	ESSEX	6,23	1,53	4,70
UK55	GREATER LONDON	9,15	5,85	3,29
UK561	HAMPSHIRE	5,37	1,85	3,52
UK562	ISLE OF WIGHT	6,09	-4,72	10,81
UK57	KENT	9,92	1,24	8,68
UK611	AVON	6,77	1,89	4,88
UK612	GLOUCESTERSHIRE	3,04	0,80	2,24
UK613	WILTSHIRE	8,87	2,97	5,90
UK621	CORNWALL	6,53	-1,95	8,48
UK622	DEVON	3,96	-1,97	5,93
UK631	DORSET	5,60	-2,94	8,54
UK632	SOMERSET	6,40	-1,03	7,44
UK711	HEREFORD AND WORCESTER	5,56	0,63	4,92
UK712	WARWICKSHIRE	5,06	0,83	4,24
UK721	SHROPSHIRE	8,40	1,45	6,95
UK722	STAFFORDSHIRE	1,54	1,02	0,52

UK73	WEST MIDLANDS	-1,58	2,99	-4,57
UK81	CHESHIRE	1,48	1,13	0,35
UK82	GREATER MANCHESTER	0,04	1,50	-1,46
UK83	LANCASHIRE	0,19	-0,03	0,21
UK84	MERSEYSIDE	-4,08	-0,33	-3,75
UK9	UKL WALES	1,52	-0,05	1,57
UKA	UKM SCOTLAND	-1,38	-0,22	-1,16
UKB	NORTHERN IRELAND	5,68	5,44	0,25
BG011	VIDIN	-13,79	-14,02	0,23
BG012	MONTANA	-14,24	-11,89	-2,35
BG013	VRATSA	-8,87	-9,51	0,63
BG021	PLEVEN	-10,64	-9,52	-1,11
BG022	LOVECH	-10,13	-10,68	0,55
BG023	VELIKO TARNOVO	-10,75	-9,35	-1,40
BG024	GABROVO	-8,55	-9,40	0,85
BG025	RUSE	-7,14	-7,86	0,71
BG031	VARNA	-5,94	-4,01	-1,93
BG032	DOBRICH	-5,09	-5,53	0,44
BG033	SHUMEN	-6,12	-5,66	-0,46
BG034	TURGOVISHTE	-6,80	-5,90	-0,91
BG035	RAZGRAD	-6,94	-5,75	-1,19
BG036	SILISTRA	-9,62	-6,84	-2,78
BG041	SOFIA STOLITSA (CAPITAL)	2,52	-4,79	7,31
BG042	SOFIA	-14,55	-8,00	-6,55
BG043	BLAGOEVGRAD	-2,85	-1,33	-1,52
BG044	PERNIK	-9,55	-9,98	0,42
BG045	KYUSTENDIL	-9,52	-9,52	0,00
BG051	PLOVDIV	-2,53	-5,42	2,89
BG052	STARA ZAGORA	-5,13	-6,67	1,54
BG053	HASKOVO	-2,31	-7,27	4,96
BG054	PAZARDZHIK	-7,25	-4,14	-3,11
BG055	SMOLYAN	-15,05	-2,58	-12,47
BG056	KARDZHALI	-11,74	-2,03	-9,70
BG061	BURGAS	-6,14	-3,76	-2,38
BG062	SLIVEN	-5,03	-3,16	-1,87
BG063	YAMBOL	-8,72	-8,14	-0,58
CZ01	PRAHA	-4,57	-4,29	-0,28
CZ02	STREDNÍ CECHY	0,45	-3,23	3,68
CZ031	JIHOCECKÝ	-0,27	-1,49	1,22
CZ032	PLZENSKÝ	-1,81	-2,95	1,14
CZ041	KARLOVARSKÝ	0,00	-0,55	0,55
CZ042	ÚSTECKÝ	0,61	-1,49	2,10
CZ051	LIBERECKÝ	0,00	-1,17	1,17
CZ052	KRÁLOVEHRADECKÝ	-0,90	-1,75	0,84
CZ053	PARDUBICKÝ	-0,98	-1,24	0,26
CZ061	VYSOCINA	-0,64	-0,96	0,32
CZ062	JIHOMORAVSKÝ	-0,88	-2,17	1,29
CZ071	OLOMOUCKÝ	-0,52	-1,76	1,24
CZ072	ZLÍNSKÝ	-1,11	-1,94	0,83
CZ08	MORAVSKOSLEZKO	-1,94	-0,96	-0,98
EE001	PÕHJA-EESTI	-9,57	-4,26	-5,31
EE004	LÄÄNE-EESTI	-1,80	-2,70	0,90
EE002	KESK-EESTI	9,01	-9,23	18,24

EE003	KIRDE-EESTI	-7,13	-3,57	-3,57
EE005	LÕUNA-EESTI	-2,77	-4,06	1,29
HU011	BUDAPEST	-12,45	-6,56	-5,89
HU012	PEST	11,33	-2,47	13,80
HU021	FEJÉR	0,00	-2,27	2,27
HU022	KOMÁROM-ESZTERGOM	-1,61	-3,43	1,82
HU023	VESZPRÉM	-3,09	-3,01	-0,09
HU031	GYOR-MOSON-SOPRON	-1,18	-3,22	2,04
HU032	VAS	-4,32	-5,06	0,74
HU033	ZALA	-6,71	-5,59	-1,12
HU041	BARANYA	-5,34	-3,94	-1,40
HU042	SOMOGY	-5,47	-4,98	-0,50
HU043	TOLNA	-5,40	-4,72	-0,67
HU051	BORSOD-ABAÚJ-ZEMPLÉN	-5,17	-2,11	-3,06
HU052	HEVES	-4,59	-4,89	0,31
HU053	NÓGRÁD	-6,82	-5,30	-1,52
HU061	HAJDÚ-BIHAR	-3,35	-1,28	-2,07
HU062	JÁSZ-NAGYKUN-SZOLNOK	-5,18	-4,31	-0,88
HU063	SZABOLCS-SZATMÁR-BEREG	-0,58	0,64	-1,22
HU071	BÁCS-KISKUN	-3,72	-4,77	1,05
HU072	BÉKÉS	-6,67	-5,58	-1,08
HU073	CSONGRÁD	-5,52	-5,28	-0,24
LT001	ALYTAUS (APSKRITIS)	-1,65	-0,99	-0,66
LT002	KAUNO (APSKRITIS)	-1,10	-0,49	-0,62
LT003	KLAIPEDOS (APSKRITIS)	0,00	0,48	-0,48
LT004	MARIJAMPOLES (APSKRITIS)	-0,84	0,00	-0,84
LT005	PANEVEZIO (APSKRITIS)	-2,58	-1,55	-1,03
LT006	SIAULIU (APSKRITIS)	-0,41	-0,58	0,17
LT007	TAURAGES (APSKRITIS)	0,00	-1,03	1,03
LT008	TELSIU (APSKRITIS)	0,00	1,09	-1,09
LT009	UTENOS (APSKRITIS)	-4,13	-5,28	1,16
LT00A	VILNIAUS (APSKRITIS)	-1,49	-1,56	0,07
LV001	RIGA	-9,52	-14,78	5,25
LV002	VIDZEME	-4,55	-17,30	12,75
LV003	KURZEME	-9,42	-5,46	-3,97
LV004	ZEMGALE	-7,02	-4,59	-2,43
LV005	LATGALE	-10,10	-4,21	-5,89
PL011	JELENIOGÓRSKO-WALBRZYSKI	-1,90	-0,50	-1,40
PL012	LEGNICKI	1,62	2,72	-1,10
PL013	WROCLAWSKI	3,10	2,02	1,09
PL014	MIASTA WROCLAW	-2,34	-1,87	-0,47
PL021	BYDGOSKI	1,13	1,26	-0,13
PL022	TORUNSKO-WLOCLAWSKI	0,94	1,85	-0,91
PL031	BIALSKOPODLASKI	-1,03	1,03	-2,06
PL032	CHELMSKO-ZAMOJSKI	-1,94	0,15	-2,09
PL033	LUBELSKI	0,00	0,54	-0,54
PL041	GORZOWSKI	3,05	2,26	0,78
PL042	ZIELONOGÓRSKI	2,36	2,04	0,31
PL051	LÓDZKI	-1,38	-1,63	0,24
PL052	PIOTRKOWSKO-SKIERNIEWICKI	-1,11	-0,33	-0,78
PL053	MIASTA LÓDZ	-6,75	-6,71	-0,04
PL061	KRAKOWSKO-TARNOWSKI	2,77	1,78	0,99
PL062	NOWOSADECKI	6,18	5,60	0,59

PL063	MIASTA KRAKÓW	-2,25	-1,40	-0,86
PL071	CIECHANOWSKO-PLOCKI	0,52	1,65	-1,14
PL072	OSTROLECKO-SIEDLECKI	0,43	2,20	-1,77
PL073	WARSZAWSKI (SRE 2001)	5,69	-0,40	6,08
PL074	RADOMSKI	0,44	1,59	-1,14
PL075	MIASTA WARSZAWA	-3,49	-4,08	0,59
PL08	OPOLSKIE	-1,07	0,76	-1,83
PL091	RZESZOWSKO-TARNOBRZESKI	3,31	3,37	-0,06
PL092	KROSNIENSKO-PRZEMYSKI	1,74	3,10	-1,36
PL0A1	BIALOSTOCKO-SUWALSKI	0,74	0,33	0,41
PL0A2	LOMZYNSKI	0,00	3,35	-3,35
PL0B1	SLUPSKI	2,74	4,25	-1,51
PL0B2	GDANSKI	6,42	5,28	1,14
PL0B3	GDANSK-GDYNIA-SOPOT	-1,10	-0,75	-0,35
PL0C1	PÓLNOCNOSLASKI (SRE 2001)	4,01	-1,70	5,72
PL0C2	POLUDNIOWOSLASKI (SRE 2001)	1,38	1,85	-0,47
PL0C3	CENTRALNY SLASKI (SRE 2001)	-7,30	-1,34	-5,96
PL0D	SWIETOKRZYSKIE	-1,25	0,20	-1,45
PL0E1	ELBLASKI	2,77	4,06	-1,29
PL0E2	OLSZTYNSKI	2,40	3,10	-0,69
PL0E3	ELCKI	1,71	4,55	-2,84
PL0F1	PILSKI	2,03	3,33	-1,30
PL0F2	POZNANSKI	4,66	2,28	2,37
PL0F3	KALISKI	0,83	1,33	-0,50
PL0F4	KONINSKI	1,14	2,73	-1,59
PL0F5	MIASTA POZNAN	-1,72	-2,30	0,57
PL0G1	SZCZECINSKI	1,49	1,41	0,09
PL0G2	KOSZALINSKI	3,27	3,00	0,27
RO011	BACAU	4,69	1,79	2,90
RO012	BOTOSANI	5,43	-0,51	5,94
RO013	IASI	-0,20	2,71	-2,91
RO014	NEAMT	4,29	0,63	3,66
RO015	SUCEAVA	3,51	2,67	0,84
RO016	VASLUI	6,87	2,10	4,77
RO021	BRAILA	0,00	-3,34	3,34
RO022	BUZAU	-0,98	-3,61	2,62
RO023	CONSTANTA	-1,12	-0,31	-0,80
RO024	GALATI	0,26	0,57	-0,31
RO025	TULCEA	-3,76	-2,38	-1,38
RO026	VRANCEA	1,28	-0,85	2,13
RO031	ARGES	-0,99	-1,43	0,44
RO032	CALARASI	-2,50	-3,40	0,90
RO033	DÂMBOVITA	-0,90	-2,11	1,20
RO034	GIURGIU	-6,13	-6,80	0,67
RO035	IALOMITA	1,09	-1,97	3,06
RO036	PRAHOVA	-2,89	-2,70	-0,19
RO037	TELEORMAN	-4,65	-7,80	3,15
RO041	DOLJ	-4,01	-4,27	0,27
RO042	GORJ	0,00	-0,59	0,59
RO043	MEHEDINTI	-3,08	-3,90	0,82
RO044	OLT	-1,30	-3,44	2,14
RO045	VÂLCEA	0,77	-2,62	3,39
RO051	ARAD	-2,80	-5,66	2,87

RO052	CARAS-SEVERIN	-8,31	-4,16	-4,16
RO053	HUNEDOARA	-9,52	-2,33	-7,18
RO054	TIMIS	-8,66	-3,03	-5,63
RO061	BIHOR	-3,73	-3,67	-0,05
RO062	BISTRITA-NASAUD	1,53	2,14	-0,61
RO063	CLUJ	-8,29	-3,45	-4,83
RO064	MARAMURES	0,31	1,00	-0,69
RO065	SATU MARE	-2,13	-2,55	0,43
RO066	SALAJ	-2,57	-3,47	0,90
RO071	ALBA	-2,90	-2,40	-0,50
RO072	BRASOV	-7,60	-0,84	-6,76
RO073	COVASNA	-2,16	-0,43	-1,73
RO074	HARGHITA	-2,43	-0,97	-1,46
RO075	MURES	-0,83	-1,99	1,16
RO076	SIBIU	-3,75	-0,52	-3,22
RO081	BUCURESTI (CAPITAL)	-10,03	-4,29	-5,74
RO082	ILFOV	-3,61	-4,09	0,48
SI001	POMURSKA	-3,97	-2,91	-1,06
SI002	PODRAVSKA	-1,56	-1,35	-0,21
SI003	KOROSKA	0,00	0,90	-0,90
SI004	SAVINJSKA	0,00	-0,13	0,13
SI005	ZASAVSKA	0,00	-2,13	2,13
SI006	SPODNJEPOSAVSKA	-4,76	-1,90	-2,86
SI009	GORENJSKA	0,85	1,70	-0,85
SI00A	NOTRANJSKO-KRASKA	-6,67	-1,33	-5,33
SI00B	GORISKA	-1,39	-1,67	0,28
SI00C	OBALNO-KRASKA	0,00	-1,62	1,62
SI00D	JUGOVZHODNA SLOVENIJA	1,22	0,97	0,24
SI00E	OSREDNJESLOVENSKA	0,00	1,10	-1,10
SK01	BRATISLAVSKÝ	-0,81	-1,13	0,32
SK021	TRNAVSKÝ KRAJ	0,91	-0,12	1,03
SK022	TRENCIANSKÝ KRAJ	-0,27	0,05	-0,33
SK023	NITRIANSKÝ KRAJ	-0,23	-1,44	1,21
SK031	ZILINSKÝ KRAJ	1,94	3,14	-1,21
SK032	BANSKOBYSTRICKÝ KRAJ	-0,25	-0,60	0,35
SK041	PRESOVSKÝ KRAJ	4,30	5,68	-1,38
SK042	KOSICKÝ KRAJ	2,63	3,16	-0,53
N010	AKERSHUS	15,41	6,08	9,33
N011	AUST-AGDER	4,23	2,49	1,74
N012	BUSKERUD	8,16	1,62	6,54
N013	FINNMARK	-10,59	6,93	-17,52
N014	HEDMARK	0,13	-2,04	2,18
N015	HORDALAND	5,18	5,30	-0,12
N016	MORE OG ROMSDAL	2,08	2,75	-0,67
N017	NORDLAND	-3,61	2,58	-6,18
N018	NORD-TRONDELAG	-1,38	2,75	-4,13
N019	OPPLAND	-1,18	-0,73	-0,45
N020	OSLO	9,57	4,49	5,08
N021	OSTFOLD	7,97	0,59	7,38
N022	ROGALAND	11,13	7,96	3,17
N023	SOGN OG FJORDANE	-0,28	2,94	-3,22
N024	SOR-TRONDELAG	4,72	4,16	0,57
N025	TELEMARK	2,67	-0,12	2,79

N026	TROMS	-2,12	4,54	-6,66
N027	VEST-AGDER	7,86	4,26	3,60
N028	VESTFOLD	10,13	1,55	8,58
CH01	NORDOSTSCHWEIZ	2,87	2,36	0,51
CH02	NORDWESTSCHWEIZ-BERN	1,03	1,44	-0,42
CH03	SUDSCHWEIZ	0,85	2,49	-1,64
CH04	WESTSCHWEIZ	4,26	3,51	0,75
CH05	ZENTRALSCHWEIZ	5,53	4,72	0,81

Table A4.7 Population change, six typologies with regard to total and natural population development and net-migration 1996-1999

Six typologies:

1	BT>0	BM>0	BN>0
2	BT>0	BM>0	BN<0
3	BT>0	BM<0	BN>0
4	BT<0	BM<0	BN<0
5	BT<0	BM>0	BN<0
6	BT<0	BM<0	BN>0

BT=Total population development
BM=Net migration
BN=Natural population development

BE	BE BELGIUM	1
BE1	BE1 RÉGION BXL-CAPITALE	3
BE21	BE21 ANTWERPEN	1
BE22	BE22 LIMBURG	1
BE23	BEE23 OOST-VLAANDERERN	1
BE24	BE24 VLAAMS BRABANT	1
BE25	BE25 WEST-VLAANDEREN	1
BE31	BE31 BRABANT WALLON	1
BE32	BE32 HAINAUT	4
BE33	BE33 LIÈGE	1
BE34	BE34 LUXEMBOURG (BE)	1
BE35	BE35 NAMUR	1
DK	DK DENMARK	1
DK001	DK001 KØBENHAVN OG FREDERIKSBERG	1
DK002	DK002 KØBENHAVNS AMT	1
DK003	DK003 FREDERIKSBORG AMT	1
DK004	DK004 ROSKILDE AMT	1
DK005	DK005 VESTSJÆLLANDS AMT	2
DK006	DK006 STORSTRØMS AMT	2
DK007	DK007 BORNHOLMS AMT	4
DK008	DK008 FYNS AMT	1
DK009	DK009 SØNDERJYLLANDS AMT	3
DK00A	DK00A RIBE AMT	3
DK00B	DK00B VJL AMT	1
DK00C	DK00C RINGKØBING AMT	3
DK00D	DK00D ÅRHUS AMT	1
DK00E	DK00E VIBORG AMT	1
DK00F	DK00F NORDJYLLANDS AMT	1
DE	DE FEDERAL REPUBLIC OF GERMANY (INCL EX-GDR FROM 1991)	2
DE1	DE1 BADEN-WÜRTTEMBERG	1
DE11	DE11 STUTTGART	1
DE12	DE12 KARLSRUHE	1
DE13	DE13 FREIBURG	1
DE14	DE14 TÜBINGEN	1

DE2	DE2 BAYERN	1
DE21	DE21 OBERBAYERN	1
DE22	DE22 NIDERBAYERN	1
DE23	DE23 OBERPFALZ	1
DE24	DE24 OBERFRANKEN	2
DE25	DE25 MITTELFRANKEN	2
DE26	DE26 UNTERFRANKEN	1
DE27	DE27 SCHWABEN	1
DE3	DE3 BERLIN	4
DE4	DE4 BRANDENBURG	2
DE5	DE5 BREMEN	4
DE6	DE6 HAMBURG	5
DE7	DE7 HESSEN	1
DE71	DE71 DARMSTADT	1
DE72	DE72 GIEßEN	1
DE73	DE73 KASSEL	2
DE8	DE8 MECKLENBURG-VORPOMMERN	4
DE9	DE9 NIDERSACHSEN	2
DE91	DE91 BRAUNSCHWEIG	5
DE92	DE92 HANNOVER	2
DE93	DE93 LÜNEBURG	2
DE94	DE94 WESER-EMS	1
DEA	DEA NORDRHEIN-WESTFALEN	2
DEA1	DEA1 DÜSSELDORF	5
DEA2	DEA2 KÖLN	1
DEA3	DEA3 MÜNSTER	1
DEA4	DEA4 DETMOLD	1
DEA5	DEA5 ARNSBERG	5
DEB	DEB RHEINLAND-PFALZ	2
DEB1	DEB1 KOBLENZ	2
DEB2	DEB2 TRIER	2
DEB3	DEB3 RHEINHESSEN-PFALZ	2
DEC	DEC SAARLAND	4
DED	DED SACHSEN	4
DEE	DEE SACHSEN-ANHALT	4
DEE1	DEE1 DESSAU	4
DEE2	DEE2 HALLE	4
DEE3	DEE3 MAGDEBURG	4
DEF	DEF SCHLESWIG-HOLSTEIN	2
DEG	DEG THÜRINGEN	4
GR	GR GREECE	1
GR1	GR1 VOREIA ELLADA	1
GR11	GR11 ANATOLIKI MAKEDONIA, THRAKI	2
GR12	GR12 KENTRIKI MAKEDONIA	1
GR13	GR13 DYTIKI MAKEDONIA	1
GR14	GR14 THESSALIA	2
GR2	GR2 KENTRIKI ELLADA	2
GR21	GR21 IPEIROS	2
GR22	GR22 IONIA NISIA	2
GR23	GR23 DYTIKI ELLADA	2
GR24	GR24 STEREA ELLADA	2
GR25	GR25 PELOPONNISOS	2
GR3	GR3 ATTIKI	6

GR4	GR4 NISIA AIGAIOU, KRITI	1
GR41	GR41 VOREIO AIGAIO	5
GR42	GR42 NOTIO AIGAIO	1
GR43	GR43 KRITI	1
EES	ES SPAIN	1
ES1	ES1 NOROESTE	5
ES11	ES11 GALICIA	5
ES111	ES111 LA CORUÑA	2
ES112	ES112 LUGO	5
ES113	ES113 ORENSE	5
ES114	ES114 PONTEVEDRA	2
ES12	ES12 PRINCIPADO DE ASTURIAS	5
ES13	ES13 CANTABRIA	5
ES2	ES2 NORESTE	4
ES21	ES21 PAIS VASCO	4
ES211	ES211 ÁLAVA	1
ES212	ES212 GUIPÚZCOA	4
ES213	ES213 VIZCAYA	4
ES22	ES22 COMUNIDAD FORAL DE NAVARRA	1
ES23	ES23 LA RIOJA	4
ES24	ES24 ARAGÓN	5
ES241	ES241 HUESCA	5
ES242	ES242 TERUEL	4
ES243	ES243 ZARAGOZA	5
ES3	ES3 COMUNIDAD DE MADRID	3
ES4	ES4 CENTRO (E)	2
ES41	ES41 CASTILLA Y LEÓN	5
ES411	ES411 AVILA	4
ES412	ES412 BURGOS	4
ES413	ES413 LEÓN	5
ES414	ES414 PALENCIA	4
ES415	ES415 SALAMANCA	5
ES416	ES416 SEGOVIA	4
ES417	ES417 SORIA	4
ES418	ES418 VALLADOLID	5
ES419	ES419 ZAMORA	4
ES42	ES42 CASTILLA-LA MANCHA	1
ES421	ES421 ALBACETE	1
ES422	ES422 CIUDAD REAL	2
ES423	ES423 CUENCA	4
ES424	ES424 GUADALAJARA	2
ES425	ES425 TOLEDO	1
ES43	ES43 EXTREMADURA	2
ES431	ES431 BADAJOZ	1
ES432	ES432 CÁCERES	2
ES5	ES5 ESTE	2
ES51	ES51 CATALUÑA	4
ES511	ES511 BARCELONA	6
ES512	ES512 GERONA	1
ES513	ES513 LÉRIDA	5
ES514	ES514 TARRAGONA	2
ES52	ES52 COMUNIDAD VALENCIANA	2
ES521	ES521 ALICANTE	1

ES522	ES522 CASTELLÓN DE LA PLANA	2
ES523	ES523 VALENCIA	2
ES53	ES53 BALEARES	1
ES6	ES6 SUR	1
ES61	ES61 ANDALUCIA	1
ES611	ES611 ALMERÍA	1
ES612	ES612 CADIZ	1
ES613	ES613 CÓRDOBA	1
ES614	ES614 GRANADA	1
ES615	ES615 HUELVA	1
ES616	ES616 JAÉN	1
ES617	ES617 MÁLAGA	1
ES618	ES618 SEVILLA	1
ES62	ES62 MURCIA	1
FR	FR FRANCE	3
FR1	FR1 ÎLE DE FRANCE	3
FR101	FR101 PARIS	6
FR102	FR102 SEINE-ET-MARNE	3
FR103	FR103 YVELINES	3
FR104	FR104 ESSONNE	3
FR105	FR105 HAUTS-DE-SEINE	3
FR106	FR106 SEINE-SAINT-DENIS	6
FR107	FR107 VAL-DE-MARNE	3
FR108	FR108 VAL-D'OISE	3
FR2	FR2 BASSIN PARISIEN	3
FR21	FR21 CHAMPAGNE-ARDENNE	6
FR211	FR211 ARDENNES	6
FR212	FR212 AUBE	3
FR213	FR213 MARNE	3
FR214	FR214 HAUTE-MARNE	6
FR22	FR22 PICARDIE	3
FR221	FR221 AISNE	6
FR222	FR222 OISE	3
FR223	FR223 SOMME	3
FR23	FR23 HAUTE-NORMANDIE	3
FR231	FR231 EURE	1
FR232	FR232 SEINE-MARITIME	3
FR24	FR24 CENTRE	1
FR241	FR241 CHER	6
FR242	FR242 EURE-ET-LOIR	3
FR243	FR243 INDRE	5
FR244	FR244 INDRE-ET-LOIRE	1
FR245	FR245 LOIR-ET-CHER	1
FR246	FR246 LOIRET	1
FR25	FR25 BASSE-NORMANDIE	3
FR251	FR251 CALVADOS	1
FR252	FR252 MANCHE	3
FR253	FR253 ORNE	6
FR26	FR26 BOURGOGNE	6
FR261	FR261 CÔTE-D'OR	3
FR262	FR262 NIÈVRE	4
FR263	FR263 SAÔNE-ET-LOIRE	4
FR264	FR264 YONNE	2

FR3	FR3 NORD - PAS-DE-CALAIS	3
FR301	FR301 NORD	3
FR302	FR302 PAS-DE-CALAIS	3
FR4	FR4 EST	3
FR41	FR41 LORRAINE	6
FR411	FR411 MEURTHE-ET-MOSELLE	6
FR412	FR412 MEUSE	6
FR413	FR413 MOSELLE	3
FR414	FR414 VOSGES	6
FR42	FR42 ALSACE	1
FR421	FR421 BAS-RHIN	1
FR422	FR422 HAUT-RHIN	1
FR43	FR43 FRANCHE-COMTÉ	3
FR431	FR431 DOUBS	3
FR432	FR432 JURA	3
FR433	FR433 HAUTE-SAÔNE	3
FR434	FR434 TERRITOIRE DE BELFORT	3
FR5	FR5 OUEST	1
FR51	FR51 PAYS DE LA LOIRE	1
FR511	FR511 LOIRE-ATLANTIQUE	1
FR512	FR512 MAINE-ET-LOIRE	3
FR513	FR513 MAYENNE	3
FR514	FR514 SARTHE	1
FR515	FR515 VENDÉE	1
FR52	FR52 BRETAGNE	1
FR521	FR521 CÔTE-DU-NORD	2
FR522	FR522 FINISTÈRE	1
FR523	FR523 ILLE-ET-VILAINE	1
FR524	FR524 MORBIHAN	1
FR53	FR53 POITOU-CHARENTES	1
FR531	FR531 CHARENTE	4
FR532	FR532 CHARENTE-MARITIME	1
FR533	FR533 DEUX-SÈVRES	6
FR534	FR534 VIENNE	1
FR6	FR6 SUD-OUEST	2
FR61	FR61 AQUITAINE	1
FR611	FR611 DORDOGNE	2
FR612	FR612 GIRONDE	1
FR613	FR613 LANDES	2
FR614	FR614 LOT-ET-GARONNE	2
FR615	FR615 PYRÉNÉES-ATLANTIQUES	2
FR62	FR62 MIDI-PYRÉNÉES	1
FR621	FR621 ARIÈGE	2
FR622	FR622 AVEYRON	5
FR623	FR623 HAUTE-GARONNE	1
FR624	FR624 GERS	5
FR625	FR625 LOT	2
FR626	FR626 HAUTES-PYRÉNÉES	5
FR627	FR627 TARN	2
FR628	FR628 TARN-ET-GARONNE	1
FR63	FR63 LIMOUSIN	5
FR631	FR631 CORRÈZE	4
FR632	FR632 CREUSE	5

FR633	FR633 HAUTE-VIENNE	5
FR7	FR7 CENTRE-EST	1
FR71	FR71 RHÔNE-ALPES	1
FR711	FR711 AIN	1
FR712	FR712 ARDÈCHE	2
FR713	FR713 DRÔME	1
FR714	FR714 ISÈRE	1
FR715	FR715 LOIRE	6
FR716	FR716 RHÔNE	3
FR717	FR717 SAVOIE	1
FR718	FR718 HAUTE-SAVOIE	1
FR72	FR72 AUVERGNE	2
FR721	FR721 ALLIER	4
FR722	FR722 CANTAL	5
FR723	FR723 HAUTE-LOIRE	2
FR724	FR724 PUY-DE-DÔME	1
FR8	FR8 MÉDITERRANÉE	1
FR81	FR81 LANGUEDOC-ROUSSILLON	2
FR811	FR811 AUDE	2
FR812	FR812 GARD	1
FR813	FR813 HÉRAULT	1
FR814	FR814 LOZÈRE	2
FR815	FR815 PYRÉNÉES-ORIENTALES	2
FR82	FR82 PROVENCE-ALPES-CÔTE D'AZUR	1
FR821	FR821 ALPES-DE-HAUTE-PROVENCE	2
FR822	FR822 HAUTES-ALPES	1
FR823	FR823 ALPES-MARITIMES	2
FR824	FR824 BOUCHES-DU-RHÔNE	1
FR825	FR825 VAR	1
FR826	FR826 VAUCLUSE	1
FR83	FR83 CORSE	1
FR831	FR831 CORSE-DU-SUD	4
FR832	FR832 HAUTE-CORSE	1
IE001	IE011 BORDER	1
IE004	IE012 MIDLANDS	1
IE008	IE013 WEST	1
IE002	IE021 DUBLIN	1
IE003	IE022 MID-EAST	1
IE005	IE023 MIDWEST	1
IE006	IE024 SOUTH-EAST (IE)	1
IE007	IE025 SOUTH-WEST (IE)	1
IT	IT ITALY	2
IT1	IT1 NORD OVEST	5
IT11	IT11 PIEMONTE	5
IT111	IT111 TORINO	5
IT112	IT112 VERCELLI	5
IT113	IT113 BIELLA	5
IT114	IT114 VERBANO-CUSIO-OSSOLA	5
IT115	IT115 NOVARA	2
IT116	IT116 CUNEO	2
IT117	IT117 ASTI	2
IT118	IT118 ALESSANDRIA	5
IT12	IT12 VALLE D'AOSTA	2

IT13	IT13 LIGURIA	5
IT131	IT131 IMPERIA	5
IT132	IT132 SAVONA	5
IT133	IT133 GENOVA	5
IT134	IT134 LA SPEZIA	5
IT2	IT2 LOMBARDIA	2
IT201	IT201 VARESE	2
IT202	IT202 COMO	2
IT203	IT203 LECCO	1
IT204	IT204 SONDRIO	2
IT205	IT205 MILANO	2
IT206	IT206 BERGAMO	1
IT207	IT207 BRESCIA	1
IT208	IT208 PAVIA	2
IT209	IT209 LODI	2
IT20A	IT20A CREMONA	2
IT20B	IT20B MANTOVA	2
IT3	IT3 NORD EST	2
IT31	IT31 TRENTINO-ALTO ADIGE	1
IT311	IT311 BOLZANO-BOZEN	1
IT312	IT312 TRENTO	1
IT32	IT32 VENETO	2
IT321	IT321 VERONA	2
IT322	IT322 VICENZA	1
IT323	IT323 BELLUNO	5
IT324	IT324 TREVISO	1
IT325	IT325 VENEZIA	5
IT326	IT326 PADOVA	1
IT327	IT327 ROVIGO	5
IT33	IT33 FRIULI-VENEZIA GIULIA	5
IT331	IT331 PORDENONE	2
IT332	IT332 UDINE	5
IT333	IT333 GORIZIA	2
IT334	IT334 TRIESTE	5
IT4	IT4 EMILIA-ROMAGNA	2
IT401	IT401 PIACENZA	5
IT402	IT402 PARMA	2
IT403	IT403 REGGIO NELL'EMILIA	2
IT404	IT404 MODENA	2
IT405	IT405 BOLOGNA	2
IT406	IT406 FERRARA	5
IT407	IT407 RAVENNA	2
IT408	IT408 FORLÌ-CESENA	2
IT409	IT409 RIMINI	2
IT5	IT5 CENTRO (I)	2
IT51	IT51 TOSCANA	2
IT511	IT511 MASSA-CARRARA	5
IT512	IT512 LUCCA	5
IT513	IT513 PISTOIA	2
IT514	IT514 FIRENZE	5
IT515	IT515 PRATO	2
IT516	IT516 LIVORNO	5
IT517	IT517 PISA	2

IT518	IT518 AREZZO	2
IT519	IT519 SIENA	2
IT51A	IT51A GROSSETO	5
IT52	IT52 UMBRIA	2
IT521	IT521 PERUGIA	2
IT522	IT522 TERNI	5
IT53	IT53 MARCHE	2
IT531	IT531 PESARO E URBINO	2
IT532	IT532 ANCONA	2
IT533	IT533 MACERATA	2
IT534	IT534 ASCOLI PICENO	2
IT6	IT6 LAZIO	2
IT601	IT601 VITERBO	2
IT602	IT602 RIETI	2
IT603	IT603 ROMA	2
IT604	IT604 LATINA	1
IT605	IT605 FROSINONE	2
IT7	IT7 ABRUZZO-MOLISE	2
IT71	IT71 ABRUZZO	2
IT711	IT711 L'AQUILA	2
IT712	IT712 TERAMO	2
IT713	IT713 PESCARA	2
IT714	IT714 CHIETI	2
IT72	IT72 MOLISE	4
IT721	IT721 ISERNIA	5
IT722	IT722 CAMPOBASSO	4
IT8	IT8 CAMPANIA	3
IT801	IT801 CASERTA	1
IT802	IT802 BENEVENTO	6
IT803	IT803 NAPOLI	3
IT804	IT804 AVELLINO	6
IT805	IT805 SALERNO	3
IT9	IT9 SUD	6
IT91	IT91 PUGLIA	3
IT911	IT911 FOGGIA	6
IT912	IT912 BARI	3
IT913	IT913 TARANTO	6
IT914	IT914 BRINDISI	6
IT915	IT915 LECCE	6
IT92	IT92 BASILICATA	6
IT921	IT921 POTENZA	1
IT922	IT922 MATERA	6
IT93	IT93 CALABRIA	6
IT931	IT931 COSENZA	6
IT932	IT932 CROTONE	6
IT933	IT933 CATANZARO	6
IT934	IT934 VIBO VALENTIA	6
IT935	IT935 REGGIO DI CALABRIA	6
ITA	ITA SICILIA	3
ITA01	ITA01 TRAPANI	3
ITA02	ITA02 PALERMO	3
ITA03	ITA03 MESSINA	4
ITA04	ITA04 AGRIGENTO	6

ITA05	ITA05 CALTANISSETTA	3
ITA06	ITA06 ENNA	6
ITA07	ITA07 CATANIA	1
ITA08	ITA08 RAGUSA	1
ITA09	ITA09 SIRACUSA	6
ITB	ITB SARDEGNA	4
ITB01	ITB01 SASSARI	5
ITB02	ITB02 NUORO	6
ITB03	ITB03 ORISTANO	5
ITB04	ITB04 CAGLIARI	6
LU	LU LUXEMBOURG	1
NL	NL NETHERLANDS	1
NL1	NL1 NOORD-NEDERLAND	1
NL11	NL11 GRONINGEN	3
NL12	NL12 FRIESLAND	1
NL13	NL13 DRENTHE	1
NL2	NL2 OOST-NEDERLAND	1
NL21	NL21 OVERIJSSEL	1
NL22	NL22 GELDERLAND	1
NL23	NL23 FLEVOLAND	1
NL3	NL3 WEST-NEDERLAND	1
NL31	NL31 UTRECHT	1
NL32	NL32 NOORD-HOLLAND	1
NL33	NL33 ZUID-HOLLAND	1
NL34	NL34 ZEELAND	1
NL4	NL4 ZUID-NEDERLAND	1
NL41	NL41 NOORD-BRABANT	1
NL42	NL42 LIMBURG (NL)	1
AT	AT AUSTRIA	1
AT11	AT11 BURGENLAND	2
AT12	AT12 NIEDERÖSTERREICH	2
AT13	AT13 WIEN	2
AT21	AT21 KÄRNTEN	1
AT22	AT22 STEIERMARK	4
AT31	AT31 OBERÖSTERREICH	6
AT32	AT32 SALZBURG	1
AT33	AT33 TIROL	3
AT34	AT34 VORARLBERG	3
PT	PT PORTUGAL	1
PT1	PT1 PORTUGAL (CONTINENT)	1
PT11	PT11 NORTE	1
PT12	PT12 CENTRO (P)	5
PT13	PT13 LISBOA E VALE DO TEJO	1
PT14	PT14 ALENTEJO	4
PT15	PT15 ALGARVE	2
PT2	PT2 AÇORES (PT)	1
PT3	PT3 MADEIRA (PT)	1
FI	FI FINLAND	1
FI13	FI13 ITÄ-SUOMI	4
FI14	FI14 VÄLI-SUOMI	6
FI15	FI15 POHJOIS-SUOMI	6
FI11	FI16 UUSIMAA (SUURALUE)	1
FI12	FI17 ETELÄ-SUOMI	1

FI2	FI2 ÅLAND	1
SE01	STOCKHOLM	1
SE02	OSTRA MELLANSVERIGE	4
SE04	SYDSVERIGE	2
SE06	NORRA MELLANSVERIGE	4
SE07	MELLERSTA NORRLAND	4
SE08	OVRE NORRLAND	4
SE03	SMALAND MED OARNA	4
SE05	VASTSVERIGE	2
UKB	UKN NORTHERN IRELAND	1
UK111	CLEVELAND	6
UK112	DURHAM	5
UK12	CUMBRIA	2
UK131	NORTHUMBERLAND	2
UK132	TYNE AND WEAR	4
UK21	HUMBERSIDE	6
UK22	NORTH YORKSHIRE	2
UK23	SOUTH YORKSHIRE	6
UK24	WEST YORKSHIRE	3
UK311	DERBYSHIRE	1
UK312	NOTTINGHAMSHIRE	3
UK321	LEICESTERSHIRE	3
UK322	NORTHAMPTONSHIRE	1
UK33	LINCOLNSHIRE	2
UK401	CAMBRIDGESHIRE	1
UK402	NORFOLK	2
UK403	SUFFOLK	1
UK511	BEDFORDSHIRE	1
UK512	HERTFORDSHIRE	1
UK521	BERKSHIRE	1
UK522	BUCKINGHAMSHIRE	1
UK523	OXFORDSHIRE	1
UK531	EAST SUSSEX	2
UK532	SURREY	1
UK533	WEST SUSSEX	2
UK54	ESSEX	1
UK55	GREATER LONDON	1
UK561	HAMPSHIRE	1
UK562	ISLE OF WIGHT	2
UK57	KENT	1
UK611	AVON	1
UK612	GLOUCESTERSHIRE	1
UK613	WILTSHIRE	1
UK621	CORNWALL	2
UK622	DEVON	2
UK631	DORSET	2
UK632	SOMERSET	2
UK711	HEREFORD AND WORCESTER	1
UK712	WARWICKSHIRE	1
UK721	SHROPSHIRE	1
UK722	STAFFORDSHIRE	1
UK73	WEST MIDLANDS	6
UK81	CHESHIRE	1

UK82	GREATER MANCHESTER	3
UK83	LANCASHIRE	2
UK84	MERSEYSIDE	4
UK9	UKL WALES	2
UKA	UKM SCOTLAND	4
UKB	NORTHERN IRELAND	1
BG	BULGARIA	5
BG01	SEVEROZAPADEN	4
BG011	VIDIN	5
BG012	MONTANA	4
BG013	VRATSA	5
BG02	SEVEREN TSENTRALEN	4
BG021	PLEVEN	4
BG022	LOVECH	5
BG023	VELIKO TARNOVO	4
BG024	GABROVO	5
BG025	RUSE	5
BG03	SEVEROIZTOCHEN	4
BG031	VARNA	4
BG032	DOBRICH	5
BG033	SHUMEN	4
BG034	TURGOVISHTE	4
BG035	RAZGRAD	4
BG036	SILISTRA	4
BG04	YUGOZAPADEN	5
BG041	SOFIA STOLITSA (CAPITAL)	2
BG042	SOFIA	4
BG043	BLAGOEVGRAD	4
BG044	PERNIK	5
BG045	KYUSTENDIL	5
BG05	YUZHEN TSENTRALEN	4
BG051	PLOVDIV	5
BG052	STARA ZAGORA	5
BG053	HASKOVO	5
BG054	PAZARDZHIK	4
BG055	SMOLYAN	4
BG056	KARDZHALI	4
BG06	YUGOIZTOCHEN	4
BG061	BURGAS	4
BG062	SLIVEN	4
BG063	YAMBOL	4
CZ	CZECH REPUBLIC	5
CZ01	PRAHA	4
CZ02	STREDNÍ CECHY	2
CZ03	JIHOZÁPAD	5
CZ031	JIHOCECKÝ	5
CZ032	PLZENSKÝ	5
CZ04	SEVEROZÁPAD	2
CZ041	KARLOVARSKÝ	2
CZ042	ÚSTECKÝ	2
CZ05	SEVEROVÝCHOD	5
CZ051	LIBERECKÝ	2
CZ052	KRÁLOVEHRADECKÝ	5

CZ053	PARDUBICKÝ	5
CZ06	JIHOVÝCHOD	5
CZ061	VYSOCINA	5
CZ062	JIHOMORAVSKÝ	5
CZ07	STREDNÍ MORAVA	5
CZ071	OLOMOUCKÝ	5
CZ072	ZLÍNSKÝ	5
CZ08	MORAVSKOSLEZKO	4
EE	ESTONIA	4
EE001	PÕHJA-EESTI	4
EE004	LÄÄNE-EESTI	5
EE002	KESK-EESTI	2
EE003	KIRDE-EESTI	4
EE005	LÕUNA-EESTI	5
HU	HUNGARY	4
HU01	KÖZÉP-MAGYARORSZÁG	5
HU011	BUDAPEST	4
HU012	PEST	2
HU02	KÖZÉP-DUNÁNTÚL	5
HU021	FEJÉR	2
HU022	KOMÁROM-ESZTERGOM	5
HU023	VESZPRÉM	4
HU03	NYUGAT-DUNÁNTÚL	5
HU031	GYOR-MOSON-SOPRON	5
HU032	VAS	5
HU033	ZALA	4
HU04	DÉL-DUNÁNTÚL	4
HU041	BARANYA	4
HU042	SOMOGY	4
HU043	TOLNA	4
HU05	ÉSZAK-MAGYARORSZÁG	4
HU051	BORSOD-ABAÚJ-ZEMPLÉN	4
HU052	HEVES	5
HU053	NÓGRÁD	4
HU06	ÉSZAK-ALFÖLD	4
HU061	HAJDÚ-BIHAR	4
HU062	JÁSZ-NAGYKUN-SZOLNOK	4
HU063	SZABOLCS-SZATMÁR-BEREG	6
HU07	DÉL-ALFÖLD	5
HU071	BÁCS-KISKUN	5
HU072	BÉKÉS	4
HU073	CSONGRÁD	4
LT	LITHUANIA	4
LT001	ALYTAUS (APSKRITIS)	4
LT002	KAUNO (APSKRITIS)	4
LT003	KLAIPEDOS (APSKRITIS)	3
LT004	MARIJAMPOLES (APSKRITIS)	6
LT005	PANEVEZIO (APSKRITIS)	4
LT006	SIAULIU (APSKRITIS)	5
LT007	TAURAGES (APSKRITIS)	2
LT008	TELSIU (APSKRITIS)	3
LT009	UTENOS (APSKRITIS)	5
LT00A	VILNIAUS (APSKRITIS)	5

LV	LATVIA	6
LV001	RIGA	5
LV002	VIDZEME	5
LV003	KURZEME	4
LV004	ZEMGALE	4
LV005	LATGALE	4
PL	POLAND	3
PL01	DOLNOSLASKIE	6
PL011	JELENIOGÓRSKO-WALBRZYSKI	4
PL012	LEGNICKI	3
PL013	WROCLAWSKI	1
PL014	MIASTA WROCLAW	4
PL02	KUJAWSKO-POMORSKIE	3
PL021	BYDGOSKI	3
PL022	TORUNSKO-WLOCLAWSKI	3
PL03	LUBELSKIE	6
PL031	BIALSKOPODLASKI	6
PL032	CHELMSKO-ZAMOJSKI	6
PL033	LUBELSKI	3
PL04	LUBUSKIE	1
PL041	GORZOWSKI	1
PL042	ZIELONOGÓRSKI	1
PL05	LÓDZKIE	4
PL051	LÓDZKI	5
PL052	PIOTRKOWSKO-SKIERNIEWICKI	4
PL053	MIASTA LÓDZ	4
PL06	MALOPOLSKIE	1
PL061	KRAKOWSKO-TARNOWSKI	1
PL062	NOWOSADECKI	1
PL063	MIASTA KRAKÓW	4
PL07	MAZOWIECKIE	2
PL071	CIECHANOWSKO-PLOCKI	3
PL072	OSTROLECKO-SIEDLECKI	3
PL073	WARSZAWSKI (SRE 2001)	2
PL074	RADOMSKI	3
PL075	MIASTA WARSZAWA	5
PL08	OPOLSKIE	6
PL09	PODKARPACKIE	3
PL091	RZESZOWSKO-TARNOBRZESKI	3
PL092	KROSNIENSKO-PRZEMYSKI	3
PL0A	PODLASKIE	3
PL0A1	BIALOSTOCKO-SUWALSKI	1
PL0A2	LOMZYNSKI	3
PL0B	POMORSKIE	1
PL0B1	SLUPSKI	3
PL0B2	GDANSKI	1
PL0B3	GDANSK-GDYNIA-SOPOT	4
PL0C	SLASKIE	4
PL0C1	PÓLNOCNOSLASKI (SRE 2001)	2
PL0C2	POLUDNIOWOSLASKI (SRE 2001)	3
PL0C3	CENTRALNY SLASKI (SRE 2001)	4
PL0D	SWIETOKRZYSKIE	6
PL0E	WARMINSKO-MAZURSKIE	3

PL0E1	ELBLASKI	3
PL0E2	OLSZTYNSKI	3
PL0E3	ELCKI	3
PL0F	WIELKOPOLSKIE	1
PL0F1	PILSKI	3
PL0F2	POZNANSKI	1
PL0F3	KALISKI	3
PL0F4	KONINSKI	3
PL0F5	MIASTA POZNAN	5
PL0G	ZACHODNIOPOMORSKIE	1
PL0G1	SZCZECINSKI	1
PL0G2	KOSZALINSKI	1
RO	ROMANIA	4
RO01	NORD-EST	1
RO011	BACAU	1
RO012	BOTOSANI	2
RO013	IASI	6
RO014	NEAMT	1
RO015	SUCEAVA	1
RO016	VASLUI	1
RO02	SUD-EST	5
RO021	BRAILA	2
RO022	BUZAU	5
RO023	CONSTANTA	4
RO024	GALATI	3
RO025	TULCEA	4
RO026	VRANCEA	2
RO03	SUD	5
RO031	ARGES	5
RO032	CALARASI	5
RO033	DÂMBOVITA	5
RO034	GIURGIU	5
RO035	IALOMITA	2
RO036	PRAHOVA	4
RO037	TELEORMAN	5
RO04	SUD-VEST	5
RO041	DOLJ	5
RO042	GORJ	2
RO043	MEHEDINTI	5
RO044	OLT	5
RO045	VÂLCEA	2
RO05	VEST	4
RO051	ARAD	5
RO052	CARAS-SEVERIN	4
RO053	HUNEDOARA	4
RO054	TIMIS	4
RO06	NORD-VEST	4
RO061	BIHOR	4
RO062	BISTRITA-NASAUD	3
RO063	CLUJ	4
RO064	MARAMURES	3
RO065	SATU MARE	5
RO066	SALAJ	5

RO07	CENTRU	4
RO071	ALBA	4
RO072	BRASOV	4
RO073	COVASNA	4
RO074	HARGHITA	4
RO075	MURES	5
RO076	SIBIU	4
RO08	BUCURESTI	4
RO081	BUCURESTI (CAPITAL)	4
RO082	ILFOV	5
SI	SLOVENIA	4
SI001	POMURSKA	4
SI002	PODRAVSKA	4
SI003	KOROSKA	3
SI004	SAVINJSKA	2
SI005	ZASAVSKA	2
SI006	SPODNJEPOSAVSKA	4
SI009	GORENJSKA	3
SI00A	NOTRANJSKO-KRASKA	4
SI00B	GORISKA	5
SI00C	OBALNO-KRASKA	2
SI00D	JUGOVZHODNA SLOVENIJA	1
SI00E	OSREDNJESLOVENSKA	3
SK	SLOVAK REPUBLIC	3
SK01	BRATISLAVSKÝ	5
SK02	ZÁPADNÉ SLOVENSKO	2
SK021	TRNAVSKÝ KRAJ	2
SK022	TRENCIANSKÝ KRAJ	6
SK023	NITRIANSKÝ KRAJ	5
SK03	STREDNÉ SLOVENSKO	3
SK031	ZILINSKÝ KRAJ	3
SK032	BANSKOBYSTRICKÝ KRAJ	5
SK04	VÝCHODNÉ SLOVENSKO	3
SK041	PRESOVSKÝ KRAJ	3
SK042	KOSICKÝ KRAJ	3
N010	AKERSHUS	1
N011	AUST-AGDER	1
N012	BUSKERUD	1
N013	FINNMARK	6
N014	HEDMARK	2
N015	HORDALAND	3
N016	MORE OG ROMSDAL	3
N017	NORDLAND	6
N018	NORD-TRONDELAG	6
N019	OPPLAND	4
N020	OSLO	1
N021	OSTFOLD	1
N022	ROGALAND	1
N023	SOGN OG FJORDANE	6
N024	SOR-TRONDELAG	1
N025	TELEMARK	2
N026	TROMS	6
N027	VEST-AGDER	1

N028	VESTFOLD	1
CH	SCHWEIZ	1
CH01	NORDOSTSCHWEIZ	1
CH02	NORDWESTSCHWEIZ-BERN	3
CH03	SUDSCHWEIZ	3
CH04	WESTSCHWEIZ	1
CH05	ZENTRALSCHWEIZ	1

Table A4.8 Share (%) of population in the ages 65+ in EU29.

NUTS	REGION	1990	1995	1999
BE	BE Belgium	NA	0,15	0,17
BE1	BE1 Région BXL-capitale	NA	0,17	0,17
BE2	BE2 Vlaams Gewest	NA	0,15	0,16
BE21	BE21 Antwerpen	NA	0,15	0,17
BE22	BE22 Limburg	NA	0,12	0,13
BE23	BE23 Oost-Vlaanderern	NA	0,16	0,17
BE24	BE24 Vlaams Brabant	NA	0,15	0,17
BE25	BE25 West-Vlaanderen	NA	0,16	0,18
BE3	BE3 Région Wallonne	NA	0,16	0,17
BE31	BE31 Brabant Wallon	NA	0,14	0,15
BE32	BE32 Hainaut	NA	0,16	0,17
BE33	BE33 Liège	NA	0,16	0,17
BE34	BE34 Luxembourg (BE)	NA	0,15	0,16
BE35	BE35 Namur	NA	0,15	0,16
DK	DK Denmark	0,16	0,15	0,15
DK001	DK001 København og Frederiksberg	0,22	0,18	0,12
DK002	DK002 Københavns amt	0,15	0,15	0,16
DK003	DK003 Frederiksborg amt	0,12	0,13	0,13
DK004	DK004 Roskilde amt	0,10	0,11	0,11
DK005	DK005 Vestsjællands amt	0,16	0,16	0,15
DK006	DK006 Storstrøms amt	0,18	0,18	0,18
DK007	DK007 Bornholms amt	0,18	0,18	0,18
DK008	DK008 Fyns amt	0,16	0,16	0,16
DK009	DK009 Sønderjyllands amt	0,15	0,15	0,15
DK00A	DK00A Ribe amt	0,14	0,14	0,14
DK00B	DK00B Vejle amt	0,15	0,15	0,15
DK00C	DK00C Ringkøbing amt	0,12	0,14	0,14
DK00D	DK00DE Århus amt	0,14	0,14	0,13
DK00E	DK00 Viborg amt	0,17	0,16	0,16
DK00F	DK00F Nordjyllands amt	0,16	0,16	0,16
DE	de Germany (including ex-GDR from 1991)	NA	0,15	0,16
DE1	de1 Baden-Württemberg	NA	0,15	0,15
DE11	de11 Stuttgart	NA	0,14	0,15
DE12	de12 Karlsruhe	NA	0,15	0,16
DE13	de13 Freiburg	NA	0,15	0,16
DE14	de14 Tübingen	NA	0,14	0,15
DE2	de2 Bayern	NA	0,15	0,16
DE21	de21 Oberbayern	NA	0,15	0,15
DE22	de22 Niederbayern	NA	0,15	0,16
DE23	de23 Oberpfalz	NA	0,15	0,16
DE24	de24 Oberfranken	NA	0,17	0,17
DE25	de25 Mittelfranken	NA	0,16	0,16
DE26	de26 Unterfranken	NA	0,15	0,16
DE27	de27 Schwaben	NA	0,16	0,16
DE3	de3 Berlin	NA	0,14	0,14
DE4	de4 Brandenburg	NA	0,13	0,14
DE5	de5 Bremen	NA	0,18	0,18
DE6	de6 Hamburg	NA	0,17	0,17
DE7	de7 Hessen	NA	0,16	0,16

DE71	de71 Darmstadt	NA	0,15	0,15
DE72	de72 Gießen	NA	0,15	0,16
DE73	de73 Kassel	NA	0,17	0,18
DE8	de8 Mecklenburg-Vorpommern	NA	0,12	0,14
DE9	de9 Niedersachsen	NA	0,16	0,16
DE91	de91 Braunschweig	NA	0,17	0,17
DE92	de92 Hannover	NA	0,17	0,17
DE93	de93 Lüneburg	NA	0,16	0,16
DE94	de94 Weser-Ems	NA	0,14	0,15
DEA	dea Nordrhein-Westfalen	NA	0,16	0,16
DEA1	dea1 Düsseldorf	NA	0,16	0,17
DEA2	dea2 Köln	NA	0,15	0,15
DEA3	dea3 Münster	NA	0,15	0,16
DEA4	dea4 Detmold	NA	0,16	0,17
DEA5	dea5 Arnsberg	NA	0,16	0,17
DEB	deb Rheinland-Pfalz	NA	0,16	0,17
DEB1	deb1 Koblenz	NA	0,17	0,17
DEB2	deb2 Trier	NA	0,17	0,17
DEB3	deb3 Rheinhessen-Pfalz	NA	0,16	0,16
DEC	dec Saarland	NA	0,16	0,18
DED	ded Sachsen	NA	0,17	0,17
DED1	ded1 Chemnitz	NA	NA	0,19
DED2	ded2 Dresden	NA	NA	0,17
DED3	ded3 Leipzig	NA	NA	0,17
DEE	dee Sachsen-Anhalt	NA	0,15	0,16
DEE1	dee1 Dessau	NA	0,15	0,17
DEE2	dee2 Halle	NA	0,15	0,17
DEE3	dee3 Magdeburg	NA	0,15	0,16
DEF	def Schleswig-Holstein	NA	0,16	0,16
DEG	deg Thüringen	NA	0,15	0,16
GR	GR Greece	NA	0,15	0,17
GR1	GR1 Voreia Ellada	NA	0,15	0,17
GR11	GR11 Anatoliki Makedonia, Thraki	NA	0,15	0,17
GR12	GR12 Kentriki Makedonia	NA	0,14	0,16
GR13	GR13 Dytiki Makedonia	NA	0,15	0,17
GR14	GR14 Thessalia	NA	0,16	0,18
GR2	GR2 Kentriki Ellada	NA	0,17	0,19
GR21	GR21 Ipeiros	NA	0,17	0,19
GR22	GR22 Ionia Nisia	NA	0,19	0,20
GR23	GR23 Dytiki Ellada	NA	0,16	0,17
GR24	GR24 Sterea Ellada	NA	0,16	0,19
GR25	GR25 Peloponnisos	NA	0,19	0,21
GR3	GR3 Attiki	NA	0,14	0,16
GR4	GR4 Nisia Aigaiou, Kriti	NA	0,17	0,17
GR41	GR41 Voreio Aigaio	NA	0,22	0,23
GR42	GR42 Notio Aigaio	NA	0,14	0,15
GR43	GR43 Kriti	NA	0,16	0,17
EES	ES Spain	NA	0,15	0,17
ES1	ES1 Noroeste	NA	0,18	0,19
ES11	ES11 Galicia	NA	0,18	0,19
ES12	ES12 Principado de Asturias	NA	0,19	0,20
ES13	ES13 Cantabria	NA	0,17	0,18
ES2	ES2 Noreste	NA	0,17	0,18

ES21	ES21 Pais Vasco	NA	0,15	0,17
ES22	ES22 Comunidad Foral de Navarra	NA	0,17	0,18
ES23	ES23 La Rioja	NA	0,18	0,19
ES24	ES24 Aragón	NA	0,20	0,21
ES3	ES3 Comunidad de Madrid	NA	0,13	0,15
ES4	ES4 Centro (E)	NA	0,18	0,20
ES41	ES41 Castilla y León	NA	0,20	0,21
ES42	ES42 Castilla-la Mancha	NA	0,18	0,19
ES43	ES43 Extremadura	NA	0,16	0,18
ES5	ES5 Este	NA	0,15	0,17
ES51	ES51 Cataluña	NA	0,16	0,17
ES52	ES52 Comunidad Valenciana	NA	0,15	0,16
ES53	ES53 Baleares	NA	0,15	0,15
ES6	ES6 Sur	NA	0,13	0,14
ES61	ES61 Andalucia	NA	0,13	0,14
ES62	ES62 Murcia	NA	0,13	0,14
ES63	ES63 Ceuta y Melilla	NA	0,11	0,12
ES7	ES7 Canarias	NA	0,10	0,12
FR	FR France (**)	NA	0,150	NA
FR1	FR1 Île de France	NA	0,11	0,15
FR2	FR2 Bassin Parisien	NA	0,15	NA
FR21	FR21 Champagne-Ardenne	NA	0,14	0,16
FR22	FR22 Picardie	NA	0,13	0,15
FR23	FR23 Haute-Normandie	NA	0,13	0,15
FR24	FR24 Centre	NA	0,17	0,18
FR25	FR25 Basse-Normandie	NA	0,16	0,18
FR26	FR26 Bourgogne	NA	0,18	0,19
FR3	FR3 Nord - Pas-de-Calais	NA	0,13	0,15
FR4	FR4 Est	NA	0,14	NA
FR41	FR41 Lorraine	NA	0,14	0,24
FR42	FR42 Alsace	NA	0,13	0,14
FR43	FR43 Franche-Comté	NA	0,15	0,16
FR5	FR5 Ouest	NA	0,17	NA
FR51	FR51 Pays de la Loire	NA	0,15	0,17
FR52	FR52 Bretagne	NA	0,17	0,19
FR53	FR53 Poitou-Charentes	NA	0,19	0,21
FR6	FR6 Sud-Ouest	NA	0,19	NA
FR61	FR61 Aquitaine	NA	0,18	0,20
FR62	FR62 Midi-Pyrénées	NA	0,18	0,20
FR63	FR63 Limousin	NA	0,22	0,24
FR7	FR7 Centre-Est	NA	0,15	NA
FR71	FR71 Rhône-Alpes	NA	0,14	0,16
FR72	FR72 Auvergne	NA	0,18	0,20
FR8	FR8 Méditerranée	NA	0,18	NA
FR81	FR81 Languedoc-Roussillon	NA	0,18	0,20
FR82	FR82 Provence-Alpes-Côte d'Azur	NA	0,18	0,19
FR83	FR83 Corse	NA	0,17	0,19
IE	IE011 Ireland	NA	NA	NA
IE01	IE012 Border, Midlands and Western	NA	NA	NA
IE02	IE013 Southern and Eastern	NA	NA	NA
IT	IT Italy	NA	0,16	0,18
IT1	IT1 Nord Ovest	NA	0,20	0,21
IT11	IT11 Piemonte	NA	0,19	0,20

IT12	IT12 Valle d'Aosta	NA	0,17	0,18
IT13	IT13 Liguria	NA	0,23	0,24
IT2	IT2 Lombardia	NA	0,16	0,17
IT3	IT3 Nord Est	NA	0,17	0,18
IT31	IT31 Trentino-Alto Adige	NA	0,16	0,16
IT32	IT32 Veneto	NA	0,16	0,18
IT33	IT33 Friuli-Venezia Giulia	NA	0,20	0,21
IT4	IT4 Emilia-Romagna	NA	0,21	0,22
IT5	IT5 Centro (I)	NA	0,20	0,22
IT51	IT51 Toscana	NA	0,21	0,22
IT52	IT52 Umbria	NA	0,21	0,22
IT53	IT53 Marche	NA	0,20	0,21
IT6	IT6 Lazio	NA	0,15	0,17
IT7	IT7 Abruzzo-Molise	NA	0,18	0,20
IT71	IT71 Abruzzo	NA	0,18	0,20
IT72	IT72 Molise	NA	0,19	0,20
IT8	IT8 Campania	NA	0,12	0,13
IT9	IT9 Sud	NA	0,14	0,15
IT91	IT91 Puglia	NA	0,13	0,15
IT92	IT92 Basilicata	NA	0,16	0,17
IT93	IT93 Calabria	NA	0,14	0,16
ITA	ITA Sicilia	NA	0,14	0,16
ITB	ITB Sardegna	NA	0,13	0,15
LU	LU Luxembourg	NA	0,14	0,14
NL	NL Netherlands	NA	0,13	0,14
NL1	NL1 Noord-Nederland	NA	0,14	0,15
NL11	NL11 Groningen	NA	0,14	0,15
NL12	NL12 Friesland	NA	0,14	0,14
NL13	NL13 Drenthe	NA	0,15	0,15
NL2	NL2 Oost-Nederland	NA	0,13	0,13
NL21	NL21 Overijssel	NA	0,13	0,14
NL22	NL22 Gelderland	NA	0,13	0,14
NL23	NL23 Flevoland	NA	0,09	0,09
NL3	NL3 West-Nederland	NA	0,14	0,14
NL31	NL31 Utrecht	NA	0,12	0,12
NL32	NL32 Noord-Holland	NA	0,13	0,13
NL33	NL33 Zuid-Holland	NA	0,14	0,14
NL34	NL34 Zeeland	NA	0,16	0,16
NL4	NL4 Zuid-Nederland	NA	0,12	0,13
NL41	NL41 Noord-Brabant	NA	0,12	0,13
NL42	NL42 Limburg (NL)	NA	0,13	0,14
AT	AT Austria	NA	0,15	0,15
AT1	AT10 Ostösterreich	NA	0,16	0,16
AT11	AT11 Burgenland	NA	0,17	0,18
AT12	AT12 Niederösterreich	NA	0,16	0,16
AT13	AT13 Wien	NA	0,17	0,16
AT2	AT20 Sudösterreich	NA	0,16	0,16
AT21	AT21 Kärnten	NA	0,15	0,16
AT22	AT22 Steiermark	NA	0,16	0,16
AT3	AT30 Westösterreich	NA	0,13	0,14
AT31	AT31 Oberösterreich	NA	0,14	0,15
AT32	AT32 Salzburg	NA	0,13	0,13
AT33	AT33 Tirol	NA	0,13	0,13

AT34	AT34 Vorarlberg	NA	0,11	0,12
PT	PT Portugal	NA	0,15	0,16
PT1	PT1 Portugal (Continent)	NA	0,15	0,16
PT11	PT11 Norte	NA	0,12	0,13
PT12	PT12 Centro (P)	NA	0,18	0,19
PT13	PT13 Lisboa e Vale do Tejo	NA	0,15	0,16
PT14	PT14 Alentejo	NA	0,21	0,23
PT15	PT15 Algarve	NA	0,18	0,19
PT2	PT2 Açores (PT)	NA	0,11	0,12
PT3	PT3 Madeira (PT)	NA	0,11	0,13
FI	FI Finland	0,13	0,14	0,15
FI1	FI1 Manner-Suomi	0,13	0,14	0,15
FI13	FI13 Itä-Suomi	0,14	0,15	0,17
FI14	FI14 Väli-Suomi	0,14	0,15	0,16
FI15	FI15 Pohjois-Suomi	0,11	0,12	0,13
FI11	FI16 Uusimaa (suuralue)	0,11	0,11	0,12
FI12	FI17 Etelä-Suomi	0,15	0,16	0,16
FI2	FI2 Åland	0,17	0,16	0,16
SE	se Sweden	0,18	0,17	0,17
SE01	se01 Stockholm	0,16	0,15	0,15
SE02	se02 Östra Mellansverige	0,18	0,17	0,17
SE04	se04 Sydsverige	0,19	0,18	0,18
SE06	se06 Norra Mellansverige	0,20	0,19	0,20
SE07	se07 Mellersta Norrland	0,21	0,20	0,20
SE08	se08 Övre Norrland	0,17	0,16	0,17
SE09	se09 Småland med öarna	0,19	0,19	0,19
SE0A	se0a Västsverige	0,18	0,18	0,17
UK	uk United Kingdom	NA	0,16	0,16
UKC	ukc North East	NA	0,16	0,16
UKC1	ukc1 Tees Valley and Durham	NA	0,15	0,16
UKC2	ukc2 Northumberland, Tyne and Wear	NA	0,16	0,17
UKD	ukd North West (including Merseyside)	NA	0,16	0,16
UKD1	ukd1 Cumbria	NA	0,18	0,18
UKD2	ukd2 Cheshire	NA	0,15	0,15
UKD3	ukd3 Greater Manchester	NA	0,15	0,15
UKD4	ukd4 Lancashire	NA	0,17	0,16
UKD5	ukd5 Merseyside	NA	0,16	0,16
UKE	uke Yorkshire and The Humber	NA	0,16	0,16
UKE1	uke1 East Riding and North Lincolnshire	NA	0,16	0,17
UKE2	uke2 North Yorkshire	NA	0,18	0,18
UKE3	uke3 South Yorkshire	NA	0,16	0,16
UKE4	uke4 West Yorkshire	NA	0,15	0,15
UKF	ukf East Midlands	NA	0,16	0,16
UKF1	ukf1 Derbyshire and Nottinghamshire	NA	0,16	0,16
UKF2	ukf2 Leicestershire, Rutland and Northants	NA	0,15	0,15
UKF3	ukf3 Lincolnshire	NA	0,19	0,19
UKG	ukg West Midlands	NA	0,15	0,16
UKG1	ukg1 Herefordshire, Worcestershire and Warks	NA	0,16	0,17
UKG2	ukg2 Shropshire and Staffordshire	NA	0,15	0,16
UKG3	ukg3 West Midlands	NA	0,15	0,15
UKH	ukh Eastern	NA	0,16	0,16
UKH1	ukh1 East Anglia	NA	0,17	0,17
UKH2	ukh2 Bedfordshire, Hertfordshire	NA	0,14	0,14

UKH3	ukh3 Essex	NA	0,16	0,16
UKI	uki London	NA	NA	0,13
UKI1	uki1 Inner London	NA	NA	0,11
UKI2	uki2 Outer London	NA	NA	0,14
UKJ	ukj South East	NA	0,16	0,16
UKJ1	ukj1 Berkshire, Bucks and Oxfordshire	NA	0,13	0,13
UKJ2	ukj2 Surrey, East and West Sussex	NA	0,19	0,18
UKJ3	ukj3 Hampshire and Isle of Wight	NA	0,16	0,16
UKJ4	ukj4 Kent	NA	0,17	0,16
UKK	ukk South West	NA	0,19	0,18
UKK1	ukk1 Gloucestershire, Wiltshire and North Somerset	NA	0,16	0,16
UKK2	ukk2 Dorset and Somerset	NA	0,21	0,21
UKK3	ukk3 Cornwall and Isles of Scilly	NA	NA	0,20
UKK4	ukk4 Devon	NA	NA	0,20
UKL	ukl Wales	NA	0,17	0,17
UKL1	ukl1 West Wales and The Valleys	NA	NA	0,1794
UKL2	ukl2 East Wales	NA	NA	0,1611
UKM	ukm Scotland	NA	0,15	0,15
UKM1	ukm1 North Eastern Scotland	NA	0,14	0,14
UKM2	ukm2 Eastern Scotland	NA	0,16	0,16
UKM3	ukm3 South Western Scotland	NA	0,15	0,15
UKM4	ukm4 Highlands and Islands	NA	0,16	0,16
UKN	ukn Northern Ireland	NA	0,13	0,13
BG	Bulgaria	NA	0,15	0,16
BG01	Severozapaden	NA	0,20	0,21
BG011	Vidin	NA	0,23	0,23
BG012	Montana	NA	0,21	0,22
BG013	Vratsa	NA	0,19	0,19
BG02	Severen Tsentralen	NA	0,18	0,18
BG021	Pleven	NA	0,18	0,19
BG022	Lovech	NA	0,20	0,20
BG023	Veliko Tarnovo	NA	0,17	0,18
BG024	Gabrovo	NA	0,18	0,19
BG025	Ruse	NA	0,15	0,17
BG03	Severoiztochen	NA	0,13	0,14
BG031	Varna	NA	0,13	0,14
BG032	Dobrich	NA	0,13	0,14
BG033	Shumen	NA	0,14	0,14
BG034	Turgovishte	NA	0,15	0,16
BG035	Razgrad	NA	0,13	0,14
BG036	Silistra	NA	0,13	0,14
BG04	Yugozapaden	NA	0,14	0,15
BG041	Sofia Stolitsa (capital)	NA	0,14	0,15
BG042	Sofia	NA	0,17	0,19
BG043	Blagoevgrad	NA	0,11	0,12
BG044	Pernik	NA	0,17	0,18
BG045	Kyustendil	NA	0,18	0,19
BG05	Yuzhen Tsentralen	NA	0,14	0,15
BG051	Plovdiv	NA	0,14	0,16
BG052	Stara Zagora	NA	0,15	0,16
BG053	Haskovo	NA	0,16	0,18
BG054	Pazardzhik	NA	0,13	0,14

BG055	Smolyan	NA	0,10	0,12
BG056	Kardzhali	NA	0,09	0,11
BG06	Yugoiztochen	NA	0,13	0,15
BG061	Burgas	NA	0,13	0,14
BG062	Sliven	NA	0,13	0,14
BG063	Yambol	NA	0,16	0,18
CY	Cyprus (*)	NA	NA	0,12
CZ	Czech Republic	0,12	0,13	0,14
CZ01	Praha	0,15	0,16	0,16
CZ02	Strední Cechy	0,13	0,14	0,14
CZ03	Jihozápad	NA	0,13	0,14
CZ031	Jihocecký	NA	0,13	0,13
CZ032	Plzenský	NA	0,13	0,14
CZ04	Severozápad	NA	0,11	0,12
CZ041	Karlovarský	NA	0,11	0,12
CZ042	Ústecký	NA	0,12	0,12
CZ05	Severovýchod	NA	0,13	0,14
CZ051	Liberecký	NA	0,12	0,13
CZ052	Královehradecký	NA	0,14	0,14
CZ053	Pardubický	NA	0,13	0,14
CZ06	Jihovýchod	NA	0,13	0,14
CZ061	Vysocina	NA	0,13	0,14
CZ062	Jihomoravský	NA	0,14	0,14
CZ07	Strední Morava	NA	0,13	0,13
CZ071	Olomoucký	NA	0,13	0,13
CZ072	Zlínský	NA	0,13	0,13
CZ08	Moravskoslezko	NA	0,11	0,12
EE	Estonia	0,12	0,13	0,15
EE001	Põhja-Eesti	0,10	0,12	0,13
EE004	Lääne-Eesti	0,13	0,14	0,16
EE002	Kesk-Eesti	0,13	0,14	0,15
EE003	Kirde-Eesti	0,10	0,13	0,15
EE005	Lõuna-Eesti	0,14	0,15	0,16
HU	Hungary	0,13	0,14	0,15
HU01	Közép-Magyarország	0,15	0,15	0,15
HU011	Budapest	NA	NA	0,17
HU012	Pest	NA	NA	0,13
HU02	Közép-Dunántúl	0,11	0,12	0,13
HU021	Fejér	NA	NA	0,13
HU022	Komárom-Esztergom	NA	NA	0,13
HU023	Veszprém	NA	NA	0,13
HU03	Nyugat-Dunántúl	0,13	0,14	0,15
HU031	Gyor-Moson-Sopron	NA	NA	0,14
HU032	Vas	NA	NA	0,15
HU033	Zala	NA	NA	0,15
HU04	Dél-Dunántúl	0,13	0,14	0,15
HU041	Baranya	NA	NA	0,14
HU042	Somogy	NA	NA	0,15
HU043	Tolna	NA	NA	0,15
HU05	Észak-Magyarország	0,13	0,14	0,15
HU051	Borsod-Abaúj-Zemplén	NA	NA	0,14
HU052	Heves	NA	NA	0,16
HU053	Nógrád	NA	NA	0,15

HU06	Észak-Alföld	0,12	0,13	0,13
HU061	Hajdú-Bihar	NA	NA	0,13
HU062	Jász-Nagykun-Szolnok	NA	NA	0,15
HU063	Szabolcs-Szatmár-Bereg	NA	NA	0,13
HU07	Dél-Alföld	0,14	0,15	0,15
HU071	Bács-Kiskun	NA	NA	0,15
HU072	Békés	NA	NA	0,16
HU073	Csongrád	NA	NA	0,15
LT	Lithuania	NA	0,12	0,13
LT001	Alytaus (Apskritis)	NA	0,13	0,15
LT002	Kauno (Apskritis)	NA	0,12	0,13
LT003	Klaipedos (Apskritis)	NA	0,10	0,12
LT004	Marijampoles (Apskritis)	NA	0,13	0,15
LT005	Panevezio (Apskritis)	NA	0,14	0,14
LT006	Siauliu (Apskritis)	NA	0,12	0,13
LT007	Taurages (Apskritis)	NA	0,13	0,14
LT008	Telsiu (Apskritis)	NA	0,12	0,13
LT009	Utenos (Apskritis)	NA	0,15	0,16
LT00A	Vilniaus (Apskritis)	NA	0,10	0,12
LV	Latvia	0,13	0,13	0,14
LV001	Riga	NA	0,13	0,15
LV002	Vidzeme	NA	0,14	0,15
LV003	Kurzeme	NA	0,13	0,14
LV004	Zemgale	NA	0,12	0,13
LV005	Latgale	NA	0,15	0,16
MT	Malta	NA	0,11	NA
PL	Poland	0,09	0,11	0,12
PL01	Dolnoslaskie	0,10	0,11	0,11
PL02	Kujawsko-Pomorskie	0,12	0,13	0,13
PL03	Lubelskie	0,09	0,10	0,11
PL04	Lubuskie	0,13	0,14	0,14
PL05	Lódzkie	0,10	0,11	0,12
PL06	Malopolskie	0,12	0,13	0,14
PL07	Mazowieckie	0,09	0,10	0,11
PL08	Opolskie	0,10	0,11	0,12
PL09	Podkarpackie	0,11	0,12	0,13
PL0A	Podlaskie	0,09	0,10	0,10
PL0B	Pomorskie	0,09	0,10	0,11
PL0C	Slaskie	0,12	0,13	0,14
PL0D	Swietokrzyskie	0,08	0,09	0,10
PL0E	Warminsko-Mazurskie	0,10	0,11	0,11
PL0F	Wielkopolskie	0,08	0,10	0,11
PL0G	Zachodniopomorskie	0,08	0,10	0,11
RO	ro Romania	0,10	0,12	0,13
RO01	ro01 Nord-Est	0,09	0,11	0,12
RO011	ro011 Bacau	NA	NA	0,11
RO012	ro012 Botosani	NA	NA	0,15
RO013	ro013 Iasi	NA	NA	0,11
RO014	ro014 Neamt	NA	NA	0,12
RO015	ro015 Suceava	NA	NA	0,13
RO016	ro016 Vaslui	NA	NA	0,13
RO02	ro02 Sud-Est	0,09	0,11	0,12
RO021	ro021 Braila	NA	NA	0,14

RO022	ro022 Buzau	NA	NA	0,16
RO023	ro023 Constanta	NA	NA	0,09
RO024	ro024 Galati	NA	NA	0,11
RO025	ro025 Tulcea	NA	NA	0,11
RO026	ro026 Vrancea	NA	NA	0,15
RO03	ro03 Sud	0,11	0,13	0,14
RO031	ro031 Arges	NA	NA	0,12
RO032	ro032 Calarasi	NA	NA	0,15
RO033	ro033 Dâmbovita	NA	NA	0,13
RO034	ro034 Giurgiu	NA	NA	0,18
RO035	ro035 Ialomita	NA	NA	0,14
RO036	ro036 Prahova	NA	NA	0,13
RO037	ro037 Teleorman	NA	NA	0,19
RO04	ro04 Sud-Vest	0,11	0,13	0,14
RO041	ro041 Dolj	NA	NA	0,15
RO042	ro042 Gorj	NA	NA	0,12
RO043	ro043 Mehedinti	NA	NA	0,15
RO044	ro044 Olt	NA	NA	0,14
RO045	ro045 Vâlcea	NA	NA	0,14
RO05	ro05 Vest	0,11	0,12	0,13
RO051	ro051 Arad	NA	NA	0,15
RO052	ro052 Caras-Severin	NA	NA	0,13
RO053	ro053 Hunedoara	NA	NA	0,11
RO054	ro054 Timis	NA	NA	0,13
RO06	ro06 Nord-Vest	0,10	0,11	0,12
RO061	ro061 Bihor	NA	NA	0,13
RO062	ro062 Bistrita-Nasaud	NA	NA	0,12
RO063	ro063 Cluj	NA	NA	0,13
RO064	ro064 Maramures	NA	NA	0,10
RO065	ro065 Satu Mare	NA	NA	0,11
RO066	ro066 Salaj	NA	NA	0,14
RO07	ro07 Centru	0,10	0,11	0,12
RO071	ro071 Alba	NA	NA	0,13
RO072	ro072 Brasov	NA	NA	0,10
RO073	ro073 Covasna	NA	NA	0,12
RO074	ro074 Harghita	NA	NA	0,12
RO075	ro075 Mures	NA	NA	0,14
RO076	ro076 Sibiu	NA	NA	0,11
RO08	ro08 Bucuresti	0,11	0,12	0,13
RO081	ro081 Bucuresti (capital)	NA	NA	0,13
RO082	ro082 Ilfov	NA	NA	0,14
SI	Slovenia	0,11	0,12	0,14
SI001	Pomurska	0,13	0,14	0,15
SI002	Podravska	0,10	0,12	0,14
SI003	Koroska	0,09	0,10	0,12
SI004	Savinjska	0,10	0,11	0,13
SI005	Zasavska	0,11	0,13	0,15
SI006	Spodnjeposavska	0,12	0,13	0,15
SI009	Gorenjska	0,10	0,11	0,13
SI00A	Notranjsko-kraska	0,13	0,14	0,15
SI00B	Goriska	0,13	0,14	0,16
SI00C	Obalno-kraska	0,11	0,13	0,15
SI00D	Jugovzhodna Slovenija	0,10	0,11	0,13

SI00E	Osrednjeslovenska	0,10	0,12	0,13
SK	Slovak Republic	0,10	0,11	0,11
SK01	Bratislavský	NA	NA	0,12
SK02	Západné Slovensko	NA	NA	0,12
SK021	Trnavský kraj	NA	NA	0,11
SK022	Trencianský kraj	NA	NA	0,12
SK023	Nitrianský kraj	NA	NA	0,13
SK03	Stredné Slovensko	NA	NA	0,11
SK031	Zilinský kraj	NA	NA	0,11
SK032	Banskobystrický kraj	NA	NA	0,12
SK04	Východné Slovensko	NA	NA	0,10
SK041	Presovský kraj	NA	NA	0,10
SK042	Kosický kraj	NA	NA	0,11
NO	NORWAY	NA	NA	NA
N001	No01 Østfold	0,16	0,17	0,17
N002	No02 Akershus	0,12	0,13	0,13
N003	No03 Oslo	0,20	0,17	0,15
N004	No04 Hedmark	0,19	0,20	0,19
N005	No05 Oppland	0,19	0,19	0,18
N006	No06 Buskerud	0,17	0,17	0,16
N007	No07 Vestfold	0,17	0,17	0,16
N008	No08 Telemark	0,19	0,18	0,18
N009	No09 Aust-Agder	0,17	0,16	0,15
N010	No10 Vest-Agder	0,15	0,15	0,15
N011	No11 Rogaland	0,14	0,13	0,13
N012	No12 Hordaland	0,16	0,15	0,15
N014	No14 Sogn og Fjordane	0,18	0,17	0,17
N015	No15 Møre og Romsdal	0,17	0,17	0,17
N016	No16 Sør-Trøndelag	0,16	0,16	0,15
N017	No17 Nord-Trøndelag	0,17	0,17	0,17
N018	No18 Nordland	0,17	0,16	0,16
N019	No19 Troms	0,14	0,14	0,10
N020	No20 Finnmark	0,12	0,12	0,13
CH	Schweiz / Suisse (***)	NA	0,15	0,15
CH	Zürich	NA	0,15	0,15
CH	Bern	NA	0,17	0,17
CH	Luzern	NA	0,14	0,19
CH	Uri	NA	0,15	0,15
CH	Schwyz	NA	0,12	0,13
CH	Obwalden	NA	0,14	0,14
CH	Nidwalden	NA	0,12	0,13
CH	Glarus	NA	0,16	0,16
CH	Zug	NA	0,12	0,12
CH	Fribourg	NA	0,13	0,13
CH	Solothurn	NA	0,16	0,16
CH	Basel-Stadt	NA	0,21	0,21
CH	Basel-Landschaft	NA	0,15	0,16
CH	Schaffhausen	NA	0,17	0,18
CH	Appenzell A.Rh.	NA	0,16	0,16
CH	Appenzell I.Rh.	NA	0,15	0,16
CH	St.Gallen	NA	0,14	0,14
CH	Graubünden	NA	0,15	0,15
CH	Aargau	NA	0,13	0,13

CH	Thurgau	NA	0,14	0,14
CH	Ticino	NA	0,17	0,18
CH	Vaud	NA	0,16	0,16
CH	Valais	NA	0,13	0,15
CH	Neuchâtel	NA	0,17	0,17
CH	Genève	NA	0,14	0,15
CH	Jura	NA	0,16	0,16

(*) Data for 2001

(**) Without overseas departments

(***) Data for 2000

Table A4.9 Regions with a high share (18% or more) of the population in the ages 65+ year 1999. Six typologies with regard to total and natural population development and net-migration 1996-1999

Six typologies:

1	BT>0	BM>0	BN>0
2	BT>0	BM>0	BN<0
3	BT>0	BM<0	BN>0
4	BT<0	BM<0	BN<0
5	BT<0	BM>0	BN<0
6	BT<0	BM<0	BN>0

BT=Total population development

BM=Net migration

BN=Natural population development

NUTS	REGION					Typology
IT13	IT13 LIGURIA	0,24	-4,99	-6,70	1,71	5
FR21	FR41 LORRAINE	0,24	-0,60	2,88	-3,48	6
FR42	FR63 LIMOUSIN	0,24	-2,32	-3,27	0,95	5
GR4	GR41 VOREIO AIGAIO	0,23	-3,35	-4,35	1,00	5
PT14	PT14 ALENTEJO	0,23	-8,80	-6,06	-2,74	4
IT52	IT52 UMBRIA	0,22	2,85	-3,57	6,42	2
IT4	IT4 EMILIA-ROMAGNA	0,22	2,93	-4,08	7,00	2
IT51	IT51 TOSCANA	0,22	0,56	-4,24	4,79	2
ES3	ES41 CASTILLA Y LEÓN	0,21	-2,71	-2,86	0,15	5
BG01	SEVEROZAPADEN	0,21	-11,81	-11,31	-0,49	4
ES23	ES24 ARAGÓN	0,21	-2,04	-2,86	0,82	5
GR25	GR25 PELOPONNISOS	0,21	0,94	-3,08	4,03	2
IT33	IT33 FRIULI-VENEZIA GIULIA	0,21	-1,25	-5,01	3,75	5
UKK2	HAMPSHIRE	0,21	5,37	1,85	3,52	1
FR26	FR53 POITOU-CHARENTES	0,21	3,07	0,51	2,56	1
ES12	ES12 PRINCIPADO DE ASTURIAS	0,20	-5,10	-5,16	0,06	5
GR22	GR22 IONIA NISIA	0,20	7,03	-1,99	9,02	2
IT71	IT72 MOLISE	0,20	-2,52	-2,22	-0,30	4
FR52	FR81 LANGUEDOC-ROUSSILLON	0,20	10,43	-1,09	11,52	2
IT11	IT11 PIEMONTE	0,20	-0,29	-3,49	3,21	5
FR51	FR72 AUVERGNE	0,20	0,01	-2,42	2,42	2
FR41	FR62 MIDI-PYRÉNÉES	0,20	5,51	0,11	5,40	1
SE07	MELLERSTA NORRLAND	0,20	-8,42	-3,85	-4,57	4
FR3	FR61 AQUITAINE	0,20	4,31	0,06	4,25	1
SE06	NORRA MELLANSVERIGE	0,20	-6,99	-3,10	-3,89	4
IT6	IT71 ABRUZZO	0,20	1,79	-0,81	2,60	2
FR61	FR83 CORSE	0,19	1,29	0,13	1,16	1
FR26	FR26 BOURGOGNE	0,19	-0,55	0,21	-0,76	6
ES11	ES11 GALICIA	0,19	-1,30	-3,64	2,34	5
PT12	PT12 CENTRO (P)	0,19	-0,29	-1,99	1,70	5
N004	FINNMARK	0,19	-10,59	6,93	-17,52	6

FR53	FR82 PROVENCE-ALPES-CÔTE D'AZUR	0,19	5,22	1,44	3,78	1
ES22	ES23 LA RIOJA	0,19	-1,86	-1,41	-0,45	4
GR21	GR21 IPEIROS	0,19	5,98	-2,07	8,04	2
ES4	ES42 CASTILLA-LA MANCHA	0,19	3,94	0,00	3,94	1
UKF3	LINCOLNSHIRE	0,19	6,46	-1,20	7,66	2
SE09	SMALAND MED ÍAMA	0,19	-3,49	-1,44	-2,05	4
PT15	PT15 ALGARVE	0,19	3,08	-2,21	5,29	2
GR24	GR24 STEREA ELLADA	0,19	2,36	-1,96	4,33	2
FR25	FR52 BRETAGNE	0,19	5,96	1,45	4,51	1
N005	HEDMARK	0,18	0,13	-2,04	2,18	2
ES63	FR24 CENTRE	0,18	2,47	2,05	0,42	1
BG02	SEVEREN TSENTRALEN	0,18	-9,55	-9,24	-0,32	4
UKJ2	SURREY	0,18	7,43	1,94	5,48	1
	WEST SUSSEX	0,18	9,76	-1,48	11,23	2
IT12	IT12 VALLE D'AOSTA	0,18	3,35	-1,95	5,30	2
DK007	DK007 BORNHOLMS AMT	0,18	-4,45	-3,71	-0,74	4
ES13	ES13 CANTABRIA	0,18	-0,19	-2,60	2,41	5
SE04	SYDSVERIGE	0,18	2,15	-0,85	3,01	2

Table A4.10 Dependency rates 1995 and 1999.Total population/population 20-64 years.

		1995	1999
BE	**BE BELGIUM**	1,66	1,68
BE1	BE1 RÉGION BXL-CAPITALE	1,68	1,68
BE2	BE2 VLAAMS GEWEST	1,64	1,66
BE21	BE21 ANTWERPEN	1,65	1,67
BE22	BE22 LIMBURG	1,60	1,61
BE23	BE23 OOST-VLAANDERERN	1,64	1,65
BE24	BE24 VLAAMS BRABANT	1,63	1,66
BE25	BE25 WEST-VLAANDEREN	1,68	1,70
BE3	BE3 RÉGION WALLONNE	1,70	1,71
BE31	BE31 BRABANT WALLON	1,67	1,69
BE32	BE32 HAINAUT	1,70	1,71
BE33	BE33 LIÈGE	1,68	1,70
BE34	BE34 LUXEMBOURG (BE)	1,75	1,76
BE35	BE35 NAMUR	1,71	1,72
DK	**DK DENMARK**	1,64	1,63
DK001	DK001 KØBENHAVN OG FREDERIKSBERG	1,52	1,47
DK002	DK002 KØBENHAVNS AMT	1,63	1,65
DK003	DK003 FREDERIKSBORG AMT	1,60	1,62
DK004	DK004 ROSKILDE AMT	1,55	1,57
DK005	DK005 VESTSJÆLLANDS AMT	1,67	1,66
DK006	DK006 STORSTRØMS AMT	1,70	1,68
DK007	DK007 BORNHOLMS AMT	1,75	1,73
DK008	DK008 FYNS AMT	1,66	1,65
DK009	DK009 SØNDERJYLLANDS AMT	1,70	1,69
DK00A	DK00A RIBE AMT	1,69	1,68
DK00B	DK00B VEJLE AMT	1,67	1,65
DK00C	DK00C RINGKØBING AMT	1,70	1,68
DK00D	DK00DE ÅRHUS AMT	1,61	1,59
DK00E	DK00 VIBORG AMT	1,74	1,72
DK00F	DK00F NORDJYLLANDS AMT	1,68	1,66
DE	**DE GERMANY (INCLUDING EX-GDR FROM 1991)**	1,58	1,60
DE1	DE1 BADEN-WÜRTTEMBERG	1,58	1,60
DE11	DE11 STUTTGART	1,57	1,59
DE12	DE12 KARLSRUHE	1,56	1,58
DE13	DE13 FREIBURG	1,60	1,62
DE14	DE14 TÜBINGEN	1,60	1,63
DE2	DE2 BAYERN	1,58	1,60
DE21	DE21 OBERBAYERN	1,53	1,56
DE22	DE22 NIEDERBAYERN	1,62	1,63
DE23	DE23 OBERPFALZ	1,61	1,63
DE24	DE24 OBERFRANKEN	1,62	1,64
DE25	DE25 MITTELFRANKEN	1,58	1,60
DE26	DE26 UNTERFRANKEN	1,62	1,64
DE27	DE27 SCHWABEN	1,62	1,64
DE3	DE3 BERLIN	1,51	1,50
DE4	DE4 BRANDENBURG	1,59	1,57

DE5	DE5 BREMEN	1,56	1,58
DE6	DE6 HAMBURG	1,54	1,53
DE7	DE7 HESSEN	1,56	1,58
DE71	DE71 DARMSTADT	1,53	1,55
DE72	DE72 GIEßEN	1,59	1,61
DE73	DE73 KASSEL	1,63	1,64
DE8	DE8 MECKLENBURG-VORPOMMERN	1,61	1,59
DE9	DE9 NIEDERSACHSEN	1,60	1,62
DE91	DE91 BRAUNSCHWEIG	1,59	1,61
DE92	DE92 HANNOVER	1,58	1,60
DE93	DE93 LÜNEBURG	1,60	1,62
DE94	DE94 WESER-EMS	1,62	1,64
DEA	DEA NORDRHEIN-WESTFALEN	1,58	1,61
DEA1	DEA1 DÜSSELDORF	1,57	1,60
DEA2	DEA2 KÖLN	1,55	1,58
DEA3	DEA3 MÜNSTER	1,61	1,63
DEA4	DEA4 DETMOLD	1,64	1,66
DEA5	DEA5 ARNSBERG	1,60	1,62
DEB	DEB RHEINLAND-PFALZ	1,61	1,63
DEB1	DEB1 KOBLENZ	1,63	1,66
DEB2	DEB2 TRIER	1,64	1,66
DEB3	DEB3 RHEINHESSEN-PFALZ	1,58	1,60
DEC	DEC SAARLAND	1,58	1,61
DED	DED SACHSEN	1,63	1,61
DED1	DED1 CHEMNITZ	NA	1,62
DED2	DED2 DRESDEN	NA	1,61
DED3	DED3 LEIPZIG	NA	1,58
DEE	DEE SACHSEN-ANHALT	1,61	1,59
DEE1	DEE1 DESSAU	1,61	1,59
DEE2	DEE2 HALLE	1,61	1,59
DEE3	DEE3 MAGDEBURG	1,61	1,59
DEF	DEF SCHLESWIG-HOLSTEIN	1,57	1,59
DEG	DEG THÜRINGEN	1,61	1,59
GR	**GR GREECE**	1,66	1,64
GR1	GR1 VOREIA ELLADA	1,65	1,64
GR11	GR11 ANATOLIKI MAKEDONIA, THRAKI	1,67	1,68
GR12	GR12 KENTRIKI MAKEDONIA	1,61	1,61
GR13	GR13 DYTIKI MAKEDONIA	1,69	1,69
GR14	GR14 THESSALIA	1,70	1,68
GR2	GR2 KENTRIKI ELLADA	1,71	1,68
GR21	GR21 IPEIROS	1,69	1,66
GR22	GR22 IONIA NISIA	1,75	1,73
GR23	GR23 DYTIKI ELLADA	1,73	1,68
GR24	GR24 STEREA ELLADA	1,67	1,64
GR25	GR25 PELOPONNISOS	1,72	1,70
GR3	GR3 ATTIKI	1,62	1,60
GR4	GR4 NISIA AIGAIOU, KRITI	1,75	1,72
GR41	GR41 VOREIO AIGAIO	1,84	1,83
GR42	GR42 NOTIO AIGAIO	1,69	1,66
GR43	GR43 KRITI	1,75	1,71
EES	**ES SPAIN**	1,67	1,63
ES1	ES1 NOROESTE	1,68	1,63
ES11	ES11 GALICIA	1,69	1,64

ES12	ES12 PRINCIPADO DE ASTURIAS	1,65	1,61
ES13	ES13 CANTABRIA	1,67	1,62
ES2	ES2 NORESTE	1,62	1,59
ES21	ES21 PAIS VASCO	1,57	1,54
ES22	ES22 COMUNIDAD FORAL DE NAVARRA	1,64	1,61
ES23	ES23 LA RIOJA	1,68	1,64
ES24	ES24 ARAGÓN	1,69	1,66
ES3	ES3 COMUNIDAD DE MADRID	1,61	1,57
ES4	ES4 CENTRO (E)	1,73	1,70
ES41	ES41 CASTILLA Y LEÓN	1,70	1,67
ES42	ES42 CASTILLA-LA MANCHA	1,77	1,73
ES43	ES43 EXTREMADURA	1,76	1,72
ES5	ES5 ESTE	1,65	1,61
ES51	ES51 CATALUÑA	1,64	1,60
ES52	ES52 COMUNIDAD VALENCIANA	1,68	1,62
ES53	ES53 BALEARES	1,67	1,63
ES6	ES6 SUR	1,72	1,66
ES61	ES61 ANDALUCIA	1,72	1,66
ES62	ES62 MURCIA	1,72	1,67
ES63	ES63 CEUTA Y MELILLA	1,75	1,71
ES7	ES7 CANARIAS	1,63	1,58
FR	**FR FRANCE (**)**	1,70	NA
FR1	FR1 ÎLE DE FRANCE	1,61	1,61
FR2	FR2 BASSIN PARISIEN	1,73	NA
FR21	FR21 CHAMPAGNE-ARDENNE	1,71	1,71
FR22	FR22 PICARDIE	1,72	1,72
FR23	FR23 HAUTE-NORMANDIE	1,72	1,72
FR24	FR24 CENTRE	1,74	1,74
FR25	FR25 BASSE-NORMANDIE	1,75	1,76
FR26	FR26 BOURGOGNE	1,74	1,75
FR3	FR3 NORD - PAS-DE-CALAIS	1,76	1,05
FR4	FR4 EST	1,68	NA
FR41	FR41 LORRAINE	1,69	1,77
FR42	FR42 ALSACE	1,65	1,64
FR43	FR43 FRANCHE-COMTÉ	1,71	1,71
FR5	FR5 OUEST	1,75	NA
FR51	FR51 PAYS DE LA LOIRE	1,75	1,74
FR52	FR52 BRETAGNE	1,74	1,75
FR53	FR53 POITOU-CHARENTES	1,75	1,76
FR6	FR6 SUD-OUEST	1,71	NA
FR61	FR61 AQUITAINE	1,71	1,73
FR62	FR62 MIDI-PYRÉNÉES	1,70	1,72
FR63	FR63 LIMOUSIN	1,75	1,77
FR7	FR7 CENTRE-EST	1,69	NA
FR71	FR71 RHÔNE-ALPES	1,68	1,69
FR72	FR72 AUVERGNE	1,71	1,72
FR8	FR8 MÉDITERRANÉE	1,73	NA
FR81	FR81 LANGUEDOC-ROUSSILLON	1,74	1,75
FR82	FR82 PROVENCE-ALPES-CÔTE D'AZUR	1,72	1,74
FR83	FR83 CORSE	1,69	1,71
IE	**IE011 IRELAND**	NA	NA
IE01	IE012 BORDER, MIDLANDS AND WESTERN	NA	NA
IE02	IE013 SOUTHERN AND EASTERN	NA	NA

IT	**IT ITALY**	1,61	1,60
IT1	IT1 NORD OVEST	1,58	1,59
IT11	IT11 PIEMONTE	1,57	1,57
IT12	IT12 VALLE D'AOSTA	1,54	1,54
IT13	IT13 LIGURIA	1,61	1,62
IT2	IT2 LOMBARDIA	1,53	1,54
IT3	IT3 NORD EST	1,57	1,56
IT31	IT31 TRENTINO-ALTO ADIGE	1,60	1,60
IT32	IT32 VENETO	1,56	1,55
IT33	IT33 FRIULI-VENEZIA GIULIA	1,58	1,57
IT4	IT4 EMILIA-ROMAGNA	1,58	1,59
IT5	IT5 CENTRO (I)	1,62	1,62
IT51	IT51 TOSCANA	1,61	1,60
IT52	IT52 UMBRIA	1,64	1,64
IT53	IT53 MARCHE	1,64	1,64
IT6	IT6 LAZIO	1,57	1,57
IT7	IT7 ABRUZZO-MOLISE	1,68	1,67
IT71	IT71 ABRUZZO	1,67	1,66
IT72	IT72 MOLISE	1,70	1,70
IT8	IT8 CAMPANIA	1,69	1,67
IT9	IT9 SUD	1,69	1,67
IT91	IT91 PUGLIA	1,68	1,65
IT92	IT92 BASILICATA	1,70	1,68
IT93	IT93 CALABRIA	1,72	1,69
ITA	ITA SICILIA	1,70	1,69
ITB	ITB SARDEGNA	1,61	1,57
LU	**LU LUXEMBOURG**	1,60	1,63
NL	**NL NETHERLANDS**	1,60	1,61
NL1	NL1 NOORD-NEDERLAND	1,63	1,64
NL11	NL11 GRONINGEN	1,59	1,60
NL12	NL12 FRIESLAND	1,67	1,66
NL13	NL13 DRENTHE	1,64	1,65
NL2	NL2 OOST-NEDERLAND	1,63	1,64
NL21	NL21 OVERIJSSEL	1,64	1,65
NL22	NL22 GELDERLAND	1,62	1,62
NL23	NL23 FLEVOLAND	1,67	1,65
NL3	NL3 WEST-NEDERLAND	1,60	1,60
NL31	NL31 UTRECHT	1,59	1,59
NL32	NL32 NOORD-HOLLAND	1,57	1,57
NL33	NL33 ZUID-HOLLAND	1,61	1,62
NL34	NL34 ZEELAND	1,68	1,69
NL4	NL4 ZUID-NEDERLAND	1,57	1,59
NL41	NL41 NOORD-BRABANT	1,57	1,59
NL42	NL42 LIMBURG (NL)	1,57	1,59
AT	**AT AUSTRIA**	1,62	1,62
AT1	AT10 OSTÖSTERREICH	1,61	1,61
AT11	AT11 BURGENLAND	1,66	1,66
AT12	AT12 NIEDERÖSTERREICH	1,65	1,65
AT13	AT13 WIEN	1,57	1,56
AT2	AT20 SUDÖSTERREICH	1,64	1,64
AT21	AT21 KÄRNTEN	1,65	1,66
AT22	AT22 STEIERMARK	1,64	1,64
AT3	AT30 WESTÖSTERREICH	1,63	1,63

AT31	AT31 OBERÖSTERREICH	1,63	1,65
AT32	AT32 SALZBURG	1,61	1,61
AT33	AT33 TIROL	1,62	1,62
AT34	AT34 VORARLBERG	1,62	1,62
PT	**PT PORTUGAL**	1,69	1,65
PT1	PT1 PORTUGAL (CONTINENT)	1,68	1,64
PT11	PT11 NORTE	1,69	1,64
PT12	PT12 CENTRO (P)	1,75	1,71
PT13	PT13 LISBOA E VALE DO TEJO	1,63	1,60
PT14	PT14 ALENTEJO	1,78	1,76
PT15	PT15 ALGARVE	1,71	1,67
PT2	PT2 AÇORES (PT)	1,85	1,78
PT3	PT3 MADEIRA (PT)	1,78	1,72
FI	**FI FINLAND**	1,66	1,65
FI1	FI1 MANNER-SUOMI	1,66	1,65
FI13	FI13 ITÄ-SUOMI	1,69	1,71
FI14	FI14 VÄLI-SUOMI	1,74	1,73
FI15	FI15 POHJOIS-SUOMI	1,71	1,71
FI11	FI16 UUSIMAA (SUURALUE)	1,57	1,56
FI12	FI17 ETELÄ-SUOMI	1,66	1,66
FI2	FI2 ÅLAND	1,69	1,67
SE	**SE SWEDEN**	1,73	1,71
SE01	SE01 STOCKHOLM	1,64	1,62
SE02	SE02 ÖSTRA MELLANSVERIGE	1,74	1,72
SE04	SE04 SYDSVERIGE	1,74	1,72
SE06	SE06 NORRA MELLANSVERIGE	1,78	1,77
SE07	SE07 MELLERSTA NORRLAND	1,78	1,76
SE08	SE08 ÖVRE NORRLAND	1,72	1,72
SE09	SE09 SMÅLAND MED ÖARNA	1,79	1,79
SE0A	SE0A VÄSTSVERIGE	1,74	1,73
UK	**UK UNITED KINGDOM**	1,70	1,69
UKC	UKC NORTH EAST	1,71	1,71
UKC1	UKC1 TEES VALLEY AND DURHAM	1,71	1,71
UKC2	UKC2 NORTHUMBERLAND, TYNE AND WEAR	1,70	1,71
UKD	UKD NORTH WEST (INCLUDING MERSEYSIDE)	1,71	1,71
UKD1	UKD1 CUMBRIA	1,71	1,71
UKD2	UKD2 CHESHIRE	1,68	1,68
UKD3	UKD3 GREATER MANCHESTER	1,71	1,70
UKD4	UKD4 LANCASHIRE	1,73	1,73
UKD5	UKD5 MERSEYSIDE	1,73	1,73
UKE	UKE YORKSHIRE AND THE HUMBER	1,70	1,71
UKE1	UKE1 EAST RIDING AND NORTH LINCOLNSHIRE	1,72	1,73
UKE2	UKE2 NORTH YORKSHIRE	1,71	1,72
UKE3	UKE3 SOUTH YORKSHIRE	1,69	1,69
UKE4	UKE4 WEST YORKSHIRE	1,70	1,70
UKF	UKF EAST MIDLANDS	1,69	1,70
UKF1	UKF1 DERBYSHIRE AND NOTTINGHAMSHIRE	1,68	1,69
UKF2	UKF2 LEICESTERSHIRE, RUTLAND AND NORTHANTS	1,69	1,69

UKF3	UKF3 LINCOLNSHIRE	1,73	1,75
UKG	UKG WEST MIDLANDS	1,70	1,71
UKG1	UKG1 HEREFORDSHIRE, WORCESTERSHIRE AND WARKS	1,69	1,69
UKG2	UKG2 SHROPSHIRE AND STAFFORDSHIRE	1,67	1,68
UKG3	UKG3 WEST MIDLANDS	1,73	1,74
UKH	UKH EASTERN	1,69	1,69
UKH1	UKH1 EAST ANGLIA	1,71	1,71
UKH2	UKH2 BEDFORDSHIRE, HERTFORDSHIRE	1,66	1,67
UKH3	UKH3 ESSEX	1,69	1,69
UKI	UKI LONDON	NA	1,60
UKI1	UKI1 INNER LONDON	NA	1,56
UKI2	UKI2 OUTER LONDON	NA	1,63
UKJ	UKJ SOUTH EAST	1,70	1,69
UKJ1	UKJ1 BERKSHIRE, BUCKS AND OXFORDSHIRE	1,64	1,64
UKJ2	UKJ2 SURREY, EAST AND WEST SUSSEX	1,74	1,73
UKJ3	UKJ3 HAMPSHIRE AND ISLE OF WIGHT	1,69	1,69
UKJ4	UKJ4 KENT	1,71	1,72
UKK	UKK SOUTH WEST	1,74	1,74
UKK1	UKK1 GLOUCESTERSHIRE, WILTSHIRE AND NORTH SOMERSET	1,69	1,69
UKK2	UKK2 DORSET AND SOMERSET	1,79	1,79
UKK3	UKK3 CORNWALL AND ISLES OF SCILLY	NA	1,77
UKK4	UKK4 DEVON	NA	1,77
UKL	UKL WALES	1,75	1,75
UKL1	UKL1 WEST WALES AND THE VALLEYS	NA	1,76
UKL2	UKL2 EAST WALES	NA	1,72
UKM	UKM SCOTLAND	1,67	1,67
UKM1	UKM1 NORTH EASTERN SCOTLAND	1,64	1,64
UKM2	UKM2 EASTERN SCOTLAND	1,66	1,66
UKM3	UKM3 SOUTH WESTERN SCOTLAND	1,68	1,68
UKM4	UKM4 HIGHLANDS AND ISLANDS	1,71	1,71
UKN	UKN NORTHERN IRELAND	1,79	1,76
BG	**BULGARIA**	1,68	1,64
BG01	SEVEROZAPADEN	1,78	1,75
BG011	VIDIN	1,80	1,77
BG012	MONTANA	1,79	1,77
BG013	VRATSA	1,75	1,73
BG02	SEVEREN TSENTRALEN	1,70	1,67
BG021	PLEVEN	1,73	1,71
BG022	LOVECH	1,75	1,72
BG023	VELIKO TARNOVO	1,70	1,66
BG024	GABROVO	1,66	1,63
BG025	RUSE	1,66	1,63
BG03	SEVEROIZTOCHEN	1,67	1,63
BG031	VARNA	1,63	1,60
BG032	DOBRICH	1,67	1,63
BG033	SHUMEN	1,70	1,66
BG034	TURGOVISHTE	1,73	1,69
BG035	RAZGRAD	1,70	1,65
BG036	SILISTRA	1,66	1,62
BG04	YUGOZAPADEN	1,64	1,60

BG041	SOFIA STOLITSA (CAPITAL)	1,60	1,55
BG042	SOFIA	1,70	1,71
BG043	BLAGOEVGRAD	1,68	1,64
BG044	PERNIK	1,66	1,64
BG045	KYUSTENDIL	1,70	1,67
BG05	YUZHEN TSENTRALEN	1,68	1,65
BG051	PLOVDIV	1,65	1,62
BG052	STARA ZAGORA	1,69	1,65
BG053	HASKOVO	1,73	1,70
BG054	PAZARDZHIK	1,69	1,67
BG055	SMOLYAN	1,66	1,60
BG056	KARDZHALI	1,72	1,64
BG06	YUGOIZTOCHEN	1,69	1,66
BG061	BURGAS	1,68	1,64
BG062	SLIVEN	1,72	1,69
BG063	YAMBOL	1,71	1,69
CY	**CYPRUS**	NA	NA
CZ	**CZECH REPUBLIC**	1,68	1,61
CZ01	PRAHA	1,66	1,59
CZ02	STREDNÍ CECHY	1,69	1,61
CZ03	JIHOZÁPAD	1,68	1,61
CZ031	JIHOCECKÝ	1,69	1,62
CZ032	PLZENSKÝ	1,67	1,60
CZ04	SEVEROZÁPAD	1,66	1,59
CZ041	KARLOVARSKÝ	1,64	1,58
CZ042	ÚSTECKÝ	1,67	1,59
CZ05	SEVEROVÝCHOD	1,70	1,62
CZ051	LIBERECKÝ	1,68	1,60
CZ052	KRÁLOVEHRADECKÝ	1,70	1,63
CZ053	PARDUBICKÝ	1,70	1,63
CZ06	JIHOVÝCHOD	1,71	1,63
CZ061	VYSOCINA	1,72	1,65
CZ062	JIHOMORAVSKÝ	1,70	1,62
CZ07	STREDNÍ MORAVA	1,70	1,62
CZ071	OLOMOUCKÝ	1,70	1,62
CZ072	ZLÍNSKÝ	1,69	1,62
CZ08	MORAVSKOSLEZKO	1,66	1,60
EE	**ESTONIA**	1,70	1,69
EE001	PÕHJA-EESTI	1,65	1,61
EE004	LÄÄNE-EESTI	1,74	1,75
EE002	KESK-EESTI	1,76	1,77
EE003	KIRDE-EESTI	1,63	1,66
EE005	LÕUNA-EESTI	1,77	1,78
HU	**HUNGARY**	1,68	1,63
HU01	KÖZÉP-MAGYARORSZÁG	1,67	1,60
HU011	BUDAPEST	NA	1,59
HU012	PEST	NA	1,60
HU02	KÖZÉP-DUNÁNTÚL	1,66	1,61
HU021	FEJÉR	NA	1,60
HU022	KOMÁROM-ESZTERGOM	NA	1,59
HU023	VESZPRÉM	NA	1,62
HU03	NYUGAT-DUNÁNTÚL	1,68	1,63
HU031	GYOR-MOSON-SOPRON	NA	1,62

HU032	VAS	NA	1,63
HU033	ZALA	NA	1,63
HU04	DÉL-DUNÁNTÚL	1,67	1,63
HU041	BARANYA	NA	1,62
HU042	SOMOGY	NA	1,63
HU043	TOLNA	NA	1,64
HU05	ÉSZAK-MAGYARORSZÁG	1,69	1,67
HU051	BORSOD-ABAÚJ-ZEMPLÉN	NA	1,68
HU052	HEVES	NA	1,66
HU053	NÓGRÁD	NA	1,63
HU06	ÉSZAK-ALFÖLD	1,71	1,67
HU061	HAJDÚ-BIHAR	NA	1,66
HU062	JÁSZ-NAGYKUN-SZOLNOK	NA	1,66
HU063	SZABOLCS-SZATMÁR-BEREG	NA	1,69
HU07	DÉL-ALFÖLD	1,70	1,65
HU071	BÁCS-KISKUN	NA	1,65
HU072	BÉKÉS	NA	1,65
HU073	CSONGRÁD	NA	1,64
LT	**LITHUANIA**	1,69	1,68
LT001	ALYTAUS (APSKRITIS)	1,75	1,74
LT002	KAUNO (APSKRITIS)	1,66	1,66
LT003	KLAIPEDOS (APSKRITIS)	1,68	1,68
LT004	MARIJAMPOLES (APSKRITIS)	1,78	1,79
LT005	PANEVEZIO (APSKRITIS)	1,73	1,72
LT006	SIAULIU (APSKRITIS)	1,73	1,72
LT007	TAURAGES (APSKRITIS)	1,80	1,79
LT008	TELSIU (APSKRITIS)	1,79	1,77
LT009	UTENOS (APSKRITIS)	1,76	1,74
LT00A	VILNIAUS (APSKRITIS)	1,61	1,60
LV	**LATVIA**	1,68	1,67
LV001	RIGA	1,62	1,61
LV002	VIDZEME	1,77	1,75
LV003	KURZEME	1,73	1,71
LV004	ZEMGALE	1,73	1,71
LV005	LATGALE	1,71	1,70
MT	**MALTA**	NA	NA
PL	**POLAND**	1,73	1,68
PL01	DOLNOSLASKIE	1,69	1,63
PL02	KUJAWSKO-POMORSKIE	1,73	1,68
PL03	LUBELSKIE	1,81	1,75
PL04	LUBUSKIE	1,73	1,67
PL05	LÓDZKIE	1,71	1,66
PL06	MALOPOLSKIE	1,75	1,71
PL07	MAZOWIECKIE	1,72	1,68
PL08	OPOLSKIE	1,68	1,64
PL09	PODKARPACKIE	1,81	1,75
PL0A	PODLASKIE	1,80	1,76
PL0B	POMORSKIE	1,72	1,66
PL0C	SLASKIE	1,65	1,61
PL0D	SWIETOKRZYSKIE	1,78	1,72
PL0E	WARMINSKO-MAZURSKIE	1,76	1,70
PL0F	WIELKOPOLSKIE	1,75	1,68
PL0G	ZACHODNIOPOMORSKIE	1,69	1,64

RO	**RO ROMANIA**	1,70	1,66
RO01	RO01 NORD-EST	1,79	1,73
RO011	RO011 BACAU	NA	1,69
RO012	RO012 BOTOSANI	NA	1,80
RO013	RO013 IASI	NA	1,71
RO014	RO014 NEAMT	NA	1,69
RO015	RO015 SUCEAVA	NA	1,76
RO016	RO016 VASLUI	NA	1,80
RO02	RO02 SUD-EST	1,69	1,65
RO021	RO021 BRAILA	NA	1,64
RO022	RO022 BUZAU	NA	1,70
RO023	RO023 CONSTANTA	NA	1,59
RO024	RO024 GALATI	NA	1,64
RO025	RO025 TULCEA	NA	1,65
RO026	RO026 VRANCEA	NA	1,72
RO03	RO03 SUD	1,71	1,67
RO031	RO031 ARGES	NA	1,62
RO032	RO032 CALARASI	NA	1,72
RO033	RO033 DÂMBOVITA	NA	1,69
RO034	RO034 GIURGIU	NA	1,76
RO035	RO035 IALOMITA	NA	1,70
RO036	RO036 PRAHOVA	NA	1,62
RO037	RO037 TELEORMAN	NA	1,72
RO04	RO04 SUD-VEST	1,71	1,68
RO041	RO041 DOLJ	NA	1,67
RO042	RO042 GORJ	NA	1,69
RO043	RO043 MEHEDINTI	NA	1,69
RO044	RO044 OLT	NA	1,68
RO045	RO045 VÂLCEA	NA	1,67
RO05	RO05 VEST	1,66	1,62
RO051	RO051 ARAD	NA	1,65
RO052	RO052 CARAS-SEVERIN	NA	1,63
RO053	RO053 HUNEDOARA	NA	1,59
RO054	RO054 TIMIS	NA	1,61
RO06	RO06 NORD-VEST	1,71	1,66
RO061	RO061 BIHOR	NA	1,66
RO062	RO062 BISTRITA-NASAUD	NA	1,73
RO063	RO063 CLUJ	NA	1,60
RO064	RO064 MARAMURES	NA	1,66
RO065	RO065 SATU MARE	NA	1,65
RO066	RO066 SALAJ	NA	1,71
RO07	RO07 CENTRU	1,71	1,65
RO071	RO071 ALBA	NA	1,66
RO072	RO072 BRASOV	NA	1,60
RO073	RO073 COVASNA	NA	1,67
RO074	RO074 HARGHITA	NA	1,67
RO075	RO075 MURES	NA	1,66
RO076	RO076 SIBIU	NA	1,65
RO08	RO08 BUCURESTI	1,63	1,56
RO081	RO081 BUCURESTI (CAPITAL)	NA	1,55
RO082	RO082 ILFOV	NA	1,64
SI	**SLOVENIA**	1,62	1,60
SI001	POMURSKA	1,64	1,61

SI002	PODRAVSKA	1,58	1,57
SI003	KOROSKA	1,62	1,58
SI004	SAVINJSKA	1,62	1,60
SI005	ZASAVSKA	1,62	1,61
SI006	SPODNJEPOSAVSKA	1,65	1,64
SI009	GORENJSKA	1,63	1,62
SI00A	NOTRANJSKO-KRASKA	1,67	1,64
SI00B	GORISKA	1,66	1,62
SI00C	OBALNO-KRASKA	1,59	1,56
SI00D	JUGOVZHODNA SLOVENIJA	1,66	1,65
SI00E	OSREDNJESLOVENSKA	1,61	1,59
SK	**SLOVAK REPUBLIC**	1,74	1,67
SK01	BRATISLAVSKÝ	NA	1,59
SK02	ZÁPADNÉ SLOVENSKO	NA	1,65
SK021	TRNAVSKÝ KRAJ	NA	1,64
SK022	TRENCIANSKÝ KRAJ	NA	1,66
SK023	NITRIANSKÝ KRAJ	NA	1,65
SK03	STREDNÉ SLOVENSKO	NA	1,68
SK031	ZILINSKÝ KRAJ	NA	1,70
SK032	BANSKOBYSTRICKÝ KRAJ	NA	1,66
SK04	VÝCHODNÉ SLOVENSKO	NA	1,72
SK041	PRESOVSKÝ KRAJ	NA	1,76
SK042	KOSICKÝ KRAJ	NA	1,69
NO	**NORWAY**	1,71	1,70
N001	01 ØSTFOLD	1,71	1,70
N002	02 AKERSHUS	1,65	1,66
N003	03 OSLO	1,61	1,57
N004	04 HEDMARK	1,76	1,75
N005	05 OPPLAND	1,74	1,73
N006	06 BUSKERUD	1,71	1,69
N007	07 VESTFOLD	1,72	1,72
N008	08 TELEMARK	1,76	1,74
N009	09 AUST-AGDER	1,77	1,73
N010	10 VEST-AGDER	1,77	1,76
N011	11 ROGALAND	1,73	1,73
N012	12 HORDALAND	1,74	1,73
N014	14 SOGN OG FJORDANE	1,82	1,81
N015	15 MØRE OG ROMSDAL	1,79	1,77
N016	16 SØR-TRØNDELAG	1,68	1,70
N017	17 NORD-TRØNDELAG	1,78	1,78
N018	18 NORDLAND	1,75	1,75
N019	19 TROMS	1,67	1,68
N020	20 FINNMARK	1,64	1,66
CH	**SWITZERLAND (*)**	1,61	1,63
CH	ZÜRICH	1,56	1,57
CH	BERN	1,64	1,65
CH	LUZERN	1,64	1,66
CH	URI	1,69	1,68
CH	SCHWYZ	1,63	1,64
CH	OBWALDEN	1,71	1,71
CH	NIDWALDEN	1,60	1,61
CH	GLARUS	1,71	1,71
CH	ZUG	1,56	1,58

CH	FRIBOURG	1,64	1,65
CH	SOLOTHURN	1,63	1,65
CH	BASEL-STADT	1,60	1,62
CH	BASEL-LANDSCHAFT	1,57	1,61
CH	SCHAFFHAUSEN	1,66	1,67
CH	APPENZELL A.RH.	1,73	1,73
CH	APPENZELL I.RH.	1,78	1,82
CH	ST.GALLEN	1,67	1,67
CH	GRAUBÜNDEN	1,64	1,65
CH	AARGAU	1,59	1,61
CH	THURGAU	1,68	1,68
CH	TICINO	1,57	1,60
CH	VAUD	1,62	1,64
CH	VALAIS	1,62	1,64
CH	NEUCHÂTEL	1,64	1,67
CH	GENÈVE	1,55	1,58
CH	JURA	1,68	1,70

(*) Data for 2000

(**) Without overseas departments

Table A4.11 Rural regions in “Europe 29” with regard to various types of rural areas and relative depopulation (quartiles based on distribution between all regions and on NUTS2-level).

Type of rural area Densely populated (1) Intermediate populated (4) Sparsely populated (7)		Depopulation category Very low relative depopulation (1) Low relative depopulation (2) High relative depopulation (3) Very high relative depopulation (4)	
NUTS3	NAME	Type of rural area	Relative depopulation, quartiles
BE253	IEPER	1	3
BE258	VEURNE	1	3
CH021	BERN	1	3
CH033	AARGAU	1	2
CH053	APPENZELL A.RH.	1	1
CH055	ST. GALLEN	1	1
CH057	THURGAU	1	1
CH061	LUZERN	1	1
CZ062	JIHOMORAVSKY	1	2
CZ071	OLOMOUCKY	1	2
DE214	ALTOTTING	1	3
DE21K	ROSENHEIM, LK	1	3
DE251	ANSBACH, SK	1	3
DE732	FULDA	1	4
DE939	STADE	1	4
DE94F	VECHTA	1	2
DED32	DELITZSCH	1	4
DED35	MULDENTALKREIS	1	4
DEE13	BERNBURG	1	4
DEE14	BITTERFELD	1	4
DEG0H	SONNEBERG	1	4
GR222	KERKYRA	1	4
HU012	PEST	1	3
IT20B	MANTOVA	1	4
IT604	LATINA	1	4
IT801	CASERTA	1	1
IT804	AVELLINO	1	1
IT805	SALERNO	1	1
IT912	BARI	1	2
IT913	TARANTO	1	2
IT914	BRINDISI	1	2
IT915	LECCE	1	2
IT935	REGGIO DI CALABRIA	1	2
ITA01	TRAPANI	1	2
ITA02	PALERMO	1	2
ITA03	MESSINA	1	2
ITA04	AGRIGENTO	1	2
ITA07	CATANIA	1	2
ITA08	RAGUSA	1	2
ITA09	SIRACUSA	1	2
ITB04	CAGLIARI	1	3

NL111	OOST-GRONINGEN	1	2
NL112	DELFZIJL E.O.	1	2
NL113	OVERIG GRONINGEN	1	2
NL121	NOORD-FRIESLAND	1	1
NL122	ZUIDWEST-FRIESLAND	1	1
NL123	ZUIDOOST-FRIESLAND	1	1
NL131	NOORD-DRENTHE	1	2
NL132	ZUIDOOST-DRENTHE	1	2
NL133	ZUIDWEST-DRENTHE	1	2
NL211	NOORD-OVERIJSSEL	1	1
NL212	ZUIDWEST-OVERIJSSEL	1	1
NL221	VELUWE	1	1
NL222	ACHTERHOEK	1	1
NL224	ZUIDWEST-GELDERLAND	1	1
NL321	KOP VAN NOORD-HOLLAND	1	1
NL342	OVERIG ZEELAND	1	3
NL413	NOORDOOST-NOORD-BRABANT	1	1
NL421	NOORD-LIMBURG	1	2
NL422	MIDDEN-LIMBURG	1	2
PL061	KRAKOWSKO-TARNOWSKI	1	1
PL073	WARSZAWSKI	1	1
PL091	RZESZOWSKO-TARNOBRZESKI	1	1
PT112	CAVADO	1	1
PT115	TAMEGA	1	1
PT125	DAO-LAFOES	1	4
RO082	ILFOV	1	3
UKD22	CHESHIRE CC	1	3
UKE13	NORTH AND SOUTH EAST LINCOLNS	1	3
UKF13	SOUTH AND WEST DERBYSHIRE	1	2
UKF15	NORTH NOTTINGHAMSHIRE	1	2
UKF16	SOUTH NOTTINGHAMSHIRE	1	2
UKF22	LEICESTERSHIRE CC AND RUTLAND	1	1
UKF23	NORTHAMPTONSHIRE	1	1
UKG12	WORCESTERSHIRE	1	3
UKG13	WARWICKSHIRE	1	3
UKG24	STAFFORDSHIRE CC	1	2
UKH12	CAMBRIDGESHIRE CC	1	3
UKH14	SUFFOLK	1	3
UKH22	BEDFORDSHIRE CC	1	1
UKJ13	BUCKINGHAMSHIRE CC	1	1
UKJ14	OXFORDSHIRE	1	1
UKJ22	EAST SUSSEX CC	1	3
UKJ24	WEST SUSSEX	1	3
UKJ33	HAMPSHIRE CC	1	2
UKJ34	ISLE OF WIGHT	1	2
UKJ42	KENT CC	1	3
UKK13	GLOUCESTERSHIRE	1	2
UKK22	DORSET CC	1	4
AT111	MITTELBURGENLAND	4	4
AT112	NORDBURGENLAND	4	4
AT113	SUDBURGENLAND	4	4

AT121	MOSTVIERTEL-EISENWURZEN	4	3
AT125	WEINVIERTEL	4	3
AT126	WIENER UMLAND/NORDTEIL	4	3
AT224	OSTSTEIERMARK	4	3
AT225	WEST- UND SUDSTEIERMARK	4	3
AT311	INNVIERTEL	4	1
AT313	MUHLVIERTEL	4	1
AT314	STEYR-KIRCHDORF	4	1
AT335	TIROLER UNTERLAND	4	1
BE252	DIKSMUIDE	4	3
BG012	MONTANA	4	4
BG013	VRATSA	4	4
BG021	PLEVEN	4	4
BG023	VELIKO TARNOVO	4	4
BG033	SHUMEN	4	2
BG034	TARGOVISHTE	4	2
BG035	RAZGRAD	4	2
BG036	SILISTRA	4	2
BG043	BLAGOEVGRAD	4	3
BG045	KYUSTENDIL	4	3
BG054	PAZARDZHIK	4	2
BG056	KARDZHALI	4	2
CH012	VALAIS	4	2
CH022	FRIBOURG	4	3
CH025	JURA	4	3
CH051	GLARUS	4	1
CH054	APPENZELL I.RH.	4	1
CH063	SCHWYZ	4	1
CH064	OBWALDEN	4	1
CZ02	STREDOCESKY	4	2
CZ031	JIHOCESKY	4	2
CZ032	PLZENSKY	4	2
CZ053	PARDUBICKY	4	2
CZ061	VYSOCINA	4	2
CZ072	ZLINSKY	4	2
DE119	HOHENLOHEKREIS	4	3
DE11A	SCHWABISCH HALL	4	3
DE11B	MAIN-TAUBER-KREIS	4	3
DE127	NECKAR-ODENWALD-KREIS	4	3
DE12C	FREUDENSTADT	4	3
DE13A	WALDSHUT	4	3
DE145	ALB-DONAU-KREIS	4	2
DE146	BIBERACH	4	2
DE149	SIGMARINGEN	4	2
DE215	BERCHTESGADENER LAND	4	3
DE216	BAD TOLZ-WOLFRATSHAUSEN	4	3
DE219	EICHSTATT	4	3
DE21A	ERDING	4	3
DE21D	GARMISCH-PARTENKIRCHEN	4	3
DE21E	LANDSBERG A. LECH	4	3
DE21F	MIESBACH	4	3

DE21G	MUHLDORF A. INN	4	3
DE21I	NEUBURG-SCHROBENHAUSEN	4	3
DE21J	PFAFFENHOFEN A. D. ILM	4	3
DE21M	TRAUNSTEIN	4	3
DE21N	WEILHEIM-SCHONGAU	4	3
DE224	DEGGENDORF	4	3
DE225	FREYUNG-GRAFENAU	4	3
DE226	KELHEIM	4	3
DE227	LANDSHUT, LK	4	3
DE228	PASSAU, LK	4	3
DE229	REGEN	4	3
DE22A	ROTTAL-INN	4	3
DE22B	STRAUBING-BOGEN	4	3
DE22C	DINGOLFING-LANDAU	4	3
DE234	AMBERG-SULZBACH	4	3
DE235	CHAM	4	3
DE236	NEUMARKT I.D. OPF	4	3
DE237	NEUSTADT A. D. WALDNAAB	4	3
DE238	REGENSBURG, LK	4	3
DE239	SCHWANDORF	4	3
DE23A	TIRSCHENREUTH	4	3
DE246	BAYREUTH, LK	4	4
DE249	HOF, LK	4	4
DE24A	KRONACH	4	4
DE24B	KULMBACH	4	4
DE256	ANSBACH, LK	4	3
DE25A	NEUSTADT(AISCH)-BAD WINDSHEIM	4	3
DE25C	WEISSENBURG-GUNZENHAUSEN	4	3
DE265	BAD KISSINGEN	4	3
DE266	RHON-GRABFELD	4	3
DE267	HASSBERGE	4	3
DE268	KITZINGEN	4	3
DE26A	MAIN-SPESSART	4	3
DE26B	SCHWEINFURT, LK	4	3
DE277	DILLINGEN A. D. DONAU	4	3
DE27B	OSTALLGAU	4	3
DE27C	UNTERALLGAU	4	3
DE27D	DONAU-RIES	4	3
DE27E	OBERALLGAU	4	3
DE405	BARNIM	4	3
DE406	DAHME-SPREEWALD	4	3
DE407	ELBE-ELSTER	4	3
DE408	HAVELLAND	4	3
DE409	MARKISCH-ODERLAND	4	3
DE40A	OBERHAVEL	4	3
DE40B	OBERSPREEWALD-LAUSITZ	4	3
DE40C	ODER-SPREE	4	3
DE40E	POTSDAM-MITTELMARK	4	3
DE40G	SPREE-NEISSE	4	3
DE40H	TELTOW-FLAMING	4	3

DE725	VOGELSBERGKREIS	4	3
DE733	HERSFELD-ROTENBURG	4	4
DE735	SCHWALM-EDER-KREIS	4	4
DE736	WALDECK-FRANKENBERG	4	4
DE737	WERRA-MEISSNER-KREIS	4	4
DE807	BAD DOBERAN	4	3
DE809	GUSTROW	4	3
DE80A	LUDWIGSLUST	4	3
DE80D	NORDVORPOMMERN	4	3
DE80E	NORDWESTMECKLENBURG	4	3
DE80F	OSTVORPOMMERN	4	3
DE80H	RUGEN	4	3
DE80I	UECKER-RANDOW	4	3
DE914	GIFHORN	4	4
DE922	DIEPHOLZ	4	4
DE926	HOLZMINDEN	4	4
DE927	NIENBURG (WESER)	4	4
DE931	CELLE	4	4
DE932	CUXHAVEN	4	4
DE935	LUNEBURG	4	4
DE937	ROTENBURG (WUMME)	4	4
DE938	SOLTAU-FALLINGBOSTEL	4	4
DE93A	UELZEN	4	4
DE948	CLOPPENBURG	4	2
DE949	EMSLAND	4	2
DE94B	GRAFSCHAFT BENTHEIM	4	2
DE94C	LEER	4	2
DE94D	OLDENBURG, LK	4	2
DE94G	WESERMARSCH	4	2
DE94H	WITTMUND	4	2
DEA44	HOXTER	4	3
DEA57	HOCHSAUERLANDKREIS	4	4
DEB15	BIRKENFELD	4	4
DEB16	COCHEM-ZELL	4	4
DEB19	RHEIN-HUNSRUECK-KREIS	4	4
DEB22	BERNKASTEL-WITTLICH	4	4
DEB23	BITBURG-PRUM	4	4
DEB24	DAUN	4	4
DEB25	TRIER-SAARBURG	4	4
DEB3D	DONNERSBERGKREIS	4	4
DEB3G	KUSEL	4	4
DED26	NIEDERSCHLESISCHER OBERLAUSITZKREIS	4	4
DED36	TORGAU-OSCHATZ	4	4
DEE12	ANHALT-ZERBST	4	4
DEE15	KOTHEN	4	4
DEE16	WITTENBERG	4	4
DEE22	BURGENLANDKREIS	4	4
DEE25	SAALKREIS	4	4
DEE26	SANGERHAUSEN	4	4
DEE33	BORDEKREIS	4	4

DEE34	HALBERSTADT	4	4
DEE35	JERICHOWER LAND	4	4
DEE36	OHREKREIS	4	4
DEE37	STENDAL	4	4
DEE3A	WERNIGERODE	4	4
DEF05	DITHMARSCHEN	4	4
DEF06	HERZOGTUM LAUENBURG	4	4
DEF07	NORDFRIESLAND	4	4
DEF08	OSTHOLSTEIN	4	4
DEF0A	PLON	4	4
DEF0C	SCHLESWIG-FLENSBURG	4	4
DEF0E	STEINBURG	4	4
DEG06	EICHSFELD	4	4
DEG07	NORDHAUSEN	4	4
DEG09	UNSTRUT-HAINICH-KREIS	4	4
DEG0A	KYFFHÄUSERKREIS	4	4
DEG0B	SCHMALKALDEN-MEININGEN	4	4
DEG0D	SÖMMERDA	4	4
DEG0E	HILDBURGHAUSEN	4	4
DEG0F	ILM-KREIS	4	4
DEG0I	SAALFELD-RUDOLSTADT	4	4
DEG0J	SAALE-HOLZLAND-KREIS	4	4
DEG0K	SAALE-ORLA-KREIS	4	4
DEG0P	WARTBURGKREIS	4	4
DK005	VESTSJAELLANDS AMT	4	2
DK006	STORSTROMS AMT	4	2
DK007	BORNHOLMS AMT	4	2
DK008	FYNS AMT	4	2
DK009	SONDERJYLLANDS AMT	4	2
DK00A	RIBE AMT	4	2
DK00B	VEJLE AMT	4	2
DK00C	RINGKOBING AMT	4	2
DK00E	VIBORG AMT	4	2
DK00F	NORDJYLLANDS AMT	4	2
ES111	LA CORUNA	4	4
ES13	CANTABRIA	4	4
ES23	LA RIOJA	4	4
ES418	VALLADOLID	4	4
ES512	GIRONA	4	4
ES514	TARRAGONA	4	4
ES522	CASTELLON DE LA PLANA	4	3
ES611	ALMERIA	4	3
ES613	CORDOBA	4	3
ES614	GRANADA	4	3
FR211	ARDENNES	4	2
FR213	MARNE	4	2
FR221	AISNE	4	1
FR222	OISE	4	1
FR223	SOMME	4	1
FR231	EURE	4	1
FR242	EURE-ET-LOIR	4	3

FR251	CALVADOS	4	3
FR252	MANCHE	4	3
FR261	COTE-D'OR	4	3
FR263	SAONE-ET-LOIRE	4	3
FR414	VOSGES	4	1
FR431	DOUBS	4	2
FR432	JURA	4	2
FR512	MAINE-ET-LOIRE	4	2
FR513	MAYENNE	4	2
FR514	SARTHE	4	2
FR515	VENDEE	4	2
FR521	COTES-D'ARMOR	4	3
FR522	FINISTERE	4	3
FR523	ILLE-ET-VILAINE	4	3
FR524	MORBIHAN	4	3
FR531	CHARENTE	4	3
FR532	CHARENTE-MARITIME	4	3
FR533	DEUX-SEVRES	4	3
FR534	VIENNE	4	3
FR614	LOT-ET-GARONNE	4	3
FR627	TARN	4	3
FR628	TARN-ET-GARONNE	4	3
FR633	HAUTE-VIENNE	4	4
FR711	AIN	4	4
FR712	ARDECHE	4	1
FR713	DROME	4	1
FR717	SAVOIE	4	1
FR724	PUY-DE-DOME	4	3
FR811	AUDE	4	3
GR112	XANTHI	4	4
GR124	PELLA	4	3
GR214	PREVEZA	4	4
GR221	ZAKYNTHOS	4	4
GR224	LEFKADA	4	4
GR233	ILEIA	4	3
GR253	KORINTHIA	4	4
GR255	MESSINIA	4	4
GR412	SAMOS	4	4
HU021	FEJER	4	2
HU022	KOMAROM-ESZTERGOM	4	2
HU023	VESPREM	4	2
HU031	GYOR-MOSON-SOPRON	4	2
HU032	VAS	4	2
HU033	ZALA	4	2
HU042	SOMOGY	4	3
HU043	TOLNA	4	3
HU051	BORSOD-ABAUJ-ZEMPLEN	4	2
HU052	HEVES	4	2
HU053	NOGRAD	4	2
HU063	SZABOLCS-SZATMAR-BEREG	4	1
IE022	MID-EAST	4	1

IT117	ASTI	4	4
IT118	ALESSANDRIA	4	4
IT331	PORDENONE	4	4
IT601	VITERBO	4	4
IT602	RIETI	4	4
IT605	FROSINONE	4	4
IT711	L'AQUILA	4	4
IT714	CHIETI	4	4
IT721	ISERNIA	4	4
IT722	CAMPOBASSO	4	4
IT802	BENEVENTO	4	1
IT911	FOGGIA	4	2
IT921	POTENZA	4	3
IT922	MATERA	4	3
IT931	COSENZA	4	2
IT932	CROTONE (FROM IT933 CATANZARO)	4	2
IT933	CATANZARO	4	2
IT934	VIBO VALENTIA (FROM IT933 CATANZARO)	4	2
ITA05	CALTANISSETTA	4	2
ITA06	ENNA	4	2
ITB01	SASSARI	4	3
NL341	ZEEUWSCH-VLAANDEREN	4	3
PL013	WROCLAWSKI	4	2
PL031	BIALSKOPODLASKI	4	1
PL032	CHELMSKO-ZAMOJSKI	4	1
PL033	LUBELSKI	4	1
PL051	LODZKI	4	2
PL052	PIOTRKOWSKO-SKIERNIEWICKI	4	2
PL062	NOWOSADECKI	4	1
PL071	CIECHANOWSKO-PLOCKI	4	1
PL072	OSTROLECKO-SIEDLECKI	4	1
PL074	RADOMSKI	4	1
PL08	OPOLSKI	4	2
PL092	KROSNIENSKO-PRZEMYSKI	4	1
PL0A2	LOMZYNSKI	4	1
PL0B1	SLUPSKI	4	1
PL0B2	GDANSKI	4	1
PL0D	SWIETOKRZYSKI	4	1
PL0F1	PILSKI	4	1
PL0F2	POZNANSKI	4	1
PL0F3	KALISKI	4	1
PL0F4	KONINSKI	4	1
PT111	MINHO-LIMA	4	1
PT117	DOURO	4	1
PT123	PINHAL LITORAL	4	4
PT124	PINHAL INTERIOR NORTE	4	4
PT127	SERRA DA ESTRELA	4	4
PT12A	COVA DA BEIRA	4	4
PT131	OESTE	4	3
PT134	MEDIO TEJO	4	3

PT135	LEZIRIA DO TEJO	4	3
PT2	ACORES	4	1
RO011	BACAU	4	1
RO012	BOTOSANI	4	1
RO013	IASI	4	1
RO014	NEAMT	4	1
RO015	SUCEAVA	4	1
RO016	VASLUI	4	1
RO022	BUZAU	4	2
RO026	VRANCEA	4	2
RO031	ARGES	4	2
RO032	CALARASI	4	2
RO033	DAMBOVITA	4	2
RO034	GIURGIU	4	2
RO035	IALOMITA	4	2
RO037	TELEORMAN	4	2
RO042	GORJ	4	2
RO043	MEHEDINTI	4	2
RO044	OLT	4	2
RO045	VALCEA	4	2
RO061	BIHOR	4	2
RO062	BISTRITA-NASAUD	4	2
RO065	SATU MARE	4	2
RO066	SALAJ	4	2
SE041	BLEKINGE LAEN	4	3
SK021	TRNAVSKY KRAJ	4	2
SK023	NITRIANSKY KRAJ	4	2
SK031	ZILINSKY KRAJ	4	1
SK041	PRESOVSKY KRAJ	4	1
UKC21	NORTHUMBERLAND	4	2
UKD11	WEST CUMBRIA	4	3
UKD12	EAST CUMBRIA	4	3
UKE12	EAST RIDING OF YORKSHIRE	4	3
UKE22	NORTH YORKSHIRE CC	4	3
UKF3	LINCOLNSHIRE	4	4
UKG11	HEREFORDSHIRE, COUNTY OF	4	3
UKG22	SHROPSHIRE CC	4	2
UKH13	NORFOLK	4	3
UKK15	WILTSHIRE CC	4	2
UKK23	SOMERSET	4	4
UKK3	CORNWALL AND ISLES OF SCILLY	4	4
UKK43	DEVON CC	4	4
AT124	WALDVIERTEL	7	3
AT212	OBERKARNTEN	7	3
AT213	UNTERKARNTEN	7	3
AT222	LIEZEN	7	3
AT226	WESTLICHE OBERSTEIERMARK	7	3
AT321	LUNGAU	7	1
AT322	PINZGAU-PONGAU	7	1
AT331	AUSSERFERN	7	1
AT333	OSTTIROL	7	1

AT334	TIROLER OBERLAND	7	1
BE342	BASTOGNE	7	2
BE344	NEUFCHATEAU	7	2
BG011	VIDIN	7	4
BG022	LOVECH	7	4
BG032	DOBRICH	7	2
BG042	SOFIA	7	3
BG055	SMOLYAN	7	2
CH056	GRAUBUNDEN	7	1
CH062	URI	7	1
DE40D	OSTPRIGNITZ-RUPPIN	7	3
DE40F	PRIGNITZ	7	3
DE40I	UCKERMARK	7	3
DE808	DEMMIN	7	3
DE80B	MECKLENBURG-STRELITZ	7	3
DE80C	MURITZ	7	3
DE80G	PARCHIM	7	3
DE934	LUCHOW-DANNENBERG	7	4
DEE3B	ALTMARKKREIS SALZWEDEL	7	4
EE002	KEKS-EESTI	7	2
EE004	LÄÄNE-EESTI	7	2
EE005	LOUNA-EESTI	7	2
ES112	LUGO	7	4
ES113	ORENSE	7	4
ES22	COMUNIDAD DE NAVARRA	7	4
ES241	HUESCA	7	4
ES242	TERUEL	7	4
ES411	AVILA	7	4
ES412	BURGOS	7	4
ES413	LEON	7	4
ES414	PALENCIA	7	4
ES415	SALAMANCA	7	4
ES416	SEGOVIA	7	4
ES417	SORIA	7	4
ES419	ZAMORA	7	4
ES421	ALBACETE	7	3
ES422	CIUDAD REAL	7	3
ES423	CUENCA	7	3
ES424	GUADALAJARA	7	3
ES425	TOLEDO	7	3
ES431	BADAJOZ	7	3
ES432	CACERES	7	3
ES513	LLEIDA	7	4
ES615	HUELVA	7	3
ES616	JAEN	7	3
FI131	ETELÄ-SAVO - SÖDRA SAVOLAX	7	3
FI132	POHJOIS-SAVO - NORRA SAVOLAX	7	3
FI133	POHJOIS-KARJALA - NORRA KARELEN	7	3
FI134	KAINUU - KAJANALAND	7	3
FI141	KESKI-SUOMI - MELLERSTA FINLAND	7	3

FI142	ETELÄ-POHJANMAA - SÖDRA ÖSTERBOTTEN	7	3
FI144	KESKI-POHJANMAA - MELLERSTA ÖSTERBOTTEN	7	3
FI151	POHJOIS-POHJANMAA - NORRA ÖSTERBOTTEN	7	1
FI152	LAPPI - LAPPLAND	7	1
FI162	ITÄ-UUSIMAA - ÖSTRA NYLAND	7	1
FI173	KANTA-HÄME - EGENTLIGA TAVASTLAND	7	3
FI177	ETELÄ-KARJALA - SÖDRA KARELEN	7	3
FI2	LANDSKAPET ÅLAND	7	3
FR212	AUBE	7	2
FR214	HAUTE-MARNE	7	2
FR241	CHER	7	3
FR243	INDRE	7	3
FR245	LOIR-ET-CHER	7	3
FR253	ORNE	7	3
FR262	NIEVRE	7	3
FR264	YONNE	7	3
FR412	MEUSE	7	1
FR433	HAUTE-SAONE	7	2
FR611	DORDOGNE	7	3
FR613	LANDES	7	3
FR621	ARIEGE	7	3
FR622	AVEYRON	7	3
FR624	GERS	7	3
FR625	LOT	7	3
FR626	HAUTES-PYRENEES	7	3
FR631	CORREZE	7	4
FR632	CREUSE	7	4
FR721	ALLIER	7	3
FR722	CANTAL	7	3
FR723	HAUTE-LOIRE	7	3
FR814	LOZERE	7	3
FR821	ALPES-DE-HAUTE-PROVENCE	7	3
FR822	HAUTES-ALPES	7	3
FR831	CORSE DU SUD	7	4
FR832	HAUTE-CORSE	7	4
GR113	RODOPI	7	4
GR123	KILKIS	7	3
GR126	SERRES	7	3
GR127	CHALKIDIKI	7	3
GR131	GREVENA	7	4
GR132	KASTORIA	7	4
GR133	KOZANI	7	4
GR134	FLORINA	7	4
GR141	KARDITSA	7	4
GR144	TRIKALA	7	4
GR211	ARTA	7	4
GR212	THESPROTIA	7	4
GR213	IOANNINA	7	4
GR223	KEFALLINIA	7	4

GR231	AITOLOAKARNANIA	7	3
GR243	EVRYTANIA	7	4
GR244	FTHIOTIDA	7	4
GR245	FOKIDA	7	4
GR251	ARGOLIDA	7	4
GR252	ARKADIA	7	4
GR254	LAKONIA	7	4
GR411	LESVOS	7	4
GR422	KYKLADES	7	1
GR432	LASITHI	7	3
GR433	RETHYMNI	7	3
IE011	BORDER	7	1
IE012	MIDLAND	7	1
IE013	WEST	7	1
IE023	MID-WEST	7	1
IE024	SOUTH-EAST	7	1
IE025	SOUTH-WEST	7	1
IT51A	GROSSETO	7	4
ITB02	NUORO	7	3
ITB03	ORISTANO	7	3
LT001	ALYTAUS APSKRITIS	7	1
LT004	MARIJAMPOLES APSKRITIS	7	1
LT005	PANEVEZIO APSKRITIS	7	1
LT006	SIAULIAU APSKRITIS	7	1
LT007	TAURAGES APSKRITIS	7	1
LT008	TELSIU APSKRITIS	7	1
LT009	UTENOS APSKRITIS	7	1
LV002	VIDZEME	7	2
LV003	KURZEME	7	2
LV004	ZEMGALE	7	2
LV005	LATGALE	7	2
NO021	HEDMARK	7	4
NO022	OPPLAND	7	4
NO034	TELEMARK	7	2
NO041	AUST-AGDER	7	1
NO052	SOGN OG FJORDANE	7	2
NO053	MORE OG ROMSDAL	7	2
NO062	NORD-TRONDELAG	7	2
NO071	NORDLAND	7	1
NO072	TROMS	7	1
NO073	FINNMARK	7	1
PL0E3	ELCKI	7	1
PT118	ALTO TRAS-OS-MONTES	7	1
PT126	PINHAL INTERIOR SUL	7	4
PT128	BEIRA INTERIOR NORTE	7	4
PT129	BEIRA INTERIOR SUL	7	4
PT141	ALENTEJO LITORAL	7	4
PT142	ALTO ALENTEJO	7	4
PT143	ALENTEJO CENTRAL	7	4
PT144	BAIXO ALENTEJO	7	4
RO025	TULCEA	7	2

RO074	HARGHITA	7	2
SE021	UPPSALA LÄN	7	3
SE022	SOEDERMANLANDS LÄN	7	3
SE024	OEREBRO LÄN	7	3
SE061	VAERMLANDS LÄN	7	4
SE062	DALARNAS LÄN	7	4
SE063	GAEVLEBORGS LÄN	7	4
SE071	VAESTERNORRLANDS LÄN	7	4
SE072	JAEMTLANDS LÄN	7	4
SE081	VAESTERBOTTENS LÄN	7	3
SE082	NORRBOTTENS LÄN	7	3
SE091	JOENKOEPING LÄN	7	4
SE092	KRONOBERG LÄN	7	4
SE093	KALMAR LÄN	7	4
SE094	GOTLANDS LÄN	7	4
SE0A1	HALLANDS LÄN	7	3

Source. Data delivered by ESPON 1.1.2 “Urban-rural relations in Europe” and ESPON 1.1.4 “Spatial effects of demographic trends and migration”.

Table A4.12 Popualtion change in EU29 1990-2000 at NUTS3 level. Average annual change.

Source: Eurostat.

	1990-2000	1990-1995	1995-2000
be1 Région Bruxelles-capitale	-0,01	-0,26	0,25
be211 Antwerpen (Arrondissement)	0,08	0,19	-0,03
be212 Mechelen	0,36	0,38	0,34
be213 Turnhout	0,65	0,75	0,55
be221 Hasselt	0,51	0,57	0,45
be222 Maaseik	0,87	1,00	0,75
be223 Tongeren	0,44	0,56	0,32
be231 Aalst	0,15	0,18	0,12
be232 Dendermonde	0,22	0,26	0,17
be233 Eeklo	0,09	0,18	0,00
be234 Gent (Arrondissement)	0,19	0,20	0,19
be235 Oudenaarde	0,20	0,28	0,12
be236 Sint-Niklaas	0,40	0,49	0,31
be241 Halle-Vilvoorde	0,43	0,51	0,34
be242 Leuven	0,59	0,74	0,44
be251 Brugge	0,28	0,32	0,25
be252 Diksmuide	0,17	0,21	0,13
be253 Ieper	0,03	0,08	-0,02
be254 Kortrijk	0,07	0,20	-0,06
be255 Oostende	0,38	0,53	0,23
be256 Roeselare	0,22	0,27	0,16
be257 Tielt	0,24	0,32	0,16
be258 Veurne	0,68	0,93	0,43
be31 Brabant Wallon	0,98	1,20	0,77
be321 Ath	0,31	0,31	0,31
be322 Charleroi	-0,14	0,02	-0,31
be323 Mons	-0,15	-0,03	-0,26
be324 Mouscron	-0,21	-0,25	-0,17
be325 Soignies	0,36	0,40	0,31
be326 Thuin	0,22	0,33	0,11
be327 Tournai	0,00	0,07	-0,07
be331 Huy	0,68	0,67	0,69
be332 Liège (Arrondissement)	-0,08	0,04	-0,21
be333 Verviers	0,51	0,62	0,40
be334 Waremme	0,82	0,75	0,90
be341 Arlon	0,68	0,89	0,47
be342 Bastogne	0,82	0,79	0,85
be343 Marche-en-Famenne	0,91	0,89	0,93
be344 Neufchâteau	0,39	0,52	0,25
be345 Virton	0,62	0,82	0,42
be351 Dinant	0,70	0,80	0,59
be352 Namur (Arrondissement)	0,47	0,54	0,41
be353 Philippeville	0,43	0,47	0,39
dk001 København og Frederiksberg Kommuner	0,62	0,34	0,90

dk002 Københavns amt	0,21	0,15	0,26
dk003 Frederiksborg amt	0,70	0,57	0,82
dk004 Roskilde amt	0,66	0,64	0,67
dk005 Vestsjællands amt	0,43	0,36	0,49
dk006 Storstrøms amt	0,09	-0,02	0,19
dk007 Bornholms amt	-0,35	-0,31	-0,40
dk008 Fyns amt	0,25	0,34	0,16
dk009 Sønderjyllands amt	0,12	0,16	0,07
dk00a Ribe amt	0,26	0,33	0,19
dk00b Vejle amt	0,52	0,44	0,60
dk00c Ringkøbing amt	0,21	0,25	0,18
dk00d Århus amt	0,63	0,70	0,56
dk00e Viborg amt	0,19	0,16	0,21
dk00f Nordjyllands amt	0,20	0,18	0,22
de111 Stuttgart, Stadtkreis	0,13	0,39	-0,13
de112 Böblingen	0,93	1,07	0,78
de113 Esslingen	0,45	0,52	0,38
de114 Göppingen	0,63	1,11	0,14
de115 Ludwigsburg	0,74	0,97	0,50
de116 Rems-Murr-Kreis	0,80	1,07	0,52
de117 Heilbronn, Stadtkreis	0,37	1,15	-0,41
de118 Heilbronn, Landkreis	1,76	2,33	1,19
de119 Hohenlohekreis	1,59	2,41	0,78
de11a Schwäbisch Hall	1,35	2,05	0,66
de11b Main-Tauber-Kreis	0,77	1,38	0,16
de11c Heidenheim	0,52	1,04	0,00
de11d Ostalbkreis	0,75	1,27	0,23
de121 Baden-Baden, Stadtkreis	0,21	0,42	0,00
de122 Karlsruhe, Stadtkreis	0,19	0,26	0,11
de123 Karlsruhe, Landkreis	1,03	1,38	0,69
de124 Rastatt	0,97	1,69	0,25
de125 Heidelberg, Stadtkreis	0,33	0,50	0,16
de126 Mannheim, Stadtkreis	-0,04	0,35	-0,42
de127 Neckar-Odenwald-Kreis	0,85	1,31	0,39
de128 Rhein-Neckar-Kreis	0,79	1,11	0,46
de129 Pforzheim, Stadtkreis	0,45	1,12	-0,20
de12a Calw	0,85	1,52	0,18
de12b Enzkreis	1,02	1,40	0,65
de12c Freudenstadt	1,07	1,91	0,23
de131 Freiburg im Breisgau, Stadtkreis	0,74	0,99	0,49
de132 Breisgau-Hochschwarzwald	1,11	1,33	0,88
de133 Emmendingen	0,90	1,08	0,72
de134 Ortenaukreis	1,00	1,52	0,49
de135 Rottweil	0,69	1,06	0,33
de136 Schwarzwald-Baar-Kreis	0,48	0,84	0,12
de137 Tuttlingen	1,11	1,66	0,57
de138 Konstanz	0,86	1,14	0,58
de139 Lörrach	0,81	1,12	0,49
de13a Waldshut	0,73	1,20	0,27
de141 Reutlingen	0,80	1,14	0,46
de142 Tübingen, Landkreis	0,84	1,29	0,40

de143 Zollernalbkreis	0,72	1,41	0,04
de144 Ulm, Stadtkreis	0,60	0,98	0,22
de145 Alb-Donau-Kreis	1,05	1,48	0,63
de146 Biberach	1,26	1,66	0,86
de147 Bodenseekreis	0,87	1,10	0,65
de148 Ravensburg	0,92	1,29	0,55
de149 Sigmaringen	1,09	1,68	0,50
de211 Ingolstadt, Kreisfreie Stadt	1,09	1,50	0,67
de212 München, Kreisfreie Stadt	-0,13	0,37	-0,63
de213 Rosenheim, Kreisfreie Stadt	0,54	1,09	0,00
de214 Altötting	1,00	1,47	0,53
de215 Berchtesgadener Land	0,51	0,87	0,14
de216 Bad Tölz-Wolfratshausen	1,07	1,28	0,87
de217 Dachau	1,53	1,85	1,21
de218 Ebersberg	1,51	1,61	1,42
de219 Eichstätt	1,46	1,71	1,20
de21a Erding	2,03	1,97	2,10
de21b Freising	1,71	1,92	1,50
de21c Fürstenfeldbruck	0,69	0,74	0,64
de21d Garmisch-Partenkirchen	0,48	0,76	0,19
de21e Landsberg am Lech	1,64	2,07	1,22
de21f Miesbach	0,65	0,74	0,56
de21g Mühldorf am Inn	1,03	1,53	0,53
de21h München, Landkreis	1,02	1,09	0,96
de21i Neuburg-Schrobenhausen	1,11	1,47	0,76
de21j Pfaffenhofen an der Ilm	1,64	2,11	1,18
de21k Rosenheim, Landkreis	1,43	1,85	1,00
de21l Starnberg	0,87	0,93	0,81
de21m Traunstein	0,92	1,23	0,61
de21n Weilheim-Schongau	1,27	1,53	1,01
de221 Landshut, Kreisfreie Stadt	0,00	0,24	-0,24
de222 Passau, Kreisfreie Stadt	0,04	0,40	-0,32
de223 Straubing, Kreisfreie Stadt	0,59	1,27	-0,09
de224 Deggendorf	0,89	1,16	0,62
de225 Freyung-Grafenau	0,51	0,83	0,20
de226 Kelheim	1,50	1,90	1,10
de227 Landshut, Landkreis	1,54	1,75	1,34
de228 Passau, Landkreis	0,93	1,30	0,56
de229 Regen	0,41	0,70	0,12
de22a Rottal-Inn	0,98	1,42	0,55
de22b Straubing-Bogen	1,23	1,50	0,96
de22c Dingolfing-Landau	1,40	1,74	1,05
de231 Amberg, Kreisfreie Stadt	0,16	0,46	-0,14
de232 Regensburg, Kreisfreie Stadt	0,36	0,80	-0,08
de233 Weiden in der Oberpfalz, Kreisfreie Stadt	0,21	0,52	-0,09
de234 Amberg-Sulzbach	0,95	1,28	0,62
de235 Cham	0,46	0,63	0,29
de236 Neumarkt in der Oberpfalz	1,30	1,59	1,02
de237 Neustadt an der Waldnaab	0,57	0,83	0,32
de238 Regensburg, Landkreis	1,44	1,73	1,15

de239 Schwandorf	0,64	0,76	0,51
de23a Tirschenreuth	0,15	0,35	-0,05
de241 Bamberg, Kreisfreie Stadt	-0,19	-0,11	-0,26
de242 Bayreuth, Kreisfreie Stadt	0,26	0,28	0,25
de243 Coburg, Kreisfreie Stadt	-0,23	0,00	-0,46
de244 Hof, Kreisfreie Stadt	-0,31	0,00	-0,62
de245 Bamberg, Landkreis	1,31	1,72	0,90
de246 Bayreuth, Landkreis	0,78	1,18	0,37
de247 Coburg, Landkreis	0,85	1,33	0,37
de248 Forchheim	0,92	1,33	0,51
de249 Hof, Landkreis	0,18	0,57	-0,20
de24a Kronach	-0,04	0,24	-0,31
de24b Kulmbach	0,55	0,92	0,18
de24c Lichtenfels	0,54	0,91	0,17
de24d Wunsiedel im Fichtelgebirge	-0,25	0,16	-0,66
de251 Ansbach, Kreisfreie Stadt	0,70	1,15	0,25
de252 Erlangen, Kreisfreie Stadt	-0,10	-0,06	-0,14
de253 Fürth, Kreisfreie Stadt	0,75	1,15	0,35
de254 Nürnberg, Kreisfreie Stadt	-0,05	0,18	-0,28
de255 Schwabach, Kreisfreie Stadt	0,82	1,39	0,26
de256 Ansbach, Landkreis	1,13	1,62	0,64
de257 Erlangen-Höchstadt	1,30	1,84	0,76
de258 Fürth, Landkreis	1,47	2,27	0,67
de259 Nuernberger Land	0,75	1,25	0,25
de25a Neustadt an der Aisch-Bad Windsheim	1,10	1,39	0,81
de25b Roth	1,27	1,70	0,84
de25c Weißenburg-Gunzenhausen	0,63	0,99	0,28
de261 Aschaffenburg, Kreisfreie Stadt	0,55	0,80	0,30
de262 Schweinfurt, Kreisfreie Stadt	0,06	0,55	-0,44
de263 Würzburg, Kreisfreie Stadt	0,04	0,11	-0,03
de264 Aschaffenburg, Landkreis	0,87	1,26	0,48
de265 Bad Kissingen	0,58	1,04	0,13
de266 Rhön-Grabfeld	0,74	1,31	0,19
de267 Haßberge	0,69	1,00	0,39
de268 Kitzingen	0,82	1,26	0,39
de269 Miltenberg	0,96	1,41	0,51
de26a Main-Spessart	0,51	0,85	0,17
de26b Schweinfurt, Landkreis	0,83	1,11	0,54
de26c Würzburg, Landkreis	1,03	1,36	0,71
de271 Augsburg, Kreisfreie Stadt	0,05	0,58	-0,47
de272 Kaufbeuren, Kreisfreie Stadt	0,44	1,31	-0,43
de273 Kempten (Allgäu), Kreisfreie Stadt	-0,03	0,00	-0,07
de274 Memmingen, Kreisfreie Stadt	0,48	0,76	0,20
de275 Aichach-Friedberg	1,40	1,91	0,89
de276 Augsburg, Landkreis	1,50	2,02	0,98
de277 Dillingen an der Donau	1,25	1,73	0,77
de278 Günzburg	0,94	1,46	0,42
de279 Neu-Ulm	0,88	1,45	0,30
de27a Lindau (Bodensee)	0,60	0,84	0,37
de27b Ostallgäu	0,86	1,04	0,69
de27c Unterallgäu	1,05	1,52	0,58

de27d Donau-Ries	0,76	1,16	0,36
de27e Oberallgäu	0,85	1,33	0,39
de301 Berlin-West, Stadt	-0,09	0,31	-0,50
de302 Berlin-Ost, Stadt	-0,10	0,31	-0,51
de401 Brandenburg an der Havel, Kreisfreie Stadt	-1,63	-1,20	-2,06
de402 Cottbus, Kreisfreie Stadt	-1,85	-1,18	-2,51
de403 Frankfurt (Oder), Kreisfreie Stadt	-1,63	-1,09	-2,18
de404 Potsdam, Kreisfreie Stadt	-0,86	-0,46	-1,25
de405 Barnim	1,13	0,03	2,26
de406 Dahme-Spreewald	1,02	0,11	1,94
de407 Elbe-Elster	-0,77	-0,75	-0,78
de408 Havelland	1,01	-0,32	2,36
de409 Märkisch-Oderland	0,72	-0,33	1,78
de40a Oberhavel	1,20	-0,01	2,42
de40b Oberspreewald-Lausitz	-1,25	-1,04	-1,46
de40c Oder-Spree	0,14	-0,44	0,72
de40d Ostprignitz-Ruppin	-0,46	-0,36	-0,55
de40e Potsdam-Mittelmark	1,87	0,57	3,18
de40f Prignitz	-1,25	-1,39	-1,10
de40g Spree-Neiße	-0,19	-0,59	0,21
de40h Teltow-Fläming	0,58	-0,35	1,51
de40i Uckermark	-1,06	-1,09	-1,04
de501 Bremen, Kreisfreie Stadt	-0,18	0,00	-0,35
de502 Bremerhaven, Kreisfreie Stadt	-0,65	0,11	-1,40
de6 Hamburg	0,42	0,80	0,04
de711 Darmstadt, Kreisfreie Stadt	-0,03	0,09	-0,14
de712 Frankfurt am Main, Kreisfreie Stadt	0,07	0,31	-0,18
de713 Offenbach am Main, Kreisfreie Stadt	0,22	0,35	0,10
de714 Wiesbaden, Kreisfreie Stadt	0,41	0,60	0,22
de715 Bergstraße	0,61	0,91	0,31
de716 Darmstadt-Dieburg	0,97	1,37	0,58
de717 Groß-Gerau	0,64	0,88	0,41
de718 Hochtaunuskreis	0,60	0,74	0,46
de719 Main-Kinzig-Kreis	0,84	1,42	0,26
de71a Main-Taunus-Kreis	0,62	0,64	0,59
de71b Odenwaldkreis	0,94	1,58	0,30
de71c Offenbach, Landkreis	0,59	0,80	0,38
de71d Rheingau-Taunus-Kreis	0,78	1,29	0,27
de71e Wetteraukreis	1,12	1,52	0,72
de721 Gießen, Landkreis	0,65	1,14	0,16
de722 Lahn-Dill-Kreis	0,66	1,28	0,05
de723 Limburg-Weilburg	1,07	1,52	0,63
de724 Marburg-Biedenkopf	0,56	0,94	0,18
de725 Vogelsbergkreis	0,49	0,99	0,00
de731 Kassel, Kreisfreie Stadt	0,11	0,85	-0,63
de732 Fulda	1,03	1,43	0,64
de733 Hersfeld-Rotenburg	0,17	0,67	-0,33
de734 Kassel, Landkreis	0,68	0,96	0,40
de735 Schwalm-Eder-Kreis	0,59	1,01	0,18
de736 Waldeck-Frankenberg	0,87	1,61	0,14

de737 Werra-Meißner-Kreis	-0,13	0,31	-0,57
de801 Greifswald, Kreisfreie Stadt	-1,95	-1,61	-2,28
de802 Neubrandenburg, Kreisfreie Stadt	-1,88	-1,83	-1,94
de803 Rostock, Kreisfreie Stadt	-2,07	-1,55	-2,58
de804 Schwerin, Kreisfreie Stadt	-2,21	-1,83	-2,59
de805 Stralsund, Kreisfreie Stadt	-1,78	-1,79	-1,77
de806 Wismar, Kreisfreie Stadt	-1,66	-1,82	-1,50
de807 Bad Doberan	2,15	0,83	3,50
de808 Demmin	-0,95	-1,03	-0,86
de809 Güstrow	-0,84	-1,10	-0,59
de80a Ludwigslust	0,28	-0,38	0,93
de80b Mecklenburg-Strelitz	0,05	-0,44	0,53
de80c Müritz	-0,61	-1,04	-0,17
de80d Nordvorpommern	-0,29	-0,75	0,17
de80e Nordwestmecklenburg	1,00	0,60	1,41
de80f Ostvorpommern	-0,63	-1,17	-0,09
de80g Parchim	0,02	-0,37	0,41
de80h Rügen	-1,25	-1,46	-1,05
de80i Uecker-Randow	-1,24	-1,53	-0,95
de911 Braunschweig, Kreisfreie Stadt	-0,46	-0,34	-0,58
de912 Salzgitter, Kreisfreie Stadt	-0,09	0,73	-0,90
de913 Wolfsburg, Kreisfreie Stadt	-0,47	-0,19	-0,75
de914 Gifhorn	2,15	3,04	1,27
de915 Göttingen	0,37	0,80	-0,05
de916 Goslar	-0,26	0,15	-0,68
de917 Helmstedt	0,06	0,44	-0,32
de918 Northeim	0,10	0,55	-0,35
de919 Osterode am Harz	-0,39	-0,07	-0,71
de91a Peine	0,95	1,08	0,83
de91b Wolfenbüttel	0,73	0,72	0,73
de921 Hannover, Kreisfreie Stadt	0,14	0,55	-0,28
de922 Diepholz	1,20	1,60	0,81
de923 Hameln-Pyrmont	0,31	0,72	-0,11
de924 Hannover, Landkreis	0,70	0,86	0,54
de925 Hildesheim	0,31	0,56	0,05
de926 Holzminden	0,10	0,59	-0,39
de927 Nienburg (Weser)	0,85	1,25	0,45
de928 Schaumburg	0,75	1,02	0,48
de931 Celle	0,73	1,09	0,37
de932 Cuxhaven	0,67	0,71	0,63
de933 Harburg	1,64	1,74	1,54
de934 Lüchow-Dannenberg	0,66	1,09	0,23
de935 Lüneburg, Landkreis	1,96	2,57	1,36
de936 Osterholz	1,40	1,91	0,90
de937 Rotenburg (Wümme)	1,37	1,48	1,25
de938 Soltau-Fallingbostel	1,09	1,31	0,87
de939 Stade	1,29	1,59	0,99
de93a Uelzen	0,46	0,60	0,33
de93b Verden	1,29	1,77	0,80
de941 Delmenhorst, Kreisfreie Stadt	0,24	0,81	-0,34
de942 Emden, Kreisfreie Stadt	0,12	0,51	-0,27

de943 Oldenburg (Oldenburg), Kreisfreie Stadt	0,77	1,03	0,51
de944 Osnabrück, Kreisfreie Stadt	0,12	0,77	-0,52
de945 Wilhelmshaven, Kreisfreie Stadt	-0,50	0,13	-1,13
de946 Ammerland	1,38	1,48	1,29
de947 Aurich	0,96	1,11	0,82
de948 Cloppenburg	2,25	3,14	1,37
de949 Emsland	1,44	2,05	0,84
de94a Friesland	0,68	0,75	0,61
de94b Grafschaft Bentheim	0,86	1,02	0,69
de94c Leer	1,05	1,12	0,99
de94d Oldenburg, Landkreis	1,58	1,73	1,42
de94e Osnabrück, Landkreis	1,41	2,04	0,78
de94f Vechta	1,84	2,25	1,43
de94g Wesermarsch	0,45	0,79	0,11
de94h Wittmund	0,82	0,74	0,89
dea11 Düsseldorf, Kreisfreie Stadt	-0,11	-0,12	-0,09
dea12 Duisburg, Kreisfreie Stadt	-0,32	0,06	-0,70
dea13 Essen, Kreisfreie Stadt	-0,48	-0,32	-0,64
dea14 Krefeld, Kreisfreie Stadt	-0,07	0,57	-0,71
dea15 Mönchengladbach, Kreisfreie Stadt	0,20	0,64	-0,24
dea16 Mülheim an der Ruhr, Kreisfreie Stadt	-0,23	-0,10	-0,35
dea17 Oberhausen, Kreisfreie Stadt	-0,05	0,13	-0,24
dea18 Remscheid, Kreisfreie Stadt	-0,26	-0,02	-0,49
dea19 Solingen, Kreisfreie Stadt	0,05	0,17	-0,07
dea1a Wuppertal, Kreisfreie Stadt	-0,37	0,07	-0,80
dea1b Kleve	1,09	1,34	0,83
dea1c Mettmann	0,20	0,31	0,09
dea1d Neuss	0,60	0,79	0,41
dea1e Viersen	1,06	1,24	0,89
dea1f Wesel	0,69	0,97	0,41
dea21 Aachen, Kreisfreie Stadt	0,19	0,66	-0,28
dea22 Bonn, Kreisfreie Stadt	0,38	0,17	0,59
dea23 Köln, Kreisfreie Stadt	0,12	0,30	-0,06
dea24 Leverkusen, Kreisfreie Stadt	0,05	0,24	-0,14
dea25 Aachen, Landkreis	0,45	0,62	0,27
dea26 Düren	1,01	1,26	0,77
dea27 Erftkreis	0,88	1,16	0,59
dea28 Euskirchen	1,13	1,48	0,78
dea29 Heinsberg	1,29	1,56	1,02
dea2a Oberbergischer Kreis	1,01	1,45	0,57
dea2b Rheinisch-Bergischer-Kreis	0,61	0,72	0,49
dea2c Rhein-Sieg-Kreis	1,41	1,67	1,15
dea31 Bottrop, Kreisfreie Stadt	0,22	0,32	0,12
dea32 Gelsenkirchen, Kreisfreie Stadt	-0,41	0,01	-0,83
dea33 Münster, Kreisfreie Stadt	0,36	0,72	0,00
dea34 Borken	1,15	1,30	1,00
dea35 Coesfeld	1,58	1,88	1,28
dea36 Recklinghausen	0,15	0,41	-0,10
dea37 Steinfurt	1,15	1,34	0,96
dea38 Warendorf	0,93	1,26	0,60
dea41 Bielefeld, Kreisfreie Stadt	0,13	0,43	-0,17

dea42 Gütersloh	1,35	1,65	1,05
dea43 Herford	0,76	1,14	0,37
dea44 Höxter	0,73	1,23	0,25
dea45 Lippe	0,85	1,33	0,37
dea46 Minden-Lübbecke	0,88	1,24	0,52
dea47 Paderborn	1,65	2,32	0,98
dea51 Bochum, Kreisfreie Stadt	-0,08	0,28	-0,44
dea52 Dortmund, Kreisfreie Stadt	-0,14	0,08	-0,36
dea53 Hagen, Kreisfreie Stadt	-0,45	-0,07	-0,83
dea54 Hamm, Kreisfreie Stadt	0,20	0,58	-0,17
dea55 Herne, Kreisfreie Stadt	-0,14	0,28	-0,55
dea56 Ennepe-Ruhr-Kreis	0,10	0,27	-0,07
dea57 Hochsauerlandkreis	0,57	1,15	0,00
dea58 Märkischer Kreis	0,42	0,77	0,08
dea59 Olpe	0,87	1,22	0,52
dea5a Siegen-Wittgenstein	0,35	0,85	-0,15
dea5b Soest	1,04	1,45	0,63
dea5c Unna	0,63	0,78	0,48
deb11 Koblenz, Kreisfreie Stadt	-0,04	0,20	-0,28
deb12 Ahrweiler	1,12	1,51	0,73
deb13 Altenkirchen (Westerwald)	0,93	1,44	0,43
deb14 Bad Kreuznach	0,56	0,86	0,27
deb15 Birkenfeld	0,40	0,82	-0,02
deb16 Cochem-Zell	0,65	1,08	0,21
deb17 Mayen-Koblenz	0,88	1,08	0,68
deb18 Neuwied	1,28	1,79	0,78
deb19 Rhein-Hunsrück-Kreis	1,32	2,16	0,48
deb1a Rhein-Lahn-Kreis	0,69	1,11	0,28
deb1b Westerwaldkreis	1,32	1,90	0,74
deb21 Trier, Kreisfreie Stadt	0,16	0,47	-0,14
deb22 Bernkastel-Wittlich	0,58	0,99	0,18
deb23 Bitburg-Prüm	0,58	0,97	0,19
deb24 Daun	0,97	1,33	0,60
deb25 Trier-Saarburg	0,78	0,97	0,59
deb31 Frankenthal (Pfalz), Kreisfreie Stadt	0,30	0,64	-0,04
deb32 Kaiserslautern, Kreisfreie Stadt	0,11	0,68	-0,46
deb33 Landau in der Pfalz, Kreisfreie Stadt	1,00	1,31	0,70
deb34 Ludwigshafen am Rhein, Kreisfreie Stadt	0,12	0,79	-0,56
deb35 Mainz, Kreisfreie Stadt	0,24	0,66	-0,17
deb36 Neustadt an der Weinstraße, Kreisfreie Stadt	0,44	0,84	0,04
deb37 Pirmasens, Kreisfreie Stadt	-0,43	0,46	-1,31
deb38 Speyer, Kreisfreie Stadt	0,78	1,47	0,08
deb39 Worms, Kreisfreie Stadt	0,57	1,01	0,13
deb3a Zweibrücken, Kreisfreie Stadt	0,58	1,33	-0,17
deb3b Alzey-Worms	1,75	2,23	1,28
deb3c Bad Dürkheim	0,76	0,97	0,56
deb3d Donnersbergkreis	1,26	1,84	0,68
deb3e Germersheim	1,28	1,76	0,80
deb3f Kaiserslautern, Landkreis	1,09	1,83	0,35
deb3g Kusel	0,36	0,80	-0,08

deb3h Südliche Weinstraße	0,80	1,09	0,52
deb3i Ludwigshafen, Landkreis	0,86	1,19	0,53
deb3j Mainz-Bingen	1,27	1,81	0,74
deb3k Südwestpfalz	0,53	0,96	0,10
dec01 Saarbrücken, Stadtverband	-0,27	-0,12	-0,42
dec02 Merzig-Wadern	0,44	0,80	0,08
dec03 Neunkirchen	-0,09	0,16	-0,35
dec04 Saarlouis	0,00	0,32	-0,31
dec05 Saarpfalz-Kreis	0,22	0,57	-0,11
dec06 Sankt Wendel	0,24	0,64	-0,15
ded11 Chemnitz, Kreisfreie Stadt	-1,25	-1,33	-1,17
ded12 Plauen, Kreisfreie Stadt	0,00	-0,93	0,95
ded13 Zwickau, Kreisfreie Stadt	-0,73	-0,93	-0,53
ded14 Annaberg	1,15	3,11	-0,77
ded15 Chemnitzer Land	-1,19	-0,93	-1,44
ded16 Freiberg	-0,60	-0,93	-0,26
ded17 Vogtlandkreis	-0,51	0,19	-1,20
ded18 Mittlerer Erzgebirgskreis	-0,75	-0,93	-0,56
ded19 Mittweida	-0,84	-0,93	-0,75
ded1a Stollberg	-0,48	-0,93	-0,02
ded1b Aue-Schwarzenberg	-1,09	-0,93	-1,25
ded1c Zwickauer Land	-0,99	-0,93	-1,06
ded21 Dresden, Kreisfreie Stadt	-0,34	-0,66	-0,02
ded22 Görlitz, Kreisfreie Stadt	-1,53	-1,65	-1,41
ded23 Hoyerswerda, Kreisfreie Stadt	-2,16	-0,93	-3,37
ded24 Bautzen	-0,72	-0,93	-0,51
ded25 Meissen	-0,75	-0,93	-0,58
ded26 Niederschlesischer Oberlausitzkreis	-0,97	-0,93	-1,01
ded27 Riesa-Großenhain	-0,89	-1,02	-0,76
ded28 Löbau-Zittau	-0,95	-0,93	-0,97
ded29 Sächsische Schweiz	-1,16	-0,93	-1,39
ded2a Weißeritzkreis	0,44	-0,93	1,84
ded2b Kamenz	-0,64	-0,93	-0,34
ded31 Leipzig, Kreisfreie Stadt	-0,40	-1,42	0,63
ded32 Delitzsch	2,41	-0,93	5,86
ded33 Döbeln	-1,08	-1,31	-0,84
ded34 Leipziger Land	-4,35	-0,93	-7,66
ded35 Muldentalkreis	0,66	-0,93	2,29
ded36 Torgau-Oschatz	-0,72	-0,93	-0,50
dee11 Dessau, Kreisfreie Stadt	-1,47	-1,22	-1,73
dee12 Anhalt-Zerbst	-0,67	-0,99	-0,35
dee13 Bernburg	-0,88	-0,99	-0,77
dee14 Bitterfeld	-1,14	-0,99	-1,29
dee15 Köthen	-0,78	-1,04	-0,53
dee16 Wittenberg	-0,95	-0,99	-0,90
dee21 Halle/Saale, Stadtkreis	-2,13	-1,61	-2,64
dee22 Burgenlandkreis	-0,93	-0,99	-0,86
dee23 Mansfelder Land	-0,99	-0,99	-0,98
dee24 Merseburg-Querfurt	-0,80	-0,99	-0,62
dee25 Saalkreis	1,44	-0,99	3,94
dee26 Sangerhausen	-1,09	-1,20	-0,99

dee27 Weißenfels	-0,77	-0,99	-0,55
dee31 Magdeburg, Kreisfreie Stadt	-1,80	-1,27	-2,33
dee32 Aschersleben-Staßfurt	-1,00	-0,99	-1,00
dee33 Bördekreis	-0,52	-0,99	-0,05
dee34 Halberstadt	-0,78	-1,06	-0,49
dee35 Jerichower Land	-0,38	-0,99	0,24
dee36 Ohrekreis	0,29	-0,99	1,58
dee37 Stendal	-0,93	-0,99	-0,88
dee38 Quedlinburg	-1,01	-0,99	-1,03
dee39 Schönebeck	-0,86	-0,99	-0,73
dee3a Wernigerode	-0,77	-0,99	-0,55
dee3b Altmarkkreis Salzwedel	-0,85	-0,99	-0,71
def01 Flensburg, Kreisfreie Stadt	-0,30	0,14	-0,74
def02 Kiel, Kreisfreie Stadt	-0,50	0,11	-1,10
def03 Lübeck, Kreisfreie Stadt	-0,04	0,24	-0,32
def04 Neumünster, Kreisfreie Stadt	-0,06	0,35	-0,47
def05 Dithmarschen	0,62	0,66	0,58
def06 Herzogtum Lauenburg	1,19	1,29	1,10
def07 Nordfriesland	0,76	0,80	0,72
def08 Ostholstein	0,68	0,85	0,50
def09 Pinneberg	0,81	1,03	0,60
def0a Plön	0,96	0,77	1,16
def0b Rendsburg-Eckernförde	0,89	0,84	0,95
def0c Schleswig-Flensburg	0,92	0,82	1,03
def0d Segeberg	1,26	1,43	1,10
def0e Steinburg	0,59	0,68	0,51
def0f Stormarn	0,90	0,98	0,82
deg01 Erfurt, Kreisfreie Stadt	-1,14	-1,16	-1,13
deg02 Gera, Kreisfreie Stadt	-1,67	-1,50	-1,84
deg03 Jena, Kreisfreie Stadt	-0,58	-0,79	-0,38
deg04 Suhl, Kreisfreie Stadt	-1,68	-1,32	-2,04
deg05 Weimar, Kreisfreie Stadt	-0,33	-0,69	0,03
deg06 Eichsfeld	-0,24	0,09	-0,57
deg07 Nordhausen	-0,67	-0,71	-0,63
deg09 Unstrut-Hainich-Kreis	-0,57	-0,77	-0,38
deg0a Kyffhäuserkreis	-0,90	-1,04	-0,76
deg0b Schmalkalden-Meiningen	-0,58	-0,73	-0,44
deg0c Gotha	-0,37	-0,84	0,11
deg0d Sömmerda	-0,40	-0,52	-0,27
deg0e Hildburghausen	-0,34	-0,34	-0,35
deg0f Ilm-Kreis	-0,57	-0,93	-0,21
deg0g Weimarer Land	0,28	-0,11	0,67
deg0h Sonneberg	-0,75	-0,63	-0,86
deg0i Saalfeld-Rudolstadt	-0,88	-0,88	-0,87
deg0j Saale-Holzland-Kreis	-0,10	-0,54	0,35
deg0k Saale-Orla-Kreis	-0,64	-0,61	-0,67
deg0l Greiz	-0,66	-0,84	-0,48
deg0m Altenburger Land	-1,22	-1,38	-1,06
deg0n Eisenach, Kreisfreie Stadt	-0,63	-0,82	-0,43
deg0p Wartburgkreis	-0,68	-0,82	-0,54
gr111 Evros	-0,45	-0,81	0,00

gr112 Xanthi	0,41	0,18	0,71
gr113 Rodopi	0,03	0,00	0,07
gr114 Drama	0,41	0,87	-0,15
gr115 Kavala	0,29	0,64	-0,16
gr121 Imathia	0,79	0,95	0,58
gr122 Thessaloniki	0,57	0,38	0,81
gr123 Kilkis	0,54	1,11	-0,18
gr124 Pella	0,78	0,99	0,52
gr125 Pieria	1,04	1,74	0,18
gr126 Serres	0,46	0,87	-0,04
gr127 Chalkidiki	2,19	3,92	0,07
gr131 Grevena	2,00	3,98	-0,41
gr132 Kastoria	-0,02	-0,27	0,29
gr133 Kozani	0,43	0,56	0,28
gr134 Florina	0,17	0,34	-0,05
gr141 Karditsa	0,31	0,60	-0,04
gr142 Larisa	0,19	0,13	0,27
gr143 Magnisia	0,20	0,42	-0,09
gr144 Trikala	0,04	0,26	-0,23
gr211 Arta	0,63	1,01	0,15
gr212 Thesprotia	1,93	3,50	0,00
gr213 Ioannina	1,64	1,80	1,44
gr214 Preveza	0,95	1,64	0,08
gr221 Zakynthos	0,74	0,97	0,44
gr222 Kerkyra	1,34	1,16	1,57
gr223 Kefallinia	0,38	0,86	-0,22
gr224 Lefkada	0,11	0,47	-0,35
gr231 Aitoloakarnania	0,42	0,66	0,11
gr232 Achaia	0,93	1,05	0,78
gr233 Ileia	0,23	0,51	-0,12
gr241 Voiotia	2,00	3,40	0,28
gr242 Evvoia	1,43	2,15	0,55
gr243 Evrytania	3,66	6,68	0,00
gr244 Fthiotida	1,20	1,87	0,38
gr245 Fokida	3,29	6,00	0,00
gr251 Argolida	0,91	1,19	0,56
gr252 Arkadia	1,17	2,17	-0,07
gr253 Korinthia	2,39	3,99	0,43
gr254 Lakonia	1,22	2,14	0,07
gr255 Messinia	0,78	1,29	0,14
gr3 Attiki	-0,24	-0,35	-0,11
gr411 Lesvos	-0,47	-0,60	-0,31
gr412 Samos	-0,77	-0,91	-0,59
gr413 Chios	-0,36	-0,28	-0,46
gr421 Dodekanisos	1,03	1,06	0,99
gr422 Kyklades	0,73	1,16	0,20
gr431 Irakleio	0,65	0,68	0,62
gr432 Lasithi	0,36	0,70	-0,07
gr433 Rethymni	0,73	1,10	0,27
gr434 Chania	0,54	0,69	0,36
es111 La Coruña	0,02	0,11	-0,08

es112 Lugo	-0,97	-1,15	-0,75
es113 Orense	-2,29	-3,79	-0,38
es114 Pontevedra	0,16	0,26	0,04
es12 Principado de Asturias	-0,71	-0,89	-0,49
es13 Cantabria	0,00	0,00	0,00
es211 Álava	0,40	0,38	0,43
es212 Guipúzcoa	-0,32	-0,52	-0,07
es213 Vizcaya	-0,56	-0,68	-0,40
es22 Comunidad Foral de Navarra	0,28	0,23	0,34
es23 La Rioja	0,10	0,08	0,12
es241 Huesca	-0,52	-0,71	-0,29
es242 Teruel	-1,12	-1,62	-0,48
es243 Zaragoza	-0,23	-0,24	-0,22
es3 Comunidad de Madrid	0,47	0,53	0,39
es411 Avila	-1,13	-1,51	-0,65
es412 Burgos	-0,63	-0,84	-0,37
es413 León	-0,74	-0,99	-0,43
es414 Palencia	-0,95	-1,23	-0,60
es415 Salamanca	-0,42	-0,47	-0,35
es416 Segovia	-0,61	-0,97	-0,15
es417 Soria	-0,77	-1,06	-0,41
es418 Valladolid	-0,25	-0,34	-0,13
es419 Zamora	-1,12	-1,47	-0,67
es421 Albacete	-0,10	-0,34	0,20
es422 Ciudad Real	-0,46	-0,71	-0,15
es423 Cuenca	-0,89	-1,26	-0,44
es424 Guadalajara	1,05	0,54	1,68
es425 Toledo	0,36	0,23	0,51
es431 Badajoz	-0,61	-1,11	0,01
es432 Cáceres	-0,50	-0,94	0,04
es511 Barcelona	0,04	0,03	0,05
es512 Gerona	0,95	0,89	1,02
es513 Lérida	0,08	0,06	0,11
es514 Tarragona	1,13	1,27	0,97
es521 Alicante	1,16	1,10	1,23
es522 Castellón de la Plana	0,44	0,53	0,32
es523 Valencia	0,24	0,38	0,06
es53 Illes Balears	1,34	1,26	1,45
es611 Almería	0,85	0,77	0,95
es612 Cadiz	0,39	0,63	0,10
es613 Córdoba	0,07	0,19	-0,08
es614 Granada	0,29	0,42	0,12
es615 Huelva	0,25	0,39	0,07
es616 Jaén	-0,08	-0,11	-0,05
es617 Málaga	0,46	-0,10	1,18
es618 Sevilla	0,79	1,26	0,21
es62 Murcia	0,88	0,98	0,75
es631 Ceuta (ES)	0,58	0,26	0,98
es632 Melilla (ES)	1,70	1,87	1,48
es701 Las Palmas	1,36	1,13	1,64
es702 Santa Cruz De Tenerife	0,93	0,60	1,34

fr101 Paris	-0,09	-0,28	0,08
fr102 Seine-et-Marne	1,04	1,41	0,68
fr103 Yvelines	0,37	0,58	0,17
fr104 Essonne	0,44	0,74	0,13
fr105 Hauts-de-Seine	0,35	0,20	0,50
fr106 Seine-Saint-Denis	0,06	0,15	-0,03
fr107 Val-de-Marne	0,15	0,12	0,18
fr108 Val-d'Oise	0,54	0,78	0,30
fr211 Ardennes	-0,21	-0,19	-0,23
fr212 Aube	0,11	0,20	0,02
fr213 Marne	0,14	0,25	0,04
fr214 Haute-Marne	-0,50	-0,49	-0,51
fr221 Aisne	0,00	0,04	-0,04
fr222 Oise	0,56	0,81	0,31
fr223 Somme	0,19	0,17	0,20
fr231 Eure	0,58	0,67	0,49
fr232 Seine-Maritime	0,15	0,24	0,06
fr241 Cher	-0,24	-0,24	-0,24
fr242 Eure-et-Loir	0,29	0,48	0,10
fr243 Indre	-0,29	-0,31	-0,26
fr244 Indre-et-Loire	0,53	0,54	0,52
fr245 Loir-et-Cher	0,34	0,36	0,31
fr246 Loiret	0,70	0,80	0,60
fr251 Calvados	0,53	0,50	0,56
fr252 Manche	0,06	0,03	0,10
fr253 Orne	-0,02	0,05	-0,09
fr261 Côte-d'Or	0,28	0,36	0,21
fr262 Nièvre	-0,37	-0,35	-0,40
fr263 Saône-et-Loire	-0,28	-0,23	-0,32
fr264 Yonne	0,35	0,39	0,31
fr301 Nord	0,13	0,16	0,10
fr302 Pas-de-Calais	0,09	0,07	0,11
fr411 Meurthe-et-Moselle	0,04	0,16	-0,08
fr412 Meuse	-0,21	-0,14	-0,27
fr413 Moselle	0,15	0,17	0,13
fr414 Vosges	-0,13	-0,09	-0,17
fr421 Bas-Rhin	0,84	0,87	0,80
fr422 Haut-Rhin	0,61	0,64	0,57
fr431 Doubs	0,32	0,43	0,21
fr432 Jura	0,11	0,13	0,09
fr433 Haute-Saône	0,05	0,01	0,09
fr434 Territoire de Belfort	0,27	0,38	0,16
fr511 Loire-Atlantique	0,87	0,85	0,89
fr512 Maine-et-Loire	0,45	0,47	0,44
fr513 Mayenne	0,33	0,28	0,39
fr514 Sarthe	0,37	0,36	0,39
fr515 Vendée	0,65	0,61	0,69
fr521 Côte-du-Nord	0,11	-0,05	0,27
fr522 Finistère	0,21	0,10	0,32
fr523 Ille-et-Vilaine	0,94	0,87	1,01
fr524 Morbihan	0,44	0,32	0,56

fr531 Charente	-0,06	-0,06	-0,06
fr532 Charente-Maritime	0,62	0,50	0,73
fr533 Deux-Sèvres	-0,02	-0,03	-0,01
fr534 Vienne	0,57	0,62	0,51
fr611 Dordogne	0,07	-0,01	0,14
fr612 Gironde	0,66	0,67	0,65
fr613 Landes	0,56	0,51	0,62
fr614 Lot-et-Garonne	0,02	-0,09	0,14
fr615 Pyrénées-Atlantiques	0,43	0,32	0,54
fr621 Ariège	0,06	-0,04	0,16
fr622 Aveyron	-0,22	-0,28	-0,17
fr623 Haute-Garonne	1,36	1,37	1,35
fr624 Gers	-0,14	-0,25	-0,02
fr625 Lot	0,33	0,27	0,39
fr626 Hautes-Pyrénées	-0,11	-0,11	-0,12
fr627 Tarn	0,06	-0,05	0,17
fr628 Tarn-et-Garonne	0,30	0,35	0,26
fr631 Corrèze	-0,23	-0,24	-0,21
fr632 Creuse	-0,58	-0,68	-0,48
fr633 Haute-Vienne	0,03	0,04	0,03
fr711 Ain	0,99	0,97	1,01
fr712 Ardèche	0,34	0,29	0,39
fr713 Drôme	0,62	0,62	0,63
fr714 Isère	0,83	0,85	0,81
fr715 Loire	-0,24	-0,16	-0,32
fr716 Rhône	0,51	0,55	0,48
fr717 Savoie	0,76	0,75	0,76
fr718 Haute-Savoie	1,13	1,28	0,98
fr721 Allier	-0,38	-0,40	-0,37
fr722 Cantal	-0,57	-0,56	-0,58
fr723 Haute-Loire	0,19	0,01	0,37
fr724 Puy-de-Dôme	0,13	0,07	0,20
fr811 Aude	0,40	0,28	0,51
fr812 Gard	0,70	0,68	0,73
fr813 Hérault	1,32	1,35	1,28
fr814 Lozère	0,12	0,05	0,19
fr815 Pyrénées-Orientales	0,83	0,73	0,93
fr821 Alpes-de-Haute-Provence	0,71	0,82	0,61
fr822 Hautes-Alpes	0,77	0,75	0,80
fr823 Alpes-Maritimes	0,42	0,46	0,37
fr824 Bouches-du-Rhône	0,49	0,48	0,51
fr825 Var	1,06	1,12	1,00
fr826 Vaucluse	0,74	0,76	0,71
fr831 Corse-du-Sud	-0,02	0,13	-0,17
fr832 Haute-Corse	0,78	1,08	0,48
fr91 Guadeloupe (FR)	0,91	1,42	0,40
fr92 Martinique (FR)	0,62	1,30	-0,05
fr93 French Guiana (FR)	3,56	5,67	1,49
fr94 Reunion (FR)	1,85	1,86	1,85
ie011 Border	0,26	0,20	0,32
ie012 Midlands	0,35	0,14	0,57

ie013 West	0,89	0,30	1,49
ie021 Dublin	0,90	0,59	1,20
ie022 Mid-East	1,86	1,34	2,39
ie023 Midwest	0,72	0,58	0,86
ie024 South-East (IE)	0,54	0,48	0,60
ie025 South-West (IE)	0,51	0,52	0,49
it111 Torino	-0,21	-0,32	-0,09
it112 Vercelli	-0,19	-0,16	-0,22
it113 Biella	-0,15	-0,16	-0,15
it114 Verbano-Cusio-Ossola	-0,12	-0,16	-0,09
it115 Novara	0,07	-0,16	0,30
it116 Cuneo	0,25	0,25	0,26
it117 Asti	0,14	0,23	0,06
it118 Alessandria	-0,28	-0,39	-0,18
it12 Valle d'Aosta	0,55	0,78	0,32
it131 Imperia	0,07	0,23	-0,08
it132 Savona	-0,23	-0,18	-0,28
it133 Genova	-0,69	-0,75	-0,63
it134 La Spezia	-0,32	-0,30	-0,35
it201 Varese	0,34	0,39	0,30
it202 Como	0,30	0,20	0,39
it203 Lecco	0,39	0,20	0,58
it204 Sondrio	0,10	0,15	0,06
it205 Milano	0,21	0,20	0,23
it206 Bergamo	0,53	0,30	0,76
it207 Brescia	0,67	0,54	0,80
it208 Pavia	0,11	0,03	0,19
it209 Lodi	0,46	0,20	0,73
it20a Cremona	0,25	0,23	0,26
it20b Mantova	0,12	-0,10	0,34
it311 Bolzano-Bozen	0,61	0,62	0,60
it312 Trento	0,66	0,68	0,65
it321 Verona	0,53	0,43	0,63
it322 Vicenza	0,67	0,60	0,74
it323 Belluno	-0,08	-0,08	-0,09
it324 Treviso	0,68	0,52	0,85
it325 Venezia	-0,11	-0,14	-0,08
it326 Padova	0,43	0,42	0,43
it327 Rovigo	-0,21	-0,23	-0,19
it331 Pordenone	0,26	0,12	0,40
it332 Udine	-0,06	-0,08	-0,03
it333 Gorizia	-0,01	-0,10	0,07
it334 Trieste	-0,72	-0,77	-0,67
it401 Piacenza	-0,09	-0,13	-0,04
it402 Parma	0,19	0,05	0,33
it403 Reggio nell'Emilia	0,87	0,65	1,09
it404 Modena	0,49	0,33	0,66
it405 Bologna	0,13	-0,04	0,30
it406 Ferrara	-0,45	-0,45	-0,45
it407 Ravenna	0,01	-0,06	0,07
it408 Forlì-Cesena	0,21	0,12	0,30

it409 Rimini	0,39	0,12	0,66
it511 Massa-Carrara	-0,06	0,02	-0,14
it512 Lucca	-0,07	-0,11	-0,03
it513 Pistoia	0,24	0,16	0,32
it514 Firenze	-0,02	-0,06	0,01
it515 Prato	0,35	-0,06	0,77
it516 Livorno	-0,13	-0,09	-0,18
it517 Pisa	0,05	-0,02	0,12
it518 Arezzo	0,30	0,22	0,38
it519 Siena	0,11	0,05	0,17
it51a Grosseto	-0,05	0,06	-0,16
it521 Perugia	0,49	0,49	0,49
it522 Terni	-0,01	0,05	-0,08
it531 Pesaro e Urbino	0,34	0,25	0,44
it532 Ancona	0,23	0,23	0,24
it533 Macerata	0,32	0,28	0,36
it534 Ascoli Piceno	0,33	0,40	0,26
it601 Viterbo	0,60	0,90	0,31
it602 Rieti	0,46	0,81	0,11
it603 Roma	0,23	0,15	0,31
it604 Latina	0,92	1,22	0,63
it605 Frosinone	0,40	0,60	0,19
it711 L'Aquila	0,28	0,55	0,02
it712 Teramo	0,48	0,56	0,40
it713 Pescara	0,22	0,28	0,16
it714 Chieti	0,27	0,41	0,13
it721 Isernia	-0,04	0,09	-0,17
it722 Campobasso	-0,10	0,08	-0,29
it801 Caserta	0,64	0,87	0,42
it802 Benevento	0,03	0,25	-0,19
it803 Napoli	0,28	0,52	0,03
it804 Avellino	0,08	0,21	-0,06
it805 Salerno	0,35	0,54	0,15
it911 Foggia	-0,04	0,09	-0,18
it912 Bari	0,40	0,54	0,27
it913 Taranto	-0,04	0,10	-0,17
it914 Brindisi	0,07	0,25	-0,11
it915 Lecce	0,23	0,48	-0,03
it921 Potenza	-0,08	-0,06	-0,10
it922 Matera	-0,10	0,03	-0,23
it931 Cosenza	-0,10	0,06	-0,25
it932 Crotone	-0,37	-0,06	-0,69
it933 Catanzaro	-0,10	-0,06	-0,14
it934 Vibo Valentia	-0,22	-0,06	-0,38
it935 Reggio di Calabria	-0,18	-0,09	-0,26
ita01 Trapani	0,16	0,30	0,02
ita02 Palermo	0,09	0,25	-0,08
ita03 Messina	0,39	1,02	-0,24
ita04 Agrigento	-0,18	0,00	-0,36
ita05 Caltanissetta	0,05	0,12	-0,01
ita06 Enna	-0,38	-0,17	-0,59

ita07 Catania	0,65	0,95	0,35
ita08 Ragusa	0,53	0,69	0,37
ita09 Siracusa	0,03	0,26	-0,20
itb01 Sassari	0,22	0,45	-0,01
itb02 Nuoro	-0,18	-0,03	-0,32
itb03 Oristano	0,02	0,17	-0,13
itb04 Cagliari	0,11	0,33	-0,12
lu Luxembourg	1,36	1,46	1,27
nl111 Oost-Groningen	0,14	0,05	0,22
nl112 Delfzijl en omgeving	-0,57	-0,47	-0,67
nl113 Overig Groningen	0,32	0,27	0,38
nl121 Noord-Friesland	0,30	0,32	0,29
nl122 Zuidwest-Friesland	0,65	0,29	1,00
nl123 Zuidoost-Friesland	0,62	0,52	0,72
nl131 Noord-Drenthe	1,30	0,75	1,86
nl132 Zuidoost-Drenthe	1,21	0,39	2,05
nl133 Zuidwest-Drenthe	-0,84	0,71	-2,36
nl211 Noord-Overijssel	0,80	0,78	0,82
nl212 Zuidwest-Overijssel	0,65	0,56	0,75
nl213 Twente	0,40	0,43	0,37
nl221 Veluwe	0,52	0,58	0,46
nl222 Achterhoek	0,48	0,42	0,55
nl223 Arnhem/Nijmegen	0,63	0,69	0,56
nl224 Zuidwest-Gelderland	1,16	1,18	1,14
nl23 Flevoland	4,08	4,33	3,84
nl31 Utrecht	0,86	0,88	0,85
nl321 Kop van Noord-Holland	0,66	0,67	0,65
nl322 Alkmaar en omgeving	0,77	0,89	0,66
nl323 Ijmond	0,79	1,03	0,55
nl324 Agglomeratie Haarlem	-0,07	-0,20	0,06
nl325 Zaanstreek	0,58	0,75	0,42
nl326 Groot-Amsterdam	0,74	0,88	0,60
nl327 Het Gooi en Vechtstreek	-0,12	-0,15	-0,09
nl331 Agglomeratie Leiden en Bollenstreek	0,55	0,65	0,46
nl332 Agglomeratie 's -Gravenhage	0,34	0,24	0,44
nl333 Delft en Westland	0,87	0,79	0,95
nl334 Oost-Zuid-Holland	0,85	1,38	0,31
nl335 Groot-Rijnmond	0,48	0,49	0,47
nl336 Zuidoost Zuid-Holland	0,61	0,76	0,46
nl341 Zeeuwsch-Vlaanderen	0,07	0,07	0,06
nl342 Overig Zeeland	0,62	0,75	0,50
nl411 West-Noord-Brabant	0,58	0,75	0,42
nl412 Midden-Noord-Brabant	-0,02	0,67	-0,71
nl413 Noordoost-Noord-Brabant	1,33	0,84	1,82
nl414 Zuidoost-Noord-Brabant	0,84	0,75	0,94
nl421 Noord-Limburg	0,51	0,61	0,41
nl422 Midden-Limburg	0,48	0,57	0,39
nl423 Zuid-Limburg	0,17	0,34	0,01
at111 Mittelburgenland	0,26	0,21	0,32
at112 Nordburgenland	0,53	0,59	0,46
at113 Südburgenland	0,10	0,10	0,10

at121 Mostviertel-Eisenwurzen	0,50	0,59	0,39
at122 Niederösterreich-Süd	0,51	0,75	0,21
at123 Sankt Pölten	0,69	0,89	0,44
at124 Waldviertel	-0,12	-0,05	-0,21
at125 Weinviertel	-0,05	0,03	-0,16
at126 Wiener Umland/Nordteil	1,27	1,48	1,02
at127 Wiener Umland/Südteil	0,72	1,04	0,32
at13 Vienna	0,56	0,89	0,16
at211 Klagenfurt-Villach	0,53	0,76	0,23
at212 Oberkärnten	0,36	0,54	0,15
at213 Unterkärnten	0,13	0,25	-0,03
at221 Graz	0,39	0,70	-0,01
at222 Liezen	0,35	0,59	0,06
at223 Östliche Obersteiermark	-0,45	-0,22	-0,74
at224 Oststeiermark	0,45	0,59	0,28
at225 West- und Südsteiermark	0,21	0,36	0,03
at226 Westliche Obersteiermark	-0,07	0,07	-0,25
at311 Innviertel	0,44	0,90	-0,13
at312 Linz-Wels	0,55	1,19	-0,25
at313 Mühlviertel	0,49	0,82	0,08
at314 Steyr-Kirchdorf	0,29	0,74	-0,27
at315 Traunviertel	0,57	1,10	-0,10
at321 Lungau	0,16	0,29	0,00
at322 Pinzgau-Pongau	0,69	0,96	0,35
at323 Salzburg und Umgebung	1,01	1,46	0,46
at331 Außerfern	0,57	1,02	0,00
at332 Innsbruck	0,63	1,05	0,10
at333 Osttirol	0,14	0,29	-0,05
at334 Tiroler Oberland	0,87	1,11	0,57
at335 Tiroler Unterland	0,95	1,26	0,56
at341 Bludenz-Bregenzer Wald	0,65	0,87	0,38
at342 Rheintal-Bodenseegebiet	0,69	0,98	0,32
pt111 Minho-Lima	-0,19	-0,10	-0,29
pt112 Cávado	0,88	0,84	0,92
pt113 Ave	0,89	1,09	0,69
pt114 Grande Porto	0,57	0,56	0,58
pt115 Tâmega	0,47	0,48	0,46
pt116 Entre Douro e Vouga	0,76	0,73	0,78
pt117 Douro	-0,84	-0,32	-1,37
pt118 Alto Trás-os-Montes	-0,78	-0,62	-0,94
pt121 Baixo Vouga	0,84	0,37	1,31
pt122 Baixo Mondego	0,25	0,00	0,49
pt123 Pinhal Litoral	0,95	0,36	1,54
pt124 Pinhal Interior Norte	-0,22	-0,60	0,16
pt125 Dão-Lafões	0,00	-0,20	0,20
pt126 Pinhal Interior Sul	-1,30	-1,18	-1,43
pt127 Serra da Estrela	-0,78	-0,56	-1,00
pt128 Beira Interior Norte	-0,43	-0,61	-0,26
pt129 Beira Interior Sul	-0,42	-0,59	-0,25
pt12a Cova da Beira	-0,11	-0,41	0,19
pt131 Oeste	0,72	0,38	1,06

pt132 Grande Lisbon	0,19	0,44	-0,05
pt133 Península de Setúbal	0,94	0,77	1,11
pt134 Médio Tejo	-0,22	-0,45	0,01
pt135 Lezíria do Tejo	0,20	0,13	0,26
pt141 Alentejo Litoral	-0,23	-0,86	0,40
pt142 Alto Alentejo	-0,28	-0,14	-0,42
pt143 Alentejo Central	-0,27	-0,79	0,25
pt144 Baixo Alentejo	-0,88	-1,27	-0,49
pt15 Algarve	1,11	0,13	2,10
pt2 Açores (PT)	-0,12	0,23	-0,47
pt3 Madeira (PT)	-0,58	0,09	-1,24
fi131 Etelä-Savo	-0,46	-0,17	-0,76
fi132 Pohjois-Savo	-0,14	0,16	-0,44
fi133 Pohjois-Karjala	-0,26	0,10	-0,63
fi134 Kainuu	-0,70	-0,31	-1,09
fi141 Keski-Suomi	0,45	0,46	0,44
fi142 Etelä-Pohjanmaa	-0,26	0,01	-0,53
fi143 Pohjanmaa	0,06	0,22	-0,09
fi144 Keski-Pohjanmaa	0,00	0,42	-0,41
fi151 Pohjois-Pohjanmaa	0,63	0,78	0,48
fi152 Lappi	-0,37	0,16	-0,89
fi161 Uusimaa (maakunta)	1,29	1,27	1,31
fi162 Itä-Uusimaa	0,52	0,37	0,66
fi171 Varsinais-Suomi	0,50	0,44	0,57
fi172 Satakunta	-0,33	-0,11	-0,54
fi173 Kanta-Häme	0,21	0,39	0,04
fi174 Pirkanmaa	0,46	0,47	0,45
fi175 Päijät-Häme	0,04	0,17	-0,10
fi176 Kymenlaakso	-0,31	-0,14	-0,48
fi177 Etelä-Karjala	-0,28	-0,18	-0,37
fi2 Åland	0,52	0,65	0,39
se01 Stockholm	1,04	1,08	0,99
se021 Uppsala län	0,95	1,58	0,33
se022 Södermanlands län	0,06	0,33	-0,21
se023 Östergötlands län	0,25	0,74	-0,25
se024 Örebro län	0,06	0,32	-0,20
se025 Västmanlands län	-0,02	0,28	-0,32
se041 Blekinge län	0,01	0,32	-0,29
se044 Skåne län	0,58	0,89	0,27
se061 Värmlands län	-0,25	0,09	-0,58
se062 Dalarnas län	-0,30	0,15	-0,74
se063 Gävleborgs län	-0,31	-0,02	-0,60
se071 Västernorrlands län	-0,50	-0,19	-0,80
se072 Jämtlands län	-0,39	0,04	-0,82
se081 Västerbottens län	0,20	0,74	-0,33
se082 Norrbottens län	-0,23	0,20	-0,67
se091 Jönköpings län	0,07	0,27	-0,12
se092 Kronobergs län	-0,02	0,36	-0,39
se093 Kalmar län	-0,18	0,26	-0,62
se094 Gotlands län	0,07	0,38	-0,24
se0a1 Hallands län	0,82	1,27	0,37

se0a2 Västra Götalands län	0,34	0,57	0,12
ukc11 Hartlepool and Stockton	0,00	0,30	-0,30
ukc12 South Teeside	-0,36	0,30	-1,01
ukc13 Darlington	-0,12	0,30	-0,54
ukc14 Durham CC	-0,11	0,30	-0,51
ukc21 Northumberland	0,07	0,18	-0,04
ukc22 Tyneside	-0,42	0,14	-0,97
ukc23 Sunderland	-0,44	0,14	-1,01
ukd11 West Cumbria	-0,19	-0,04	-0,34
ukd12 East Cumbria	0,02	-0,04	0,09
ukd21 Halton and Warrington	0,15	0,40	-0,11
ukd22 Cheshire CC	0,27	0,40	0,14
ukd31 Greater Manchester South	-0,58	-0,06	-1,10
ukd32 Greater Manchester North	-0,21	-0,06	-0,35
ukd41 Blackburn with Darwen	0,02	0,47	-0,42
ukd42 Blackpool	-0,51	0,47	-1,47
ukd43 Lancashire CC	0,23	0,47	-0,01
ukd51 East Merseyside	-0,29	-0,14	-0,45
ukd52 Liverpool	-0,72	-0,14	-1,31
ukd53 Sefton	-0,38	-0,14	-0,62
ukd54 Wirral	-0,66	-0,14	-1,17
uke11 City of Kingston upon Hull	-0,54	0,72	-1,78
uke12 East Riding of Yorkshire	0,48	0,72	0,24
uke13 North and North East Lincolnshire	0,23	0,72	-0,25
uke21 York	0,31	0,08	0,54
uke22 North Yorkshire CC	0,23	0,08	0,38
uke31 Barnsley, Doncaster and Rotherham	-0,23	0,16	-0,62
uke32 Sheffield	-0,23	0,16	-0,61
uke41 Bradford	-0,21	0,36	-0,79
uke42 Leeds	0,00	0,36	-0,37
uke43 Calderdale, Kirklees and Wakefield	0,11	0,36	-0,14
ukf11 Derby	-0,17	0,43	-0,75
ukf12 East Derbyshire	0,05	0,43	-0,32
ukf13 South and West Derbyshire	0,45	0,43	0,48
ukf14 Nottingham	-0,32	0,43	-1,05
ukf15 North Nottinghamshire	0,21	0,43	-0,01
ukf16 South Nottinghamshire	0,11	0,43	-0,21
ukf21 Leicester City	-0,21	0,57	-0,99
ukf22 Leicester CC and Rutland	0,50	0,57	0,43
ukf23 Northamptonshire	0,75	0,61	0,89
ukf3 Lincolnshire	0,81	0,62	1,00
ukg11 Herefordshire	0,86	0,65	1,06
ukg12 Worcestershire	0,45	0,65	0,26
ukg13 Warwickshire	0,39	0,64	0,14
ukg21 The Wrekin	0,98	0,40	1,56
ukg22 Shropshire CC	0,47	0,40	0,53
ukg23 Stoke-on-Trent	-0,31	0,40	-1,02
ukg24 Staffordshire CC	0,23	0,40	0,05
ukg31 Birmingham	-0,29	0,16	-0,73
ukg32 Solihull	-0,10	0,16	-0,36
ukg33 Coventry	-0,01	0,16	-0,17

ukg34 Dudley and Sandwell	-0,23	0,16	-0,62
ukg35 Walsall and Wolverhampton	-0,24	0,16	-0,64
ukh11 Peterborough	0,09	0,57	-0,38
ukh12 Cambridgeshire CC	0,63	0,57	0,69
ukh13 Norfolk	0,56	0,55	0,56
ukh14 Suffolk	0,44	0,32	0,56
ukh21 Luton	0,38	0,40	0,36
ukh22 Bedfordshire CC	0,67	0,55	0,78
ukh23 Hertfordshire	0,47	0,55	0,39
ukh31 Southend-on-Sea	-0,27	0,55	-1,09
ukh32 Thurrock	1,01	0,55	1,47
ukh33 Essex CC	0,52	0,55	0,49
uki11 Inner London - West	1,05	2,40	-0,29
uki12 Inner London - East	0,79	0,86	0,72
uki21 Outer London - East and North East	0,21	0,20	0,22
uki22 Outer London - South	0,62	0,89	0,35
uki23 Outer London - West and North West	0,83	1,42	0,23
ukj11 Berkshire	0,57	0,58	0,56
ukj12 Milton Keynes	1,00	0,53	1,46
ukj13 Buckinghamshire CC	0,39	0,53	0,24
ukj14 Oxfordshire	0,32	0,29	0,34
ukj21 Brighton and Hove	0,32	0,67	-0,03
ukj22 East Sussex CC	0,53	0,67	0,39
ukj23 Surrey	0,52	0,82	0,23
ukj24 West Sussex	0,66	0,65	0,66
ukj31 Portsmouth	0,18	0,74	-0,38
ukj32 Southampton	0,54	0,74	0,34
ukj33 Hampshire CC	0,58	0,74	0,42
ukj34 Isle of Wight	0,13	-0,72	0,99
ukj41 Medway Towns	0,47	0,34	0,60
ukj42 Kent CC	0,29	0,34	0,24
ukk11 City of Bristol	-0,11	0,76	-0,98
ukk12 North and North East Somerset, South Gloucestershire	0,71	0,76	0,66
ukk13 Gloucestershire	0,61	0,77	0,46
ukk14 Swindon	0,71	0,76	0,67
ukk15 Wiltshire CC	0,69	0,76	0,62
ukk21 Bournemouth and Poole	0,35	0,59	0,11
ukk22 Dorset CC	0,61	0,59	0,63
ukk23 Somerset	0,62	0,65	0,58
ukk3 Cornwall and Isles of Scilly	0,62	0,61	0,64
ukk41 Plymouth	-0,37	0,53	-1,25
ukk42 Torbay	0,64	0,53	0,75
ukk43 Devon CC	0,61	0,53	0,70
ukl11 Isle of Anglesey	0,00	0,26	-0,27
ukl12 Gwynedd	0,03	0,26	-0,20
ukl13 Conwy and Denbighshire	0,08	0,26	-0,11
ukl14 South West Wales	0,31	0,26	0,36
ukl15 Central Valleys	-0,24	0,26	-0,73
ukl16 Gwent Valleys	0,02	0,26	-0,22
ukl17 Bridgend and Neath Port Talbot	-0,16	0,26	-0,58

ukl18 Swansea	-0,20	0,26	-0,66
ukl21 Monmouthshire and Newport	0,06	0,26	-0,14
ukl22 Cardiff and Vale of Glamorgan	0,08	0,26	-0,10
ukl23 Flintshire and Wrexham	0,37	0,26	0,49
ukl24 Powys	0,45	0,26	0,63
ukm11 Aberdeen City, Aberdeenshire and North East Moray	0,30	0,91	-0,31
ukm21 Angus and Dundee City	-0,34	-0,09	-0,59
ukm22 Clackmannanshire and Fife	-0,02	0,20	-0,23
ukm23 East Lothian and Midlothian	0,37	0,36	0,38
ukm24 The Scottish Borders	0,26	0,53	-0,02
ukm25 Edinburgh, City of	0,21	0,42	0,00
ukm26 Falkirk	0,10	-0,03	0,24
ukm27 Perth and Kinross, Stirling	0,60	0,69	0,51
ukm28 West Lothian	0,71	0,46	0,96
ukm31 East and West Dunbartonshire, Helensburgh and Lomond	-0,27	-0,14	-0,39
ukm32 Dumfries and Galloway	-0,01	0,08	-0,09
ukm33 East Ayrshire and North Ayrshire Mainland	-0,29	-0,02	-0,56
ukm34 Glasgow City	-0,93	-0,44	-1,41
ukm35 Inverclyde, East Renfrewshire and Renfrewshire	-0,25	-0,02	-0,48
ukm36 North Lanarkshire	-0,28	-0,20	-0,36
ukm37 South Ayrshire	-0,10	0,25	-0,44
ukm38 South Lanarkshire	-0,06	0,24	-0,37
ukm41 Caithness and Sutherland, Ross and Cromarty	0,05	0,34	-0,25
ukm42 Inverness and Nairn, Moray, Badenoch and Strathspey	0,68	0,87	0,49
ukm43 Lochaber, Skye and Lochalsh, Argyll and The Islands	-0,15	-0,14	-0,16
ukm44 Comhairle Nan Eilan (Western Isles)	-1,06	-0,47	-1,63
ukm45 Orkney Islands	-0,05	0,51	-0,61
ukm46 Shetland Islands	-0,09	0,62	-0,79
ukn01 Belfast	-0,48	0,17	-1,12
ukn02 Outer Belfast	0,82	1,01	0,64
ukn03 East of Northern Ireland	0,93	1,04	0,81
ukn04 North of Northern Ireland	0,83	0,84	0,81
ukn05 West and South of Northern Ireland	0,62	0,72	0,52
bg011 Vidin	-1,33	-1,30	-1,38
bg012 Montana	-1,33	-1,30	-1,38
bg013 Vratsa	-0,84	-0,83	-0,86
bg021 Pleven	-1,03	-1,01	-1,06
bg022 Lovech	-0,94	-0,92	-0,96
bg023 Veliko Tarnovo	-1,02	-1,00	-1,04
bg024 Gabrovo	-0,78	-0,77	-0,80
bg025 Ruse	-0,70	-0,69	-0,71
bg031 Varna	-0,60	-0,59	-0,61
bg032 Dobrich	-0,43	-0,43	-0,44
bg033 Shumen	-0,67	-0,67	-0,69
bg034 Turgovishte	-0,67	-0,66	-0,68
bg035 Razgrad	-0,59	-0,58	-0,60
bg036 Silistra	-0,94	-0,92	-0,96

bg041 Sofia Stolitsa (capital)	0,29	0,30	0,29
bg042 Sofia	-1,41	-1,37	-1,45
bg043 Blagoevgrad	-0,28	-0,28	-0,29
bg044 Pernik	-0,93	-0,91	-0,95
bg045 Kyustendil	-0,97	-0,96	-1,00
bg051 Plovdiv	-0,20	-0,20	-0,20
bg052 Stara Zagora	-0,51	-0,50	-0,51
bg053 Haskovo	0,09	0,09	0,09
bg054 Pazardzhik	-0,69	-0,68	-0,70
bg055 Smolyan	-1,72	-1,67	-1,80
bg056 Kardzhali	-1,50	-1,45	-1,55
bg061 Burgas	-0,57	-0,56	-0,57
bg062 Sliven	-0,43	-0,42	-0,43
bg063 Yambol	-0,86	-0,84	-0,87
Cy Cyprus (**) Data for 1992	1,67	2,19	1,28
cz01 Praha	-0,31	-0,14	-0,48
cz02 Strední Cechy	0,05	0,02	0,09
cz031 Jihocecký	-0,03	-0,04	-0,03
cz032 Plzenský	-0,10	-0,05	-0,16
cz041 Karlovarský	-0,05	-0,06	-0,03
cz042 Ústecký	-0,01	-0,04	0,02
cz051 Liberecký	-0,01	-0,03	0,00
cz052 Královehradecký	-0,08	-0,06	-0,10
cz053 Pardubický	-0,08	-0,06	-0,10
cz061 Vysocina	-0,08	-0,08	-0,08
cz062 Jihomoravský	-0,08	-0,06	-0,09
cz071 Olomoucký	-0,03	-0,05	-0,01
cz072 Zlínský	-0,07	-0,03	-0,10
cz08 Moravskoslezko	-0,16	-0,08	-0,23
ee001 Põhja-Eesti	-1,41	-1,96	-0,87
ee004 Lääne-Eesti	-1,07	-1,33	-0,80
ee006 Kesk-Eesti	-1,22	-1,78	-0,67
ee007 Kirde-Eesti	-2,10	-2,56	-1,64
ee008 Lõuna-Eesti	-1,04	-1,20	-0,87
hu011 Budapest	-1,15	-1,00	-1,29
hu012 Pest	0,92	0,60	1,23
hu021 Fejér	0,08	0,24	-0,08
hu022 Komárom-Esztergom	-0,10	-0,19	-0,01
hu023 Veszprém	-0,29	-0,16	-0,42
hu031 Gyor-Moson-Sopron	0,01	0,09	-0,08
hu032 Vas	-0,37	-0,29	-0,45
hu033 Zala	-0,45	-0,26	-0,64
hu041 Baranya	-0,44	-0,34	-0,55
hu042 Somogy	-0,43	-0,35	-0,50
hu043 Tolna	-0,40	-0,24	-0,56
hu051 Borsod-Abaúj-Zemplén	-0,42	-0,29	-0,54
hu052 Heves	-0,36	-0,30	-0,42
hu053 Nógrád	-0,45	-0,27	-0,63
hu061 Hajdú-Bihar	-0,15	0,04	-0,33
hu062 Jász-Nagykun-Szolnok	-0,37	-0,14	-0,59
hu063 Szabolcs-Szatmár-Bereg	-0,04	0,07	-0,15

hu071 Bács-Kiskun	-0,23	-0,11	-0,34
hu072 Békés	-0,52	-0,34	-0,70
hu073 Csongrád	-0,53	-0,51	-0,56
lt001 Alytaus (Apskritis)	-0,27	-0,27	-0,27
lt002 Kauno (Apskritis)	-0,25	-0,25	-0,25
lt003 Klaipedos (Apskritis)	-0,09	-0,09	-0,09
lt004 Marijampoles (Apskritis)	-0,11	-0,11	-0,11
lt005 Panevezio (Apskritis)	-0,37	-0,37	-0,37
lt006 Siauliu (Apskritis)	-0,23	-0,23	-0,23
lt007 Taurages (Apskritis)	-0,12	-0,12	-0,12
lt008 Telsiu (Apskritis)	-0,08	-0,08	-0,08
lt009 Utenos (Apskritis)	-0,53	-0,53	-0,53
lt00a Vilniaus (Apskritis)	-0,22	-0,22	-0,22
lv001 Riga	-1,29	-1,56	-1,01
lv002 Vidzeme	-0,52	-0,53	-0,51
lv003 Kurzeme	-1,10	-1,34	-0,86
lv004 Zemgale	-0,77	-0,91	-0,63
lv005 Latgale	-0,94	-0,87	-1,02
mt Malta	-0,06	0,90	-1,01
pl011 Jeleniogórsko-walbrzyski	-0,06	0,10	-0,22
pl012 Legnicki	0,22	0,35	0,09
pl013 Wroclawski	0,39	0,47	0,31
pl014 Miasta Wroclaw	-0,11	0,00	-0,22
pl021 Bydgoski	0,23	0,33	0,12
pl022 Torunsko-wloclawski	0,20	0,32	0,07
pl031 Bialskopodlaski	0,10	0,31	-0,12
pl032 Chelmsko-zamojski	-0,02	0,18	-0,22
pl033 Lubelski	0,09	0,21	-0,02
pl041 Gorzowski	0,32	0,43	0,21
pl042 Zielonogórski	0,30	0,42	0,18
pl051 Lódzki	-0,02	0,10	-0,15
pl052 Piotrkowsko-skierniewicki	-0,01	0,11	-0,13
pl053 Miasta Lódz	-0,65	-0,57	-0,72
pl061 Krakowsko-tarnowski	0,35	0,43	0,28
pl062 Nowosadecki	0,76	0,93	0,59
pl063 Miasta Kraków	-0,16	-0,13	-0,19
pl071 Ciechanowsko-plocki	0,21	0,38	0,04
pl072 Ostrolecko-siedlecki	0,23	0,42	0,03
pl073 Warszawski (SRE 2001)	0,41	0,27	0,56
pl074 Radomski	0,15	0,38	-0,07
pl075 Miasta Warszawa	-0,07	-0,22	0,09
pl08 Opolskie	0,01	0,18	-0,15
pl091 Rzeszowsko-tarnobrzeski	0,50	0,69	0,31
pl092 Krosniensko-przemyski	0,30	0,45	0,15
pl0a1 Bialostocko-suwalski	0,19	0,34	0,04
pl0a2 Lomzynski	0,24	0,51	-0,03
pl0b1 Slupski	0,46	0,68	0,25
pl0b2 Gdanski	0,73	0,82	0,64
pl0b3 Gdansk-Gdynia-Sopot	-0,11	-0,13	-0,09
pl0c1 Pólnocnoslaski (SRE 2001)	0,01	-0,04	0,05
pl0c2 Poludniowoslaski (SRE 2001)	0,61	1,13	0,09

pl0c3 Centralny slaski (SRE 2001)	-0,98	-1,07	-0,89
pl0d Swietokrzyskie	0,04	0,18	-0,11
pl0e1 Elblaski	0,40	0,57	0,24
pl0e2 Olsztynski	0,36	0,49	0,23
pl0e3 Elcki	0,36	0,63	0,09
pl0f1 Pilski	0,38	0,60	0,17
pl0f2 Poznanski	0,57	0,69	0,45
pl0f3 Kaliski	0,22	0,35	0,09
pl0f4 Koninski	0,36	0,60	0,11
pl0f5 Miasta Poznan	-0,24	-0,27	-0,21
pl0g1 Szczecinski	0,26	0,40	0,12
pl0g2 Koszalinski	0,41	0,54	0,29
ro011 Bacau	0,31	0,24	0,40
ro012 Botosani	0,12	-0,09	0,38
ro013 Iasi	0,10	0,07	0,12
ro014 Neamt	0,19	0,10	0,30
ro015 Suceava	0,28	0,26	0,32
ro016 Vaslui	0,21	0,00	0,48
ro021 Braila	-0,36	-0,60	-0,06
ro022 Buzau	-0,24	-0,31	-0,15
ro023 Constanta	-0,13	-0,19	-0,07
ro024 Galati	-0,12	-0,22	0,00
ro025 Tulcea	-0,29	-0,22	-0,38
ro026 Vrancea	0,00	-0,05	0,06
ro031 Arges	-0,08	-0,03	-0,15
ro032 Calarasi	-0,33	-0,35	-0,30
ro033 Dâmbovita	-0,26	-0,36	-0,13
ro034 Giurgiu	-0,69	-0,77	-0,58
ro035 Ialomita	0,11	0,13	0,08
ro036 Prahova	-0,25	-0,21	-0,32
ro037 Teleorman	-0,72	-0,87	-0,53
ro041 Dolj	-0,47	-0,52	-0,40
ro042 Gorj	0,28	0,51	0,00
ro043 Mehedinti	-0,07	0,12	-0,31
ro044 Olt	-0,32	-0,42	-0,19
ro045 Vâlcea	0,13	0,23	0,00
ro051 Arad	-0,74	-1,13	-0,26
ro052 Caras-Severin	-1,43	-1,91	-0,83
ro053 Hunedoara	-0,83	-0,79	-0,88
ro054 Timis	-0,75	-0,79	-0,69
ro061 Bihor	-0,66	-0,89	-0,36
ro062 Bistrita-Nasaud	0,00	-0,06	0,08
ro063 Cluj	-0,53	-0,43	-0,66
ro064 Maramures	-0,47	-0,76	-0,09
ro065 Satu Mare	-0,68	-1,03	-0,25
ro066 Salaj	-0,42	-0,45	-0,38
ro071 Alba	-0,65	-0,86	-0,37
ro072 Brasov	-1,21	-1,63	-0,67
ro073 Covasna	-0,33	-0,42	-0,22
ro074 Harghita	-0,63	-0,90	-0,29
ro075 Mures	-0,33	-0,49	-0,12

ro076 Sibiu	-1,43	-2,29	-0,34
ro081 Bucuresti (capital)	-0,79	-0,70	-0,91
ro082 Ilfov	0,33	0,88	-0,36
si001 Pomurska	-0,48	-0,62	-0,35
si002 Podravska	-0,26	-0,43	-0,08
si003 Koroska	0,01	0,00	0,03
si004 Savinjska	-0,05	-0,16	0,06
si005 Zasavska	-0,34	-0,42	-0,26
si006 Spodnjeposavska	-0,45	-0,55	-0,34
si009 Gorenjska	0,14	0,10	0,17
si00a Notranjsko-kraska	0,10	0,40	-0,20
si00b Goriska	-0,07	0,00	-0,15
si00c Obalno-kraska	0,17	0,20	0,14
si00d Jugovzhodna Slovenija	0,15	0,15	0,15
si00e Osrednjeslovenska	0,14	0,08	0,19
sk01 Bratislavský	-0,06	-0,06	-0,06
sk021 Trnavský kraj	0,08	0,08	0,08
sk022 Trencianský kraj	-0,03	-0,03	-0,03
sk023 Nitrianský kraj	-0,05	-0,05	-0,05
sk031 Zilinský kraj	0,19	0,19	0,19
sk032 Banskobystrický kraj	-0,05	-0,05	-0,05
sk041 Presovský kraj	0,39	0,39	0,39
sk042 Kosický kraj	0,24	0,24	0,24

ANNEX A.5 List of abbreviations and glossary

CBR, see Crude Birth Rate

CDR, see Crude Death Rate

Crude Birth Rate. The Crude Birth Rate is the number of births per thousand people in the population in a given year. This measure ignores the age and sex structure of the population.

Crude Death Rate. The Crude Death Rate is the number of deaths per thousand people in the population in a given year. This measure ignores the age and sex structure of the population.

Dependency Ratio. The total population divided by the number of persons in the ages 20-64. A high dependency ratio shows that the share of population ages 20-64 is relatively low.

Depopulation. Depopulation is a population decrease (i) of a certain enduring – and potentially territorially comprehensive – nature, (ii) which is related to long-term fertility decline, and where (iii) the structural demographic implications of which are inadequately counteracted, and sometimes even reinforced, by lasting patterns of net migration. In its turn the inherent demographic dynamics imply (iv) particular age-pyramid effects, which entail (v) a problem potential depending on qualities of the regional context.

Emigration. The process of leaving one country to take up permanent or semi-permanent residence in another

Factor commodity. Factor commodity is equivalent with factors of production. Land, labour and capital are the three basic categories of factors.

Immigration. The process of entering one country from another to take up permanent or semi-permanent residence.

Labour Shortage. The amount of labour by which quantity supplied is less than quantity demanded at the existing price at a short run perspective. A labour shortage will lead to a rise in the wage ratio. The amount of labour by which quantity supplied is less than quantity demanded at the existing price at a long run perspective *does not* indicate a labour shortage, but a lacking ability of structural adjustment, i.e. to substitute the expensive factor commodity labour for the factor commodity capital.

Life expectancy by sex. The average number of years of life expected by a hypothetical cohort of individuals who would be subject during all their lives to the mortality rates of a given period. It is expressed as years.

Long Run. A period long enough for prices to adjust to their equilibrium level.

Migration. Migration is the change of the place of living by crossing national or international borders and with the intention to stay for a minimum time period.

Migratory balances: Migratory balance is a measure for a territorial unit of the difference between arrivals and departures (immigration – emigration). It is an indirect indicator for measuring of how attractive a region is.

Migration flows: Migration flows are exchanges of population between different territories.

Mobility: Mobility is a general term to describe the intensity of migration.

Natural Population Development. The natural population development is defined as the number of births minus the number of deaths for a given area during a given time.

Net Migration. The net effect of immigration and emigration on an area's population in a given time period, expressed as an increase or decrease.

Net migration rate. Net number of migrants, that is, the number of immigrants minus the number of emigrants. It is expressed as thousands.

Net Production Rate. The average number of daughters a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates and the mortality rates of a given period. It is expressed as number of daughters per woman.

Population. De facto population in a country, area or region as of 1 July of the year indicated. Figures are presented in thousands.

Population change. Population increment over a period, that is, the difference between the population at the end of the period and that at the beginning of the period. Refers to five-year periods runing from 1 July to 30 June of the initial and final years. Data are presented in thousands.

Population density. Population by square kilometer.

Population growth rate. Average exponential rate of growth of the population over a given period. It is calculated as ln(Pt/P0)/t where t is the length of the period. It is expressed as a percentage.

Population sex ratio. Number of males per 100 females in the population.

PSR, see Potential Support Ratio

Potential Support Ratio. The potential support ratio is the ratio of the population aged 15-64 to the population aged 65 and older. A low ratio indicates that many people depend on a fewer supporters. A high ratio indicates that there are many to support each and every person over the age of 65.

Rate of natural increase. Crude birth rate minus the crude death rate. Represents the portion of population growth (or decline) determined exclusively by births and deaths.

Replacement Migration. Replacement migration can be defined as the needed immigration to compensate for (i) an ageing society and the rise in the number of pensioners, (ii) the consequences of depopulation, or, (iii) a low number of persons in active age.

Rural population. De facto population living in areas classified as rural (that is, it is the difference between the total population of a country and its urban population). Data refer to 1 July of the year indicated and are presented in thousands.

Short Run. The time before the price level has adjusted to its equilibrium.

Substitution Effect. The substitution effect leads the producer to produce a given output using a technique which economises on the factor commodity that has become relatively more expensive. Thus, a rise in the wage rate of labour leads to a substitution effect towards more capital intensive production methods at each output.

TFR, see Total Fertility Rate

Total Fertility Rate. The total fertility rate TFR is the sum of the age-specific birth rates of women in five-year age groups multiplied by five in this example. Single year or ten-year cohorts or other age groupings can be used. National TFR's are published using five-year Intervals and, therefore, we also use them for comparability. The TFR estimates the number of children a cohort of 1,000 women would bear if they all went through their childbearing years exposed to the age-specific birth rates in effect for a particular time.

Total Population Development. The total population development is defined as the natural population change plus net migration for a given area at a given time.

Urban population. De facto population living in areas classified as urban according to the criteria used by each area or country. Data refer to 1 July of the year indicated and are presented in thousands.

ANNEX A.6 Indication of performance indicators achieved

Number of spatial indicators developed: - in total covering - the EU territory - more than the EU territory	 3 3 0
Number of spatial indicators applied: - in total covering - the EU territory - more than the EU territory	 18 18 0
Number of spatial concepts defined	10
Number of spatial typologies tested	13
Number of EU maps produced	101
Number of ESDP policy options addressed	11

ANNEX A.7 Case Studies

The alpine region – Population decline or growth?

In the 19th century the Alpine region was characterized by depopulation and emigration. Thousands of people left the Alpine region in Austria, Switzerland, Italy and France and settled down in the metropoles of the home country or emigrated to the new world across the ocean. The alpine regions were economically poor, overpopulated and without granting perspective to those who want to stay. This image of an area with decreasing population is still a part of a common opinion but it is not true anymore.

Since the interwar period and at least after the World War II this situation changed significantly. With the rise of the mass tourism – especially the winter tourism - economic progress came into the dislodged valleys and solitary villages of the alpine region. Hotels, restaurants, second homes, streets and cable cars were built and the sons and daughters of the mountain farmers found new jobs in the tourism, the service and construction sector. The mass emigration was stopped more or less completely.

In addition to the economic rise due to the mass tourism another effect gained importance. The enforcement of the automobile as the dominant means of transportation made it possible for urban population to live in Alpine valleys and to work in the next urbanized settlement. In the surroundings of the larger metropoles in the Alpine regions a special form of suburbanisation started. Once again capital and population flew in the Alpin area and strengthened the economic basis of the inhabitants.

This process can be observed in Austria which is covered by two third of its area by mountains belonging to the Alps. Between 1991 and 2001 (census data) the number of inhabitants of Austria increased by 27.000 per year, the growth rate amounted to for the entire decade 3,4 ‰. In the three Alpine federal countries Salzburg, Tyrol and Vorarlberg the growth rate was double as high as the average. This increase can be explained demographically by the higher fertility, the excess of birth over death and a significant immigration from other parts of Austria and from foreign countries. The decisive factor is however the economic development which guarantees the younger population enough resources to stay and to live in their villages and settlements where they were born. The Alpine countries changed their demographic character from depopulation to demographic growth. However this is in some places problematically to the ecological system but not at all for the society.

Table: Population development 1991–2001 in the Austrian “Länder”

	1991	2001	Growth rate p.a. in ‰ ; 1991-2001
Burgenland	270.880	278.600	2,8
Carinthia	547.798	561.126	2,4
Lower Austria	1.473.813	1.549.658	5,0
Upper Austria	1.333.480	1.381.993	3,6
Salzburg	482.365	518.587	7,3
Steiermark	1.184.720	1.186.379	0,1
Tyrol	631.410	675.070	6,7
Vorarlberg	331.472	351.570	5,9
Vienna	1.539.848	1.562.482	1,5
Österreich	**7.795.786**	**8.065.465**	**3,4**

Source: Census of the Statistic Austria; own calculation

Demographic crisis of old industrial regions - the case of old industrial areas of Walloonia

The migratory logics of strongly urbanized old industrial regions are different from those of the metropolitan regions. Four major characteristics distinguish them :

- structurally negative or only slightly positive migratory balances ;
- weak attractiveness compared to other regions of the country ;
- a strong tendency towards emigration of the youth ;
- a weak overall mobility compared to most of the other regions. In other words, the generally negative migratory balances are a result of the very weak entry levels and stronger exit levels.

In Belgium however, the negative balances of old industrial areas with the rest of the country have been compensated by positive balances with foreigner countries. The causes for this kind of a situation are well known. The main cause is of economic origin: these regions undergo a structural crisis linked to their strong specialization in the industrial sector which is in crisis, as in the case of the coal sector since the 50’s or the metallurgy sector in the 70’s, and is also due to socio-economic structures which makes their redevelopment difficult. Most of these regions do not possess a major urban center, a prestigious university or other types of services that could attract the young. The more favorable migratory balances of the province Liège could be linked to the presence of a major university in the francophone part of Belgium. Moreover, these regions also suffer from a very deteriorated environment, a negative image and a strong entrepreneurial deficit.

The two provinces of old industrialization in Belgium show thus a different situation within the Belgian national territory framework: we have already mentioned that the province of Liège has an urban center and the most important high-level educational institution in the Walloon region. The province of Hainaut, where the economic problems were more intense, benefits for its part on the proximity of Brussels, towards where its population commutes rather than migrates.

Figure 1 Migratory balances by age groups, for the two main old industrial areas of Belgium, 1996-98

The migratory balances by age classes (see figure 1) shed light on the difficulties of these regions. The graph clearly shows the difference of behaviour between the two industrial basins of Walloonia. The “Hainaut” has negative balances for nearly all age classes. The incapability to keep the 20 to 29 years old corresponds to the weakness of opportunities both in terms of studies and employment for young people.On the other hand , the “Liège” basin is very attractive for the 20 to 24 uears old because the towns offers a wide range of possibilities for the students, including one of the main university of the french speaking part of Belgium. But the balances for the 25 to 29 are quite negative (-5 for thousand) and, to some extend, of all active age classes. It is the consequence of a massive structural unemployment for young coming from university. This profile according to age of the migrations is indicative of a migratory deficit being mostly of an economic nature: the youth, often graduated, in search of employment according to their level of qualifications are often constrained to emigrate to other regions.

The renewal of rural isolated areas of North Western Europe - The case of Belgian Ardenne

The repopulation of rural isolated areas of North Western can be seen as a consequence of a general process of counterurbanization. In developped countries, the dense urban areas are becoming less and less attractive and there is a general sprawl from urban centers to suburbs and even more rural isolated areas.

This process has a consequence of repopulating the interstitial rural areas within the very strongly urbanized center-European territory. Figure 1 illustrates this situation in the case of rural districts of sparse population in the south of Wallonia : whereas the balances were negative in 1970, they become increasingly more positive thereafter, up to the point where these districts show the most positive balances for Wallonia in 1999.

This amelioration of migratory balances is the result of at the same time a less negative balance for the youth and the arrival of families with children or young pensioners. Figure 1 shows a profile per age in the rural areas of the Ardenne, in Wallonia. With the exception of the 20-24 age group, balances are henceforth positive for all age groups, with peaks for young children and the 30-34 age class, the balances are from now on positive for all ages, with peaks for young children and the 30-34 age groups and thus consists of young families with children, and for the 55-59 years' olds, of young pensioners, which sometimes move into their one-time secondary residences on a permanent basis, all the while possibly making regular returns to the city where their children are residing. This type of areas remains repulsive to the young at the age of higher studies or in the initial phase of family emancipations, but becomes less massive than before.

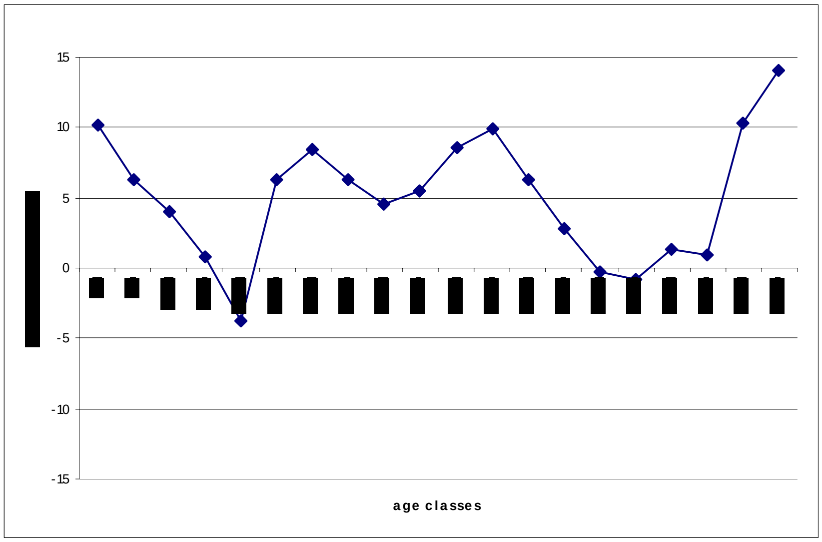
Finding general explanations to this demographic renewal of rural areas for the central European regions is not easy. It has been established that this demographic dynamism is part of a general renewal of these regions: the economic growth is at the same time a cause and a consequence of this demographic renewal. The economic dynamism of these zones fall within the global economic evolution of the developed world. The transition towards a flexible economy has twice valorized these isolated rural zones: the strong proportion of self-employed forms a reservoir of small enterprises; factors of quality of the environment, the cost of soil, the higher flexibility of the labor force are equally very strong points to the investors. We should however take into account the increase in mobility in relationship with distances covered – not in actual distances but in travel time -: a large number of this new rural population still maintains employment in the cities. The propagation of cars and the importance of family budgets that have been allocated to them accompany this opening up (Thomsin, 2000).

In terms of development of the territory, the local development has become a major axis: the districts increasingly pay more attention to drawing the attention to the benefits of their communes, and to maintain a young population there in particular by housing policies (cheap housing projects,…).

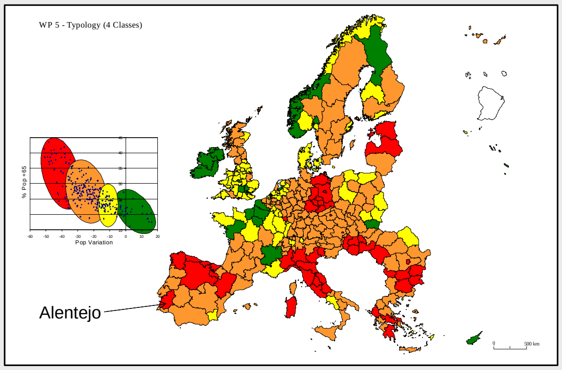
Table 1 Evolution of the internal migratory balance of rural districts in the south of Belgium.

	Migratory balance for thousand
1970	-1,63
1980	2,17
1989	4,05
1999	5,56

Fig 1 Migratory balance per age group in the Belgian Ardennes, 1994-96



The depopulation of peripheral rural areas: the case of the Alentejo



Key figures

	Alentejo	Mainland Portugal
Resident population (inhabit.)		
1960	760,916	8,292,975
2001	530,866	9,869,343
Variation 1960-2001 (%)	-30.2	19.0
Resident population (%)		
Age group <15, 1960	25.6	29.2
2001	13.6	16.0
Age group >64, 1960	7.9	8.0
2001	23.4	16.4
Population density in 2001 (inhab./km^2)	24.7	111.8
Ageing rate (%)		
1991	106.6	69.5
2001	167.9	107.8
Foreigners as a % of the resident population		
1960	0.2	0.3
2001	1.3	2.2

	Alentejo	Mainland Portugal
Variation of foreign residents (by origin), 1991-2001 (%)		
Europe	240.0	93.1
Africa	319.0	181.9
Others	97.2	57.4
Total	193.0	112.7
Economically active population (by sector), 2001		
Primary	12.0	5.0
Secondary	27.9	35.1
Tertiary	60.1	59.9
Work contracts of non-EU foreigners holding permanence permits (by activity sector), 2001 (%)		
Agriculture	21.8	4.2
Construction	43.3	49.8
Commerce	23.2	10.0
Restaurant & Hotels	9.9	19.0
Industrial cleaning	0.2	10.3

With an area of 27,029 km^2 – nearly a third of the country – the Alentejo has always exhibited **low levels of population density**. In 2001, according to INE's 2001 Population Census, the figure was 19.8 inhabit./km^2, compared to 110.8 inhabit./km^2 in mainland Portugal as a whole.

The **increasing ageing rate** (167.9% in 2001) and the **negative population variation** (-30.2% between 1960 and 2001) are also worthy of mention. Another demographic component that has brought about the depopulation, and especially the ageing, of the Alentejo region is the dynamics of the age structure. The youths and the elderly have virtually swapped positions over the past forty years, which is indicative of worrying trends as far as the dependency rates, the capacity for inter-generational substitution and the reproduction of the labour force are concerned.

These trends are characteristic of regions experiencing **ageing and depopulation**, which normally **lead to problems of labour shortage.** It is important to understand the role played by immigration within this sort of demographic context.

Immigration has on several occasions (Coleman, 1992; Feld, 2000, cit. ONU, 2000) been put forth as a possible solution to the problems of the rural areas affected by population decrease, a factor that directly affects the availability of labour.

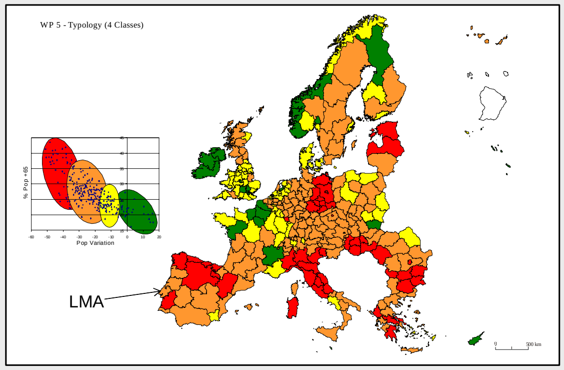
The emergence of a series of **consecutive migration waves** (first, the post-colonial cycle; then, the Eastern European wave) has led to the gradual replacement of the traditional migration strategies based on social and family networks and relationships (as in the case of the migrants from the former Portuguese colonies in Africa) by an organised system of illegal human trafficking networks operating from Eastern Europe (Fonseca, 2004).

This was a result of two factors that are characteristic of the Alentejo economy: on the one hand, the **need to fill the gaps** in the labour market; on the other, **the need to keep costs down**. Still, bearing in mind that **these immigrants are characterised by high average levels of schooling and skills**, they may well provide an opportunity for the introduction of new factors of economic development and for the demographic and economic rejuvenation of the receiving areas.

For the time being, however, they have remained largely confined to low-skilled jobs. In the Alentejo, an aged and pronouncedly rural region, **immigrants are gradually replacing the autochthonous labour force** in a variety of sectors, from **construction** and **public works** to **agriculture, household cleaning** and the **hotel and restaurant** sector.

Although replacement migration can in the future be considered a possible solution for these worrying demographic and economic trends, **it is unlikely that regions like the Alentejo will be able to reverse the current downward tendency of their population**. At best, a certain degree of stability can be hoped for, because in an aged population, the tendency is for the number of deaths to increase - moreover, the population inflows are not large enough to tilt the scales in the opposite direction – and because from a productivity and economic competitiveness standpoint, a new demographic *boom* (as the one that took place in the 1950's) would in fact probably have a detrimental impact.

Immigrants and the labour market in the Lisbon Metropolitan Area



Key figures

	LMA	Mainland Portugal
Resident population (inhabit.)		
1960	1,524,200	8,292,975
2001	2,682,687	9,869,343
Variation 1960-2001 (%)	76.0	19.0
Resident population (%)		
Age group <15, 1960	21.3	29.2
2001	14.9	16.0
Age group >64, 1960	7.9	8.0
2001	15.4	16.4
Population density in 2001 (inhab./km^2)	674.9	111.8
Ageing rate (%)		
1991	68.3	69.5
2001	103.7	107.8
Foreigners as a % of the resident population		
1960	1.0	0.3
2001	4.7	2.2

	LMA	Mainland Portugal
Variation of foreign residents (by origin), 1991-2001 (%)		
Europe	89.6	93.1
Africa	202.1	181.9
Others	202.7	57.4
Total	176.1	112.7
Economically active population (by sector), 2001		
Primary	1.2	5.0
Secondary	24.1	35.1
Tertiary	74.7	59.9
Work contracts of non-EU foreigners holding permanence permits (by activity sector), 2001 (%)	NUTII (LTV)	
Agriculture	3.0	4.2
Construction	46.1	49.8
Commerce	11.6	10.0
Restaurant & Hotels	19.1	19.0
Industrial cleaning	17.2	10.3

According to the 2001 Population Census, the Lisbon Metropolitan Area (LMA) has a **resident population** of 2,682,687 that **accounts for 25.9% of the country**, living in 5.2% (4,643 km^2) of the national territory. On the other hand, this area is home to around 28.1% of the Portuguese workforce. (INE, 2001)

This sub-region soon achieved a high level of demographic growth and physical, economic and social development that, along with **the international economic and politics connections, confer it a supra-national role.** (Gaspar, 1993)

42.8% of the foreign nationals residing in Portugal lived in the LMA in 1991, and the figure had increased to **55.5% by 2001**. It was from the 1970s onwards that this upward trend became apparent. In 2001, around 80% of the immigrants of African origin lived in the LMA, and provided an **important contribution to the work force**, particularly in the construction and household/industrial cleaning sectors.

There is significant concentration of the Asians in the LMA, many of whom own their own businesses. Another group that is heavily concentrated in the LMA is the Europeans, who experienced an 89.6% increase between 1991 and 2001. There has also been a **recent inflow of Eastern Europeans**. According to Fonseca et al. (2002), “after the economic collapse of countries such as Russia, the Ukraine and Romania, many skilled and semi-skilled workers in these countries found themselves either jobless or earning a much lower salary than they previously used to.

This **concentration of the foreign nationals is a reflection of the immigrants’ tendency to regroup** in the host country, to the higher level of international integration in the metropolitan economy and to the weight of the retail and service sectors (Baganha et al., 1998), which, as we have seen, accounts for the greatest share of the economically active population (74.7% in 2001).

Today, the workforce in the LMA comprehends workers with a variety of skills. **At the upper end of the skills spectrum, we find the professionals and managers** that move within the internal labour markets of transnational corporations to escort expanding international trade or foreign direct investment.

On the other hand, we find workers moving to fill unskilled positions in the segments of the labour market that have been vacated by the native workers, who move on to better jobs.

This situation reflects the polarisation of the socioeconomic structure of the foreign nationals living in the LMA: **highly skilled professionals from Western Europe and North America** (increase in the inflow of skilled professionals, cadres, technicians and scientists, mostly temporary stays) coexist with **unskilled workers to work in construction from African countries** (aside from the construction sector, illegal foreigners are also commonly found working in retail, restaurants and industrial and household cleaning, particularly women).

Therefore, the process of labour market restructuring in the LMA has led to an increase in the demand for two segments of the labour market: highly skilled professionals to perform tasks in the activity sectors of the new economy and unskilled workers to attend to the needs of the preceding, particularly in the service sector.

The Nordic geographical periphery as depopulating territory

Geographical level and depopulation processes

With the example study we change the geographical level of analysis from NUTS 2 and 3 to LAU levels ('Local Administrative Units'). This is more than a mere change of territorial level to those smaller geographical units outside NUTS regulation, as the meaning of each demographic process for depopulation differs according to geographical level. The relative importance of migration increases the smaller the geographical territory. Today, as fertility in most regions falls below reproduction level and the difference in fertility between regions decreases in many countries, the relative importance of migration for the regional distribution of population has increased. As there is no reproduction surplus to distribute, the migration balance decides which regions will get smaller from one generation of adults to the next. The more detailed the geographical level, the more important is migration for total population change and for changes in the composition of the population. With increasing importance for migration, the importance of life stage composition of the population (see below) is also increased, migrational behaviour being very different according to stages of life, and therefore highly influencing the age structure and population growth/absolute depopulation.

On generations and life stages

The balance between births and deaths on a regional scale is in some ways more complex than the migration balance, as it involves to a greater extent decisions covering several generations. As there are generally a number of generations in between ages with high mortality and those born in a specific year, the relative number of births compared with deaths shows only one aspect of the proportion of very old to the new cohorts. This can be interpreted as an aspect of reproduction where the reproduction of the parental generation is not the issue, but where the excess of births over deaths is an indicator of multigenerational change. Thus we may be in a situation where the parental generation is reproduced, but where deaths still outnumber births because the parental generation is smaller than the oldest generation. As we will see below, the parental generation can differ highly between regions in its relative size, being composed of age groups that to a large extent have finished their inter municipal migration. In aged territories, only positive or even strongly positive, net migration can balance the net population change, given today's fertility levels.

A division of the age structure into life stages are central to understanding depopulation at the regional and sub regional level as the demographic development and its regional implications are influenced by decisions made in the different life stages, and by the development of decisions at the same life stage, by succeeding cohorts and generations. A division of ages into seven-year life stages suggested by Kjetil Sørlie (0-6, 7-13, 14-20, 21-27….) were used by Juvkam and Sørlie (2000) and Foss and Juvkam (2005). For many of today's debates on ageing, the pensioner group will at first glance seem to be the most relevant, as the debate to a large extent focuses on the size of the workforce compared with the size of the retired population. However, as ageing results from changes in different life stages, the nature of the other life stages' influence on ageing has to be defined. When the focus is on regional demography, some of the life stages play different roles than those at the national level. This difference is primarily due to migration being more common at certain life stages.

The seven-year stages from 42 to 62 primarily show what is in store and are important as part of the labour force. The ages from 56 show the new pensioners of the next decade. The representation of ages from 21 to 34 (stages of (i) advanced education/work experience and (ii) establishing family, children, work) indicate possibilities for development in age biases, as the majority of children will be born to people in these age spans. From 35 to 41 there is possible compensation by family migration to some periphery types and some catching up on fertility. These stages will also be those in which migration to other municipalities will primarily be concentrated, even though the bias between in-migration and out-migration may occasionally be greater at other life stages.

In other words, the relative division into life stages tells about different kinds of ageing. When looking into the regional depopulation/ageing processes, we see that such processes are primarily resulting from net losses due to migration in the life stages from 21 to 34 years of age, reducing the number of people of reproductive age and reducing the number of children. This increases the relative representation of the elderly even if their numbers do not increase – in other word a case of depopulation both in the sense of ageing and in the sense of reduced population levels. A grouping of ages into relevant life stages thus makes the pattern of ageing processes clearer.

Population density as a defining feature for characterizing the Nordic geographical periphery

The Nordic periphery constitutes a geographical rarity within Europe in that the population densities are especially low, the centres generally have few inhabitants, and the distance between such settlements are longer than in central parts of the Nordic territories or in continental Europe. The periphery constitutes a large share of most Nordic countries, giving a very low population density even at the national level (with the exception of Denmark, the Nordic countries have a population density of up to 22 inhabitants per square kilometre), but even in the most centrally located NUTS 3 regions, the population densities are generally low by continental standards. Regional policy has aimed at supporting the periphery within these sparsely populated countries. The Nordic periphery was also acknowledged by the EU in the membership discussions with Finland, Sweden and Norway in preparation for the 1995 EU enlargement, and a separate structure fund being implemented for geographical areas with low population density and peripheral location.

As a consequence of settlements being quite small, the local labour markets are usually quite limited in size and structure, with distances between centres establishing regional labour markets centred on a single urban settlement, and the labour market being local rather than regional in a functional sense. In accordance with this, the geographical territories close to the centres are often more similar in character to hinterlands than to suburbs, both as commuting territories and in demographical terms. As a consequence of the population distribution, there is a stronger need for a positive development in local labour markets in the periphery than in the rest of the Nordic territory to facilitate the same demographic development in the reproductive life stages. If it is not possible to find a certain kind of job locally, migration or a life as unemployed or marginally employed are the main possibilities, as the local labour market more or less equals the regional one.

There are also some specific demographic conditions that emerge from territories being sparsely populated. These can be related to migration, the single most important demographic process for redistribution of population within the Nordic nations. For the peripheral regions, there is a redistribution of population where “sparsely populated” means a further thinning out of population, and a reduction of regional in migration for the centres. You will not find the common process in more central locations where one migrates from the centres to obtain better conditions for upbringing of children and better housing at a later life stage.

The problem of the peripheries can be seen as not so much a problem of out migration to more centrally located areas as a problem of very little migration in the other direction. In other words, the in migration to a peripheral municipality is much more local/regional in character than the out migration. This implies that if the share of people migrating locally is kept stable, the actual number doing this will drop. The local centres of the periphery will therefore have increasing difficulties in the future with maintaining a positive population development given today's TFR level because both a level below and somewhat above reproduction level will result in a reduction in the size of new generations of potential in migrants from municipalities in the region, as future potentials have already been reduced by migration to the centre and places outside the region in previous generations.

A delimitation of the Nordic peripheries

Foss and Juvkam (2005) have made a delimitation of the Nordic periphery and a typology of peripheral areas within this periphery based on the Nordic municipal divisions. The criteria for the delimitation are:

- Counties/NUTS 3 regions with less than 10 inhabitants per square kilometre are included
- Municipalities with less than 2,5 inhabitants per square kilometre are included
- Municipalities located in archipelagos are included
- Municipalities located close to a city of national importance (more than 100 000 inhabitants in the urban settlement) are excluded

To be relevant for the study of the spatial aspects of age segregation the typologisation within the periphery has been related to the urban-rural dimension. The typology distinguishes between municipalities that are centres and municipalities that are not. It is distinguished between centres with ('centres') and without ('independent centres') a set of surrounding municipalities with labour market ties to the centre. For the municipalities that are not centre municipalities, it is distinguished between those that are part of a labour market region with a centre ('hinterland municipality') and those outside such regions ('independent municipality').

According to the delimitation, the Nordic periphery comprises almost 2.5 million inhabitants corresponding to just above ten percent of the total Nordic population in 2003. Denmark has no periphery by these criteria, while the entire territories and populations of the Faroe Islands, Greenland and Åland are classified as periphery. Almost one third of the Icelandic population live in the periphery and from almost one tenth to 16 percent of the populations of Finland, Sweden and Norway. However, the peripheral regions cover a considerable part of each country's – and the total Nordic – territory. At the same time: a considerably larger part of the Nordic population would be regarded as living in peripheral locations by allowing minor changes in the rather strict criteria for delimitation.

After a century of centralization of Nordic population distribution, and some decades after the TFR even in most peripheral regions fell below reproduction level, how has the age structure of the peripheries developed? How strong is the depopulation?

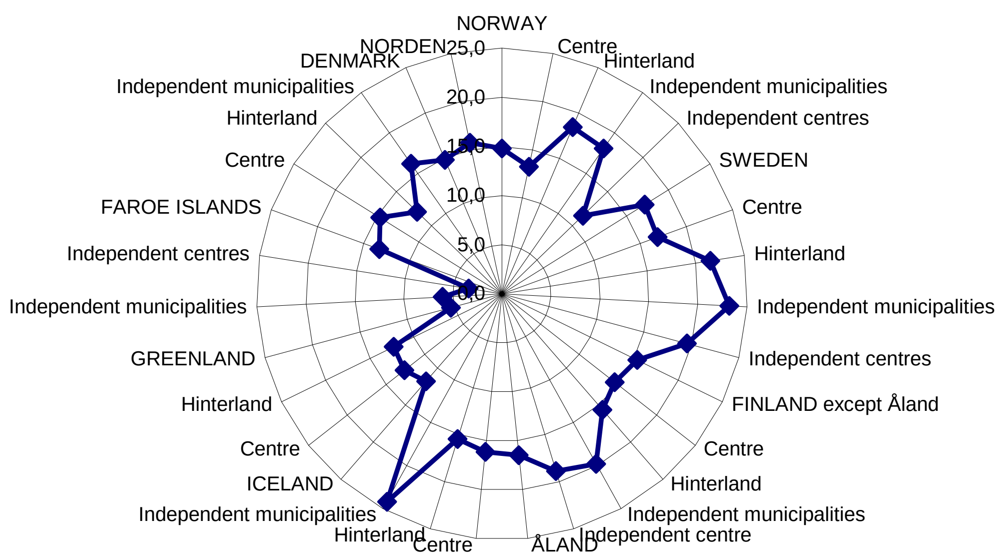
By subdividing the different national peripheries, the picture of demographic development changes from the one for territories covered by the NUTS 3 level in one marked way, as discussed above; the effects of migration become much stronger. The main demographic elements of migration for depopulation is on the one hand the changes in population size, where some local communities can actually stop being places of permanent settlement, or depopulation even in its most narrowly defined meaning. On the other hand we have the changes of age structure caused by the fact that migration is primarily a question of territorial redistribution of population in reproductive life stages. This means that the ability of a certain geographical area to increase its population in these life stages is a guarantee against an ageing of its population stronger than the national one. If one loses population in these life stages, it means a relative ageing that is stronger than the national one as it tilts the age balance towards older cohorts. Territories with high share of elderly are generally underrepresented in shares being children; those with low shares of elderly are overrepresented in children, meaning that an index like the dependency ratio will in many cases not really catch the strong difference between a region growing and one losing population due to the migration pattern.

Depopulation of the peripheries

In all the Nordic countries with peripheral as well as non-peripheral areas, the peripheral population declined during the last ten years (1993-2003). In Iceland and Sweden the peripheral population in 2003 were between four and five percent below the population ten years earlier. In Norway the reduction was just above one percent. However, the population development varied considerably among the different types of periphery within each country. The general pattern was a marked redistribution from the peripheral to the more central areas within the peripheries – the centres in average growing within the range of ca. 5-10 percent among the countries, while the hinterlands and independent municipalities in some countries declined by 6-10 percent. In the Swedish periphery even the centres in average experienced stagnation or a slight decline, while the population of the rest of the Swedish periphery declined by 7-10 percent. The population redistribution within the periphery was most pronounced in Iceland.

Figure 1 shows a crude picture of the present "ageing profile" of the Nordic territory according to the centre-periphery dimension. The figure should be read "with the sun" – the Norwegian peripheral areas following to the right of the national average etc. The figure is simply showing the percentage of "elderly" persons (65+) of the total population in one year (2003). The Nordic average is 15,7 percent, Sweden and Åland have the highest average share (17,2 and 16,5) while Greenland and Iceland have the lowest (5,4 and 11,8). In the world in average this figure is estimated to be around 7 percent and the European average is slightly above 15 percent.

Figure 1. Share of the population 2003 aged 65 years or more. Country averages and types of periphery. Percent

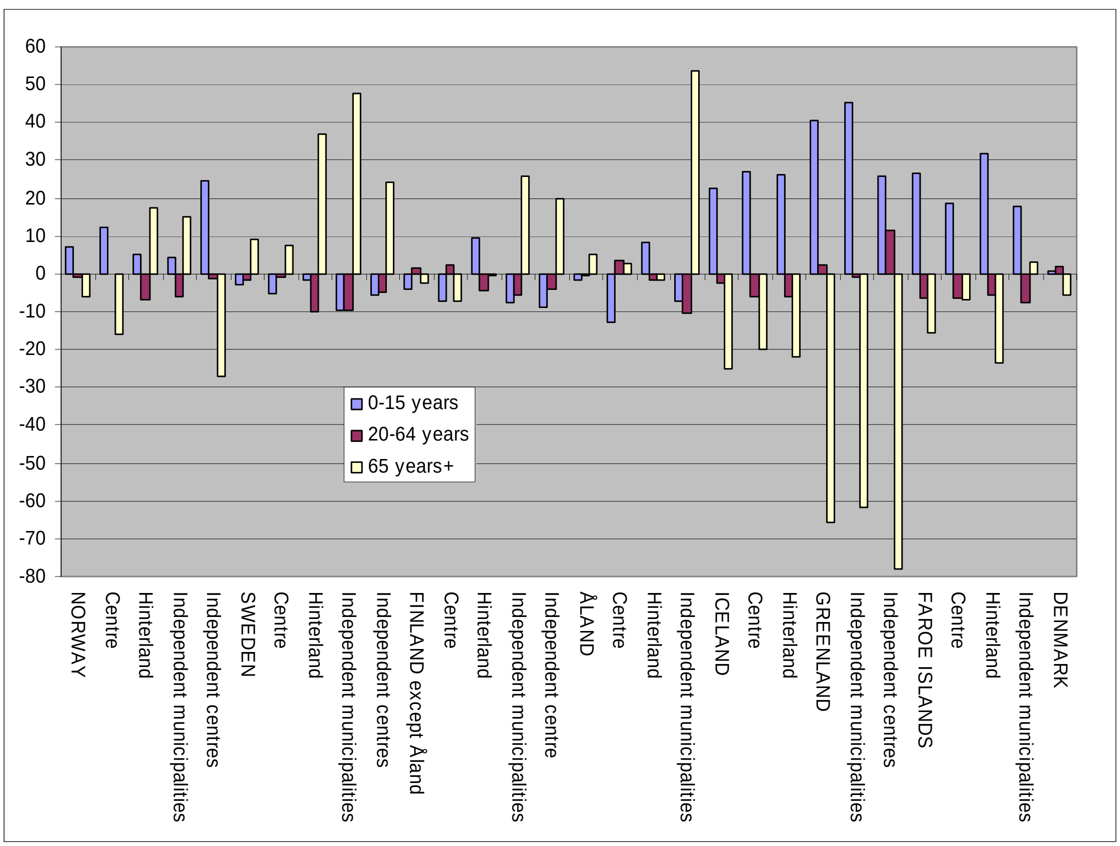


The highest shares of “elderly” persons are shown to be found in certain types of periphery in Åland, Sweden and Finland and to some degree in the Norwegian “peripheries of the periphery”. In Greenland and Iceland even the peripheries have relatively low shares of persons 65 years and older. The figure indicates that the different Nordic peripheries are wide apart in demographic situations and regarding the questions related to age structure and ageing of the population.

Figure 2 summarizes the status of the Nordic countries and of the different types of peripheries within the Nordic countries, with regard to the relative representation of three strategic age groups in the population, compared to the Nordic average representation. The bars indicate percent over- and under-representation of the respective age group with a Nordic reference.

Significant deviations from the average Nordic age structure of 2003 are revealed. The most striking is the relative “youthfulness” of the Nordic island communities, with the exception of Åland, implying considerable over-representation of children (0-15) and a marked under-representation of elderly persons (65+) in all sub-types of periphery. The middle age group shows only minor differences from the Nordic average in the particular periphery types, although the difference usually seem to be to the disfavour of the peripheries.

Figure 2 Three age groups’ share of the total population 2004. National averages and types of national periphery. Relative representation compared to the Nordic average representation. Per cent.



The mainland country peripheries display some variation – with a marked centre-periphery pattern within the peripheries. Especially the Swedish hinterland and independent municipalities have a relatively much more aged population structure than the Nordic average. Even the independent centre and centre municipalities of the Swedish periphery are more "aged" than the Nordic average, but the overrepresentation is less than in the rest of the Swedish periphery. In the Norwegian and Finish periphery centres the group of elderly persons is slightly under-represented.

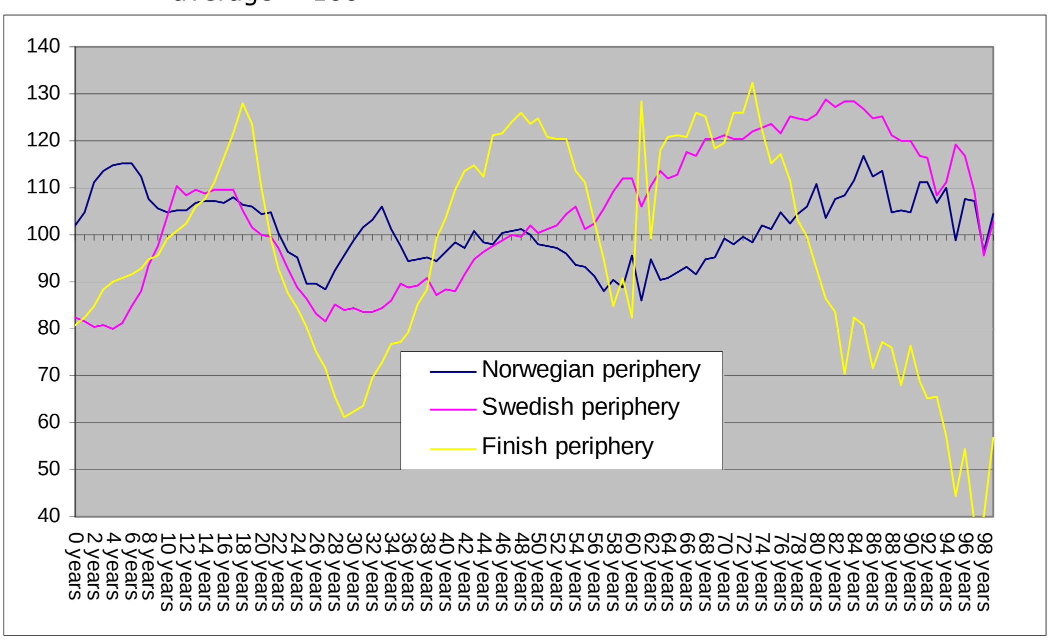
In a general Nordic perspective the most striking impression is *the significant variation in demographic situations* – even within the peripheries, and between similar types of peripheries in different Nordic countries. Applying a more detailed age variable will reveal even more pronounced differences – for instance between Finland and the other mainland Nordic peripheries with regard to the relative representation of particular segments of elderly people.

The age structures of the different types of Nordic periphery

Indexes of relative representation are employed to display over- and under-representation of different ages in the populations of different territorial types, in relation to the Nordic average representation of the particular type ("age-biases").

When comparing the Nordic countries within ESPON territory, the Swedish periphery is the only one with an over-representation for every age within the span of 50-90 years of age. Pensioner ages up to 90 are 20-30 per cent more common than at the Nordic level. This has probably to do with the very strong centralization in Sweden after the municipal reform 1962-1974 together with the fact that these age groups are overrepresented at the national level as well. The relatively low representation of ages from 20-50 years old shows a continuation of centralisation of the Swedish population, low representations for these age groups being quite typical to the peripheries. The over-representation of young people between 10 and 20 is the only above average representation among the youth, being a result of former relatively high fertility levels.

Figure 3 THE NORDIC MAINLAND PERIPHERIES: Age structure 2003. Index, Nordic average = 100

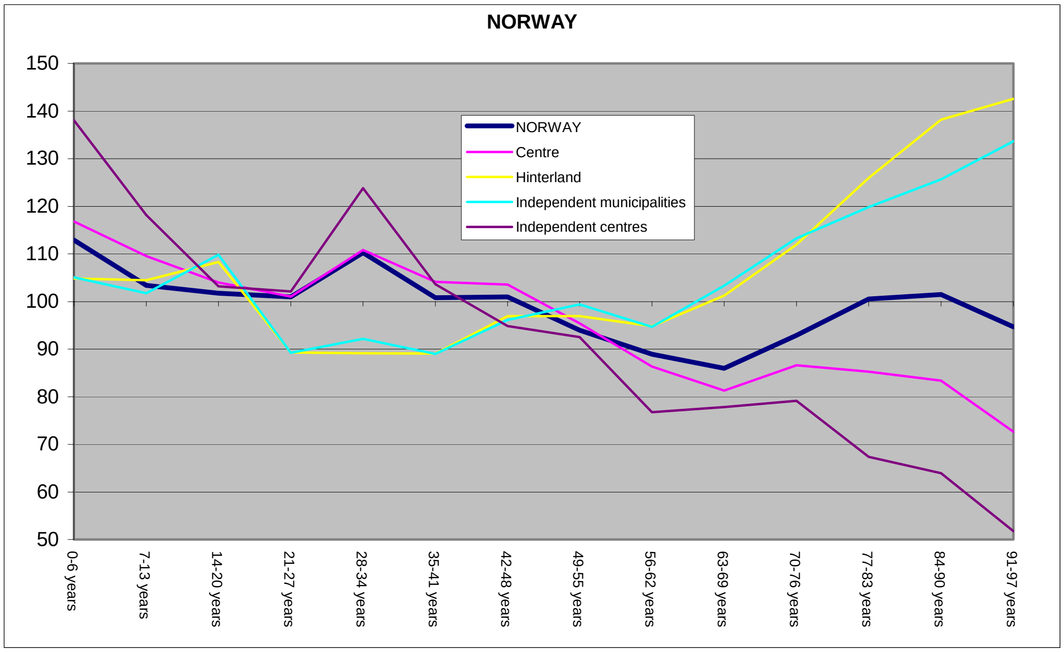


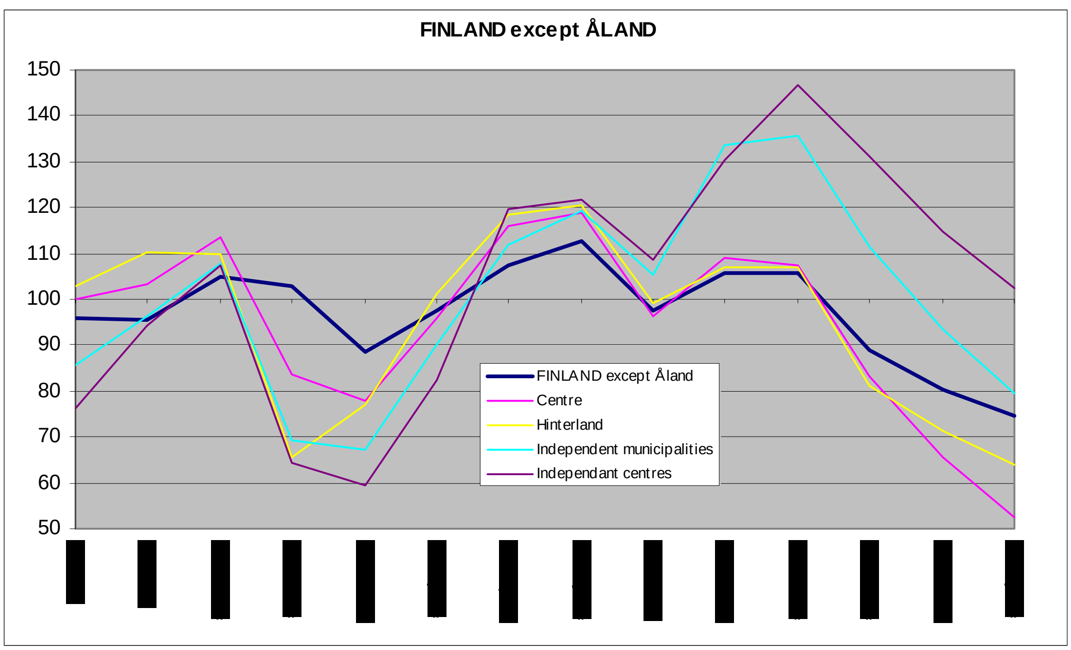
The Norwegian periphery shows far less age bias towards the elderly. The over-representation is restricted to ages from the mid 70s, and is generally below 15 per cent. For people between 50 and these higher ages on the other hand, the cohorts are underrepresented, meaning that the near future will not see any growing representation of pensioners. The Finish periphery shows basically a pattern similar to Finland in average (see Foss and Juvkam 2005), but with far more pronounced effects. This means that even before we look at the low representations for groups above 75 years of age, the relative representations vary between 60 and 130. The lowest representations are for cohorts in reproductive ages, the highest for some cohorts in their teens and in the age span from mid 40s to early 70s, excluding most cohorts born during World War 2. For most ages above 80 the representation is lower than 80 percent of the Nordic average, falling to between 70 and 40 for cohorts in their 90s.

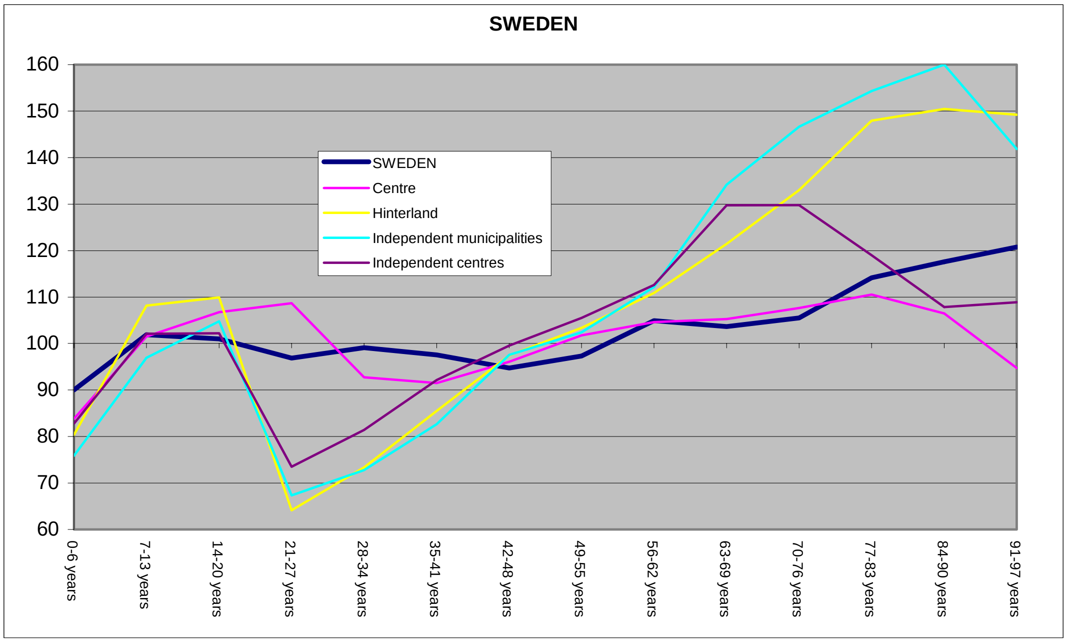
Figures 4-6 illustrates how the picture becomes even more complex when we differentiate between the separate types of periphery within the Nordic national peripheries. In these figures the index is calculated for characteristic age-groups corresponding to different phases of the life-span. With the delimitation we have used for the periphery, there are very marked differences in age structure for the different territories within each national periphery.

The type of municipalities that can be assessed as the most peripheral within the periphery is the independent municipalities. Where we have defined this type of municipality it is usually the one where the representation of elderly is highest today, but in Norway the hinterland is somewhat more aged than the independent municipalities. At the same time, this periphery type is one of the two with lowest representations for persons in reproductive ages (the other usually being the hinterland). The important lesson for depopulation is how ageing geographical peripheries are associated with underrepresentation in reproductive life stages, resulting from migrational losses, which increases the relative representation of older cohorts in the population. This loss is especially strong in Finland. In other words, the age structure of the Nordic peripheries seems to be influenced by migratory losses to more central areas of persons in the most reproductive ages, with in most cases no compensating stream of migrant people in the early family phases. The ageing impact in the periphery is reinforced by the levelling out of territorial fertility levels in the wake of the recent fertility decline. There is even an emerging tendency for some periphery types to attract (have positive net migration from) the cohorts born during the 1930th and 1940th, a tendency that may enhance the ageing potential of the periphery.

Figures 4-6. THREE NORDIC COUNTRIES: Age structure 2003. National averages and types of periphery. Index, Nordic average = 100







Around 2015 the bulk of the "baby-boom" generation is in its last economically active decade, or already in transition to retirement, which will give a substantial growth in the number and share of persons in this stage of the life-span in all municipalities – with noticeable effects of possible migratory redistribution of the respective relatively large cohorts. At the same time, the peripheries will have a weaker development in younger age groups than the respective nations, giving the peripheries stronger ageing tendencies than the more central parts of each Nordic country.

With shrinking size of new young cohorts, the future consequences of migration in reproductive life stages can become stronger than what we see today in the peripheries. When smaller cohorts grow up in the Nordic peripheries, the possibilities of keeping a larger share of them locally might increase, but at the same time; if one regards the negative net migration of the peripheries as a problem, one should rather look at the low migration from the central parts of each country to the peripheries than at the migration from the peripheries to the centres. This has partly to do with the fact that there is a stronger potential for growth in a peripheral municipality if it is able to keep a higher share of its in migrants from moving to yet another municipality than from keeping a larger share of its original population in different cohorts from migrating to more central regions.

It has also to do with a situation where the weakening of the relative size of cohorts in the younger life stages outside the centres of the peripheries reduces the potential number of migrants from the hinterlands and independent municipalities related to the centres of the peripheries. This means that in-migration from larger areas than previously is needed in order that the centre may have a continuous balanced development, with a more national pattern of in-migration (not one relying on regional in-migration), like the one for out-migration, being necessary. Demographic "success" for a peripheral centre can in other words in the long run only occur when a peripheral centre has a positive migration balance with more central regions. "Success" limited to migration from a centre's own hinterland is not possible, as the population basis is too weak. Without stronger in-migration from other regions to the peripheries, centralisation will be enhanced.

Two examples from the Nordic periphery at NUTS 5 level

Within a larger area of the Nordic countries which in a Nordic as well as European context is characterized by a rather top-heavy population pyramid, two smaller Nordic areas may serve as examples of "depopulating" and "ageing" communities. The two contiguous areas within the Nordic periphery (cf. above) are defined by five Swedish and four Norwegian municipalities (number of inhabitants in 2003 in parenthesis):

A. The municipalities of Bräcke (7406), Ragunda (6079), Örnsköldsvik (55047), Sollefteå (21384) and Ånge (10948) in Vesternorrlands (244319) and Jämtlands (127947) counties (NUTS 3)) in *Sweden*.
B. The municipalities of Engerdal (1512), Stor-Elvdal (2888), Rendalen (2193) and Ringebu (4644) in Hedmark (188281) and Oppland (183582) counties (NUTS 3) in *Norway*.

The two *Norwegian* counties are the only two among 19 Norwegian counties without coastline. They have had a long period with negative migration balance, low fertility level and a relatively aged population by Norwegian standards. Rendalen and Engerdal are the only *municipalities* in East Norway with less than one inhabitant per square kilometre. Stor-Elvdal also belongs to the most thinly populated municipalities in East Norway with 1.4 inhabitants per square kilometre. Ringebu is more typical for the peripheries in East Norway with 3.9 inhabitants per square kilometre.

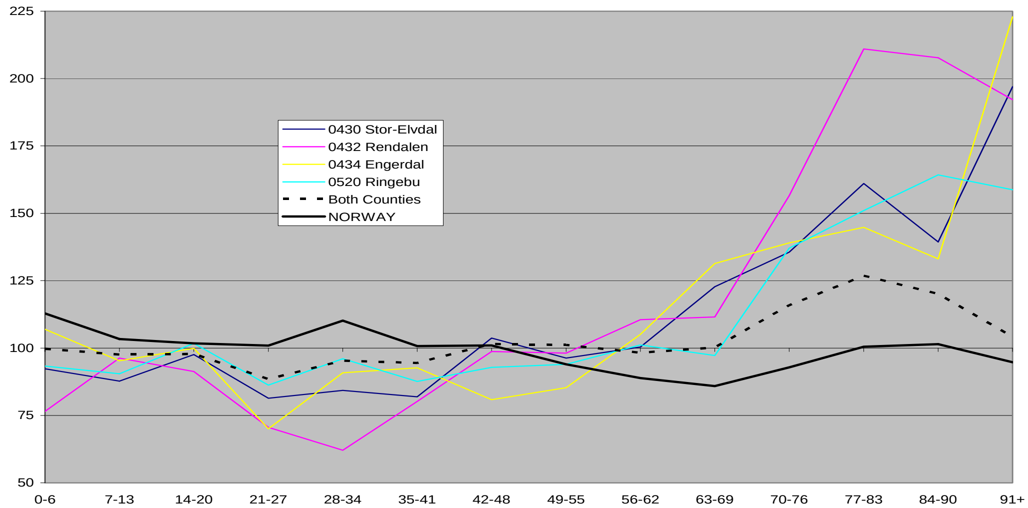
With the exception of Örnsköldsvik the *Swedish* municipalities have no coastline. Bräcke and Ragunda both border on the municipality of the main city of their own county, Östersund, and the main city of Västernorrland, Sundsvall. Örnsköldsvik has the highest population density with 9 inhabitants per square kilometre. Ånge and Sollefteå have 4 inhabitants per square kilometre while the population density of Ragunda and Bräcke is 2 inhabitants per square kilometre.

These Nordic municipalities, and even the counties they belong to in average, stand out as examples of *realized adaptation* to what is considered rather dramatic *long-term prospects* of change in demographic structure in most of the world, usually with a share of elderly population (65+) above 22 percent. Typical characteristics compared to the Nordic average: i) Significant *under-representation* of the age segments 21-27 and 28-34, and of children (0-6). ii) Substantial *overrepresentation* of all age segments above 60 years, especially persons in the late 70s and older.

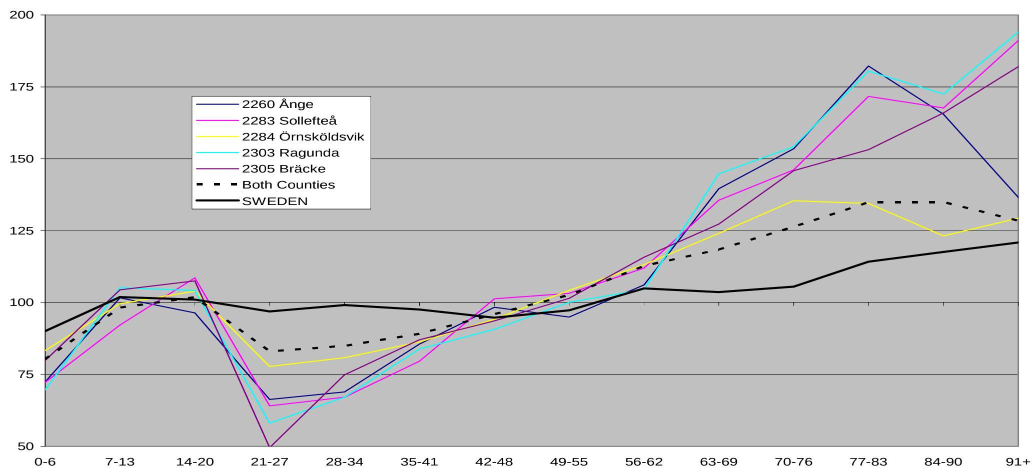
All nine municipalities have experienced *total population decline* in each of the last three five-year periods from 1988 to 2003. In most of the period they as a rule experienced negative natural population change *as well as* net out-migration. There is one exception with net in-migration in all the three periods, but this municipality had a severe natural population loss in the same periods. While the number of deaths stays at approximately the same relative level from period to period in most of the municipalities, *there is a significant fall in the relative number of live births from the first to the last period*. The areas are demographically far beyond the stage where population growth and the remedy of age-pyramid distortion may achieved by net in-migration of a realistic magnitude within the present an prospective national demographic context.

Figures 7-8. Present age-structure of the municipalities: National average, average of the two counties involved, and each municipality of the selected area in Norway and Sweden. Index, Nordic average =100.

A. NORWAY



B. SWEDEN



Some concluding remarks

The literature seem to indicate that knowledge of contemporary and prospective demographic evolution has seldom been shown to have influenced behaviour or policies with regard to the future in any direct or thorough ways, except perhaps for efforts to adjust particular age-related supplies of material and services within certain sectors to short or medium term changes in the size of relevant population categories. Rather, the demography has been taken for granted and incremental adjustments in societal arrangements and individual behaviour have taken place along the way, mostly in a reactive and slow manner.
The most obvious reason for this state-of-affairs is the following: Above a certain territorial level of aggregation net demographic changes – notably the reshaping of age-pyramids – tend to evolve extremely slowly and un-dramatically, granting oceans of time for individuals and societies to consider, plan, act and adapt. Moreover, demographic forecasting is an uncertain and inaccurate exercise, and more often than not forecasts have been proven "wrong". The medium variants of the two latest Norwegian projections (Statistics Norway 1999, 2002) differ in projected total population size around the middle of the present century by almost 400.000 persons or around eight percent of the present Norwegian population.

Below the rather aggregated territorial scales – for instance the nations or larger territories – population projections may at best serve the function of illustrating alternative frame conditions – given different sets of assumptions – for territorial population development. Moreover, the importance of demography for development and problems at more disaggregated territorial levels must be judged against a larger context. Assessment of vulnerability must presume the proper and relevant demographic, socio-economic and territorial context. Even at finer territorial scales the most characteristic or common situation is slow demographic net changes, with only moderate and gradual implications for the socio-economic context with which it interacts.

Just as the different Nordic countries experienced varying population growth rates during the last two centuries[7], their courses of recent fertility development also differ somewhat, regardless of general parallels in development. In Sweden below replacement level fertility emerged as early as 1968, and the current level of fertility (Total fertility rate, TFR) is 1,5. Denmark and Finland reached below replacement fertility in 1969 and the present fertility level is 1,7. Norway entered the below replacement phase in 1975 and the present TFR level is ca. 1,8. During the period from the late 1960s to the early 1980s fertility fell well below replacement level (ca. 2,1) in most European countries. However, the courses of decline differed and the fertility levels varied substantially among the countries in the decades following the steepest decline, pointing towards rather differentiated demographic prospects in the years to come. The patterns are even more heterogeneous when we move to sub-national territorial entities, where the role of migration has to be taken into consideration.

[7] The Finish population grew by 215 percent 1801-1901 and by 94 percent 1901-2001. In the same periods the other mainland Nordic countries experiences the following growth rates: 163 and 118 percent (Denmark), 154 and 102 percent (Norway), 120 and 72 percent (Sweden).

CASE STUDY OF COUNTY GYŐR-MOSON-SOPRON, HUNGARY: PROCESS, COMPOSITION AND CAUSES OF MIGRATION

Background

The territorial structure of Hungary is the following: The national territory is 93 029 km^2, the number of national population is 10 142 362 (January, 2003). There are 19 administrative counties, the number of NUTS3 regions is 20 (the 19 administrative counties and the capital city Budapest). The NUTS2 regions are statistical and development regions (with Regional Development Councils but with no administrative status). Their number is 7. Each NUTS2 region comprises three administrative counties except the Central Hungarian Region, with one county (County Pest) and Budapest. County Győr-Moson-Sopron (NUTS3) lies in north-west Hungary. It is a part of the West-Transdanubian Region (NUTS2).

The process of privatisation and economic restructuring has had a fundamental impact on the Hungarian spatial structure. Innovation, foreign capital investment and economic renewal and growth concentrated in Budapest and its region (Central Hungarian Region) first of all, which reinforced to country's monocentric pattern. The main losers of this process have been the former heavy industrial (mining, metallurgy, steel manufacturing) concentrations. The situation of the underdeveloped, peripheral regions further deteriorated, as the generally low educated workforce (commuters to the centres of heavy industries in the former period) lost their means of living. Economic crisis and poverty have become long-lasting problems in these regions in spite of the national government's consecutive attempts to solve them.

Following the transition to a market economy in the early 1990s, employment and economic activity only started to increase again in 1998. But this 'flattened out' in 2001 and only marginally increasing in 2002, and employment and activity rates are still considerably lagging behind the EU average (by 7 and 9 percentage points respectively). While the unemployment rate was only 5.7% during the third quarter of 2003, one of the lowest amongst the acceding countries, this does not reflect the substantial disengagement from the labour market and the high levels of inactivity and social exclusion amongst the working age population which still persist in Hungary. Significant economic, social and infrastructural disparities exist across and within the Hungarian regions and this increased during the 1990s. As a consequence, the country is characterised by a significant duality. Budapest and its agglomeration, the north-western part of the country and some regional centres have developed dynamically, while other regions have stagnated, primarily due to economic restructuring, insufficient accessibility, unfavourable settlement structures, the absence of defined development centres and the low skills levels of the local population.

The development of Budapest is striking compared to the rest of the country. While only 17% of the population live in Budapest, it accounts for 35% of total gross domestic product (2001). As regards micro-regions and individual settlements, differences are much more complicated than the simple division between west and east. For example, there are dynamically developing areas in the eastern part of the country, and weaker areas in the developed Transdanubian regions: the so-called internal peripheries. In this spatially differentiated process County Győr-Moson-Sopron had relative advantages.

DEMOGRAPHY

Basic population figures, NUTS 3: In Hungary national population decreased by 1.5% between 1990 and 2001. This trend characterized the majority of NUTS3 regions (administrative counties). Between 1990 and 2001 the slight increase was the result of natural growth in two eastern Counties, Szabolcs-Szatmár-Bereg (1.03%) and Hajdú-Bihar (1.01%), whereas in Counties Pest (1.16%), Győr-Moson-Sopron (1.03%) and Fejér (1.02%) is was due to migration gain.

Migration trends among NUTS3 regions

The demographic trends have been more favourable in County Győr-Moson-Sopron than in the other NUTS3 regions owing to net migration gain. The County's location in the north-west had been a disadvantage in the earlier decades, when the large metallurgical and heavy machinery plants were established and developed. The development of the city Győr as a working class town intensified in the 1970's, when some scope was gained by the more sophisticated manufacturing industries like the production of trucks and cars. By the 1980's, especially the second half, when communication with the western countries (Austria, Germany) improved, the north-west location became an advantage. The locational advantage became more pronounced after 1990. Owing to the earlier business relations the city of Győr has been rather successful in attracting foreign capital. After Budapest and its region (that is, Central Hungary), though after a considerable gap, the County of Győr-Moson-Sopron is the largest concentration of foreign capital investment in Hungary (in spite of the fact that this region is not given preference in term of government subsidies).

This dynamism has an attractive influence on migration, though the attraction is restricted by the shortage of housing, especially affordable housing for industrial workforce. (This is why the problems of labour shortage are surmounted by the attraction of cross-border commuters and by moving plants to less developed parts of the County.) However, the demographic trends have been more favourable in County Győr-Moson-Sopron than in the other NUTS3 regions owing to net migration gain.

Throughout the last decade of the 20th century migration balance was positive in relation of County Győr-Moson-Sopron and the other counties. A major source of migration was County Borsod-Abaúj-Zemplén in north-east Hungary, a concentration of heavy industries in the former period, and impacted by large-scale economic restructuring after 1990. Between 1990 and 1998 the increase in migration gain is inevitable. In 1990 this number is 75, while in 1998 249. It is worth to mention that in 2002 the migration gain shows slight decrease 162 which are due to moderate success of economic revitalisation in the donor county.

Another was County Veszprém bordering Győr-Moson-Sopron, with heavy industries in the zone adjacent to the county borders. The volume of migration gain is greater between 1990 and 1998 1 265, contrary County Borsod-Abaúj-Zemplén where it is 1 243, but the increase is more even due to the shorter distance.

The same trend prevailed after 2000. Interesting to note is positive migration balance with all area units, except the capital city Budapest. Migration gain from County Veszprém is still significant, the in-migrants number about 27% higher that out migration in 2002, and the net figure covers considerable turn-over.

Population change

In the villages of County Győr-Moson-Sopron the number of population was decreasing during the whole 60 years' period from 1940 (except the slight rise in the 1950's). The main losers were the small rural settlements. In towns and cities of all sizes the trend of steady growth turned to decline after 1990.

Two cities dominate the settlement pattern of the County. Győr the county centre lies at the eastern, Sopron at the western edge of the County's territory. A third centre is Mosonmagyaróvár at the northern edge. The micro regions (NUTS 4) of these centres are the growth areas, whereas the middle parts of the territory -- especially the micro regions of Csorna and Kapuvár -- are less developed and population density decrease is continuous

(Csorna -26,9% and Kapuvár -20,5%). While in the past 60 years the average population density increase exceeded the 59.9% for Győr and 15.6% for Mosonmagyaróvár respectively, Sopron lost its population by 3.4%.

The percentage rates of change clearly demonstrate the processes described above. The change of the tendency of decline to growth in villages (-16.3%) and the reverse in the urban municipalities (cities +53%, towns +37.9) are well visible between 1941 and 1998). The smallest villages lost half – one third of their total population since 1940. The main winner is the city of Győr increasing by 80 per cent.

In the recent years there has been slight growth in all size categories (except the smallest). Between 1999 and 2001 Győr–Sopron-Moson County shows 1.9 % increase of density of population, while the national average is 0.9. Two micro regions, Győr and Sopron exceed 3.0 and 3.8 percent increase respectively.

Age structure

The age structure of the population has been steadily moving towards the higher ages. The ratio of older age groups has been consistently growing throughout the last 15 years. Traditionally, the villages show ageing tendency, ageing index 1.19. The modest ageing is d characterised by towns, where inhabitant's number is between 5000 and 20000. Only Mosonmagyaróvár (0.72) and Sopron (0.94) micro regions show low values. The aging index, however, has become high everywhere in the last years. By 2001 in all micro regions ageing index exceeded 1.

CHANGES OF THE ECONOMIC STRUCTURE

Activity rate

Activity rate at the County level did not change much since 1990 (except for the growth of unemployment, which, however, was not admitted in 1990). In 2001 the activity rate was much higher in County Győr-Moson-Sopron (42.1%) that in the country as a whole (36.2%). The change of activity rate between 1990 and 2001 for the County is only -1.9, while -7.4 for the whole country (percentage point).

Employment structure by sectors

The share of agriculture as a general tendency has been decreasing in the economic sector. The absence of mining and quarrying is clear in County Győr-Moson-Soron, and here the share of manufacturing is higher 39.5 % than the national average 32.9%. The County and especially the region of Győr is an industrial area. The growth of business activities, financial services and education has been below the national average.
The educational structure and position of employees in County Győr-Moson-Sopron indicated inferior levels than the national average. The County was a receiver of foreign capital, but the in the structure of workplaces lower level jobs were overwhelming up until the last years.

Unemployment

Unemployment rate has been decreasing since 1992, the trend has been much more favourable than the national average. While in 2001 the unemployment percentage by active population was 3.2% for Győr-Moson-Sopron County, the national average was 5.9%. Moreover, the decrease of long term unemployment (more than 180 days) has been a particularly favourable trend in the County. It was only 0.9%, while national average was 2.6% in 2001. The lowest in Sopron micro region, 0.5%, while relatively stable the other micro regions, about 1.0%. It is worth to mention, that in 1993, the rate of long term unemployment for cities was 3.6, for towns 4.2 and for villages 5.3 per cent. By 2001 the situation became more balanced, 0.8 % in the cities and 1.0% in the towns and the villages respectively.

DEVELOPMENT POTENTIALS IN COUNTY GYŐR-MOSON-SOPRON

The main motors of development in the County are the two cities, Győr and Sopron. Győr is an industrial city with manufacturing traditions. All the three sectors of its earlier industrial structure (machinery, textile and food) have survived, in privatised form. Machinery has always been the leading sector, and now it has an overwhelming ratio. This industry has had a very characteristic life cycle. From the manufacturing of truck and tractors of the 1970’s and 1980’s passenger car manufacturing got upper hand in the 1990’s (Audi), and electronics (Philips) is currently growing. In the first phase the multinational companies offered semiskilled jobs on assembly lines only. The impact of this first phase still prevailed at the end of the previous decade, as shown by the census figures. The percentage change of number between 1990 and 2001 of jobs needed university degree increased by 19.0 % (16.5 % national average) and of jobs needed other graduation (not university degree) or middle grade increased by 25%, meanwhile the national increase was only 10.5%. The service sector employment capacity showed significant change, 63.0 percent in the County. The relative change for machine operators, assembly workers, drivers etc. is more descriptive: 4.3% for the County and -29.2% for the whole country.

Gradually, however, more sophisticated production has been developing, and Hungarian workforce is employed in higher level technical and managerial positions. A new development is the setting up of a research and coordination centre in the city. Since 2003 Győr is a university city. For the procurement of workforce of labour-intensive production, commuters are attracted from Slovakia, and new plants are established at Kapuvár, in the less developed part of the County. Győr is thus a city undergoing relatively dynamic development. Its industrial profile is moving towards new technologies, and the service sector is growing.

Sopron by the Hungarian-Austrian border did not undergo significant industrial development. The improvement of cross-border relations, especially from the late 1980’s, turned the city’s peripheral location into an advantage. The city has become a popular centre of commercial, medical, cultural services. By the beginning of the new millennium Sopron has occupied its traditional position as the centre of the Austrian province Burgenland. Owing to the cultural heritage and attractive natural environment, Sopron and its micro region is an important tourist centre. This explains why decades of decline and stagnation Sopron and its micro region is now a concentration of a broad range of services (from retail to health, hotels, restaurants, medium and higher education, research), and an area with positive migration balance.

Mosonmagyaróvár is a town near to both border crossings to Austria and Slovakia. This location has made the town and its region a concentration of transport and commercial services linked to border crossing. The tourist function of the area is endangered by the dam built on the river Danube of the Slovakian side. The services of the region were used more while the motorway was not built yet. Now the micro region is a transit area, which already affects its attractiveness.

The problem areas, those of decline and out-migration are those in the middle, especially the micro-regions of Csorna and Kapuvár. The austerity of the local economy has direct influence on their demographic situation. These areas are the areas of depopulation, of out-migration. It is a question for the future whether the planned motorway and the new industries will have a stabilizing effect. The Tét-Pannonhalma micro-region actually comprises two small areas linked to two towns, Tét and Pannonhalma. The small areas are even separated by a nature conservation area, and currently applying for the permission of a road link. Tét and its surroundings lie in the middle of the County's territory and suffer from similar problems like the micro-regions of Csorna and Kapuvár. Pannonhalma is a cultural, religious and tourist centre, which, together with the surrounding municipalities, belongs to the urban region of Győr.

1. Basic population figures, NUTS 3

Table 1

	1990	2001
Counties (NUTS 3)	Population total	
Veszprém	381,685	373,705
Borsod-Abaúj-Zemplén	756,926	744,484
Hajdú-Bihar	549,204	551,837
Komárom-Esztergom	314,014	315,515
Szabolcs-Szatmár-Bereg	568,830	586,193
Vas	275,470	267,429
Jász-Nagykun-Szolnok	424,430	416,147
Bács-Kiskun	543,199	544,116
Zala	305,059	297,853
Békés	409,226	396,131
Somogy	343,315	335,701
Tolna	252,872	248,998
Nógrád	225,738	219,447
Csongrád	438,315	426,817
Fejér	422,048	428,409
Baranya	418,025	404,709
Heves	333,377	325,029
Pest	951,057	1,105,412
Budapest	2,018,035	1,719,342
Győr–Moson-Sopron	424,017	435,088

2. Migration to and from County Győr-Moson-Sopron

Table 2

Migration balance between Győr-Moson-Sopron County and the other Counties of Hungary									
	1990	1993	1994	1995	1996	1997	1998	1990 - 1998 total	2002
Veszprém	198	219	111	208	150	70	125	1,265	278
Borsod-Abaúj-Zemplén	75	132	97	151	112	216	249	1,243	162
Hajdú-Bihar	58	75	63	59	64	111	97	725	97
Komárom-Esztergom	78	89	147	150	83	5	42	665	193
Szabolcs-Szatmár-Bereg	47	48	31	46	43	40	61	493	130
Vas	-153	113	61	156	127	56	26	483	195
Jász-Nagykun-Szolnok	16	22	36	82	45	37	76	398	76
Bács-Kiskun	36	22	36	49	69	64	32	391	79
Zala	-15	17	34	35	79	63	33	361	67
Békés	10	20	67	46	39	28	52	355	107
Somogy	16	35	99	70	-3	0	58	353	99
Tolna	-4	12	20	34	23	25	68	271	49
Nógrád	47	20	23	29	29	7	20	251	3
Csongrád	15	11	60	26	46	34	12	247	73
Fejér	-49	61	46	108	38	-10	41	233	102
Baranya	19	27	-53	53	21	32	33	185	41
Heves	4	31	38	9	0	29	19	184	31
Pest	8	32	43	-9	-24	-88	-45	6	16
Budapest	-516	-214	-159	-36	-3	-66	-91	-1,077	-128
Győr–Moson-Sopron County migration balance total	-110	772	800	1,266	938	653	908	7,032	1,670

Migration balance between Győr-Moson-Sopron County and the Counties of Hungary

	2002		
	out-migration	in-migration	Migration balance
Veszprém	1,002	1,280	278
Borsod-Abaúj-Zemplén	324	486	162
Hajdú-Bihar	190	287	97
Komárom-Eszergom	632	825	193
Szabolcs-Szatmár-Bereg	116	246	130
Vas	602	797	195
Jász-Nagykun-Szolnok	136	212	76
Bács-Kiskun	132	211	79
Zala	277	344	67
Békés	164	271	107
Somogy	150	249	99
Tolna	81	130	49
Nógrád	76	79	3
Csongrád	135	208	73
Fejér	270	372	102
Baranya	173	214	41
Heves	94	125	31
Pest	395	411	16
Budapest	1,375	1,247	-128
GY-M-S County migration balance total			1,670

3. Density of population, NUTS5, NUTS4, NUTS3, NUTS2

Table 3

Density of population (persons/ km2)							
	1941	1949	1960	1970	1980	1990	1998
Administrative status (NUTS5)							
Cities	3,440.0	3,085.3	3,698.8	4,378.4	5,205.3	5,363.4	5,263.7
Towns	1,154.4	1,161.5	1,285.9	1,404.9	1,593.6	1,608.7	1,591.8
Villages	662.9	655.6	658.6	618.1	585.4	551.9	554.5
Population size-category (NUTS5)							
0 - 499	596.7	586.4	555.6	458.0	384.7	318.3	294.6
500 - 999	631.1	637.9	617.7	546.2	492.2	436.9	429.2
1000 - 1999	660.6	656.0	659.4	623.6	592.7	567.1	581.6
2000 - 2999	729.1	716.6	748.9	746.2	734.4	721.3	736.2
3000 - 4999	840.2	836.8	910.6	916.9	931.8	916.1	933.1
5000 - 9999	507.3	464.2	458.4	453.5	446.4	440.0	437.9
10000 – 19999	969.2	977.7	1,011.1	1,001.2	1,077.8	1,090.3	1,058.9
30000 - 49999	1,984.5	1,961.2	2,360.2	2,888.5	3,483.1	3,524.2	3,488.6
50000 - 99999	2,813.7	2,159.4	2,430.1	2,836.4	3,243.6	3,258.2	3,177.5
100000 – X	4,045.7	3,980.9	4,926.0	5,869.9	7,102.6	7,399.6	7,281.6
Micro region (NUTS4)							
Csorna	782.4	766.4	745.1	677.1	639.8	592.4	571.8
Győr	1,469.0	1,470.8	1,750.5	1,974.6	2,273.7	2,349.9	2,348.4
Kapuvár	839.1	849.2	833.1	759.5	754.4	700.0	666.8
Mosonmagyaróvár	664.9	644.5	679.5	721.9	764.8	763.2	768.8
Sopron	1,113.3	959.6	1,004.9	1,045.5	1,082.8	1,057.9	1,054.1
Tét-Pannonhalma	680.6	701.1	718.4	667.8	623.9	559.8	548.3
Győr-Moson-Sopron County total (NUTS 3)	938.6	903.3	968.1	1,001.8	1,060.4	1,047.2	1,039.5
Western Transdanubian Region (NUTS2)	870.3	855.0	890.0	885.4	925.8	902.9	883.2
National total	1,001.4	989.4	1,069.4	1,109.5	1,151.2	1,115.2	1,084.8

Density of population

	Administrative status (NUTS5)	
	1990	2001
Cities	527.4	517.0
Towns	365.7	339.8
Villages	56.8	56.7
Population size-category (NUTS5)		
	1999	2002
0-499	30.7	30.0
500-999	40.9	41.8
1000-1999	61.2	61.2
2000-2999	73.4	78.0
3000-4999	78,0	90.5
5000-9999	40.0	40.3
10000-19999	111.6	114.4
20000-49999	349.4	356.3
50000-99999	317.0	330.9
100000-X	726.4	736.6
Micro region (NUTS4)		
	1999	2002
Csorna	57	57
Győr	235	242
Kapuvár	66	67
Mosonmagyaróvár	77	78
Sopron	105	109
Tét-Pannonhalma	56	57
Győr-Moson-Sopron County total (NUTS 3)	104	106
Western Transdanubian Region (NUTS2)	88	89
National total	108	109

4. Percentage change of population density

Table 4

Density of population percentage change							
	1941 - 1998	1949 – 1998	1949-1959	1960 - 1969	1970 – 1979	1980 - 1989	1990 - 1998
Administrative status (NUTS5)							
Cities	53.0	70.6	19.9	18.4	18.9	3.0	-2.3
Towns	37.9	37.0	10.7	9.3	13.4	0.9	-1.1
Villages	-16.3	-15.4	0.5	-6.1	-5.3	-5.7	1.0
Population size-category (NUTS5)							
0 - 499	-50.6	-49.8	-5.3	-17.6	-16.0	-17.3	-6.8
500 – 999	-32.0	-32.7	-3.2	-11.6	-9.9	-11.2	-1.0
1000 – 1999	-12.0	-11.3	0.5	-5.4	-5.0	-4.3	3.0
2000 - 2999	1.0	2.7	4.5	-0.4	-1.6	-1.8	2.1
3000 – 4999	11.1	11.5	8.8	0.7	1.6	-1.7	2.7
5000 - 9999	-13.7	-5.7	-1.3	-1.1	-1.6	-1.4	-0.2
10000 - 19999	9.3	8.3	3.4	-1.0	7.6	1.2	-2.5
30000 - 49999	75.8	77.9	20.3	22.4	20.6	1.2	-1.3
50000 - 99999	12.9	47.2	12.5	16.7	14.4	0.5	-2.9
100000 - X	80.0	82.9	23.7	19.2	21.0	4.2	-2.0
Micro region (NUTS4)							
Csorna	-26.9	-25.4	-2.8	-9.1	-5.5	-7.4	-2.8
Győr	59.9	59.7	19.0	12.8	15.1	3.4	-0.3
Kapuvár	-20.5	-21.5	-1.9	-8.8	-0.7	-7.2	-4.1
Mosonmagyaróvár	15.6	19.3	5.4	6.3	5.9	-0.2	0.8
Sopron	-5.3	9.9	4.7	4.0	3.6	-2.3	-0.5
Tét-Pannonhalma	-19.4	-21.8	2.5	-7.0	-6.6	-10.3	-1.3
Győr-Moson-Sopron County (NUTS 3)	10.8	15.1	7.2	3.5	5.8	-1.2	-0.7
Western Transdanubian Region (NUTS2)	1.5	3.3	4.1	-0.5	4.6	-2.5	-2.2
National total	8.3	9.6	8.1	3.7	3.8	-3.1	-2.8

Density of population percentage change

	1990 -2001	1999 - 2002
Administrative status (NUTS5)		
Cities	-2.0	
Towns	-7.1	
Villages	-0.2	
Population size-category (NUTS5)		
0-499		-2.6
500-999		2.2
1000-1999		0.0
2000-2999		-6.7
3000-4999		13.5
5000-9999		1.0
10000-19999		2.6
20000-49999		2.0
50000-99999		4.4
100000-X		1.4
Micro region (NUTS4)		
Csorna		0.0
Győr		3.0
Kapuvár		1.5
Mosonmagyaróvár		1.3
Sopron		3.8
Tét-Pannonhalma		1.8
Győr-Moson-Sopron County total (NUTS 3)		1.9
Western Transdanubian Region (NUTS2)		1.1
National total		0.9

5. Net change of the number of population

Table5

Net increase, decrease									
	1941 - 1949	1949 - 1959	1960 - 1969	1970 - 1979	1980 - 1989	1990 - 1998	estimated 1990 - 1998	1990	1998
	In the percentage of the first year population							per 1000 inhabitants	
Administrative status (NUTS5)									
Cities	-10.3	19.0	18.4	18.9	3.0	-2.3	0.1	1.7	-0.6
Towns	0.6	13.8	9.3	13.4	0.9	-1.1	-2.1	-0.6	-5.9
Villages	-1.1	0.6	-6.1	-5.3	-5.7	1.0	-1.0	-4.1	-1.0
Population size-category (NUTS5)									
0 - 499	-1.7	-6.4	-17.6	-16.0	-17.3	-6.8	-10.2	-14.0	-6.8
500 - 999	1.1	-3.4	-11.6	-9.9	-11.2	-1.0	-4.0	-8.8	-6.1
1000 - 1999	-0.7	0.5	-5.4	-5.0	-4.3	3.0	1.5	-1.2	-0.5
2000 - 2999	-1.7	6.0	-0.4	-1.6	-1.8	2.1	0.5	1.5	0.0
3000 - 4999	-0.4	7.8	0.7	1.6	-1.7	2.7	1.4	-5.9	8.5
5000 - 9999	-8.5	0.8	-1.1	-1.6	-1.4	-0.2	-2.5	-2.6	-6.0
10000 - 19999	0.9	4.7	-1.0	7.6	1.2	-2.5	-4.1	-6.1	-10.1
30000 - 49999	-1.2	26.6	22.4	20.6	1.2	-1.3	-1.9	1.7	-3.5
50000 - 99999	-23.3	15.0	16.7	14.4	0.5	-2.9	0.5	1.0	-1.5
100000 - X	-1.6	21.1	19.2	21.0	4.2	-2.0	-0.1	2.0	-0.2
Micro region (NUTS4)									
Csorna	-2.1	-2,7	-9.1	-5.5	-7.4	-2.8	-5.5	-9.5	-8.3
Győr	0.1	16.8	12.8	15.1	3.4	-0.3	1.0	1.9	1.8
Kapuvár	1.2	0.1	-8.8	-0.7	-7.2	-4.1	-7.0	-11.4	-8.2
Mosonmagyaróvár	-3.1	8.3	6.3	5.9	-0.2	0.8	-0.7	0.2	-3.7
Sopron	-13.8	5.9	4.0	3.6	-2.3	-0.5	0.9	1.2	-1.3
Tét-Pannonhalma	3.0	1.5	-7.0	-6.6	-10.3	-1.3	-3.2	-8.9	-1.3
Győr-Moson-Sopron County total (NUTS 3)	-3.8	7.3	3.5	5.8	-1.2	-0.7	-0.7	1.1	1.5
Western Transdanubian Region (NUTS2)	-1.8	4.0	-0.5	4.6	-2.5	-2.2	-2.6	-1.1	-1.5
National total	-1.2	8.2	3.7	3.8	-3.1	-2.8	-3.0	-2.3	-4.2

Net increase, decrease

	1990- 2001 In the percentage of the first year population	1990- 2001 per 1000 inhabitants		1999 - 2002 In the percentage of the first year population	1999 per 1000 inhabitants	2002
Administrative status (NUTS5)						
Cities, towns	0.8	-0.6	-1.6	5.8	-1.7	0.2
Villages	2.5	-4.1	2.9	-1.3	-0.6	2.2
Population size-category (NUTS5)						
0-199		-14.0	-9.2	6.0	-13.8	12.0
200-499		-8.8	5.0	-6.0	-4.3	-10.8
500-999		-1.2	-3.0	-0.6	-6.1	-7.0
1000-1999		1.5	5.3	5.5	3.9	6.4
2000-2999		-5.9	-4.4	-19.9	-1.0	-0.5
3000-4999		-2.6	1.7	39.4	0.01	0.6
5000-9999		-6.1	-2.3	1.0	-6.9	1.2
10000-19999		1.7	0.2	2.5	-0.2	-0.4
20000-49999		1.0	-1.9	1.9	-2.4	-3.6
50000-99999		2.0	10.0	4.4	-2.7	5.7
100000-X		-14.0	-8.5	1.4	1.2	-0.7
Micro region (NUTS4)						
Csorna	-2.7	-9.5	-3.0	1.1	-7.0	-7.6
Győr	2.4	1.9	-1.5	3.0	1.5	4.4
Kapuvár	-4.4	-11.4	-4.4	1.0	-7.8	-4.7
Mosonmagyaróvár	2.1	0.2	-2.0	1.4	-2.8	-2.0
Sopron	3.4	1.2	5.4	3.2	-1.6	2.7
Tét-Pannonhalma	0.1	-8.9	9.1	6.3	0.3	0.0
Győr-Moson-Sopron County total (NUTS 3)	1.5	1.10	0.3	2.5	-1.2	1.0
Western Transdanubian Region (NUTS2)	-1.0	-1.1	-2.0	1.6	-4.3	-2.4
National total	-1.7	-2.3	-3.4	0.9	-4.8	-3.5

6. Components of demographic change (%)
Table 6

	Net increase, decrease		Natural increase, decrease		Migration balance	
	1980 – 1989	1990 - 1998	1980 - 1989	1990 - 1998	1980 - 1989	1990 - 1998
Administrative status (NUTS5)						
Cities	3.0	0.1	1.2	-1.1	1.9	1.1
Towns	0.9	-2.1	3.3	-0.3	-2.4	-1.8
Villages	-5.7	-1.0	-1.5	-3.8	-4.3	2.8
Population size-category (NUTS5)						
0 - 499	-17.3	-10.2	-5.4	-9.4	-11.8	-0.8
500 – 999	-10.3	-4.0	-5.0	-7.0	-5.3	3.1
1000 - 1999	-4.3	1.5	-1.3	-3.1	-3.0	4.6
2000 - 2999	-2.8	0.5	1.5	-1.3	-4.3	1.8
3000 - 4999	-1.7	1.4	0.0	-2.7	-1.7	4.0
5000 - 9999	-1.4	-2.5	2.9	-1.6	-4.4	-0.9
10000 - 19999	1.2	-4.1	2.1	-1.1	-1.0	-3.0
30000 - 49999	1.2	-1.9	4.3	0.3	-3.1	-2.2
50000 - 99999	0.5	0.5	0.3	-1.6	0.1	2.1
100000 - X	4.2	-0.1	1.5	-0.8	2.6	0.7
Micro region (NUTS4)						
Csorna	-7.4	-5.5	-1.8	-3.6	-.,6	-1.9
Győr	3.1	1.0	1.1	-1.3	2.0	2.3
Kapuvár	-7.2	-7.0	-1.6	-4.3	-5.6	-2.7
Mosonmagyaróvár	-0.2	-0.7	3.5	-0.4	-3.8	-0.3
Sopron	-2.3	0.9	-1.4	-3.2	-0.9	4.1
Tét-Pannonhalma	-9.1	-3.2	-2.2	-4.2	-6.9	1.0
Győr-Moson-Sopron County total (NUTS 3)	-1.2	-0.7	0.3	-2.2	-1.5	1.5
Western Transdanubian Region (NUTS2)	-2.5	-2.6	-0.8	-3.3	-1.7	0.7
National total	-3.1	-3.0	-1.3	-3.0	-1.8	0.0

	Net increase, decrease	Natural increase, decrease	Migration balance
	1990 – 2001	1990 - 2001	1990 - 2001
Administrative status (NUTS5)			
Cities, towns	510	-382	892
Villages	4.870	-8,375	13,245
Population size-category (NUTS5)			
0-199	-147	-147	0
200 - 499	52	-78	130
500 - 999	-106.52	-209.4	102.9
1000 - 1999	381.8	-245.0	626.8
2000 – 2999	-157.9	-53.8	-104.1
3000 - 4999	622.9	-132.5	755.4
5000 - 9999	-13.8	-18.0	4.2
10000 - 19999	2.1	-18.0	20.1
20000 - 49999	-57.8	-42.6	-15.2
50000 - 99999	557.4	-89.2	646.6
100000 - X	-1,099	-129.3	-969.7
Micro region (NUTS4)			
Csorna	-1,040	-1,601	561
Győr	4,154	-2,945	7,099
Kapuvár	-1,172	-1,367	195
Mosonmagyaróvár	1,496	-616	2,112
Sopron	3,076	-3,385	6,461
Tét-Pannonhalma	39	-1,523	1,562
Győr-Moson-Sopron County total (NUTS 3)	6,553	-11,437	17,990
Western Transdanubian Region (NUTS2)	-10,262	-39,707	29,445
National total	-34,594.5	-34,594.5	-

7. Rate of change of the components of demographic change

Table 7

	Estimated real increase decrease	Natural increase decrease	Estimated migration balance	Real increase decrease	Real increase decrease	Natural increase decrease	Natural increase decrease	Migration balance	Migration balance
	1990 I.1 - 1999 I.1			1990	1998	1990	1998	1990	1998
	In the percentage of the first year population /for 10 years/			per 1000 inhabitants					
Administrative status (NUTS5)									
Cities	0.1	-1.1	1.1	1.7	-0.6	0.7	-2.8	1.0	2.2
Towns	-2.1	-0.3	-1.8	-0.6	-5.9	1.7	-2.2	-2.3	-3.7
Villages	-1.0	-3.8	2.8	-4.1	-1.0	-3.0	-4.9	-1.1	3.9
Population size-category (NUTS5)									
0 - 499	-10.2	-9.4	-0.8	-14.0	-6.8	-9.5	-7.7	-4.5	0.9
500 - 999	-4.0	-7.0	3.1	-8.8	-6.1	-6.7	-8.1	-2.1	1.9
1000 – 1999	1.5	-3.1	4.6	-1.2	-0.5	-1.9	-4.6	0.8	4.2
2000 - 2999	0.5	-1.3	1.8	1.5	0.0	0.8	-2.1	0.6	2.1
3000 - 4999	1.4	-2.7	4.0	-5.9	8.5	-3.2	-3.8	-2.7	12.2
5000 - 9999	-2.5	-1.6	-0.9	-2.6	-6.0	0.2	-4.1	-2.8	-1.9
10000 - 19999	-4.1	-1.1	-3.0	-6.1	-10.1	-0.4	-2.8	-5.7	-7.3
30000 - 49999	-1.9	0.3	-2.2	1.7	-3.5	3.0	-1.8	-1.3	-1.7
50000 – 99999	0.5	-1.6	2.1	1.0	-1.5	-0.5	-3.2	1.5	1.6
100000 - X	-0.1	-0.8	0.7	2.0	-0.2	1.2	-2.6	0.8	2.5
Micro region (NUTS4)									
Csorna	-5.5	-3.6	-1.9	-9.5	-8.3	-3.5	-4.4	-6.0	-3.9
Győr	1.0	-1.3	2.3	1.9	1.8	0.6	-3.0	1.4	4.7
Kapuvár	-7.0	-4.3	-2.7	-11.4	-8.2	-3.2	-5.8	-8.2	-2.5
Mosonmagyaróvár	-0.7	-0.4	-0.3	0.2	-3.7	2.0	-2.4	-1.8	-1.3
Sopron	0.9	-3.2	4.1	1.2	-1.3	-2.7	-4.2	4.0	2.9
Tét-Pannonhalma	-3.2	-4.2	1.0	-8.9	-1.3	-3.3	-5.9	-5.6	4.6
Győr-Moson-Sopron County total (NUTS 3)	-0.7	-2.2	1.5	-1.1	-1.5	-0.8	-3.6	-0.3	2.2
Western Transdanubian Region (NUTS2)	-2.6	-3.3	0.7	-2.3	-4.2	-2.1	-4.9	-0.2	0.7
National total	-3.0	-3.0	0.0	-1.9	-4.3	-1.9	-4.3	0.0	0.0

8. Birthrates, deathrates

Table 8

	Natural increase decrease	Natural increase decrease	Natural increase decrease	Migration balance	Migration balance	Migration balance
	1990	1999	2002	1990	1999	2002
per 1000 inhabitants						
Administrative status (NUTS5)						
Cities, towns	1.7	1.7	-2.2	-2.3	-2.3	-3.7
Villages	-3.0	-3.0	-4.9	-1.1	-1.1	3.9
Population size-category (NUTS5)						
0 - 499	-9.5	-9.5	-7.7	-4.5	-4.5	0.9
500 - 999	-6.7	-6.7	-8.1	-2.1	-2.1	1.9
1000 - 1999	-1.9	-1.9	-4.6	0.8	0.8	4.2
2000 – 2999	0.8	0.8	-2.1	0.6	0.6	2.1
3000 – 4999	-3.2	-3.2	-3.8	-2.7	-2.7	12.2
5000 - 9999	0.2	0.2	-4.1	-2.8	-2.8	-1.9
10000 - 19999	-0.4	-0.4	-2.8	-5.7	-5.7	-7.3
30000 - 49999	3.0	3.0	-1.8	-1.3	-1.3	-1.7
50000 – 99999	-0.5	-0.5	-3.2	1.5	1.5	1.6
100000 - X	1.2	1.2	-2.6	0.8	0.8	2.5
Micro region (NUTS4)						
Csorna	-3.5	-3.5	-4.4	-6.0	-6.0	-3.9
Győr	0.6	0.6	-3.0	1.4	1.4	4.7
Kapuvár	-3.2	-3.2	-5.8	-8.2	-8.2	-2.5
Mosonmagyaróvár	2.0	2.0	-2.4	-1.8	-1.8	-1.3
Sopron	-2.7	-2.7	-4.2	4.0	4.0	2.9
Tét-Pannonhalma	-3.3	-3.3	-5.9	-5.6	-5.6	4.6
Győr-Moson-Sopron County total (NUTS 3)	-0.8	-0.8	-3.6	-0.3	-0.3	2.2
Western Transdanubian Region (NUTS2)	-2.1	-2.1	-4.9	-0.2	-0.2	0.7
National total	-1.9	-1.9	-4.3	0.0	0.0	0.0

	Per 100 inhabitants		Live births per 100 deaths	Per 100 inhabitants		Live births per 100 deaths	Per 100 inhabitants		Live births per 100 deaths
	live births	deaths		live births	deaths		live births	deaths	
	1990. I - 1999 I.1			1990			1998		
	In the percentage of the first year population /for 10 years/								
Administrative status (NUTS5)									
Cities	10.3	11.3	90.6	1.3	1.2	106.5	0.9	1.2	75.2
Towns	10.9	11.2	97.6	1.4	1.2	115.4	1.0	1.3	81.1
Villages	10.8	14.5	73.9	1.3	1.6	80.0	1.0	1.6	65.9
Population size-category (NUTS5)									
0 - 499	9.2	18.6	49.6	1.2	2.2	52.3	1.0	1.9	54.8
500 - 999	10.1	17.1	58.9	1.2	2.0	61.7	1.0	1.9	53.8
1000 – 1999	11.1	14.2	78.5	1.4	1.6	86.8	1.0	1.5	65.6
2000 - 2999	11.4	12.7	89.9	1.4	1.3	106.9	1.1	1.3	82.1
3000 - 4999	10.8	13.5	80.1	1.2	1.6	77.7	1.1	1.5	72.9
5000 - 9999	10.9	12.5	87.2	1.4	1.4	101.4	1.0	1.4	68.5
10000 - 19999	10.5	11.6	90.6	1.4	1.5	96.8	1.0	1.3	76.4
30000 - 49999	11.0	10.6	103.2	1.4	1.1	130.6	1.0	1.2	83.7
50000 – 99999	9.7	11.3	86.1	1.2	1.2	95.6	0.9	1.3	71.9
100000 - X	10.5	11.3	92.6	1.3	1.2	111.2	1.0	1.2	76.6
Micro region (NUTS4)									
Csorna	10.0	13.7	73.3	1.3	1.7	76.9	1.0	1.5	67.0
Győr	10.7	12.0	89.2	1.4	1.3	104.9	1.0	1.3	74.9
Kapuvár	9.8	14.1	69.5	1.4	1.7	79.7	1.0	1.6	60.3
Mosonmagyaróvár	11.4	11.9	96.5	1.5	1.2	117.9	1.1	1.3	80.0
Sopron	10.0	13.2	75.9	1.2	1.5	79.4	1.0	1.4	67.6
Tét-Pannonhalma	10.8	14.9	72.1	1.3	1.7	78.2	1.0	1.7	61.1
Győr-Moson-Sopron County total (NUTS 3)	10.6	12.7	83.1	1.3	1.4	94.0	1.0	1.4	71.2
Western Transdanubian Region (NUTS2)	10.3	13.6	75.8	1.3	1.5	84.6	1.0	1.5	63.7
National total	10.9	13.9	78.3	1.3	1.6	86.4	1.1	1.5	69.0

	Per 100 inhabitants		Live births per 100 deaths	Per 100 inhabitants		Live births per 100 deaths	Per 100 inhabitants		Live births per 100 deaths
	live births	deaths		live births	deaths		live births	deaths	
	1990 - 2001			1990			2001		
	In the percentage of the first year population /for 10 years/								
Administrative status (NUTS5)									
Cities	11.1	12.5	88.4	1.3	1.2	106.5	0.9	1.0	87.3
Towns	11.2	12.5	89.5	1.4	1.2	115.4	0.9	1.1	88.5
Villages	11.5	16.0	72.2	1.3	1.6	80.0	0.8	1.3	69.5
Population size-category (NUTS5)									
0 - 499				1.2	2.2	52.3	0.8	1.5	44.8
500 - 999				1.2	2.0	61.7	0.9	1.5	60.8
1000 - 1999				1.4	1.6	86.8	0.9	1.2	72.1
2000 – 2999				1.4	1.3	106.9	0.9	1.1	86.1
3000 – 4999				1.2	1.6	77.7	0.8	1.3	86.0
5000 - 9999				1.4	1.4	101.4	1.0	1.3	76.4
10000 - 19999				1.4	1.5	96.8	0.9	1.0	93.7
30000 - 49999				1.4	1.1	130.6	0.9	1.1	85.8
50000 – 99999				1.2	1.2	95.6	0.9	1.0	84.3
100000 - X				1.3	1.2	111.2	0.9	1.0	90.4
Micro region (NUTS4)									
Csorna	10.7	15.0	71.4	1.3	1.7	76.9	8.7	13.3	68.9
Győr	11.5	13.2	87.0	1.4	1.3	104.9	9.6	11.0	87.9
Kapuvár	10.5	15.6	67.2	1.4	1.7	79.7	8.5	12.9	65.6
Mosonmagyaróvár	12.2	13.1	93.4	1.5	1.2	117.9	10.4	11.7	82.5
Sopron	10.9	14.6	74.4	1.2	1.5	79.4	8.1	12.7	75.2
Tét-Pannonhalma	11.4	16.3	70.7	1.3	1.7	78.2	8.6	13.0	66.9
Győr-Moson-Sopron County total (NUTS 3)	11.3	14.0	81.0	1.3	1.4	94.0	9.2	11.9	79.1
Western Transdanubian Region (NUTS2)	11.0	14.9	73.7	1.3	1.5	84.6	8.6	12.7	70.2
National total	11.8	15.4	76.6	1.3	1.6	86.4	9.5	13.1	73.1

9. Age structure

Table 9

	Ratio of 0-14 years old population %		Ratio of 60-X years old population %		Ageing index 1990	
	1990	1998	1990	1998	1990	1998
Administrative status (NUTS5)						
Cities	20.0	15.5	16.2	16.6	0.77	1.07
Towns	21.2	16.6	15.9	15.8	0.71	0.96
Villages	20.2	17.4	20.7	20.6	0.98	1.19
Population size-category (NUTS5)						
0 - 499	16.7	15.5	28.8	28.7	1.64	1.86
500 – 999	18.6	16.8	24.2	24.3	1.24	1.45
1000 – 1999	20.4	17.6	20.1	20.0	0.95	1.13
2000 - 2999	21.6	17.7	18.4	18.2	0.81	1.02
3000 - 4999	21.3	17.6	18.3	18.2	0.83	1.03
5000 - 9999	21.8	18.3	17.6	17.5	0.77	0.96
10000 – 19999	21.6	16.8	16.6	16.4	0.73	0.98
30000 - 49999	20.9	16.2	15.0	15.0	0.67	0.92
50000 - 99999	19.1	15.0	16.9	17.6	0.81	1.17
100000 - X	20.4	15.8	16.0	16.2	0.75	1.02
County total	20.3	16.5	18.2	18.3	0.85	1.11
Micro region (NUTS4)						
Csorna	20.1	16.7	21.3	21.1	1.00	1.26
Győr	20.6	16.3	16.5	16.6	0.77	1.02
Kapuvár	19.5	16.0	21.2	21.1	1.03	1.32
Mosonmagyaróvár	21.4	17.5	16.4	16.3	0.72	0.93
Sopron	19.0	15.7	19.2	19.6	0.94	1.25
Tét-Pannonhalma	20.1	17.8	21.7	22.1	1.05	1.24
Győr-Moson-Sopron County total (NUTS 3)	20.3	16.5	18.2	18.3	0.85	1.11
Western Transdanubian Region (NUTS2)	19.9	16.4	19.0	19.0	0.91	1.16
National total	19.7	17.0	18.9	19.0	0.92	1.12

	Ratio of 0-14 year old population %		Ratio of 60-X years old population %		Ageing index	
	1990	2001	1990	2001	1990	2001
Administrative status (NUTS5)						
Cities	20.0	15.5	16.6	19.3	0.77	1.2
Towns	21.2	16.1	15.9	20.4	0.71	1.1
Villages	20.2	16.9	20.7	20.7	0.98	1.2
Population size-category (NUTS5)						
0 - 499	16.7		28.8		1.64	
500 - 999	18.6		24.2		1.24	
1000 - 1999	20.4		20.1		0.95	
2000 - 2999	21.6		18.4		0.81	
3000 - 4999	21.3		18.3		0.83	
5000 - 9999	21.8		17.6		0.77	
10000 – 19999	21.6		16.6		0.73	
30000 - 49999	20.9		15.0		0.67	
50000 – 99999	19.1		16.9		0.81	
100000 - X	20.4		16.0		0.75	
Micro region (NUTS4)						
Csorna	20.1	15.8	21.3	22.6	1.00	1.4
Győr	20.6	16.1	16.5	18.9	0.77	1.2
Kapuvár	19.5	15.3	21.2	21.8	1.03	1.4
Mosonmagyaróvár	21.4	17.0	16.4	18.0	0.72	1.1
Sopron	19.0	15.8	19.2	20.6	0.94	1.3
Tét-Pannonhalma	20.1	17.4	21.7	21.9	1.05	1.3
Győr-Moson-Sopron County total (NUTS 3)	20.3	16.2	18.2	19.8	0.85	1.2
Western Transdanubian Region (NUTS2)	19.9	16.1	19.0	20.4	0.91	1.3
National total	19.7	16.8	18.9	20.6	0.92	1.2

CHANGES OF THE ECONOMIC STRUCTURE

10. Activity rate

Table 10

Activity rate								
	Győr-Moson-Sopron County total				National total			
	%							
	Active	Unemployed	Inactive	Dependent	Active	Unemployed	Inactive	Dependent
1990	44.7	0.7	24.5	30.2	43.6	1.2	25.6	29.5
1996	40.0	3.2	29.4	27.3	34.1	4.7	32.5	28.5
Change 1990-1996 / percentage point/	-4.7	2.5.	5.1	-2.9	-9.5	3.5	7.0	-1.0

Activity rate								
	Győr-Moson-Sopron County total				National total			
	%							
	Active	Unemployed	Inactive	Dependent	Active	Unemployed	Inactive	Dependent
1990	44.0	0.7	24.5	30.2	43.6	1.2	25.6	28.5
2001	42.1	2.3	29.2	26.5	36.2	4.1	32.4	27.3
Change 1990-2001 /percentage point/	-1.9	1.6	4.7	-3.7	-7.4	2.9	6.8	-1.2

11. Employment structure by sectors

Table 11

Distribution by economic sectors											
	Employment										
	% change of the number of employees		Distribution by economic sectors				% change of distribution by sectors		Győr- Moson – Sopron County. in relation to the national total		
	GY-M-S County	Hungary	Győr-Moson-Sopron County		Hungary total		GY-M-S County	Hungary			1990-1996
	1990 - 1996		1990	1996	1990	1996	1990 - 1996		1990	1996	
	percentage						%-point		%		%-Point
Agriculture, hunting, forestry and fishing	-53.5	-60.1	14.9	7.8	15.5	8.0	-7.1	-7.4	96.7	97.3	0.7
Mining and quarrying	-69.8	-69.0	0.1	0.0	2.0	0.8	-0.1	-1.2	4.4	3.7	-0.7
Manufacture	-17.7	-32.2	30.7	28.4	26.4	23.3	-2.3	-3.1	116.1	121.9	5.8
Electricity, gas and water supply	-7.8	-14.8	2.7	2.8	2.5	2.7	0.1	0.3	108.9	102.0	-6.9
Construction	-17.8	-35.3	7.1	6.5	7.0	5.9	-0.5	-1.1	101.3	111.4	10.0
Wholesale and retail trade, repair	12.7	0.7	10.5	13.3	10.3	13.4	2.8	3.2	102.5	99.2	-3.2
Hotels and restaurants	60.5	2.4	2.7	4.9	2.4	3.2	2.2	0.8	113.2	153.5	40.4
Transport, storage, post and telecommunication	-0.7	-20.7	8.2	9.2	8.8	9.1	1.0	0.3	93.6	101.5	7.9
Financial services	73.9	72.9	0.9	1.8	1.0	2.3	0.9	1.3	90.9	79.1	-11.8
Real estate, renting and business activities	19.4	-11.7	2.0	2.7	3.4	3.9	0.7	0.5	60.5	70.7	10.3
Public administration and defense	8.3	3.8	5.0	6.0	5.5	7.5	1.1	1.9	89.3	80.6	-8.7
Education	1.9	10.5	6.5	7.5	6.0	8.7	0.9	2.6	108.0	86.1	-21.8
Health and social services	3.1	-5.6	4.8	5.6	5.2	6.4	0.8	1.2	92.6	87.5	-5.1
Other public services	-19.4	-5.4	3.8	3.5	4.0	5.0	-0.4	0.9	95.1	70.0	-25.1
Total	-11.0	-23.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0
Agriculture, hunting, forestry and fishing	-53.5	-60.1	14.9	7.8	15.5	8.0	-7.1	-7.4	96.7	97.3	0.7
Industry and construction	-17.2	-33.6	40.5	37.7	37.9	32.7	-2.8	-5.2	107.0	115.4	8.5
Services	8.8	-2.2	44.6	54.5	46.7	59.3	9.9	12.6	95.5	91.9	-3.6

Distribution of active according to national economic industries											
	Employed										
	Percentage change of number		Distribution according to national economic industries				Alteration of percentage distribution		Győr- Moson – Sopron County. in percentage of the country		
	GY-M-S County	Hungary	Győr-Moson-Sopron County		Hungary total		GY-M-S County	Hungary	Győr-Moson - Sopron County	Hungary total	Change 1990 - 2001
	1990 - 2001 -		1990	2001	1990	2001	1990 - 2001		1990	2001	
	percentage						%-point		%		%-point
Agriculture, hunting, forestry and fishing	-63.2	-71.0	14.9	5.8	15.5	5.5	-9.1	-10.0	96.7	105.5	8.8
Minning and quarrying	2.3	-91.3	0.1	0.1	2.0	0.2	0.0	-1.8	4.4	0.5	-3.9
Manufacturing	-3.4	-24.9	30.7	31.0	26.4	24.3	-0.7	-2.1	116.1	127.6	11.5
Electricity, gas and water supply	-40.9	-35.7	2.7	1.6	2.5	1.9	-1.1	-0.6	108.9	84.2	-24.7
Costruction	-8.0	-25.2	7.1	6.8	7.0	6.4	-0.3	-0.6	101.3	106.3	5.0
Wholesale and retail trade; reapair of motorvehicles and household goods	16.7	11.9	10.5	12.8	10.3	14.1	2.3	3.8	102.5	90.8	-11.7
Hotels and restaurants	57.9	24.4	2.7	4.4	2.4	3.6	1.7	1.2	113.2	122.2	9.0
Transport, storage, post and telecommunication	-4.4	-27.5	8.2	8.2	8.8	7.8	0.0	-1.0	93.6	105.1	11.5
Financial intermediation	61.0	53.1	0.9	1.5	1.0	1.9	0.6	0.9	90.9	78.9	-12.0
Real estate, renting and business activities	154.6	82.2	2.0	5.4	3.4	7.6	3.4	4.2	60.5	71.1	10.6
Public administration and defence; Compulsary social security	13.0	11.5	5.0	5.8	5.5	7.6	0.8	2.1	89.3	76.3	-13.0
Education	6.3	13.1	6.5	7.3	6.0	8.4	0.8	2.4	108.0	86.9	-21.1
Health and social work	11.7	2.6	4.8	5.6	5.2	6.5	0.8	1.3	92.6	86.2	-6.4
Outher community, social and personal service and activities	-12.7	-17.2	3.8	3.5	4.0	4.1	-0.3	0.1	95.1	85.4	-9.7
Total	11.5	-18.4	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0
Agriculture, hunting, forestry and fishing	-63.2	-71.0	14.9	5.8	15.5	5.5	-9.1	-10.0	96.7	105.5	8.8
Industry and construction	-6.7	-29.2	40.5	39.5	37.9	32.9	-1.0	-5.0	107.0	120.1	13.1
Tertiar	17.5	7.6	44.6	54.7	46.7	61.6	10.1	14.9	95.5	88.8	-6.7

12. Emloyment structure by activity types

Table 12

Distribution of active wage earners according to types of activity											
	Active wage earners										
	% change of numbers		Distribution according to types of activity				% change of distribution		Győr- Moson – Sopron County in relation to the national total		
	GY-M-S County	Hungary	Győr-Moson-Sopron County		Hungary total		GY-M-S County	Hungary			change 1990 -1996
	1990 - 1996		1990	1996	1990	1996	1990 - 1996		1990	1996	
	Percentage						% - point		%		% - point
Legislators, administrators, corporate managers	-26.8	-36.9	7.5	6.2	7.6	6.2	-1.3	-1.4	98.7	100.0	1.3
Jobs needing university degree	12.0	4.3	7.8	9.8	8.5	11.6	2.0	3.1	91.8	84.5	-7.3
Jobs needing other degree of higher or medium education	15.6	-1.2	10.4	13.6	10.9	14.0	3.2	3.1	95.4	97.1	1.7
Secretarial jobs	-31.4	-21.8	6.1	4.7	6.1	6.2	-1.4	0.1	100.0	75.8	-24.2
Services	49.6	34.7	9.4	15.8	8.6	15.1	6.4	6.5	109.3	104.6	-4.7
Agriculture, forestry	-28.2	-32.2	3.7	3.0	4.0	3.5	-0.7	-0.5	92.5	85.7	-6.8
Industry, construction	-28.0	-36.3	27.9	22.6	27.1	22.5	-5.3	-4.6	103.0	100.4	-2.5
Machine operators, assembly workers, drivers	-11.5	-35.8	13.9	13.8	13.0	10.9	-0.1	-2.1	106.9	126.6	19.7
Unskilled workers	-28.4	-43.7	11.1	8.9	11.5	8.4	-2.2	-3.1	96.5	106.0	9.4
Army	-32.8	-50.9	2.1	1.6	2.5	1.6	-0.5	-0.9	84.0	100.0	16.0
Total	-11.0	-23.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0

Distribution of active wage earner according to main division of activity											
	Active wage earners										
	Percentage change of number		Distribution according to main division of activity				Change of percentage distribution		Győr- Moson – Sopron County in the percentage of the country		
	GY-M-S County	Hungary	Győr-Moson-Sopron County		Hungary total		GY-M-S County	Hungary			change 1990 -2001
	1990 -2001		1990	2001	1990	2001	1990 - 2001		1990	2001	
	Percentage						% - point		%		% - point
Legislators, administrative, corporate staff, economic managers	-8.4	-12.7	7.5	7.2	7.6	8.1	-0.3	0.5	98.7	88.8	-9.9
Jobs needing university degree	19.0	16.5	7.9	9.8	8.6	12.3	1.9	3.7	91.8	79.7	-12.1
Jobs need to be other graduated or middle graded	25.0	10.5	10.3	13.5	10.8	14.7	3.2	3.9	95.4	91.8	-3.6
Official, management jobs	-15.6	-24.7	6.1	5.4	6.1	5.8	-0.7	-0.3	100.0	93.1	-6.9
Services	63.0	49.3	9.4	16.0	8.6	15.8	6.6	7.2	109.3	101.3	-8.0
Agricultural, forestry jobs	-24.0	-36.2	3.7	3.0	4.0	3.1	-0.7	-0.9	92.5	96.8	4.3
Industrial and constructional jobs	-27.3	-39.4	27.9	21.1	27.1	20.2	-6.8	-6.9	102.9	104.5	1.6
Machine operators, assembly workers, drivers	4.3	-29.2	13.9	15.2	13.0	11.3	1.3	-1.7	106.9	134.5	27.6
Jobs don't need qualiciation	42.3	-50.7	11.1	6.7	11.5	6.9	-4.4	-4.6	96.5	97.1	0.6
Army	-10.1	-39.6	2.1	2.0	2.5	1.9	-0.1	-0.6	84.0	105.3	21.3
Total	68.2	-18.4	100.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0

13. Enterprises by economic sectors

Table 13

Ratio of firms by economic sectors per 1000 inhabitants									
	In agriculture. hunting. forestry and fishing national economic industry		change 1992 - 1998	Industry and construction		change 1992 - 1998	Services		change 1992 - 1998
	1992	1998		1992	1998		1992	1998	
	percentage		% - point	Percentage		% - point	percentage		% - point
Administrative status (NUTS5)									
Cities	1.2	2.3	1.1	21.6	20.3	-1.2	77.2	77.4	0.2
Towns	1.4	6.1	4.7	27.7	21.6	-6.1	70.9	72.3	1.3
Villages	5.2	16.1	10.8	31.6	26.2	-5.5	63.1	57.8	-5.4
Population size-category (NUTS5)									
0 - 499	6.1	28.5	22.4	28.4	23.6	-4.8	65.6	47.9	-17.7
500 - 999	6.5	20.7	14.2	32.4	25.3	-7.1	61.0	54.0	-7.0
1000 – 1999	4.4	17.4	13.0	33.8	26.7	-7.1	61.8	55.9	-5.9
2000 – 2999	4.7	12.4	7.7	29.3	25.8	-3.5	66.0	61.8	-4.2
3000 – 4999	5.9	8.5	2.6	30.4	26.6	-3.8	63.7	64.9	1.1
5000 – 9999	4.5	17.0	12.5	33.9	27.4	-6.5	61.6	55.6	-6.0
10000 - 19999	1.5	7.9	6.5	32.3	23.8	-8.5	66.3	68.3	2.0
30000 - 49999	1.2	4.5	3.2	24.2	20.2	-4.0	74.6	75.3	0.8
50000 - 99999	0.9	2.9	1.9	23.3	21.6	-1.7	75.8	75.5	-0.2
100000 – X	1.3	2.1	0.7	20.9	19.9	-1.0	77.7	78.0	0.3
Micro region (NUTS4)									
Csorna	4.3	17.0	12.6	33.2	26.1	-7.0	62.5	56.9	-5.6
Győr	1.9	3.3	1.4	22.2	21.2	-1.0	75.9	75.5	-0.4
Kapuvár	2.0	16.7	14.6	32.2	20.4	-11.8	65.8	63.0	-2.8
Mosonmagyaróvár	2.3	9.3	7.0	26.7	22.9	-3.8	71.0	67.8	-3.2
Sopron	1.8	6.7	4.9	26.3	23.1	-3.2	71.9	70.2	-1.7
Tét-Pannonhalma	8.2	17.7	9.5	31.9	25.4	-6.5	59.8	56.8	-3.0
Győr-Moson-Sopron County total (NUTS 3)	2.4	7.1	4.7	25.3	22.3	-2.9	72.4	70.6	-1.8
Western Transdanubian Region (NUTS2)	3.2	8.2	5.0	25.0	22.5	-2.6	71.7	69.3	-2.4
National total	2.3	5.7	3.4	23.6	21.8	-1.8	74.1	72.5	-1.6

UNEMPLOYMENT

14. Unemployment by active population

Table 14

The number of registered unemployed for 100 work aged inhabitants								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 -1998	
Administrative status (NUTS5)								
Cities	6.6	3.2	-3.4	-51.8	59.9	45.9	-14.0	-23.4
Towns	6.7	3.7	-3.0	-45.0	60.3	52.7	-7.6	-12.6
Villages	8.8	3.6	-5.1	-58.4	79.4	52.5	-27.0	-33.9
County total	7.5	3.4	-4.1	-54.2	68.2	49.6	-18.6	-27.2
Average	7.3	3.5	-3.8	-52.3				
Standard deviation	1.2	0.3	-1.0	-78.1				
Relative deviation	16.8	7.7	-9.1	-54.1				
Population size-category (NUTS5)								
0 - 499	8.6	3.6	-5.1	-58.5	78.3	51.6	-26.7	-34.1
500 - 999	8.2	3.7	-4.6	-55.3	74.7	53.1	-21.6	-28.9
1000 – 1999	7.9	3.7	-4.2	-52.9	71.8	53.7	-18.1	-25.2
2000 – 2999	9.3	3.4	-5.9	-63.2	84.5	49.4	-35.1	-41.6
3000 – 4999	10.2	3.6	-6.6	-64.7	92.2	51.7	-40.5	-43.9
5000 – 9999	9.0	4.2	-4.9	-53.9	82.0	60.0	-22.0	-26.8
10000 - 19999	5.4	3.7	-1.7	-31.2	49.1	53.7	4.6	9.3
30000 - 49999	7.6	3.6	-4.0	-53.2	69.0	51.2	-17.7	-25.7
50000 - 99999	3.2	1.9	-1.3	-39.9	28.6	27.3	-1.3	-4.6
100000 – X	8.0	3.7	-4.3	-53.6	72.9	53.7	-19.2	-26.4
Relative deviation	26.4	17.1	-9.3	-35.3				
Micro region (NUTS4)								
Csorna	6.7	3.0	-3.7	-55.0	61.1	43.6	-17.4	-28.5
Győr	8.5	3.7	-4.8	-56.8	76.7	52.7	-24.0	-31.3
Kapuvár	8.2	4.7	-3.5	-42.5	74.1	67.7	-6.4	-8.7
Mosonmagyaróvár	8.0	3.7	-4.3	-54.2	72.4	52.6	-19.8	-27.3
Sopron	4.0	2.3	-1.7	-42.0	36.4	33.5	-2.9	-8.0
Tét-pannonhalma	12.0	4.6	-7.5	-61.9	109.2	66.0	-43.2	-39.5
Relative deviation	33.0	24.8	-8.2	-25.0				
Győr-Moson-Sopron County total (NUTS 3)	7.5	3.4	-4.1	-54.1	68.2	49.3		
Western Transdanubian Region (NUTS2)	8.3	4.6	-3.7	-44.3	75.5	66.7		
National total	11.0	6.9	-4.1	-37.0	100.0	100.0		

The number of registered unemployed for 100 work aged inhabitants								
	1992	2001	Absolute change	% change	1992	2001	Absolute change	% change
			1992 - 2001		In the percentage of the national total		1992 - 2001	
Administrative status (NUTS5)								
Cities	6.6	3.3	-3.3	-50.0	60.0	55.9	-4.1	-6.8
Towns	6.7	3.3	-3.4	-50.7	60.9	55.9	-5.0	-8.2
Villages	8.8	3.0	-5.8	-65.9	80.0	50.8	-29.2	36.5
Average	7.4	3.2	-4.2	-55.5				
Standard deviation	1.2	0.2	1.4	9.0				
Relative deviation	16.2	6.3	-33.3	-16.2				
Micro region (NUTS4)								
Csorna	6.7	3.0	-3.7	-55.2	60.9	50.8	-10.1	-16.6
Győr	8.5	3.6	-4.9	-57.6	77.3	61.0	-16.3	-21.1
Kapuvár	8.2	3.0	-5.2	-63.4	74.5	50.8	-23.7	-31.8
Mosonmagyaróvár	8.0	2.3	-5.7	-71.2	72.7	39.0	-33.7	-46.4
Sopron	4.0	2.3	-1.7	-42.5	36.4	39.0	2.6	7.1
Tét-pannonhalma	12.0	3.6	-8.4	-70.0	109.1	61.0	-48.1	-44.1
Relative deviation	33.0	19.6	-45.0	-17.8				
Győr-Moson-Sopron County total (NUTS 3)	7.5	3.2	-4.3	-57.3	68.2	54.2	-14.0	-20.5
Western Transdanubian Region (NUTS2)	8.3	3.5	-4.8	-57.8	75.5	59.3	-16.2	-21.5
National total	11.0	5.9	-5.1	-46.7	100.0	100.0	0.0	1.0

15. Long-term unemployment by active population

Table 15

Rate of long-term (more than 180 days) registered unemployed for 100 work aged inhabitants								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	3.8	2.0	-1.8	-48.1	50.9	43.1	-7.8	-15.3
Towns	4.5	2.3	-2.2	-49.5	59.8	49.3	-10.5	-17.6
Villages	5.6	2.0	-3.6	-64.2	74.8	43.7	-31.1	-41.6
Relative deviation	19.6	7.5	-12.1	-61.7				
Population size-category (NUTS5)								
0 - 499	4.8	1.9	-2.9	-60.8	64.2	41.1	-23.1	-36.0
500 – 999	5.1	2.1	-3.0	-59.1	68.1	45.5	-22.6	-33.2
1000 – 1999	5.0	2.0	-3.0	-60.4	67.2	43.4	-23.8	-35.4
2000 – 2999	6.0	1.9	-4.2	-68.9	80.7	40.9	-39.8	-49.3
3000 – 4999	6.8	2.0	-4.8	-70.8	90.1	42.9	-47.2	-52.4
5000 – 9999	5.9	2.7	-3.2	-54.4	79.1	58.9	-20.3	-25.6
10000 - 19999	3.8	2.0	-1.7	-45.5	50.2	44.6	-5.5	-11.1
30000 - 49999	5.2	2.4	-2.8	-54.4	69.3	51.6	-17.7	-25.5
50000 - 99999	1.5	1.0	-0.5	-35.6	20.4	21.4	1.0	5.1
100000 – X	4.8	2.4	-2.4	-49.7	63.6	52.2	-11.4	-17.9
Relatedeviation	29.4	22.3	-7.1	-24.2				
Micro region (NUTS4)								
Csorna	4.7	1.6	-3.1	-66.0	63.0	35.0	-28.0	-44.4
Győr	5.1	2.2	-2.9	-56.4	68.6	48.8	-19.7	-28.8
Kapuvár	5.0	2.4	-2.6	-52.4	66.2	51.4	-14.8	-22.3
Mosonmagyaróvár	5.4	2.4	-3.1	-56.6	72.6	51.4	-21.2	-29.2
Sopron	2.0	1.3	-0.8	-38.2	27.3	27.5	0.2	0.8
Tét-pannonhalma	7.7	2.5	-5.2	-67.0	102.7	55.3	-47.4	-46.2
Relative deviation	36.1	24.6	-11.5	-31.9				
Győr-Moson-Sopron County total (NUTS 3)	4.7	2.0	-2.6	-56.5	62.2	44.2	-18.0	-28.9
Western Transdanubian Region (NUTS2)	5.0	2.7	-2.3	-46.3	67.4	59.1	-8.3	-12.3
National total	7.5	4.6	-2.9	-38.7	100.0	100.0	0.0	0.0

Rate of long-term (more than 180 days) registered unemployed for 100 work aged inhabitants								
	1993	2001	Absolute change	% change	1993	2001	Absolute change	% change
			1993 - 2001		In the percentage of the national total		1992 - 2001	
Administrative status (NUTS5)								
Cities	3.6	0.8	-2.8	-77.3	55.8	31.6	-24.2	-43.4
Towns	4.2	1.0	-3.3	-76.6	65.2	38.1	-27.1	-41.6
Villages	5.3	1.0	-4.3	-81.1	81.4	38.3	-43.0	-52.9
Relate deviation	19.7	12.4	-22.0	-3.1				
Micro region (NUTS4)								
Csorna	4.4	1.0	-3.4	-77.4	68.3	38.5	-29.8	-43.6
Győr	4.9	1.0	-3.9	-79.2	75.2	39.0	-36.1	-48.1
Kapuvár	4.7	1.0	-3.6	-77.6	71.9	40.3	-31.6	-44.0
Mosonmagyaróvár	5.2	1.0	-4.2	-80.9	79.8	38.0	-41.8	-52.4
Sopron	1.9	0.5	-1.4	-71.9	29.8	20.9	-8.9	-29.8
Tét-pannonhalma	7.2	1.2	-6.1	-84.0	111.3	44.4	-66.9	-60.1
Relative deviation	36.1	24.7	-40.1	-5.2				
Győr-Moson-Sopron County total (NUTS 3)	4.4	0.9	-3.5	-79.2	68.0	35.4	-32.6	-47.9
Western Transdanubian Region (NUTS2)	4.8	1.3	-3.5	-73.8	73.6	48.1	-25.5	-34.6
National total	6.5	2.6	-3.9	-60.0	100.0	100.0	0.0	0.0

16. Unemployment – low educational level

Table 16

% ratio of registered unemployed without 8 year primary education								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 -1998	
Administrative status (NUTS5)								
Cities	1.7	0.7	-1.0	-60.3	56.5	30.5	-26.0	-46.0
Towns	2.0	0.9	-1.1	-54.6	69.4	43.0	-26.4	-38.1
Villages	1.6	0.8	-0.8	-52.3	54.7	35.6	-19.2	-35.0
Standard deviation	13.3	17.2	3.9	29.3				
Population size-category (NUTS5)								
0 - 499	1.2	0.5	-0.7	-55.8	40.8	24.6	-16.3	-39.8
500 - 999	1.2	0.5	-0.6	-54.9	39.4	24.2	-15.2	-38.6
1000 – 1999	1.4	0.8	-0.5	-39.0	46.3	38.5	-7.8	-16.8
2000 – 2999	2.1	0.9	-1.2	-56.4	71.2	42.3	-28.8	-40.5
3000 – 4999	2.2	0.8	-1.4	-63.6	74.0	36.7	-37.3	-50.4
5000 – 9999	2.3	1.2	-1.1	-49.7	77.9	53.4	-24.5	-31.5
10000 - 19999	2.1	1.1	-1.0	-47.9	72.7	51.6	-21.1	-29.0
30000 - 49999	2.2	0.8	-1.4	-65.1	74.4	35.4	-39.0	-52.4
50000 - 99999	0.5	0.2	-0.3	-53.3	17.4	11.1	-6.3	-36.4
100000 – X	2.2	0.8	-1.3	-61.0	74.0	39.3	-34.7	-46.9
Relative deviation	35.8	36.1	0.3	0.9				
Micro region (NUTS4)								
Csorna	1.3	0.7	-0.6	-46.1	44.8	32.9	-11.9	-26.5
Győr	2.1	0.8	-1.3	-60.8	70.2	37.5	-32.7	-46.6
Kapuvár	1.6	0.8	-0.8	-49.2	56.1	38.8	-17.3	-30.8
Mosonmagyaróvár	1.9	1.0	-0.9	-47.6	64.9	46.3	-18.5	-28.6
Sopron	0.7	0.5	-0.2	-29.9	22.5	21.5	-1.0	-4.5
Tét-pannonhalma	2.6	1.2	-1.4	-54.5	88.0	54.6	-33.4	-37.9
Relative deviation	38.9	29.3	-9.6	-24.7				
Győr-Moson-Sopron County total (NUTS 3)	1.7	0.8	-0.9	-52.4	56.9	36.9	-20.0	-35.1
Western Transdanubian Region (NUTS2)	1.9	1.3	-0.6	-31.1	65.9	61.9	-4.0	-6.1
National total	2.9	2.2	-0.8	-26.6	100.0	100.0	0.0	0.0

% ratio of registered unemployed without 8 year primary education								
	1993	2001	Absolute change	% change	1993	2001	Absolute change	% change
			1993 -2001		In the percentage of the national total		1993 -2001	
Administrative status (NUTS5)								
Cities	3.9	2.5	-1.4	-35.9	12.3	34.2	21.9	178.0
Towns	6.3	4.0	-2.3	-36.5	77.8	54.8	-23.0	-29.6
Villages	6.5	3.6	-2.9	-44.6	80.2	49.3	-30.9	-38.5
Relative deviation	26.0	23.1	-34.3	-12.5				
Micro region (NUTS4)								
Csorna	7.0	5.4	-1.6	-22.9	86.4	68.5	-17.9	-20.7
Győr	4.7	2.8	-1.9	-40.2	58.0	38.4	-19.6	-33.8
Kapuvár	7.0	4.3	-2.7	-38.6	86.4	58.9	-27.5	-31.8
Mosonmagyaróvár	5.6	3.3	-2.3	-41.1	69.1	45.2	-23.9	-34.6
Sopron	4.0	1.7	-2.3	-57.5	49.4	23.3	-26.1	-52.5
Tét-pannonhalma	8.1	4.4	-3.7	-45.7	100.0	60.3	-39.7	-39.7
Relative deviation	25.8	36.1	-30.3	-27.3				
Győr-Moson-Sopron County total (NUTS 3)	5.5	3.2	-2.3	-41.8	67.9	43.8	-24.1	-35.5
Western Transdanubian Region (NUTS2)	6.4	5.0	-1.4	-21.9	79.0	68.5	-10.5	-13.3
National total	8.1	7.3	-0.8	-9.9	100.0	100.0	0.0	0.0

17. Unemployment – medium-level education

Table 17

% ratio of registreted unemployed with middle school qualification								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	3.6	1.8	-1.8	-50.5	67.4	55.2	-12.2	-18.0
Towns	3.8	2.1	-1.7	-44.3	72.0	66.4	-5.6	-7.7
Villages	5.5	2.4	-3.1	-56.5	103.9	74.9	-29.0	-27.9
Standard deviation	24.5	15.0	-9.5	-38.6				
Population size-category (NUTS5)								
0 - 499	6.9	2.3	-4.7	-67.4	130.6	70.4	-60.2	-46.1
500 - 999	5.5	2.9	-2.6	-46.9	103.6	91.0	-12.5	-12.1
1000 – 1999	5.1	2.5	-2.6	-51.6	95.7	76.7	-19.0	-19.8
2000 – 2999	5.5	2.2	-3.3	-59.8	103.0	68.6	-34.4	-33.4
3000 – 4999	6.0	2.3	-3.7	-61.9	113.0	71.4	-41.6	-36.8
5000 – 9999	5.1	1.9	-3.2	-62.4	96.5	60.1	-36.4	-37.7
10000 - 19999	3.0	2.4	-0.6	-19.8	56.3	74.8	18.5	32.9
30000 - 49999	4.3	1.9	-2.4	-55.1	81.0	60.2	-20.8	-25.6
50000 - 99999	1.9	1.2	-0.7	-38.3	36.4	37.2	0.8	2.2
100000 – X	4.2	2.0	-2.2	-52.6	79.1	62.1	-17.0	-21.5
Relative deviation	30.7	20.8	-9.9	-32.2				
Micro region (NUTS4)								
Csorna	3.7	2.3	-1.4	-36.8	69.5	72.7	3.3	4.7
Győr	4.4	2.0	-2.4	-53.8	82.7	63.2	-19.5	-23.6
Kapuvár	5.6	3.3	-2.3	-41.7	105.9	102.2	-3.7	-3.5
Mosonmagyaróvár	4.6	2.0	-2.6	-57.4	86.5	61.1	-25.4	-29.4
Sopron	2.4	1.4	-1.0	-42.5	45.0	42.9	-2.1	-4.7
Tét-pannonhalma	7.4	3.0	-4.4	-59.1	139.3	94.5	-44.9	-32.2
Relative deviation	36.5	30.5	-6.0	-16.5				
Győr-Moson-Sopron County total (NUTS 3)	4.1	2.0	-2.1	-51.7	77.4	61.9	-15.5	-20.0
Western Transdanubian Region (NUTS2)	4.5	2.5	-2.0	-43.4	84.7	79.3	-5.4	-6.3
National total	5.3	3.2	-2.1	-39.6	100.0	100.0	0.0	0.0

% ratio of registered unemployed with middle school qualification								
	1993	2001	Absolute change	% change	1993	2001	Absolute change	% change
			1993 -2001		In the percentage of the national total		1993 - 2001	
Administrative status (NUTS5)								
Cities	27.9	30.0	2.1	7.5	158.5	150.8	-7.7	-4.9
Towns	23.5	26.2	2.7	11.5	133.5	131.7	-1.8	-1.3
Villages	15.7	19.4	3.7	23.6	89.2	97.5	8.3	9.3
Relative deviation	27.6	21.3	28.5	59.0				
Micro region (NUTS4)								
Csorna	16.4	23.9	7.5	45.7	93.2	120.1	26.9	28.9
Győr	24.4	27.4	3.0	12.3	138.6	137.7	-0.9	-0.6
Kapuvár	20.2	22.2	2.0	10.0	114.8	111.6	-3.2	-2.8
Mosonmagyaróvár	19.2	18.3	-0.9	-4.7	109.1	92.0	-17.1	-15.7
Sopron	22.8	28.3	5.5	24.1	129.5	142.2	12.7	9.8
Tét-pannonhalma	14.4	17.4	3.0	20.8	81.2	87.4	6.2	7.6
Relative deviation	19.3	19.7	86.5	93.6				
Győr-Moson-Sopron County total (NUTS 3)	21.3	24.5	3.2	15.0	121.0	123.1	2.1	1.6
Western Transdanubian Region (NUTS2)	20.5	23.0	2.5	12.2	116.5	115.6	-0.9	-0.8
National total	17.6	19.9	2.3	13.1	100.0	100.0	0.0	0.0

18. Unemployment of university graduates

Table 18

Percentage rate of the graduates among the registered unemployed								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	1.8	0.9	-0.9	-49.5	99.2	83.4	-15.7	-15.9
Towns	1.6	0.9	-0.6	-41.4	83.7	81.8	-2.0	-2.3
Villages	2.5	1.2	-1.3	-51.1	134.0	109.0	-24.9	-18.6
Standard deviation	19.6	7.5	-12.1	-61.7				
Population size-category (NUTS5)								
0 - 499	1.7	1.1	-0.6	-33.8	92.0	101.5	9.5	10.3
500 - 999	2.7	2.1	-0.7	-24.5	147.3	185.3	38.0	25.8
1000 – 1999	2.8	1.3	-1.5	-53.6	149.9	115.9	-34.0	-22.7
2000 – 2999	2.0	0.7	-1.2	-62.3	105.5	66.3	-39.2	-37.2
3000 – 4999	2.6	0.9	-1.7	-65.6	141.0	80.7	-60.3	-42.7
5000 – 9999	1.6	0.9	-0.7	-42.3	88.0	84.6	-3.4	-3.9
10000 - 19999	1.5	1.1	-0.3	-22.5	79.4	102.5	23.1	29.1
30000 - 49999	1.7	0.8	-0.8	-50.9	89.9	73.6	-16.3	-18.2
50000 - 99999	1.4	0.8	-0.5	-39.5	73.3	73.8	0.5	0.7
100000 – X	2.0	1.0	-1.1	-52.1	109.1	87.1	-22.0	-20.2
Relative deviation	26.7	35.6	8.9	33.4				
Micro region (NUTS4)								
Csorna	1.3	1.2	-0.1	-9.0	71.9	109.0	37.1	51.6
Győr	2.1	1.0	-1.1	-52.4	113.3	89.9	-23.4	-20.7
Kapuvár	2.8	1.5	-1.3	-45.6	149.9	135.8	-14.1	-9.4
Mosonmagyaróvár	1.7	0.8	-0.9	-52.2	91.3	72.7	-18.6	-20.4
Sopron	1.4	0.9	-0.6	-38.3	77.6	79.8	2.2	2.8
Tét-pannonhalma	3.4	1.0	-2.4	-69.4	182.8	93.3	-89.6	-49.0
Relative deviation	38.3	23.6	-14.8	-38.5				
Győr-Moson-Sopron County total (NUTS 3)	1.9	1.0	-0.9	-49.0	103.6	88.0	-15.6	-15.0
Western Transdanubian Region (NUTS2)	1.9	1.2	-0.7	-35.7	100.9	108.0	7.1	7.0
National total	1.9	1.1	-0.7	-40.0	100.0	100.0	0.0	0.0

Percentage rate of the graduated among the registered unemployed								
	1993	2001	Absolute change	% change	1993	2001	Absolute change	% change
			1993 - 2001		In the percentage of the national total		1993 - 2001	
Administrative status (NUTS5)								
Cities	5.2	7.0	1.8	34.6	273.7	241.4	-32.3	-11.8
Towns	2.9	4.9	2.0	69.0	152.6	169.0	16.4	10.7
Villages	1.5	2.8	1.3	86.7	78.9	96.6	17.7	2.4
Relative deviation	58.4	42.9	21.2	41.8				
Micro region (NUTS4)								
Csorna	1.4	1.9	0.5	35.7	73.7	65.6	-8.1	-11.0
Győr	4.0	6.2	2.2	55.0	210.5	213.8	3.3	1.6
Kapuvár	2.4	4.1	1.7	70.8	126.3	141.4	15.1	11.9
Mosonmagyaróvár	1.9	3.4	1.5	78.9	100.0	117.2	17.2	17.2
Sopron	4.8	5.4	0.6	12.5	252.6	186.2	-66.4	-26.3
Tét-pannonhalma	1.5	2.4	0.9	60.0	78.9	82.7	3.8	4.8
Relative deviation	52.9	43.0	54.7	46.8				
Győr-Moson-Sopron County total (NUTS 3)	3.1	4.7	1.6	51.6	163.2	162.1	-1.1	-0.7
Western Transdanubian Region (NUTS2)	2.6	4.1	1.5	57.7	136.8	141.4	4.6	3.6
National total	1.9	2.9	1.0	52.6	100.0	100.0	0.0	0.0

19. Income by taxpayer

Table 19

Total estimated net income by taxpayer								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	179,968	150,094	-29,874	-16.6	103.7	109.5	5.9	5.7
Towns	156,778	132,757	-24,021	-15.3	90.3	96.9	6.6	7.3
Villages	137,802	120,299	-17,503	-12.7	79.4	87.8	8.4	10.6
Standard deviation	13.4	11.1	-2.2	-16.6				
Population size-category (NUTS5)								
0 - 499	127,479	110,295	-17,185	-13.5	73.4	80.5	7.1	9.6
500 - 999	135,501	118,937	-16,563	-12.2	78.0	86.8	8.7	11.2
1000 – 1999	136,879	118,742	-18,137	-13.3	78.8	86.6	7.8	9.9
2000 – 2999	138,489	119,164	-19,325	-14.0	79.8	87.0	7.2	9.0
3000 – 4999	145,795	130,367	-15,428	-10.6	84.0	95.1	11.2	13.3
5000 – 9999	141,074	121,254	-19,820	-14.0	81.3	88.5	7.2	8.9
10000 - 19999	148,485	121,314	-27,171	-18.3	85.5	88.5	3.0	3.5
30000 - 49999	163,995	142,731	-21,264	-13.0	94.5	104.1	9.7	10.3
50000 - 99999	170,693	136,915	-33,778	-19.8	98.3	99.9	1.6	1.6
100000 – X	183,910	155,380	-28,530	-15.5	105.9	113.4	7.5	7.0
Relative deviation	12.0	10.8	-1.2	-10.3				
Micro region (NUTS4)								
Csorna	135,622	113,906	-21,715	-16.0	78.1	83.1	5.0	6.4
Győr	175,827	148,348	-27,480	-15.6	101.3	108.2	7.0	6.9
Kapuvár	136,054	115,661	-20,394	-15.0	78.4	84.4	6.0	7.7
Mosonmagyaróvár	152,059	131,470	-20,589	-13.5	87.6	95.9	8.4	9.5
Sopron	160,197	130,230	-29,967	-18.7	92.3	95.0	2.8	3.0
Tét-pannonhalma	131,749	119,714	-12,035	-9.1	75.9	87.4	11.5	15.1
Relative deviation	11.6	10.2	-1.4	-12.2				
Győr-Moson-Sopron County total (NUTS 3)	160,336	135,075	-25,262	-15.8	92.3	98.6	6.2	6.7
Western Transdanubian Region (NUTS2)	159,526	131,444	-28,082	-17.6	91.9	95.9	4.0	4.4
National total	173,629	137,044	-36,585	-21.1	100.0	100.0	0.0	0.0

20. Net income by inhabitant

Table 20

Estimated net income for 1000 inhabitants								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	99,399	86,092	-13,307	-13.4	121.8	132.7	10.9	8.9
Towns	82,295	71,794	-10,501	-12.8	100.9	110.7	9.8	9.7
Villages	63,500	56,170	-7,330	-11.5	77.8	86.6	8.8	11.2
Standard deviation	22.0	21.0	-1.0	-4.5				
Population size-category (NUTS5)								
0 - 499	53,636	46,852	-6,784	-12.6	65.7	72.2	6.5	9.9
500 - 999	61,152	53,780	-7,372	-12.1	75.0	82.9	7.9	10.6
1000 – 1999	63,856	55,297	-8,559	-13.4	78.3	85.2	7.0	8.9
2000 – 2999	63,901	57,805	-6,096	-9.5	78.3	89.1	10.8	13.8
3000 – 4999	67,573	62,876	-4,697	-7.0	82.8	96.9	14.1	17.0
5000 – 9999	70,302	57,681	-12,621	-18.0	86.2	88.9	2.7	3.2
10000 - 19999	78,683	65,035	-13,648	-17.3	96.4	100.2	3.8	3.9
30000 - 49999	86,122	77,960	-8,162	-9.5	105.6	120.2	14.6	13.8
50000 - 99999	93,573	75,750	-17,823	-19.0	114.7	116.8	2.1	1.8
100000 – X	101,902	90,457	-11,445	-11.2	124.9	139.4	14.5	11.6
Relative deviation	21.0	19.6	-21.0	-100.0				
Micro region (NUTS4)								
Csorna	63,961	54,324	-9,636	-15.1	78.4	83.7	5.3	6.8
Győr	93,618	83,258	-10,360	-11.1	114.8	128.3	13.6	11.8
Kapuvár	67,303	57,931	-9,372	-13.9	82.5	89.3	6.8	8.2
Mosonmagyaróvár	75,646	65,810	-9,836	-13.0	92.7	101.4	8.7	9.4
Sopron	82,739	67,122	-15,617	-18.9	101.4	103.5	2.1	2.0
Tét-pannonhalma	57,994	53,206	-4,789	-8.3	71.1	82.0	10.9	15.4
Relative deviation	17.9	27.3	9.4	52.8				
Győr-Moson-Sopron County total (NUTS 3)	81,639	70,486	-11,152	-13.7	100.1	108.7	8.6	8.6
Western Transdanubian Region (NUTS2)	80,694	68,834	-11,861	-14.7	98.9	106.1	7.2	7.3
National total	81,584	64,873	-16,711	-20.5	100.0	100.0	0.0	0.0

21. Ratio of low-income population

Table 21

Ratio of the low income inhabitants /in 1992: 0-100 000 HUF, in 1998: 0-400 000 HUF/								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	3.9	12.9	9.0	229.2	75.6	75.1	-0.5	-0.7
Towns	5.2	16.3	11.0	210.6	100.9	94.6	-6.3	-6.3
Villages	7.2	19.5	12.2	168.8	139.5	113.1	-26.4	-18.9
Standard deviation	30.6	20.2	-10.4	-33.9				
Population size-category (NUTS5)								
0 - 499	8.1	24.2	16.1	197.7	156.7	140.7	-16.0	-10.2
500 - 999	7.7	19.9	12.2	160.0	147.3	115.5	-31.8	-21.6
1000 – 1999	7.4	20.3	12.9	174.1	142.6	117.9	-24.7	-17.3
2000 – 2999	7.6	19.6	11.9	156.1	147.1	113.6	-33.5	-22.7
3000 – 4999	5.8	16.6	10.8	186.8	111.6	96.5	-15.0	-13.5
5000 – 9999	6.4	17.4	11.0	171.7	123.2	101.0	-22.2	-18.0
10000 - 19999	5.6	18.8	13.2	235.2	107.8	109.0	1.2	1.1
30000 - 49999	4.9	14.2	9.3	189.4	94.4	82.4	-12.0	-12.7
50000 - 99999	4.3	15.8	11.5	268.7	82.5	91.7	9.3	11.2
100000 – X	3.8	11.9	8.1	213.8	72.9	69.0	-3.9	-5.3
Relative deviation	24.9	19.5	-5.3	-21.5				
Micro region (NUTS4)								
Csorna	8.1	22.4	14.3	176.5	155.6	129.8	-25.8	-16.6
Győr	4.2	13.0	8.8	207.3	81.7	75.7	-6.0	-7.3
Kapuvár	7.2	21.0	13.8	191.5	138.8	122.1	-16.7	-12.1
Mosonmagyaróvár	5.9	15.9	10.1	171.3	113.0	92.5	-20.5	-18.2
Sopron	5.0	17.5	12.5	250.9	95.7	101.3	5.6	5.9
Tét-pannonhalma	8.0	19.0	11.0	136.6	154.5	110.3	-44.2	-28.6
Relative deviation	25.3	18.8	-6.5	-25.6	25.3	18.8	-6.5	-25.6
Győr-Moson-Sopron County total (NUTS 3)	5.3	15.8	10.5	198.2	102.0	91.8	-10.2	-10.0
Western Transdanubian Region (NUTS2)	5.3	16.9	11.6	220.9	101.5	98.2	-3.2	-3.2
National total	5.2	17.2	12.0	231.5	100.0	100.0	0.0	0.0

22. Ratio of high-income population

Table 22

Ratio of high income inhabitants								
	1992	1998	Absolute change	% change	1992	1998	Absolute change	% change
			1992 - 1998		In the percentage of the national total		1992 - 1998	
Administrative status (NUTS5)								
Cities	23.9	17.5	-6.5	-27.0	102.3	103.2	0.9	0.9
Towns	14.8	9.7	-5.1	-34.6	63.4	57.3	-6.1	-9.6
Villages	7.2	4.9	-2.3	-31.7	30.6	28.9	-1.7	-5.6
Standard deviation	54.8	59.4	4.6	8.3				
Population size-category (NUTS5)								
0 - 499	3.5	1.9	-1.6	-45.2	14.9	11.3	-3.6	-24.3
500 – 999	6.5	4.6	-1.9	-29.0	27.9	27.4	-0.5	-1.9
1000 – 1999	7.0	4.2	-2.7	-39.0	29.8	25.1	-4.7	-15.7
2000 – 2999	7.5	5.0	-2.5	-33.5	32.2	29.6	-2.6	-8.1
3000 – 4999	9.7	7.8	-1.9	-19.3	41.4	46.2	4.8	11.6
5000 – 9999	7.2	4.3	-2.9	-40.5	30.9	25.4	-5.5	-17.7
10000 - 19999	10.8	6.5	-4.3	-39.8	46.2	38.5	-7.7	-16.7
30000 - 49999	18.0	12.1	-5.9	-32.7	76.8	71.5	-5.3	-6.9
50000 - 99999	20.7	15.4	-5.3	-25.7	88.6	91.0	2.4	2.7
100000 – X	25.2	18.2	-7.0	-27.7	107.6	107.6	0.0	0.0
Relative deviation	61.7	67.5	5.8	9.4	263.5			
Micro region (NUTS4)								
Csorna	7.3	4.7	-2.7	-36.4	31.4	27.6	-3.8	-12.1
Győr	22.1	15.9	-6.2	-27.9	94.4	94.1	-0.3	-0.3
Kapuvár	7.1	3.7	-3.4	-48.2	30.3	21.7	-8.6	-28.4
Mosonmagyaróvár	12.5	7.9	-4.6	-36.9	53.4	46.6	-6.9	-12.8
Sopron	16.6	12.2	-4.4	-26.6	70.8	71.8	1.0	1.5
Tét-pannonhalma	6.2	3.9	-2.3	-37.0	26.6	23.2	-3.4	-12.9
Relative deviation	53.1	62.6	9.5	17.9	53.1	62.6	9.5	17.9
Győr-Moson-Sopron County total (NUTS 3)	16.7	11.8	-4.9	-29.3	71.2	69.5	-1.6	-2.3
Western Transdanubian Region (NUTS2)	16.1	10.9	-5.2	-32.2	68.9	64.5	-4.3	-6.3
National total	23.4	16.9	-6.5	-27.7	100.0	100.0	0.0	0.0

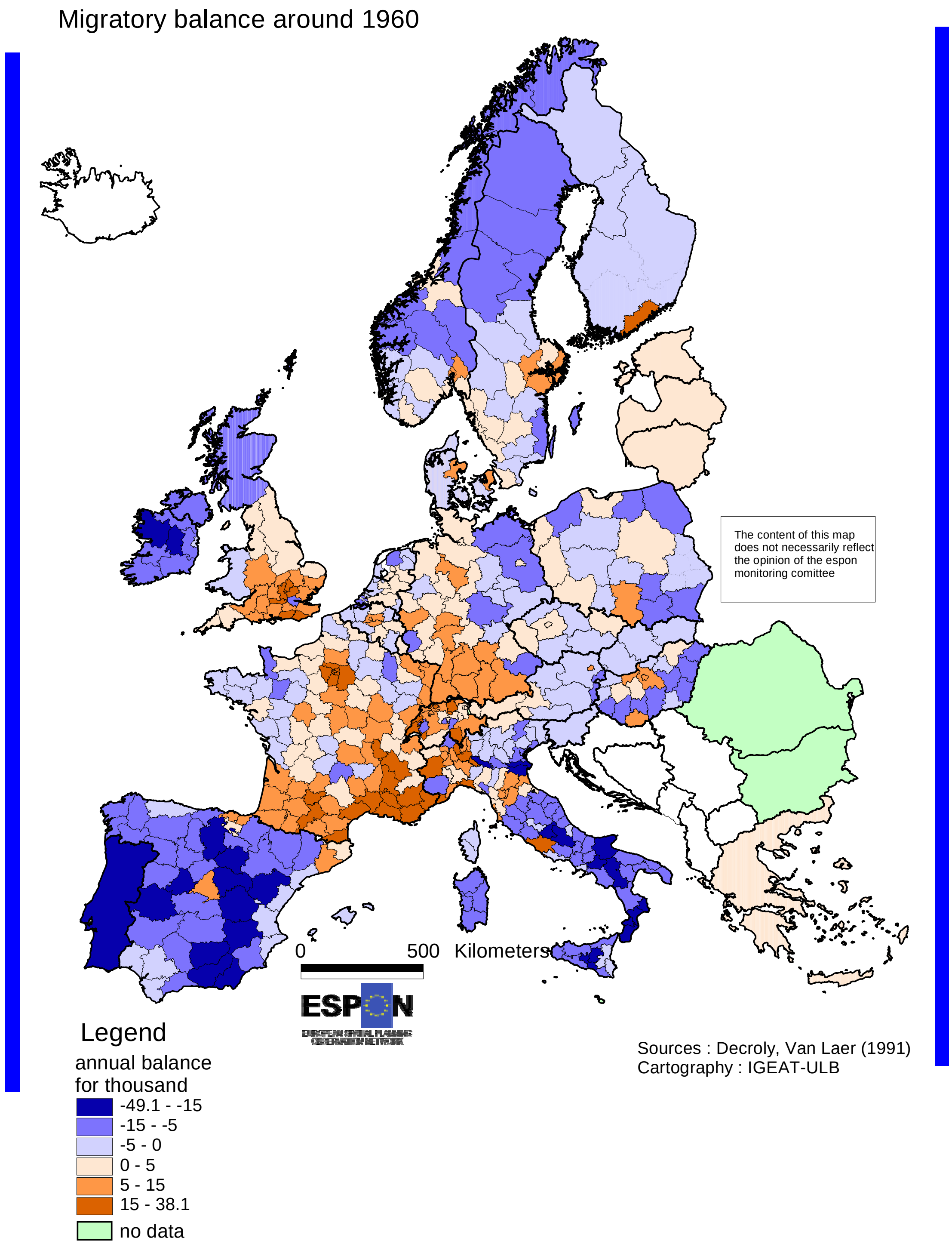
23. Income groups, car ownership

Table 23

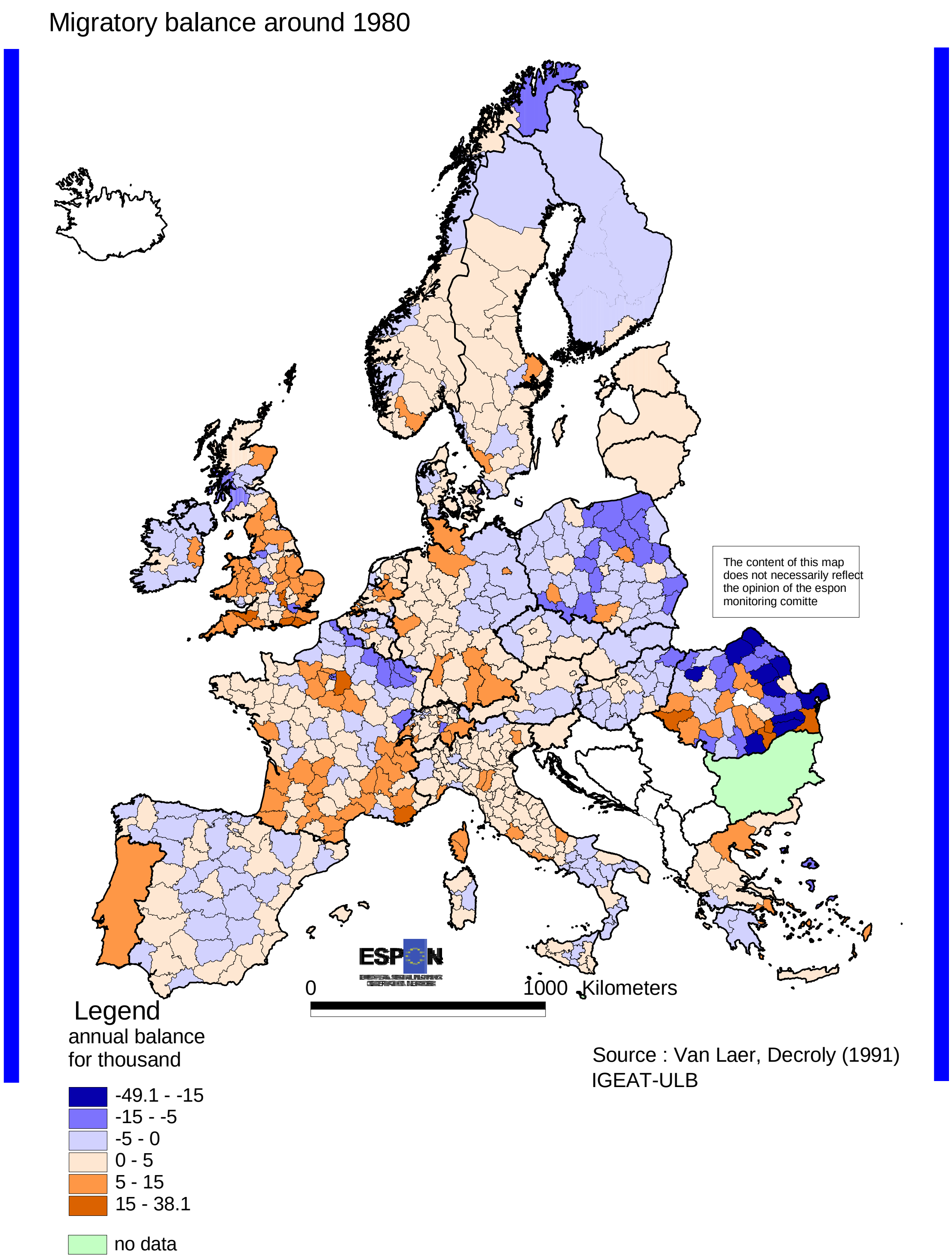
	Rate of low income inhabitants (0-400000 HUF)			High income inhabitants (more than 2000000 HUF)			Number of passenger cars for 1000 inhabitants		
	1992	2002	%	1992	2002	%	1992	2002	%
Micro region (NUTS4)									
Csorna	8.1	25.4	17.3	7.3	7.5	0.2	174.8	239.4	37.0
Győr	4.2	19.8	15.6	22.1	15.6	-6.5	200.4	292.8	46.1
Kapuvár	7.2	21.9	14.7	7.1	6.0	-0.9	174.1	254.7	46.3
Mosonmagyaróvár	5.9	21.3	15.4	12.5	9.8	-2.7	152.7	262.8	72.1
Sopron	5.0	20.8	15.8	16.6	10.8	-5.8	178.0	288.3	62.0
Tét-Pannonhalma	8.0	20.5	12.5	6.2	8.4	2.2	154.0	218.0	41.6
Győr-Moson-Sopron County total (NUTS 3)	5.3	20.9	15.6	16.7	11.9	-4.8	180.5	274.1	51.9
Western Transdanubian Region (NUTS2)	5.3	20.4	15.1	16.1	10.4	-5.7	177.8	269.5	51.6
Cities									
Győr	19.7			17.3			307.5		
Sopron	20.8			12.6			300.0		
Csorna	22.0			10.6			263.7		
Mosonmagyaróvár	20.7			12.5			291.6		
Kapuvár	20.7			7.3			264.9		
Tét	18.2			8.8			215.9		
Pannonhalma	22.1			9.2			231.1		

ANNEX A.8 Additional maps in the core text of the report

Map 1 Migratory balances around 1960

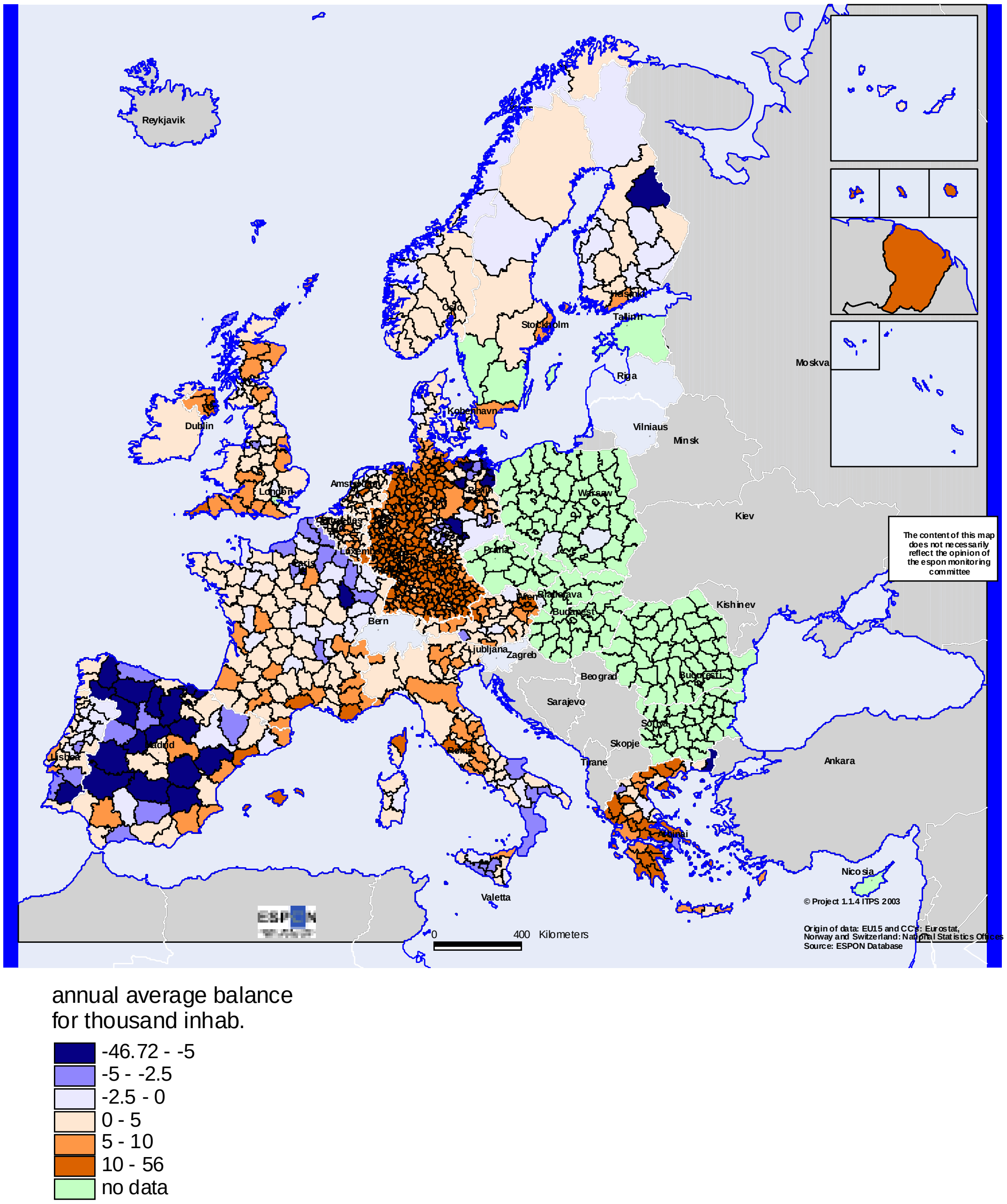


Map 2 Migratory balances around 1980



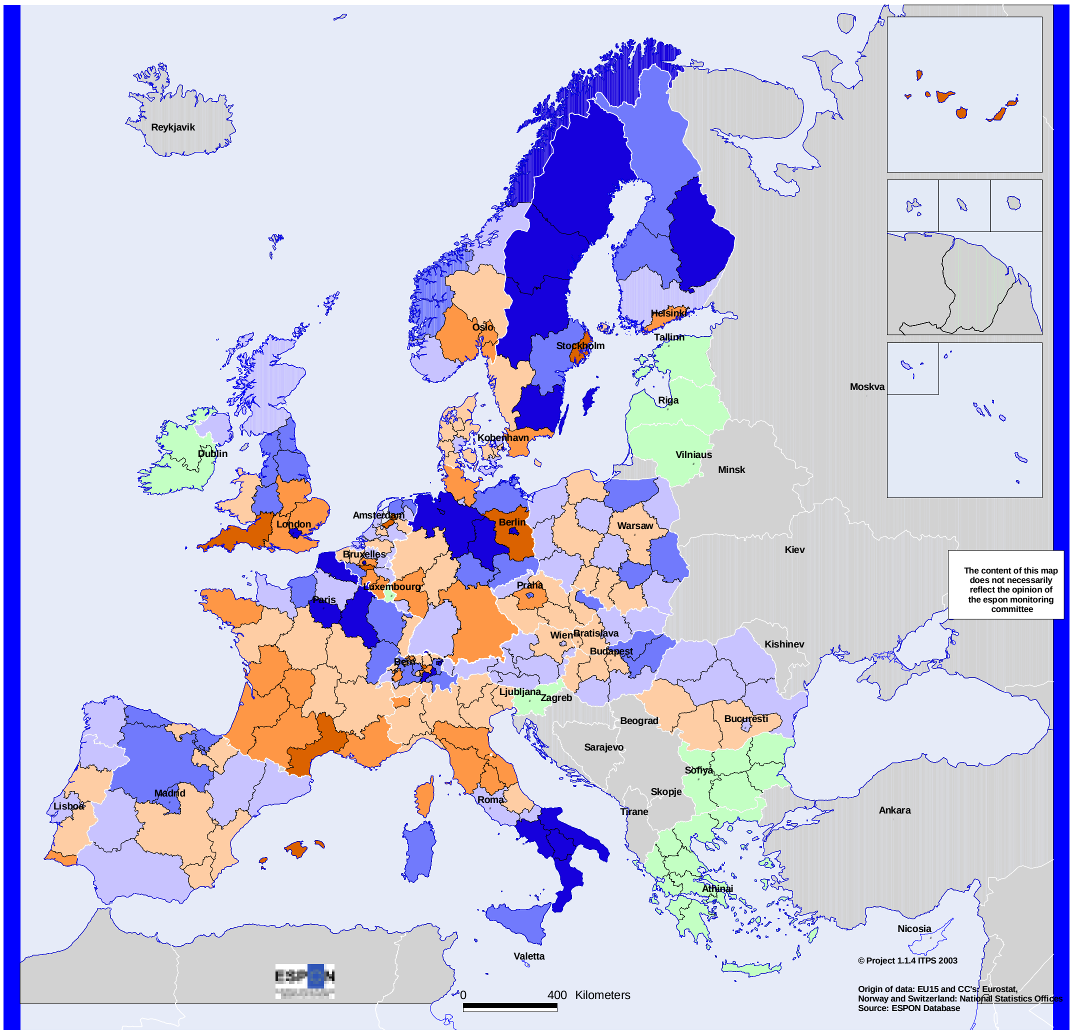
Map 3 Migratory balances between 1990-95

Migratory balance between 1990 and 1995



Map 4 Internal migratory balance

Internal migratory balance, 1996-1999



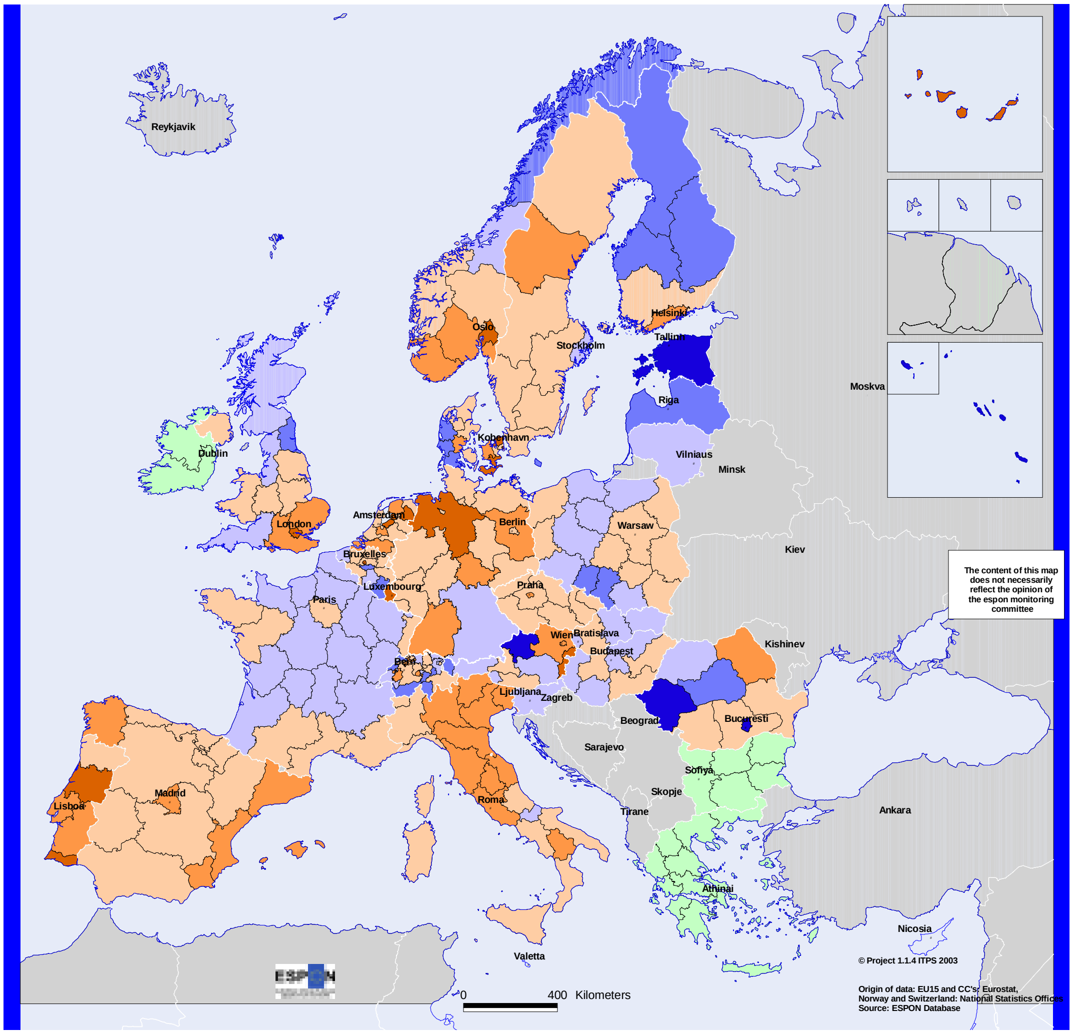
annual average balance
for 1000 inhab.

- -50 - -3
- -3 - -1
- -1 - 0
- 0 - 2
- 2 - 5
- 5 - 20
- no data

Source : Eurostat, except for Switzerland and Norway (national statistical institute)

Map 5 External migratory balance

External migratory balance, 1996-1999



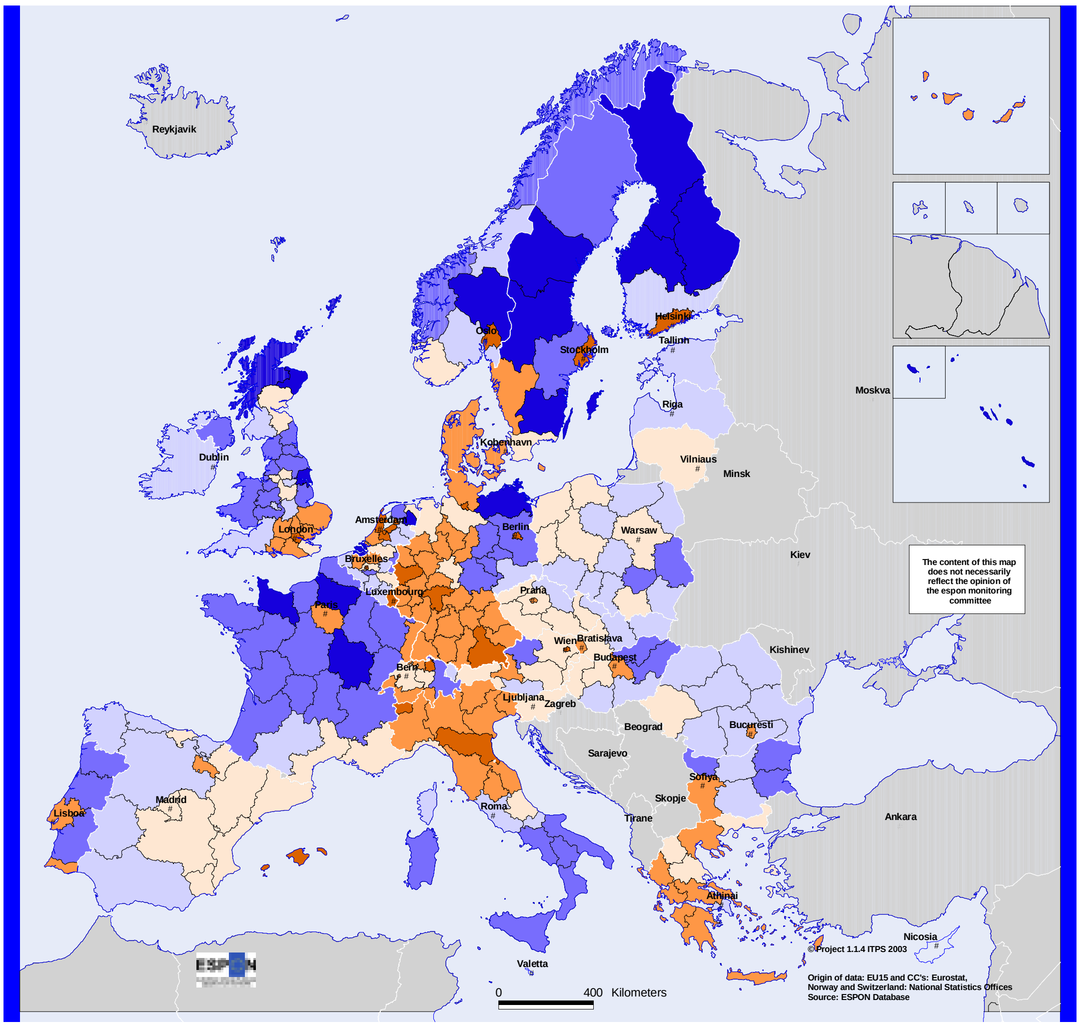
annual average balance
for 1000 inhab.

- -50 - -3
- -3 - -1
- -1 - 0
- 0 - 2
- 2 - 5
- 5 - 20
- no data

Source : Eurostat, except for Switzerland and Norway (national statistical institute)

Map 6 Migratory balance for 17.5 to 27.5 years old

Migratory balances of 17.5 to 27.5 years old, between 1995 and 2000



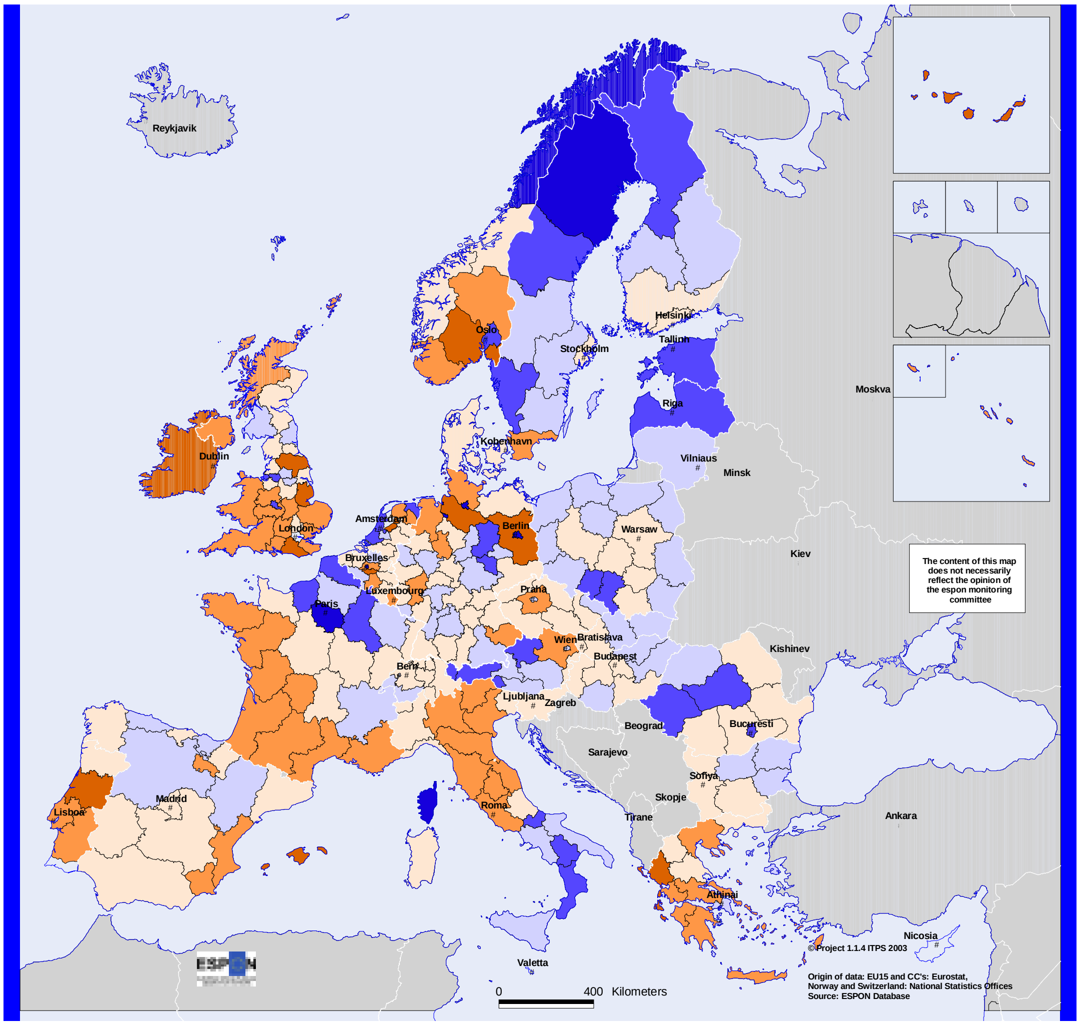
Migratory balances
for 1000 inhab.

- -173.61 - -75
- -75 - -25
- -25 - 0
- 0 - 25
- 25 - 100
- 100 - 305.9

Source : own evaluation on the basis of Eurostat data, except for Norway and Switzerland (national statistical institute)

Map 7 Migratory balance for 32.5 to 42.5 years old

Migratory balances of 32.5 to 42.5 years old, between 1995 and 2000



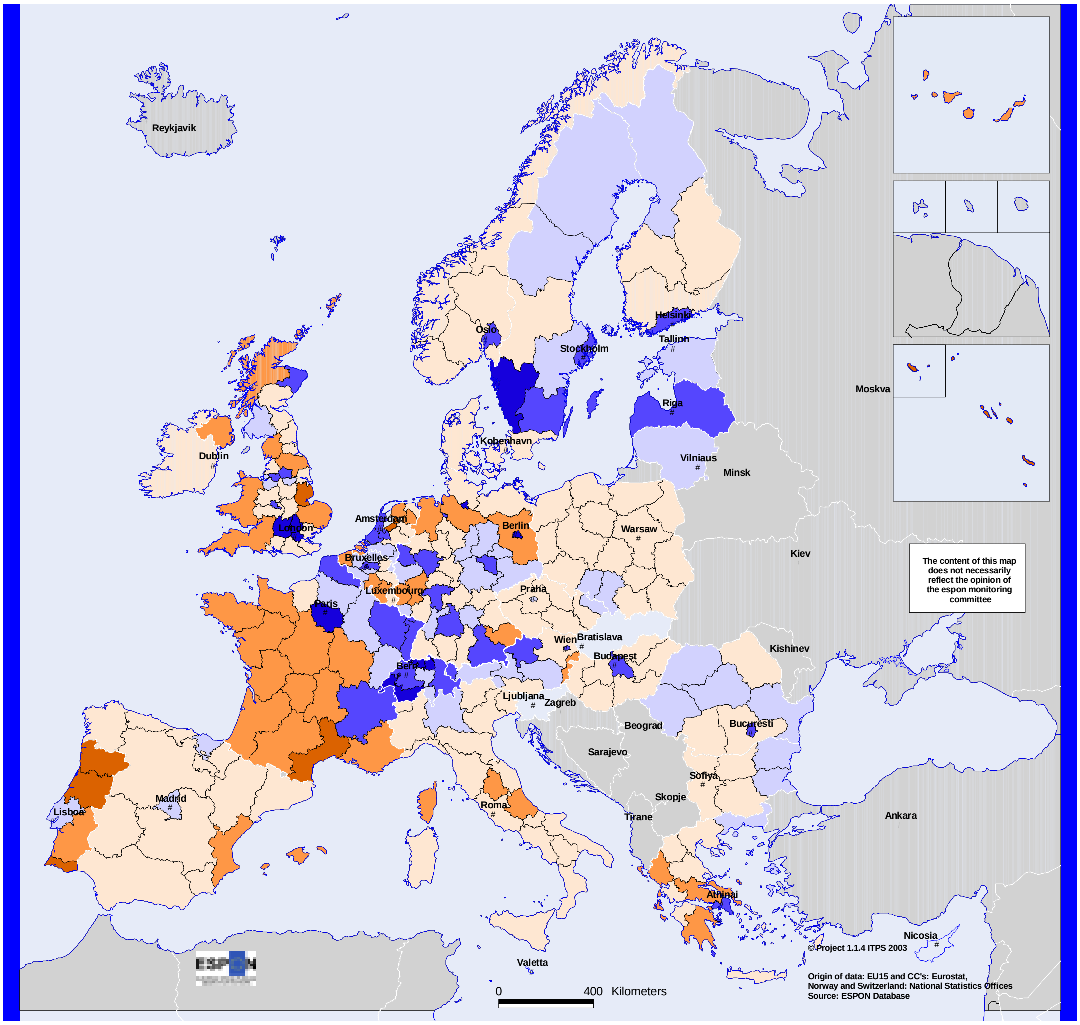
Migratory balances
for 1000 inhab.

- -65.01 - -25
- -25 - -10
- -10 - 0
- 0 - 20
- 20 - 50
- 50 - 161

Source : own evaluation on the basis of Eurostat data, except for Norway and Switzerland (national statistical institute)

Map 8 Migratory balance for 52.5 to 67.5 years old

Migratory balances of 52.5 to 67.5 years old, between 1995 and 2000



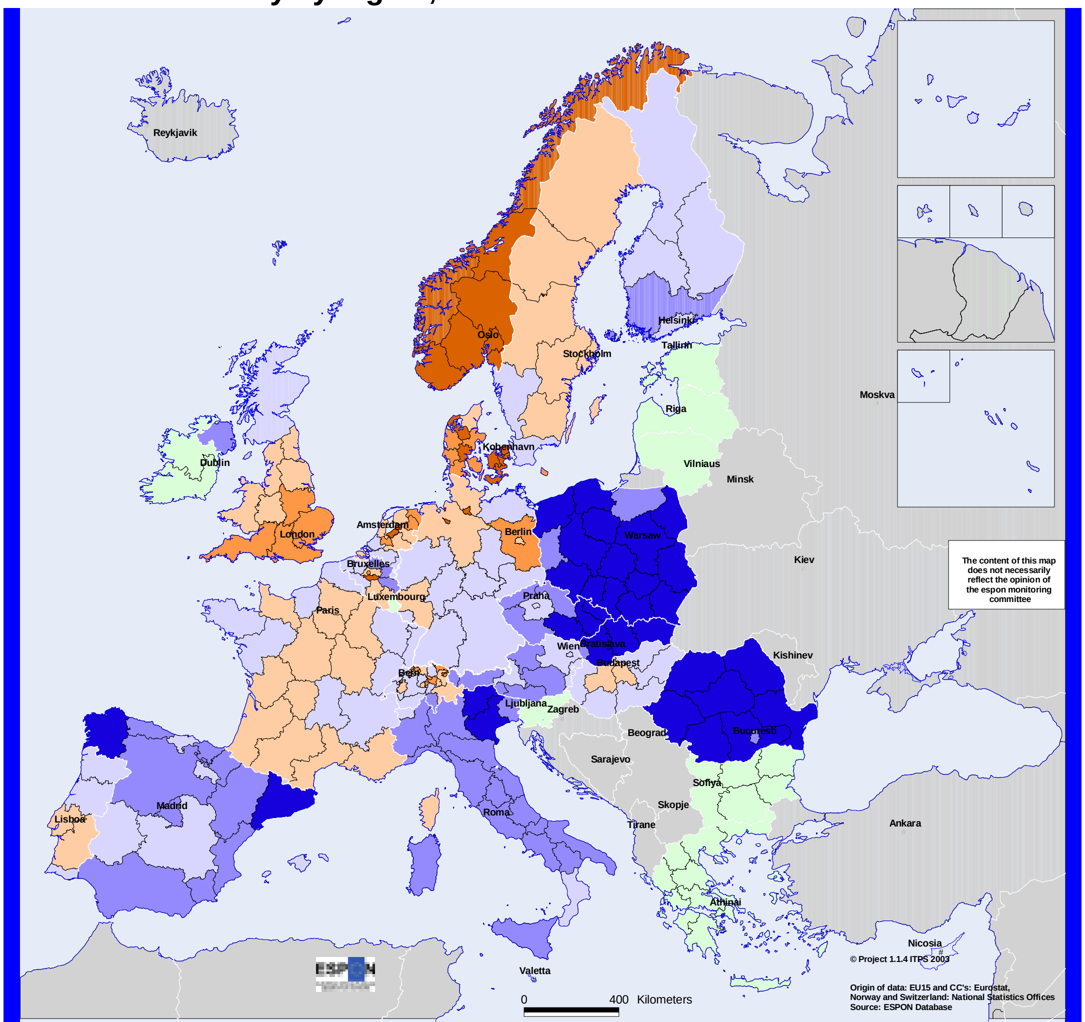
Migratory balances
for 1000 inhab.

- -86.33 - -25
- -25 - -10
- -10 - 0
- 0 - 20
- 20 - 50
- 50 - 125.86

Source : own evaluation on the basis of Eurostat data, except for Norway and Switzerland (national statistical institute)

Map 9 Internal mobility by region, 1996-99

Internal mobility by region, 1996-99



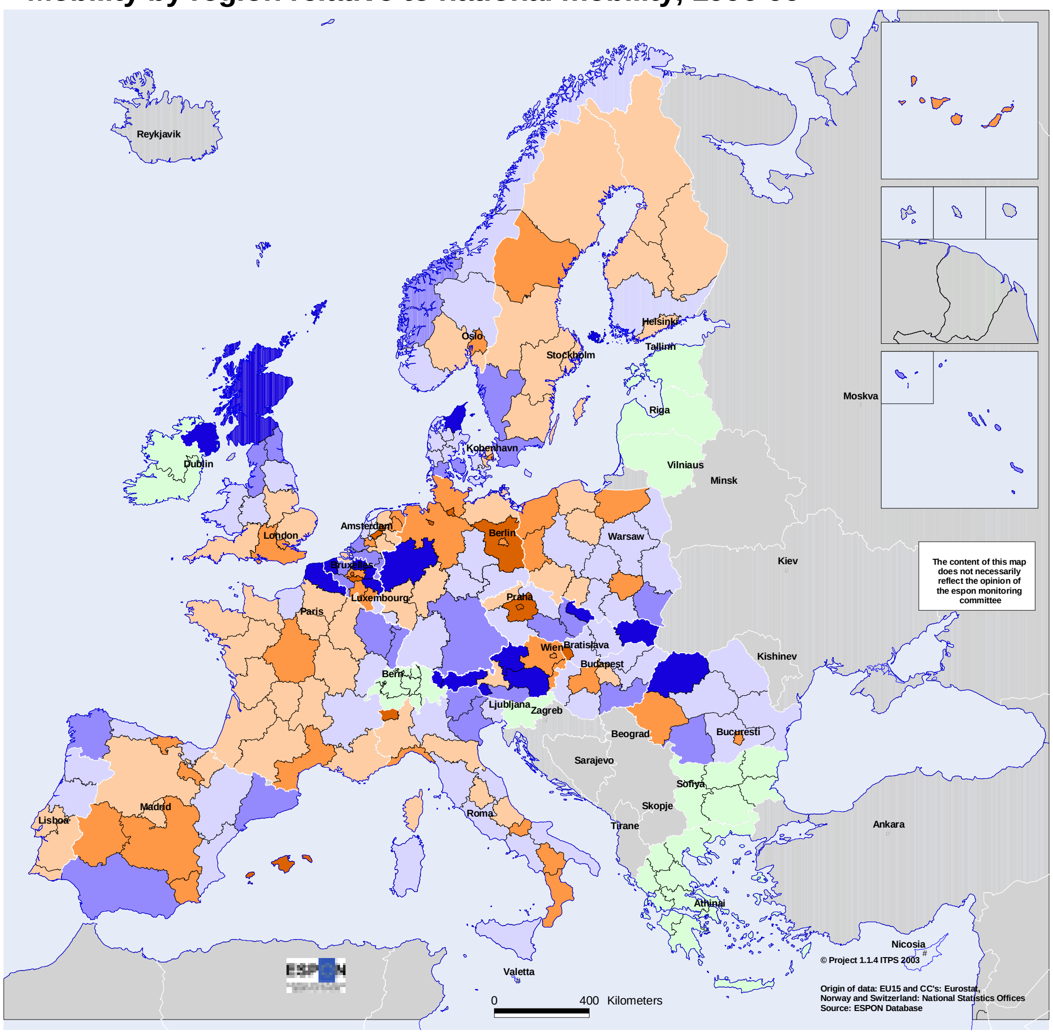
(immigration + emigration) inside the country/
population
for 1000 inhab.

- no data
- 0 - 8
- 8 - 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 110

1

Map 10 Internal mobility compared to national average, 1996-99

Mobility by region relative to national mobility, 1996-99

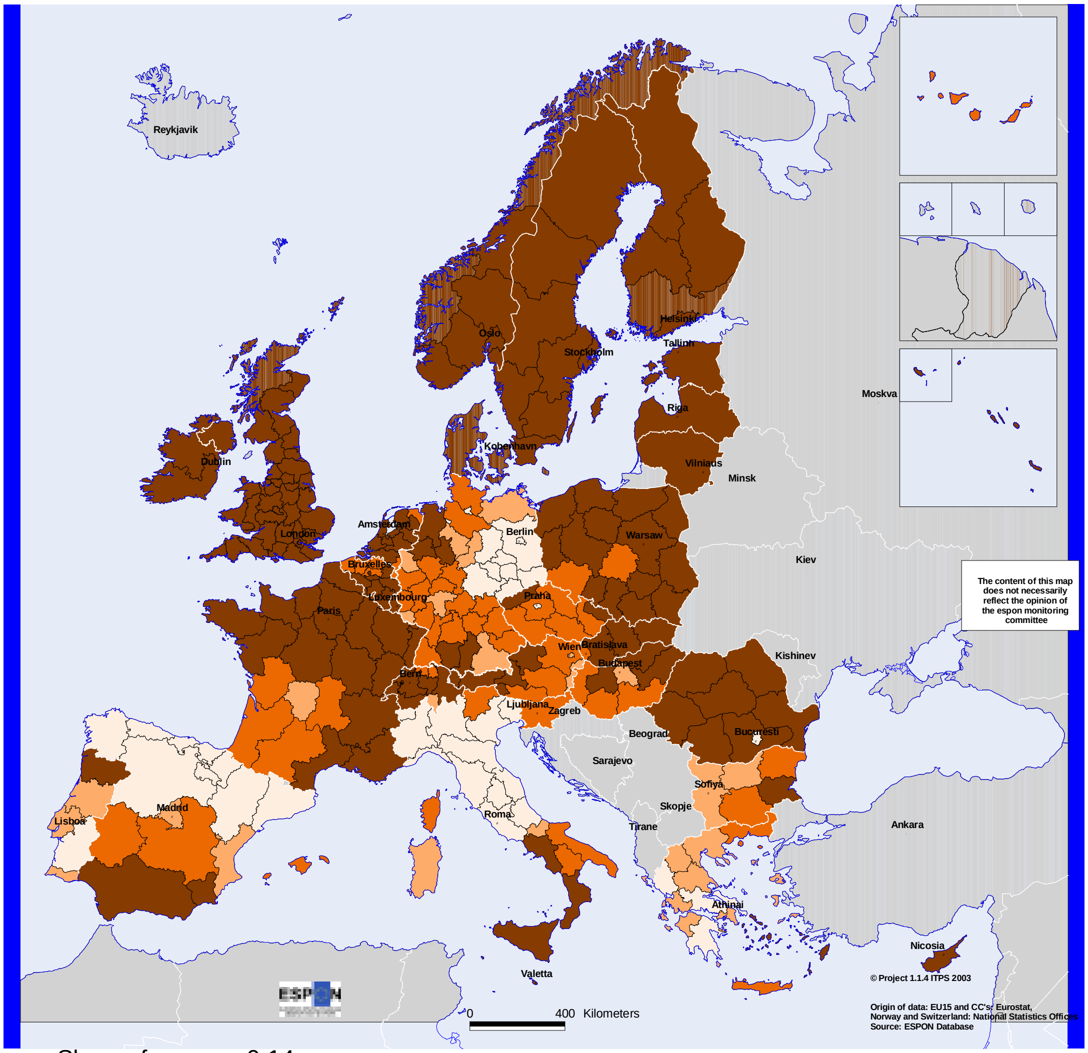


mobility* of the region /
average mobility of the country *100

- -100
- 0 - 60
- 60 - 80
- 80 - 100
- 100 - 125
- 125 - 175
- 175 - 405.3

* mobility = (immigration + emigration) / population

The share of children 0-14 years in 2000



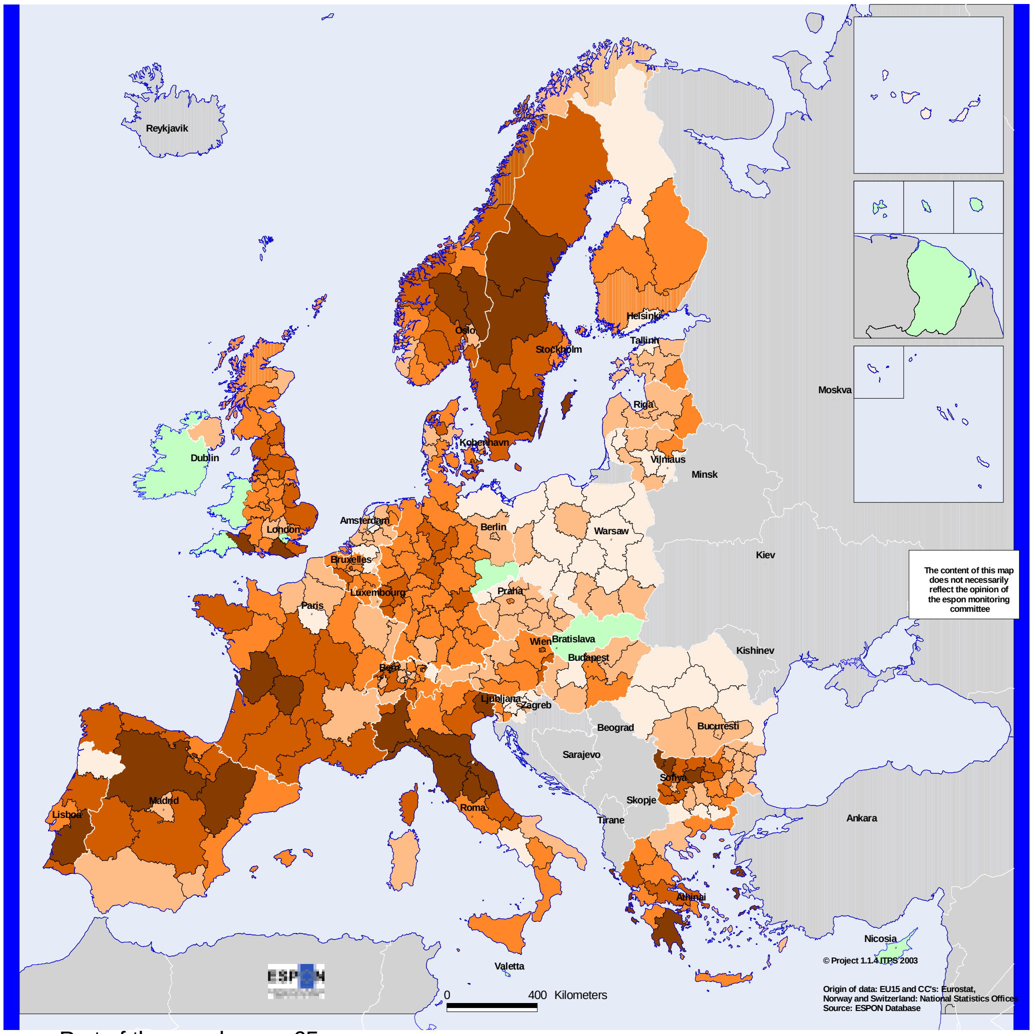
Share of persons 0-14 years
in the total population
%

- 10.4 - 14.4
- 14.4 - 15.8
- 15.8 - 17.2
- 17.2 - 34.2

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Office
Source : ESPON database

Map 12 The share of persons 65+ years

Elederly people (>65 years) in 1995

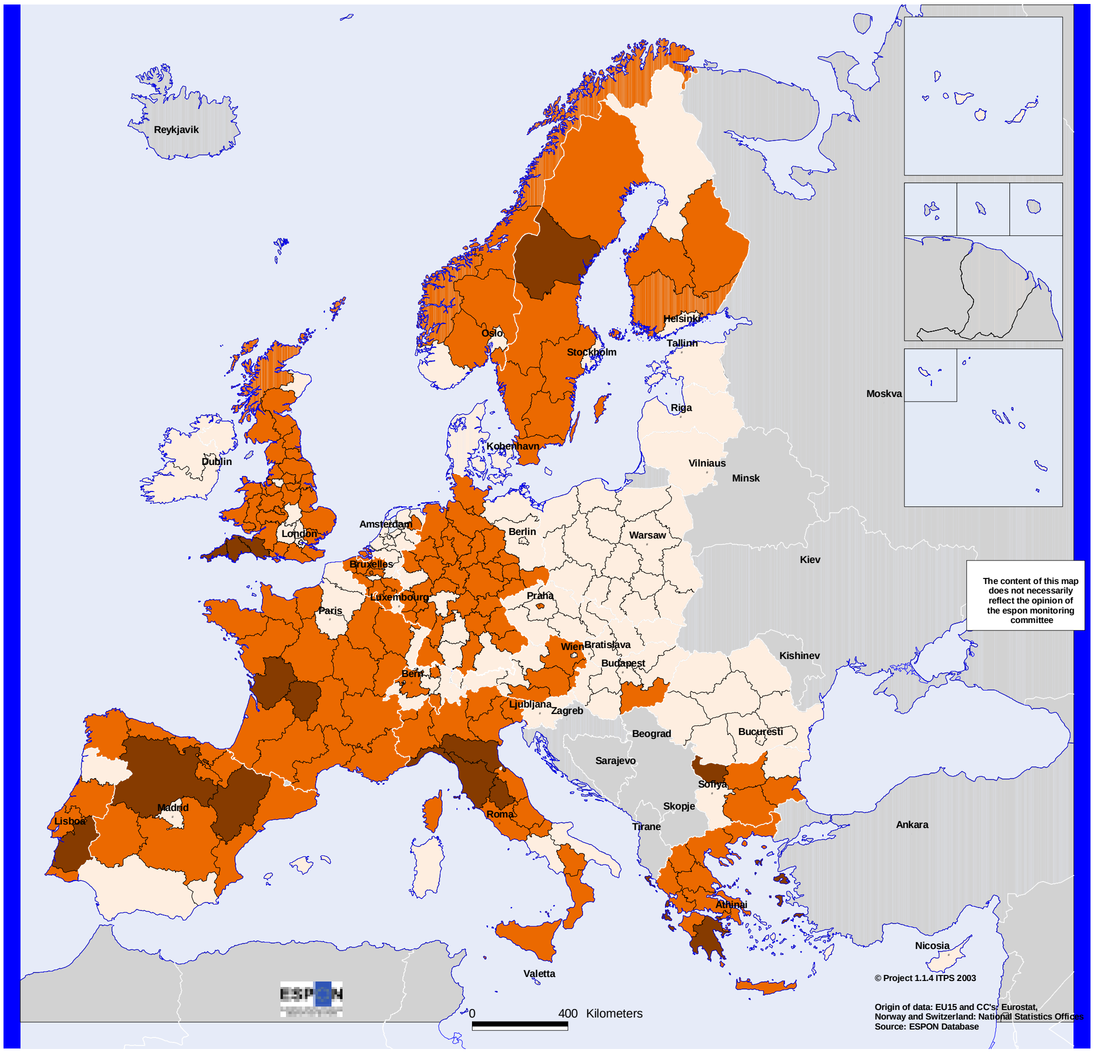


Part of the people over 65 years old in the population %

- 9.04 - 12.1
- 12.1 - 14.3
- 14.3 - 16.3
- 16.3 - 18.6
- 18.6 - 22.9
- No Data

Map 13 Post-active dependency ratio in 2000

Post active dependancy ratio in 2000



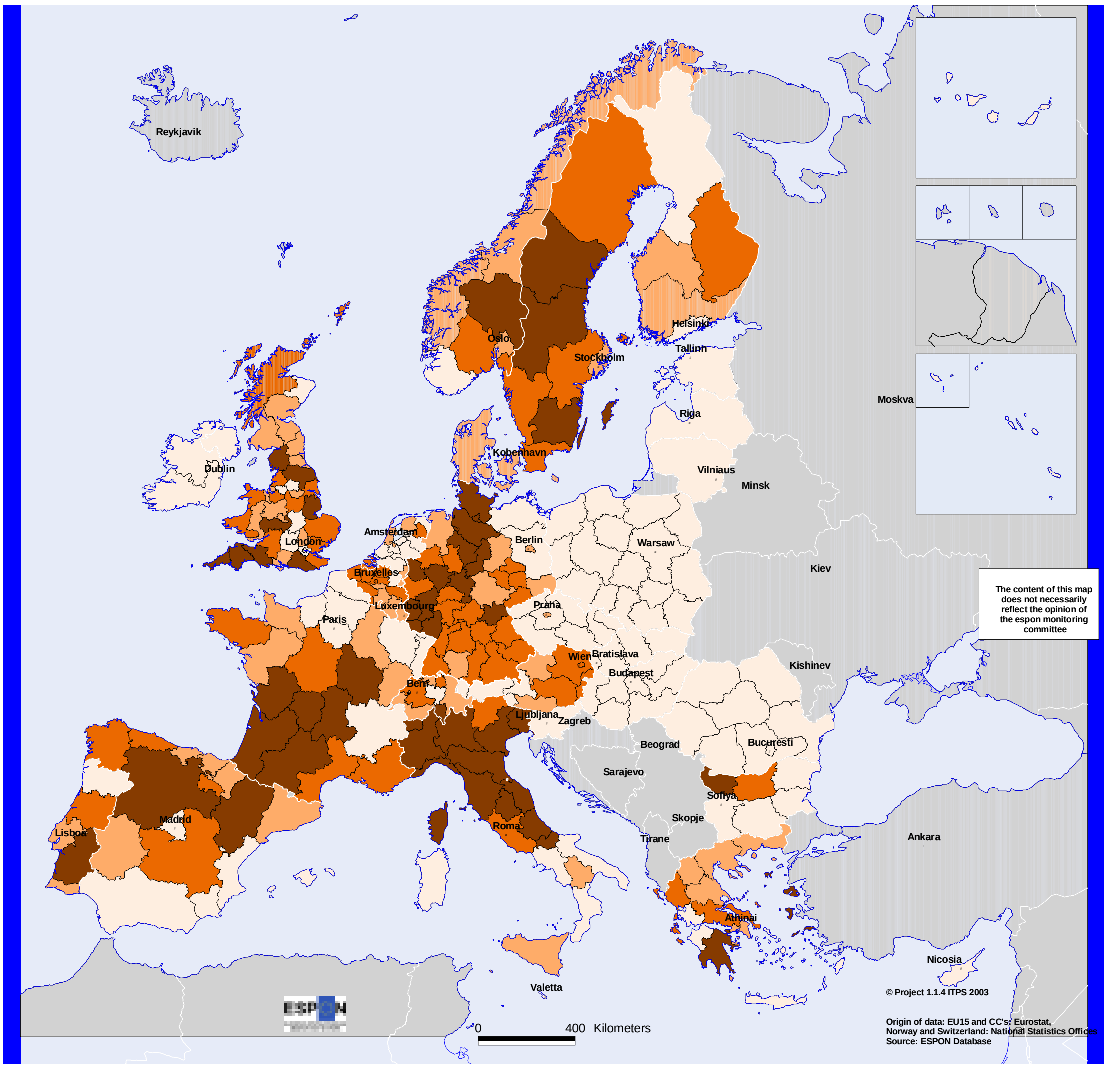
People over 65 years /
People between 20 and 64

- 0 - 0.256
- 0.256 - 0.28
- 0.28 - 0.307
- 0.307 - 0.4

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Office
Source : ESPON database

Map 14 Aged people versus youth in 2000

Aged people versus youth in 2000

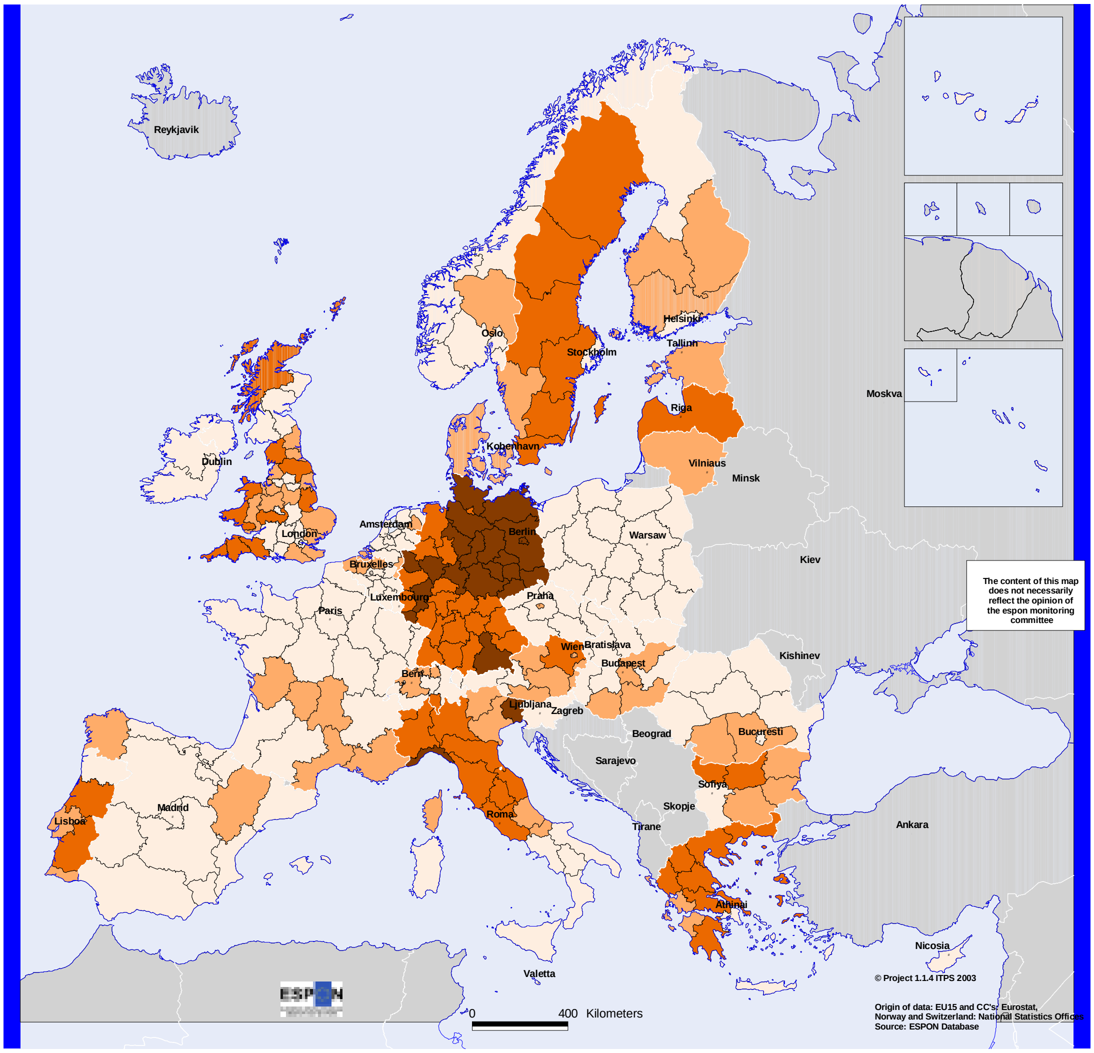


People over 65 years /
people between 15 and 24

- 0 - 1.18
- 1.18 - 1.359
- 1.359 - 1.545
- 1.545 - 2.9

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Office
Source : ESPON database

Ageing labour force in 2000



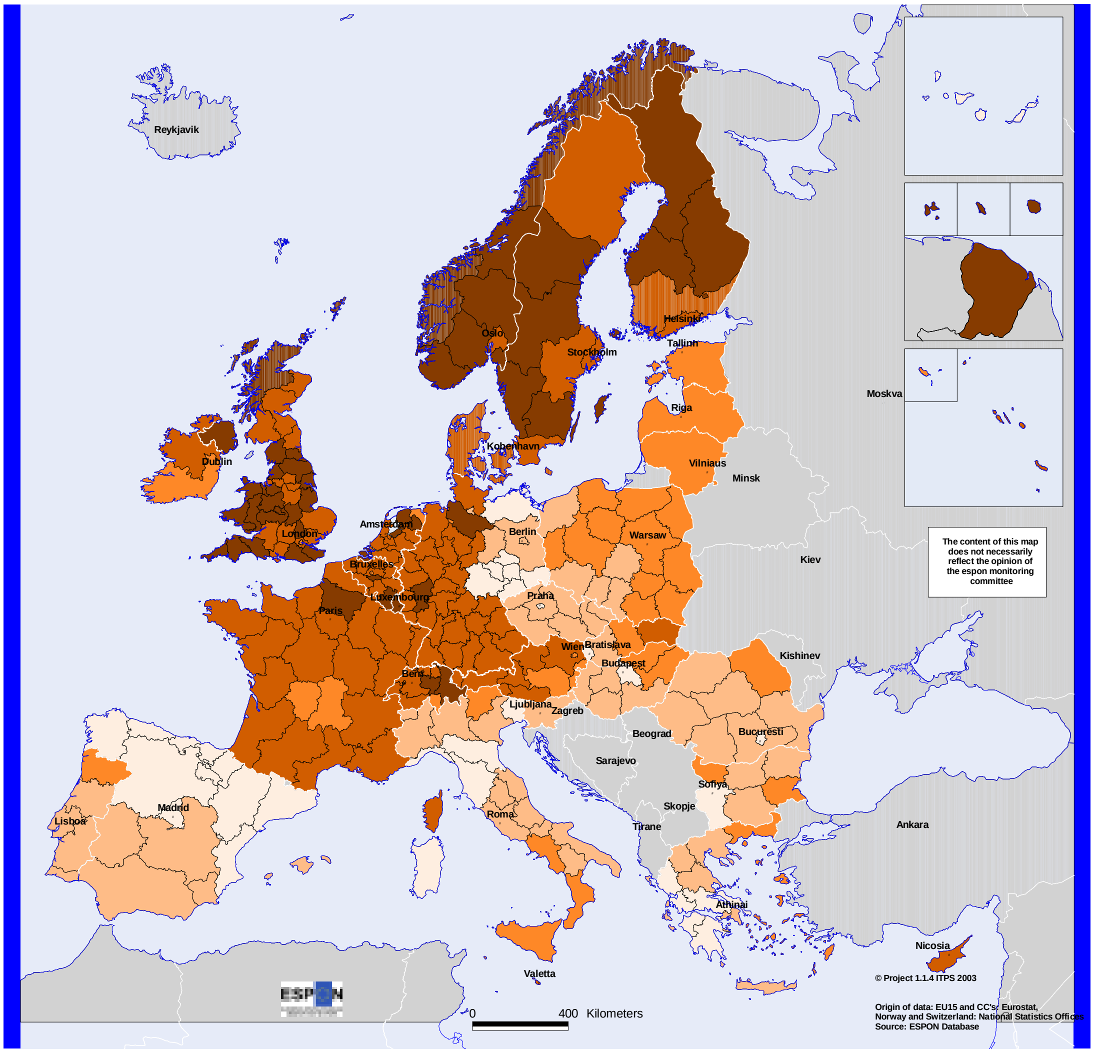
Share of population 55-64 years in the population 20-64

- 8.7 - 17.5
- 17.5 - 19
- 19 - 21
- 21 - 24.1

Origin of data : EU15 and CC's : Eurostat
Norway and Switzerland : National Statistics Office
Source : ESPON database

Map 16 Natural growth potential 2000 (2020)

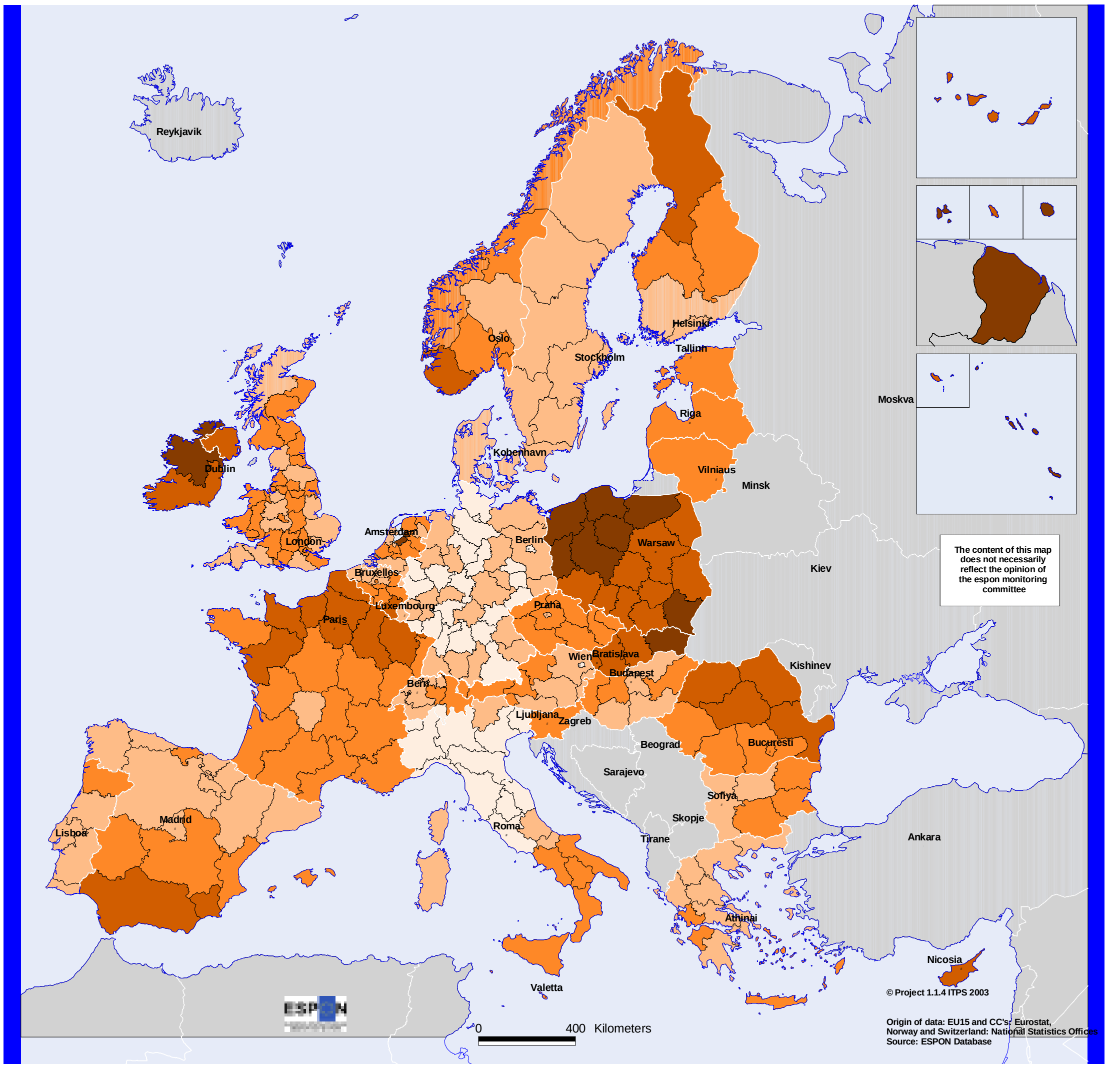
Natural growth potential 2000 (2020)



population 20-29 in 2020/population 20-29 in 2000
Cohort 1991-2000/cohort 1971-80

- 0.42 - 0.6
- 0.6 - 0.7
- 0.7 - 0.84
- 0.84 - 0.98
- 0.98 - 1.58

Labour force replacement ratio in 2000

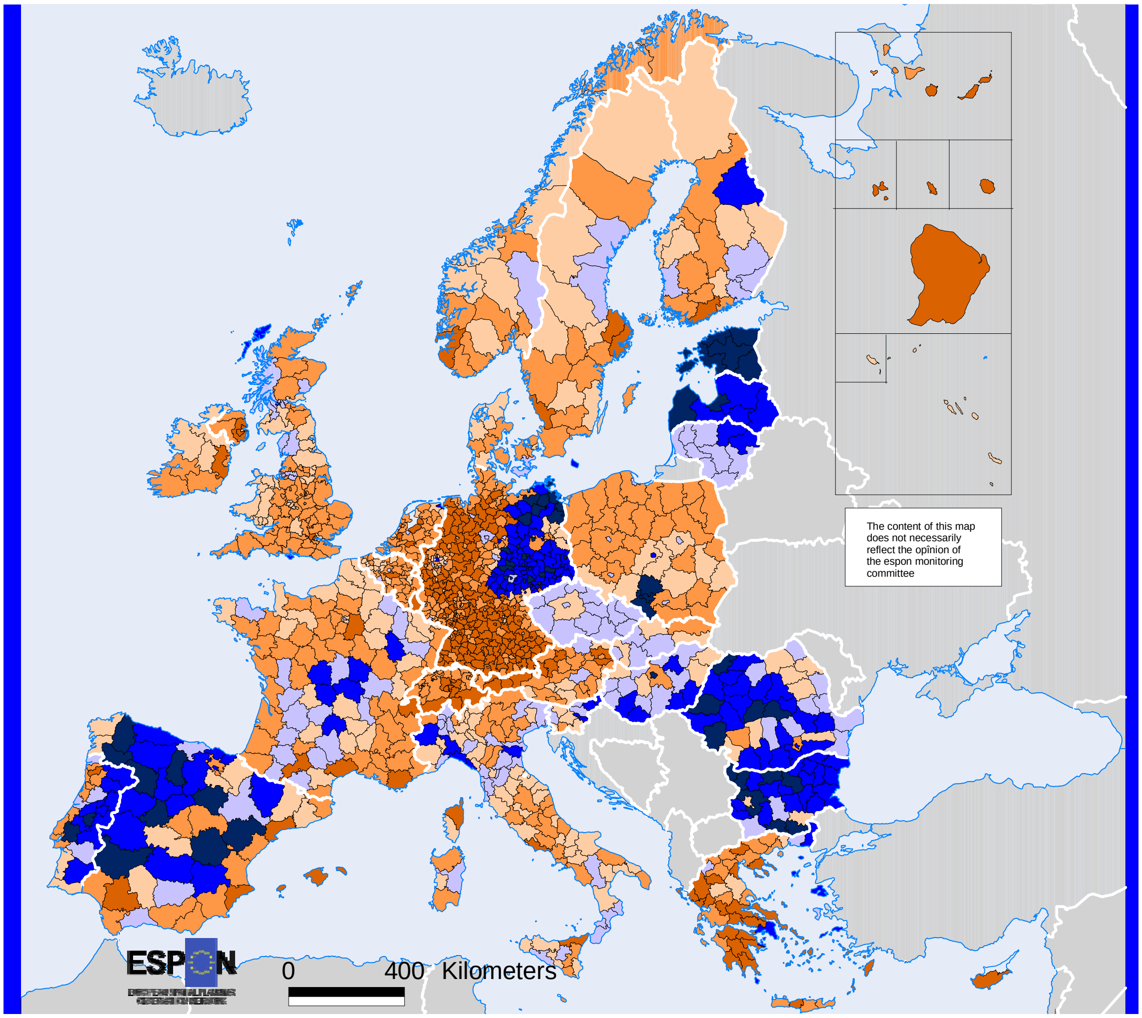


population 10-19/
Population 55-64

- 0.51 - 0.89
- 0.89 - 1.16
- 1.16 - 1.48
- 1.48 - 1.99
- 1.99 - 4.37

Map 18 Evolution of the population 1990-1995

Evolution of the population between 1990 and 1995



LEGEND

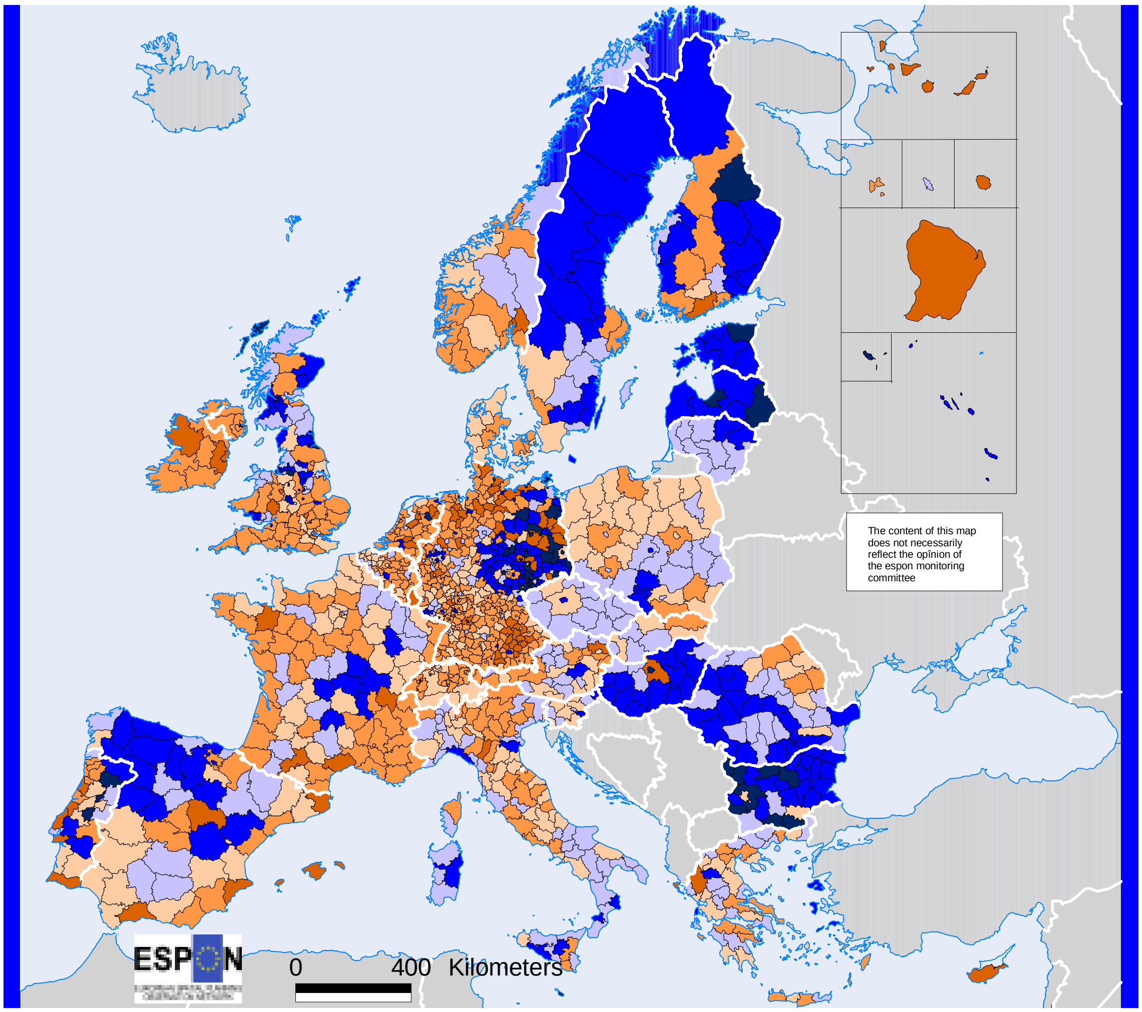
average annual growth (%)

- no data
- < -1.00
- -1 - -0.3
- -0.3 - 0
- 0 - 0.3
- 0.3 - 1
- > 1

Origin of data : EU 15 and CC's : Eurostat
Norway and Switzerland : National statistics office
Source : ESPON Database
Cartography : IGEAT- ULB

Map 19 Evolution of the population 1995-2000

Evolution of the population between 1995 and 2000



LEGEND

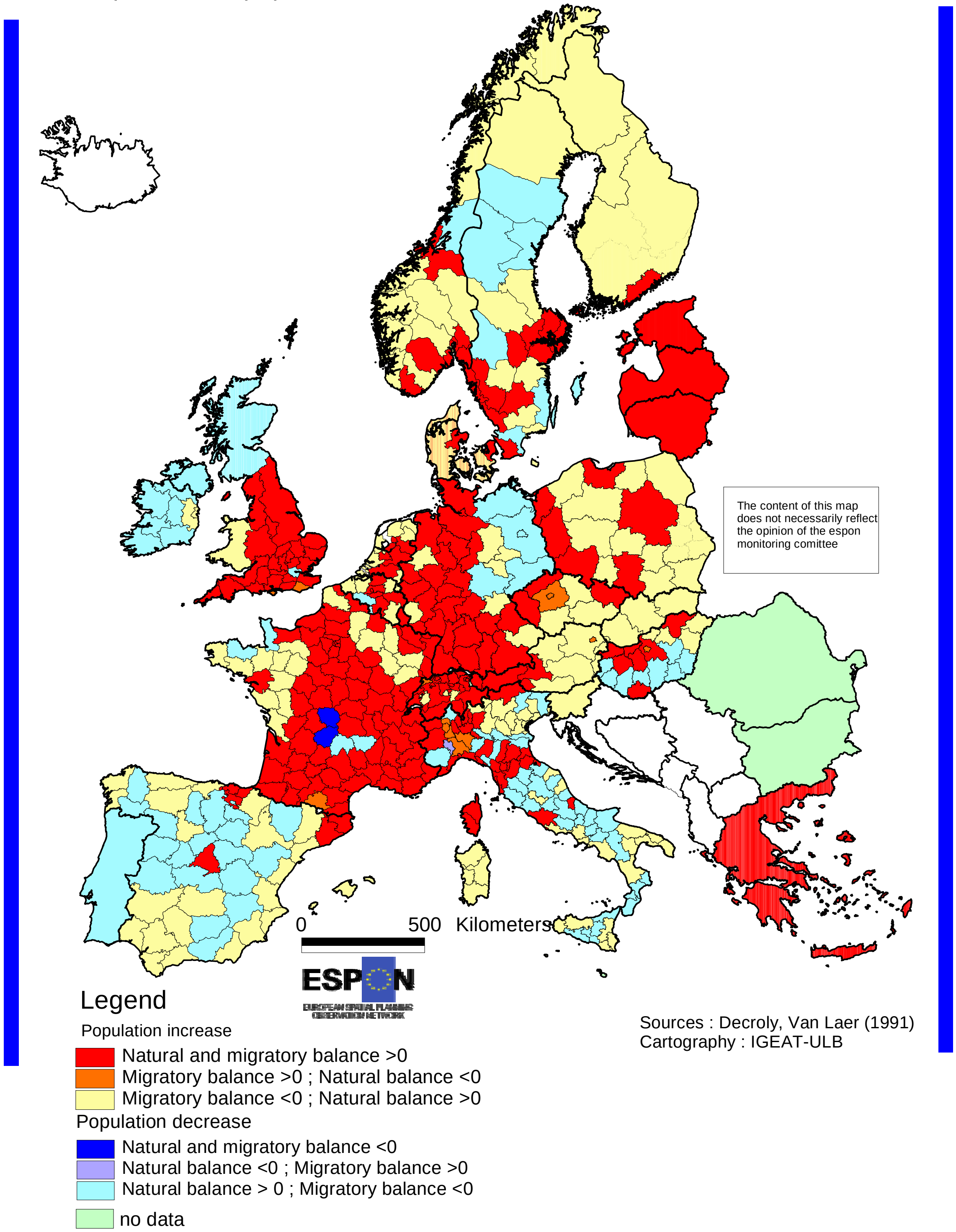
average annual growth (%)

- no data
- < -1.00
- -1 - -0.3
- -0.3 - 0
- 0 - 0.3
- 0.3 - 1
- > 1

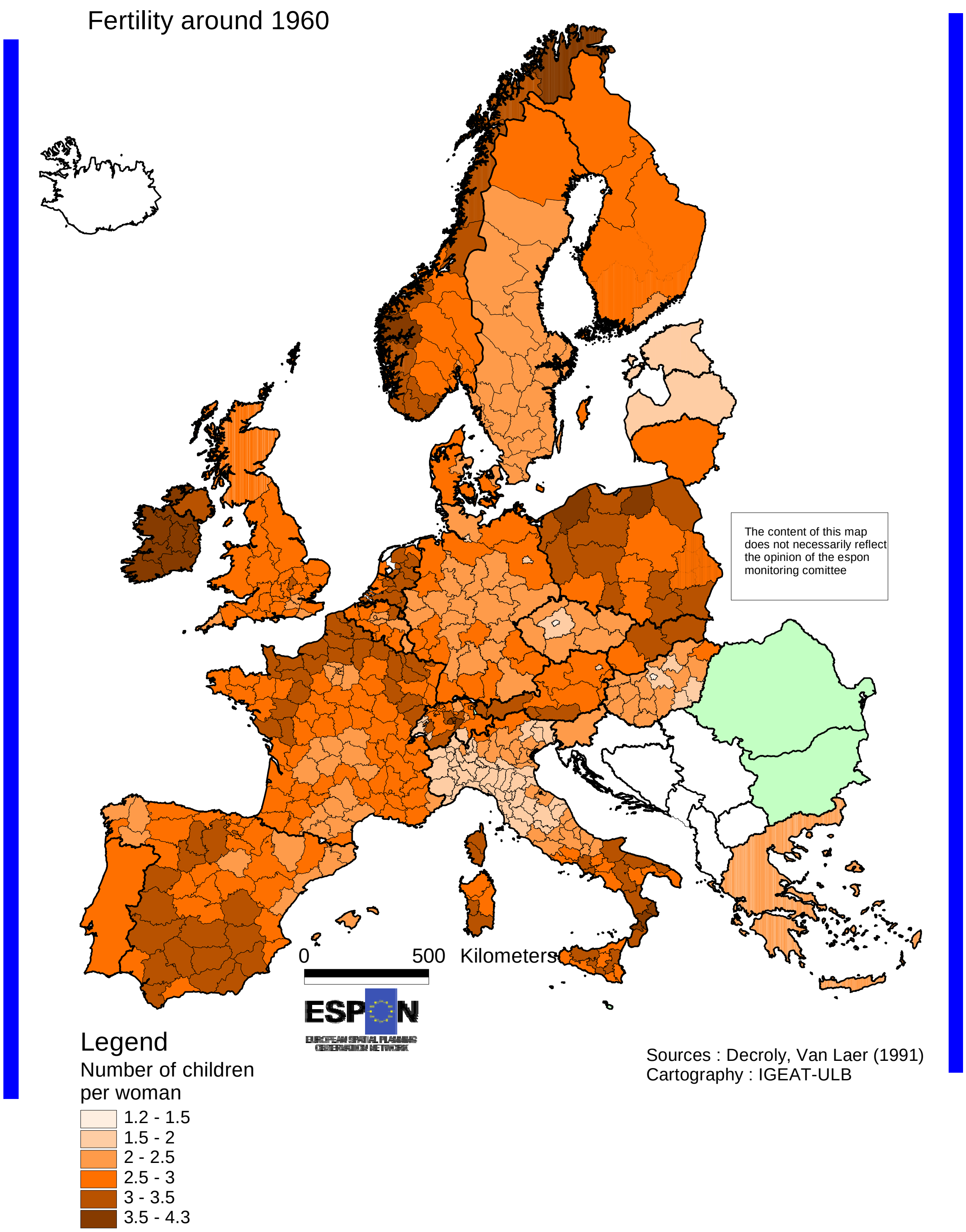
Origin of data : EU 15 and CC's : Eurostat
Norway and Switzerland : National statistics office
Source : ESPON Database
Cartography : IGEAT- ULB

Map 20

Components of population increase around 1960

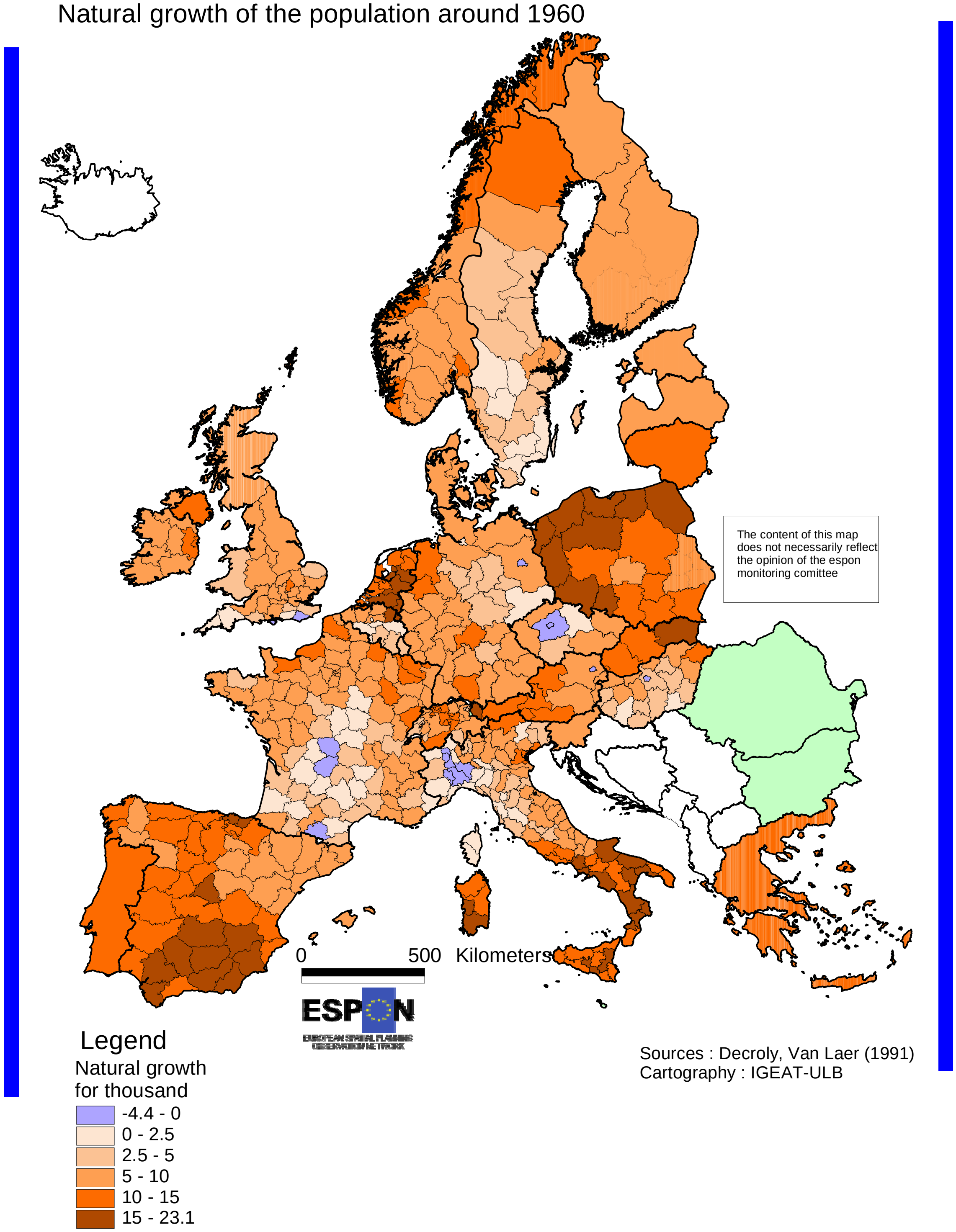


Map 21


Fertility around 1960
The content of this map does not necessarily reflect the opinion of the espon monitoring comittee
0
500 Kilometers
ESPON
Legend
Number of children per woman
1.2 - 1.5
1.5 - 2
2 - 2.5
2.5 - 3
3 - 3.5
3.5 - 4.3
Sources : Decroly, Van Laer (1991)
Cartography : IGEAT-ULB

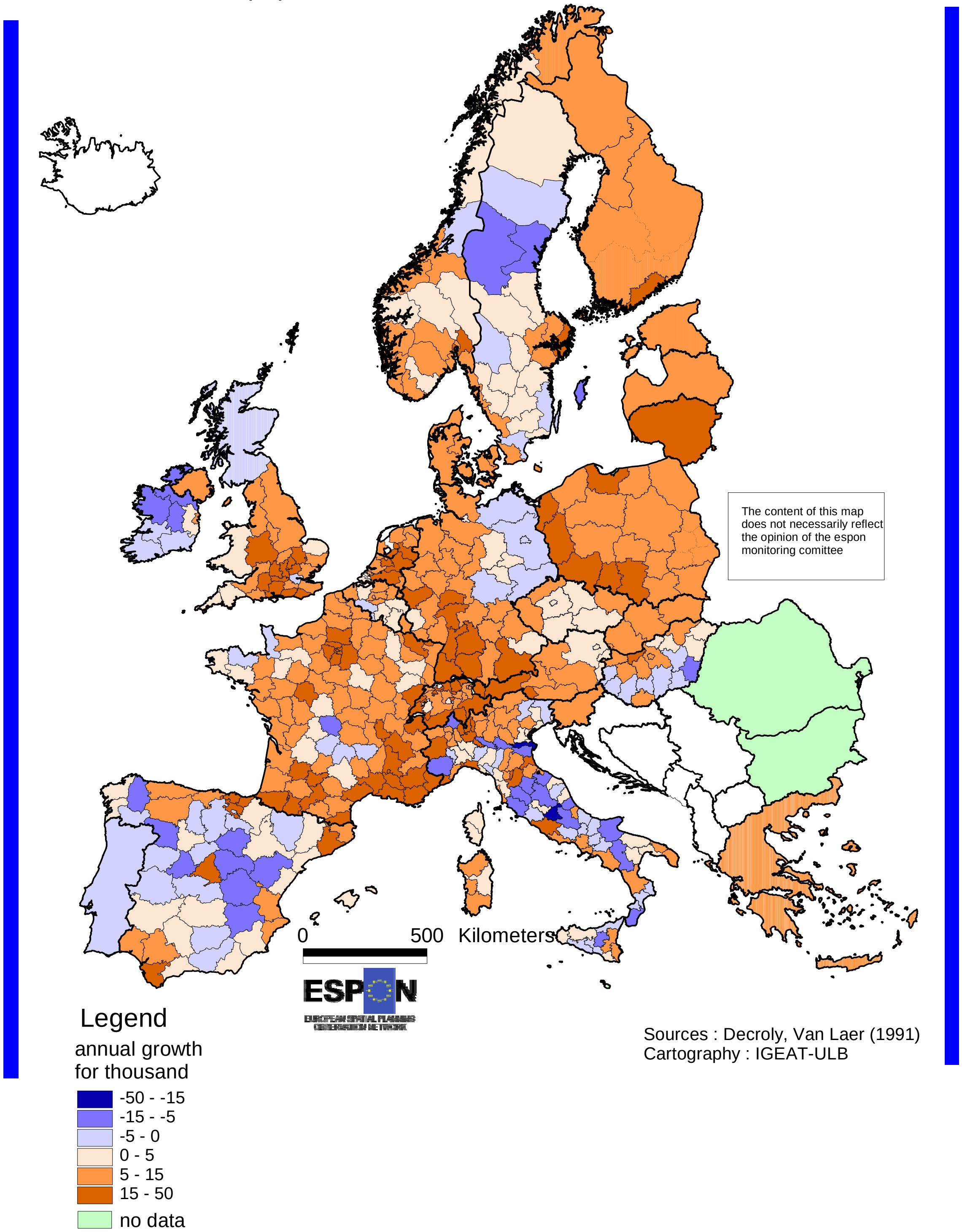
Map 22

Natural growth of the population around 1960



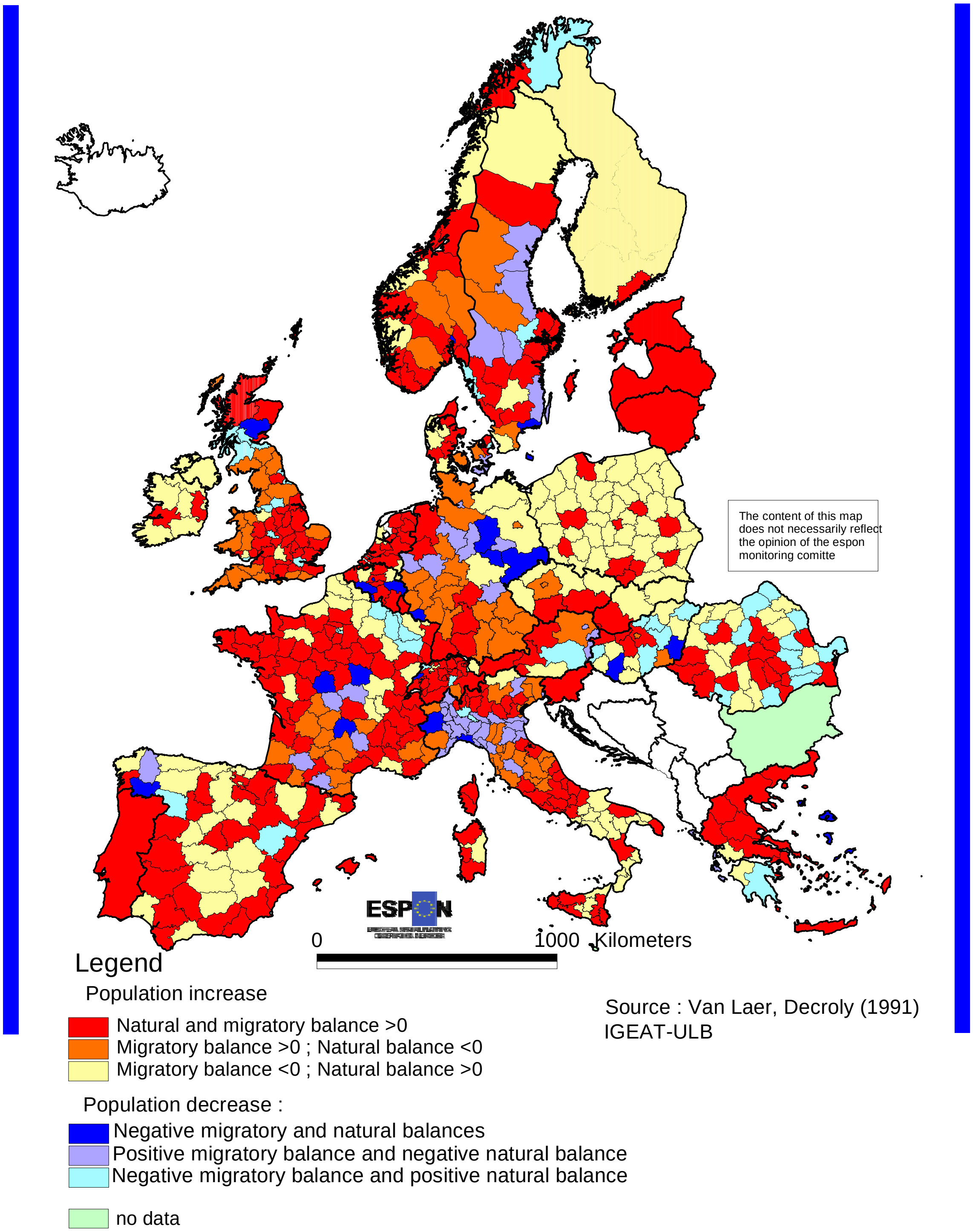
Map 23

Evolution of the population around 1960



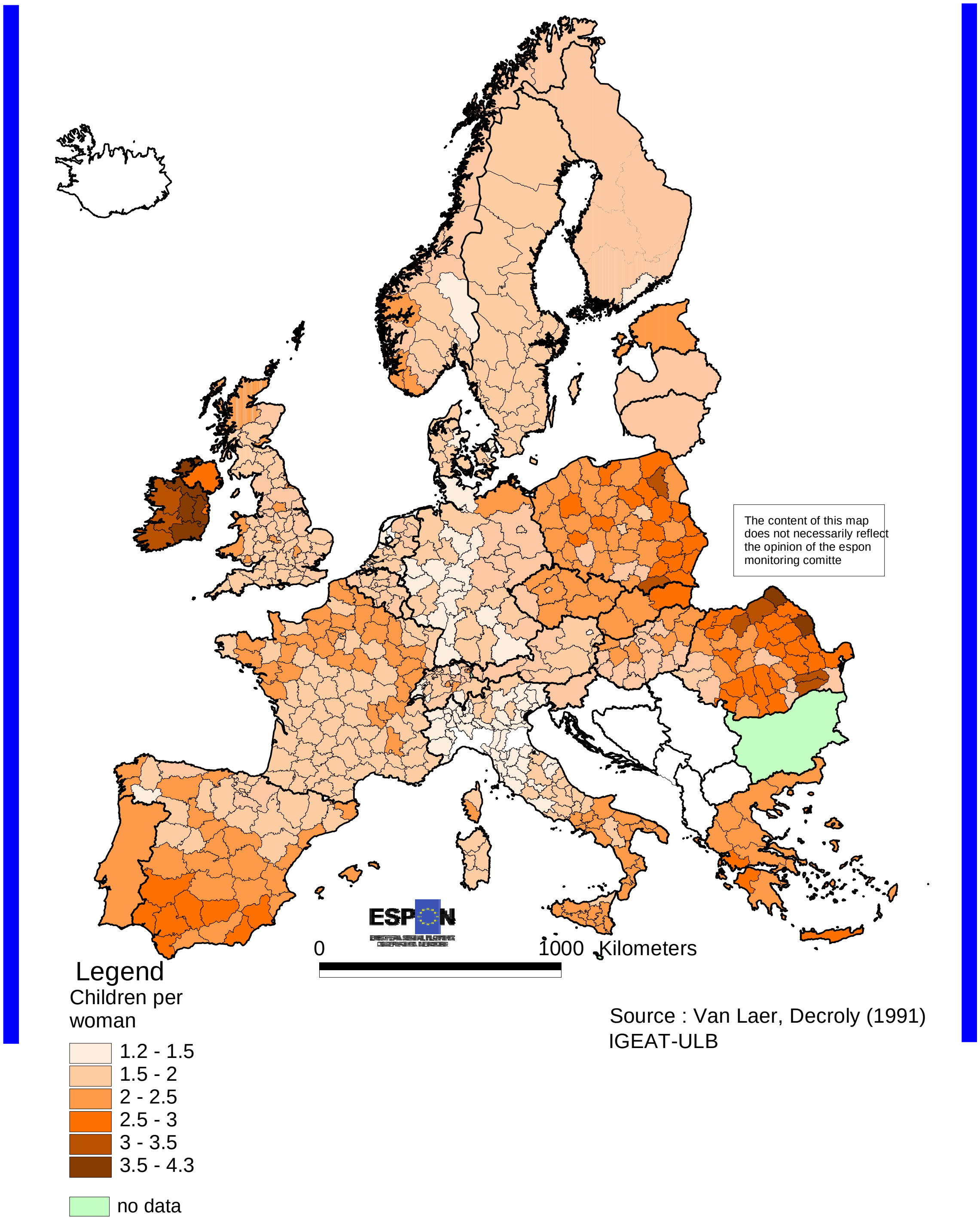
Map 24

Components of population increase around 1980



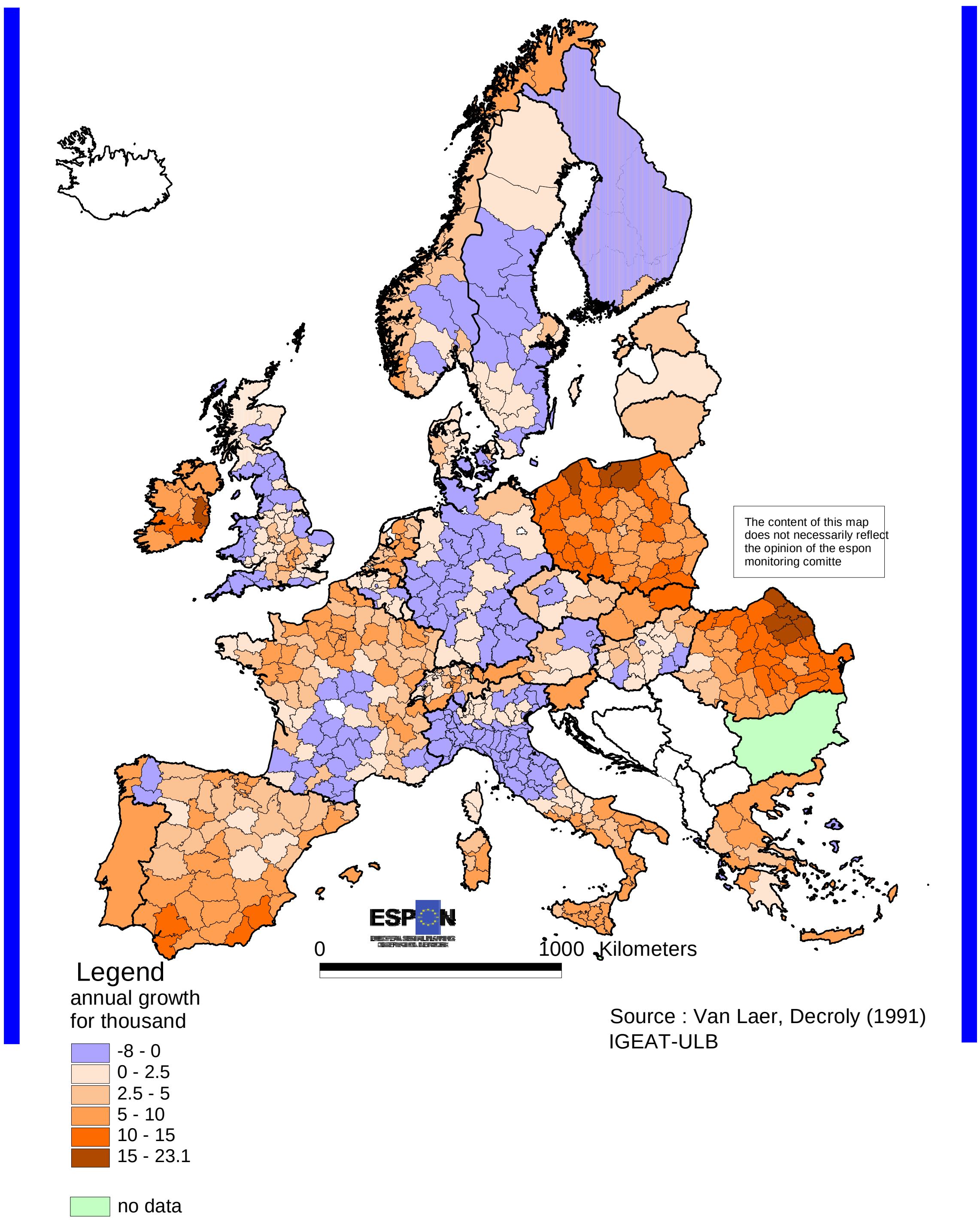
Map 25

Fertility around 1980



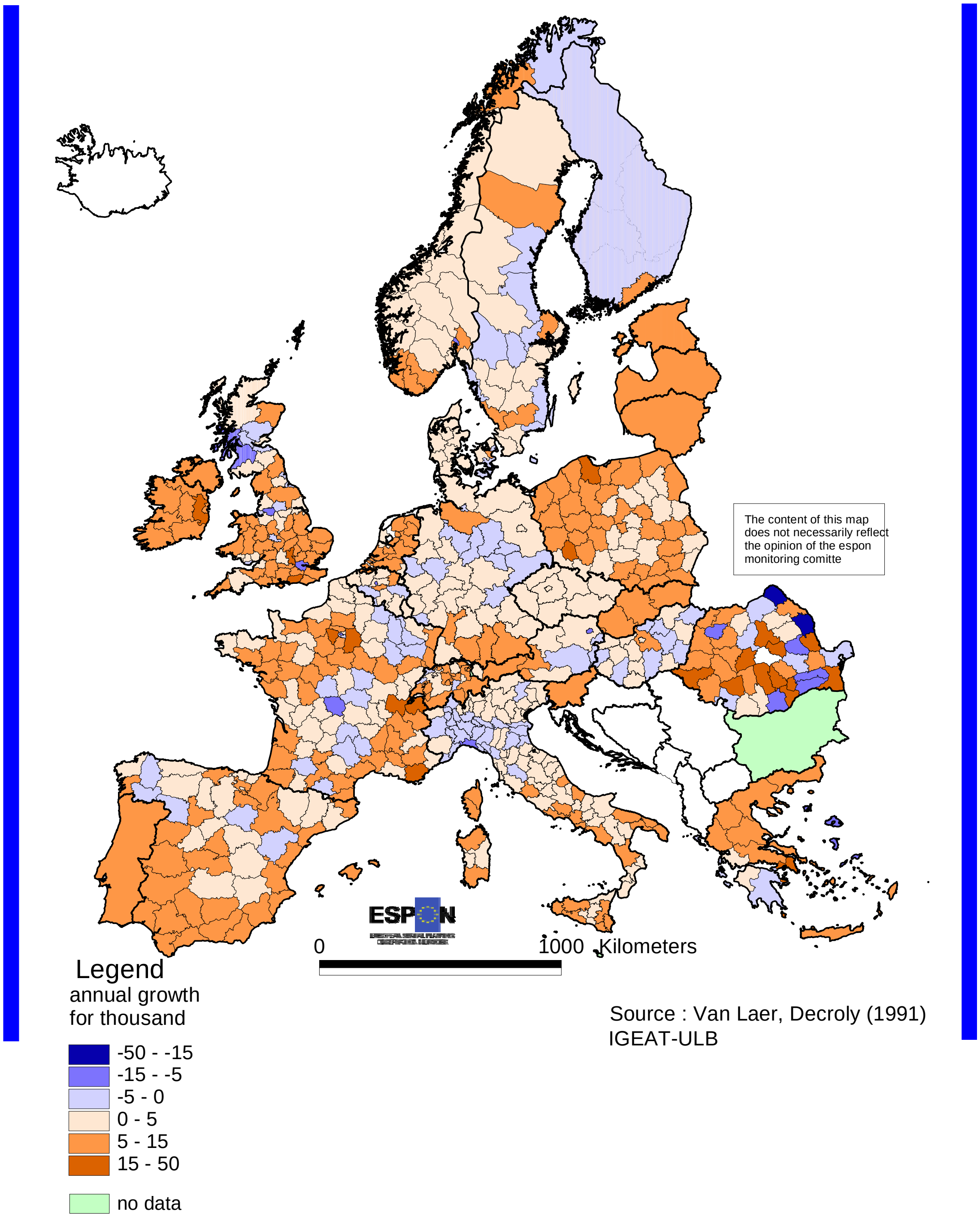
Map 26

Natural growth of the population around 1980



Map 27

Evolution of the population around 1980



ANNEX A.9 List of references

Databases

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Annex B:
Ageing, Labour Shortage and 'Replacement Migration'

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Ageing, Labour Shortage and 'Replacement Migration'

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Preface

When the UN report on replacement migration was published in 2000, a debate started on whether ‘replacement migration’ could be a mean to handle the global ageing, labour shortage and the public finances or not. In the European case, the report showed that *1 840 million* immigrants were needed until 2050. Later studies have not been able to reach any consensus on how many immigrants are needed, if any. This depends on the fact that the studies are very sensitive what assumptions are made in the models. Later studies have also pointed out a problem regarding the mismatch between demand and supply to the labour market – the segmentation of the labour market tend to create a ‘mismatch’ instead of equilibrium between the different types of labour.

The work package five (WP5) in the ESPON project 1.1.4 on the *Spatial Effects on Demographic Trends and Migration* looks at various possible future scenarios. Important issues, such as e.g. the actual importance of the ageing and depopulation trends in the various European regions; the social and economic consequences of these trends (including labour shortage) and the way in which they affect the regional and local development processes; the dimension of the migratory flows involved; and the issue of which formal and informal policy mechanisms will be more suitable in order to regulate these flows are discussed.

The following persons have taken part in the work with WP5 to prepare this study: Professor Jorge Gaspar (coordinator), professor Diogo d’Abreu, Professor Nuno Marques da Costa, Professor Eduarda Marques da Costa, Mário Barroqueiro and Ana Estevens at the Centre for Geographical Studies (CEG),University of Lisbon, Portugal. Dr. Daniel Rauhut at the Swedish Institute for Growth Policy Studies (ITPS), Stockholm, Sweden, has contributed to chapter two.

Mats Johansson, Associate Professor
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1 Introduction

As indicated in the title, Ageing, Labour Shortage and ‘Replacement Migration’ the main goal of this study is to elaborate on the phenomenon of ageing and on the related processes of “labour shortage” and “replacement migration” in Europe. Finding out the actual magnitude of these processes in the various countries and regions of Europe and identifying the main future trends in an integrated perspective should provide the basis for better policies in the fields of migration flow management and regional development, especially in those areas where the problem of depopulation is present.

The ageing trend in Europe is a much more present and intense fact than is commonly acknowledged, even among the academics and policy-makers that are not directly concerned with demographic issues. Despite its strong intensity, it assumes different spatial expressions: a) within the space of the former European Union configuration (15 countries); b) in the ten countries of the enlargement; c) in Romania and Bulgaria; and d) in Norway and Switzerland.

It must be pointed that the reasons for the current and future ageing of the European population lie in the demographic performance of the last few decades, as well as in the fact that many of the policy measures taken now will only be effective, in terms of beginning to change the demographic characteristics of the European population, in a few decades’ time.

There are two main reasons for this process of demographic ageing. The most important is the sharp general decline in fertility that Europe, like other regions in the world, has experienced since the 1960s. The other important factor in explaining the current ageing process is the increase in the life expectancy of the population, due to the medical progresses and the improved social support and care for the elderly. The association of these two effects has sped up the pace and increased the intensity of this process in the present.

It then appears that immigration, for the experts as well as for many policy-makers and managers, provides an answer to the twin problems of lack of population and lack of labour force in many regions of the world. Consequently, Europe is, and will increasingly be in the future, one of the major destinations of world migration, and a continent subject to strong migratory pressure as a result of the sequential process of ageing and labour shortage.

This issue was widely discussed after the publication by the United Nations, in the year 2000, of a report on immigration as a solution to the problem of ageing and labour shortage (UN, 2000). In that report, the U.N. Population Division considered their own previous demographic projections (UN, 2001) and five different demographic scenarios in order to forecast the total population and the amount of immigration required in a series of individual countries and groups of countries: in the case of Europe, information is provided with regard to the European Union (EU15), United Kingdom, Italy, Germany and France, as well as the Russian Federation and the continent as a whole.

In this type of forecast, it is in fact common to use very large territorial units (e.g., NUT 0), in order to avoid the errors that arise from the lack of information at larger scales (e.g., NUT 4 or smaller) and from the contingency of what can happen in small and open spaces. In fact, the larger the territories under study, the more stable and significant the forecasts will be.

Since the main goal of this paper is not to forecast, or try to guess, the future population (like the UN report does), but rather to identify and typify areas that exhibit similar demographic trends and problems, it is very important to carry out some calculations at those larger scales, i.e., for smaller territories.

The analysis of the current and future demographic trends and performances presented here refers to the European Union in its former form (as EU15), the post-enlargement European Union (EU25), and, finally, the EU25 plus Romania and Bulgaria (two countries that will soon join the EU), as well as Switzerland and Norway (who have for long maintained strong links with the European Union). This latter unit of analysis shall be referred to as EU29.

The methods adopted here shall enable us to have similar information and to reach comparable results for each of the 29 countries – Eurostat's NUT 0 – and for each of the 276 NUT 2 territorial units.

By way of standard population projection techniques, we have calculated the number of persons in each region up until the year 2050, as well as the age structure under different scenarios and assumptions, and we have then identified the main trends in terms of ageing, labour shortage and replacement migration in the aforementioned areas.

In the first five scenarios, we only consider demographic assumptions, despite knowing that some of those assumptions rest on implicit economic ones. The first one, designated by scenario or model "A", is exclusively demographic and does not include any migratory flows; as for the other four "B" scenarios, the first one has been designed in order to determine the effects upon the demographic structure of maintaining the recent migration trends, and the other three in order to make it possible to find out the amount of replacement migration (whether positive or negative) required to maintain the following variables at the level of the reference year (2000): a) the total population (model B1); b) the population inside the working age (model B2) and c) the population required in order to maintain the same PSR - Potential Support Ratio - i.e., the same ratio of working to old age population (model B3).

The other four are concerned with economic performance and allow us to determine the migration needed to the regional economy, assuming small differences in productivity level. Four different scenarios, related to a differential productivity evolution, are developed.

In all these different population projection exercises, we assume that both the specific mortality rates and the specific fertility rates will be the same during the entire period. Naturally, things will not be exactly like that in reality, but since, for the time being, that base time period (1995-2000) is the only one for which complete data sets are available for all the 276 NUT 2 units, and since that same assumption is made for all the regions, the comparability of the results is ensured. On the other hand, since the base time period seems to be the one in which the demographic prospects are the less favourable, scenario A will be closest to the worst possible demographic situation.

Generally speaking, the results of these projections are not surprising. However, their magnitude and significance are, in some cases, quite startling.

The magnitude of the phenomenon of ageing in Europe is already very significant, but it will continue to increase substantially and in a non-reversible fashion (*cf*. the extraordinary figures for the population and required migration under scenario B3, that in which the PSR is kept constant). The evolution of the spatial pattern of the ageing processes shows that it will be intense not only in the more developed countries of Central Western Europe, but also in the Southern countries (where these processes have traditionally been hidden by ideological and social perspectives) and in the countries of the enlargement. Only a handful of regions will be free from the pressures of strong population ageing processes.

Although with variable patterns, depending on the characteristics of each country, the most critical period in most of the scenarios, in terms of the ratio of "elderly to working aged people" will be between 2015 and 2030, just followed after by a more stabilised variation.

Of course, the system itself will provide solutions to this problem, both by formal or by informal ways[1], but two important aspects remain that are worthy of notice: one is the intensity of the main current demographic trends; the other is the time lag that in European societies mediates between an individual's date of birth and his entrance in the active life (of labour and reproduction), which usually takes place some 25 or more years later. This means that the period between the emergence of the problems, the appropriate measures being taken and their effects being felt is not immediate and can actually take more than 30 years.

Another important result, though not fully visible due to the non-explicit integration of the regional economic performance in these models, is the unequal regional capacity to attract/repulse population. Based solely on the current demographic characteristics and assumptions, it is possible to detect those areas that exhibit strong depopulation trends. It must be pointed out that, at same time, in those areas where the ageing and depopulation process are at an advanced stage, there is a strong probability of excess manpower occurring, because the very feeble level of local development will not allow for those few that do look for jobs to be absorbed.

If we look at the regional and local reality and at the various possible future scenarios, some important questions arise, among which the following stand out: the actual importance of the ageing and depopulation trends in the various European regions; the social and economic consequences of these trends and the way in which they affect the regional and local development processes; the dimension of the migratory flows involved; and the issue of which formal and informal policy mechanisms will be more suitable in order to regulate these flows.

[1] That is why the future can never be fully foreseen by the experts, but rather built by all the people involved.

2 Theoretical considerations on labour shortage and replacement migration

2.1 Theories on the Economic Benefits of Migration

There is no general consensus regarding the economic benefits of migration. Different theories, based on different assumptions, reach different conclusions on the impact of international migration on economic growth, unemployment, labour force participation, wages, taxes, and transfers.[2]

According to *neoclassical macroeconomics* immigration will promote economic growth. Immigrants will constitute substitutive labour. Given than the number of jobs is constant, the wages will be lowered and the native workforce will have difficulties competing with cheap immigrant labour. If the number of jobs is constant, adding more workers on the labour market will lead to competition for the jobs. The equilibrium on the market will be changed, resulting in lower wages.

Low-income earners are the ones who will be hit most severely. The capital owners in the country of destination will gain from immigration as well as the well educated. If the immigrant is young, well educated, has no dependents and finds a job immediately after arriving, the country of destination will gain from immigration: the tax contributions of this immigrant will exceed the transfers from the public. This kind of immigration ought to be encouraged. If the transfers to the immigrants exceed their tax contributions, filters are needed in the immigration policy in order to ensure that only the most profitable immigrants are allowed to immigrate.

According to neoclassical macroeconomics, a completely different scenario of the economic benefits of immigration is also possible: immigration can slow down structural change in the economy. Economically stagnant sectors can survive by employing cheaper immigrants, preserving and maintaining the existing economic structure. Access to immigrant labour can also lead to labour intensive investment, keeping productivity down.

According to the *dual labour market theory*, we are accustomed to thinking of industrialization and economic growth as a process that in some basic way involves increasingly sophisticated technologies and progressively more highly educated and well-trained labour force. At the same time, unskilled and cheap labour is needed to do hard work under poor working conditions and low wages, a kind of work that the native labour are not willing to do. According to this theory, immigrant labour constitutes a complementary work force. If labour at the lower segment of the labour market is missing, economic growth will slow down. Substituting capital for labour is a possible solution, but since it is not possible to substitute capital for labour in labour-intensive sectors, hiring immigrants is another solution. Immigrant labour can keep up economic growth on a short-term basis; on a long-term basis changes in society are required. Since the immigrants work in low-paid sectors, their tax contributions will be lower than the tax contributions of the natives. A physically demanding and monotonous job will affect their health, resulting in a need for public transfers. Since the immigrants usually end up in hard and monotonous jobs, their need for public transfers will be bigger than for the natives.

[2] Chapter 2.1 is based on the review on theories on the economic benefits of migration made by Rauhut & Blomberg (2003)

According to the *new economics of migration*, continued immigration will lead to lower economic growth, because the amount of low productive work increases and because immigrants send remittances home to their families. Immigrants will usually take up jobs in sectors in which the natives do not want to work. If the salary in the country of destination is much higher than in the country of origin, *low-quality migrants* are the ones who are most willing to migrate. Since these immigrants are usually poorly educated and low-skilled workers, they will "experience higher unemployment rate and have fewer hours of work per year". Employers are in a situation of asymmetric information with regard to the productivity of the immigrant workers, and, together with the fact that immigrants generally take up low-skilled jobs, this is the reason why immigrants receive lower salaries until the employers have improved their knowledge about their workers. As a result of earning poor wages, or of working in the informal sector, the tax contribution of the immigrants will be lower than the natives'. If the immigrants work in the informal sector they are not entitled to any public transfers. If they work in the formal sector, they earn low wages and will receive less in public transfers than the natives.

2.2 The issue of labour shortage

According to Fotakis (2000), there is growing awareness in the EU today that there are at least two major policy issues as far as population ageing is concerned, these being the ageing of the workforce and the risk of increasing imbalances in the financing of social protection. Faced with these accelerating trends, immigration is often suggested as one of the solutions to these demographic problems.

Indeed, over the last two decades, the migratory space has undergone a clear expansion, manifest in the proliferation and diversification of the places of origin of the foreign residents. In particular, the migratory space has expanded as a consequence of the increasing liberalisation of the flows of people, goods and services from Central and Eastern European countries.

There is clearly a stark contrast between the aged demographic structures of the European countries and those in which the youth have a much more significant weight, as is the case in numerous migrant-sending countries. In this context, a host of studies have been conducted on the mutually beneficial implications that result from migrant flows. Two are particularly worthy of mention: the UN report on "replacement migration" (UN, 2000), in which the possible role of migration as a solution to the ageing problem is addressed; and the report by the Council of Europe on the characteristics of the immigrant population in several European countries (Haug et al., 2000).

> Replacement migration is referred to as "the international migration that would be needed **to offset possible population shortages**, i.e. **declines in the size of population**, the d**eclines in the population of working age**, as well as **to offset the overall ageing of the population**".
>
> (UN, 2000, p. 5)

This means that, as pointed out in a previous report, replacement migration can be defined as the immigration that is required in order to compensate for: (i) an ageing society and the rise in the number of pensioners, (ii) the consequences of depopulation, or, (iii) a low number of persons in active age

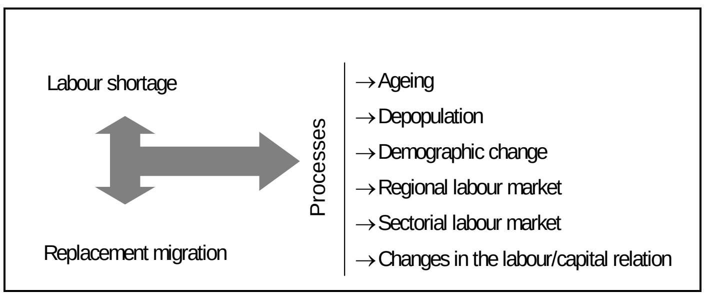
Migration flows have on numerous occasions been suggested as a way of controlling the population dynamics and thereby reaching certain demographic "targets". The UN (2000) argues that it would take a very significant inflow of migrants (1,850 million people in the period 1995-2050) for the current declining trend of the economically active population to be offset.

According to Ruby (2000), migration interferes in two ways with the demographic dynamics of a country: directly, by way of the actual arrival of the migrants; and indirectly, by the latter increase in the number of births. Coleman (1992, cf. ONU, 2000) argues that three factors drive the demand for immigration in developed countries:

1. The need for care to the ageing population (directly by way of services and indirectly by income tax revenues to finance appropriate pensions);
2. The mismatch between demand and supply of labour in the domestic labour markets;
3. The need to rejuvenate the working population (which has a beneficial effect in terms of productivity).

Hence, we find, on the one hand, a process of demographic change associated with the increase in life expectancy, low fertility rates and increasing ageing rates; and, on the other, a process of restructuring of the labour market, in which the needs are changing to accommodate the changing characteristics of society itself that are a consequence of the acceleration of technological progress (Figure 1).

Figure 1 Labour shortage and replacement migration



According to Tamas (2004), the demand for migrant labour is growing. "The International Labour Organization has recently estimated the global number of migrant workers and their family members at 120 million (Taran, 2003 cf. Tamas, 2004). As the demographic changes with ageing populations and emerging labour force shortages become increasingly apparent for the economies of developed countries, further expansion of those flows appear likely (Boswell, 2003 cf. Tamas, 2004).

In economic theory, the demand for labour depends on the total demand in the economy and on the alternative cost for replacing labour with capital. A labour shortage occurs when the demand for labour is higher than the supply and when the alternative cost for substituting labour with capital is too high.

> A labour shortage occurs when demand for labour exceeds labour supply at a specific wage level. The shortage is said to be 'relative' if the imbalance can be fixed by a change in prices (wage or reservation wage). Otherwise the shortage is said to be 'absolute'. Absolute labour shortages thus reflect the impossibility to find, among the working age population, a worker with the adequate skills (without transferring him from a similar post)
>
> (EC and OECD, 2003, p. 27)

According to Denton & Spencer (n/d), to ask whether there is a 'shortage of labour' is to suggest that there is some critical level below which the labour supply is insufficient. It is perhaps better to broaden the question and consider types of situations in which a larger and more rapidly growing labour force would be preferable, rather than to think specifically in terms of a shortage.

According to Denton & Spencer (s/d**), labour shortage** is related with diverse situations:

(i) **General excess demand:** this would be a situation in which the aggregate demand for goods exceeds the economy's capacity to supply them in the short run and, as a result, the demand for labour exceeds the available supply. The situation is assumed to be temporary.

(ii) **Specific excess demand:** there may be excess demand for specific types of labour, even though no general excess exists in the labour market as a whole. This implies that other types of labour are in excess supply. From a theoretical point of view, such a situation indicates that the relative wage rates have not responded so as to restore equilibrium, that production processes are insufficiently flexible to permit substitution of abundant for scarce types of labour, or some other departure from neoclassical assumptions.

(iii) **Increased dependency ratio:** the ratio of dependent to economically active population changes through time.

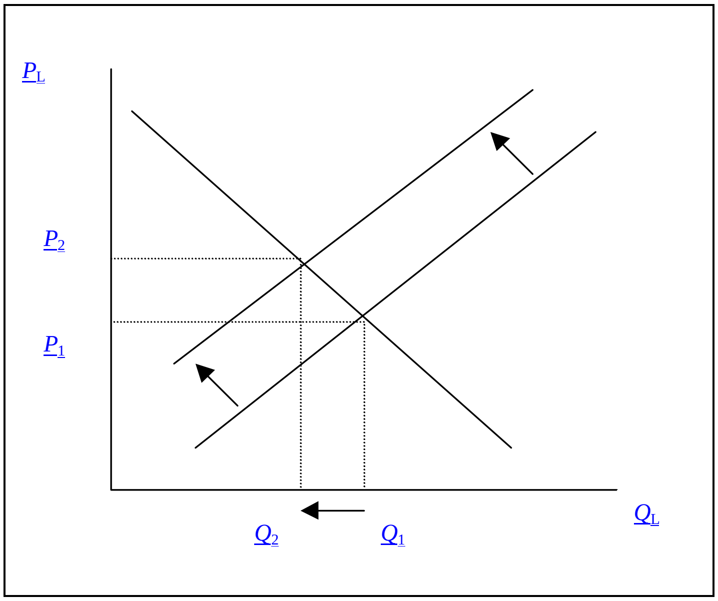
(iv) **Growth for ease of adjustment:** a variant of the previous argument is one in which growth is viewed as desirable because it facilitates adjustments within the economy. New technology can be more easily introduced in a growing economy, either through its embodiment in newly educated labour force entrants or in newly created physical capital

Denton & Spencer (n/d) argue that the definition of 'labour shortage' is itself far from being a straightforward matter and that the effects of immigration on the economy and the society are, to say the least, imperfectly understood. At the level of policy discussion, immigration needs to be viewed in a broader context than has typically been the case in the past: long-run as well as short-run consequences need to be considered and account needs to be taken of the effects on the economy as a whole, not just those effects that directly impinge on the labour market.

According to standard economic theory, the demand for labour depends on the fluctuations of short-term business cycles. In a short-term perspective, the opportunity cost for replacing labour with capital, i.e. investing in new technology, will be too high. If the labour shortage continues, or even worsens, over time, the opportunity cost of not replacing labour with capital will be too high. In a long-term perspective, labour shortage is not about being short of labour, but about lacking the capacity to adjust to the structural changes in the economy (Begg et al., 1987;. Wonnacott & Wonnacott, 1986; Elliott 1991; Fallon & Verry, 1988; Schön, 1994, 2000).

A consequence of labour shortage is that the cost for labour will increase, which is illustrated in figure 1. When the quantity of labour, QL, diminishes, and the quantity moves from Q1 to Q2, the price for labour, PL, will move from P1 to P2. As a result, a new equilibrium will be achieved (see figure 2).

Figure 2 The Relation between the Quantity of Labour and the Price of Labour



Labour shortages can be "partial" and "general". A partial labour shortage occurs when there is a shortage of labour in a specific profession or sector of the economy, e.g., farm workers, nurses, bus drivers or construction workers. A general labour shortage is a result of demographic changes in the population, i.e., there is a shortage of labour in all professions and sectors of the economy (Rauhut, 2002a).

2.2.1 Changes in relative factor prices

According to economic theory, it is possible to estimate the effects of changes in the relative prices of a factor commodity (as shown in figure above), especially when it comes to the demand for that specific factor commodity and substitution effects. Given the assumption that a company is profit-maximising, a shortage of a factor commodity will result in an increase in its price. As a consequence, this specific factor commodity will be replaced by another, cheaper, factor commodity. If it is labour that is in relative shortage, capital will be substituted for labour. Elliott states that the "substitution effect distinguishes the firm's reaction to the change in the relative price of capital and labour, holding constant the scale of production" (Elliott, 1991: 236).

Begg et al. state that "the substitution effect leads the firm to produce a given output using a technique which economizes on the factor that has become relatively more expensive. Thus, a rise in the wage rate of labour leads to a substitution effect towards more capital-intensive production methods at each output" (Begg et al., 1987, p. 214). According to Wonnacott & Wonnacott, "in a competitive, fully employed economy, the wage rate increases as productivity increases. This conveys a clear message to those producers who can no longer afford the higher wage. The message is: society can no longer afford to have its scarce labour employed in your activity. There are now too many other, more productive pursuits. This may seem harsh, but it is the sign of economic progress" (Wonnacott & Wonnacott, 1986: p. 723).

There are, in general, five ways to deal with a relative change in the price of labour (Rauhut, 2003):

i. If the relative factor price for labour increases on a short-term basis, the increase in cost will be paid by the consumer of the commodity or service.
ii. If the relative factor price of labour increases on a long-term basis, capital will, if possible, be substituted for labour.
iii. If the relative factor price of labour in labour-intensive production increases on a long-term basis, organisational or institutional changes will take place in order to use the labour more efficiently.
iv. If the relative factor price of labour increases on a long-term basis, labour in-migration can be used, provided that imported labour can replace domestic labour. This is easily done for some sectors of the economy, but for others, it is more troublesome to replace domestic labour with immigrated labour.
v. If the relative factor price of labour increases on a long-term basis, labour-intensive production will be moved to countries where labour is cheap and in abundance.

An increase in wages is to be expected when labour is scarce, which leads to an increasing wage ratio in the production. When the marginal cost of a continued increase in production is higher than the marginal cost of substituting capital for labour, institutional, organisational and technological changes will be required in order to replace the scarce and expensive factor commodity labour in production. Despite using less labour, production will be kept up due to increased productivity. This is so not only because firms are profit-maximising, but also because they are cost minimising! (Fallon & Verry, 1988).

2.2.2 Implications

The demographic trends will change the conditions of the economic system that have been built up, not just in Europe, but in the entire Western World. The problem that the Western World will face around the year 2050 will be to find solutions to support a rapidly ageing population, while, in many countries in the Third World, the problem will be to find ways to feed a relatively young population. In the Western World, technological development can probably replace labour with capital to some extent, thereby achieving productivity improvements. If young people in the Third World cannot make a living, there is a risk of financial and social tension. If this difficult global issue of distribution policy is not handled successfully, it could lead to political tensions and conflicts between rich and poor countries (Rostow, 1998). See also Hofstee (1950) for similar conclusions on the risk of war brought about by population pressure on Europe from the poorer countries.

In theory, labour migration could help the Western World to support its older population, and the young in the Third World to find a way to earn a living. Given a number of assumptions, this could provide a solution to the problem of global ageing that would benefit everyone. However, we are now facing a generalised decrease in the population inside the working age. Estimates indicate that the number of people aged 15-64 will be 4% lower in the EU15 in 2025 than it was by 2000; and that in the accession countries this figure will be 10% lower. According to the European Commission (2004), this decrease will take place alongside a significant increase in the number of people aged 65 or older: by 2025, the percentage of people over the age of retirement will be 40% larger than it is today, both in the EU and in the accession countries, which means that there will be less than three people inside the working age for every person aged 65 or older, as opposed to the current ratio of over 4/1. If none of the relevant variables are changed, the gradual reduction of the working force of the European Union will inevitably ensue from demographic ageing.

In a context of global competition, "if we compare the demographic projections for Europe and the US for the next 20 to 30 years, we find that Europe (average age in 2050: 52.7

years) will become frighteningly aged as compared to the US (average age in 2050: 36.2 years) (Vitorino, 2003).

However, there are no clear-cut results (whether theoretical or empirical) that show a link between a change in the population structure and its economic effects. The results are dependant on the assumptions that have been made. Depending on the institutional and organisational changes that take place at the time of the population changes, population decline can result in both positive and negative economic developments (Rosenberg & Birdzell, 1986; Easterlin, 1996; Kelley & Schmidt, 1994; and Coale & Hoover, 1958).

This is certainly a complex issue, one for which a consensus is yet to be reached with regard to the best available solutions. Different theoretical standpoints, based on different assumptions, naturally yield different conclusions on the issue of the impact of international migration upon demographic and economic growth, unemployment, the level of participation of the work force, wages or taxes.

According to Peixoto (2004), the "mobility of labour" (migration) has a series of implications at various levels: the idea of the unequal development of space, as a consequence of the logic of the private accumulation of capital (Hudson and Lewis, 1985); the concentration of production in urban areas, which allows for the reproduction of the work force (Castells, 1981); the recent fragmentation of the activity of capital (Massey, 1984); the "hyper-mobility of capital and labour" (Hudson and Lewis, 1985: 16-7); and the contrast between "flow space" and "local space" (Castells, 1989) – all have great potential in explaining migration flows and reflect much of today's reality (Peixoto, 2004).

According to Petras (1981, cf. Peixoto, 2004), one of the chief characteristics of the world-system theory[3] is the creation of a "global labour market". Thus, the global movement of labour must be seen in relation with the global flows of capital and goods. The existence of "wage zones" is, according to this author, the main reason behind migration flows.

Petras (1981, cf. Jackson, 1991), in turn, argues that the international division of labour originates three different yet mutually dependent spheres: the centre, the semi-periphery and the periphery. This author maintains that capital, commodities and labour move across national borders as part of a gradual process that gives rise to complex linkages between countries. Migration is thus explained by the economic and political influence of the central economies upon the peripheral ones and by the specific effects of the differentials in social and real wage levels, which lead to the recruitment of labour across national borders, drawing on the international labour surplus.

There are two ways to break the vicious circle situations brought forth by the demographic developments. Historically speaking, situations of long-term labour shortage have led to labour being replaced through technological, institutional and organisational changes. This has meant that productivity improvements have resulted in increased growth. The creation of an economic surplus through economic growth is a condition of welfare (Dillard, 1967; Rider, 1995; Cameron, 1997 and Landes, 1998).

Another way to try to offset the negative demographic development is to import labour. This would make it possible to influence the dependency ratio, increase the tax basis, obtain labour primarily for low status jobs in the service sector, as well as highly skilled workers with cutting-edge skills, graduate engineers, etc. Labour migration can also offset structural change in the economy, as stagnant trades and sectors are kept going. Furthermore,

[3] The body of knowledge on international migration is made up of a set of autonomous theories. The world-system theories, originally put forth by Wallerstein (1979 and 1986) is one of the best known, and has been adapted to the analysis of international migration by a number of different authors.

importing labour can only solve the demographic problem in the short term because the immigrants get older as well (Coppel et al., 2001).

As the push-pull models acknowledged, the specific mechanisms that bring about development and under-development (or centre and periphery) have led to the creation of pockets of labour surplus in the periphery, which are kept at low wages, and to situations of high demand for labour, which translate into higher wages, in the more developed countries.[4]

According to Jackson (1991), by the mid-19th century, the "push" factors were chiefly of an economic nature, e.g. lack of access to the ownership or use of land, unemployment, low wages, draughts, famines, unproductive land and population increase. The "pull" factors were the favourable alternatives to the latter scenarios, which often placed the urban areas under a much better light. The author claims that the aforementioned model can only be applied to the location decision of an agent within a given historical and social framework, in which he is forced to make a decision. The model is based on a set of underlying assumptions regarding the way in which the migrant makes his decision, and assumes that it consists of a rational decision-making process within a perfect information context.

The push-pull model is closely linked with labour market theory. "In its early form, the model postulated the existence of equilibrium in terms of wage levels, as any differentials would be fully compensated by migrations. Likewise, the application of the model to the places where there was a shortage of labour assumed that the ensuing increase in wages would eventually curb the migratory pressure". (Jackson, 1991: p.23)

If the political aim is sustainable economic growth, a long-term perspective is required and the tools to reach this aim need to be long-term tools. In the future, Europe will face generalised labour shortage. There will also be temporary periods of short-term labour shortage in different professions and sectors, i.e. partial labour shortage. Partial labour shortages can be overcome by way of short-term measures such as temporary labour immigration, but long-term labour shortages cannot.

Measures to deal with a general labour shortage include long-term actions such as promoting structural changes in the economy, replacing labour with capital, promoting an increase in the total fertility rate, increasing the mobility of the labour force in the countries of the EU29 area and increasing the age of retirement.

2.3 Labour market segments and migration flows

2.3.1 Labour force skills and migration flows

For Sassen (1998), several potential issues arise from the presence, or indeed absence, of a numerous immigrant labour force, including effects upon the wage level of the lowest segment of the labour market, its implications in terms of the cost of living and the competitiveness of the local economic activities, as well the patterns of labour market segmentation and the opportunities for the advancement of the native workers. Moreover, given the spatial concentration of newly-arrived migrants in the larger cities, immigration also contributes to bringing about changes in the spatial pattern of labour supply.

The development of cities cannot be seen in isolation from the fundamental changes in organisation that have taken place in the developed economies. The combination of

[4] In a study on replacement migration to Sweden, Sweden appears to be rather unattractive for extra-European immigrants due to this (Rauhut 2004).

economic, political and technical forces – the central thrust elements of the economy that have led to the decline of mass production – has brought forth the decline of the wider institutional framework that has shaped labour relations in the past (Sassen, 1998).

In his work, Piore (1979) builds on the notion that the labour market is essentially made up of two different segments – the primary and secondary labour markets – and adapts it to the incorporation of migrant workers in the national labour markets. In this context, the basic problem for the employer is to choose the levels of both production and labour that are compatible with the amount of work that can be performed by any worker, and the amount of work that requires specific skills. This is the central tenet of the dual labour market theory.

Thus, according to Peixoto (2004), the subcontracting mechanisms in place, the room for the existence of irregular labour, the level of job insecurity and the low wages earned by this portion of the work force suggest that this is an unattractive sector for the native work force, which will rather move abroad.

According to the dual labour market theory (Piore, 1977, and others, according to Peixoto, 2004), the chief characteristics of the two segments of the labour market are the following: the **primary labour market** offers stable working conditions and labour relations, attractive wages, prospects of career advancement and internal promotion (within sophisticated labour markets internal to the organisations) and the guarantee of social protection. In practice, these characteristics are most common in the case of state departments and other large public and private organisations. By contrast, the **secondary labour market** is characterised by low wages, the demand for unskilled labour, scarce career opportunities, job insecurity and often a virtual lack of social protection (Rodrigues, 1992: 25-26, cf. Peixoto, 2004).

"It is the fact that many activities rely on this ("secondary") segment of the labour market that pushes away the native work force and draws in migrants from poorer regions (who, even in an underprivileged economic situation, will be able to experience an improvement with regard to their previous situation, or – at least – nurture expectations of future mobility)." (Peixoto, 2004: p.23).

According to Portes (1981), migrants that are drawn in within the context of the primary labour market usually come in through legal channels; have access to jobs by virtue of individual qualities rather than ethnic origin; have prospects of mobility that are akin to those of the natives; and play a "complementary"/"reinforcing" role with regard to the national labour force. On the contrary, access to the secondary labour market (which accounts for the majority of the migrant workers in the international context) is chiefly characterised by the precariousness of the legal status (usually either temporary or illegal); recruitment based on ethnic origin rather than skill and qualification (as a reflection of the vulnerability of the former condition); the performance of isolated tasks, with no prospects of upward mobility; and a "disciplinary" effect upon the local labour force (by keeping the general level of wages low).

In the 1970s, the International Labour Office (ILO) defined illegal or clandestine migration as the act of migrating whereby the migrants, "during the course of their trip, at the time of their entry, during their stay or in the course of their economic activity, break the national law or any pertinent international, multinational or bilateral agreements or regulations".

2.3.2 The relevance of the Lisbon Strategy

Within the EU, several treaties and agreements (Schengen (1985), Maastricht (1992), Amsterdam (1997) and Nice (2003)), as well as the European Commission (Tampere, 1999) have all sought to contribute to this issue, even though no consensus has been reached with regard to the adoption of a single integration policy.

In order to achieve its ultimate goal – "a safe and open Europe" –, the EU must define a immigration policy at the European level. The Treaty of Tampere further highlights the importance of the fight against illegal immigration (an idea reinforced in the European Summit of 2002 in Seville) and the crime that accompanies it, without relaxing the principle of non-discrimination against third country nationals.

The greatest challenge seems to lie in the integration of the immigrant communities in the host societies. The goal, both for the Union and the Member-States, is the active participation of the immigrants in the host societies, and the other way around (Vitorino, 2003).

Yesterday's myths, such as the zero-immigration policies of the 1970s set up in response to the escalating unemployment, have no bearing in today's world (id., ibid). Migration flows play an increasingly predominant role in the population dynamics, since the current picture is one of ageing and population decline. If the desired productivity gains turn out to be unrealistic, a significant reduction of the labour force will almost inevitably have a negative impact upon economic growth.

In a rapidly changing environment, as a consequence of the globalisation process and of the challenges posed by a new knowledge-based economy, the EU has felt the need to set as its strategic goals to create knowledge infrastructures, foster innovation and economic reform and modernise the education and social protection systems.

In this context, the Lisbon Strategy (2000) sets as the new strategic goal of the EU for the next ten years "to become the most dynamic and competitive knowledge-based economy in the world, capable of ensuring sustainable economic growth, with more and better jobs and greater social cohesion" (See Annex 1), drawing on the resources of the new information society to reinforce its level of innovation and competitiveness. The strategy stresses the need to invest in training and to fight social exclusion, by following macro-economic policies that enable sustained growth.

Following this new policy orientation of the EU, and considering that the over-arching goal of the Union's social and labour policy is full employment and improved social cohesion, the Member-States must reshape their policies to meet the four action pillars: i) promoting employability; ii) fostering entrepreneurship and the creation of employment; iii) providing incentives to the adaptability of firms and workers; iv) strengthening the policies aimed at promoting the equality of opportunities between men and women.

It is important to bear in mind that immigration can provide a very positive contribution to filling in the gaps of the labour market, along with policies that result directly from the Lisbon strategy, with regard to which immigration would play a complementary role, such as the qualification of the unemployed work force in sectors for which there is a shortage of labour (especially female labour).

In a context of labour shortage, the Eastern enlargement provides no solution either, or at least so in the long run, as the demographic situation of the new Eastern members does not differ substantially from that of the EU15 (Vitorino, 2003).

On the other hand, these immigrants have experienced a process of downward professional incorporation. In spite of their skills, they usually take up jobs in the secondary labour market. The women mostly take up jobs in the hotel and restaurant sector, or in personal and household services. The men's incorporation in the labour market men mostly occurs in the construction and public works sectors.

However, this is a temporary phenomenon associated with the difficulty of accessing the secondary labour market, due to problems of skills recognition. In the short to medium term, these immigrants will provide an important contribution to the pursuit of the Lisbon strategy, if we consider that their countries of origin are characterised by high work force participation rates and high levels of schooling/skills.

One further aspect to bear in mind is the time dimension of migration. Not all the migrants move indefinitely (brain drain). Temporary immigration is an increasingly common phenomenon, especially among medium and highly skilled professionals (brain circulation) (id., ibid.).

"Assessing the needs of immigration for the European Union is a quite complicated issue that cannot be treated by taking only into account the demographic trends. A lot of considerations should be taken on board. Besides, each country of the Union represents a different situation, not only because their demographic patterns are different, but also because each of them faces its own socio-economic reality. Economic and social institutions are often different too" (Fotakis, 2000).

3 Analysis of the Regional Ageing Trends

The growing awareness with regard to demographic issues in European societies, along with the increasing inter-relationships between the economic and the demographic variables (among which in-migration to developed countries stands out) has occupied central stage in the international debate, particularly in the European Union.

The increase in life expectancy and the low fertility rates are two trends that have been consolidating over the recent past. Although this is not a new trend, it is set to further intensify because of the post-war baby boom (Fotakis, 2000).

Over the last few decades, developed countries have experienced gradual demographic changes, whereby the population ageing has often taken place alongside the depopulation of specific areas.

The ageing process leads to a shortage of labour and a reduction in the potential support ratio (the ratio between the 15-64 years old and the 65 and more years old population).

3.1 Population variation

The demographic weight of the European Union, as compared to rest of the world, has been steadily decreasing. By 1960, the EU-15 accounted for 10% of the world's population; by 1999, it had dropped to 6%; and by 2025 it may barely reach 5%, according to UN estimates (2000). Thus, the chances of a population increase built on natural growth are extremely slim. That is why migration flows have become so important.

By the end of the 1990's, the decrease in population affected a large number of European regions. The population increase was less than 1% in the second half of the decade in the area under scrutiny (the EU29), and a large number of regions saw their population decline (531 out of 1326 NUT 3). The factors that explain this situation have to do with the decline in the fertility rate and the migration flows.

The pattern of population variation shows a central-periphery differentiation, not just at the European level, but also at the national level. The most negative variations could be found in the northern and southern countries of Eastern Europe, in the least dense areas of Portugal, France and Spain, and in the north of Sweden and Finland (cf. SIR, Ch. 5). On the other hand, the greater positive variations are to be found in the economic centre of Europe and particularly in its major cities.

The main reason is that the migration flows allow some regions to reach a positive balance, even when their natural population developments are negative or null. However, in some other regions, we find a drastic population reduction due to the out-migration flows and to a negative or null natural population development. Such is the case of some regions in northern Spain and Greece, but also in Hungary, Bulgaria and the Baltic. In general, even in the future member states of the Union, Europe is experiencing scarce population growth, due to the decrease in fertility rates and to the high level of out-migration flows. Therefore, the integration of new states does not change the trends of the last years in the European Union.

3.2 Migration trends

Due to the decline in fertility and to the ageing of the population, the EU will face a demographic challenge in the near future. The ageing process affects the bases of the regional economies, mainly due to the shortage of labour. The migration system could provide an answer to this problem in two different ways: one has to do with the rejuvenating of the demographic structure, the other with the fulfilment of the needs of the labour market, by way of replacement migration.

The recent trends apparent in the EU29 (cf. SIR, Ch.4) confirm the fact that internal migrations flows are more intense than international ones. Therefore, international barriers still play an important role in the decision to migrate. On the other hand, we find that the more economically dynamic areas still draw in migrants and that the economic factors still play an important role in explaining migrations flows: differing unemployment rates, and differing job opportunities, remain important in explaining migration. This is visible in the case of the more dynamic areas - the centres attracting both skilled and non-skilled labour - , but also in the more depressed regions - where the lack of workers, especially highly skilled ones, could mean job opportunities.

3.3 Mortality and fertility

The sharp decrease in mortality rates and the increase in life expectancy are two major trends of Europe's demographic pattern. On the other hand, the sharp decline in the fertility rates, particularly from the mid-1960's to the mid-70's in the northern and western countries, and from the 70's to the 90's in the southern countries, began to stabilize - but at very low levels, actually below replacement level. Eastern European countries exhibit similar trends, but from the mid-80's onwards. Generally speaking, we can say that the behaviour of fertility in the EU29 points towards the same outcome: low fertility rates below replacement level, but with a time gap and varying intensities.

The consequences of these effects are a shift in the age structure of the populations and the ageing process. However, the gap between the beginning of the decline, and the differences in intensity, will lead to differing results in the near future. The northern and western countries will experience drastic ageing processes, whereas in the southern and eastern countries, that process will take place at a latter time, albeit in more drastic fashion.

3.4 Ageing evolution

As we have seen, the European population is definitely getting older. Nevertheless, the rate of this ageing process varies, not only at the national level, but especially at the regional level.

The decline in fertility and the expansion of life expectancy are not the only issues involved in understanding the ageing process. The most pronouncedly ageing regions are also the main regions of out-migration, and the departure of the youngsters contributes to accelerate the ageing process. Therefore, demographic declines are one result of this pattern.

On the other hand, we can identify some regions that are areas of in-migration and exhibit an older population age structure. Some of those regions are retirement areas for international or national pensioners. Naturally, they have different characteristics, and can be more or less attractive to younger people, depending on the needs and consumption capacity of the elderly people.

3.5 Potential Support Ratio evolution

The more the elderly increase their weight in the population structure, the less young and working-age population there is. The potential support ratio (PSR) indicates how many persons inside the working age exist for each person over 65 years of age. As the ratio decreases, more people depend upon fewer ones. In a way, it represents the degree of dependency of the elderly upon the active population. In the past, it was the youngest that most depended on the actives, now it is the other way around. The main difference is that in the former situation, the younger would sooner or later join the labour force, whereas that is not the case with the elderly.

The decrease in the dependency of the elderly is reachable by way of an increase in the labour force, through in-migration or by an extension of the age of retirement. All of these contribute to increasing the ratio. On the other hand, an increase in economic productivity could offset the reduction of the PSR.

4 Regional Economic Analysis

Analyses of the performance of the regional economies are crucial in order to understand the future need for labour and the capacity to generate value. This is deeply related with our aim, since economic performance, as we have seen, is related with the migrations flows that will be generated in order to offset the labour shortage.

The performance of the GDP, productivity rates and active population will provide the basis for our C models. Therefore, we must first identify the main trends at the NUT 0 and NUT 2 level. This work is currently under way and is being done based on information taken from other ESPON project groups, as well as other sources.

4.1 Gross Domestic Product

Since 1973, the EU economy has grown at an average rate of 2.0%-2.5% per year, just under that of the US. In the 10-year period between 1986 and 1996, the GDP of the EU grew, on average, at just over 2% per year. In the first half, 1986 to 1991, GDP growth averaged over 3% per year; and in the second half, 1991 to 1996, it barely reached 1.5% per year, having actually fallen sharply in 1993. From 1997 onwards, the EU economy grew at a rate of over 2.5% a year – that is, until 2000, when it returned to growth rates of 1.6%, 1.0% and 0.7% per year, in 2001, 2002 and 2003, respectively. The accession countries have grown at an average rate of 3.0% a year, exhibiting convergent behaviour.

If we look at the countries' relative position in terms of per capita GDP, with the exception of Greece and Portugal (whose per capita GDP is below that of Cyprus), there is a clear separation between the countries of the EU15 and the enlargement countries. If we consider the European average (EU15), we see, on the one hand, that the enlargement countries are significantly below that level and, on the other, that countries such as Belgium or France are *also* below that value. Also important is the fact that, even considering the average for the EU27, three countries appear below this line: Spain, Greece and Portugal.

In the period 1995-2000, the Candidate Countries exhibited the highest growth rate in terms of per capita GDP. The only exceptions to this were Ireland and the United Kingdom, which, although already highly placed in the ranking, continued to grow above the average rate in that period (see table 1).

At the regional level, we find that the regional economic performance appears to show a tendency towards real convergence if we consider some of the indicators, but not if we consider other indicators. However, in the past ten years, GDP per head increased from 41% of the EU average to 50% in the case of the 10 poorest regions, and from 52% to 59% in the 25 poorest. On the other hand, Greece, Spain, Ireland and Portugal went up from 65% of the EU average to 76.5%.

The accession countries are quite below the EU average. Between 1995 and 2000, there was some slight acceleration in the Baltic States, Poland and Hungary. No significant developments were visible in the cases of Slovakia, Slovenia or Cyprus. According to Eurostat data, the situation is only getting worse in the Czech Republic. Even more significant was the widening of the gap between the EU average and some Bulgarian and Romanian regions.

Table 1 Gross Domestic Product per head, 1995 and 2000

Country		GDP per head (2000)	GDP per head (1995)	Variation 1995-2000	
LUXEMBOURG	LU	46,401	33,495	LT	175
DENMARK	DK	32,576	26,387	LV	144
SWEDEN	SE	28,010	20,800	EE	114
IRELAND	IE	27,323	14,132	IE	93
UNITED KINGDOM	UK	26,096	14,806	UK	76
FINLAND	FI	25,337	19,361	PL	76
AUSTRIA	AT	25,258	22,349	HU	51
THE NETHERLANDS	NL	25,191	20,526	MT	51
GERMANY	DE	24,698	23,025	RO	50
BELGIUM	BE	24,237	20,885	SK	45
FRANCE	FR	23,385	19,992	BG	41
ITALIA	IT	20,165	14,643	CZ	41
SPAIN	ES	15,248	11,393	LU	39
CYPRUS	CY	14,290	10,549	PT	38
GREECE	GR	11,639	8,599	IT	38
PORTUGAL	PT	11,494	8,333	SI	36
MALTA	MT	9,913	6,568	CY	36
SLOVENIA	SI	9,815	7,215	GR	35
CZECH REPUBLIC	CZ	5,428	3,854	SE	35
HUNGARY	HU	5,045	3,336	ES	34
POLAND	PL	4,422	2,518	FI	31
ESTONIA	EE	4,070	1,899	DK	24
SLOVAKIA	SK	3,950	2,729	NL	23
LITHUANIA	LT	3,485	1,268	FR	17
LATVIA	LV	3,277	1,343	BE	16
ROMANIA	RO	1,791	1,195	AT	13
BULGARIA	BG	1,681	1,192	DE	7
Average EU15		**24,471**	18,582		32
Average CEE+2		**5,597**	3,639		54
Average EU27		**16,082**	11,940		35

Source: ESPON database

In the member states of the EU15, the most significant improvement can be found in Ireland. This has to do with the high rate of economic growth experienced in Ireland in those years. Some regions in Austria, Finland, Greece and Spain also appear to have grown above the EU average between 1995 and 2000, in terms of per capita GDP. The same can be said of the Southern part of the UK, but not of its Northern regions, which effectively resulted in a widening of the traditional gap between the North and the South of the UK.

A similar traditional gap can be found in Italy. In Germany, there have been no significant changes either, which means that the East still lags clearly behind the West. In the Benelux countries, as well as in Portugal, no significant changes in relative position with regard to the EU are to be found. Finally, Sweden's per capita GDP seems to have grown at a lower rate than that for the EU as a whole.

If we consider a wider temporal range (1970/2000)[5], per capita GDP grew at 2.63% per year in the EU15. Germany, Sweden, Denmark and Switzerland all grew at clearly lower rates than the EU15 average. The United Kingdom, Hungary, Italy and Belgium grew at slightly lower rates than the average.

On the other hand, a set of countries have grown at rates above 3% per year. That was the case of Poland, Cyprus and Malta among the "accession" group; Finland, Spain, Portugal, Luxembourg and Ireland among the EU15; and Norway and Romania among the "plus four" group.

Table 2 Long term Evolution of GDP/cap, 1970 to 2000 (Annual Variation Rate)

	1970/2000	1990/2000
AT	2.89	2.67
BE	2.60	2.41
BG	2.76	-0.61
CH	1.41	0.93
CY	4.94	4.95
CZ	na	0.91
DE	2.36	2.02
DK	2.06	2.69
EE	na	0.17
EL	2.93	3.56
ES	3.32	3.41
FI	3.10	2.41
FR	2.68	2.25
HU	2.55	1.79
IE	5.75	8.96
IT	2.57	1.85
LT	Na	-1.25
LU	4.47	5.90
LV	na	-2.38
MT	6.63	5.62
NL	2.71	2.97
NO	3.82	4.05
PL	3.05	4.14
PT	3.62	2.88
RO	3.13	-0.21
SE	2.20	2.44
SI	na	2.72
SK	na	2.15
UK	2.54	3.03
EU15	2.63	2.49
EU25	na	2.48
EU29	na	2.44

Source: UN, Eurostat, Own Calculus

[5] No data exists for 1970 for the Czech Republic, Estonia, Lithuania, Latvia, Slovenia and Slovakia.

4.2 Productivity levels

Economic growth in the EU, especially since the war, has largely been achieved by way of raising the average output per person employed, rather than by increasing the number of people who work. Of the 2.2% annual growth in GDP over the 10-year period between 1986 and 1996, growth in output per person employed accounted for 1.8%, while growth in the number of people accounted for only 0.4%. The low employment content of growth compares unfavourably with the United States, where, over the same period, the largest share of 2.5% annual GDP growth stemmed from an increase in employment of 1.5% per year, output per person rising by just 1% per year.

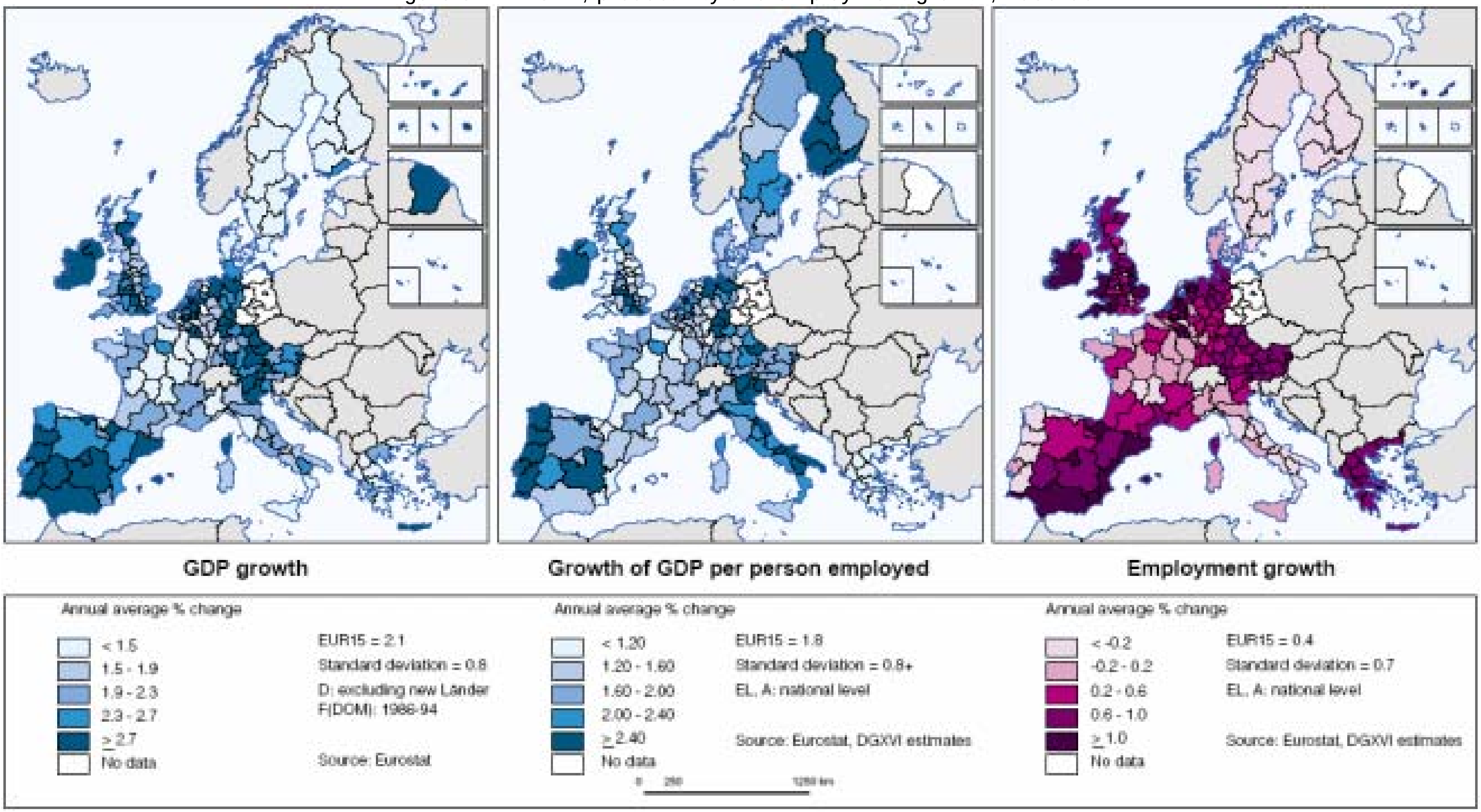
Some regional differences are also worthy of mention in this respect. Although the Portuguese regions exhibit a level of GDP per head that is similar to that of the Spanish regions (apart from the North-East), the level of productivity is much lower (typically only around 60% of the EU average as compared with around 90% of the average in Spain). Conversely, the level of employment is at some 68% of the working-age population in Portugal, whereas in Spain, it is only around 45% - and only 40% in Andalusia, which is among the lowest rates in the EU and well below the EU average of just over 60%.

Therefore, while the level of productivity in Spain has converged with regard to the EU average, the relative level of employment in this country is still substantially below its EU counterpart and increasing it remains the main economic challenge. On the other hand, in Portugal, where the level of employment as well above the EU average, the most pressing need consists of increasing the level of productivity (thus allowing for an increase in real wage levels).

For some regions in Greece, the picture is even less favourable. Both productivity and employment are at low levels and there is little evidence of catching up with the EU average in either case. The level of productivity in the rural and mountainous interior is typically around just 60% of the EU average - the lowest in the EU along with some regions in Portugal. Unlike in the case of Portugal, however, the increase in productivity has also been low - 1% per year between 1986 and 1996, or half the EU average rate, which meant that the gap has widened, rather than closed in.

In the case of Ireland, both components of per capita GDP have performed well. The substantial increase in productivity (over 4% per year between 1986 and 1996, by far the highest rate in the EU, except for a few Portuguese regions), along with the even higher growth in output, has begun to translate into significant rates of net job creation (which averaged 2% per year over the period and 3% per year over the past 5 years).

Figure 3 GDP, productivity and employment growth, 1986-96



Source: EC (1999)

As a result of this, the level of GDP per person employed in Ireland has actually exceeded the EU average, and the gap in the employment rate is rapidly closing in (by 1997, the level of employment was at 58% of the working-age population, just slightly under the EU average).

Southern Italy is similar to Spain, in the sense that the low level of per capita GDP is mainly imputable to the low level of employment. GDP per person employed is typically around 90% of the EU average (although it is exceptionally low in the case of Calabria, at just over 80%), while employment is generally at just around 40% of the working-age population – lower than anywhere else in the European Union.

The low level of per capita GDP in the new German Lander is entirely due to the low productivity. While the employment rates are slightly above the EU average in most of the regions (typically around 62–63%), the level of output per person employed barely reaches 60% of the EU average in most cases. Although no data exists for the period 1986-1996 as a whole, the recent trend seems to be for the initially (after the reunification) high levels of productivity growth to weaken and for the employment rates to stabilise.

In the Northern and Eastern regions of Finland, employment rates have traditionally been high. However, the slump in the early '90s largely fell on employment, leaving productivity growth unaffected or even slightly higher as industry restructured. In the region that was most severely hit, Itä-Suomi, productivity growth (at 2% per year over the period 1986-1996) has been similar to the EU average, but employment has fallen by 2% per year. It is now at just 55% of the working-age population, below the EU average and more typical of a Mediterranean than a Nordic region.

4.3 Active population, labour market and employment levels

Between 1973 and 1985, unemployment in the 15 Member States taken together increased every year, from an average of only 2% to over 10.5%. Economic recovery in the second half of the 1980s temporarily reversed the trend but failed to reduce the rate to a level below 7.5%. The level of unemployment in 1985 was higher than at any time since the great depression of the 1930s, but the worst was yet to come, as the recession of the early 1990's pushed unemployment up to 11.2% in 1994. Recovery since then has reduced unemployment to just under 10% by the end of 1998. Unemployment does not only affect the individuals concerned: it also means a loss of potential output and income for the Union as a whole (European Commission, 1999).

With regard to the recent past, two aspects are worthy of mention: the fact that unemployment has risen rapidly during cyclical downturns in the economy, but fallen slowly during upturns, reflecting a failure to sustain employment growth at times of economic recovery; and the fact that the increase in unemployment has been accompanied by widening disparities between the regions. The less favoured regions have been hit disproportionately by the rise of unemployment.

On the other hand, despite the high unemployment rates, the labour market has not been affected only by the overall development of the economy, but by the demographic shift as well. In the near future, the dynamics of population ageing will have a significant impact upon the workforce, particularly in terms of its composition. Therefore, increases in the participation rate could play a major role with regard to the problem of labour shortage.

Table 3 Long term Evolution of Employment 1970 to 2000 (Annual Variation Rate)

	1970/2000	1990/2000
AT	0.49	0.65
BE	0.71	0.61
BG	na	-3.13
CH	0.94	0.82
CY	na	-0.20
CZ	na	-0.15
DE	1.24	2.48
DK	0.40	0.49
EE	na	-3.64
EL	0.83	0.76
ES	0.60	1.36
FI	0.03	-0.75
FR	0.49	0.62
HU	na	-0.65
IE	1.47	3.70
IT	0.57	0.15
LT	na	-1.74
LU	1.01	1.31
LV	na	-3.92
MT	na	1.14
NL	1.18	1.94
NO	1.16	1.15
PL	na	0.28
PT	0.31	0.70
RO	na	-2.25
SE	0.26	-0.71
SI	na	-0.32
SK	na	0.13
UK	0.38	0.22
EU15	0.68	0.97
EU25	na	0.77
EU29	na	0.55

Source: UN, Eurostat, Own Calculus

The analysis of employment growth in the EU15 in the long run shows an average of 0.68% in the period 1970-2000 and of 0.97 between 1990 and 2000. The growth in employment over the last decade was lower in the accession countries than in the EU15, and several countries, such as Sweden and Finland, actually experienced severe decreases in their employment levels. On the contrary, the highest growth rates in both periods took place in Ireland, Germany and the Netherlands.

Table 4 Long term Evolution of GDP/Employment 1970 to 2000
(Annual Variation Rate)

	1970/2000	1990/2000
AT	2.39	2.01
BE	1.88	1.79
BG		2.60
CH	0.46	0.10
CY	na	5.16
CZ	na	1.06
DE	1.11	-0.45
DK	1.65	2.18
EE	na	3.96
EL	2.09	2.78
ES	2.71	2.03
FI	3.06	3.18
FR	2.18	1.62
HU	na	2.46
IE	4.22	5.07
IT	1.99	1.69
LT	na	0.50
LU	3.43	4.53
LV	na	1.60
MT	na	4.43
NL	1.51	1.02
NO	2.63	2.87
PL	na	3.85
PT	3.30	2.16
RO	na	2.09
SE	1.94	3.17
SI	na	3.05
SK	na	2.02
UK	2.15	2.80
EU15	1.94	1.51
EU25	na	1.70
EU29	na	1.88

Source: UN, Eurostat, Own Calculus

The evolution of productivity in the EU15, an indicator of the relation between GDP and employment, grew by 1.94% per year in the period between 1970-2000, and by 1.51% in the 1990s. The growth in productivity was most expressive in the accession countries during the 1990s. Alongside these countries, Ireland, Luxembourg, Sweden and Finland also increased their levels of productivity. The Netherlands, the Czech Republic, Lithuania and Switzerland, on the other hand, all exhibited lower productivity increases, while, in the case of Germany, the productivity level actually declined.

Table 5 Long term Evolution of GDP, Employment and Productivity 1970 to 2000 (Annual Variation Rate)

	1970-2000			1990-2000		
	GDP	**Employment**	**Productivity**	**GDP**	**Employment**	**Productivity**
EU15	2.63	0.68	1.94	2.49	0.97	1.51
EU25	na	na	na	2.48	0.77	1.70
EU29	na	na	na	2.44	0.55	1.88

Long-run analyses confirm the fact that productivity is the main factor driving GDP growth. Productivity accounts for 3/4 to 3/5 of GDP growth and is the key factor for long term economic expansion. Therefore, holding the workforce constant, we could expect growth in economic output in the long run, as the rise in the productivity levels translates into higher levels of economic output.

5 Forecast Model for Demographic Evolution and Replacement Migration

5.1 Formal Description of the Model

5.1.1 The Data

The data used in the model consisted chiefly of data prepared and collected for and by ESPON Projects and Working Groups, namely the Newcronos Eurostat database. Because that data contained some errors and gaps, data from other sources was required in order to fill in the matrices used for territorial demographic modelling[6]. The main source of that data was the United Nations and the various national statistics offices, through published material, internet sites and, in some cases, direct contact.

The data used consisted of the regional population, fertility and mortality rates, migration flows and basic regional economic indicators. Since the models are based on the cohort survival technique (also designated as the specific age strata), all the population data required, such as the number of residents and deaths, had to be known by age group. In order to do that, we have adopted sixteen age groups, the first fifteen consisting of 5-year age groups (from 0-4 to 65-69) and the last one including all the people aged 70 and older. In the future, it will be very important to have more age groups for the elderly, since ageing is the main process under scrutiny here. However, the required data are simply not available. In what regards the births, we have taken into account the age of the mothers using the same 5-year age groups.

The calibration period should be the closest possible to the present, i.e., 1995-2000, and that period is indeed one of the few available using Eurostat data sources.

The data that was easiest to collect was the regional resident population for the years 1995 and 2000, by 5-year age groups. Data on the number of deaths for each age group proved more difficult to obtain and was often available for just one year (1999 or another year close to the middle of the period). The most difficult data to obtain was the number of births according to the age of the mothers for each region, since it proved nearly impossible in the case of some countries and regions – and was almost always available only for some years. Still, we did manage to collect, for all the regions, trustworthy information for some year in the period 1995-2000; in most cases, 1995.

We are aware that the quality of the data used, while far from optimal, is a compromise between what we needed and what was possible to obtain, and that that, in fact, carries over some instability to the results. However, this will not impinge significantly upon the main trends and the general results, and if and when better information is available, it will be possible to take it into consideration and thereby adjust the models.

In the future, should the ESPON wish to carry on this kind of work, relying more on national data (in a international and expansive network context), it will be possible to have similar data for 1990, 1985 and 1980, and thereby improve the quality of the results (including long and medium term trends for fertility and mortality), while at the same time assessing the sensibility and robustness of the results and the models.

[6] The use of other sources raises the problem of data compatibility, but since there was no alternative, it is better to have imperfectly compatible data that to have nothing at all.

Some errors and mistakes have so far been detected, which are summarised in table 6. Whenever possible, we have tried to correct the mistakes found in the databases, by relying on internal coherence and by comparing with other sources. Whenever the data were really missing, we have sought to collect it from other sources, usually the national statistics offices of each state.

Table 6 Synthesis of Mistakes on data

Country	Population 2000			Population 1995			Deaths			Births		
	Source	Year	Errors	Source	Year	Errors	Source	Year	Errors	Source	Year	Errors
AT	OK	OK	No	OK	OK	No	OK	OK	**Yes**	OK	OK	No
BE	OK	OK	No	OK	OK	**Yes**	OK	OK	**Yes**	OK	**Other**	**Yes**
BG	OK	OK	**Yes**	OK	OK	**Yes**	OK	OK	**Yes**	OK	**Other**	**Yes**
CH	**Other**	**Other**	No	OK	**Other**	**Yes**	**Other**	**Other**	**Yes**	**Other**	**Other**	**Yes**
CY	OK	OK	No	OK	OK	No	**Other**	OK	No	**Other**	**Other**	**Yes**
CZ	OK	OK	No	OK	OK	No	OK	OK	No	OK	**Other**	**Yes**
DE	OK	OK	No	OK	**Other**	No	**Other**	OK	No	**Other**	OK	**Yes**
DK	OK	OK	No	OK	OK	No	OK	OK	No	OK	OK	No
EE	OK	OK	No	OK	OK	No	OK	OK	No	OK	OK	No
ES	OK	OK	No	OK	OK	No	OK	OK	**Yes**	OK	OK	**Yes**
FI	OK	OK	No	OK	OK	No	OK	OK	**Yes**	OK	OK	No
FR	OK	OK	No	OK	OK	No	OK	**Other**	**Yes**	OK	OK	**Yes**
GR	OK	OK	No	OK	OK	No	OK	OK	**Yes**	OK	OK	No
HU	OK	OK	No	OK	OK	No	OK	OK	**Yes**	OK	**Other**	**Yes**
IE	OK	OK	No	OK	**Other**	No	OK	OK	**Yes**	OK	**Other**	**Yes**
IT	OK	OK	No	OK	OK	No	OK	**Other**	**Yes**	OK	OK	No
LT	OK	OK	No	OK	OK	No	OK	OK	No	OK	**Other**	No
LU	OK	OK	No	OK	OK	No	OK	OK	No	OK	OK	No
LV	OK	OK	No	OK	OK	No	OK	OK	No	OK	**Other**	No
MT	OK	OK	No	**Other**	OK	No	**Other**	OK	No	**Other**	**Other**	No
NL	OK	OK	No	OK	OK	No	OK	OK	**Yes**	OK	OK	No
NO	OK	OK	**Yes**	OK	OK	**Yes**	**Other**	**Other**	**Yes**	**Other**	**Other**	**Yes**
PL	OK	OK	No	OK	OK	No	OK	OK	No	OK	**Other**	**Yes**
PT	**Other**	OK	**Yes**	OK	OK	No	OK	OK	**Yes**	OK	OK	No
RO	OK	OK	No	OK	OK	No	OK	OK	No	OK	**Other**	**Yes**
SE	OK	OK	No	OK	**Other**	No	OK	OK	**Yes**	OK	OK	No
SI	OK	OK	No	OK	OK	No	OK	OK	No	**Other**	**Other**	No
SK	OK	OK	No	OK	**Other**	No	OK	OK	No	**Other**	**Other**	**Yes**
UK	OK	OK	No	**Other**	**Other**	No	OK	OK	**Yes**	OK	**Other**	No

We have found a large number of errors and imperfections in the databases. The frequent and random character of these errors makes it hard for us to organise them in a systematic way for each unit of analysis:

- Typing errors, such as cells in which digits lack or should not be there: e.g., 11,346 instead of 111, 346;
- Mismatches between the totals and the subtotals: e.g., the figures for the various age groups often do not add up to the figure for the total population;
- The official statistic information made available online by the various countries – which we have accessed in order to overcome some of the aforementioned difficulties and imperfections – is often quite different from that contained in the ESPON_ACCESS_Database databases.

The results of the models that are presented and analysed here resulted from the application of regional-specific fertility and mortality rates to the age cohorts of the resident population in each region.

In order to predict and monitor such demographic and economic processes as depopulation, migration, ageing, GDP growth, employment and unemployment, we need a more coherent data set, not necessarily very extensive but trustworthy and exhaustive nonetheless. This data set could be used not only to monitor the processes, but also as an input for the modelling exercises. More accurate data on demographic variables are needed if we wish to study the emergent problems of ageing and depopulation in greater depth. Variables such as the infant mortality rate, the mortality rate of each 5-year group (including those groups beyond the age of seventy) and the fertility rate according to the age of the mother, are fundamental in order to improve the analysis of the situation and to support the political decision-making process.

On the other hand, we must improve data collection at a more detailed geographical scale. In some cases, data was not available at the most appropriate scale, and occasionally, it was not available at any scale at all - namely in the accession countries, the NUTs of the former DDR or non-continental territories such as French Guyana.

5.1.2 The Models

Based on the resident population and on the current specific fertility and mortality rates in each region, we have considered nine different scenarios, for each of which we have computed the migration flows required in order to achieve certain particular population targets.

Although our own work is quite similar to that of the United Nations reference analytical work (UN, 2000), there are two main differences between the two. The first one is that the United Nations considers only ten countries or group of countries – France, Germany, Italy, Japan, Korea, Russia, United Kingdom, USA, Europe and the EU15 -, while we have considered 276 NUT 2 regions in 29 European countries, as well as the aggregations of those regions. The second difference has to do with the fact that, in the UN work, the forecasts are based on national projections (which implicitly incorporate a series of assumptions with regard to the birth, death and migration rates, as well as to economic performance). Although possibly closer to reality, the UN forecasts do not allow us to isolate the effects brought about by each source of demographic variation. But that is precisely our goal. We want to show what would happen in terms of regional population stocks if the current situation were to continue - or change in accordance with certain simple demographic and economic hypotheses, since these models allow for only one element to be changed at a time.

We present results for 29 European countries: the fifteen that were already a part of the EU before May 2004, the ten that joined the EU on the 1st of May, 2004 and Bulgaria, Romania, Norway and Switzerland. Results are also presented for their respective 276 NUT 2 regions, as well as for the EU29, EU25 and EU15 as a whole.

The mentioned nine scenarios are as follow:

<u>"A" Scenario</u> – Without migration
It is a closed model, based on the extrapolation of the specific demographic rates in each region and allowing for zero migration. It is an indicator of the demographic potential of each region. The difference between the population in 2050 and the current population is a good indicator of the tendency towards depopulation, while the changes in the age structure give us an indication of the ageing processes going on.

"B" Scenario – With migration
<u>"B0" Scenario</u> – This model allows for the same migration rate as in the period 1995-2000. It is an indicator of the demographic potential given the present migration conditions. Unlike model A, it shows the effects and the limits of migration (at its current level) to impact upon the depopulation and ageing processes.

<u>"B1" Scenario</u> – This scenario computes and (takes as an assumption) the migration flows required in each five-year period in order to keep the total regional population unaltered (i.e., the same population stock as in the base year - 2000).

It is an indicator of the sustained effort required in order to keep the population stock at its current level. The sum of the migration flows in each five-year period has a similar meaning to the final difference in terms of population computed in Model A, but the results of the "B1" scenario do not wait until the end of the period under analysis; rather, they incorporate the migrant inflows in each period into the resident population and take into account their demographic behaviour after their arrival. It is a different way to show and improve the results of Model "A".

Together, these two models provide an indication of the expected upper and lower limits of the ageing index in each region. Moreover, model A also provides some information about the attractive/repulsive nature of each region.

"B2" Scenario – This scenario computes (and takes as an assumption) the migration flows required in each five-year period in order to keep the economically active population (i.e. the population between 15 and 64 years of age) at its base year (2000) level.

It is an indication of the effort required in order to maintain the regional labour force at its current level.

It is a good indicator of the "potential" shortage of labour, if we take "potential" to mean the ability to maintain the same level of production and productivity. It provides some initial information with regard to the actual "labour shortage" that will occur, all other things kept constant. It illustrates the difference between the "natural" and the "required" supply of labour, under the assumption of constant demand. Thus, high positive immigration values are an indicator of the "natural" incapacity to meet the needs of the production system and a good estimate of labour replacement migration.

"B3" Scenario – This scenario computes (and takes as an assumption) the migration flows required in each five-year period in order to keep the ratio of "working age" to "retired" population (the regional population in the 15-64 age group divided by the regional population aged 65+) at the level of the base year (2000).

It is an "impossible" scenario, because of the very high level of immigration required, but it is a good indicator of the size of the problem of financing the retirement systems.

"C" Scenarios – With assumptions regarding both migration and productivity
The "C" scenarios estimate the level of required replacement migration, based on a series of assumptions regarding the regional economic performance (which take into account the economically active population, the level of GDP and the long-term average productivity variation).

In fact, these economic scenarios cannot be considered demographic projections based on a series of predicted levels of GDP, production or output: it is obviously impossible to do that for the medium- or long-term in the case of such small regions. Instead, this is more accurately described as an exercise based on two assumptions: first, that productivity change is the key determinant of economic performance (generally speaking, the evolution of productivity is more robust than that of gross output, which is much more contingent); second, that there is a fixed relation between product and productivity change, which is to say that the relation between the evolution of GDP and employment is constant.

Hence, the central trend corresponds to model B2, which computes and assumes the migration levels required in order to keep the workforce at its current level. This means that each and every variation in GDP (in a given region, of course) is solely due to the productivity change in that region. For example, if in a given region GDP grows at an annual rate of 2%, holding the workforce constant implies a 2% growth in that region's productivity.

As we have seen, the historical long-term analysis shows an average annual growth of about 1.9% in productivity, the remainder (about 0.7 to 1%) being due to employment growth.

Then, for each of the "C" scenarios, we have assumed four different values for the relation between GDP and productivity variation. While in the "B2" scenario the assumption of a constant workforce implies that all growth in GDP is due to productivity gains, in the "C" scenarios we allow for a gap to occur between productivity and employment variation, in such a way that scenario "C1" considers a differential productivity annual rate of plus 1% (which means that changes in GDP will be equal to changes in productivity plus 1%). The "C3" scenario is similar, but allows for a differential productivity value of plus 0.5%. It should be pointed that those two scenarios – "C1" and "C3" - correspond to a lesser need, by 1% and 0.5%, respectively, for labour. In turn, the "C2" and "C4" scenarios assume differential rates of annual productivity of minus 1% and minus 0.5%, respectively.

In conclusion, although the comparative historical evolution of the product and productivity growth rates is more in agreement with the "C2" and especially the "C4" scenarios, in the future there may be some tendency for the variation of GDP to be more closely related to productivity changes than in the past, which would make it possible to avoid the huge immigration volumes that would be inescapable if the system were to continue to follow its past trends.

The four "C" scenarios provide us with a "fork" of possibilities in terms of variations in population, migration flows and age structure, around a central axis defined in terms of economic performance given by model B2. In the past, the historical records are more in accordance with the "C2" and "C4" models, but in the future, as a result of immigration difficulties, it is plausible to consider scenarios that allow for greater decreases in the overall volume of employment. That is why the results of the "C1" and "C3" models are of special interest. Although the actual figures are not particularly interesting *per se*, the overall results highlight the importance of the changes in productivity for the future performance of the European economic space and for all related demographic variables.

All the models produced projections of the total resident population and of the migratory flows by five-year age groups at the end of each five-year period between the years 2000 and 2050. The calibration period (1995-2000) also provides us with an estimate of the migration figures for that period, allowing for comparison against the actual flows.

The number of survivors in each five-year group is computed by applying the average mortality rate for each group to the people existing in the previous group (five years before). In a similar way, the number of people in the first age group (between 0 – 4 years of age) is the result of applying the specific fertility rates for each five-year group to all the age groups involved, minus the average number of deaths for that age group. The migrants appear in the model as the difference between the regional populations required in order meeting the needs that result from the assumptions made in each model and the "natural" (demographic) balance of births and deaths.

In order to carry out these projections, it is necessary to know the age structure of the migrants, which is quite different from that of the resident population. Because of their varying sex and age structures – at least partly a consequence of the maturity of the migratory flow between each particular origin and destination – we have opted for an "average" age structure, following the UN projections for replacement migration (*op. cit.*, p.16 and table III, 1, p.17) as having the characteristics of an average of the flows to modern developed countries such as Canada, the US and Australia.

In all the models, an assumption is made that the values of the specific fertility and mortality rates are constant at their level of the middle of the 1995-2000 period (as previously mentioned). Each model was run in two different ways, one for the 29 countries and another for the 276 NUT 2 regions. The second "run" also allowed for national-level conclusions to be drawn, by adding up the results for the regions in each country. These two methods yield slightly different results, due to the aggregation errors, well known to statisticians, which arise from assuming a homogeneous behaviour within each elementary territorial unit - the country in the first case, the region in the second. The small dimension of the differences found is a good indicator of the robustness of the results.

The future demographic trends are chiefly determined by the low level of specific fertility rates currently in place in almost all the countries and regions in Europe. Even though the United Nations Population Projections assume that they will rise in future, very strong institutional efforts will be needed in order for that target to be reached successfully - and the final results thus obtained will almost certainly be unable to reverse the main trends.

The low level of specific fertility rates results in even lower general fertility rates because of the ongoing ageing process that the European population is going through. The fall in terms of fertility behaviour is not a new phenomenon, but it was until recently hidden behind a series of factors, among which a few stand out, such as inter-European migration flows, the inflow of European return migrants from the former colonies, the inflow of non-European migrants, and especially the fact that the population in the younger cohorts that reaches the work and reproduction age is very small.

Another important factor for some time still will continue to be the predictable expansion in the life expectancy of the population, an old process in the most developed central and western countries, but only now reaching the more peripheral regions. The ageing of the European population seems an inevitable process, and the relation between the economically active population and the number of pensioners and retired people is very likely to fall to alarming levels.

5.2 Analysis of the Results

5.2.1 Results of the "A" model

Population

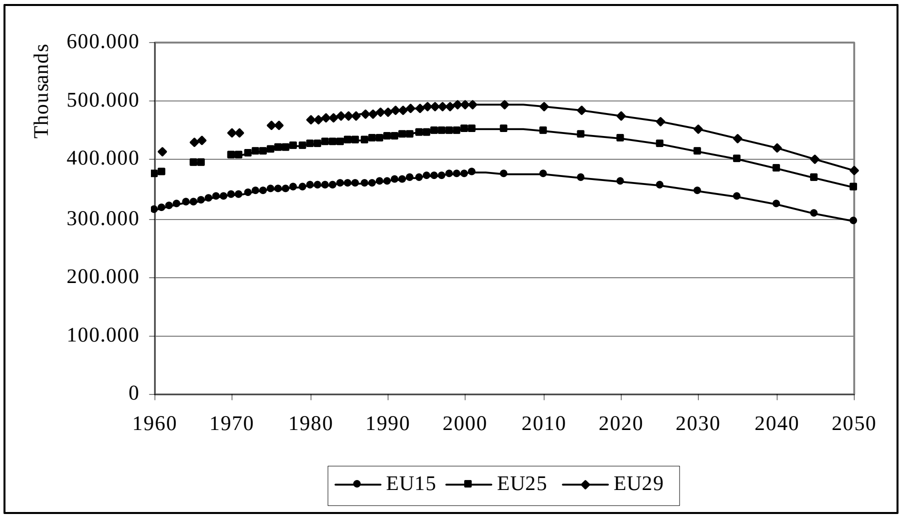
Maintaining the present demographic trends and allowing for no migration (Model A), Europe will in the near future experience a strong depopulation process (Table 7 and Figure 4). By the mid-21st century, the fifteen countries of the EU15 will have lost 80 million inhabitants (80,590,000), the ten countries of the enlargement about 20 millions (19,387 thousands) and the 29 countries considered in this analysis slightly over 111 millions.

Table 7 Model A - Without migration - Population projections (in thousands)

Region	Population			Annual average change (%)
	2000	2025	2050	
EU 15	376,539	356,074	295,949	-0.48
EU 25	451,629	425,925	351,652	-0.50
EU 29	493,878	464,781	382,839	-0.51

Source: Eurostat, model

Figure 4 Population Evolution and Projection, 1960-2050, Model A



Broadly speaking, in the next fifty years the countries of the EU15 will lose about one fifth of their present population (-21.4%), the ten enlargement countries will lose even more (around one fourth at -25.8%), and the countries of the EU29 altogether will have a population decrease of 22.5%. This process of population decrease will be even more intense after 2025 than in the period between 2000 and 2025.

Fifty years from now, the population of Europe will be under its level of the 1960s, or fifty years ago, as shown in the figure below. At the regional level (cf. table 8, figure 5 and map 1), there are significant differences between the countries. Ireland is the only one that shows a positive demographic trend, with an expected population increase of over 10% in the period (0.27% per year).

All the other countries appear with negative values. Three main groups emerge: the first one, with "low" and "very low" population losses, include Cyprus (CY), Malta (MT), Norway (NO), France (FR), Luxembourg (LU) and the United Kingdom (UK). Another group of countries, with the heaviest population losses, is composed of Latvia (LV), Bulgaria (BG), Estonia (EE), Hungary (HU), Slovenia (SI), Italy (IT) and Germany (DE). The remainder show an average behaviour, with population losses between 12.8% and 32%. Surprisingly, the worst situations appear in the southern and eastern borders of the EU29 and the best in the North - especially in Ireland.

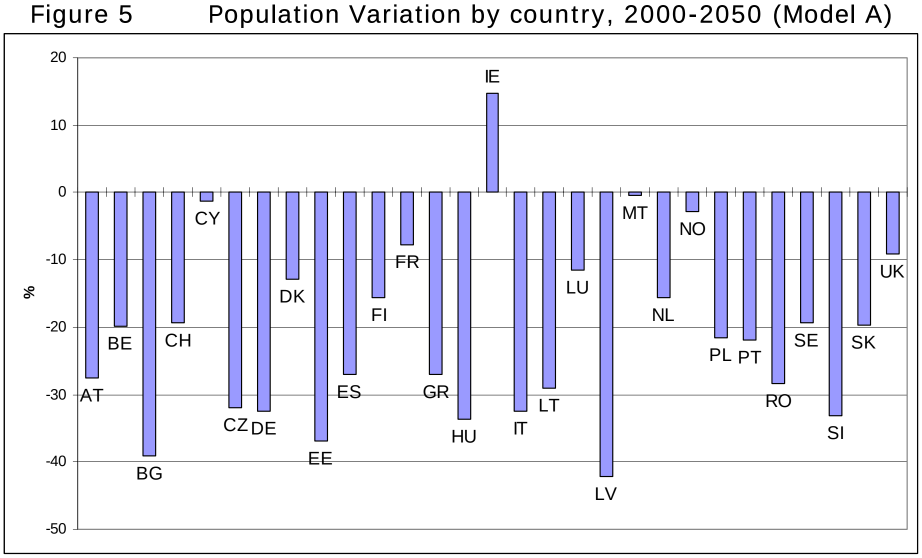
At a finer level of detail, the map 2 illustrates these demographic trends at the regional NUT 2 level. The areas where the depopulation trends are strongest are the regions in East Germany, the Baltic States, all the Balkan arch, northern Italy, northern Spain, southern and central Portugal and Scotland. Conversely, Ireland, most of Norway, Sweden and Finland, as well as urban Poland, France, southern Italy and southern Spain are the regions that exhibit the least depopulation.

Table 8 Population projections (1000s), 2000 – 2050, by country (Model A)

Country	Population			Annual average change (%)
	2000	2025	2050	
AT	8,103	7,500	5,879	-0.64
BE	10,239	9,705	8,202	-0.44
BG	8,191	6,850	4,983	-0.99
CH	7,124	6,902	5,750	-0.43
CY	786	844	776	-0.02
CZ	10,278	9,244	6,996	-0.77
DE	82,164	72,919	55,502	-0.78
DK	5,330	5,166	4,640	-0.28
EE	1,439	1,233	909	-0.92
ES	39,731	37,156	29,003	-0.63
FI	5,171	5,001	4,366	-0.34
FR	58,749	59,463	54,197	-0.16
GR	10,554	9,705	7,711	-0.63
HU	10,043	8,640	6,659	-0.82
IE	3,777	4,288	4,332	0.27
IT	57,680	51,564	38,997	-0.78
LT	3,699	3,367	2,624	-0.68
LU	436	433	385	-0.25
LV	2,424	1,996	1,401	-1.09
MT	391	412	390	-0.01
NL	15,864	15,629	13,388	-0.34
NO	4,479	4,610	4,353	-0.06
PL	38,644	37,053	30,282	-0.49
PT	10,257	9,650	8,014	-0.49
RO	22,456	20,493	16,101	-0.66
SE	8,862	8,371	7,154	-0.43
SI	1,988	1,790	1,328	-0.80
SK	5,398	5,272	4,339	-0.44
UK	59,624	59,525	54,178	-0.19

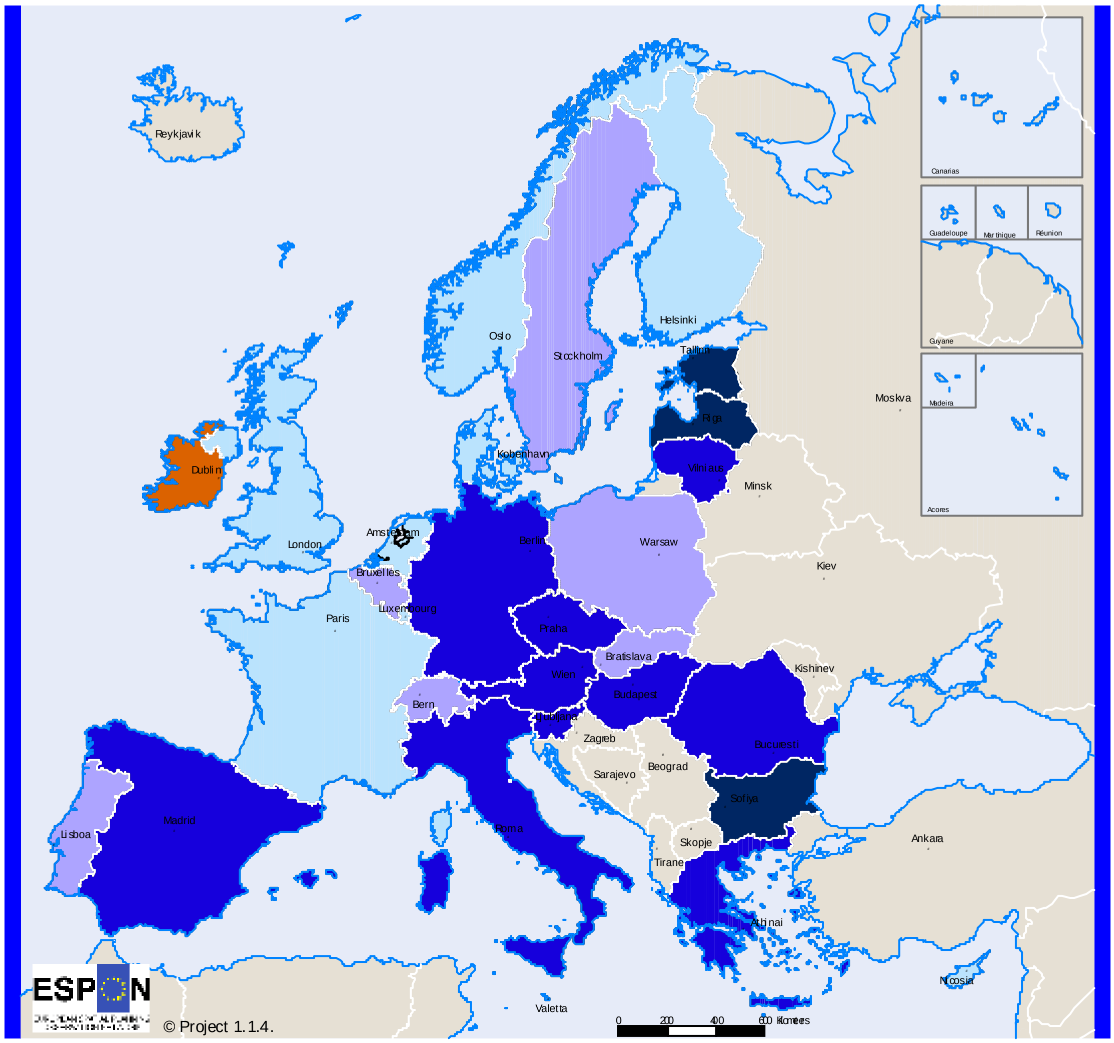
Source: Eurostat, model

Figure 5 Population Variation by country, 2000-2050 (Model A)



Map 1 Population Variation by country, 2000-2050 (Model A)

Depopulation trends by country



Variation of the population, 2000-2050 (%)
Model A

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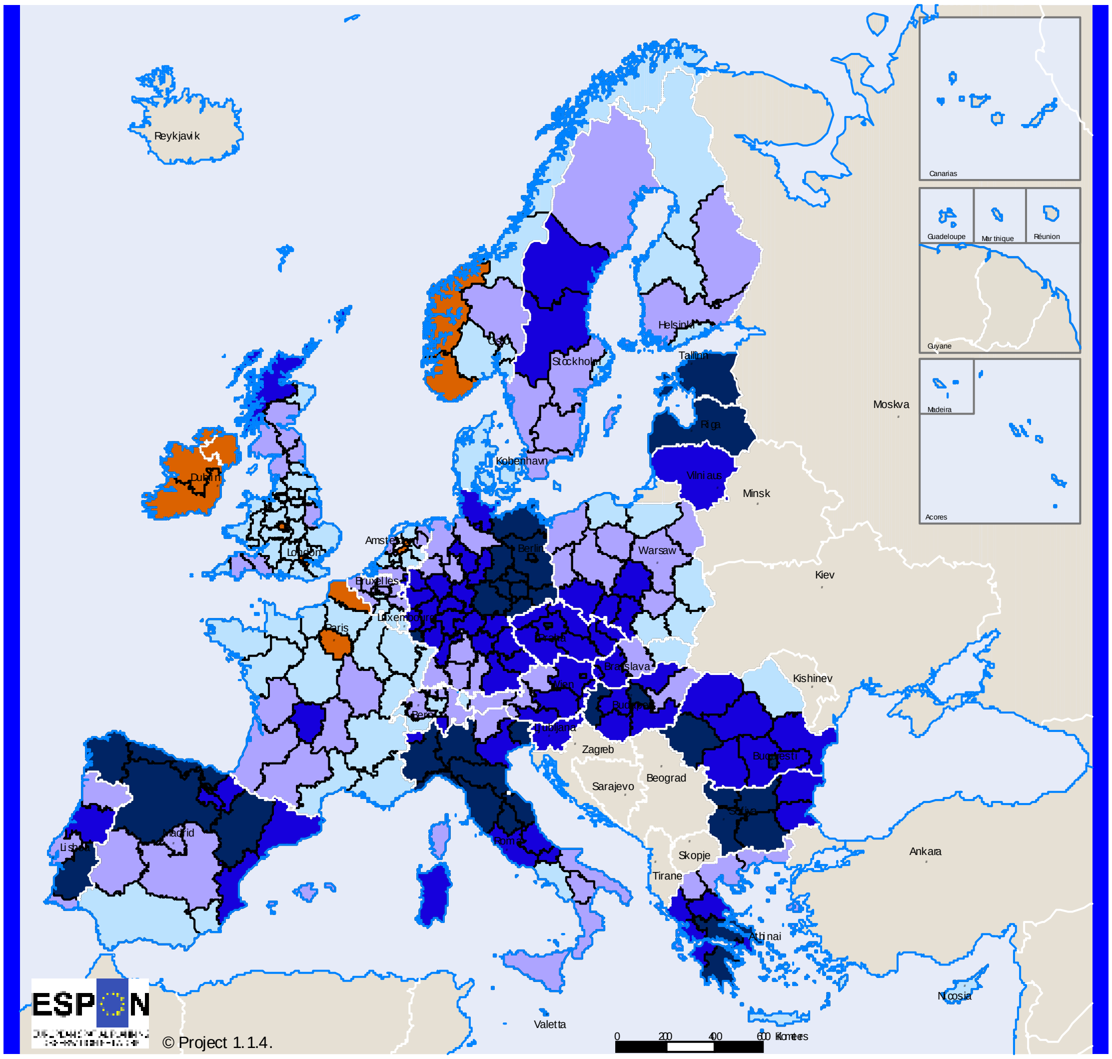
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

-42.2 to -36.9
-36.9 to -26.9
-26.9 to -19.3
-19.3 to 0
0 to 14.7

Map 2 Population Variation by NUT 2, 2000-2050 (Model A)

Depopulation trends by NUT2



Variation of the population, 2000-2050 (%)
Model A

-51.1 to -36.9

-36.9 to -25.9

-25.9 to -16.2

-16.2 to 0

0 to 16.3

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Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Ageing

The age structure in the European space will change dramatically. The tendency for the weight of the elderly people to increase is irreversible. If nothing is done to avoid it, the extrapolation of the current trend will lead to the share of people over the age of 65 to rise to twice its current value (Table 9).

Table 9 Share of people aged 65+ in Europe, % (Model A)

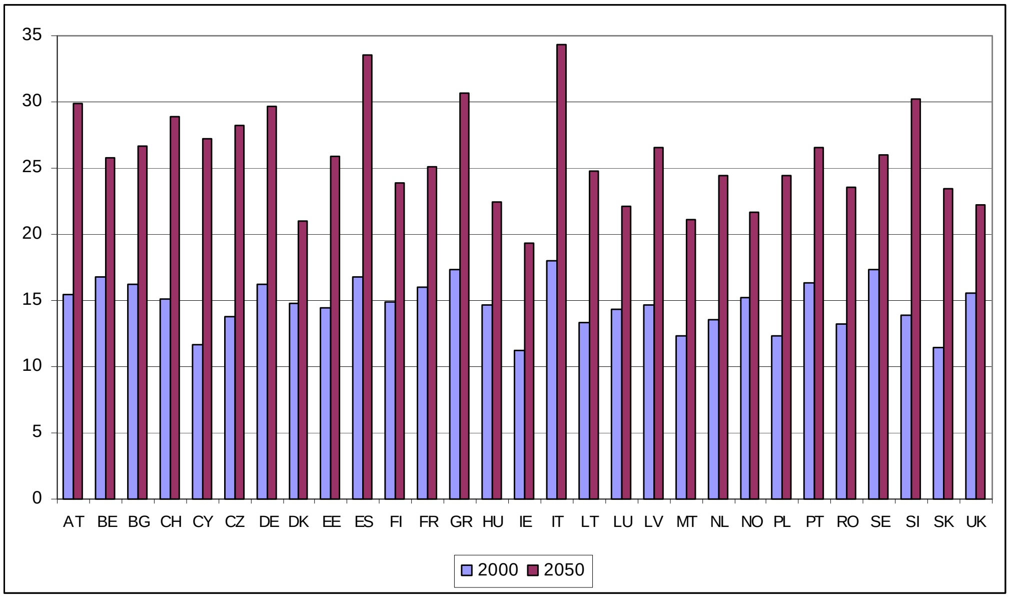
Year	EU15	EU25	EU29
2000	16.3	15.7	15.6
2025	22.2	21.6	21.3
2050	27.6	27.1	27.0

Table 10 Share of people aged 65 + in Europe, 2000 and 2050, by country (Model A)

Country	People with 65 and more years of age		
	2000 (%)	2050 (%)	2000/2050
AT	15.5	29.9	51.8
BE	16.8	25.7	65.1
BG	16.2	26.7	60.6
CH	15.2	28.9	52.4
CY	11.6	27.2	42.8
CZ	13.8	28.2	49.0
DE	16.2	29.6	54.8
DK	14.8	21.0	70.7
EE	14.5	25.8	56.1
ES	16.8	33.5	50.0
FI	14.8	23.8	62.2
FR	16.0	25.1	63.9
GR	17.3	30.7	56.4
HU	14.6	22.4	65.3
IE	11.2	19.3	58.1
IT	18.0	34.4	52.3
LT	13.4	24.8	54.0
LU	14.3	22.1	64.5
LV	14.7	26.5	55.3
MT	12.3	21.1	58.4
NL	13.6	24.4	55.6
NO	15.3	21.6	70.5
PL	12.3	24.4	50.3
PT	16.4	26.5	61.7
RO	13.2	23.6	56.0
SE	17.3	26.0	66.4
SI	13.9	30.2	45.9
SK	11.4	23.5	48.5
UK	15.6	22.2	70.2

Source: Eurostat, model

Figure 6 Share of people aged 65+ in Europe, 2000 and 2050, by country (Model A)



Large regional differences exist between the countries with respect to the share of the elderly in their population, both at the start and at the end of the period, as well as to the intensity of the ageing process. Presently, the countries with the highest levels of population ageing are Italy (IT 18.0%), Greece and Sweden (GR and SE 17.3%), Belgium and Spain (BE and ES 16.8%), Portugal (PT 16.4%), Germany and Bulgaria (DE and BG 16.2 %) and France (FR 16.0%), while those with youngest populations are Cyprus (CY 11.6%), Slovakia (SK 11.4%) and Ireland (IE 11.2%).

Assuming the "natural" population evolution (implicit in Model A) in the period until the year 2050, all the countries will have more elderly people than the present maximum. Some of the countries will have maintained their position in terms of the elderly population, others will not. The reason lies in the fact that ageing is a process that is at least partly determined by the fertility rates and the increase in life expectancy, based on age cohorts of different size, in a quasi sinusoidal way – due to the distinctive time-lag involved. The countries with the greatest share of the elderly in their population would then be Italy (IT with 34.4%[7]), Spain (ES 33.5%), Greece (GR 30.7%), Slovenia (SI 30.2%), Austria (AT 29.9%), Germany (DE 29.6%) and Switzerland (CH 28.9%).

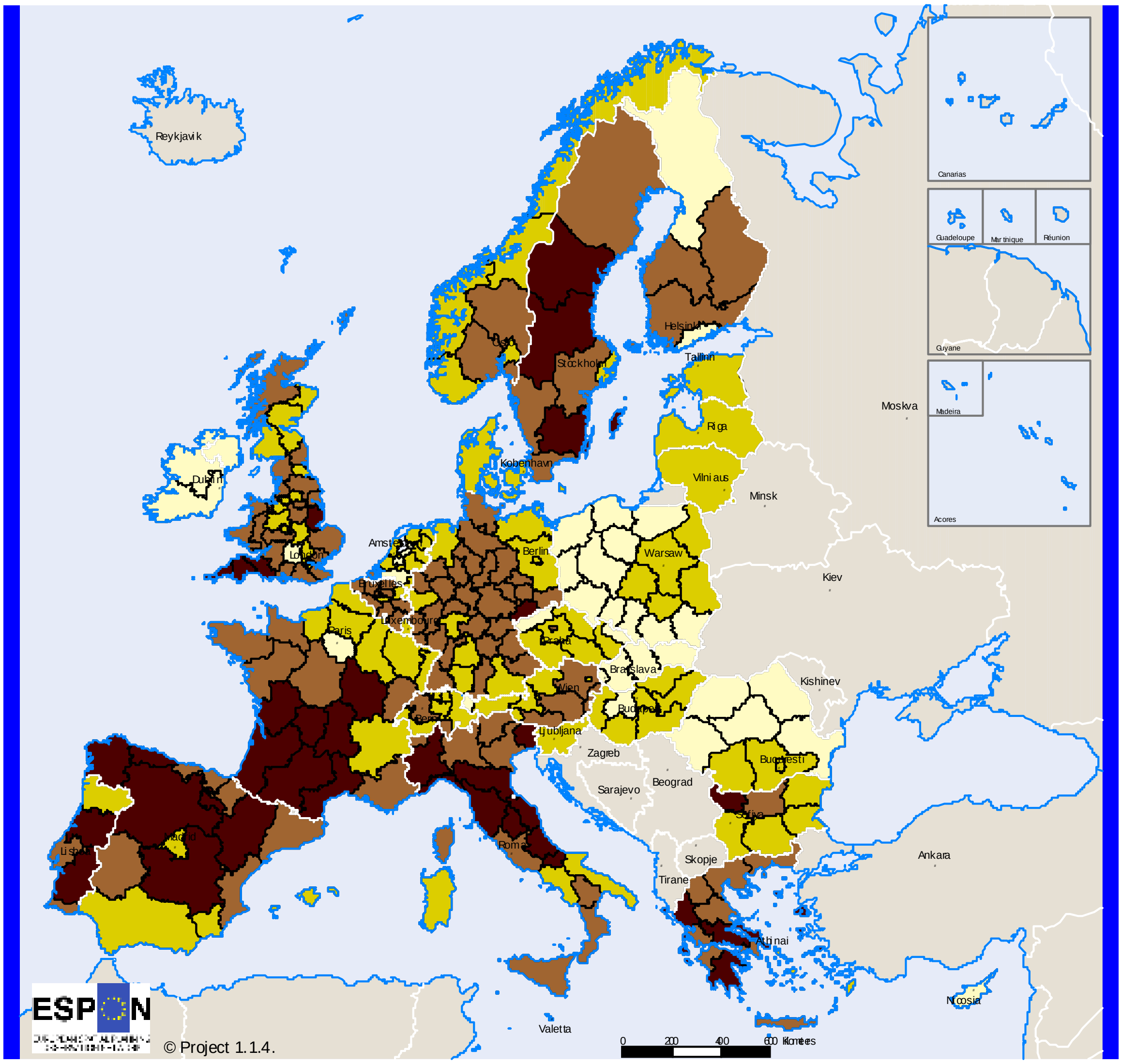
With regard to the ageing process, it is possible to distinguish between a more stable group (Cyprus, Slovakia, Slovenia, Czech Republic and Poland), only now starting their ageing process and exhibiting low figures, and two groups of quickly ageing countries, the first one made up of countries at the end of their cycle, such as Hungary and Belgium, the other of countries at the begining of a second ageing cycle, such as the United Kingdom or some of the Nordic countries: Norway, Sweden and Denmark.

[7] Again, we must bear in mind the basic meaning of the "A" model – simply the extrapolation of present values –, which is indicative of the ageing pressure currently in place in each country/region/society,. The actual future will inevitably be quite different, due both to the measures taken and to the informal answers to the problem.

Map 3 Ageing in Europe (2000-2025-2050) (% of 65+ years old)

a) Ageing in Europe 2000 (% of 65+ years old)

Trends of ageing by NUT2



Population with 65 years and more, 2000 (%)
Model A

- 8.9 to 13.2
- 13.2 to 15.7
- 15.7 to 18.7
- 18.7 to 24.7

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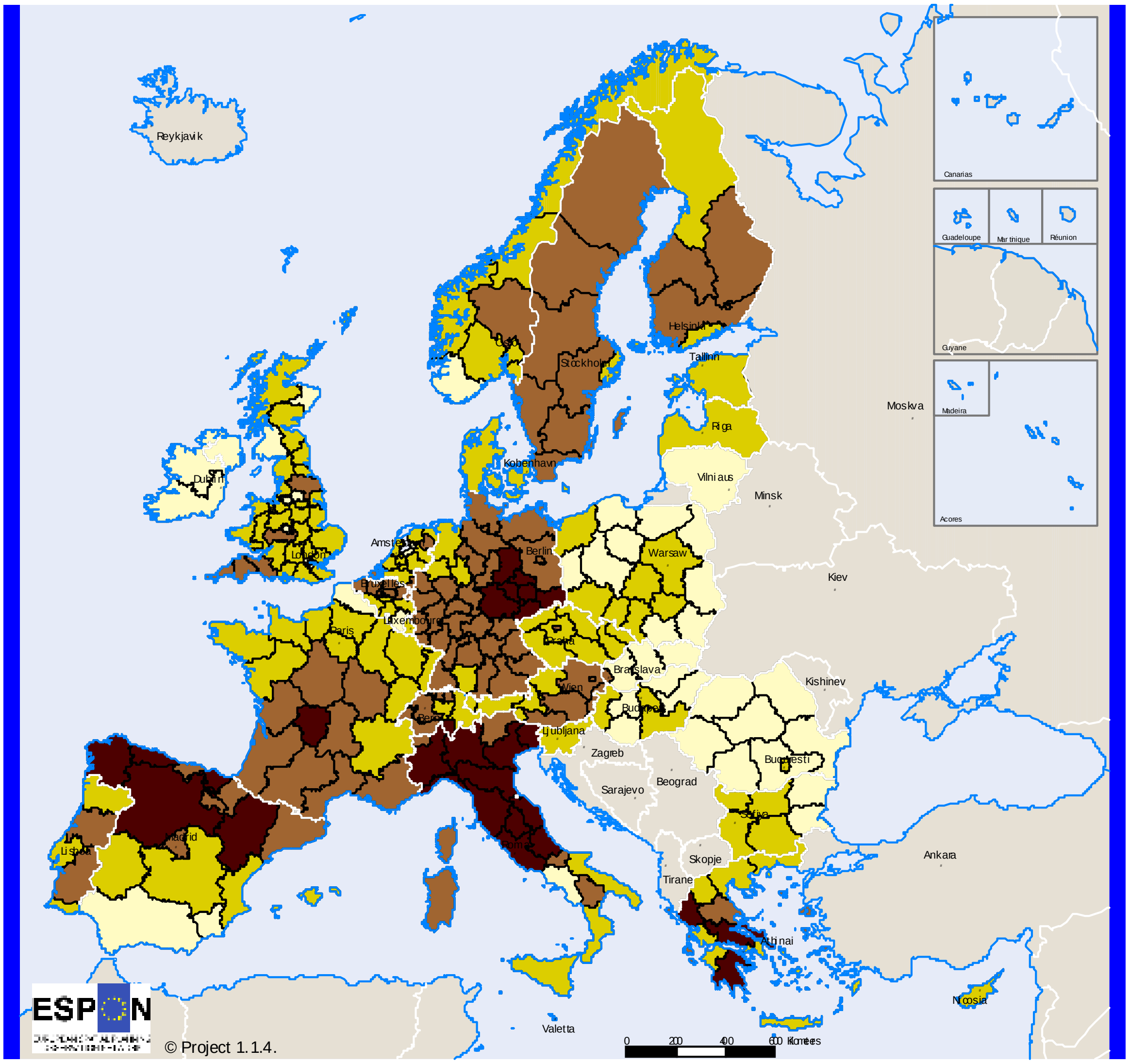
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

b) Ageing in Europe 2025 (% of 65+ years old)

Trends of ageing by NUT2



Population with 65 years and more, 2025 (%)
Model A

- 11.6 to 18.5
- 18.5 to 21.9
- 21.9 to 25.2
- 25.2 to 32.1

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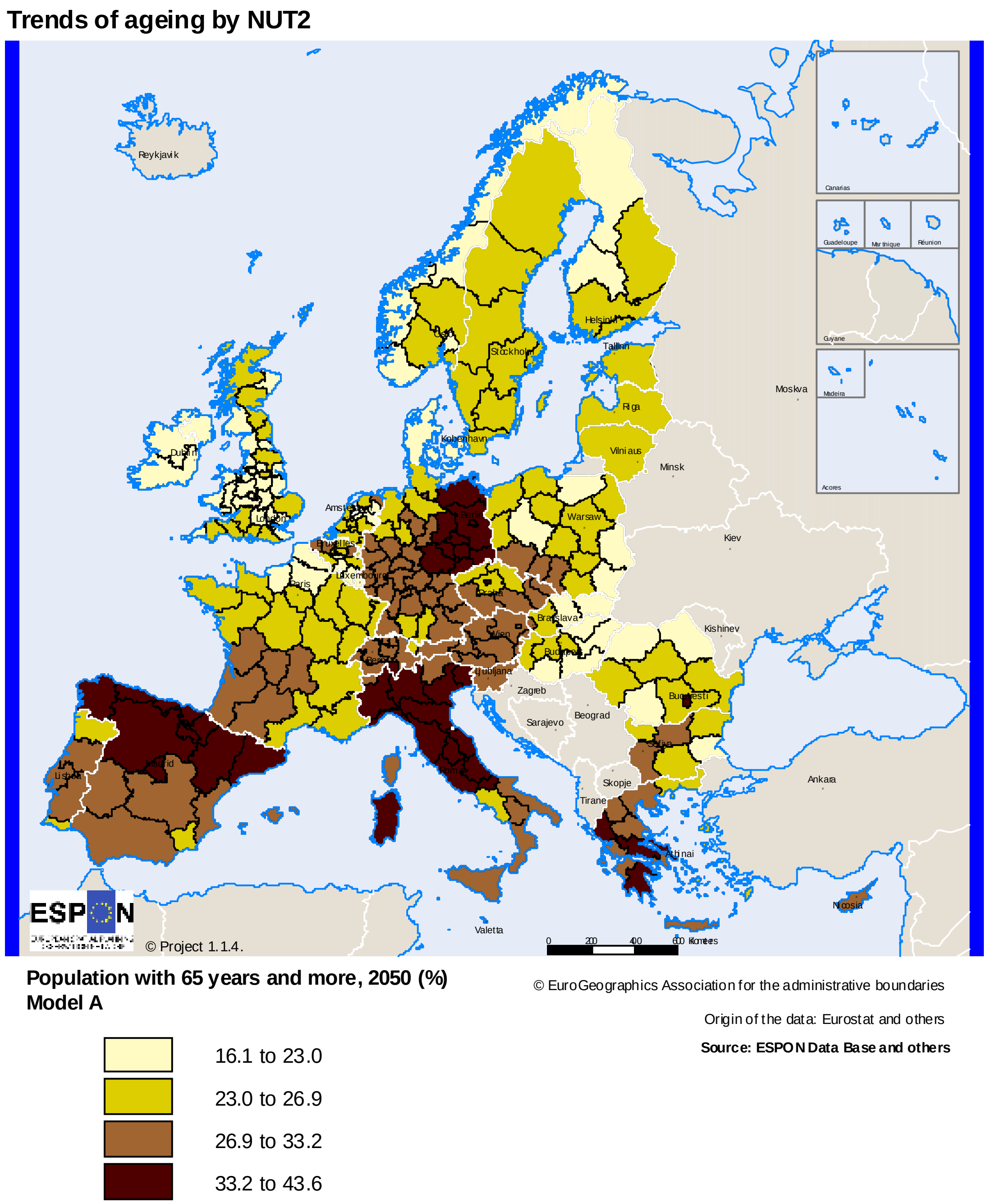
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) Ageing in Europe 2050 (% of 65+ years old)



The regional ageing process has a strong distinctive spatial pattern (see map 3). The highest values in 2050 will be found in central and northern Italy, the German regions of the former DDR, Greece and northern Spain. High values will also be found in central Spain, Sweden, the Baltic States, central France and some parts of Switzerland and Slovenia.

There is another component to the ageing processes, namely the weight of the younger people (generally under 15 years of age) in the total population. This is called "bottom ageing", as opposed to "top ageing" which results from the weight of the elderly. It will be analysed later.

It will be necessary to develop a method that enables us to distinguish between the regions in terms of their stage in the ageing cycle, begining with the fall in fertility (whether of not followed by an increase in life expectancy) and moving on to the "first" ageing phase, the death of a significant of elderly people, heavy losses in terms of general fertility (due to the small size of the cohorts arriving at reproduction age), yet more ageing, and so on.

Evolution of the Potential Support Ratio

The Potential Support Ratio (PSR) compares the number of individuals inside the working age (14-64 years old) in each region with the total amount of individuals inside the age of retirement (65 and more years of age). It is an indicator of the regional capacity to support the social security retirement schemes.

Following the current demographic trends, the PSR will strongly decline all over Europe in the near future - with even greater intensity than the ageing and depopulation processes.

Table 11 Projection of the evolution of the PSR, 2000-2025-2050 (Model A)

Region	Potential Support Ratio		
	2000	2025	2050
EU 15	4.108	2.885	2.134
EU 10	5.350	3.531	2.498
EU 4	4.727	3.574	2.498
EU 29	4.308	3.020	2.210

Source: Eurostat, model

In the fifteen countries of the EU15, we now find an average 4.1 workers for each retiree. Among the ten countries of the enlargement (EU10) the ratio is much more favourable, at 5.35 persons inside the working age for each retired person (Table 11). The overall European (EU29) value in 2000 was approximately 4.3. At the end of the period under analysis, i.e. by 2050, the figures will be at nearly half their current levels, or close to 2.1 in the countries of the EU15 and slightly under 2.5 in the others. Overall, the number of persons inside the working age for each retiree will over around 2.2.

As shown in Table 12, the largest figures for the PSR in the year 2000 can be found in the countries with younger populations, such as Slovakia (6.04), Ireland (5.97), Cyprus (5.74), Malta (5.52) and Poland (6.61), while they are lowest in those countries whose populations is undergoing ageing processes, as in the case of Sweden (3.71) or others in central and southern Europe, such as Greece (3.90), Italy (3.76), Belgium (3.92), Spain (4.07) and France (4.06).

In the year 2050, the projection of the current demographic trends leads to much lower PSR values in all the countries: the most favourable country figure in 2050 will actually be below the worst in 2000. The countries that exhibit relatively high figures remain those with young populations, such as Ireland (3.22), Malta (2.92) and Romania (2.68), but also those in which the ageing process has reached an end and another demographic cycle is emerging, such as Germany (1.99), Austria (1.96), Spain (1.62), Greece (1.86), Italy (1.60) and Slovenia (1.95).

Table 12 Projection of the PSR evolution 2000-2025-2050, by country (Model A)

Country	Potential Support Ratio		
	2000	2025	2050
AT	4.370	2.919	1.959
BE	3.918	2.860	2.341
BG	4.200	3.397	2.318
CH	4.442	2.692	2.013
CY	5.739	3.111	2.176
CZ	5.044	3.251	2.144
DE	4.188	2.697	1.986
DK	4.502	3.235	2.962
EE	4.660	3.550	2.425
ES	4.074	3.003	1.652
FI	4.511	2.713	2.553
FR	4.064	2.870	2.368
GR	3.905	2.895	1.863
HU	4.672	3.655	2.854
IE	5.968	4.487	3.218
IT	3.761	2.527	1.604
LT	5.007	3.869	2.546
LU	4.677	3.189	2.781
LV	4.605	3.581	2.380
MT	5.517	3.237	2.919
NL	5.002	3.099	2.496
NO	4.244	3.243	2.836
PL	5.610	3.525	2.534
PT	4.137	3.189	2.230
RO	5.178	4.158	2.689
SE	3.712	2.737	2.330
SI	5.054	3.013	1.952
SK	6.038	4.044	2.677
UK	4.188	3.308	2.767

Source: Eurostat, model

The most important changes seem to occur in Cyprus (where the figure in 2050 will be at only 38% of its level of 2000), Slovenia (at 39%), Spain (41%), the Czech Republic (42%) and Italy (43%). On the other hand, the most stable countries will be Norway (67%), the United Kingdom and Denmark (66%) and Sweden (63%).

The evolution between 2000 and 2050 is neither proportional nor with any other linear relation (Figure 7 and 8). The best linear fit for the data has a Pearson correlation coefficient of r = 0.31 for the 29 countries and r = 0.21 for the 276 regions, which means that the linear regression explains respectively 9.6% and 4.5% of the variation.

The figures show a very disperse relation between the PSR values at these two moments. For the 29 countries, we find that the general trend is for the figure in 2050 to be at half its level of 2000 (0.5112) and for that of the NUT 2 regions to be only slightly above that

(0.5213). But the relation is very weak (r^2= 0.2263 for the countries and r^2= 0.1583 for the NUT 2).

Figure 7 Relation between the PSR in 2000 and in 2050 in each country (Model A)

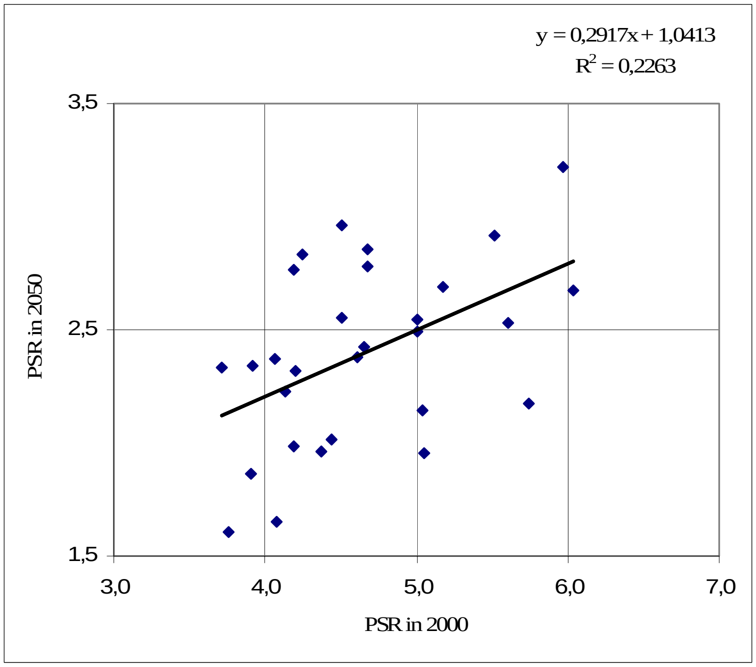
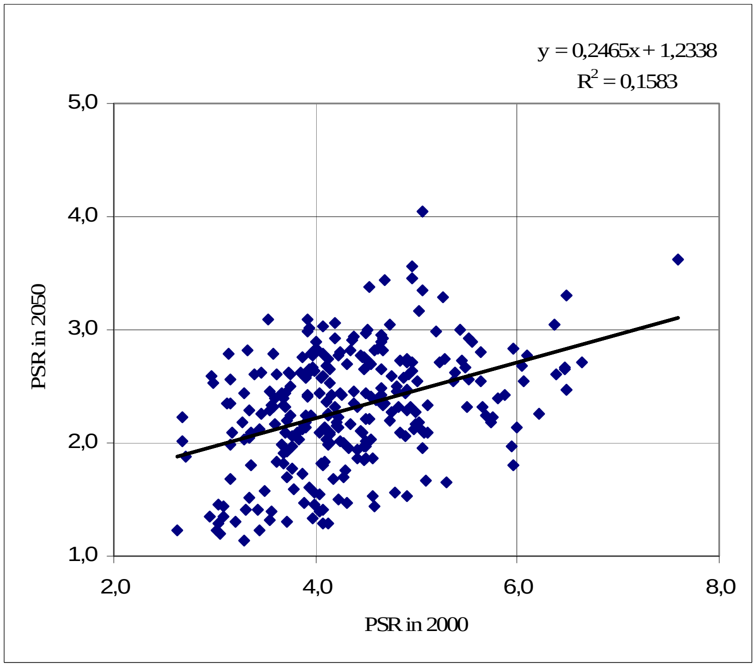


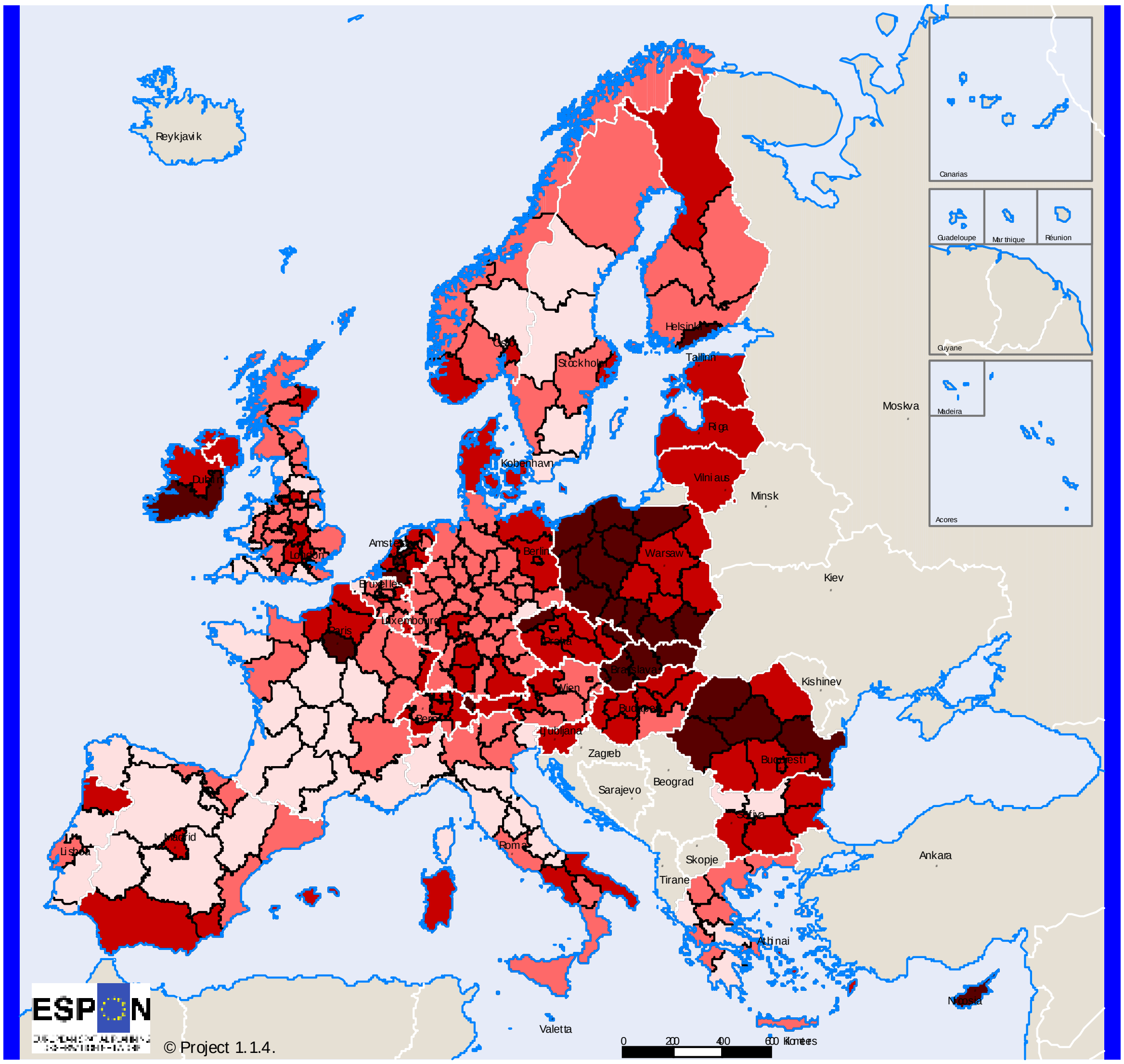
Figure 8 Relation between the PSR in 2000 and in 2050 in each NUT 2 (Model A)



Map4 Evolution of the PSR in Europe (2000-2025-2050)

a) Evolution of the PSR in Europe, 2000

Dependency trends by NUT2



Potential Support Ratio, 2000
Model A

- 2.6 to 3.6
- 3.6 to 4.4
- 4.4 to 5.3
- 5.3 to 7.6

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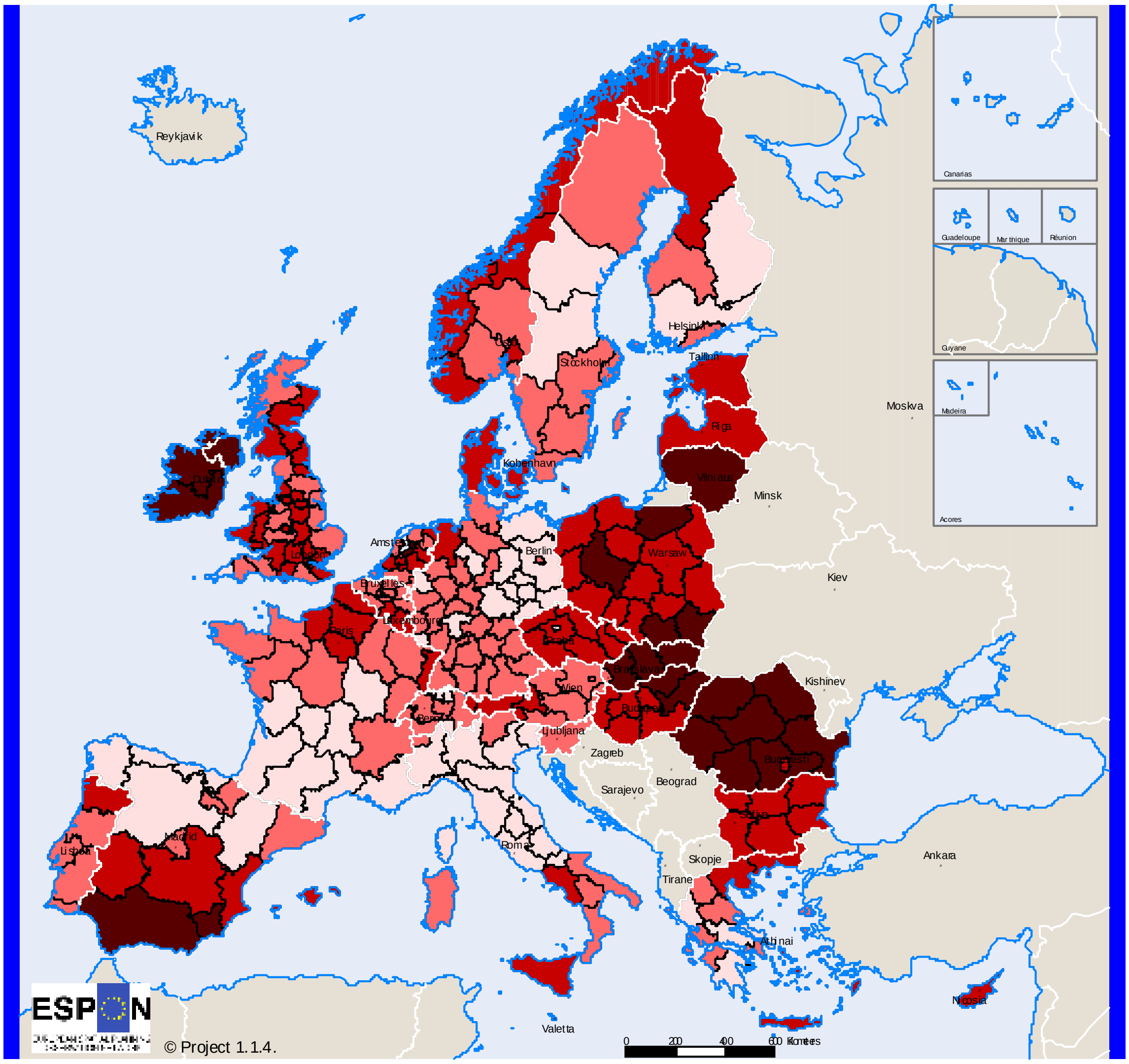
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

b) Evolution of the PSR in Europe, 2025

Dependency trends by NUT2



Potential Support Ratio, 2025
Model A

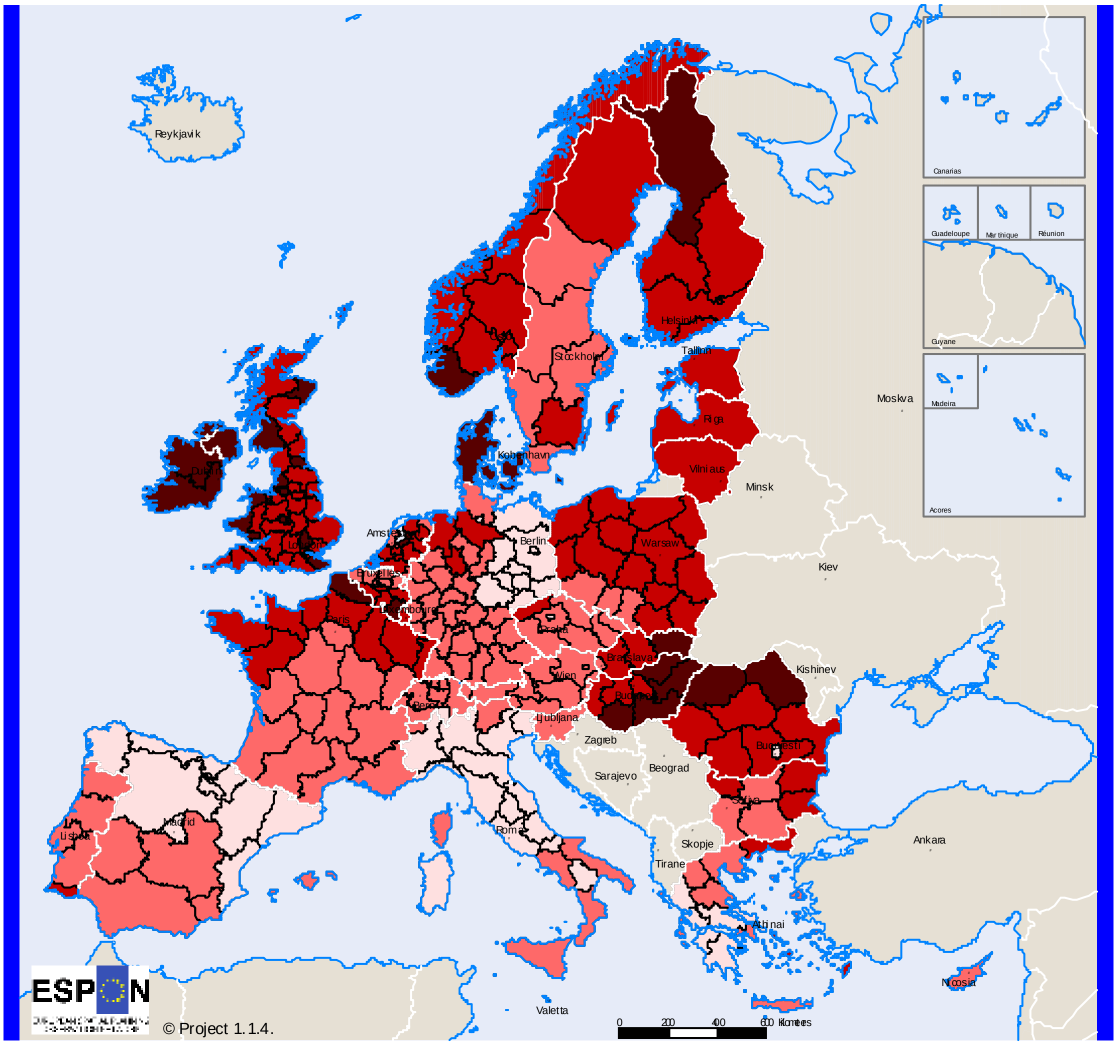
- 1.9 to 2.6
- 2.6 to 3.1
- 3.1 to 3.8
- 3.8 to 5.9

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) Evolution of the PSR in Europe, 2050

Dependency trends by NUT2



Potential Support Ratio, 2050
Model A

	1.1 to 1.8
	1.8 to 2.4
	2.4 to 2.8
	2.8 to 4.1

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Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Although it is possible to identify those countries or regions where PSR in 2050 will be much more, or less than expected, the PSR values in 2000. The overall decline is quite visible at the regional level (i.e. by NUT 2; see map 4). However, at the same time, different spatial patterns emerge, as high values in the peripheral regions of Ireland and Scotland, southern Norway, the countries of the enlargement, Greece, southern Italy and some regions of the southwestern NUT 2 regions of the Iberian Peninsula can be discerned. This pattern generally persists until 2025, a time when another pattern emerges in which the central and northern European regions exhibit relatively higher values.

Despite the fact that the specific fertility and mortality rates for each cohort is the same in each region across all the models, the crude birth and mortality rates will change with time and from model to model, due to the changes in the age structure of the regional population, different in each case. For comparative purposes, the outputs of the models in terms of fertility and mortality will be analysed together later on, followed by the migratory flows, which will not be analysed in the 'zero migration' model.

5.2.2 Results of the B Models

The Type "B" models provide us with different estimates of the migratory flows based on distinct demographic assumptions. In addition, they give us the correlative variations that will tend to occur in the regional demographic structures.

It is important to distinguish between B0, a model in which the current migration rates (in each country and region) are assumed, and the other models, in which the overall volume of migration appears as a result of different assumptions: the B1 model gives us the level of migration required in order to keep the total population at its current level; model B2 that which allows for the workforce to be kept constant; and model B3 that required in order to sustain the Potential Support Ratio (PSR) in each region at its present level.

5.2.2.1 Model B0

Population

Allowing both for the present demographic trends and for migrant flows akin to the recent past (Model B0), Europe will still experience a depopulation process – not as evident as in the "zero migration" model, but significant nonetheless (cf. Table 13, Figure 9). Indeed, under the present demographic and migratory conditions, the countries of the EU15 will lose some 36 million inhabitants (35,851 thousand), the ten accession countries about 18 million (17,509 thousand) and the countries of the EU29 taken altogether some 65 million.

At the current level of migration, the EU15 countries will lose one tenth (-9.5%) of their present population, the ten enlargement countries almost one forth (-23.3%) and the EU29 countries taken together more than one fifth (21.4%).

Table 13 Population projections, in thousands (Model B0- constant migration rate)

Region	Population			Annual average change (%)
	2000	2025	2050	
EU 15	376,539	377,069	340,688	-0.20
EU 25	451,629	477,789	398,269	-0.25
EU 29	493,878	486,394	429,144	-0.28

Source: Eurostat, model

Figure 9 Population Evolution and Projection, 1960-2050, Model B0

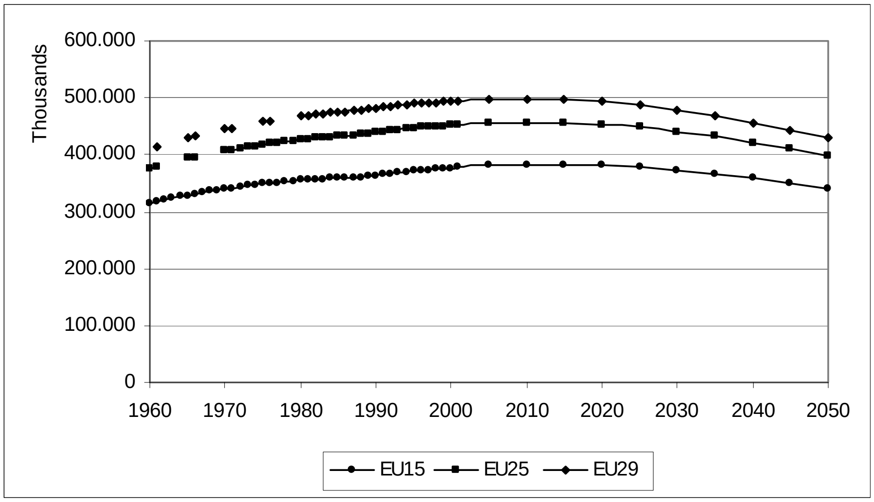


Table 14 Population projections (thousands), 2000 – 2050, by country (Model B0)

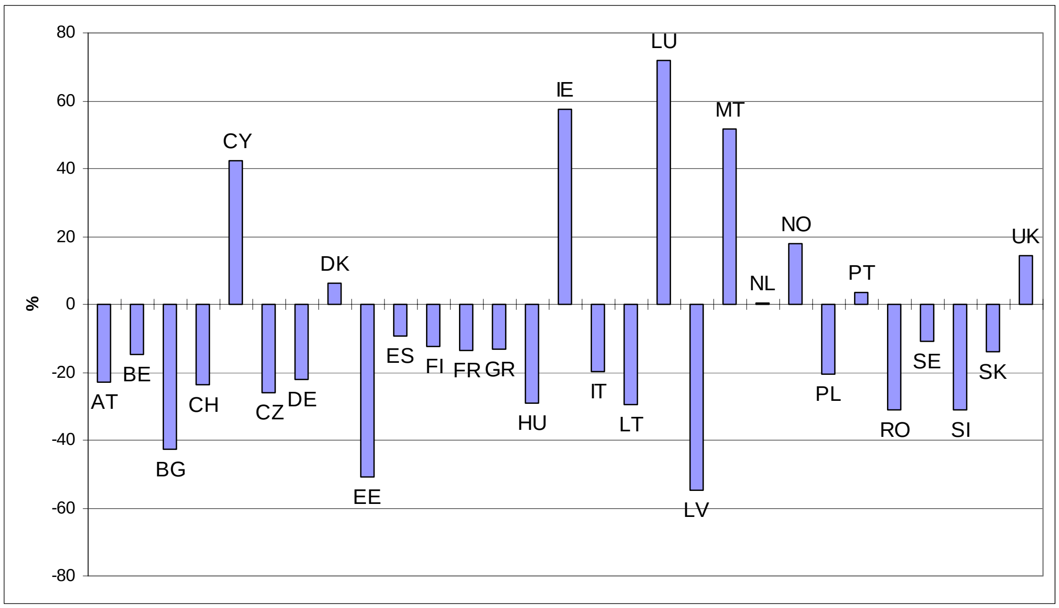
Country	Population			Annual average change (%)
	2000	2025	2050	
AT	8,103	7,677	6,234	-0.52
BE	10,239	9,962	8,740	-0.32
BG	8,191	6,686	4,689	-1.11
CH	7,124	6,754	5,447	-0.54
CY	786	986	1,118	0.71
CZ	10,278	9,561	7,608	-0.60
DE	82,164	77,134	63,906	-0.50
DK	5,330	5,623	5,658	0.12
EE	1,439	1,118	709	-1.41
ES	39,731	40,573	36,071	-0.19
FI	5,171	5,080	4,534	-0.26
FR	58,749	57,867	50,774	-0.29
GR	10,554	10,416	9,176	-0.28
HU	10,043	8,888	7,129	-0.68
IE	3,777	4,930	5,952	0.91
IT	57,680	55,191	46,264	-0.44
LT	3,699	3,359	2,608	-0.70
LU	436	578	749	1.09
LV	2,424	1,815	1,098	-1.57
MT	391	494	593	0.83
NL	15,864	16,788	15,910	0.01
NO	4,479	5,007	5,272	0.33
PL	38,644	37,262	30,698	-0.46
PT	10,257	10,858	10,625	0.07
RO	22,456	20,158	15,467	-0.74
SE	8,862	8,724	7,904	-0.23
SI	1,988	1,810	1,367	-0.75
SK	5,398	5,427	4,653	-0.30
UK	59,624	65,669	68,192	0.27

Source: Eurostat, model

A comparison with the output of the A model shows that it is in the countries of the EU15 that migration has the most significant impact. Indeed, in the case of these countries, the population decrease is half that estimated in the A model. Conversely, in the accession countries and in the EU29 as a group, the decrease is virtually the same in the two models A and B0, since the former group is a mostly migrant sending area.

The persistence of migration flows at their current levels will only bring about a slight reduction in the depopulation process. In any case, the impact of migration will be more effective in the EU15 countries than in the others, as the former are largely destination countries for international migration. As in the A model, the process of population decrease will be felt more intensely from 2025 onwards than in period between 2000 and 2025. At the regional level, the differences will be more significant (Table 14, Figure 10 and map 5).

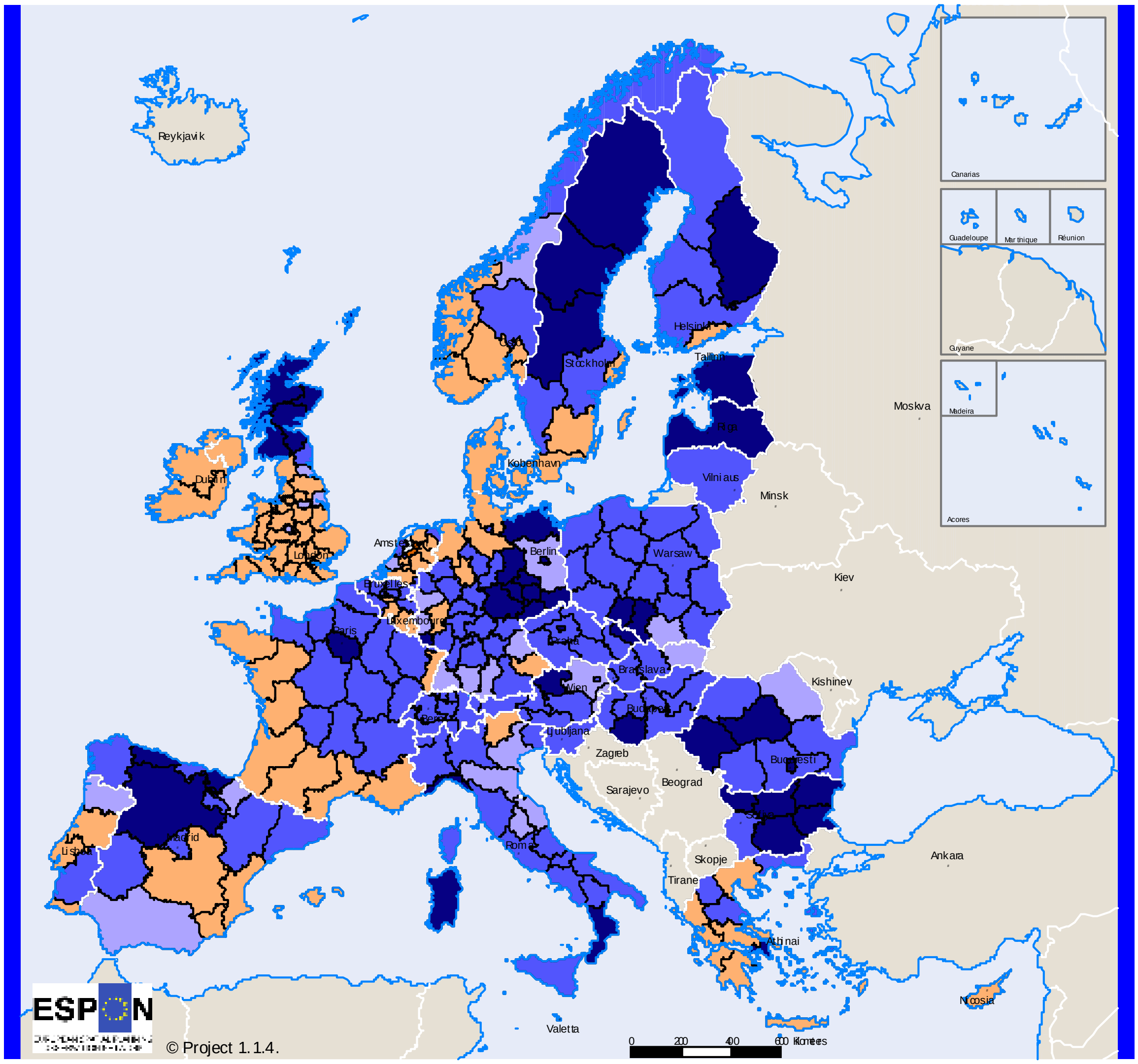
Figure 10 Population Variation by country, 2000-2050 (Model B0)



As we see, the effect of migration will contribute to reducing the depopulation process. In the case of nine countries, the migration flows will actually lead to a population increase. Three different types of situations can be found: a first group composed of those countries in which the increase is highest (Luxembourg (LU), Ireland (IE), Malta (MT) and Cyprus (CY)); another group, which includes those countries that exhibit an average increase (the United Kingdom (UK) and Norway (NO)); and a third one, in which the increase is lowest (Denmark (DK), Portugal (PT) and the Netherlands (NL)). All the other countries will suffer population losses. Among them, three distinct groups are also discernible: the first one, with decreases between 9% and 14,6%, including Spain (ES), Sweden (SE), Finland (FI), Greece (GR), France (FR), Slovakia (SK) and Belgium (BE); the second, with the heaviest population losses, in which we find Bulgaria (BG), Estonia (EE) and Latvia (LV). The remainder exhibit losses between 19.8% and 31.2%.

Map 5 Population Variation by NUT2, 2000-2050 (Model B0)

Depopulation trends by NUT2



Variation of the population, 2000-2050 (%)
Model B0

- -73.32 to -35.33
- -35.33 to -7.92
- -7.92 to 0
- 0 to 138.95
- 138.95 to 528.63

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Origin of the data: Eurostat and others

Source: ESPON Data Base and others

At the regional level, it is possible to discern certain distinctive patterns. First, all of southern United Kingdom and Ireland, then an area that includes parts of the Netherlands, Luxembourg and Belgium, the German border and continues all the way to Denmark, south-western Norway and urban Sweden. Western France, southern and South-western Spain, most of Greece, the Algarve, the Balearic Islands and Valencia in Spain, as well as urban areas such as Lisbon and Helsinki, will tend to experience positive population variation. Finally, Scotland and other northern peripheral areas, the Baltic countries, the former DDR, Bulgaria and Romania, parts of southern Poland, southern Italy and northern Spain will tend to undergo strong population decrease (cf. map 5).

Ageing

Even if we consider the persistence of the current migratory conditions, the age structure will still change. As in the A model, the increase in the relative weight of the elderly is huge. As compared with 2005, a quarter of the population in 2050 will be over the age of 65, instead of the current 15% or 16%.

Table 15 Percentage of people with 65+ years of age in Europe (Model B0)

Year	EU15	EU25	EU29
2000	16.3	15.7	15.6
2025	21.2	20.8	20.6
2050	25.4	25.2	25.2

Compared with the results of the A model, we find that migration will especially affect two groups of countries. The first one consists of Latvia and Estonia, in which the ageing process will be felt more rapidly and intensely due to the out-migration flows. The second group includes Luxembourg, Cyprus, Malta, Spain, Portugal, Italy, Greece and Ireland.

Figure 11 Share of people aged 65 + in Europe in 2000 and 2050, by country (Model B0)

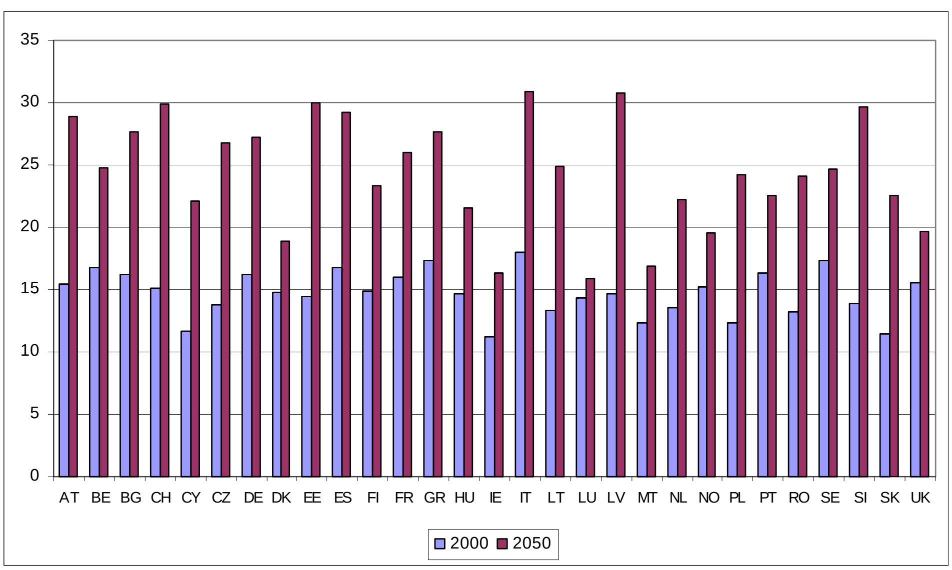


Table 16 Share of people aged 65+ in Europe, 2000 and 2050, by country (Model B0)

Country	People with 65 and more years of age	
	2000 (%)	2050 (%)
AT	15.5	28.9
BE	16.8	24.8
BG	16.2	27.7
CH	15.2	29.9
CY	11.6	22.1
CZ	13.8	26.8
DE	16.2	27.2
DK	14.8	18.9
EE	14.5	30.0
ES	16.8	29.3
FI	14.8	23.3
FR	16.0	26.0
GR	17.3	27.6
HU	14.6	21.5
IE	11.2	16.3
IT	18.0	30.9
LT	13.4	24.8
LU	14.3	15.8
LV	14.7	30.8
MT	12.3	16.9
NL	13.6	22.2
NO	15.3	19.6
PL	12.3	24.2
PT	16.4	22.5
RO	13.2	24.1
SE	17.3	24.6
SI	13.9	29.7
SK	11.4	22.5
UK	15.6	19.7

Source: Eurostat, model

In this second group, we find two types of situations: one in which the countries are characterised by a younger age structure and in which the out-migration flows are also of a younger nature, as in the case of Ireland, Malta and Luxembourg; and another that is characterised by countries with a pronouncedly aged structure, in which the migratory flows serve to rejuvenate the age structure, but only to a certain extent, as the initial age structure forces them to remain as the most pronouncedly aged countries of the EU29 in 2050.

Evolution of the Potential Support Ratio

As in the A model, the Potential Support Ratio will also experience a strong decline in this case. However, even though it performs slightly better than in the A model, the decline in the PSR computed by the B0 model remains overwhelming, especially in the countries of the EU15. As compared with the current ratios of 4.1 workers for each retiree in the EU15, 5.3 in the enlargement countries (EU10) and 4.3 in the EU29, the figures by 2050 will have risen to 2.4 in the EU15, 2.6 in the EU10 and 2.4 in the overall area under study.

Table 17 Projection of the evolution of the PSR, 2000-2025-2050 (Model B0)

Region	Potential Support Ratio		
	2000	2025	2050
EU 15	4.108	3.043	2.381
EU 10	5.350	3.570	2.561
EU 4	4.727	3.552	2.478
EU 29	4.308	3.149	2.411

Source: Eurostat, model

Table 18 Projection of the evolution of the PSR, 2000-2050, by country (Model B0)

Country	Potential Support Ratio		
	2000	2025	2050
AT	4.370	2.983	2.055
BE	3.918	2.930	2.452
BG	4.200	3.323	2.209
CH	4.442	2.637	1.926
CY	5.739	3.570	2.825
CZ	5.044	3.352	2.294
DE	4.188	2.845	2.221
DK	4.502	3.488	3.360
EE	4.660	3.248	1.990
ES	4.074	3.252	2.001
FI	4.511	2.754	2.621
FR	4.064	2.797	2.256
GR	3.905	3.090	2.151
HU	4.672	3.748	2.994
IE	5.968	5.004	3.912
IT	3.761	2.700	1.868
LT	5.007	3.861	2.535
LU	4.677	4.080	4.143
LV	4.605	3.285	1.958
MT	5.517	3.807	3.789
NL	5.002	3.304	2.813
NO	4.244	3.487	3.206
PL	5.610	3.543	2.560
PT	4.137	3.542	2.751
RO	5.178	4.101	2.611
SE	3.712	2.847	2.501
SI	5.054	3.044	1.999
SK	6.038	4.144	2.816
UK	4.188	3.606	3.212

Source: Eurostat, model

As shown in table 18, the highest values of the Potential Support Ratio (PSR) in 2000 could be found in those countries where the population structure is youngest, while the worst ratios occurred in countries undergoing ageing processes.

The projected values of the PSR for 2050, allowing for migration at the present rate, nonetheless show a steady decline. However, generally speaking, countries with relatively higher values continue in 2050 to perform better in comparison. The overall fall is impressive. Indeed, while the EU15 countries will fall from 4.1 workers for each elderly person in 2000 to 3.0 in 2025 and 2.4 in 2050, the EU10 countries of the enlargement will go from 5.4 to 3.6 and 2.6.

The overall variation of the PSR will be quite large. Even assuming the current migration rate, the ratio between the people inside the working age and those in retirement will fall by 45%, from 4.3 to 2.4.

At the national level, some relevant variations can be pointed out. The largest variations will tend to occur in Slovenia, at -60% (from 5.054 to 1.999), Latvia, Estonia and Switzerland (all at -57%) and, at the other end of the spectrum, in Luxembourg (-11%), the United Kingdom (-23%), Norway (-24%) and Denmark (-25%).

5.2.2.2 The other B Models

As previously mentioned, the B1 model assumes the constant total population in each country and region to be kept constant. In turn, the B2 model assumes a constant labour force, while model B3 holds the regional Potential Support Ratios (PSR) constant.

The main aggregated results regarding the population are as follows:

Table 19 Population projections, in thousands (Model B2- constant labour force)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	389,372	401,700	0.13
EU 25	451,629	466,844	480,284	0.12
EU 29	493,878	509,327	523,973	0.12

Source: Eurostat, model

Table 20 Population projections, in thousands (Model B3 - constant PSR)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	533,836	774,822	1.45
EU 25	451,629	649,965	940,146	1.48
EU 29	493,878	704,184	1,015,428	1.45

Source: Eurostat, model

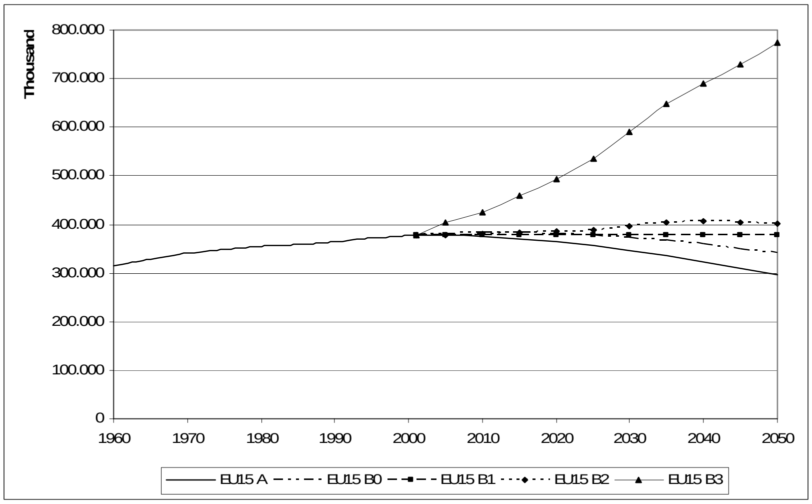
The comparison between the different forecasts provides a good deal of information. Under the current demographic conditions and without intervention of any kind (Model A), the population of the EU15 by 2050 will have declined by 80 million (-21.4%); it will decline by almost 20 million (-25.8%) in the enlargement countries; and by 11 million (-26.2%) in the remaining four countries.

The B1 model assumes that the total population in each region remains constant.

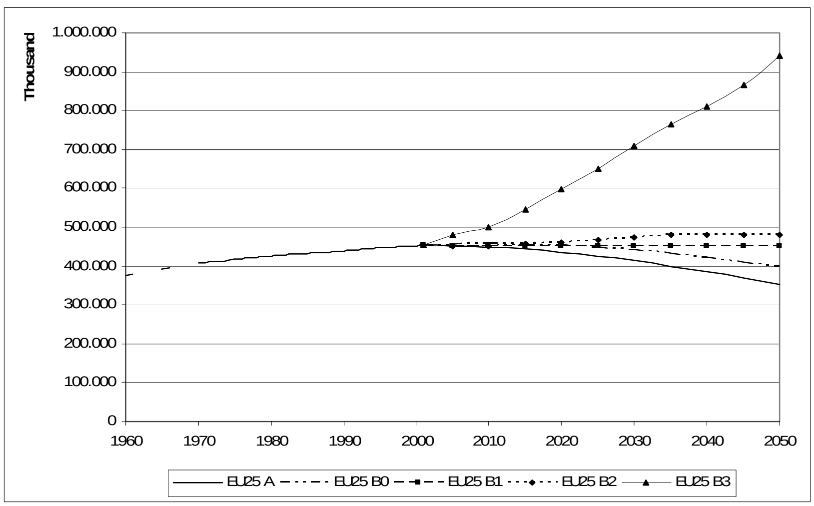
In the B2 model, which holds constant the labour force in each region, the changes in the total population only reflect the changes in the age structure, which implies a slight increase of 25 million in the EU15 (6.7%), 3.5 million in the enlargement countries (4.7%), and just under 1.5 in the remaining four (3.4%), as illustrated in Figure 12.

Figure 12 Population Evolution & Projection, 1960-2050 (Models A, B0, B1, B2, B3)

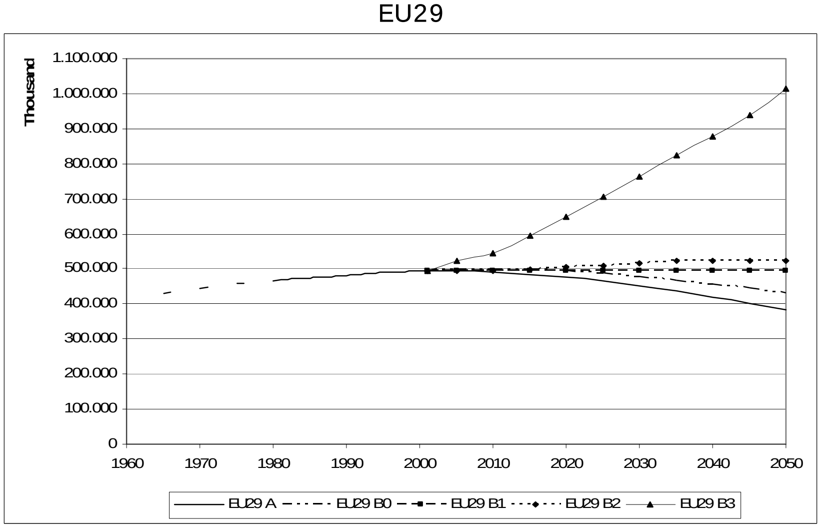
EU15



EU25



EU29



Source: Eurostat, Model

Even though holding the present labour force levels[8] constant may appear somewhat realistic, given the ageing process currently underway in many European regions, it will be impossible to prevent the fall of the Potential Support Ratio, i.e. the relation between the individuals inside the working age and those in retirement. Almost 400 million people will be required for that to be possible in the case of the EU15 (i.e., a population increase of over 105% in the next 50 years); the enlargement countries (EU25-15) will need a further 90 million (120%); whereas the EU4 (NO, CH, RO, BG) will need 33 millions in order to grow by 78%. Figure 12 presents a comparison between the results of the A, B2 and B3 models, taking B1 as a constant.

Table 21 Population projections, in thousands, by countries (Model B2 – constant labour force)

Country	Population (thousands)			Average annual change (%)
	2000	2025	2050	
AT	8,103	8,314	8,623	0.12
BE	10,239	10,511	10,626	0.07
BG	8,191	8,142	8,330	0.03
CH	7,124	7,493	7,717	0.16
CY	786	833	854	0.17
CZ	10,278	10,640	10,943	0.13
DE	82,164	85,291	87,424	0.12
DK	5,330	5,499	5,591	0.10
EE	1,439	1,430	1,448	0.01
ES	39,731	41,019	44,016	0.21
FI	5,171	5,538	5,477	0.12
FR	58,749	61,299	62,302	0.12
GR	10,554	10,893	11,467	0.17
HU	10,043	10,125	10,210	0.03
IE	3,777	3,921	4,055	0.14
IT	57,680	59,943	62,968	0.18
LT	3,699	3,635	3,709	0.01
LU	436	449	459	0.10
LV	2,424	2,377	2,400	-.0.02
MT	391	425	423	0.16
NL	15,864	16,527	16,904	0.13
NO	4,479	4,562	4,639	0.07
PL	38,644	40,412	40,814	0.11
PT	10,257	10,598	11,079	0.15
RO	22,456	22,286	23,002	0.05
SE	8,862	8,986	8,978	0.03
SI	1,988	2,088	2,145	0.15
SK	5,398	5,508	5,637	0.09
UK	59,624	60,583	61,730	0.07

Source: Eurostat, model

At both the regional and national level, the B2 model illustrates the future difficulties created by the effect of the age structure upon the labour force. This phenomenon is very clearly visible (cf. Table 21). The largest difficulties will be experienced in the southern European countries: Spain, Italy, Cyprus, Greece, Switzerland, Malta and Portugal (all

[8] Another interesting issue, to be discussed later in the text, concerns the origin of the migrants.

between 8 and 10%) and Greece. The lowest values will be found in Latvia, Lithuania and Estonia (ranging from –1.0 to 0.6%), Sweden (1.3%) and Hungary, Bulgaria and Romania (between 1.5 and 2.5%).

Table 22 Population projections, in thousands by countries (Model B3 – constant PSR)

Country	Population (thousands)			Average annual change (%)
	2000	2025	2050	
AT	8,103	11,968	18,773	1.69
BE	10,239	13,759	16,809	1.00
BG	8,191	8,766	10,436	0.49
CH	7,124	12,288	19,740	2.06
CY	786	1,813	3,903	3.26
CZ	10,278	15,679	24,205	1.73
DE	82,164	120,036	182,690	1.61
DK	5,330	7,673	10,200	1.31
EE	1,439	1,700	2,204	0.86
ES	39,731	52,606	85,293	1.54
FI	5,171	8,925	12,096	1.71
FR	58,749	87,758	117,219	1.39
GR	10,554	13,607	20,405	1.33
HU	10,043	11,564	13,023	0.52
IE	3,777	6,200	10,845	2.13
IT	57,680	79,859	122,583	1.52
LT	3,699	4,618	6,795	1.22
LU	436	681	935	1.54
LV	2,424	2,682	3,418	0.69
MT	391	791	1,287	2.41
NL	15,864	27,741	42,942	2.01
NO	4,479	6,284	7,829	1.12
PL	38,644	65,201	91,804	1.75
PT	10,257	13,019	18,381	1.17
RO	22,456	26,882	37,277	1.02
SE	8,862	11,716	14,656	1.01
SI	1,988	3,293	5,227	1.95
SK	5,398	8,788	13,459	1.84
UK	59,624	78,288	100,997	1.06

Source: Eurostat, model

Turning to the B3 model, Table 22 illustrates how difficult it is for the fall in the PSR to be compensated by adding immigration to the regional population. The figures speak for themselves: the lowest values can be found in Bulgaria, Hungary, Latvia, Estonia and Romania, on the one hand, and in Belgium, Sweden and the United Kingdom, on the other. The highest values can be found in Cyprus, Malta, Ireland, Switzerland, the Netherlands and Slovenia. Hence, we find, on the one hand, countries with younger populations actually performing similarly in this respect to those that, by 2050, will have already come to the end of their ageing processes; and, on the other, countries with either small elderly population and very low birth rates (e.g., the Baltic states, Bulgaria, Romania and Hungary) or at different stages in which, for different reasons, the relative size of the two age groups balances out (e.g., Belgium, Sweden, the United Kingdom, among others). (Figures 13, 14, K4.17 and 15, as well as maps 6, 7 and 8)

Figure 13 Population Variation, 2000-2050 – Model B0

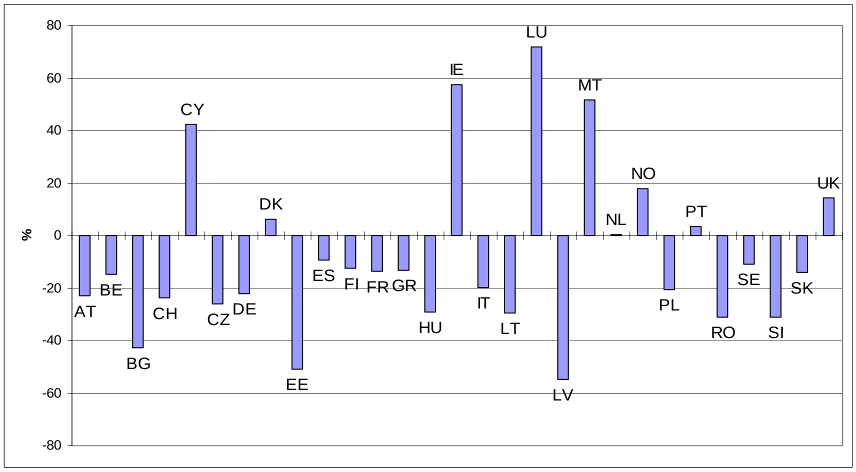


Figure 14 Population Variation, 2000-2050 – Model B2

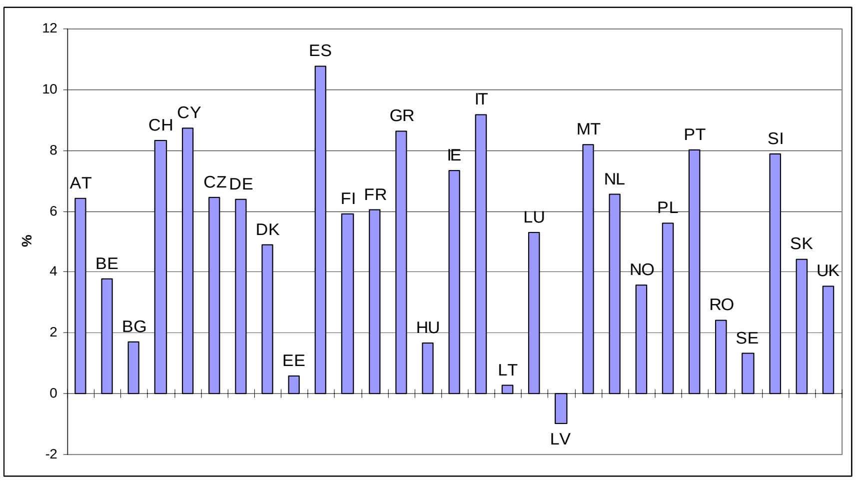
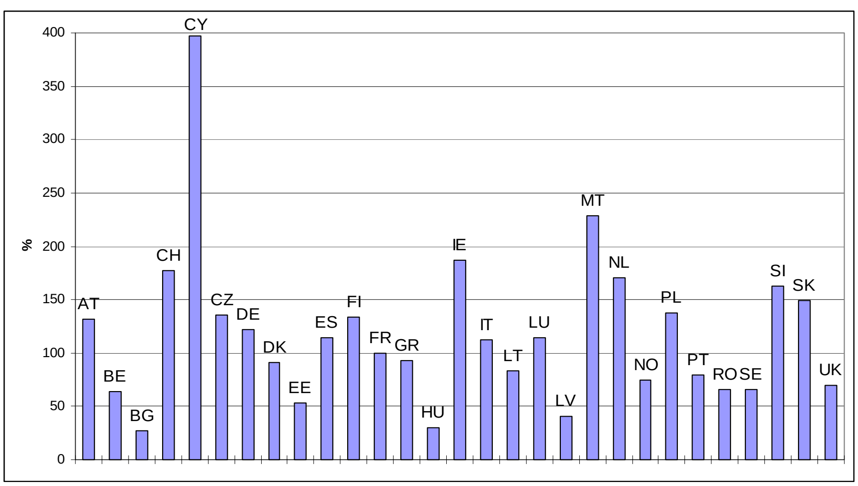
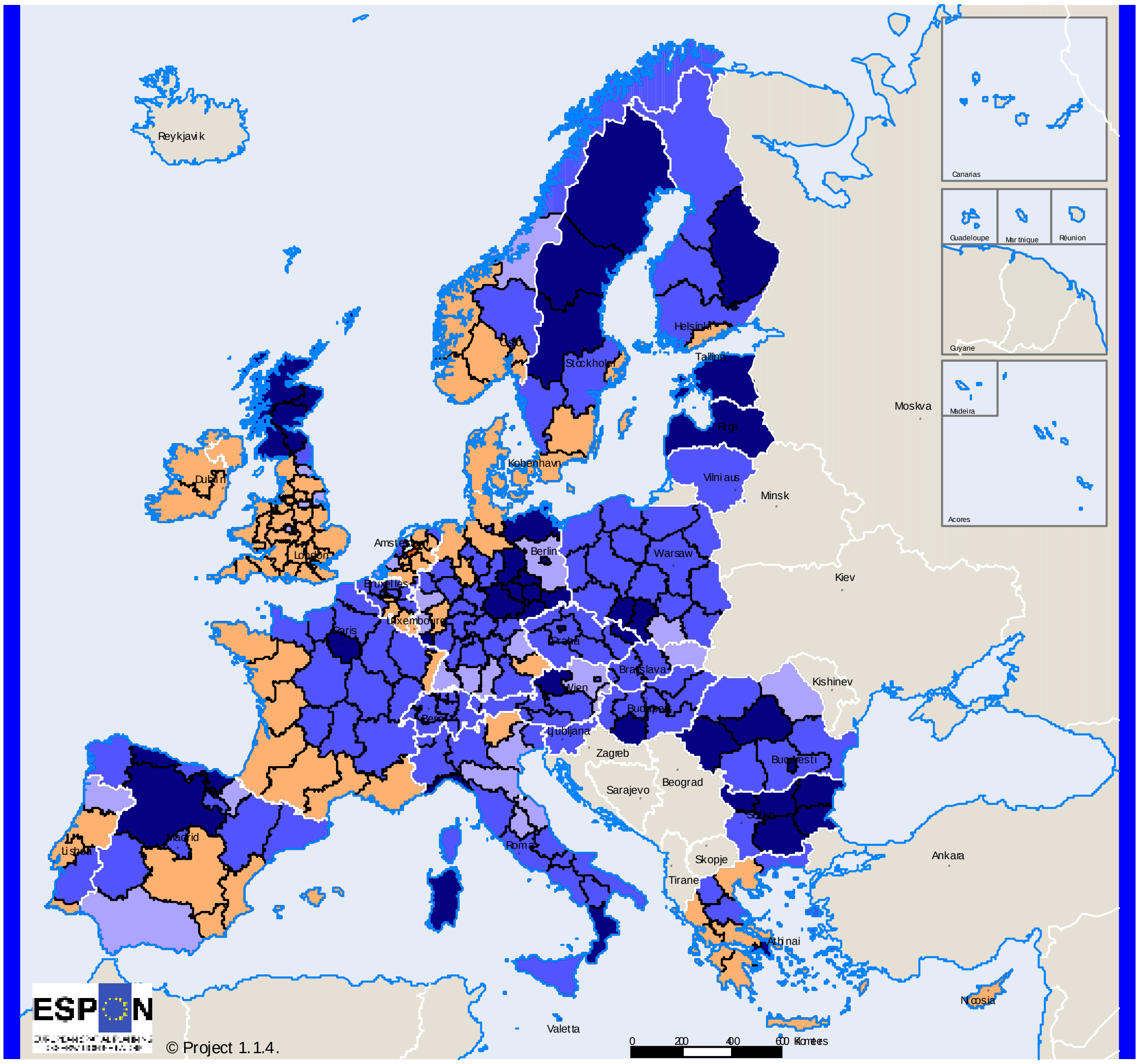


Figure 15 Population Variation, 2000-2050 – Model B3



Map 6 Population variation 2000-2050, by NUT 2 (Model B0)

Depopulation trends by NUT2



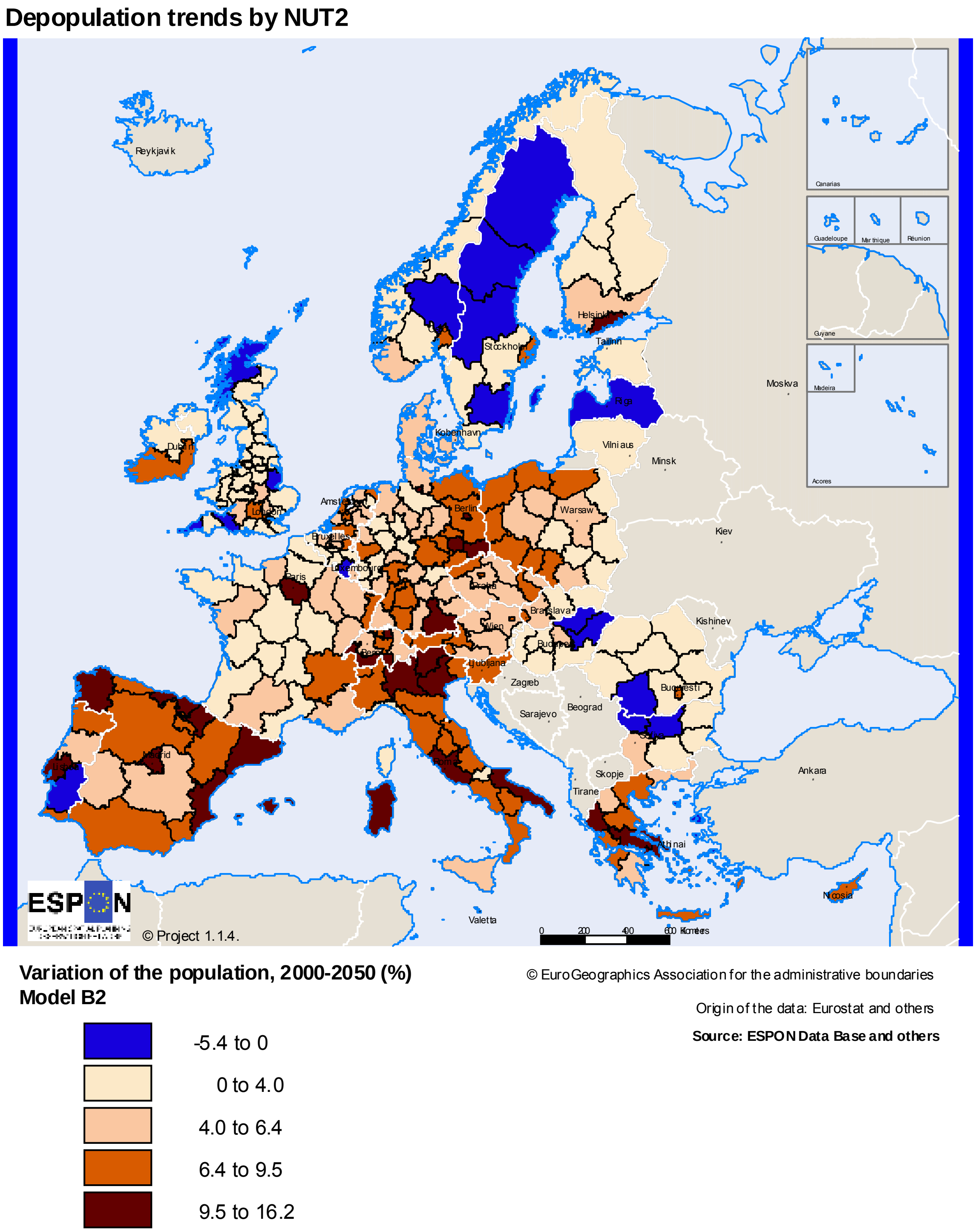
Variation of the population, 2000-2050 (%)
Model B0

- -73.32 to -35.33
- -35.33 to -7.92
- -7.92 to 0
- 0 to 138.95
- 138.95 to 528.63

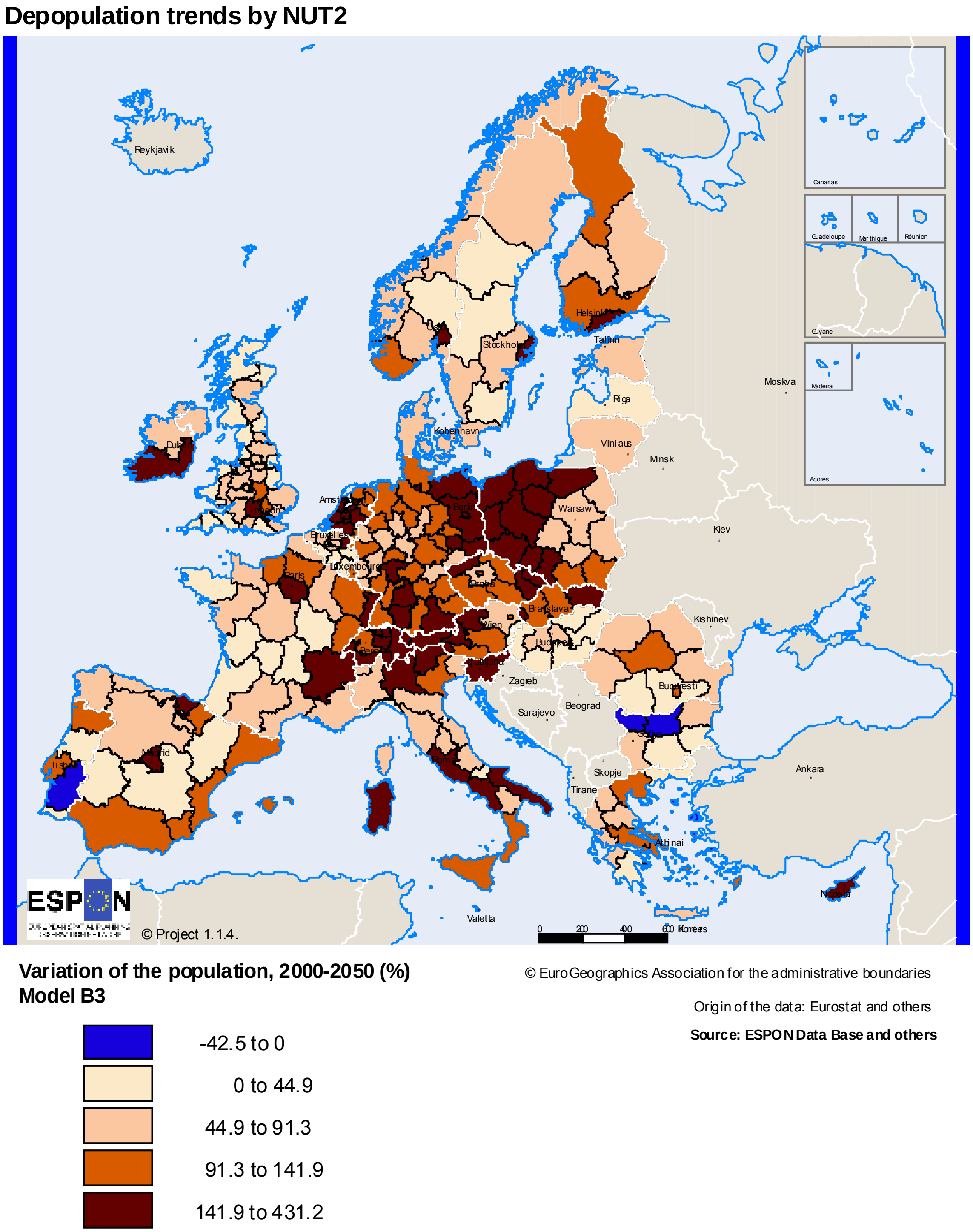
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Map 7 Population variation 2000-2050, by NUT 2 (Model B2)



Map 8 Population variation 2000-2050, by NUT 2 (Model B3)



The population variation implicit in the B2 model indicates the changes required in order to keep the labour force constant. Thus, the highest growth rates will be required in the large metropolitan areas, as well as in central and southern Europe, particularly in the Iberian Peninsula (with the exception of the Alentejo), the Mediterranean arch comprising southern Spain, Catalonia, southern France, Italy and Greece and also in Switzerland, Germany, and the western parts of the enlargement countries (map 7).

In the B3 model, the areas with the highest growth are typically those that are most heavily urbanised, especially in Central Eastern Europe. In those regions where population ageing is most extreme and which now show a very high relative weight of retired people (as in the case of the Alentejo and interior Bulgaria), a heavy depopulation process will ensue after the death of those people, thereby leading to relatively higher ratios of working age to retirement age people at a later stage, even as the number of people inside the working age drops slightly (map 8).

Ageing

Ageing will be one of the most important phenomena experienced in Europe in the near future. As shown in the Figure 16, the population over the age of 65 will increase, and at very significant rates, in all scenarios (except for the B3 model, which precisely assumes the PSR ratio, i.e., the relative weight of this age group, to be kept constant), both in the EU15, the EU25 and the EU29.

The more expansive scenario is the A model, which allows for zero migration, because the rejuvenating effect of the migrant inflows is not present. Yet, even in those scenarios that do consider the possibility of immigration, as in the case of the impressive volumes computed by the B3 model, ageing will be inescapable. It is interesting to notice that the ageing process will in general tend to slow down and eventually stabilise by the year 2040.

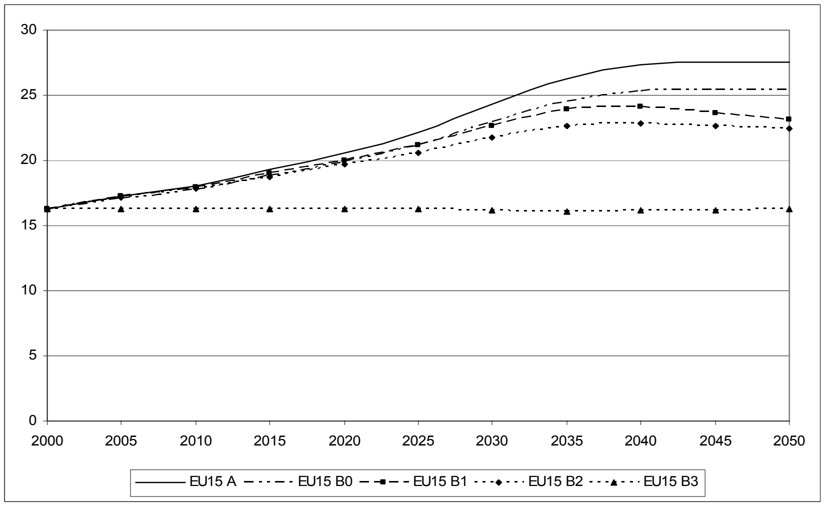
The reason behind this stabilisation in the B2 and B3 models, as well as for the relatively smaller increase in the relative weight of the elderly in the A model, is quite simply the fact that the increase in life expectancy, which has been strongly present since the year 2000, will reach an end by the end of the 2030s. From the on, the average lifetime of each individual will tend to be constant (this, of course, is what is assumed in the model; in reality, we know little about the progress of the medical sciences in the geriatric field).

The B1 model always produces slightly little less pronouncedly aged populations than the B2 model, simply because the effort required in order to keep the labour force constant is lower than that required to keep the total population at its current level, due to the general ageing trend now present in all the European societies - and in the forecasts of all the models.

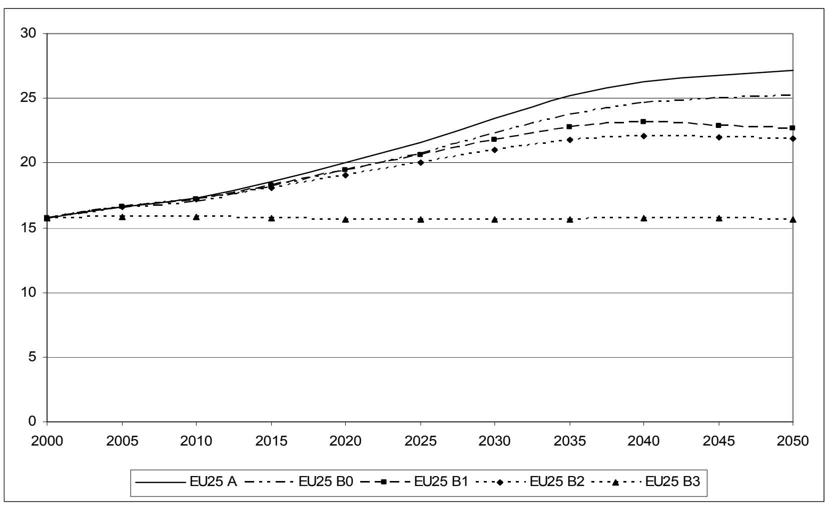
When turning to the results of each of the models at the national level, we find confirmation of the main overall conclusions. While always inevitable, the effect of ageing will be felt much more intensely without immigration, particularly in Italy, Spain, Slovenia and Austria. The countries where the ageing trend is more intense (indicated by the results of the Model A) are Cyprus, Slovenia, Slovakia, Czech Republic, Spain, Poland, Austria and Italy. The less one are the Nordic countries of Denmark, Norway, Sweden and United Kingdom.

Figure 16 Population aged 65+, 2000-2050

EU15



EU25



EU29

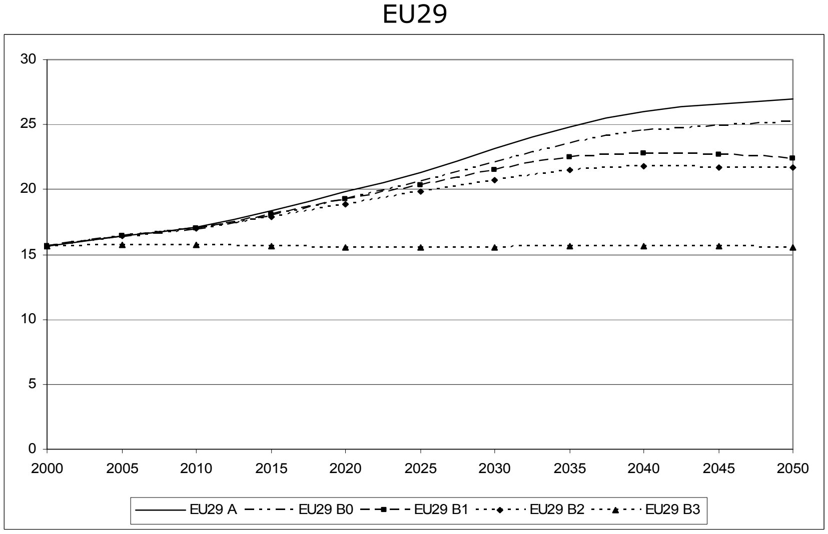


Figure 17 Population aged 65+ (%), Model A

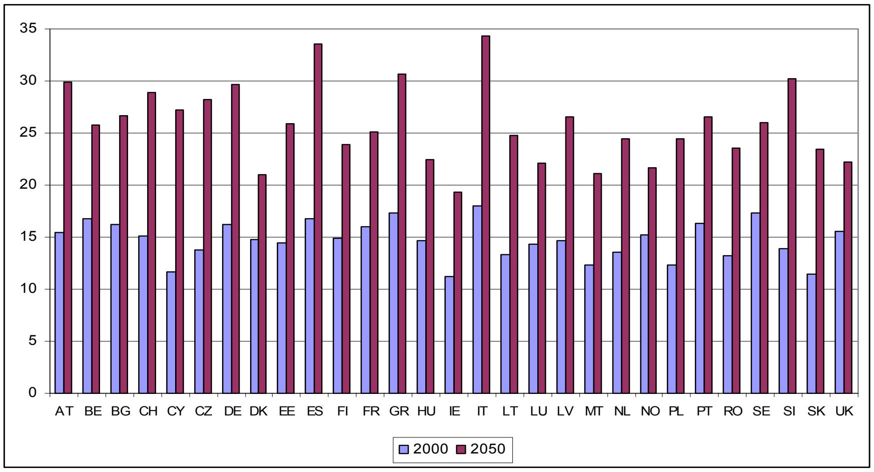


Figure 18 Population aged 65+ (%), Model B0

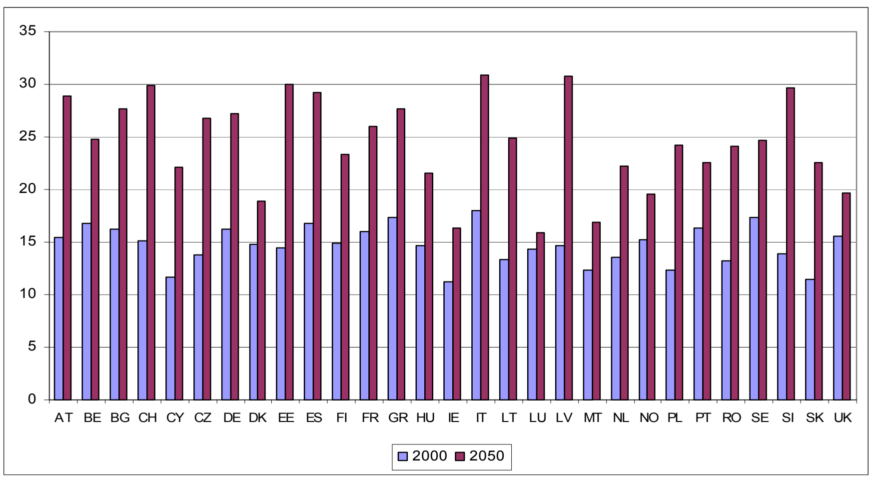


Figure 19 Population aged 65+ (%), Model B1

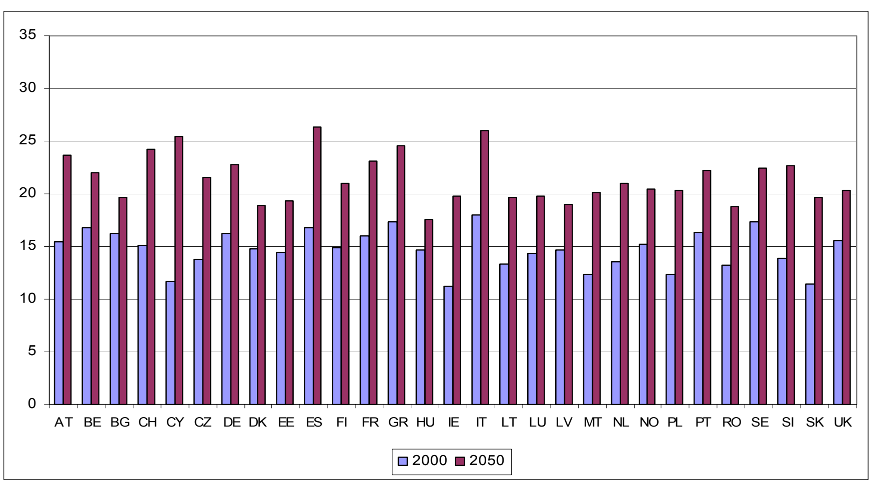


Figure 20 Population over the age of 65 (%), Model B2

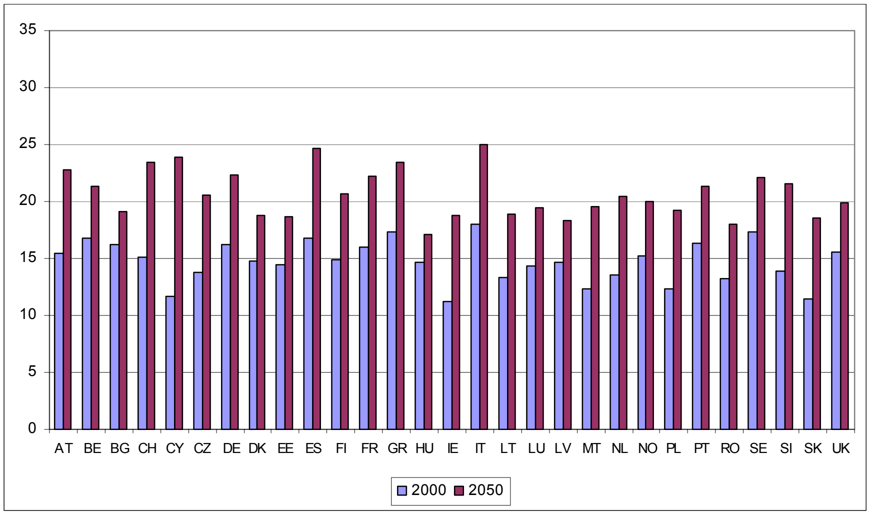
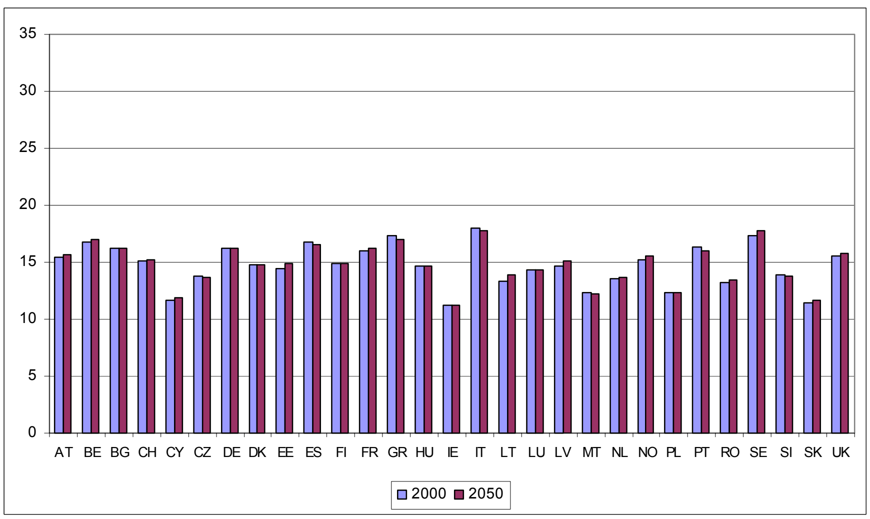


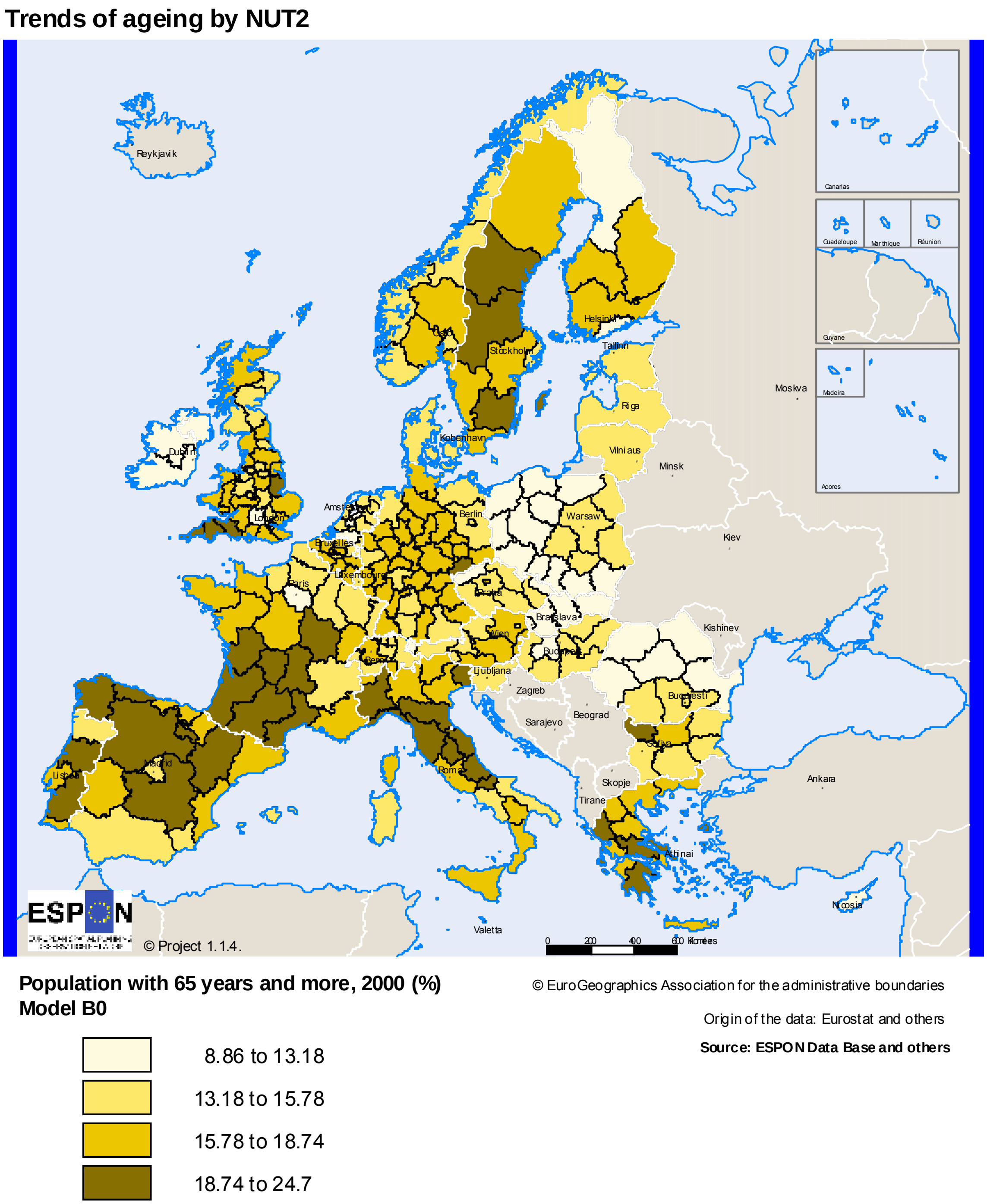
Figure 21 Population over the age of 65 (%), Model B3



The B3 model is based on the assumption of a constant PSR, or Potential Support Ratio, which of course implies that the figures must be the same in 2000 and 2050. The slight differences apparent in these results result from the fact that, for the sake of accuracy, we have aggregated the regional figures of the various NUT 2 regions in order to obtain the national value as the combined result of the different trajectories of each region in the country.

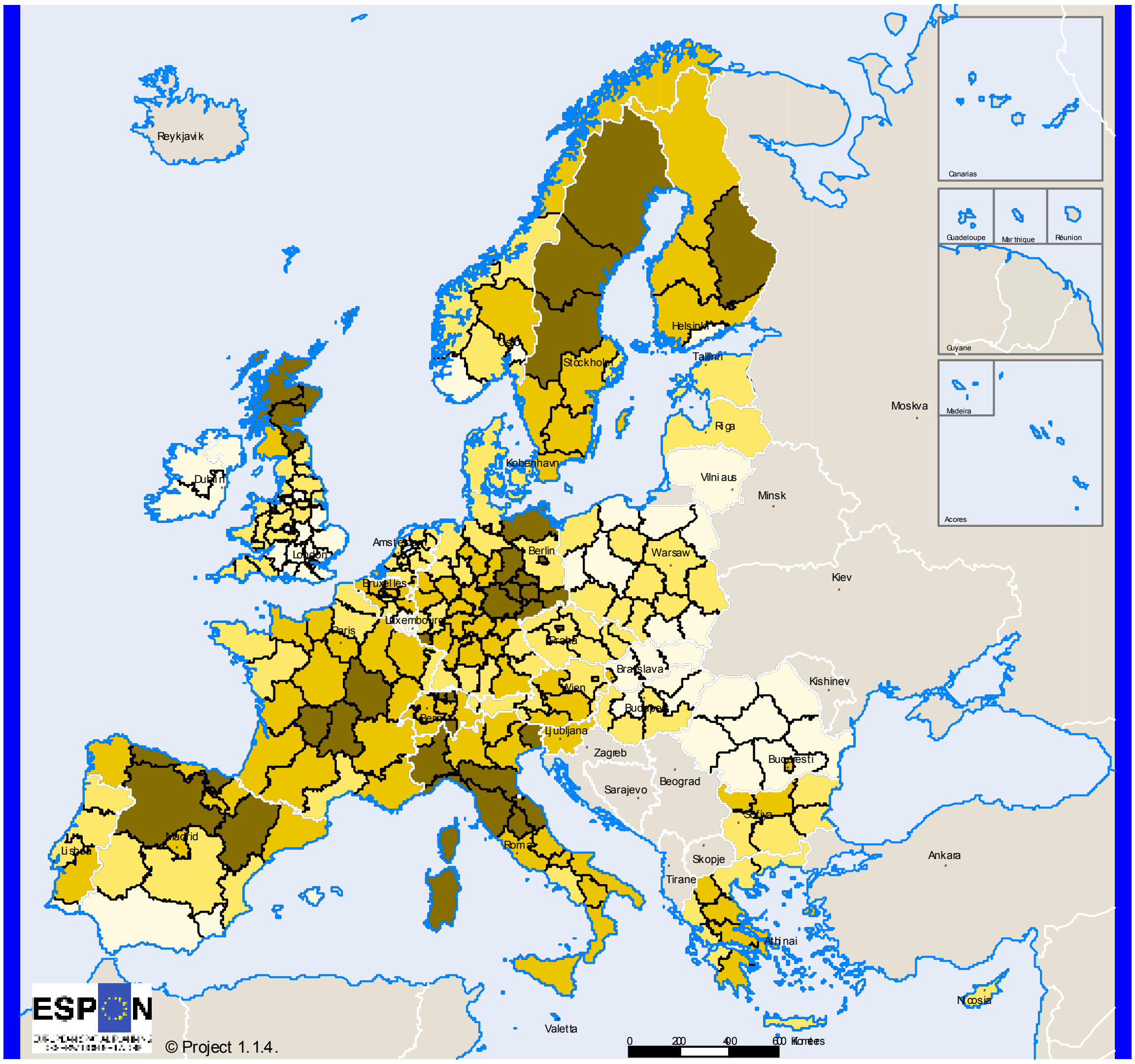
Map 9 Ageing in Europe, by NUT 2, 2000/2025/2050 (Model B0)

a) Ageing in Europe, by NUT 2, 2000 (Model B0)



b) Ageing in Europe, by NUT 2, 2025 (Model B0)

Trends of ageing by NUT2



Population with 65 years and more, 2025 (%)
Model B0

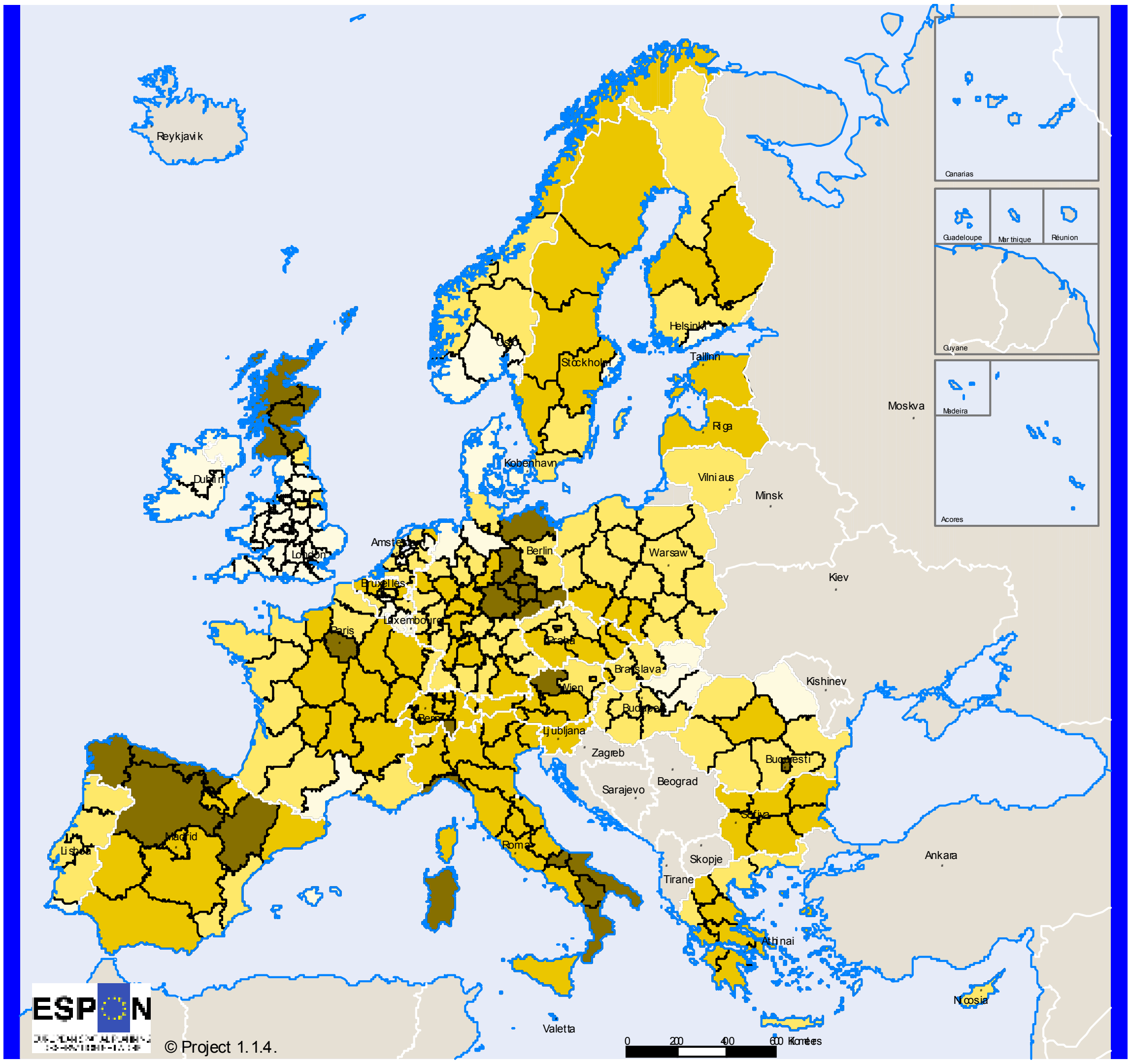
9.64 to 17.74
17.74 to 20.94
20.94 to 24.48
24.48 to 30.92

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) Ageing in Europe, by NUT 2, 2050 (Model B0)

Trends of ageing by NUT2



Population with 65 years and more, 2050 (%)
Model B0

- 8.72 to 20.70
- 20.70 to 25.58
- 25.58 to 33.16
- 33.16 to 52.35

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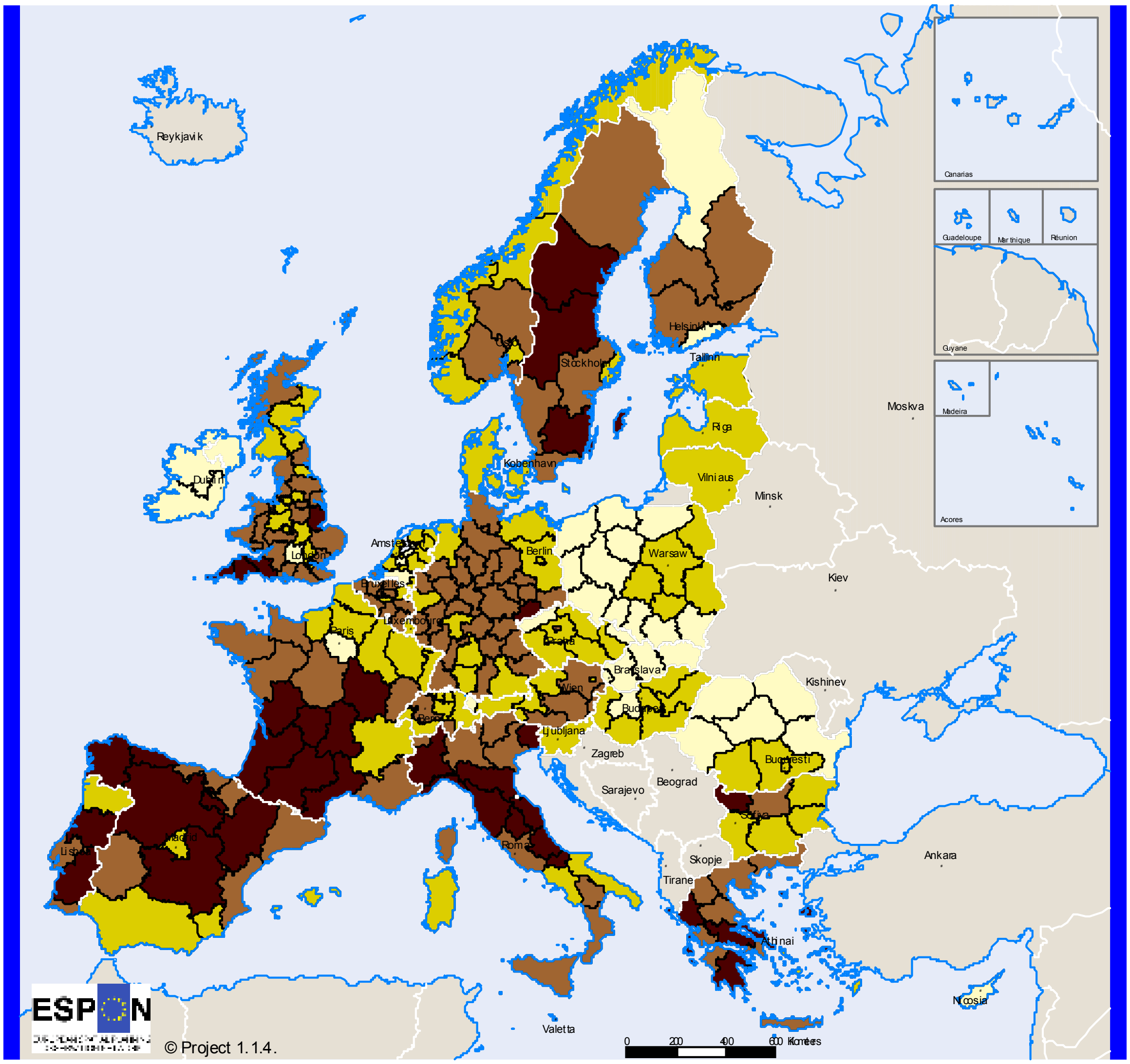
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Map 10 Ageing in Europe, by NUT 2, 2000/2025/2050 (Model B1)

a) Ageing in Europe, by NUT 2, 2000 (Model B1)

Trends of ageing by NUT2



Population with 65 years and more, 2000 (%)
Model B1

- 8.9 to 13.28
- 13.2 to 15.7
- 15.7 to 18.7
- 18.7 to 24.7

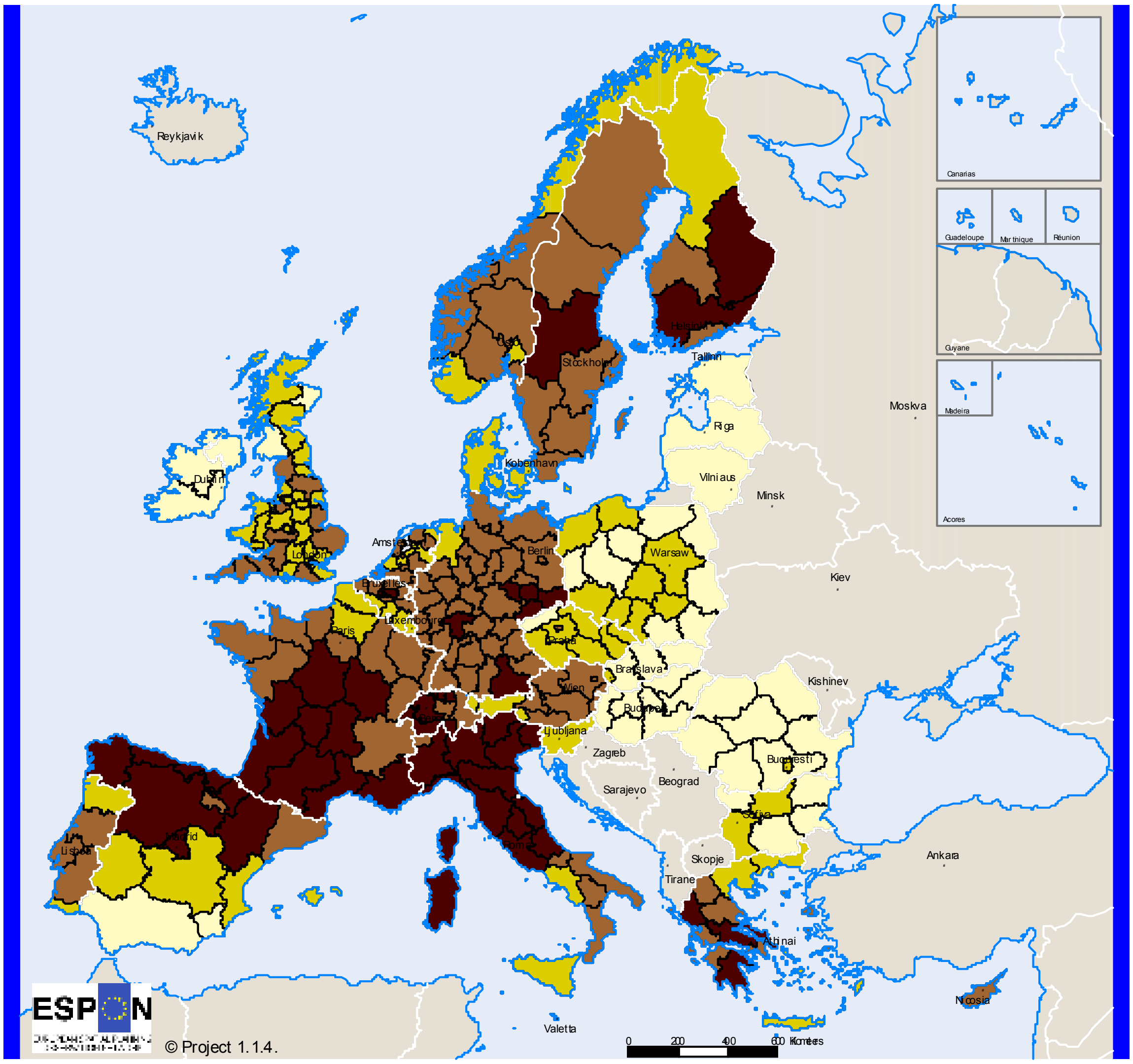
© EuroGeographics Association for the administrative boundaries

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

b) Ageing in Europe, by NUT 2, 2025 (Model B1)

Trends of ageing by NUT2



Population with 65 years and more, 2025 (%)
Model B1

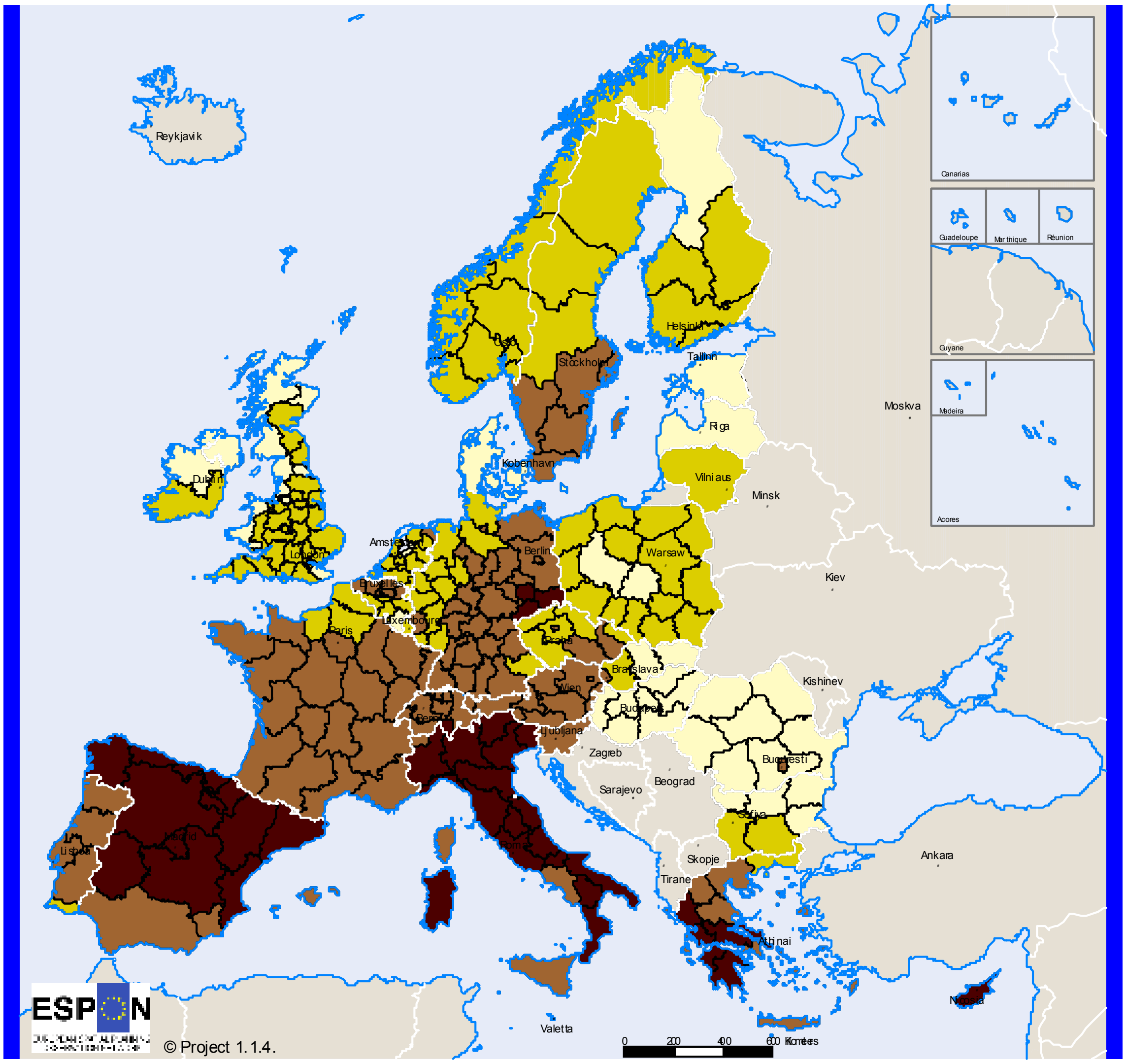
12.1 to 17.7
17.7 to 20.2
20.2 to 22.3
22.3 to 25.7

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) Ageing in Europe, by NUT 2, 2050 (Model B1)

Trends of ageing by NUT2



Population with 65 years and more, 2050 (%)
Model B1

- 15.8 to 19.6
- 19.6 to 22.0
- 22.0 to 24.8
- 24.8 to 29.7

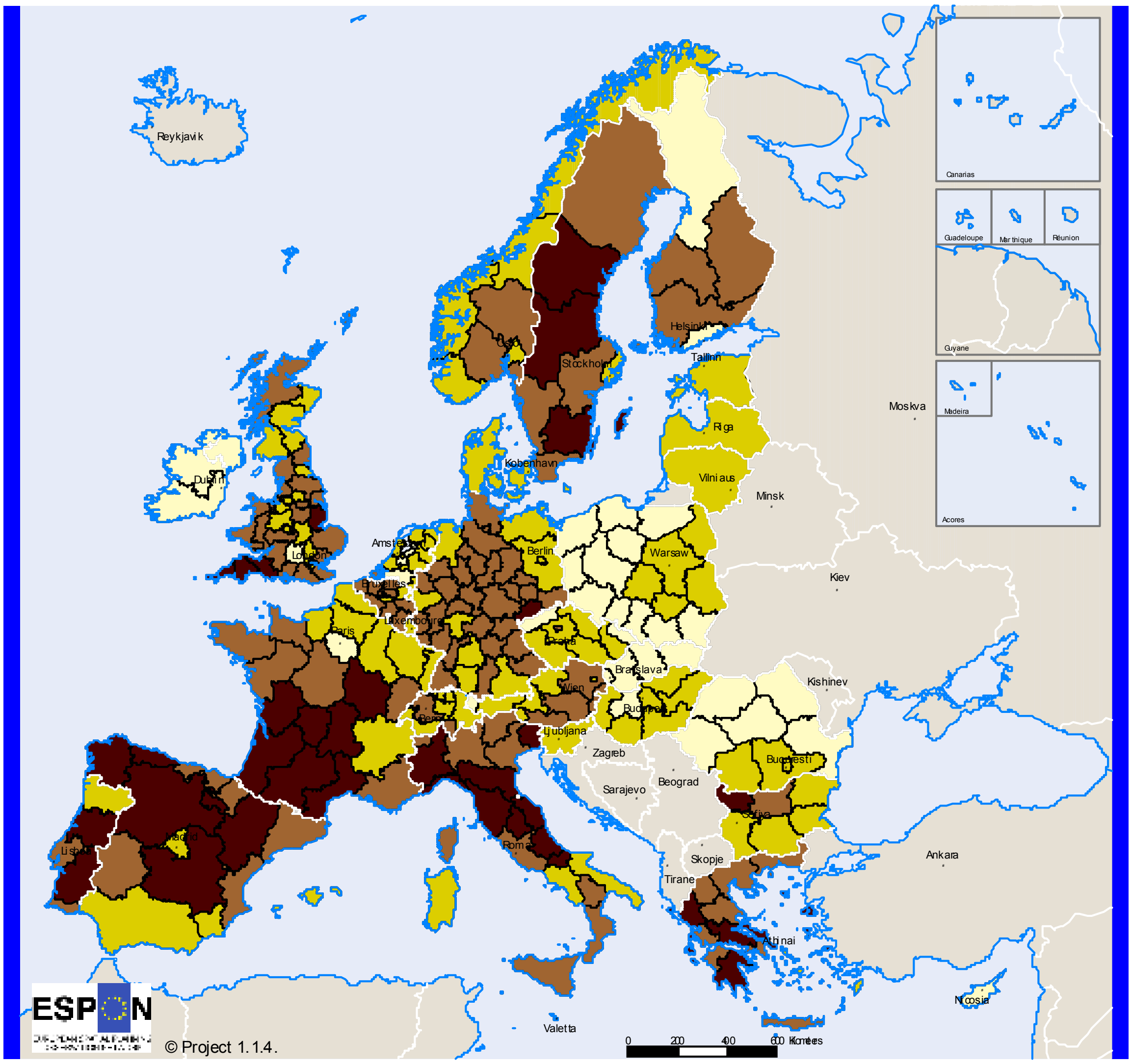
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Map 11 Ageing in Europe, by NUT 2, 2000/2025/2050 (Model B2)

a) Ageing in Europe, by NUT 2, 2000 (Model B2)

Trends of ageing by NUT2



Population with 65 years and more, 2000 (%)
Model B2

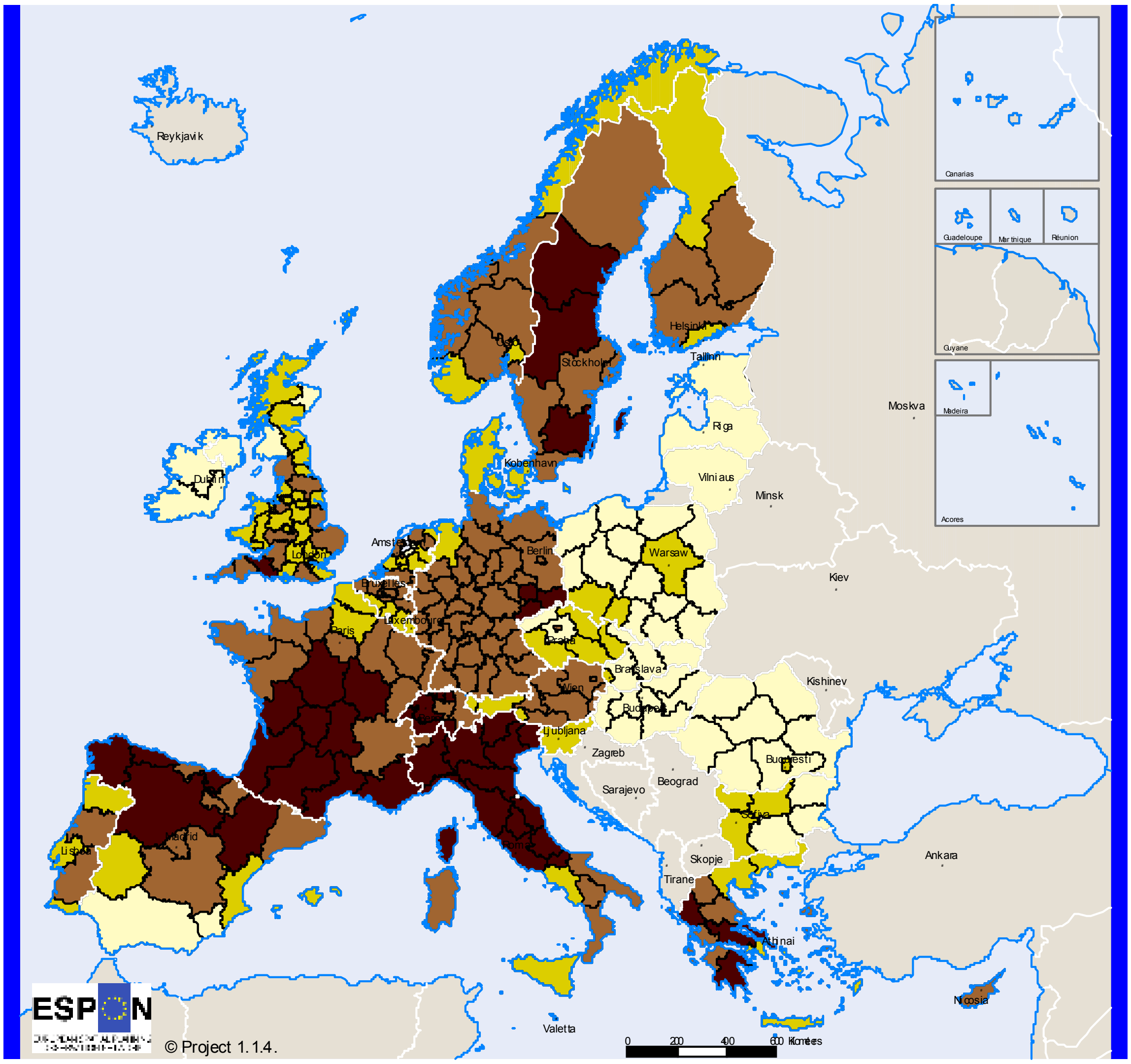
	8.9 to 13.2
	13.2 to 15.7
	15.7 to 18.7
	18.7 to 24.7

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

b) Ageing in Europe, by NUT 2, 2025 (Model B2)

Trends of ageing by NUT2



Population with 65 years and more, 2025 (%)
Model B2

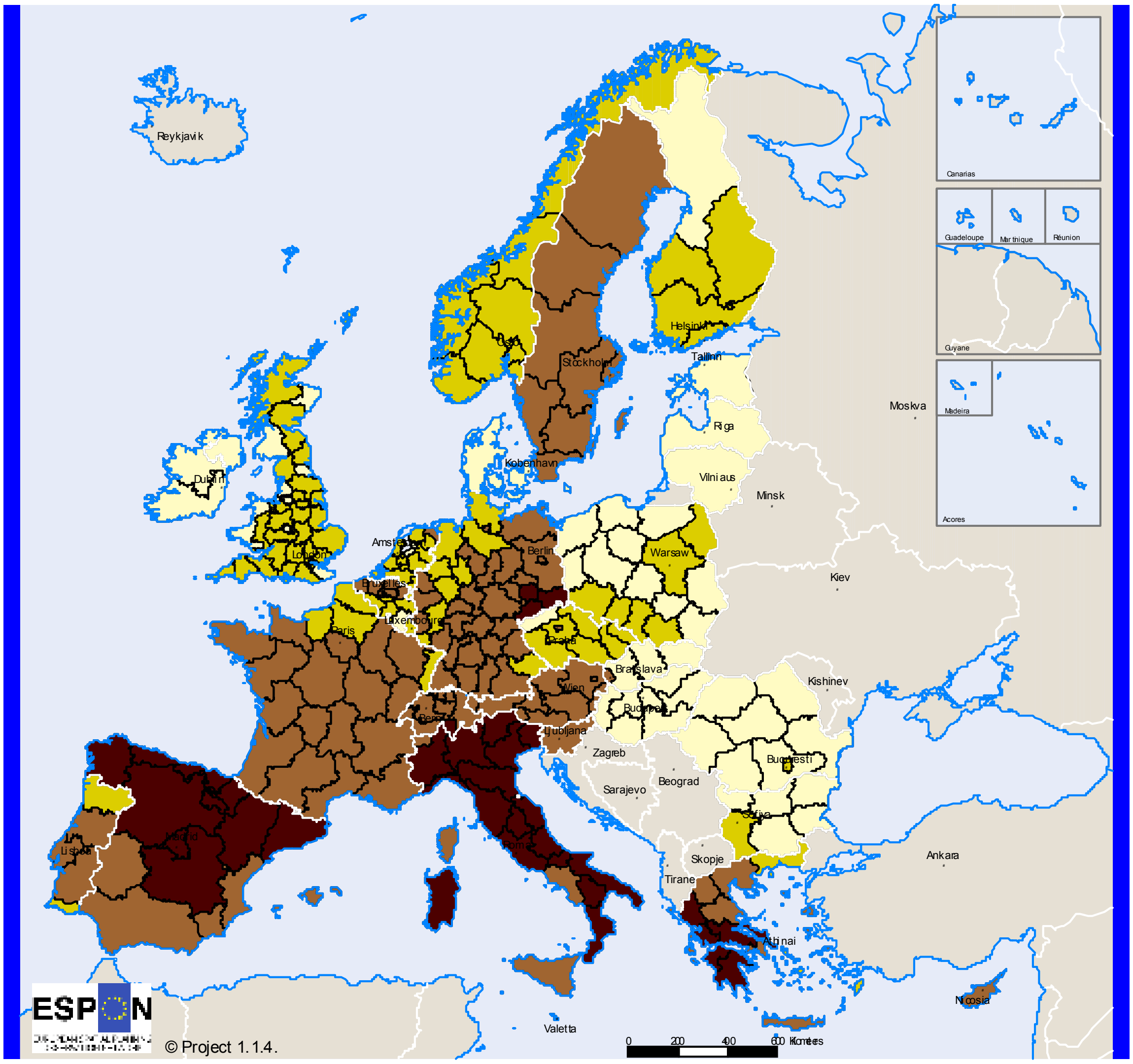
- 12.4 to 17.6
- 17.6 to 19.9
- 19.9 to 21.7
- 21.7 to 25.4

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) Ageing in Europe, by NUT 2, 2050 (Model B2)

Trends of ageing by NUT2



Population with 65 years and more, 2050 (%)
Model B2

15.1 to 19.3
19.3 to 21.4
21.4 to 24.0
24.0 to 27.8

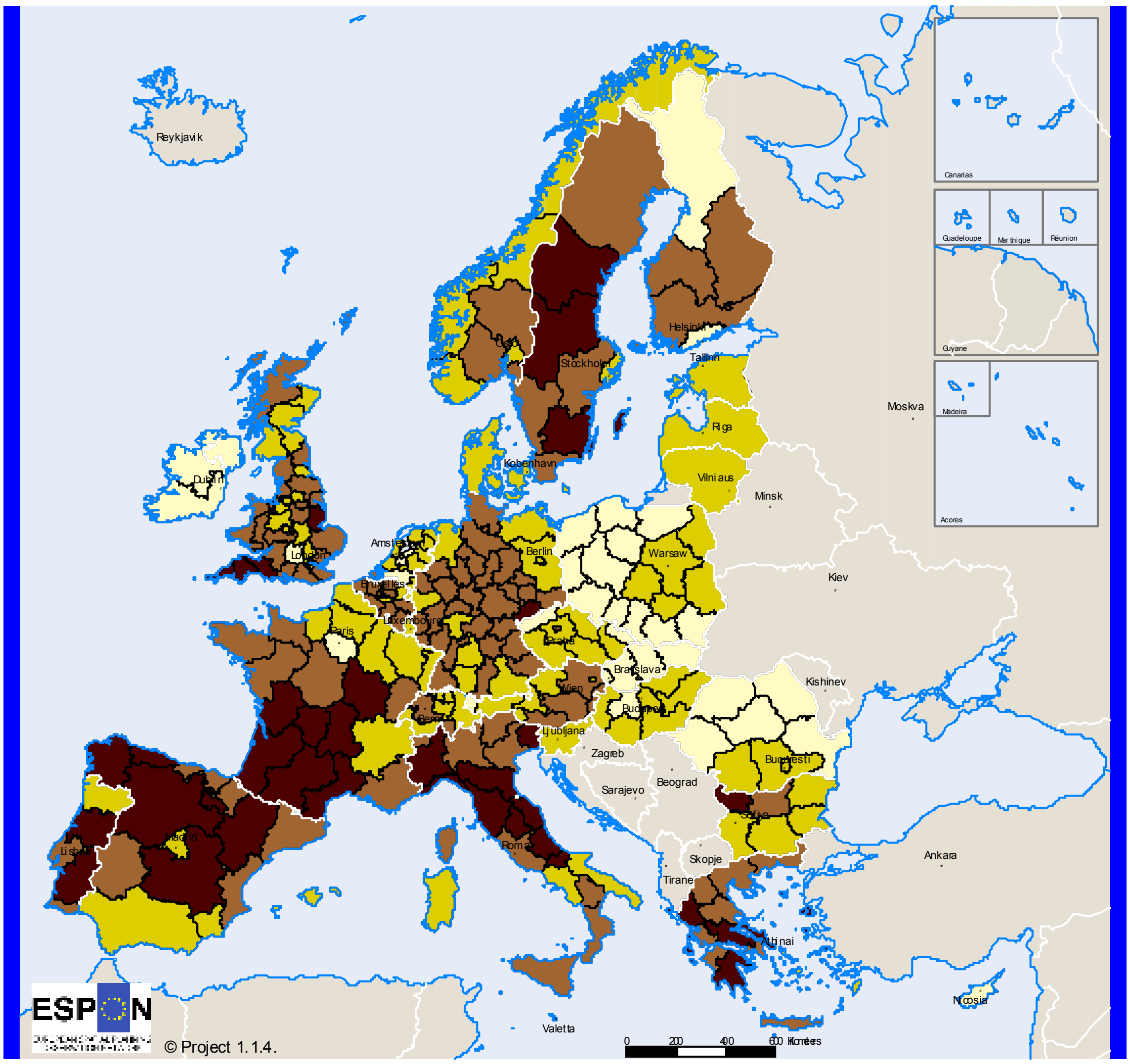
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Map 12 Ageing in Europe, by NUT 2, 2000/2025/2050 (Model B3)

a) Ageing in Europe, by NUT 2, 2000 (Model B3)

Trends of ageing by NUT2



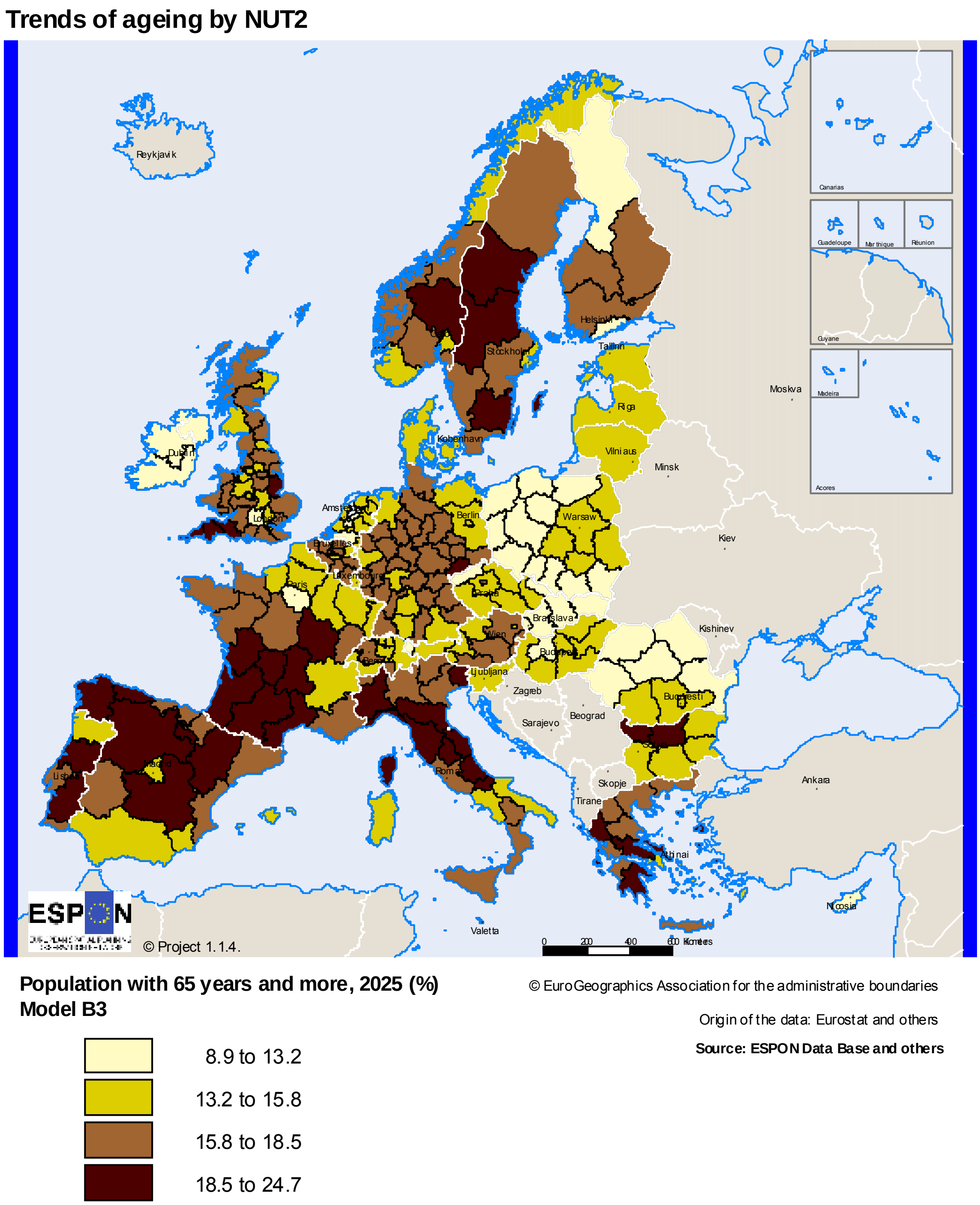
Population with 65 years and more, 2000 (%)
Model B3

- 8.9 to 13.2
- 13.2 to 15.7
- 15.7 to 18.7
- 18.7 to 24.7

Origin of the data: Eurostat and others

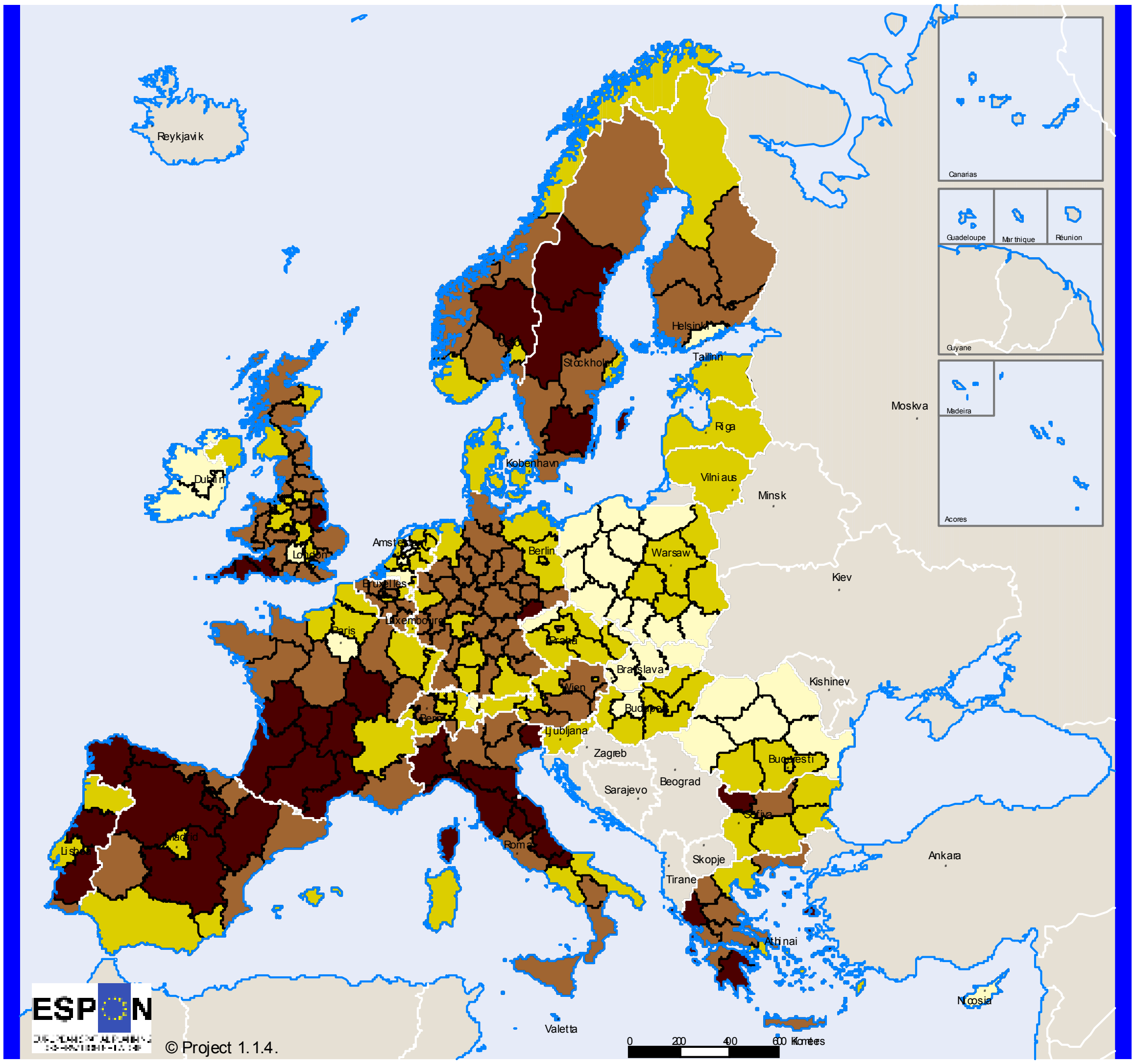
Source: ESPON Data Base and others

b) Ageing in Europe, by NUT 2, 2025 (Model B3)



c) Ageing in Europe, by NUT 2, 2050 (Model B3)

Trends of ageing by NUT2



Population with 65 years and more, 2050 (%)
Model B3

- 9.1 to 13.2
- 13.2 to 15.7
- 15.7 to 18.8
- 18.8 to 24.4

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

A first look at the results at the NUT 2 level shows that the B1 and B2 models indicate the presence of intense ageing processes all over Europe, even though these two scenarios allow for significant migration inflows, in order to make up for that part of the current total population (B1) or labour force (B2) that will be lacking in Europe, as compared with the results yielded by the A model..

Both models show an accelerating ageing process in the southern and central Europe, which is especially evident in Greece, Italy, Spain, Austria, Germany (the new eastern Lander) and Switzerland. The regions in which the process will seemingly take place at lower pace will be located in Ireland, Hungary, the United Kingdom, Romania and Bulgaria (map 10 and map 11).

The most obvious difference between the B1 and B2 models (constant population *versus* constant labour force) is that the intensity of the ageing process is slightly greater in the B1model, and that the most pronouncedly aged regions are located in Spain in one case (B1), and in Italy in the other (B2).

Evolution of the Potential Support Ratio (PSR)

The PSR will also experience a sharp decrease. The central trend, as illustrated by the results of the A model, will lead to the ratio of people inside the working age to those in retirement to fall to almost half its present value. In the B1 and B2 models, the decrease is less intense due to the beneficial effect of the migrant newcomers, but the figures remain worrisome nonetheless. For the countries of the EU29, the ratio of the people inside the working age to those in retirement drops from 4.31 in 2000 to 2.80 and 2.93, respectively, in 2050.

Table 23 Evolution of the Potential Support Ratio (PSR) in Europe

EU15	Scenarios				
	A	B0	B1	B2	B3
2000	4.11	4.11	4.11	4.11	4.11
2025	2.88	3.04	3.04	3.14	4.12
2050	2.13	2.38	2.68	2.80	4.13

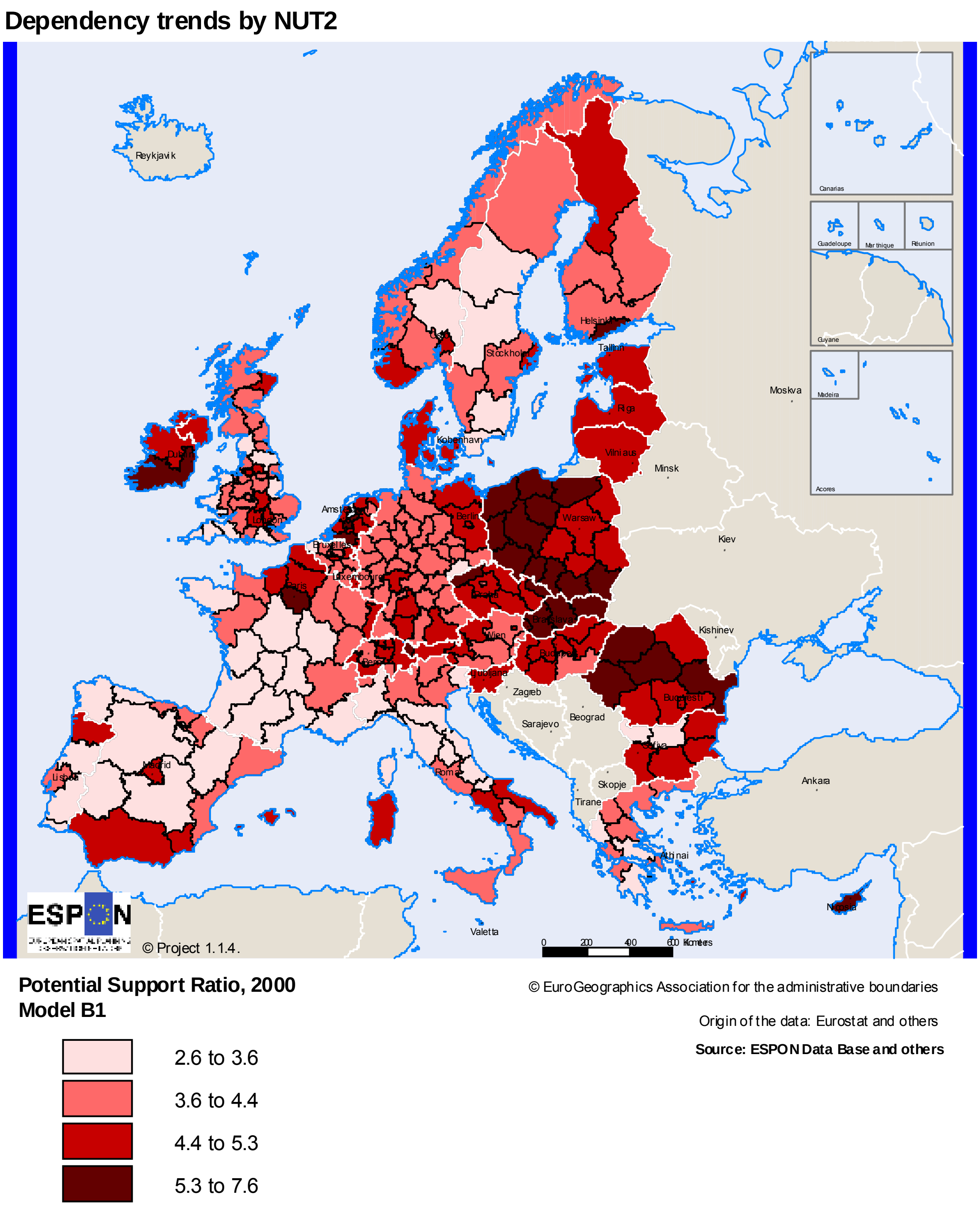
EU25	Scenarios				
	A	B0	B1	B2	B3
2000	4.27	4.27	4.27	4.27	4.27
2025	2.98	3.12	3.15	3.24	4.30
2050	2.19	2.41	2.76	2.89	4.31

EU29	Scenarios				
	A	B0	B1	B2	B3
2000	4.31	4.31	4.31	4.31	4.31
2025	3.02	3.15	3.20	3.29	4.33
2050	2.21	2.41	2.80	2.93	4.34

In all of these models, the evolution between 2000 and 2050 is neither proportional nor showing any other linear relation. This has already been shown in the case of the results yielded by the A model, and means that differences in the age structure generally lead to differential behaviour by the various countries and regions.

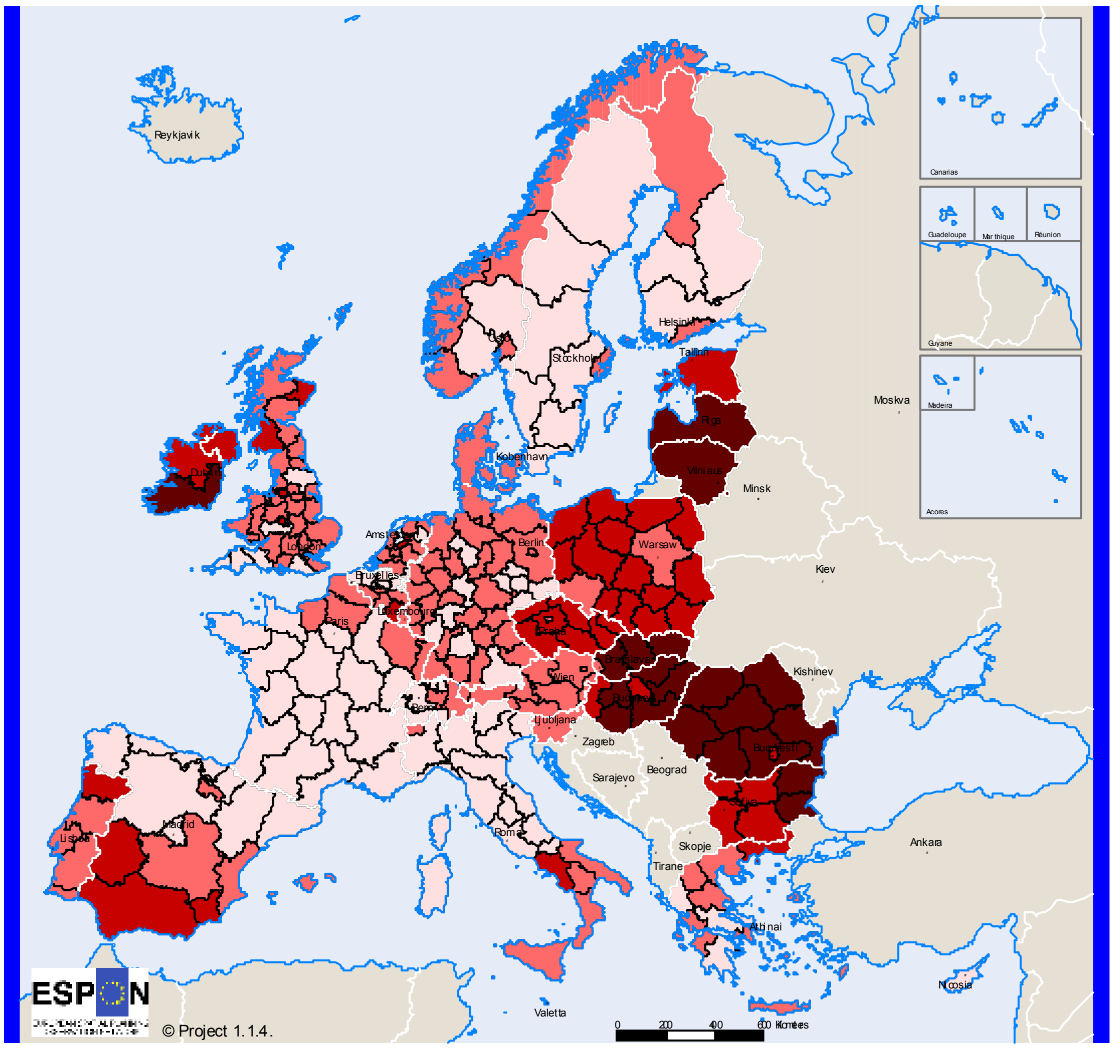
Map 13 PSR in Europe, by NUT 2, 2000/2025/2050 (Model B1)

a) PSR in Europe, by NUT 2, 2000 (Model B1)



b) PSR in Europe, by NUT 2, 2025 (Model B1)

Dependency trends by NUT2



Potential Support Ratio, 2025
Model B1

2.5 to 3.0
3.0 to 3.4
3.4 to 4.1
4.1 to 5.6

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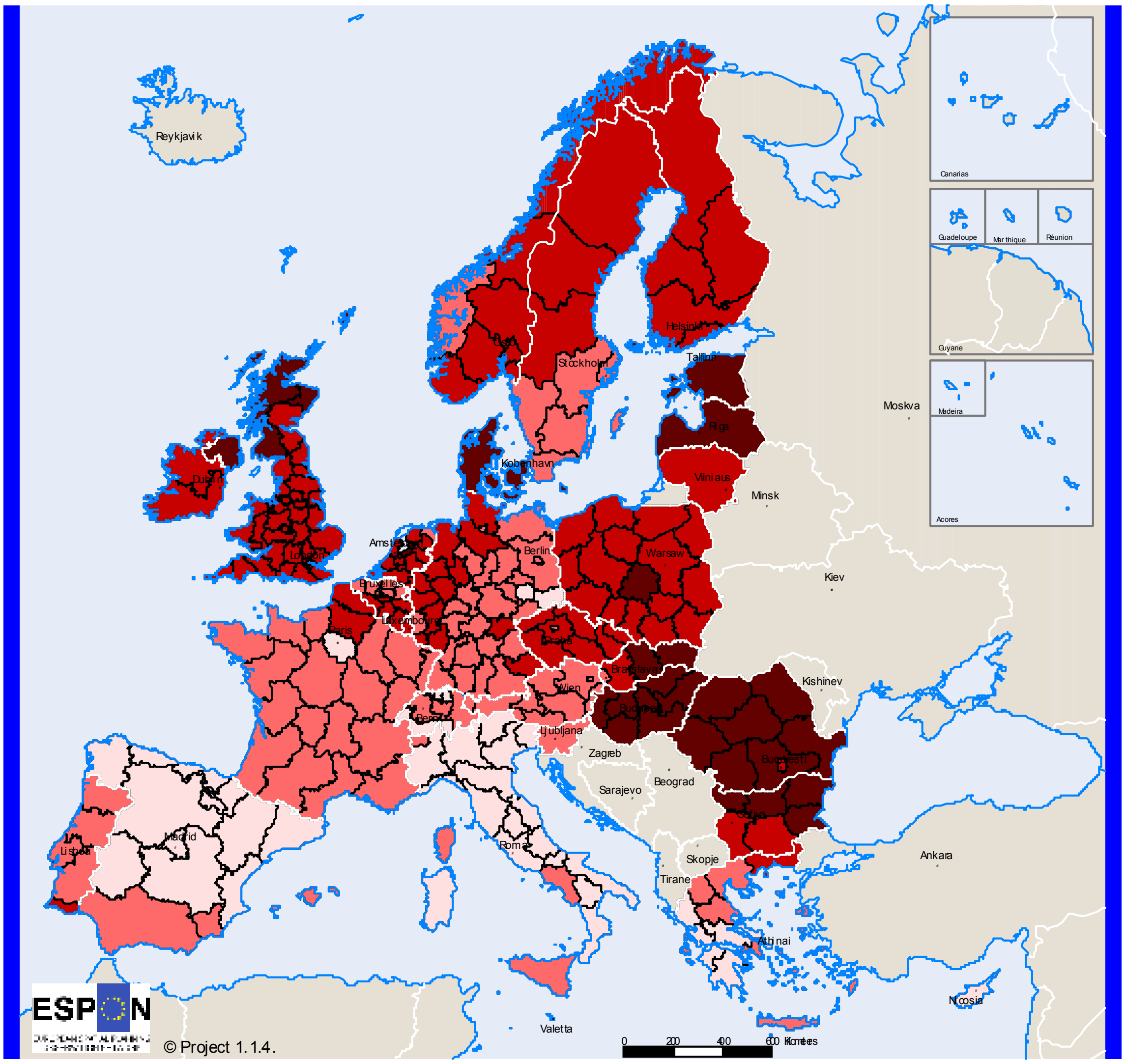
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) PSR in Europe, by NUT 2, 2050 (Model B1)

Dependency trends by NUT2



Potential Support Ratio, 2050
Model B1

- 2.0 to 2.5
- 2.5 to 2.9
- 2.9 to 3.4
- 3.4 to 4.2

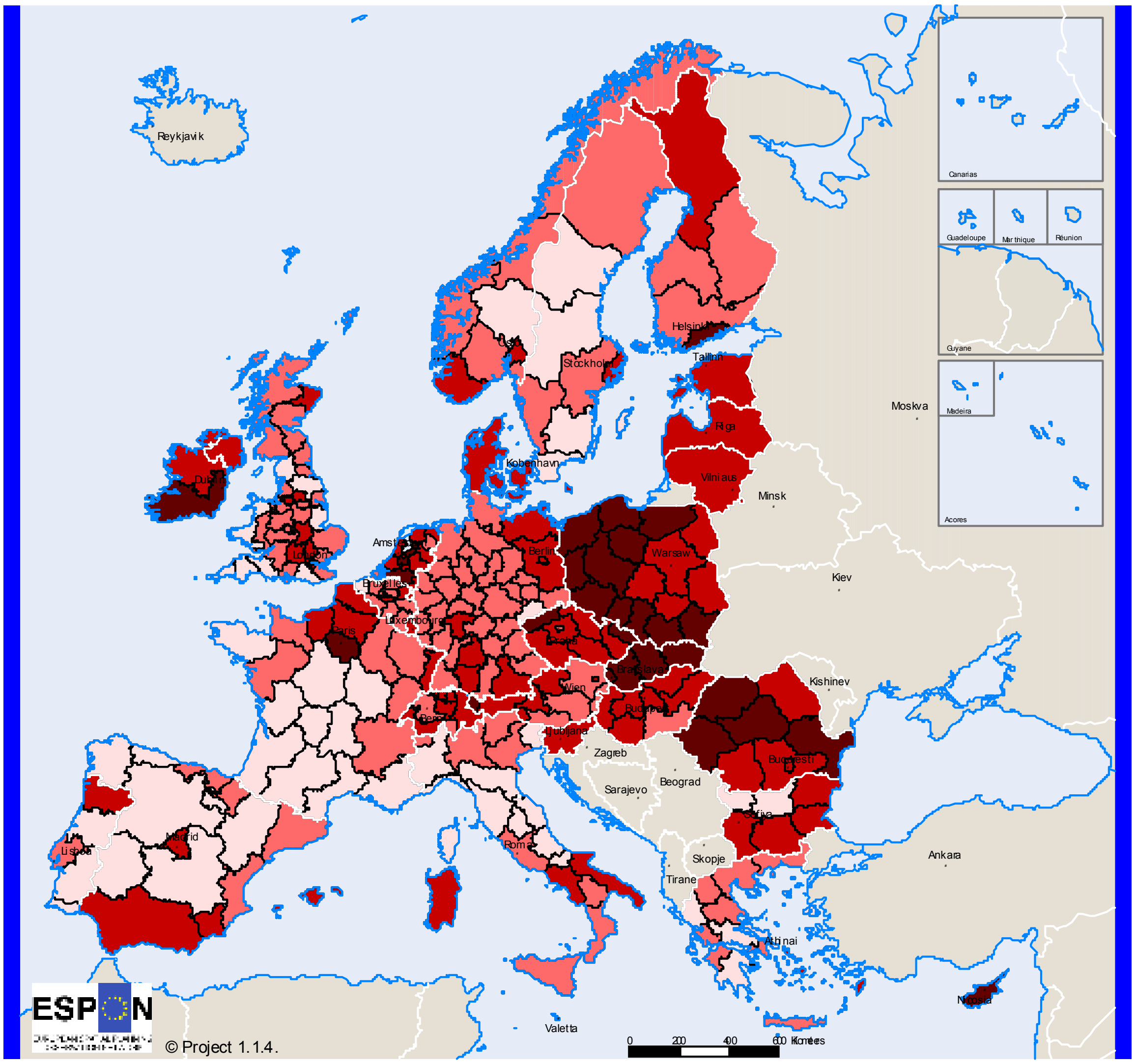
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Map 14 PSR in Europe, by NUT 2, 2000/2025/2050 (Model B2)

a) PSR in Europe, by NUT 2, 2000 (Model B2)

Dependency trends by NUT2



Potential Support Ratio, 2000
Model B2

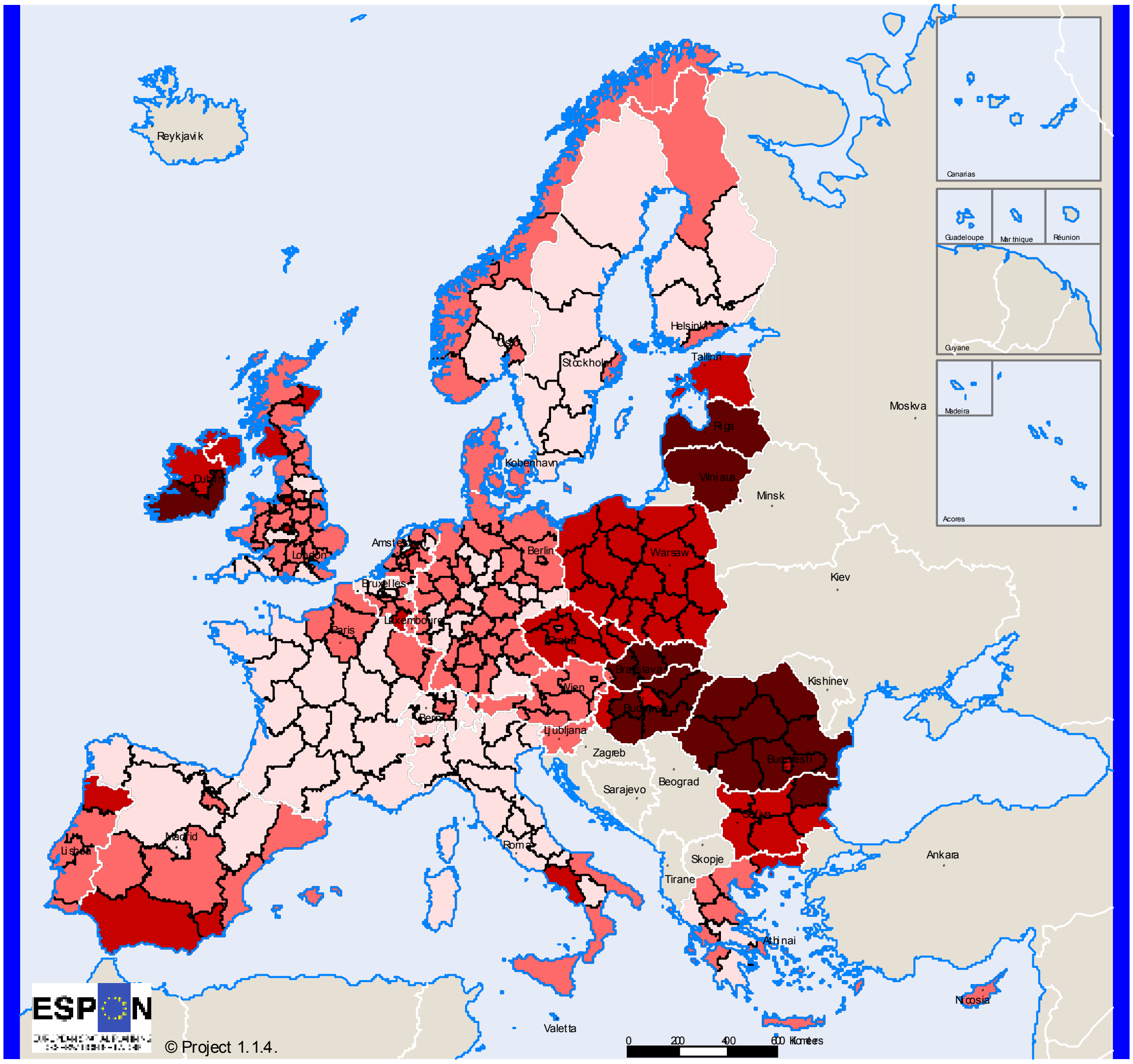
- 2.6 to 3.6
- 3.6 to 4.4
- 4.4 to 5.3
- 5.3 to 7.6

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

b) PSR in Europe, by NUT 2, 2025 (Model B2)

Dependency trends by NUT2



Potential Support Ratio, 2025
Model B2

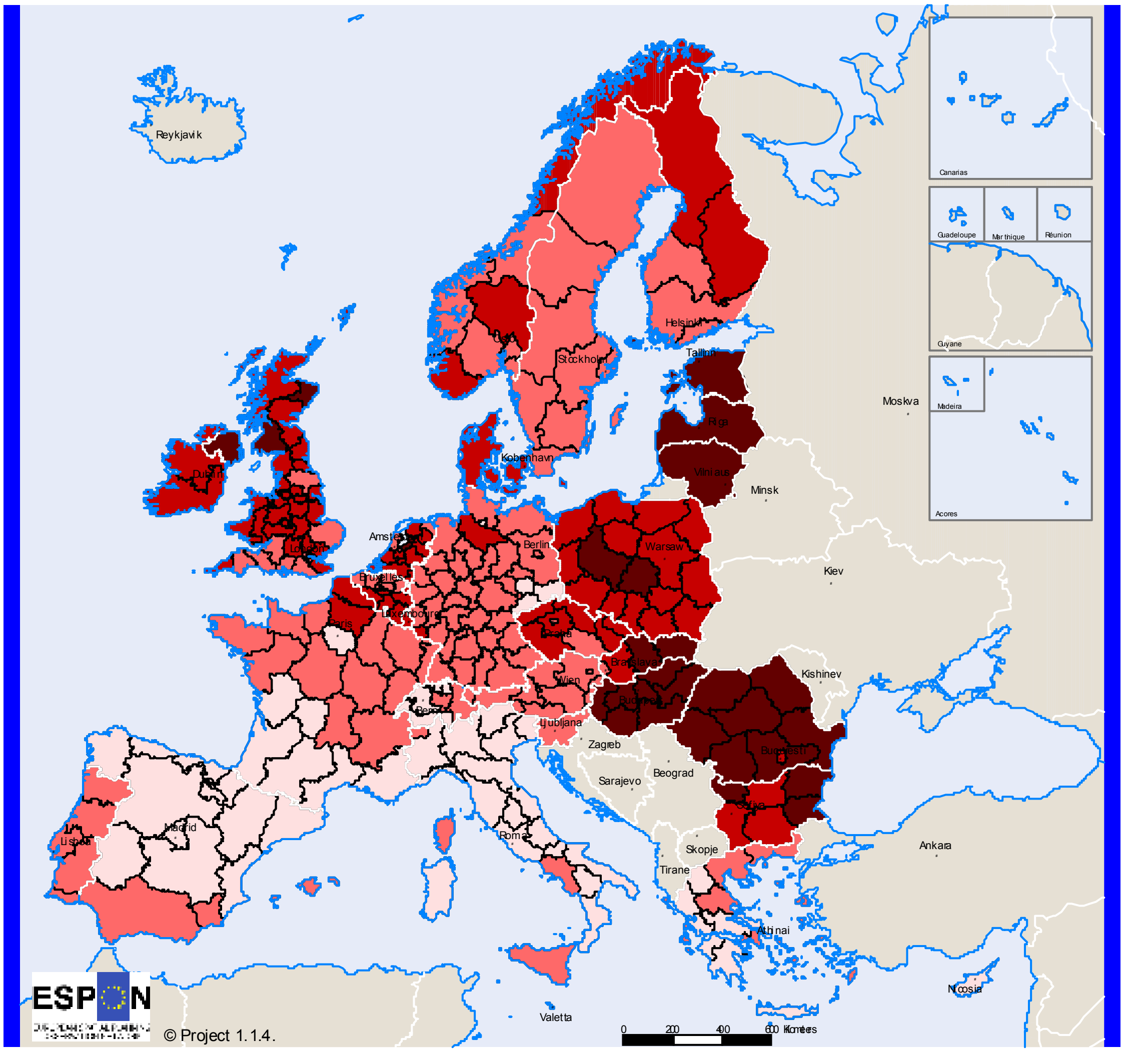
- 2.5 to 3.1
- 3.1 to 3.5
- 3.5 to 4.1
- 4.1 to 5.5

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

c) PSR in Europe, by NUT 2, 2050 (Model B2)

Dependency trends by NUT2



Potential Support Ratio, 2050
Model B2

2.2 to 2.7
2.7 to 3.1
3.1 to 3.5
3.5 to 4.4

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Although the B1 and B2 models yield similar overall results for 2025 and 2050, we do find significant geographic differences between the countries and the regions in the two models (maps 13 and 14).

At the start of the period under analysis, i.e. in the year 2000, the best values of the PSR could be found in Ireland, south-eastern Spain and, in the eastern border of the EU29, Poland, northern Romania, the Baltic countries and southern Finland. By 2050, all the country figures will have experienced a sharp decrease, while the relative positions of the regions will have changed as well. By then, the best values of the PSR will be found in the Hungarian regions, western Romania and Latvia.

5.2.3 Results of the C models

The C models are based on a series of different assumptions regarding the relative productivity changes and therefore illustrate the impact of relatively small productivity gains or losses upon the overall demographic trends. In that sense, they are complementary to the B2 model, the only one until now in which the relationship between the demographic evolution and the level of production was analysed, keeping the labour force constant.

The C models yield a series of values that, for the various groups of European countries (EU15, EU25 and EU29) and for each country and NUT 2 region, show the consequences of changes in productivity levels, thereby showing the demographic limits to policy intervention that arise from productivity increases or decreases.

Population
In the following tables (24 to 28), we present projections of the European population (EU15, EU25 and EU29) in 2025 and 2050, assuming the present specific mortality and fertility rates and relative changes in productivity of +1%, +0.5%, 0%, -0.5% and -1%, with regard to the C1, C3, B2, C4 and C2 models, respectively.

The tables show that changes in productivity will have a relatively small impact upon the general evolution of the population stock. Indeed, our model shows that a productivity growth rate 1% above the growth rate of the product will lead to a total population decrease of 1,519 thousands (roughly one and a half million) in the EU15, 1.884 million in the EU25 and 2.054 million in the EU29. On the other hand, a negative differential of equivalent absolute size (-1%) in productivity variation will have slightly smaller absolute effects, of plus 1,504 thousands, 1,867 and 2,037, respectively.

In the second half of the period under analysis, i.e. between 2025 and 2050, we find that the effect upon the population becomes more important, which is mainly due to the reproductive effect of the new in-migrants, but continues to be quite small. In fact, the output of the models show that a positive differential of 1% between the annual growth rate of productivity and that of the product will, by 2050, lead to population decreases of 4,376 thousands in the EU15, 5,351 in the EU25 and 5,884 in the EU29. As in the previous case, the impact of the equivalent negative differential of -1% is also somewhat smaller: the population *increase* brought about in such an event will amount to 4,296, 5,256 and 2,780 millions, respectively.

In general, it can be said that, by 2050, the effect of a 1% gain or a loss in the relation between the relative annual variations of productivity and product will affect the population of the EU15 by more or less 4.3 millions, and the population of the ten accession countries by nearly a million.

Table 24 Population projections, in thousands (Model C1- Plus 1% productivity level)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	387,853	397,324	0.11
EU 25	451,629	464,960	474,933	0.10
EU 29	493,878	507,273	518,089	0.10

Source: Eurostat, model

Table 25 Population projections, in thousands (Model C3- Plus 0.5% productivity level)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	388,614	399,522	0.12
EU 25	451,629	465,904	477,620	0.11
EU 29	493,878	508,302	521,044	0.11

Source: Eurostat, model

Table 26 Population projections, in thousands (Model B2- constant labour force)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	389,372	401,700	0.13
EU 25	451,629	466,844	480,284	0.12
EU 29	493,878	509,327	523,973	0.12

Source: Eurostat, model

Table 27 Population projections, in 1000s (Model C4- Minus 0.5% productivity level)

Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	390,126	403,858	0.14
EU 25	451,629	467,779	482,924	0.13
EU 29	493,878	510,347	526,876	0.13

Source: Eurostat, model

Table 28 Population projections, in thousands (Model C2- Minus 1% productivity level)

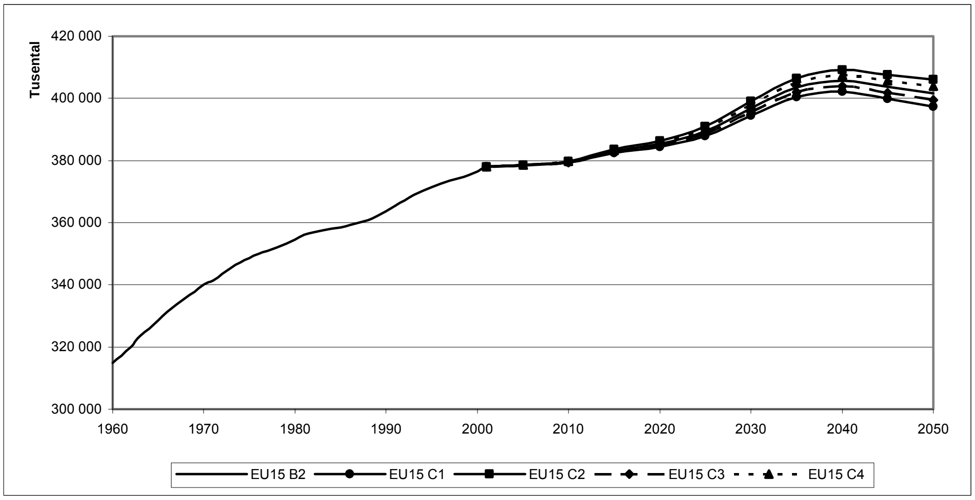
Region	Population			Average annual change (%)
	2000	2025	2050	
EU 15	376,539	390,876	405,996	0.15
EU 25	451,629	468,711	485,540	0.14
EU 29	493,878	511,364	529,753	0.14

Source: Eurostat, model

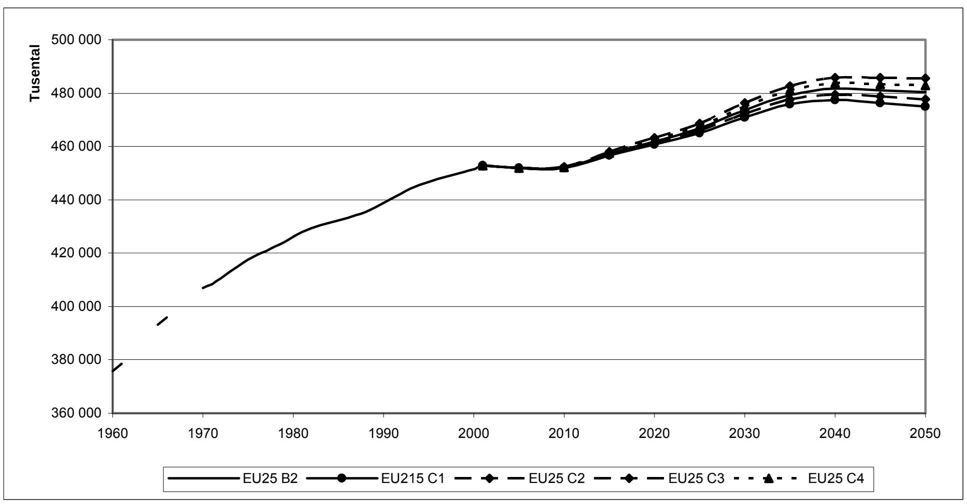
Although, as might be expected, the evolution of the European population between 2000 and 2050 in the C models closely resembles that in the B2 scenario, it does tend to diverge after some time. The general pattern of alternating periods of population increase with times of relative stagnation is a consequence of the changes in the age structure and fertility, as a consequence of migration flows and of the eventual entrance of the second generation migrants in the labour market after some time.

Figure 22 Population Evolution & Projection 1960-2050 (Models B2, C1, C2, C3, C4)

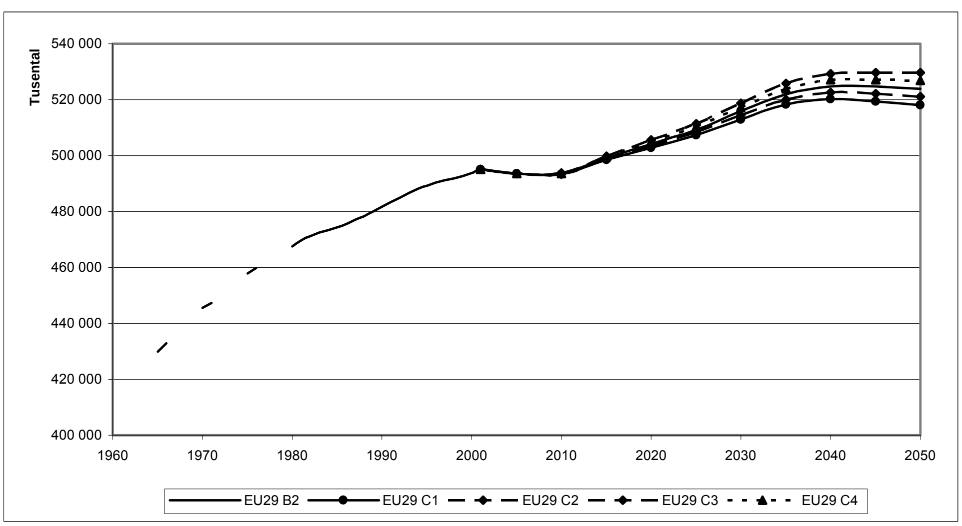
EU15



EU25



EU29



The periods between 2000 and 2010 and from the year 2040 onwards are worth highlighting: in these periods, the relative weight of the European labour force in the total population will increase, due to the rejuvenation that will ensue from the large waves of immigration. This phenomenon will be felt more intensely in the ten accession countries and in the other four of the EU 29 – Switzerland, Norway, Bulgaria and Romania – than in the countries of the EU15.

The results also indicate that, after a time of historically high population increase, Europe is undergoing one of the more favourable periods in its demographic history. However, things will inevitably change in the near future, due first to the ageing process and then to the eventual passing away of those elderly.

Ageing
In the following tables (29 to 33), we present the share of the individuals over the age of 65 in the various groups of European countries (EU15, EU25 and EU29), for the years of 2025 and 2050, based on the same assumptions as in the preceding case.

Table 29 Population over the age of 65 (%) (Model C1- Plus 1% productivity level)

Region	Share of the individuals aged 65+ (%)			Δ (%) 2000-2050
	2000	2025	2050	
EU 15	16.3	20.7	22.6	38.7
EU 25	15.7	20.1	22.0	40.1
EU 29	15.6	19.9	21.8	39.7

Source: Eurostat, model

Table 30 Population over the age of 65 (%) (Model C3- Plus 0.5% productivity level)

Region	Share of the individuals aged 65+ (%)			Δ (%) 2000-2050
	2000	2025	2050	
EU 15	16.3	20.6	22.5	38.0
EU 25	15.7	20.1	21.9	39.5
EU 29	15.6	19.9	21.7	39.1

Source: Eurostat, model

Table 31 Population over the age of 65 (%) (Model B2- constant labour force)

Region	Share of the individuals aged 65+ (%)			Δ (%) 2000-2050
	2000	2025	2050	
EU 15	16.3	20.6	22.4	37.4
EU 25	15.7	20.0	21.9	39.5
EU 29	15.6	19.8	21.7	39.1

Source: Eurostat, model

Table 32 Population over the age of 65 (%) (Model C4- Minus 0.5% productivity level)

Region	Share of the individuals aged 65+ (%)			Δ (%) 2000-2050
	2000	2025	2050	
EU 15	16,3	20,6	22,3	36,8
EU 25	15,7	20,0	21,8	38,9
EU 29	15,6	19,8	21,6	38,5

Source: Eurostat, model

Table 33 Population over the age of 65 (%) (Model C2- Minus 1% productivity level)

Region	Share of the individuals aged 65+ (%)			Δ (%) 2000-2050
	2000	2025	2050	
EU 15	16,3	20,5	22,3	36,8
EU 25	15,7	20,0	21,7	38,2
EU 29	15,6	19,8	21,6	38,5

Source: Eurostat, model

The four models show little differences with regards to the strong ageing process. Assuming the B2 model as central, a 1% gain in terms of productivity, as compared with the product variation, will by 2050 have increased the population over the age of 65 by 0.2 % in the EU15 and by 0.1% in the EU25 and EU29. On the other hand, a productivity loss of 1% will decrease the elderly population by 0.1% in the EU15 and by 0.2% in the EU25 and EU29.

Productivity changes below the variation of the product will bring about the need for larger numbers of migrants in order for the ageing process to be slightly curbed as a consequence of the rejuvenating effect of migration upon the age structure. Conversely, productivity gains will reduce the need for labour and the amount of migrants required. Consequently, the ageing process will be felt more intensely.

In any case, the ageing process will be intense, especially in the first period under analysis and in the case of the accession countries. It should also be pointed out that productivity gains will have a more significant impact in terms of ageing in the case of the countries of the EU15 than in the accession countries. On the other hand, a decrease in productivity will contribute more to rejuvenating the age structure of the enlargement countries than that of the EU15.

Evolution of the Potential Support Ratio

In the following tables (34 to 38), we present projections of the potential support ratio (PSR) in 2025 and 2050, for the various groups of European countries (EU15, EU25 and EU29), based on the same assumptions as in the case of the C and B2 models.

Table 34 Potential Support Ratio (Model C1- Plus 1% productivity level)

Region	PSR		
	2000	2025	2050
EU 15	4.11	3.13	2.77
EU 25	4.27	3.23	2.86
EU 29	4.31	3.28	2.90

Source: Eurostat, model

Table 35 Potential Support Ratio (Model C3- Plus 0,5% productivity level)

Region	PSR		
	2000	2025	2050
EU 15	4.11	3.13	2.79
EU 25	4.27	3.24	2.88
EU 29	4.27	3.28	2.91

Source: Eurostat, model

Table 36 Potential Support Ratio (Model B2- constant labour force)

Region	PSR		
	2000	2025	2050
EU 15	4.11	3.14	2.80
EU 25	4.27	3.24	2.89
EU 29	4.31	3.29	2.93

Source: Eurostat, model

Table 37 Potential Support Ratio (Model C4- Minus 0,5% productivity level)

Region	PSR		
	2000	2025	2050
EU 15	4.11	3.14	2.81
EU 25	4.27	3.25	2.90
EU 29	4.31	3.29	2.94

Source: Eurostat, model

Table 38 Potential Support Ratio (Model C2- Minus 1% productivity level)

Region	PSR		
	2000	2025	2050
EU 15	4.11	3.15	2.82
EU 25	4.27	3.25	2.91
EU 29	4.31	3.30	2.95

Source: Eurostat, model

The reduction in the PSR, as compared to the situation in 2000, will be very significant: more than 1.4 active persons for each elderly person in the EU29 countries as a whole in the C1 scenario and close to 1.3 in the best case scenario for the EU15 – the C2 model.

In all scenarios, the fall in the PSR will be around 1/3 of the figures in 2000, regardless of the group of countries considered. The enlargement countries, as well as the other four countries (Switzerland, Romania, Norway and Bulgaria) that exhibited higher PSRs in 2000, will still have higher values than the EU15 in 2050.

If we compare the different scenarios, we find that assuming a 1% differential productivity gain over the variation of the product yields a reduction in the PSR from 4.11 to 2.77 in the EU15, from 4.27 to 2.86 in the EU25 and from 4.31 to 2.90 in the EU29. On the other hand, a 1% relative decline in productivity in relation with the variation in the product will lead to lesser decreases in the PSR, to 2.82 in the EU15, 2.91 in the EU25 and 2.95 in the EU29.

6 Concluding remarks from the models

The outputs of the various models provide us with a general picture of the trends in the near future, as well as an idea of the relative intensity of the phenomena in the various different regions. Considerable ageing and even more considerable decreases in the PSR (Potential Support Ratio) are certainly among the most significant of these phenomena. First, let us look at the main trends in terms of the demographic variables.

6.1 Fertility

In all the models, we have assumed constant specific birth rates. Therefore, the differences that appear in the models in terms of the general fertility rates are a result of the initial differences in the age structure of the various regions and of their differential evolution. These slight differences shown by the models should be looked upon as an indicator of larger trends that are present and will be made manifest in each region.

It is important to stress that the crude birth rates in the ten enlargement countries are clearly below those in the countries of the EU15. This brings the issue of the origin of the migratory flows (which are so necessary for the Western and Northern Europe countries) to the fore.

Table 39 Crude Birth Rates in Europe

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67
2025	8.88	9.01	8.86	8.91	9.59	8.91	8.91	8.91	8.91
2050	8.62	8.85	8.95	9.09	9.56	9.07	9.10	9.08	9.05
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.48	10.48	10.48	10.48	10.48	10.48	10.48	10.48	10.48
2025	8.93	9.05	8.91	8.99	9.68	8.99	8.99	8.99	8.99
2050	8.61	8.82	8.96	9.07	9.42	9.05	9.08	9.06	9.07
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47
2025	8.93	9.04	8.91	8.99	9.66	8.99	8.99	8.99	8.99
2050	8.60	8.80	8.94	9.06	9.45	9.05	9.07	9.05	9.07

Another important aspect is the fact that in the A model, there is a much greater fall in the birth crude birth rate than is the case in any of the other models. This clearly illustrates the impact of the migration flows upon the characteristics of the initial population by increasing the number of births - as demonstrated by the results of the B3 model, in which significant immigrant flows also lead to larger birth rates. The results also show the limits of that impact, which are determined by the actual number of immigrants and their respective demographic characteristics. It is also worth pointing out that for all the periods under scrutiny, the B1 model tends to yield smaller values than B2, which provides an indication of the importance of the migration of labour *vis-à-vis* the total population. As expected, the results of the C models are similar or very close to those yielded by the B2 model.

6.2 Mortality

As in the case of fertility, all the models assume constant specific regional mortality rates across the entire period. Therefore, the slight differences between the results yielded by the different scenarios are a result of the initial differences between the regions with regard to the evolution of their age structure. And as with fertility, these slight are especially significant insofar as they provide an indication of larger trends affecting the regional demographic evolution.

The forecasts of the mortality rates in the A model are indeed extraordinary and show what will happen to most European regions in the near future without the effect of immigration: first, a sharp process of population ageing, immediately followed by a strong and sudden increase in mortality as many elderly people arrive at the end of their lives almost simultaneously. However, if we allow migration to occur at its current level, the mortality rates will themselves be brought down to more acceptable levels. That is the case in the other scenarios.

Again, it must be pointed out that the ten enlargement countries perform worse in terms of demography than the others, as is visible in Table 40. In 2050, the estimated mortality rate for the EU25 is always above that for the EU15: 17.98 as compared to 17.73 in the A model, 16.57 (16.18) in the B0 model and 14.42 (14.28) in the B2 model. The results are even worst if we include the remaining four countries that make up the EU29, as their respective mortality rates are even higher.

Table 40 Crude Mortality Rates in Europe

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84
2025	13.42	12.83	12.79	12.45	9.81	12.49	12.41	12.47	12.43
2050	17.73	16.18	14.77	14.28	9.94	14.39	14.18	14.33	14.17
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	9.99	9.99	9.99	9.99	9.99	9.99	9.99	9.99	9.99
2025	13.62	13.10	12.97	12.61	9.85	12.66	12.57	12.64	12.59
2050	17.98	16.57	14.95	14.42	9.94	14.53	14.32	14.48	14.37
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.11	10.11	10.11	10.11	10.11	10.11	10.11	10.11	10.11
2025	13.71	13.22	13.04	12.70	9.95	12.74	12.66	12.72	12.68
2050	18.10	16.78	15.04	14.51	10.04	14.62	14.40	14.56	14.46

As a general trend, we find that the mortality rate will increase substantially between 2000 and 2050 in the case of the A model (without migration): by 80.2% in the EU15, 80.0% in the EU25 and 79.0 in the EU29. It will not increase as much in the case of the B0 model (allowing for the current migration rates), at 64.4%, 65.9% and 66.0%. In the B2 model (constant labour force), the figures are 45.1%, 44.3% and 43.5%. It should be noticed that, even with enough immigration for the labour force to be kept at its current level, the crude mortality rate will increase by around 45%.

6.3 Migration

Only the B and C models allow for an explicit analysis of migration, although the results of the total population in the A model provide us with an important indication of the population lacking in comparison with the population in each region at the beginning of the period, i.e., in the year 2000. It is important to mention that some of the most important results of our work have to do with migration flows. In that respect, the comparison between the capacities of the EU15 and those of the enlargement, including Romania and Bulgaria, will be crucial for understanding the immigration processes and in order to look for sustainable solutions to these problems.

The figures are impressive. In what regards the B models, B1 (which holds the current population constant) shows that the EU15 will need some 700,000 migrants each year in the beginning of the period, double that (more or less 1.5 millions per year) in the middle of the period, and around 2.2 millions by the year 2050. If we compare these results with those from the B0 model (in which the annual migration rate is held constant), we find that the average number of migrants per year will be maintained at the level of 720-750 thousands/year in the EU15, 750-785 thousands/year in the EU25 and 735-780 thousands/year in the EU15[9]. The B2 model (in which it is the labour force that is kept constant) shows a different pattern, with much more immigrants in the first 25 years and less immigration at the end of the period (see table 41). This is a consequence of the effect of the newly arrived immigrants upon the demographic characteristics of the population in general. However, it is the B3 model – which shows the level of immigration required in order to maintain the PSR at its current levels – that seems most startling, if we try to imagine the difficulty of receiving and somehow succeeding in integrating almost ten million people *every year*.

The C models show less dramatic variation, and insofar as they reflect the small variations in productivity around the B2 model, the differences in the results can be used in order to make quantitative forecasts of the effects upon the migration flows of the changes in productivity. Comparing the results of the C1 and C2 models with those of B2, it is possible to estimate the effect upon the level of migration of a 1% variation in productivity rate (whether positive or negative). Therefore, around the year 2025, an overall annual gain of 1% will imply, for the EU15, some 95,000 less immigrants every year, while an equivalent fall in productivity will call for an additional 94,000 immigrants. In the year 2050, those figures will be – 63,000 and 61,000, respectively. For the countries of the EU25, the effect of 1% changes in productivity will be an annual – 116,000 and 115,000 in 2025 and – 97,000 and 96,000 in 2050. Finally, for the EU29, a 1% variation in productivity will imply – 126,000 or +125,000 in 2025 and –110,000 and 107,000 in 2050.

[9] The results of the B0 model (in which the annual migration rate is assumed to be constant in each country and region) are worthy of mention, insofar as the estimated values of the average migration rates after all seem to vary, as a non-expert person might expect. In fact, there are two reasons for the slight differences found: the first one is the fact that we are dealing with average rates for 5-year periods, based on central population estimates; the second is the fact that adding up a series of constant annual rates does not necessarily yield a constant overall rate, due to changes in the relative weight of each country and region.

Table 41 Average annual number of migrants (in thousands)

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	718	718	718	718	718	718	718	718
2025	-	753	1,481	2,180	8,078	2,085	2,274	2,133	2,227
2050	-	717	2,193	1,666	9,654	1,603	1,727	1,635	1,697
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	747	747	747	747	747	747	747	747
2025	-	785	1,834	2,677	10,412	2,561	2,792	2,620	2,735
2050	-	749	2,706	2,422	15,040	2,325	2,518	2,374	2,470
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	735	735	735	735	735	735	735	735
2025	-	777	2,039	2,919	11,296	2,793	3,044	2,856	2,982
2050	-	746	3,009	2,721	16,076	2,611	2,828	2,666	2,775

Table 42 presents the respective annual immigration rates, for the countries of the EU15, EU25 and EU29, for the all models that allow for migration to occur: the B and C models. Alongside the importance of the absolute values and rates presented, as well as the differences between them, which illustrate the effect of each different assumption in terms of the overall behaviour, it is also important to note is that, once again, the situation worsens if we look at the countries of the EU25 instead of the EU15, as higher immigrants rates are required in order to meet the population needs of the enlargement countries, which are even greater than in the EU15 countries.

Table 42 Crude Migration Rate (per 1000 inhabitants)

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91
2025	-	2.00	3.93	5.60	15.13	5.38	5.82	5.49	5.71
2050	-	2.10	5.82	4.15	12.46	4.03	4.25	4.09	4.18
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
2025	-	1.75	4.06	5.73	16.02	5.51	5.96	5.62	5.85
2050	-	1.88	5.99	5.04	16.00	4.90	5.19	4.97	5.11
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
2025	-	1.60	4.13	5.73	16.04	5.51	5.95	5.62	5.84
2050	-	1.74	6.09	5.19	15.83	5.04	5.34	5.12	5.27

The outputs of the various models for the different sets of European countries analysed in this study strongly back the idea of highly complex migratory patterns in Europe, even when based on very simple assumptions.

The analysis of the evolution of the net annual average migration flows (Figures 23 to 25) also shows complex patterns, where cycles of more significant migration alternate with cycles in which the natural balance of births and deaths has a greater capacity to sustain the population, which leads to sharp variations in the annual rates of migration, in terms of both the amplitude or wave length of these cycles and their frequency in time. The main differences can be found between the immigration rates of the EU15, on the one hand, and those of the EU25 and EU29, on the other,

If we look at the evolution of the migration flows in the various five-year periods, as shown for the countries of the EU15, EU25 and EU29 in figures 23, 24 and 25, respectively, we find that, in our models, migration flows tend to exhibit cyclical behaviour, which is a consequence of the needs of the labour market (or any other cyclical restriction) at each moment in time, and of the fact that the in-migration occurring in one period will, after an appropriate time lag, diminish the need for more migrants in the subsequent period.

Figure 23 Net annual average migration (per 1000 inhabitants) EU15, 2000-2050

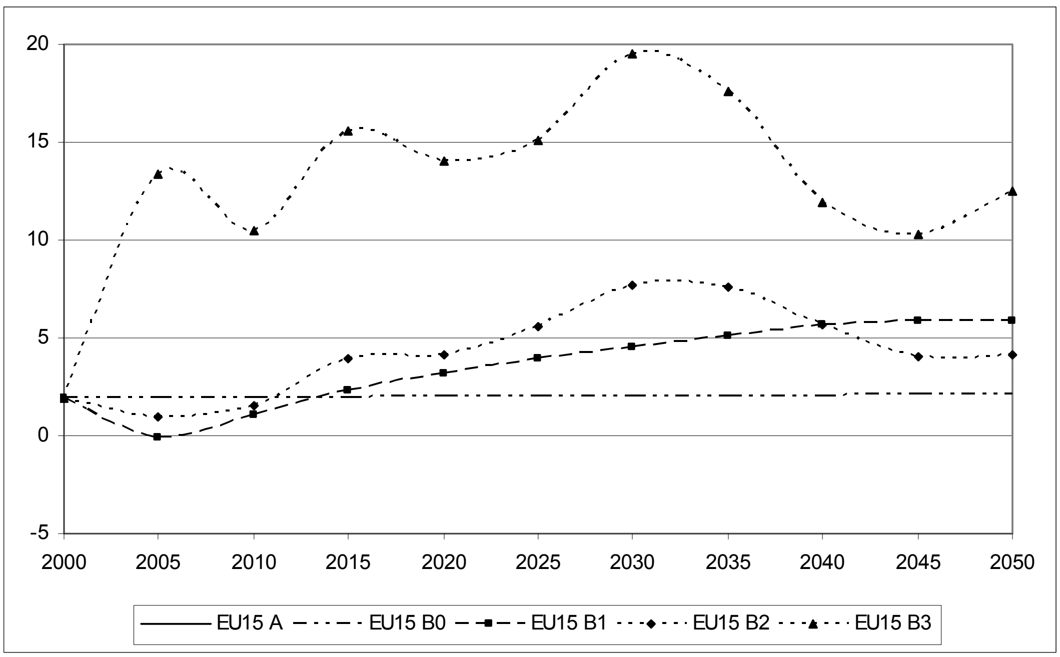


Figure 24 Net annual average migration (per 1000 inhabitants) EU25, 2000-2050

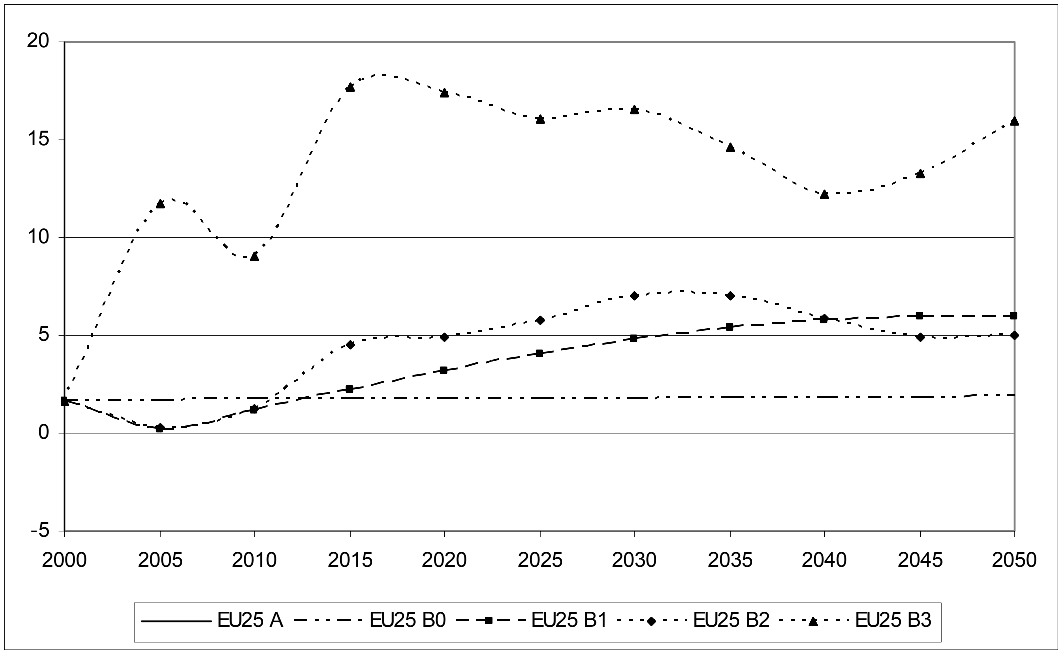
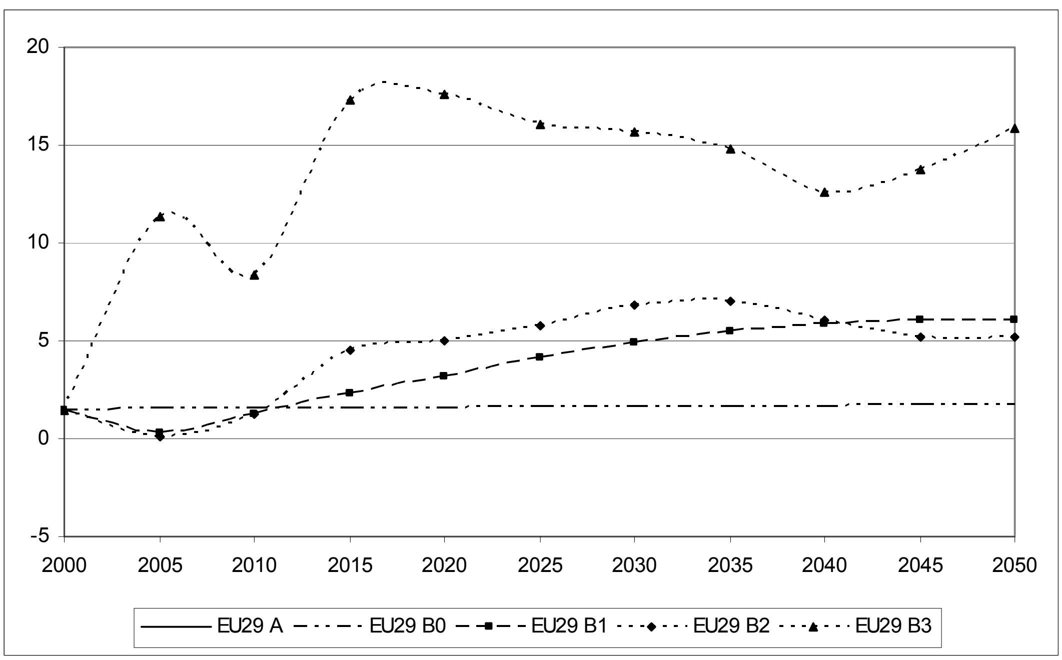


Figure 25 Net annual average migration (per 1000 inhabitants) EU29, 2000-2050



Although the graphics show that the volume of migration is different depending on the set of countries considered (i.e., the EU15, EU25 or EU29), it is the different assumptions of the various models that cause the greatest variation, as might be expected.

The B0 model will be not analysed here because it is based on the premise of a constant rate of migration akin to that actually found in the present in these countries.

The B1 model is the steadiest, exhibiting an almost constant growth of the migration rate until 2040, after which the rate tends to remain constant. In the beginning, there is a slight reduction that seems to be due to the effect of the migration flows that actually took place between 1995 and 2000. In an almost imperceptible way, regularity increases with the number of countries, the EU15 showing the least regular behaviour and the EU29 the steadiest. This also happens in the B2 and B3 models.

The migration flows estimated by the B2 model (which assumes a constant relation between product and productivity variations, and, in so doing, also assumes a constant labour force) illustrate quite well the effect of the previous immigration waves upon the latter demographic behaviour of the population, as small age cohorts alternate with bigger ones. That is what happens. Some of the age strata are very small due to recent fall in fertility, but when and if newcomers arrive (which happens at different times in the different regions) they bring about changes in the demographic patterns which allow for the future needs in terms of migration to be not as big.

The variation in time is less regular than in the case of the B1 model. Five distinct periods can be pinpointed with respect to the outputs of the B2 model. The first one, from the present until 2010, shows a relative decrease in the need for immigrant labour force (due to the demographic effect of the immigration that occurred in the past few years), with a minimum centred around 2005. The second, from 2010 to 2020, is a period in which need for immigration will increase very quickly to annual figures just over 5 immigrants per 1000 inhabitants. In the following period, i.e. up until 2030 or 2035, flows will remain at high rates (between 5 and 7) with a slight trend to increase, while after that they will tend to decline and eventually stabilise around 5 or less at the end of the period, i.e. in 2050.

Unlike in the B1 model, in B2 the variation range of migration rates tends to increase with the number of countries, being lowest in the EU15 countries.

The B3 model (where a constant PSR is assumed) clearly shows the effects of migration flows and their tendency to exhibit wave-like cyclical behaviour. The results show a strong cyclical trend with a variation range of more than 5 to 10 per thousand (wave amplitude) and a wave period of about five years (more visible in the case of the EU15). The immigration flows are much more significant than in the other models, which provides a clear indication of the impossibility of maintaining the same ratio of working to retired people as in the past.

The differences that occur between the countries of the EU15 as a group, on the one hand, and the EU25 and EU 29 taken together, on the other, is an example of the beneficial effects of the strong immigration inflows that have taken place in the recent past.

6.4 Labour Shortage

The concept of labour shortage is difficult to deal with in these models, because it is a consequence of the combination of two different elements: the number of workers present in each region, or supply, and the need for labour, or demand. Moreover, it is difficult, or even impossible, to forecast the regional evolution of these two elements in the medium and long term. To make things even more difficult, we must bear in mind that labour shortage can be absolute, i.e. the number of workers in the labour market is smaller than the needs of the regional economy, or relative, meaning that although there may be availability of workers in the regional labour market, they may be lacking in the case of some particular specialities.

Yet, while it is impossible to forecast the future shortage of labour without the help of other instruments that can cast more light on the evolution of the regional labour markets[10] and production systems, the results of our "more demographic" models give us some hints as to the difficulties that are to expected, apparent in the evolution of the volume and relative weight of the population inside the working age (Table 43).

Except for the B3 model (in which a constant ratio of working to retired people is assumed), the weight of the working age groups in the total population will decrease, from 66.89% to figures that range between 62.81% (model C4) and 58.88% (model A) for the 15 countries of EU15, from 67.20% to between 63.30 and 59.57 in the EU25 and from 67.24% to between 63.49 and 59.58 in the EU29.

That fall in the relative weight of the labour force is directly related with the intense ageing process that will affect all of Europe in the near future, in all possible future scenarios.

Table 43 Population 15-64 years old (%)

EU15	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	66.89	66.89	66.89	66.89	66.89	66.89	66.89	66.89	66.89
2025	63.90	64.41	64.40	64.68	66.90	64.65	64.72	64.67	64.70
2050	58.88	60.45	62.00	62.70	67.00	62.58	62.81	62.64	62.76
EU25	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	67.20	67.20	67.20	67.20	67.20	67.20	67.20	67.20	67.20
2025	64.26	64.70	64.77	65.01	67.18	64.97	65.04	64.99	65.02
2050	59.37	60.72	62.50	63.19	67.41	63.07	63.30	63.13	63.24
EU29	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	67.24	67.24	67.24	67.24	67.24	67.24	67.24	67.24	67.24
2025	64.48	64.86	64.99	65.20	67.27	65.17	65.23	65.18	65.21
2050	59.58	60.79	62.72	63.38	67.48	63.26	63.49	63.32	63.43

We are therefore led to conclude that, generally speaking, the relative weight of the labour force will decline, and that, in any European regional development scenario, the tendency for he labour force to be unable to meet its demand will be a constant presence.

[10] Any way, must be pointed out the difficulty of trying to do long term regional economic predictions.

6.5 Other important relations

6.5.1 Ageing process

It is important to compare the different types of results that are yielded by the models in order to identify the most relevant trends and to check for relations and correlations. That will be the base for the taxonomic work consisting of identifying the various depopulation, ageing, immigration and labour shortage situations and processes that are currently occurring in the European context.

In the A model, it is possible to see the main trends with regard to the evolution in most pronouncedly aged regions and to the regional ageing process in Europe. The regional ageing forecasts between 2000 and 2050 is far from regular, as is manifest in the low value of the Pearson Correlation coefficient, of 0.55 and 0.52, respectively, for the 29 countries and 276 regions (Figures 26 and 27).

On average, the values in 2050 are 1.7463 times larger than in 2000 in the case of the 29 countries, and 1.6822 times in the case of the 276 regions. The rather unclear linear (or proportional) relations appear to be best described by the following equations:

(%65+2050) = 1,118 x (%65+2000) + 9,382, for the countries and

(%65+2050) = 1,036 x (%65+2000) + 10,586 for the Nut 2 regions.

These relations broadly indicate that a higher value by around 10% is to be expected in 2050 as compared with the figure in 2000.

Figure 26 Ageing in Europe, by country, 2000/2050 (Model A)

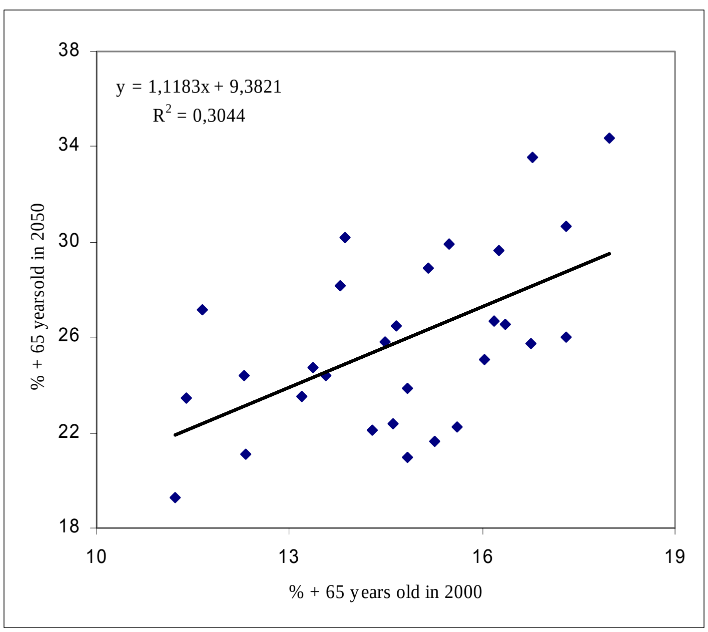
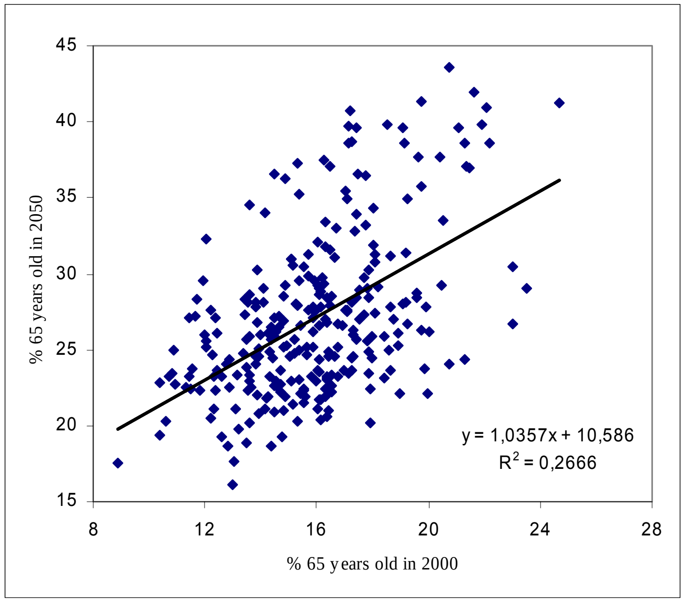


Figure 27 Ageing in Europe, by NUT 2, 2000/2050 (Model A)



6.5.2 Depopulated and aged regions

Another important relation worth analysing is the relation between the regional tendencies towards ageing and depopulation. Regional ageing is illustrated by the variable "Percentage of people over the age of 65 in 2050", while the balance between depopulation and the region's capacity to draw in people is expressed by the variable "Population variation, 2000-2050". This relation can be seen in figures 28 and 29.

Figure 28 Relation between level of ageing in 2050 and population variation (Model A)

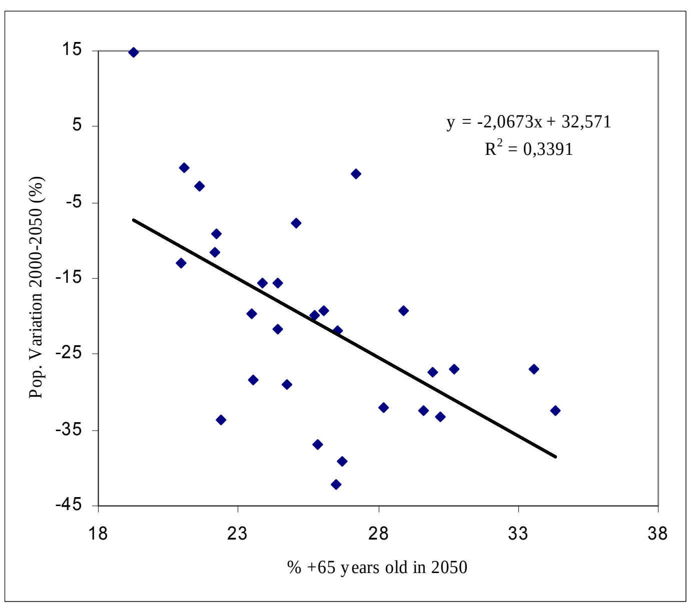
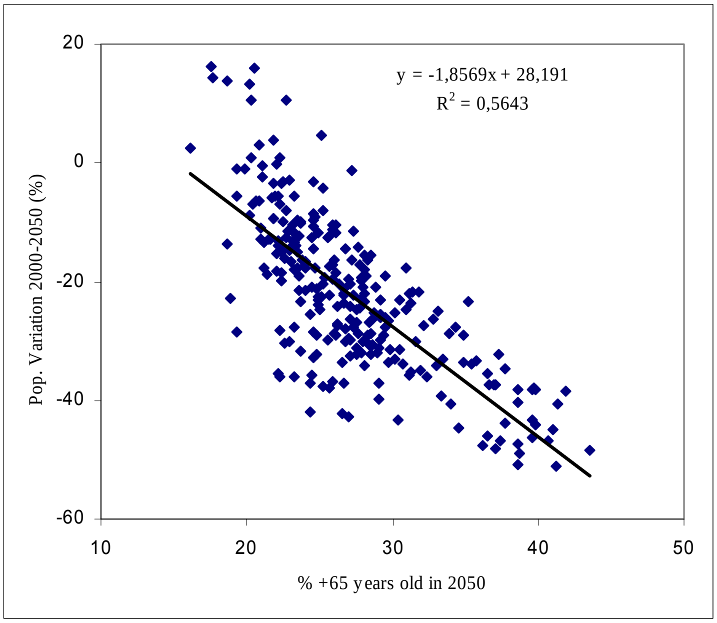


Figure 29 Relation between level of ageing in 2050 and population variation (Model A)



The two variables evolve in an opposite way, since the general trend is for the most pronouncedly aged regions in 2050 to be those where the most significant population losses in population are to be expected. Thus, ageing and depopulation area related, albeit not in a perfect way. In mathematical terms, we have found a degree of 34% (r = 0.58) for the countries and 56% (r = 0.75) for the 276 Nut 2 regions in what regards the relation between those variables. The level of significance in the case of the 276 regions is therefore higher than fin the case of the countries, which seems to indicate that the national-level approach is less interesting than the regional-level one, insofar as it reflects more the ways in which the countries try to manage and avoid extreme diversity.

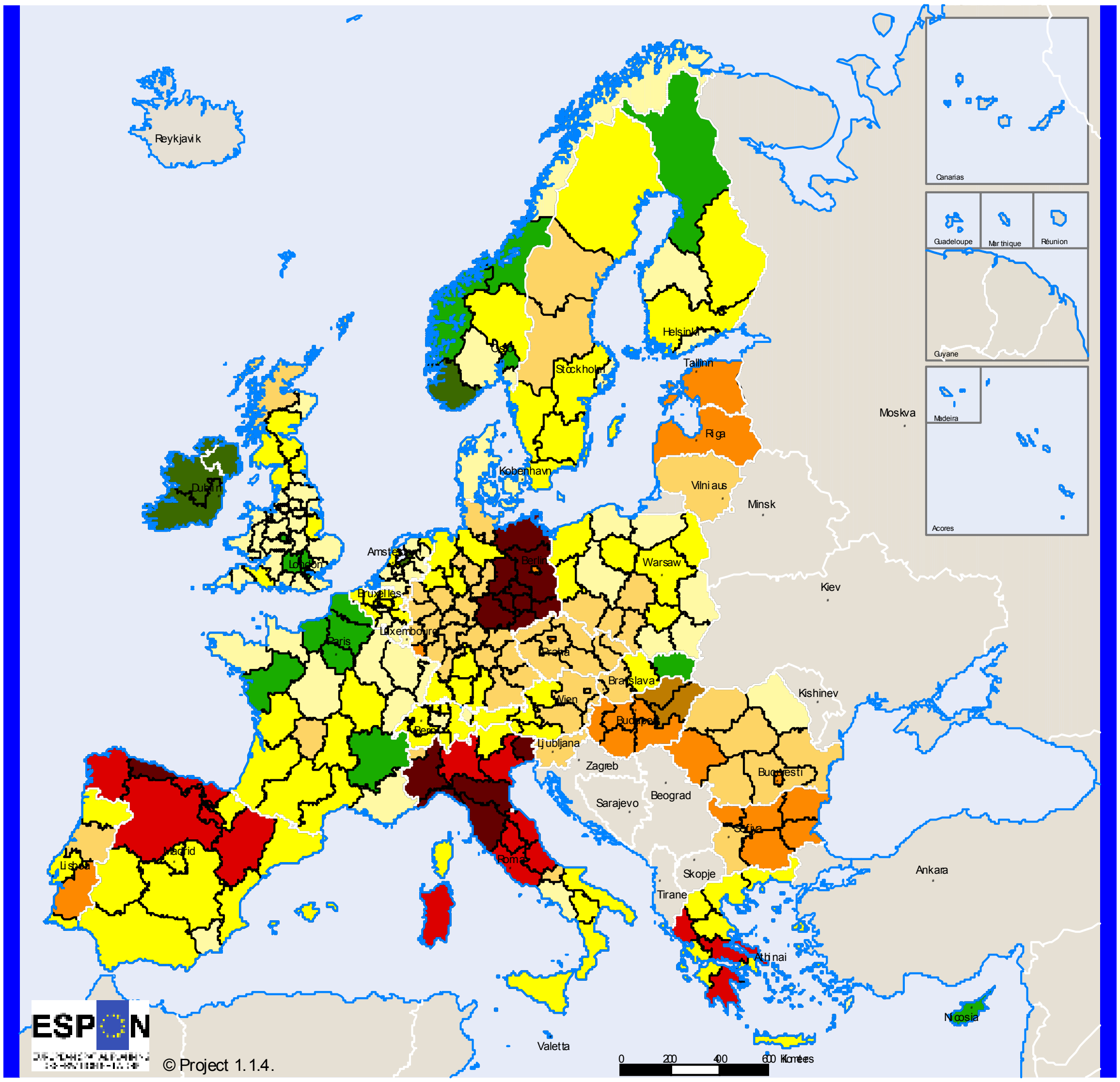
The spatial ageing patterns identified by the relation shown in map 15 and expressed in the typology show a series of different stages, in which the groups of countries range from fast-growing and relatively young areas (depicted in green in the map) to those in which the depopulation processes are most intense and the population is older (in orange in the map). Two other groups can be identified, one made up of a mere two elements, in which a relatively young population will coexist with strong population losses in (depicted in brown), and another composed of countries with simultaneous tendencies for depopulation and ageing.

This sequence of stages began in the consolidated urban areas of central France and the UK as well as in certain much more peripheral regions of northern Europe, such as parts of Norway, Finland and especially Ireland. These are regions that have different characteristics with different status, but in which, generally speaking, good economic performance takes place alongside an advanced ageing process that began quite some time ago, and which are now entering another demographic cycle.

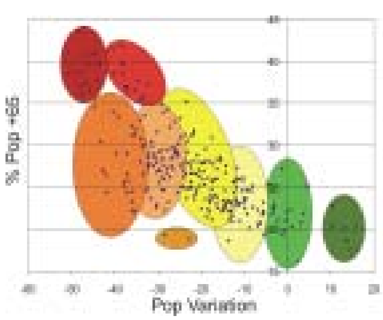
The sequence ends in places like Alentejo (in southern Portugal), parts of Romania and Hungary and the Baltic States, regions which are considerably depopulated and in which the population is relatively old.

Map 15 Typology based on Population variation 2000- 2050 *vs* % Population 65 + in 2050, Model A

Typology of ageing and depopulation by NUT2



Variation of the population, 2000-2050 (%)
Population with 65 years and more years (%)
Model A



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Origin of the data: Eurostat and others

Source: ESPON Data Base and others

As mentioned before, two distinctive groups emerge outside the most characteristic sequence representing the average relation between future ageing and future depopulation. The first is comprised of two regions in Hungary (Eszak-Magyarorszag and Eszak-Alfoeld) that are much younger than expected and should in fact be considered net out-migration areas; the other corresponds to intense depopulation and includes northern Spain, northern and central Italy, certain parts of rural Greece, Sardinia and especially the Nut 2 regions of the former DDR, parts of northern Italy such as the Piedmont, Friuli-Venezia Giulia, Emilia-Romagna, Liguria, Tuscany, and the Asturias in northern Spain.

The outputs of the models enable us to identify those areas – countries and regions – where some of these phenomena will tend to be more extreme in the future. In the case of the depopulation trends, the joint analysis of the A and B0 models carried out in the following maps (16 and 17) allows us to identify those countries (map 16) and regions (map 17) that will tend to be perform in a more (in red) or less (in blue) favourable manner.

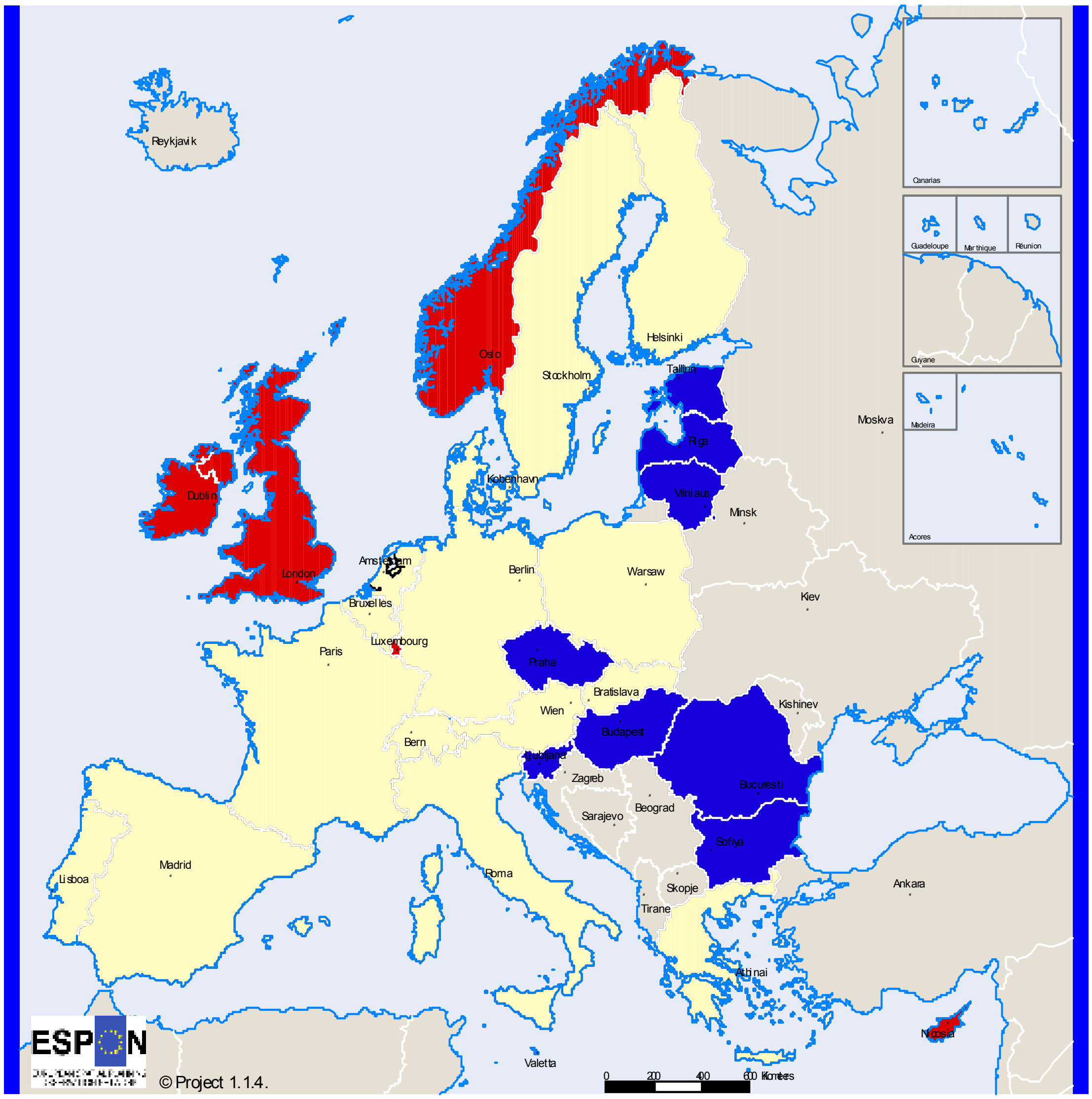
The countries where the tendency towards population decrease is most severe are all located in Eastern Europe: Romania, Bulgaria, Hungary, Croatia, the Czech Republic and the Baltic countries. In the opposite end of the spectrum, we find Ireland, the United Kingdom, Norway, Luxembourg and Cyprus. The maps also show that the countries in a better position with regard to the demographic indicators (scenario A) will continue to be the same if we take into account the persistence of the current level of immigration (scenario B0). Besides, the same happens to those in the worst positions. This result shows the resilience of the population processes and the strength of the forces that drive them.

At the NUT2 level, map 17 shows that the process is rather more complex. The regions where the depopulation processes are strong, either as a consequence of their demographic characteristics (model A) or as a result of the present pattern of immigration flows (model B0), are represented in dark blue. The map shows a coherent spatial distribution of these regions, comprising northeastern Spain, Scotland, Romania, southwestern Bulgaria, Hungary, the Baltic States and parts of the former DDR and Poland. The regions that tend to attract people for both demographic and migratory reasons are southern Norway, the greater metropolitan areas of Stockholm and Helsinki, Ireland, South Central England, Cyprus, Marseille and Valencia.

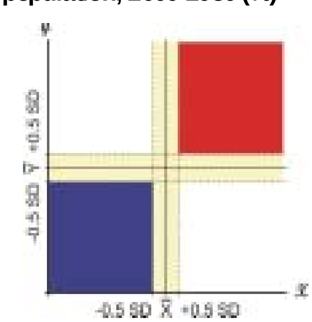
However, at this level, we also find regions for which the results vary depending on the model. In light blue, we have those regions in which the situation will be favourable if the model allows for migration, but where there will be considerable depopulation in the absence of migration. Conversely, we find, depicted in pink, two groups of regions in which the current demography structure is apparently favourable (due to migration in the recent past) but where the migratory flows are currently negative.

Map 16 Typology of the best and worst countries, in relation to the depopulation trends evinced by the comparison between model A and B0.

Depopulation trends by country



Variation of the population, 2000-2050 (%)
X = Model A
Y = Model B0

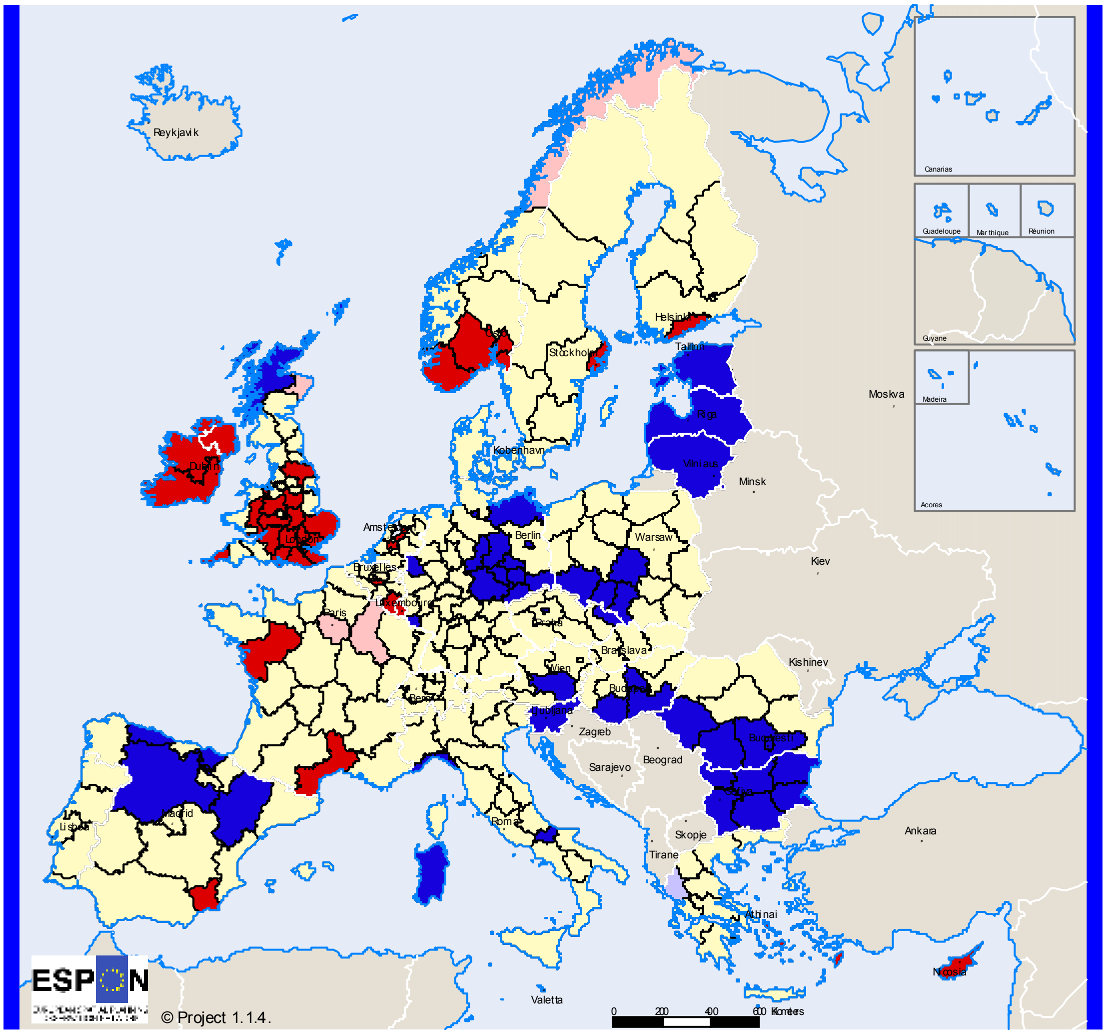


Origin of the data: Eurostat and others

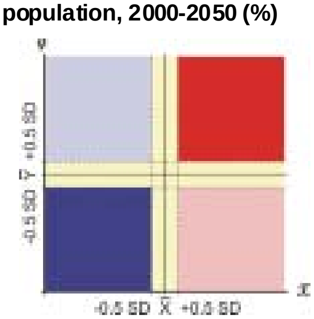
Source: ESPON Data Base and others

Map 17 Typology of the best and worst regions, in relation to the depopulation trends evinced by the comparison between model A and B0.

Depopulation trends by NUT2



Variation of the population, 2000-2050 (%)
X = Model A
Y = Model B0



Origin of the data: Eurostat and others

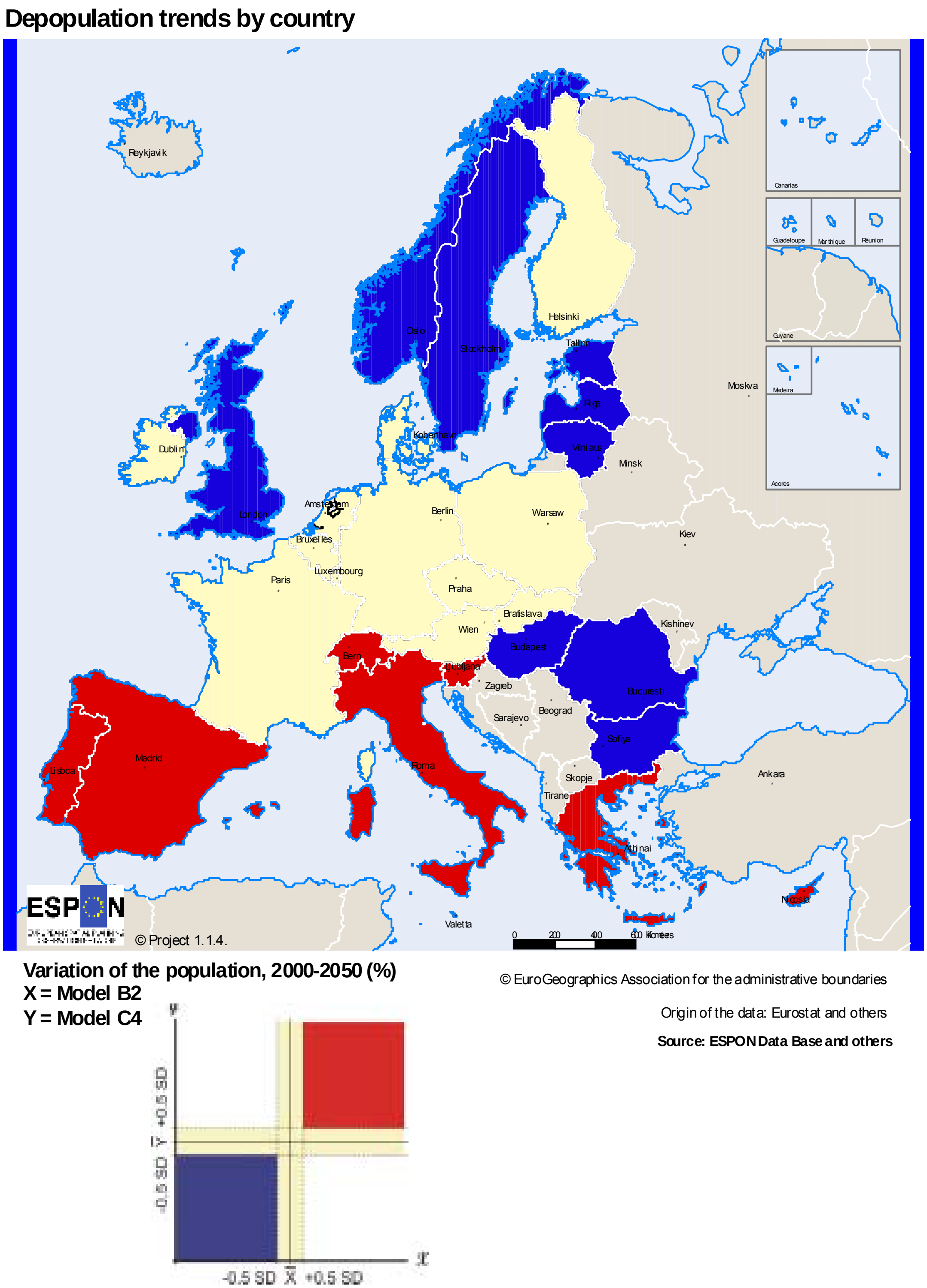
Source: ESPON Data Base and others

Another important conclusion can be drawn from the analysis of the relations between the economic models implicit in the comparison of the B2 and C4 scenarios. As they are based on rather similar assumptions – holding the workforce constant in B2, allowing for a slight decrease in productivity in C4 – it is no surprise that their results are also quite similar (maps 18 and 19).

As a consequence of the inclusion of economic factors in the model, the general pattern changes. While Bulgaria, Hungary and Romania, as well as the Baltic States, continue to show a strong tendency towards depopulation, the opposite occurs in the case of northern Europe, where we now find Norway, the United Kingdom and Sweden in the same group. This is a result of the considerable migration flows that have affected these countries in the recent past. Moreover, as a consequence of the new migration flows destined for southern Europe, this entire region also seems to be becoming much more attractive (map 19).

At a greater level of detail (at the regional level), the metropolitan effect is visible, as in the case of Lisbon, Madrid, Barcelona, Paris, London, Stockholm, Helsinki and others. In most of the south, the effect of Sun Belt migration is also manifest, as we find favourable figures in terms of population variation. Finally, we find evidence of depopulation in the southern and eastern peripheries, as well as in the axis that runs from the UK to central western France.

Map 18 Typology of the best and worst countries, in relation to the depopulation trends evinced by the comparison between model B2 and C4.



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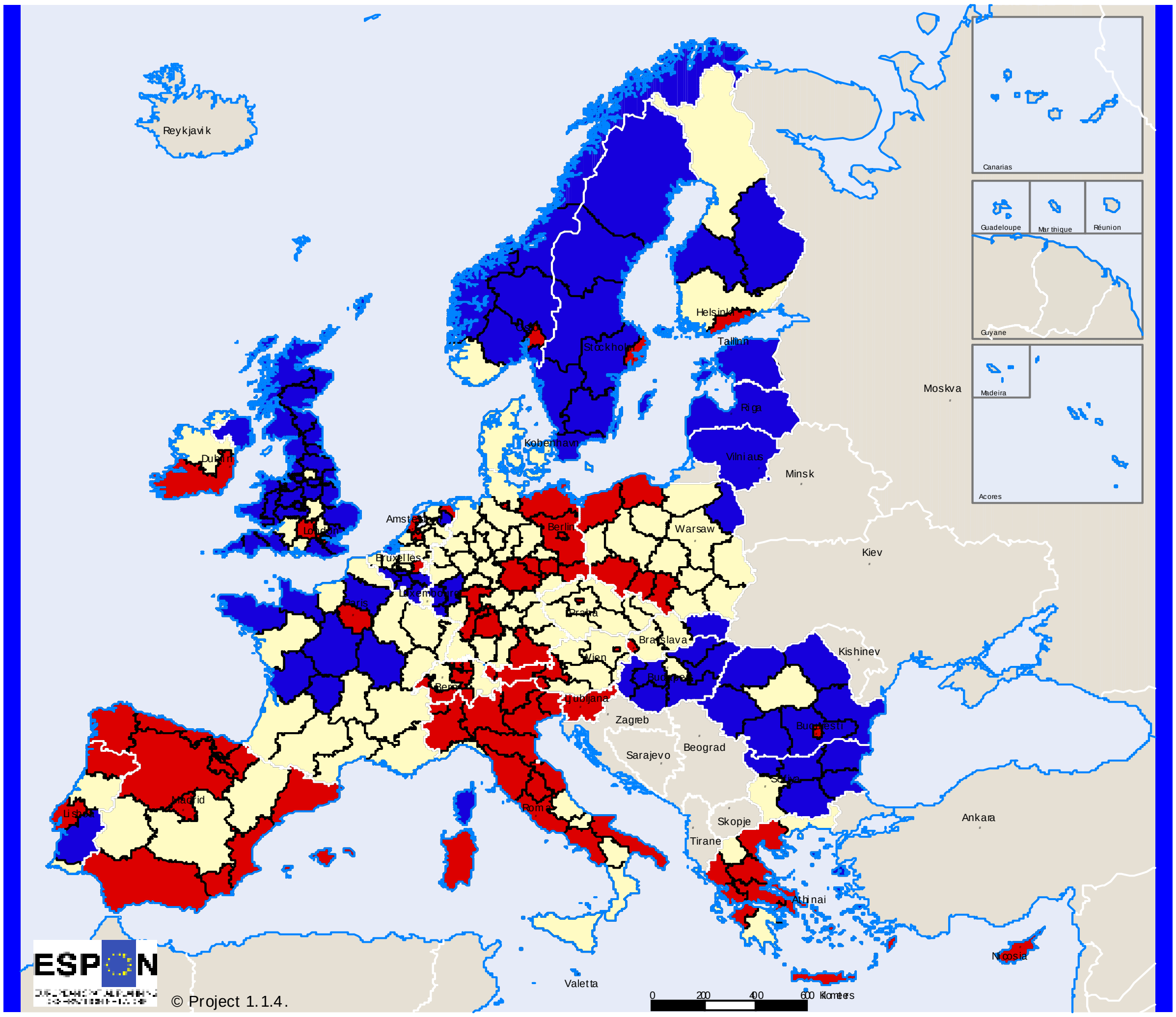
Origin of the data: Eurostat and others

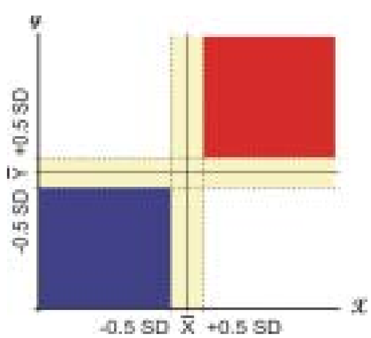
Source: ESPON Data Base and others

Map 19 Typology of the best and worst regions, in relation to the depopulation trends evinced by the comparison between model B2 and C4.

Depopulation trends by NUT2



Variation of the population, 2000-2050 (%)
X = Model B2
Y = Model C4

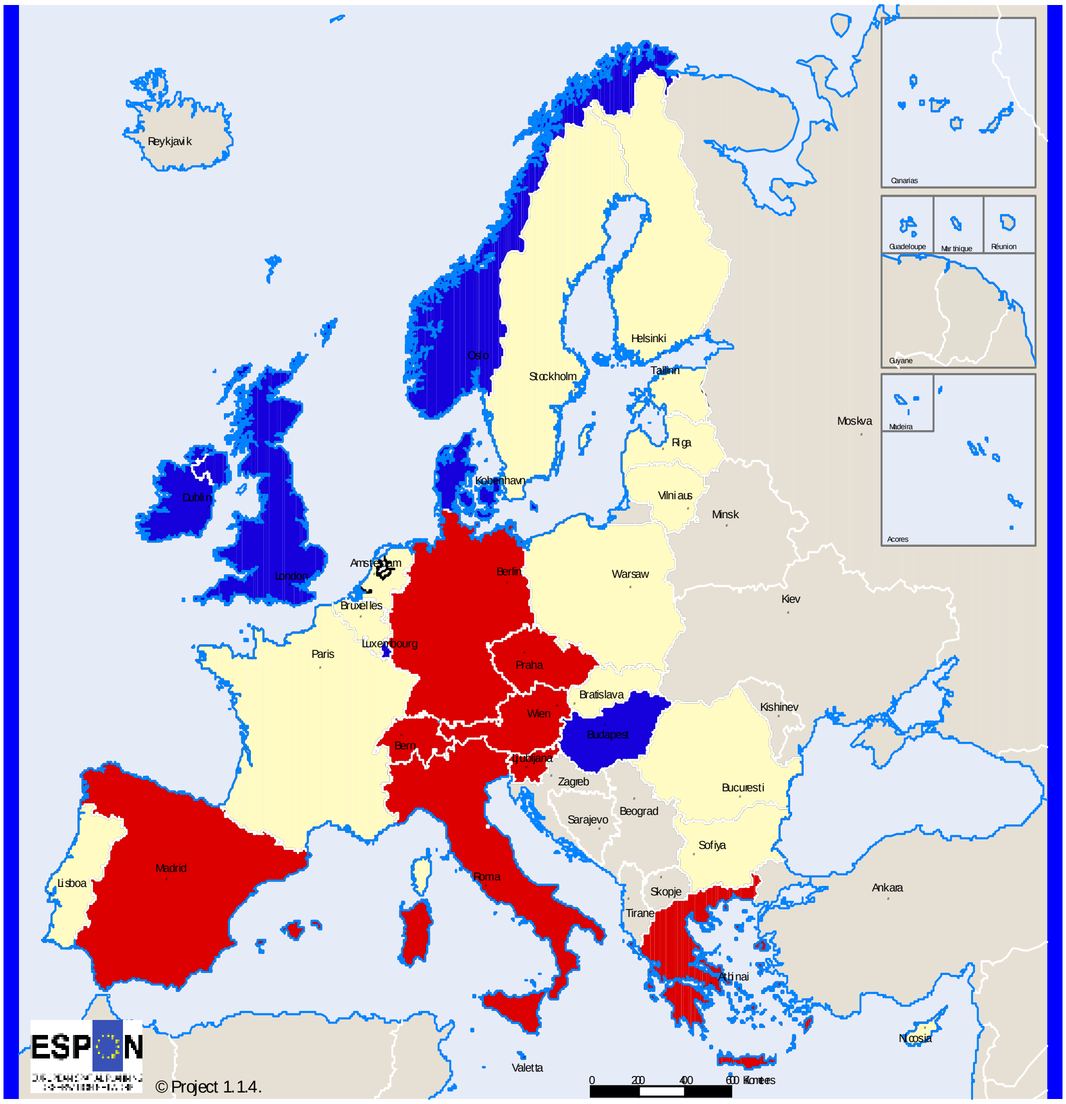


Origin of the data: Eurostat and others

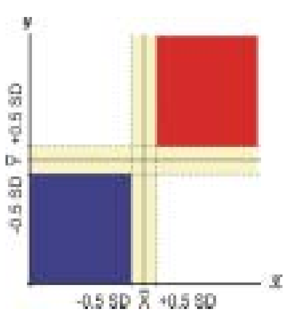
Source: ESPON Data Base and others

Map 20 Typology of the best and worst countries according to ageing. Models A and B0.

Trends for ageing by country



Population with 65 years and more, 2050 (%)
X = Model A
Y = Model B0



Origin of the data: Eurostat and others

Source: ESPON Data Base and others

We have carried out a similar exercise with regard to ageing, seeking to identify those countries and regions in which the economic (productivity) and demographic (including the current migration levels) characteristics will lead to extreme situations, whether favourable or unfavourable. In demographic terms, ageing will be most intense in Spain and along a north-south axis that runs from Germany, the Czech Republic, Austria and Switzerland all the way to Croatia, Italy and Greece (map 20).

The countries in the best situation are generally those where the process is by now at an already advanced stage, and in which the population around 2050 will by then be already undergoing a process. That is the case several Nordic countries, including Ireland, Norway, Denmark and Norway, as well as Hungary.

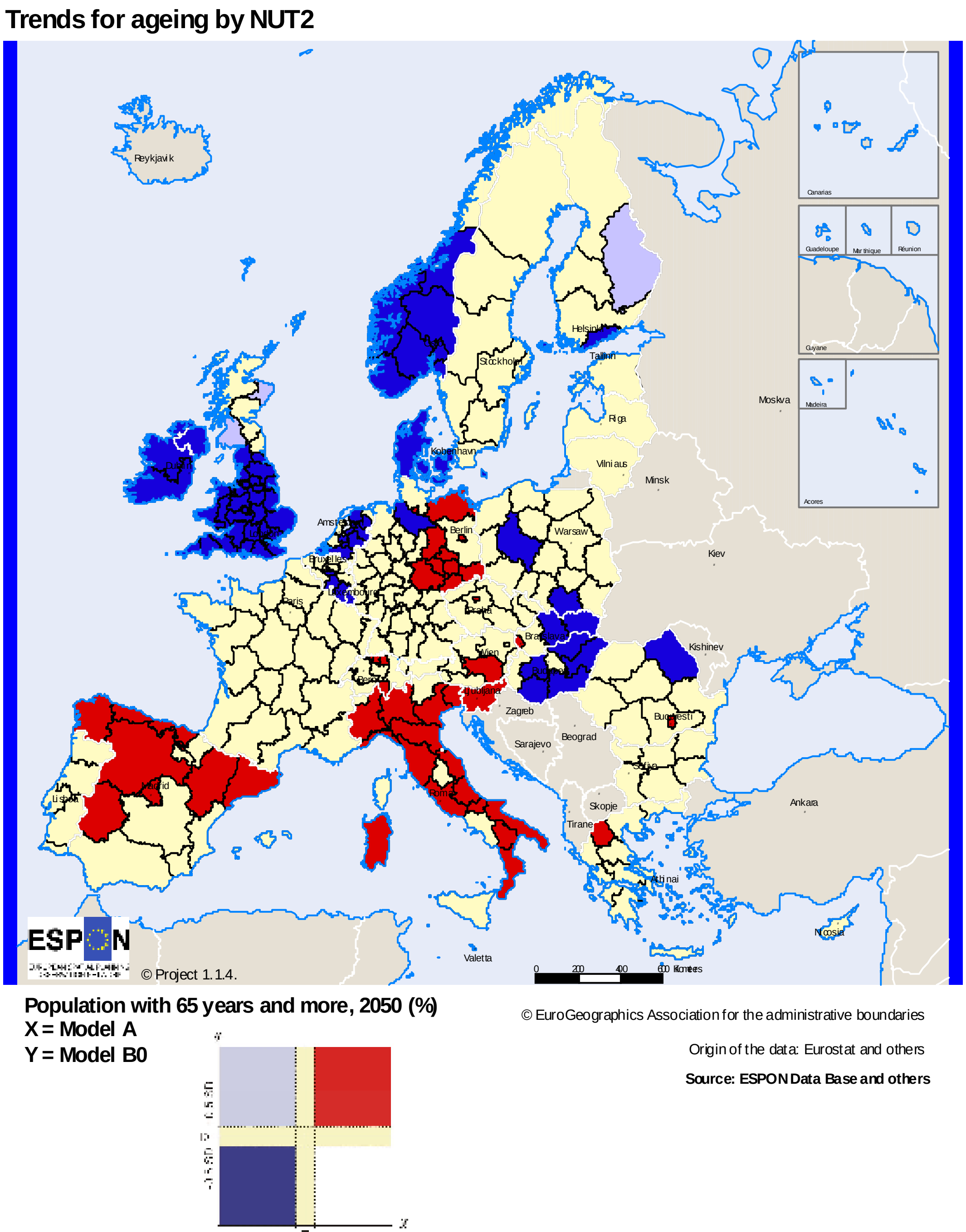
The NUT2 level mapping (map 21) allows for a more precise analysis. In Spain, we find that the problem regions are located in the north; in the case of Germany, the problem lies chiefly in the regions of the former DDR regions; in Greece, the least favourable region is Dytiki Makedonia; and in Italy, even at this level of analysis, we find that the ageing problem will affect almost the entire country.

We can also render the pattern more precise in the case of the regions in a more favourable position. All of Denmark and Ireland will perform well, but in the case of Norway and the United Kingdom we find that the regions in the most favourable situation are located in the southern, more urbanized areas. It is interesting to note that in Hungary, the ageing processes spread to contiguous areas.

If we take the demand for labour into account (map 22, based on the results of the scenarios and C2), the spatial characteristics of ageing also became more visible. Again, it is possible to distinguish between two different groups: the first is made up of highly aged countries in central and southern Europe, in which Sweden must also be included; the other is a younger, or more precisely, less aged group of countries, comprising the six eastern European accession countries, along with Bulgaria, Romania, Denmark and Ireland.

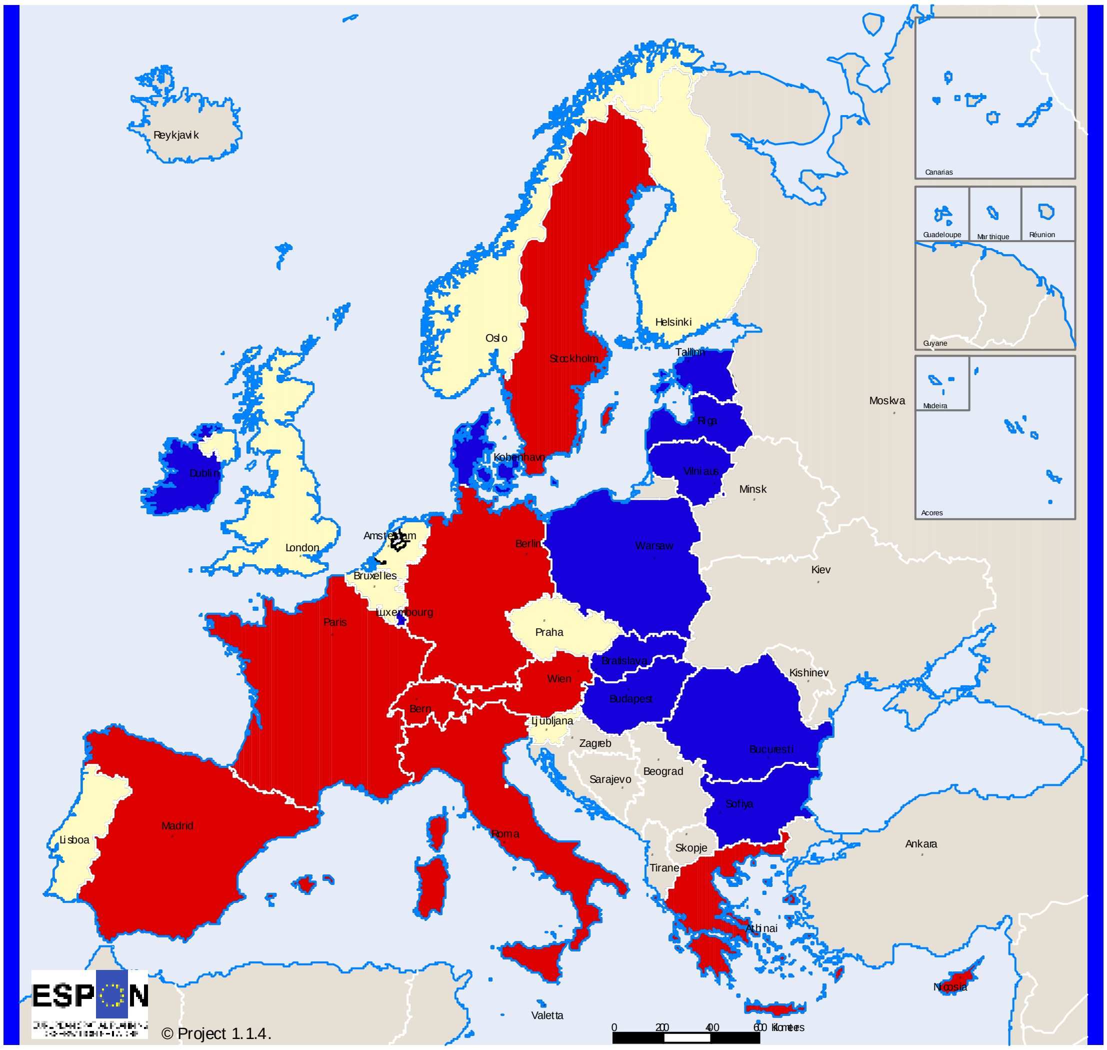
Portugal, the Benelux, the United Kingdom, Norway, Finland, the Czech Republic and Slovakia are in an intermediate position.

Map 21 Typology of the most and least favourable regions in terms of ageing. Models A and B0.

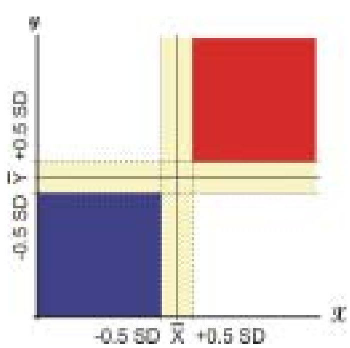


Map 22 Typology of the countries in the most and least favourable positions in terms of ageing. Models B2 and C4

Trends of ageing by country



Population with 65 years and more, 2050 (%)
X = Model B2
Y = Model C4



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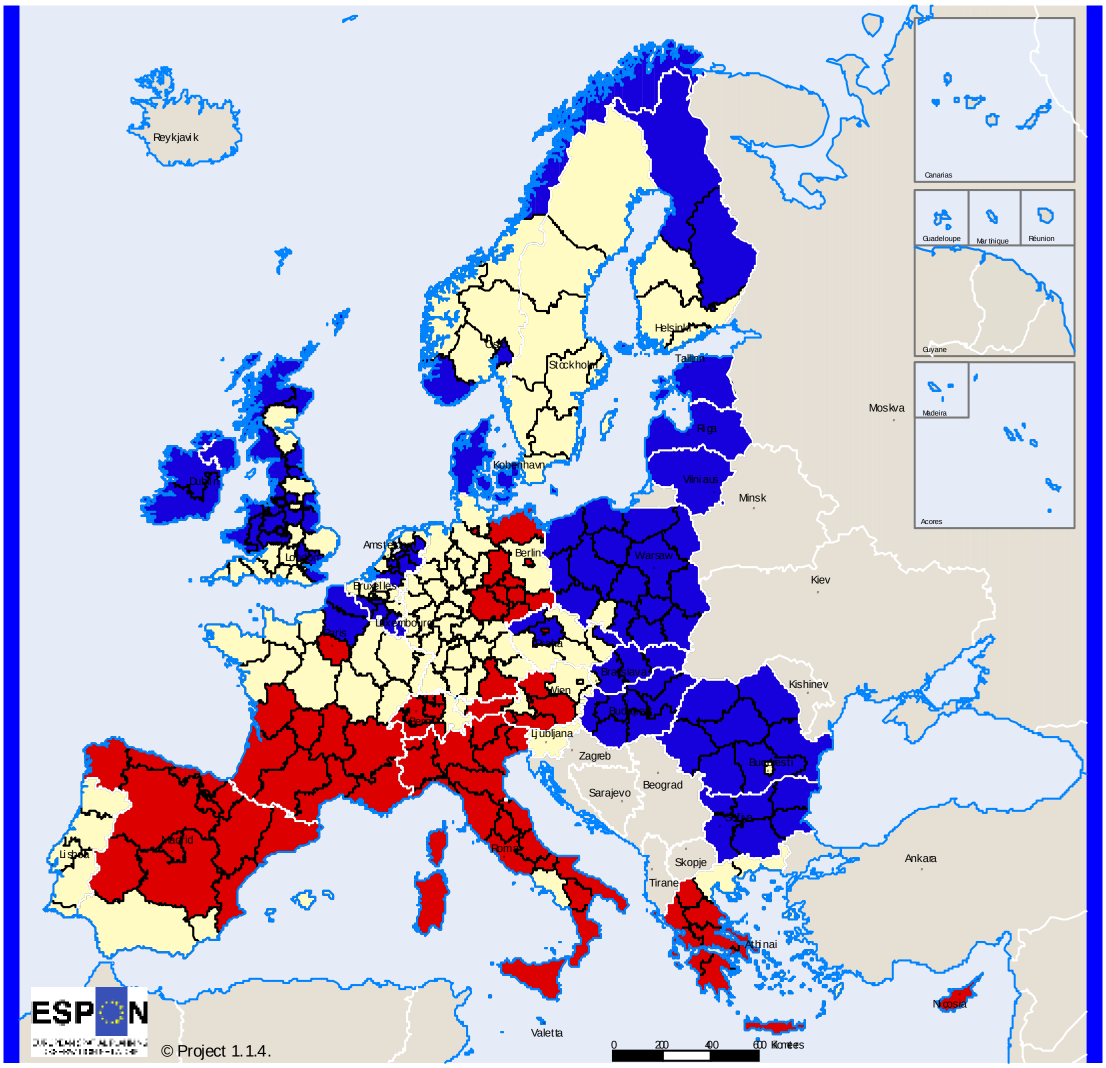
Origin of the data: Eurostat and others

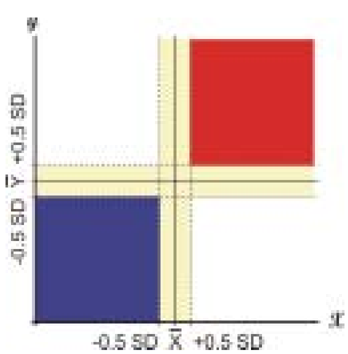
Source: ESPON Data Base and others

Map 23 Typology of the regions in the most and least favourable positions in terms of ageing. Models B2 and C4

Trends of ageing by NUT2



Population with 65 years and more, 2050 (%)
X = Model B2
Y = Model C4



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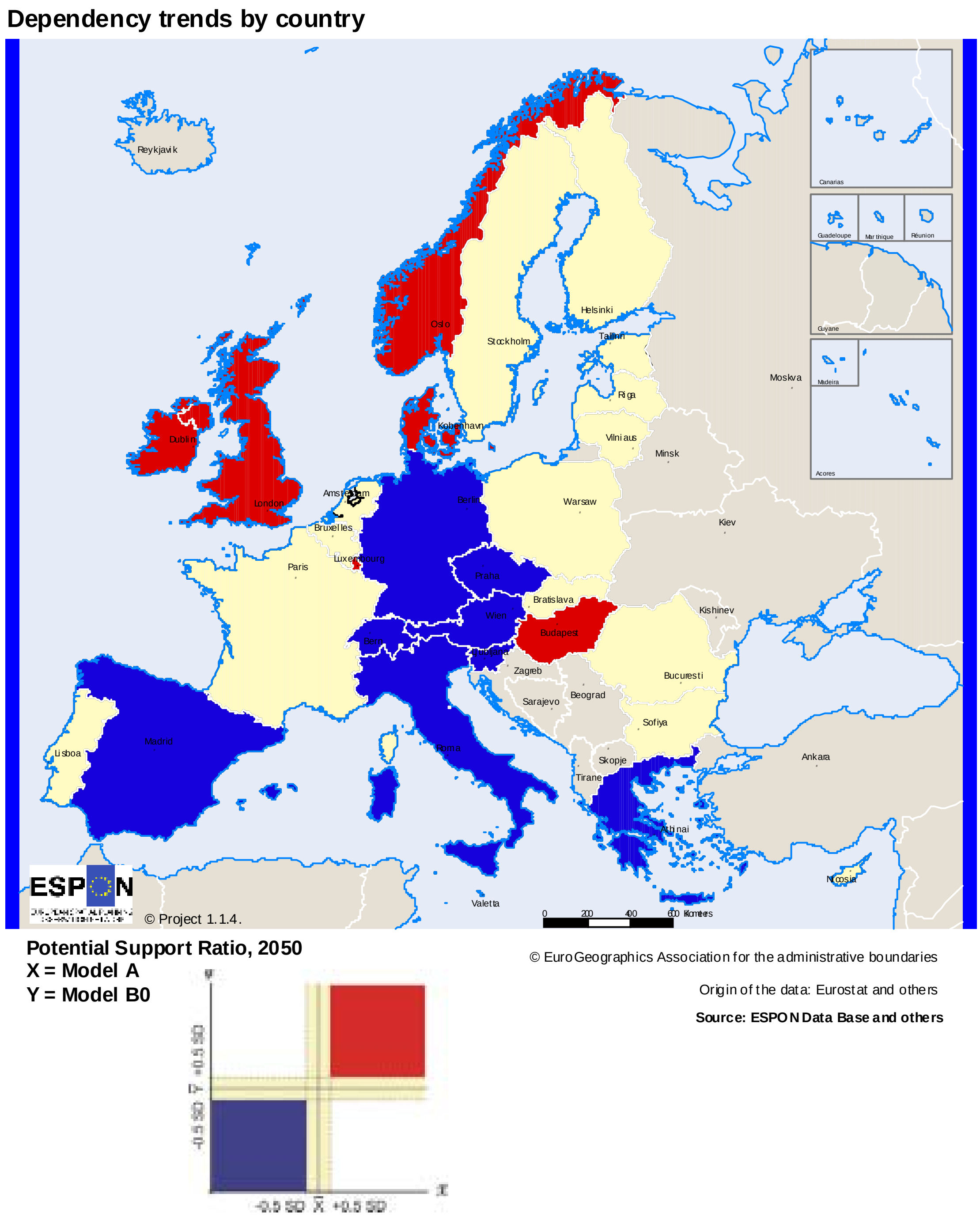
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Map 24 Typology of the countries in the most and least favourable positions in terms of PSR . Models A and B0



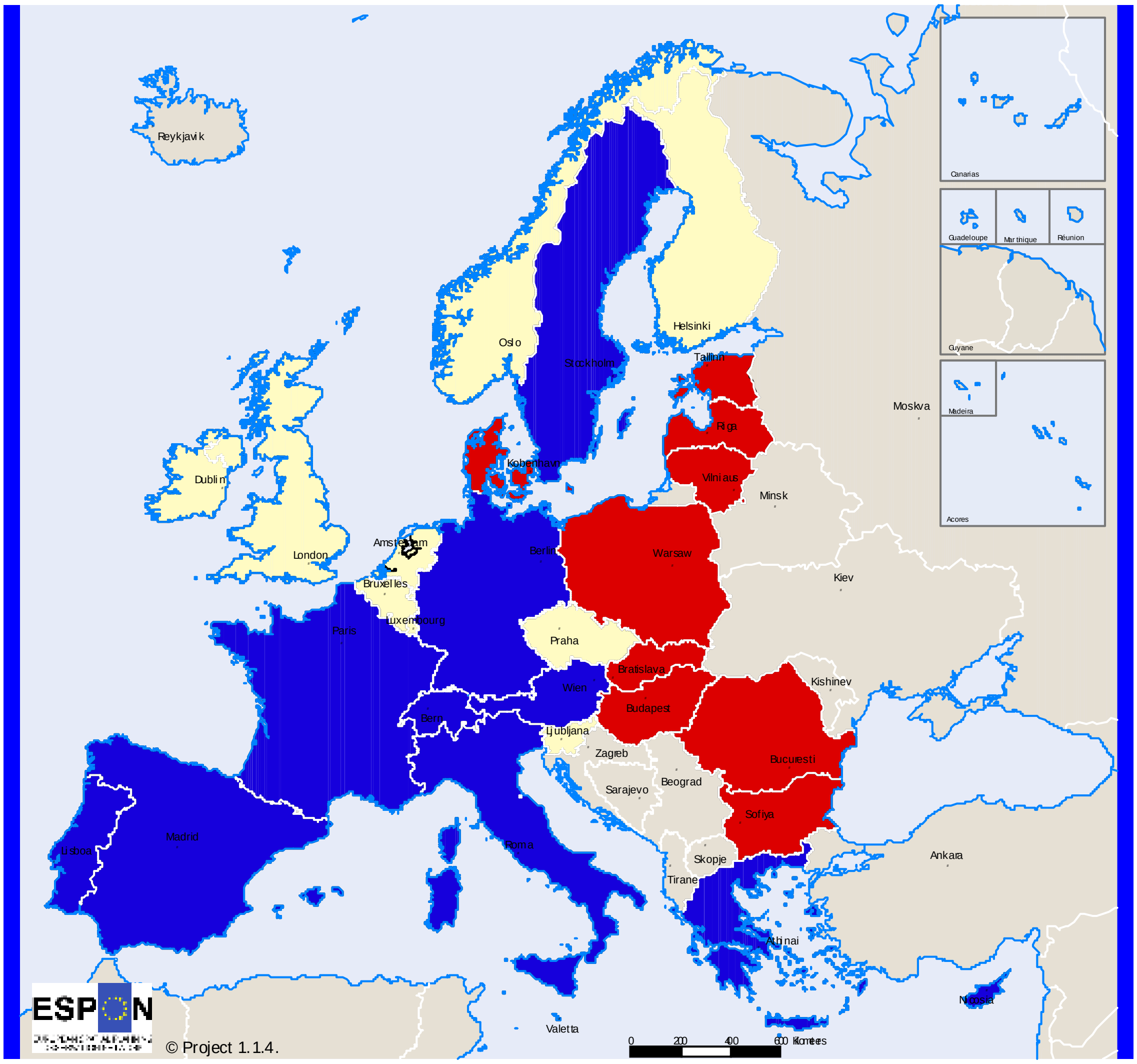
As shown in map 23, at the regional level, the spatial concentration of the ageing processes is even clearer. In general, the countries can be easily identified, which provides an indication of the scale of the problem. Again, we find the "oldest" areas to be located in Spain (except for the "sunny" South), southern France, Italy, Cyprus and Greece, as well as parts of the former DDR. The least aged areas seem to be all the regions in the eastern European fringe, the extreme north of Finland and Norway, the most heavily urbanised areas of the Baltic countries, Ireland and most of the UK, North-eastern France and most of the Benelux.

As a consequence of ageing and of the changes in the global demographic characteristics, the level of dependency (PSR) will change dramatically in all the European countries. Maps 24 and 25 show the relative size of these changes in the various countries. Considering the current demographic and migratory characteristics, the southern and central Europe countries will be in the least favourable position, while Ireland, the UK, Norway, Denmark and Hungary will perform the least unfavourably. Generally speaking, Northern European countries have already suffered, or are currently undergoing, their most severe ageing period.

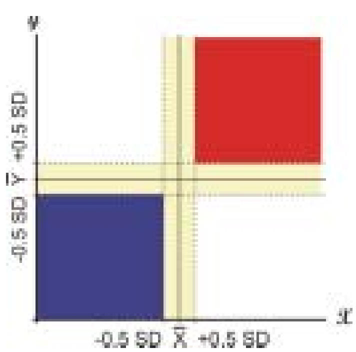
If we take the economic component into account, by assuming the maintenance of the current labour force or slight changes in productivity, the pattern changes yet again (map 25). With the exception of Denmark, Europe appears split in two, with the eastern European countries (Baltic States, Poland, Slovakia, Hungary, Bulgaria and Romania) on one side, and all the others, especially in central and southern Europe, on the other.

Map 25 Typology of the best and worst countries in terms of the PSR. Models B2 and C4

Dependency trends by country



Potential Support Ratio, 2050
X = Model B2
Y = Model C4



Origin of the data: Eurostat and others

Source: ESPON Data Base and others

7 Immigration in Portugal: an overview

The aim of this text is to present an overview of the dynamics of immigration and the labour market in the Portuguese case, placing it against the wider context. As defined within the ambit of WP5, the Lisbon Metropolitan Area and the Alentejo Region have been chosen as case-studies. The process of the labour market restructuring in the LMA has led to an increase in the demand for two segments of the labour market: highly skilled professionals to perform tasks in the activity sectors of the new economy and unskilled workers to attend to the needs of the preceding, particularly in the service sector.In Alentejo, an aged and pronouncedly rural region, immigrants are gradually replacing the autochthonous labour force in a variety of sectors, from construction and public works to agriculture, household cleaning and the hotel and restaurant sector.

7.1 Economic restructuring and labour change

> *The increasing mobility of capital has brought forth changes in the spatial organisation of manufacture production as well as in the international financial markets.* (Sassen, 1994)

In the present, migration flows are probably the main positive component of population change in the developed world – and Portugal is no exception to this rule. This is a reflection of a series of important and cumulative trends: the decrease in the birth rate; the increase in the average life expectancy; the increase in the ageing index; and the depopulation of certain areas. As a consequence, the prospects of population increase - or even stability – would be extremely slim were it not for the contribution of migration flows. Moreover, alongside the demographic context, the restructuring of the labour market has also brought forth a series of changes, particularly in what regards the structure of the demand for labour.

Thus, there are some particular aspects that are worth highlighting when looking at Portugal's demographic situation (see also Table 44):
- In the early 1960s, the Synthetic Fertility Index was as high as 3.2 children per woman; by 2001, it had dropped to 1.5, no longer ensuring intergenerational replacement.
- In the early 1960s, the average life expectancy at birth was 60.7 and 66.4 years for the men and the women, respectively; by 2001, it had jumped to 73.4 and 80.4.
- In the early 1960s, the elderly accounted for 13% of the country's population – but their share had increased to 24% by 2001.

The demographic dynamics of the Portuguese population – not unlike that of the EU15 as a whole – has therefore been losing momentum, exhibiting strong tendency towards ageing and becoming growing increasingly dependent upon migration inflows (Valente, 2004).

In the early 1990s (Esteves, 1991), the fact that Portugal had become a "host country" started getting widespread recognition. Like several other Southern European countries, Portugal has turned from a "country of emigration" into a "new receiving country". (Esteves, 1991; Baganha, 1996). It has by now become fairly consensual that Portugal is undergoing a transition phase – several authors have focused on this country's role as the final destination for a variety of migration flows, both from "traditional" origins (such as the Portuguese-speaking African countries, or PALOP) and "emerging" ones (such as Northern Africa, the Indian subcontinent or Eastern Europe) (Góis, n/d).

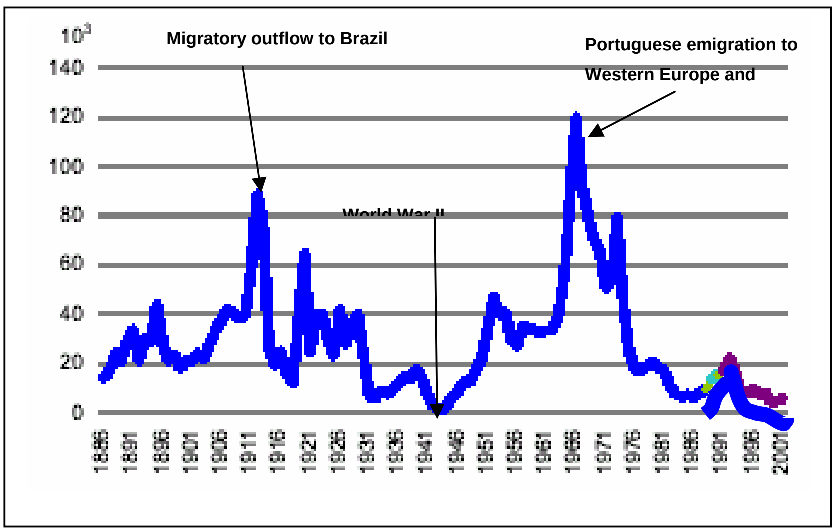
Table 44 Key figures

Key figures	**Mainland Portugal**	**Key figures**	**Mainland Portugal**
Resident population		% Change in the stock of	
1960	8,292,975	foreign nationals (by national	
2001	9,869,343	origin)	
% Change 1960-2001	19.0	Europe	93.1
		Africa	181.9
		Other	57.4
		Total	112.7
Resident population (%)		Economically active	
Age group <15,1960	29.2	population (by activity	
1980	16.0	sector), 2001	
Age group >64, 1960	8.0	Primary	5.0
1980	16.4	Secondary	35.1
		Tertiary	59.9
Population density, 2001		Work contracts to foreign	
(inhab/km^2)	111.8	nationals from outside the	
Predominately urban areas	417.6	EU holding permanence	
Intermediately urban areas	96.7	permits (by activity sector),	
Predominantly rural areas	23.9	2001	
		Agriculture	4.2
		Construction	49.8
		Retail trades and commerce	10.0
		Hotel and restaurants	19.0
		Office and industrial cleaning	
		serviced	10.3
Ageing index (%)		% variation in employment	
1991	65.9	1990-1998*	-13.7
2001	107.8	Agriculture, fisheries and	
Share of foreign nationals in the		extracting industry	-15.3
resident population (%)		Manufacture	25.9
1960	0.3	Construction	35.3
2001	2.2	Retail trades and commerce	37.0
		Hotel and restaurants	-34.4
		Transports, communications	-13.2
		Public administration,	
		education, health and other	
		collective, social and	
		personal services	-25.3
		Other activities	-3.4

The transition from a "country of emigration" into one "of immigration" was the result of a set of historical and social-economic circumstances (Góis, n/d). In turn, this country's period of most significant emigration can itself be broadly divided into a series of historical periods, which are not unrelated to its historical past as a colonial power (Patrício e Coelho, 2002):

- The first significant migratory outflow mostly headed to Brazil and took place in the years between 1911 and 1920;
- The most significant emigration wave - which would be called "the great cycle of Portuguese emigration" - took place between 1962 and 1972 and coincided with the Portuguese colonial war. Both this phase and the former were chiefly made up of male individual migrants that migrated on a permanent basis, but the phenomenon took on such a scale in the 1960s that it effectively brought about a very noticeable decrease in the country's resident population;
- More recently, in the late 1980s and early 1990s, Portuguese emigration took on a new character as the new outflows became increasingly temporary.

Figure 30 Emigrant outflows between 1886 and 2001

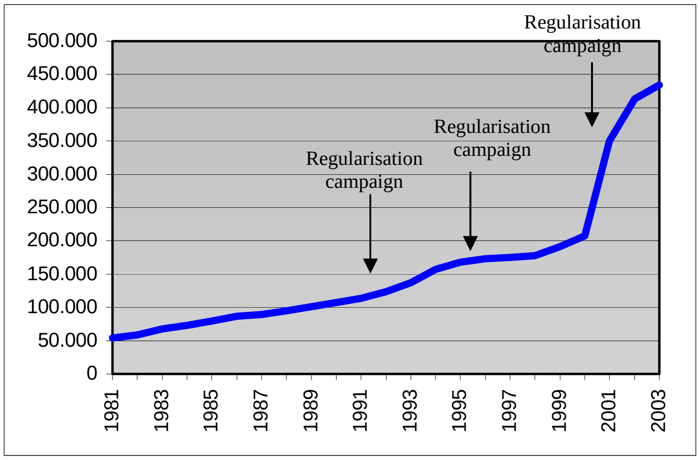


A traditionally "sending" country, Portugal was eventually confronted with a new migratory reality, as its immigration – albeit not a totally new phenomenon – gradually "outpaced" emigration in the past decades.

By the late 1960s (a time of colonial war and considerable emigration), the shortage of labour was often made up for by the entry of workers from the colonies (Saint-Maurice, 1997). However, it was from the 1970s onwards that the situation became more apparent, as large numbers of people flooded in from Africa as a consequence of the decolonisation process.

In the 1980s, the number of foreign residents kept steadily on the increase, as did the diversity of their origins (increasing numbers of Latin American nationals – especially Brazilians – as well as Asians (Indians, Pakistanis and Chinese). This diversification of the geographic origin of the foreigners is indicative of a change in the role played by Portugal within the context of the international labour migrations: this country is assuming an increasingly relevant position as far as the recruitment of foreign workers, particularly by the informal labour market, is concerned. (Malheiros, 1998)

Figure 31 Foreign nationals residing in Portugal, 1981 - 2003



Source: http://sef.pt/estatisticas.htm

This period was characterised by the virtual absence of mechanisms to control the entrance of immigrants in the country, which made it possible for a significant number of irregular immigrants to enter. (Machado, 1997)

The period between the mid-1980s and the mid-1990s was characterised by two important options in terms of economic policy: the liberalisation of the economy and its opening up to the international market. These options translated into a series of measures and initiatives, which had important repercussions upon the economic variables and the characteristics of the labour market (Malheiros, 1998). It is also important to stress that during this period, and in a context of political stability, there was a significant expansion of investment against a favourable international setting. Moreover, after Portugal's accession to the European Economic Community (EEC) in 1986, the structural funds have truly "supported" several economic sectors, such as construction and public works. (Malheiros, 1998)

This increase in the number of foreign nationals in the country, alongside the ineffectiveness of the legislation, has led to an increase in the number of undocumented immigrants and worsened the problems having to do with poverty, housing and working conditions (Esteves e Caldeira, 2002). In response to this, three extraordinary regularisation campaigns were eventually conducted:

- 1992 - Regularisation of 39,166 immigrants
- 1996 - Regularisation of 35,082 immigrants
- 2001 - Regularisation of 126,901 immigrants, among which the Eastern Europeans stand out: Ukrainians (35.6%), Moldavians (7%), Romanians (5.9%) and Russians (4%).

The accession to the European Community, the agreement to join the *Schengen area* and the impact of the globalisation process have concurred to bring about new forms of organisation of the labour market and the development of new immigration networks, reinforcing the migratory flows originating in the PALOP, Brazil and, more recently, the Eastern European countries.

In the 1990s, even though the African and EU nationals remained the most numerous communities, the Asians and the Eastern Europeans further reinforced their relative position.

In order to sum up, this process can be divided into three different stages:

i. Late 1970s: a "boom" in the entrance of Africans and return migrants from the former colonies, as the result of "push" factors at the origin;
ii. Mid-1980s: relative growth in the number of Asian and Brazilian immigrants;
iii. 1990s: the dynamics of the public works and construction sectors were responsible for an increase in the overall level of employment, particularly among the low-skilled segment. The diversity of the geographic origins of the migrants increased further, as Eastern European immigration intensified, traditional PALOP immigration remained significant (as did the migratory flows originating in Brazil) and Asian immigration increased significantly, particularly in the case of the Indians and the Chinese. (Baganha et al., 1998)

In this context, it is possible to pinpoint a number of factors that help explain the historical evolution of immigration. "Push" factors associated with the sending countries stand out, particularly the mismatch between the high supply of labour (due to the high rates of demographic growth) and the low demand with which it is met (modest growth in the number of jobs available). Some "pull" factors are also worthy of mention, such as the cultural and language ties that have arisen as a consequence of the colonial relationship, in the case of Brazil and the PALOP.

Another "pull" factor, according to Vitorino (2003), is the fact that once inside EU territory, immigrants benefit from the same degree of freedom that EU citizens tend to take for granted.

The relationship between the labour market and migration flows allows for a very interesting discussion, which must take account the labour markets of both the sending and the receiving countries.

In what regards Portuguese emigration today, a large amount consists of migrants that move temporarily to work in the construction sector in countries in which the income level is higher than in Portugal. In compensation, many (mostly African, but also Brazilian and Eastern European) immigrants have in turn sought work in the Portuguese construction sector, where the demand for labour has been quite high in the past few years. (Peixoto, 2004)

One might say that there is a clear imbalance in what regards emigration *from* Portugal and immigration *to* Portugal: this can be largely put down to the chiefly temporary nature of the migration intentions of the Portuguese emigrants and the largely permanent character of the labour immigration to Portugal. Hence, the social and economic costs in the medium and long-run can be quite high. (Baganha, 1996 and 1998)

The level of skills and education, the preferential destinations and the modes of professional incorporation are characteristics that are subject to variation depending on the nationality of the immigrants. Most African immigrants have relatively poor levels of education and skills, in stark contrast with the situation of the Eastern European immigrants. Whereas African immigrants have mostly decided to settle in the LMA and the Algarve, Eastern European migrants have tended to scatter throughout the country, mostly taking up low-skilled jobs in the construction and cleaning sectors, in the case of the men and the women, respectively (Peixoto, 2004). Along a similar line of reasoning, Sassen (1994) maintains that cities play an attraction role with regard to these essentially unstable activities, allowing for the employment to adjust on the up or on the low as a consequence of the fluid nature of the labour markets".

From the 1990s onwards, the construction and public works sectors were particularly dynamic in the Lisbon Metropolitan Area, and the construction firms have sought to further their outsourcing and subcontracting strategies.

Against this background, the problem of the foreign workers' exposure[11] to increasing job insecurity and precariousness has become worse, and the intensification of demand for labour has fostered the recruitment of PALOP migrants to perform undifferentiated tasks. (Malheiros, 1998)

Aside from the construction sector, illegal foreigners are also commonly found working in retail, restaurants and industrial and household cleaning (particularly women). "The growing tertiarisation of the urban economy, whereby a polarisation of jobs takes place into highly skilled and undifferentiated tasks, certainly contributes to the existence of underground (or semi-illegal) activities in the service and retail sectors. (Malheiros, 1998: 77)

According to the Ministry of Work and Solidarity (2002), from 2001 onwards, we have witnessed a relative shortage in terms of the internal supply of labour in a number of activity sectors that have been experiencing significant growth, but whose supply of job vacancies remains unattractive for the autochthonous population. This report further mentions that due to this fact, the inflow of migrant workers has been steadily increasing ever since.

7.2 Skills levels and labour market incorporation

Baganha et al. (1998) define three major modes of incorporation in the Portuguese labour market:

i. The highly-skilled mode (mostly consisting of university and high school graduates): this group is chiefly made up of European, North American and Asian (Japanese and Korean) nationals, for reasons having to do with the performance of highly skilled activities within strongly integrated multinational corporations;
ii. The intermediately skilled mode (a rather more heterogeneous group): In this segment, it is the Chinese (with medium education levels and mostly present in the restaurant sector) that stand out, although there are also some Brazilian citizens;
iii. Low skill mode: In this group, we find the African communities, characterised by a high number of individuals without any formal education and/or literacy skills.

However, we also find some changes in the skills and education profile of the current flows, due to the arrival of Eastern European nationals. Still, the polarisation of the socioeconomic structure of the foreigners living in Portugal remains a reality, reflecting their underlying heterogeneity: highly skilled professionals from Western Europe and North America (mostly temporary stays) coexist with unskilled construction workers from African countries. (Baganha et al., 1998)

PALOP immigrants, the vast majority of whom have very low formal skills, are in many ways akin to the Portuguese emigrants of the 1960s and 1970s (both in terms of the nature of their work and of the activity sectors in which they are employed).

The performance of the Portuguese economy after the accession to the EU was a fundamental turning point in what regards the functioning of the labour market, as far as the recruitment of foreign workers was concerned. In this period, the economy underwent significant liberalisation, increasing openness to the international economy, growing economic integration and the introduction of greater flexibility in the regulation of the labour market.

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[11] The presence of foreign workers reduces the potential tension in a sector in which there are some internal shortages of labour, and contributes to keeping the cost of labour down. (Malheiros, 1998)

According to Baganha et al. (1998), this was a time of significant economic expansion, in which both foreign and domestic investment played a fundamental role, alongside the structural funds that financed activity sectors such as construction and public works. This made it possible for the unemployment rate to drop to relatively low levels (5%) and, in conjunction with various other factors, led to the need to recruit foreign labour.

In this period, the high level of economic growth was also responsible for the steady increase in the inflow of skilled professionals, businessmen, technical workers and scientists from the other EU member states, for a limited period of time, in association with the increase in FDI flows. (Ramos, 2000)

The increase in FDI flows translated into the increasing significance of Portugal within the global intra-organisational migration system. In this decade, independent flows[12] became increasingly frequent, due to the shortage of skilled professionals in certain segments of the Portuguese labour market.

In the 1990s, following the fall of the Berlin Wall and the ensuing economic collapse, there was a large increase in immigration flows originating in Eastern Europe. However, these migrants experienced a process of downward professional incorporation. In spite of their skills, they could, and can, generally be found taking up jobs in the secondary labour market. The women work chiefly in the restaurant and industrial and household cleaning sectors, while the men tend to work in the construction and public works sector.

Table 45 Professional categories of foreign nationals, by national origin, 1998

Origin	Scientific and technical professions	Top and medium management cadres	Office staff	Retail workers and vendors	Manufacture, construction and transport workers	Other professions[13]
Europe	60.8	7.6	2.7	9.0	13.8	6.1
PALOP	4.5	0.3	2.9	2.6	78.8	11.0
Angola	7.3	0.2	2.3	2.9	73.5	13.8
Cape Verde	1.6	0.1	3.0	0.8	84.9	9.7
Guinea-Bissau	6.0	0.2	1.8	1.8	81.0	9.2
Mozambique	13.6	3.1	7.8	24.1	42.8	8.5
S. Tomé and Príncipe	9.9	0.3	4.7	3.6	58.2	23.2
Other African countries	22.5	12.3	2.6	19.0	38.6	5.2
North America	59.2	6.6	2.2	2.9	24.0	5.1
Canada	29.7	7.7	3.1	8.1	43.2	8.1
USA	63.6	6.4	2.1	2.0	21.3	4.6
Central and South America	45.6	4.5	6.1	12.2	24.3	7.3
Brazil	46.4	4.4	6.8	12.1	22.4	7.8
Asia and Oceania	22.5	8.9	2.2	27.3	15.0	24.2
China	7.7	3.5	0.8	21.9	13.7	52.4
Stateless	23.0	8.7	7.1	20.6	35.7	4.8
Total	**17.9**	**2.4**	**3.4**	**6.4**	**59.4**	**10.4**

Source: SEF, 1998

[12] Skilled international migration flows that take place outside the scope of organisations. (Ribeiro, 2001)
[13] Includes security and protection workers, personal and household services, agriculture, cattle raising and forestry workers, hunters and fishermen.

According to Baganha (1996), the available statistical data suggests that this dual nature of Portuguese immigration is a reflection of the dual needs of the Portuguese labour market: immigrants to perform skilled activities in management, technical and scientific professions; and unskilled workers for the construction sector.

Within the skilled segment of the labour market, there have been some changes in the geographic profile of the immigrants. Peixoto (1999) has stressed the predominance of the EU citizens as intra-organisational migrants[14] and that of the Brazilians as independent migrants.

7.3 Immigrants and the labour market in the Lisbon Metropolitan Area

In this section, our aim is to present an overview of the dynamics of immigration and the labour market in the Lisbon Metropolitan Area. However, some introductory remarks are in order so as to clarify the relationships between the labour market and migration flows.

The Lisbon Metropolitan Area (LMA) is made up of 19 municipalities and, according to the 2001 Population Census, has a resident population of 2,682,687 that accounts for 25,9% of the country. This area is home to around 28.1% of the Portuguese work force (INE, 2001). By 2001, the tertiary sector accounted for nearly 74.7% of the active population of the LMA, whereas in the rest of the country the figure dropped to 59.9%. (Table 46)

Table 46 Sectoral distribution of the economically active population, 1991 and 2001 (%)

Geographic units	Total	Primary	Secondary	Tertiary
1991				
LMA	100	1.84	28.35	69.81
Portugal	100	10.79	37.87	51.34
2001				
LMA	100	1.19	24.13	74.69
Portugal	100	4.98	35.10	59.92

Source: INE – Census 1991 and 2001

7.3.1 Immigrants in the Lisbon Metropolitan Area

It is in the LMA that the highest concentration of foreign residents can be found. This is due to the immigrants' tendency to regroup in the host country, to the higher level of international integration in the metropolitan economy and to the weight of the retail and service sectors (Baganha et al., 1998), which, as we have seen, accounts for the greatest share of the economically active population (74.7% in 2001).

42.8% of the foreign nationals residing in Portugal lived in the LMA in 1991, and that figure had increased to 55.5% by 2001. It was from the 1970s onwards that this upward trend became apparent. (Table 47)

[14] The official figures may actually underestimate their real weight, since "taking the increasing number of temporary stays by upper cadres into account (…) would significantly increase our account of the number of professional migrants. (Peixoto, 1998)

Table 47 Foreign residents in mainland Portugal and the Lisbon Metropolitan Area, 1960-2001

	Resident population 1960	% of foreign nationals in the total population 1960	Resident population 1981	% of foreign nationals in the total population 1981	Resident population 1991	% of foreign nationals in the total population 1991	Resident population 2001	% of foreign nationals in the total population 2001
LMA	1,524,200	1.00	2,502,044	1.82	2,535,669	1.80	2,682,687	4.69
Mainland Portugal	8,292,975	0.33	9,336,760	1.09	9,371,756	1.05	9,869,343	2.24

Source: INE

By 2001, around 80% of the immigrants of African origin lived in the LMA (Table 48), and provided an important contribution to the workforce, particularly in the construction and household/industrial cleaning sectors. Economic stagnation and civil war were among the push factors that led many of these migrants to leave their countries in search of better wages and economic prosperity in a context of labour shortage, as is the case in Portugal. (Fonseca et al., 2002)

There is significant concentration of the Asians in the LMA, many of whom own their own businesses – in which they employ their fellow countrymen. Asians tend to concentrate in the larger cities as that is where the best business opportunities can be found.

Another group that is heavily concentrated in the LMA is the Europeans, who experienced an 89.6% increase between 1991 and 2001. The geographic proximity and the economic relations between Portugal and these countries are factors that concur to explain the "pull" effect in these cases, as are the increasing level of FDI in Portugal and the firms' tendency to concentrate in the LMA.

There has also been a recent inflow of Eastern Europeans. According to Fonseca et al. (2002), "after the economic collapse of countries such as Russia, the Ukraine and Romania, many skilled and semi-skilled workers in these countries found themselves either jobless or earning much lower wages than they used to. One of the ways of improving their situation was to migrate: considering the limited opportunities in the East, the most attractive alternative was of course the West. Through either networks of friends and relatives or illegal smuggling organisations, Eastern Europeans turned to Portugal into a major destination. The massive investments that are currently being made in infrastructure, accessibilities and other public/private works require an abundant labour force – and these opportunities are widely known throughout Europe".

Table 48 Foreign nationals residing in Portugal and LMA, by continent of origin, 1991 and 2001

		1991		2001		Variation rate 1991-2001
		No.	%	No.	%	
Europe	Portugal	37,474	100	72,355	100	93.1
	LMA	10,585	28.2	20,070	27.7	89.6
Africa	Portugal	36,629	100	103,271	100	181.9
	LMA	27,234	74.4	82,277	79.7	202.1
America	Portugal	30,296	100	44,334	100	46.3
	LMA	6,409	21.2	19,169	43.2	199.1
Asia	Portugal	1,770	100	6,318	100	256.9
	LMA	1,303	73.6	4,286	67.8	228.9
Oceania	Portugal	396	100	437	100	10.4
	LMA	77	19.4	125	28.6	62.3
Total	Portugal	106,565	100	226,715	100	112.7
	LMA	45,608	42.8	125,927	55.5	176.1

Source: Adapted from Fonseca et al. (2001)

7.3.2 The labour Market

Today's migrant workforce comprehends workers with a variety of skills. At the upper end of the skills spectrum, we find the professionals and managers who move within the internal labour markets of transnational corporations to accompany expanding international trade or foreign direct investment. These so-called "intra-company transferees" have become a ubiquitous presence in the more dynamic regions of the world, where they are the purveyors of new production techniques and managerial know-how. (ILOG, 2004)

Nonetheless, contemporary migration flows are still dominated by workers moving to fill unskilled jobs in those segments of the labour market vacated by native workers who move on to better jobs. (ILOG, 2004)

Against this general background, the immigrants' participation in the labour market has also changed. The 1990s were a time of large-scale construction projects such as the Vasco da Gama Bridge, the Expo'98 or the railway crossing on the 25 de Abril Bridge. These dynamic in the construction and public works sectors were responsible for an increase in the overall level of employment, and were especially beneficial for the absorption of unskilled workers (many of whom of African origin).

From the inherently irregular pace of activity in the construction sector follows the fact that the demand for labour experiences short-term fluctuations. Consequently, with the aim of cutting costs, some firms have developed contract systems with subcontractors, who in turn take up the responsibility for hiring and dealing with the workers. A cascade-like type of recruitment system is thereby put into place (construction firms – contractors – subcontractors – *recruiters*[15]- workers), which contributes to increasing the vulnerability of the foreign workers[16] and to diluting the responsibility of each of the agents involved in the process. (Malheiros, 1996)

[15] "Recruiters" are people that set up recruitment points in the suburban areas where the African population lives and in a number of specific locations, situated in certain parts of the city of Lisbon, which serve as virtual "labour market outlets". (Malheiros, 1998)

[16] Immigrants not holding valid papers do not have access to the benefits of legal contracts, such as legal protection against wage delays and licensing, paid vacation, compensation in the event of a working accident, or unemployment benefits.

This informality, so characteristic of the Portuguese construction sector, is a well-known phenomenon, manifest in the existence of a number of well-defined hiring spots (e.g., the *Rossio* square) and in the notorious subcontractor vans that carry the immigrants from Lisbon's suburban neighbourhoods to the construction sites in the morning and back again at the end of the day. (Góis, n/d)

8 The depopulation of peripheral rural areas: the case of the Alentejo. Foreseeable future developments in the several European regions

8.1 Recent trends in demography and immigration

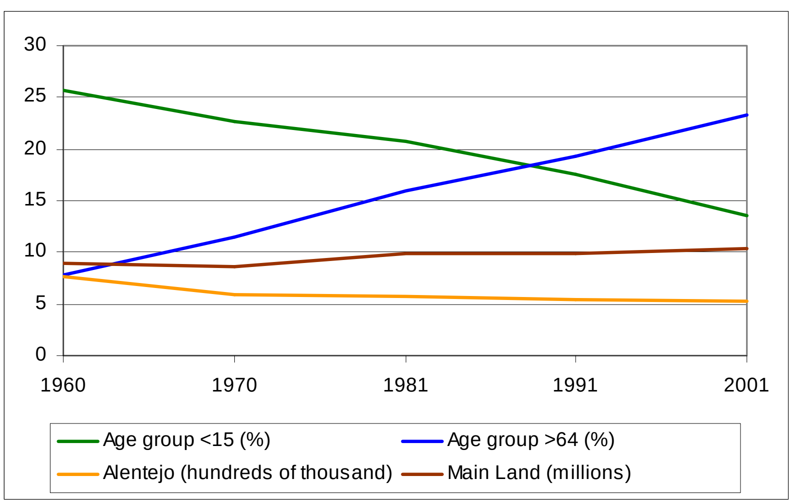
From a very early stage in the history of the country, the Alentejo region has been the stage of migration flows. Bread, wine and olive oil were (at the time of the Reconquest) the instruments that served the goal of repopulation. Olive trees and vineyards were grown in the immediate outskirts of the cities, towns and villages and provided direct or indirect employment during most of the year. Cereal crops, in which the demand for labour is more concentrated in time, have also drawn in people from both the North and the South of the country, as well as from Galicia (Spain) and Africa. (Gaspar, 1993: 141)

Later, there was a period of substantial population decrease in the decades between 1950 and 1980, which corresponded to a time of emigration and to the extensification of agriculture.

Several possible solutions were considered, such as the introduction of high-yield maize crops. "However, the lack of water remained an obstacle and, in the future, let there be no doubt, there will be no rebirth of the Alentejo without water". (Gaspar, 1993: 148)

With an area of 27,029 km^2 – almost a third of the country – the Alentejo has always had low levels of population density. In 2001, according to INE's 2001 Population Census, the figure was 19.8 inhab./km^2, which compares to 110.8 inhab./km^2 in mainland Portugal as a whole. Its (demographic) apex was reached in 1950, a time when the population reached 791,524 inhabitants as a result of the grain production campaigns. That is to say, in half a century, the Alentejo region has lost around 225,000 inhabitants (i.e., roughly 1/3). In the same period (1960-2001), the population of mainland Portugal as a whole grew by about 19%.

Figure 32 Population of the Alentejo and mainland Portugal, 1960 - 2001



Source: INE

Another demographic component that has brought about the depopulation and especially the ageing of the Alentejo region is the dynamics of its age structure. As is visible in the previous Figure, the youths and the elderly have virtually swapped positions over the past forty years, which is indicative of worrying trends as far as the dependency rates, the capacity for inter-generational substitution and the reproduction of the labour force are concerned. The trends visible in the Figure are characteristic of regions experiencing ageing and depopulation, which normally lead to problems of labour shortage.

It is important to understand the role played by immigration within this demographic context. Immigration has on several occasions (Coleman, 1992; Feld, 2000, cit. ONU, 2000) been suggested as being a possible solution to the problems of the rural areas affected by population decrease, a factor that directly affects the availability of labour.

Even though the official statistic records indicate that the weight of the foreign population in the Alentejo region[17] is relatively small, other sources[18] suggest that their actual weight and importance for the Alentejo economy is in fact steadily increasing.

Table 49 Foreign residents in mainland Portugal and the Alentejo Region, 1960, 1991 and 2001

	Resident population 1960	Foreign nationals as a % of the resident population 1960	Resident population 1991	Foreign nationals as a % of the resident population 1991	Resident population 2001	Foreign nationals as a % of the resident population 2001
Alentejo	760,916	0.16	543,442	0.66	530,866	1.31
Mainland Portugal	8,292,975	0.33	9,375,926	1.05	9,869,343	2.24

Source: INE

In mid-2004, the High-Commissioner for Immigration and Ethnic Minorities (ACIME) maintained that eastern European immigrants, particularly from Moldova and the Ukraine[19], already accounted for ¼ of all the rural workers in the Alentejo region. According to this government office, immigrants were responsible for 5% of the Gross National Product, and for around 4.5% of the Regional Product of the Alentejo. "In the Alentejo – a region in which the economic activity is centred around agriculture, but where there have been some large-scale investments in public works such as the Alqueva dam –, the foreign labour force is drawn primarily to the agriculture (47.2%) and construction (47%) sectors. (Fonseca, 2003: 88)

[17] For instance, according to data by the Foreigners and Borders Office (SEF), of the 183,655 permanence permits that were granted between 2001 and 2003, only 2.2% and 1.6% concerned the Évora and Beja districts, respectively.

[18] ACIME - High-Commissioner for Immigration and Ethnic Minorities (www.acime.gov)

[19] Also according to SEF data, 39% of the permanence permits granted between 2001 and 2003 in the Évora and Beja districts were awarded to Ukrainian nationals.

8.2 The economy

Despite their high average levels of schooling and skills, most Eastern European immigrants are employed in underpaid, low-skilled jobs in construction (men), personal services and cleaning (women).

The emergence of a series of consecutive migration waves (first, the post-colonial cycle; then, the Eastern European wave) has led to the gradual replacement of the traditional migration strategies based on social and family networks and relationships (as in the case of the migrants from the former Portuguese colonies in Africa) by an organised system of illegal human trafficking networks operating from Eastern Europe[20] (Fonseca, 2004). This was a result of two factors that are characteristic of the Alentejo economy (not unlike other European regions experiencing similar problems): on the one hand, the need to fill the gaps in the labour market; on the other, the need to keep costs down. Still, bearing in mind that these immigrants are characterised by high average levels of schooling and skills, they may well provide an opportunity for the introduction of new factors of economic development and for the demographic and economic rejuvenation of the receiving areas. For the time being, they are have remained largely confined to low-skilled jobs.

In the Alentejo, an aged and pronouncedly rural region, immigrants are gradually replacing the autochthonous labour force in a variety of sectors, from construction and public works to agriculture and the hotel and restaurant sector.

Table 50 Work contracts entered into with non-EU foreign citizens holding permanence permits, by activity sectors and NUT2, 2001 (%)

	Northern Portugal	Central Portugal	Lisbon & Tagus Valley	Alentejo	Algarve	9 Total
Agriculture	2.2	5.1	3.0	21.8	5.8	4.2
Textile	7.9	2.7	0.1	0.9	0.0	1.8
Clothing	6.1	2.5	0.6	0.3	0.0	1.7
Footwear	5.7	0.3	0.0	0.0	0.0	1.0
Metallurgy	1.7	0.9	0.5	0.3	0.0	0.7
Construction	49.2	59.7	46.1	43.3	56.4	49.8
Commerce	10.3	3.1	11.6	23.2	7.0	10.0
Restaurants & Hotels	10.1	21.8	19.1	9.9	28.8	19.0
Industrial Cleaning	5.2	1.3	17.2	0.2	1.5	10.3
Other industries	1.6	2.6	1.7	0.1	0.6	1.6

Source: FONSECA (2004: 99)

As far as the incorporation of Eastern European immigrants in the labour market is concerned, it is possible to pinpoint a number of differences with regard to the situation of the immigrants from the Portuguese-Speaking African Countries (PALOP) or Brazil. As shown in the previous Table, the relative weight (21.8%) of the Eastern European immigrants in Alentejo's agricultural sector (strictly in the context of permanence permits) is in stark contrast with their much lower weight in the rest of the country, where the share of foreign workers in agriculture barely reaches 5.8%. (Fonseca, 2004)

[20] According to Góis (s/d: cit. Expresso, 24.12.1999), 77 workers, out of a total of 200, were found to be in an irregular situation in the construction works going on in the new village of Aldeia da Luz (…). Of these, 37 were illegal immigrants from Guinea, Cape Verde, Brazil, Romania and the Ukraine. They were hired by subcontractors who systematically employed people without any legal documents, visas or work permits.

While up until the late 1990s immigrants tended to concentrate exclusively in the main urban centres, today's migratory flows (especially those originating in Eastern Europe) are more evenly scattered throughout the country (across both urban and rural areas), providing a clear indication of the increasing internationalisation of labour recruitment as part of the process of economic globalisation, even in the case of peripheral regions.

8.3 Foreseeable future developments

The economic conditions within Southern Europe, rather than the external "push" factors, should not be taken to imply that the demand for international migration comes solely from within Southern Europe. (King, 1997: 22)

It is through transnational comparison that we can move to a clearer understanding of the forces that are generating these new immigrations, and the appropriateness of policy responses (id., ibid.).

It is therefore unlikely that regions like the Alentejo will be able to reverse the current downward trend of their population. At best, a certain degree of stability can be hoped for: on the one hand, because in an aged population, the tendency is for the number of deaths to increase - moreover, the population inflows are not large enough to tilt the scale in the opposite direction-; on the other, because from a productivity and economic competitiveness standpoint, a new demographic *boom* (as the one that took place in the 1950s) would in fact probably have a detrimental impact.

Appendices

APPENDIX 1 Population Indicators for EU - 15

	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
Total population (thousands)									
2000	376.539	376.539	376.539	376.539	376.539	376.539	376.539	376.539	376.539
2025	356.074	377.069	376.539	389.372	533.836	387.853	390.876	388.614	390.126
2050	295.949	340.688	376.539	401.700	774.822	397.324	405.996	399.522	403.858
Age group 0-14 (thousands)									
2000	63.372	63.372	63.372	63.372	63.372	63.372	63.372	63.372	63.372
2025	49.680	54.372	54.374	57.274	90.067	56.929	57.616	57.102	57.446
2050	40.052	48.245	55.962	59.849	129.906	59.048	60.633	59.451	60.243
Age group 15-64 (thousands)									
2000	251.861	251.861	251.861	251.861	251.861	251.861	251.861	251.861	251.861
2025	227.519	242.881	242.484	251.861	357.117	250.750	252.960	251.307	252.412
2050	174.257	205.946	233.471	251.861	519.097	248.650	255.012	250.263	253.443
Age group 65 + (thousands)									
2000	61.307	61.307	61.307	61.307	61.307	61.307	61.307	61.307	61.307
2025	78.875	79.815	79.680	80.237	86.651	80.174	80.299	80.206	80.268
2050	81.640	86.497	87.106	89.991	125.820	89.625	90.351	89.809	90.172
Potential support ratio (PSR)									
2000	4,11	4,11	4,11	4,11	4,11	4,11	4,11	4,11	4,11
2025	2,88	3,04	3,04	3,14	4,12	3,13	3,15	3,13	3,14
2050	2,13	2,38	2,68	2,80	4,13	2,77	2,82	2,79	2,81
Average annual number of migrants (thousands)									
2000	-	718	718	718	718	718	718	718	718
2025	-	753	1.481	2.180	8.078	2.085	2.274	2.133	2.227
2050	-	717	2.193	1.666	9.654	1.603	1.727	1.635	1.697
Crude birth rate (per 1000 inhabitants)									
2000	10,67	10,67	10,67	10,67	10,67	10,67	10,67	10,67	10,67
2025	8,88	9,01	8,86	8,91	9,59	8,91	8,91	8,91	8,91
2050	8,62	8,85	8,95	9,09	9,56	9,07	9,10	9,08	9,05
Crude death rate (per 1000 inhabitants)									
2000	9,84	9,84	9,84	9,84	9,84	9,84	9,84	9,84	9,84
2025	13,42	12,83	12,79	12,45	9,81	12,49	12,41	12,47	12,43
2050	17,73	16,18	14,77	14,28	9,94	14,39	14,18	14,33	14,17
Crude migration rate (per 1000 inhabitants)									
2000	-	1,91	1,91	1,91	1,91	1,91	1,91	1,91	1,91
2025	-	2,00	3,93	5,60	15,13	5,38	5,82	5,49	5,71
2050	-	2,10	5,82	4,15	12,46	4,03	4,25	4,09	4,18

APPENDIX 2 Population Indicators for EU - 25

	Scenarios								
	A	B0	B1	B2	B3	C1	C2	C3	C4
	Total population (thousands)								
2000	451,629	451,629	451,629	451,629	451,629	451,629	451,629	451,629	451,629
2025	425,925	447,789	451,629	466,844	649,965	464,960	468,711	465,904	467,779
2050	351,652	398,269	451,629	480,284	940,146	474,933	485,540	477,620	482,924
	Age group 0-14 (thousands)								
2000	77,127	77,127	77,127	77,127	77,127	77,127	77,127	77,127	77,127
2025	60,263	65,156	66,158	69,788	111,830	69,351	70,222	69,570	70,005
2050	47,405	55,953	67,156	71,762	159,313	70,769	72,736	71,268	72,251
	Age group 15-64 (thousands)								
2000	303,475	303,475	303,475	303,475	303,475	303,475	303,475	303,475	303,475
2025	273,707	289,702	292,511	303,475	436,657	302,104	304,834	302,791	304,156
2050	208,785	241,812	282,287	303,475	633,733	299,537	307,342	301,515	305,417
	Age group 65 + (thousands)								
2000	71,027	71,027	71,027	71,027	71,027	71,027	71,027	71,027	71,027
2025	91,954	92,931	92,960	93,580	101,478	93,505	93,655	93,543	93,618
2050	95,463	100,503	102,187	105,047	147,101	104,626	105,462	104,837	105,255
	Potential support ratio (PSR)								
2000	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27
2025	2.98	3.12	3.15	3.24	4.30	3.23	3.25	3.24	3.25
2050	2.19	2.41	2.76	2.89	4.31	2.86	2.91	2.88	2.90
	Average annual number of migrants (thousands)								
2000	-	747	747	747	747	747	747	747	747
2025	-	785	1,834	2,677	10,412	2,561	2,792	2,620	2,735
2050	-	749	2,706	2,422	15,040	2,325	2,518	2,374	2,470
	Crude birth rate (per 1000 inhabitants)								
2000	10.48	10.48	10.48	10.48	10.48	10.48	10.48	10.48	10.48
2025	8.93	9.05	8.91	8.99	9.68	8.99	8.99	8.99	8.99
2050	8.61	8.82	8.96	9.07	9.42	9.05	9.08	9.06	9.07
	Crude death rate (per 1000 inhabitants)								
2000	9.99	9.99	9.99	9.99	9.99	9.99	9.99	9.99	9.99
2025	13.62	13.10	12.97	12.61	9.85	12.66	12.57	12.64	12.59
2050	17.98	16.57	14.95	14.42	9.94	14.53	14.32	14.48	14.37
	Crude migration rate (per 1000 inhabitants)								
2000	-	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
2025	-	1.75	4.06	5.73	16.02	5.51	5.96	5.62	5.85
2050	-	1.88	5.99	5.04	16.00	4.90	5.19	4.97	5.11

APPENDIX 3 Population Indicators for the EU - 29

Scenarios

Total population (thousands)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	493,878	493,878	493,878	493,878	493,878	493,878	493,878	493,878	493,878
2025	464,781	486,394	493,878	509,327	704,184	507,273	511,364	508,302	510,347
2050	382,839	429,144	493,878	523,973	1,015,428	518,089	529,753	521,044	526,876

Age group 0-14 (thousands)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	84,730	84,730	84,730	84,730	84,730	84,730	84,730	84,730	84,730
2025	65,877	70,729	72,533	76,277	121,106	75,799	76,752	76,039	76,515
2050	51,558	60,090	73,450	78,387	172,227	77,289	79,463	77,841	78,927

Age group 15-64 (thousands)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	332,072	332,072	332,072	332,072	332,072	332,072	332,072	332,072	332,072
2025	299,682	315,477	320,990	332,072	473,731	330,578	333,553	331,326	332,814
2050	228,088	260,863	309,766	332,072	685,196	327,738	336,328	329,915	334,209

Age group 65 + (thousands)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	77,077	77,077	77,077	77,077	77,077	77,077	77,077	77,077	77,077
2025	99,222	100,188	100,356	100,978	109,347	100,896	101,059	100,937	101,019
2050	103,192	108,191	110,662	113,515	158,006	113,062	113,962	113,289	113,739

Potential support ratio (PSR)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31
2025	3.02	3.15	3.20	3.29	4.33	3.28	3.30	3.28	3.29
2050	2.21	2.41	2.80	2.93	4.34	2.90	2.95	2.91	2.94

Average annual number of migrants (thousands)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	735	735	735	735	735	735	735	735
2025	-	777	2,039	2,919	11,296	2,793	3,044	2,856	2,982
2050	-	746	3,009	2,721	16.076	2,611	2,828	2,666	2,775

Crude birth rate (per 1000 inhabitants)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47
2025	8.93	9.04	8.91	8.99	9.66	8.99	8.99	8.99	8.99
2050	8.60	8.80	8.94	9.06	9.45	9.05	9.07	9.05	9.07

Crude death rate (per 1000 inhabitants)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	10.11	10.11	10.11	10.11	10.11	10.11	10.11	10.11	10.11
2025	13.71	13.22	13,04	12.70	9.95	12.74	12.66	12.72	12.68
2050	18.10	16.78	15.04	14.51	10.04	14.62	14.40	14.56	14.46

Crude migration rate (per 1000 inhabitants)

	A	B0	B1	B2	B3	C1	C2	C3	C4
2000	-	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
2025	-	1.60	4.13	5.73	16.04	5.51	5.95	5.62	5.84
2050	-	1.74	6.09	5.19	15.83	5.04	5.34	5.12	5.27

APPENDIX 4 Labour Shortage

Figure A4.1 - % 15-64 years, EU15 2000-2050

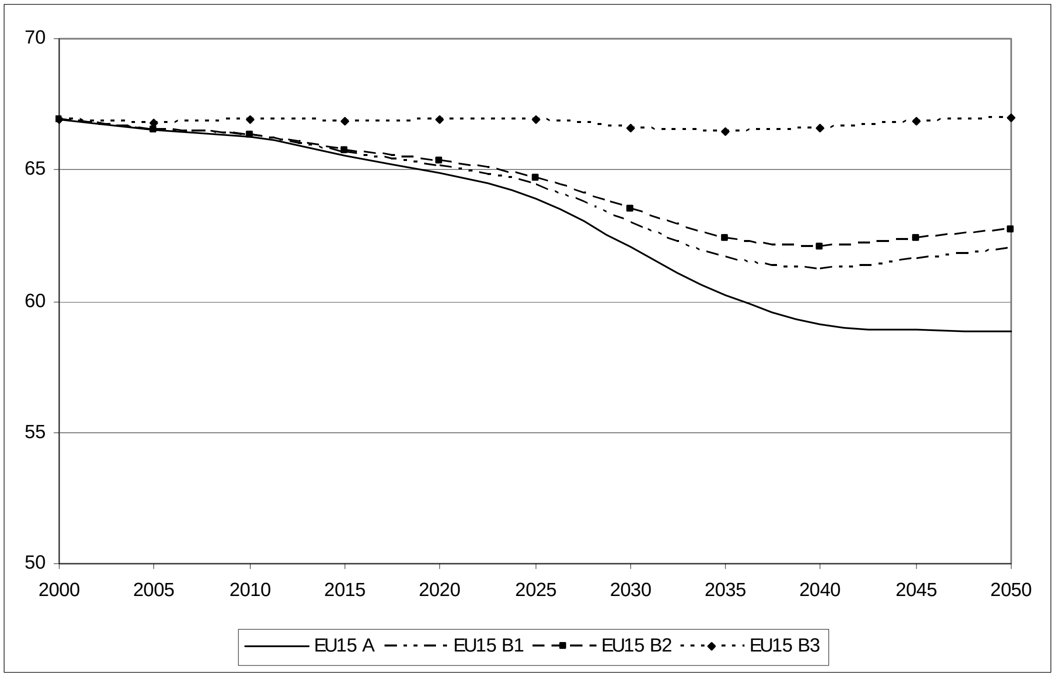


Figure A4.2 - % 15-64 years, EU25 2000-2050

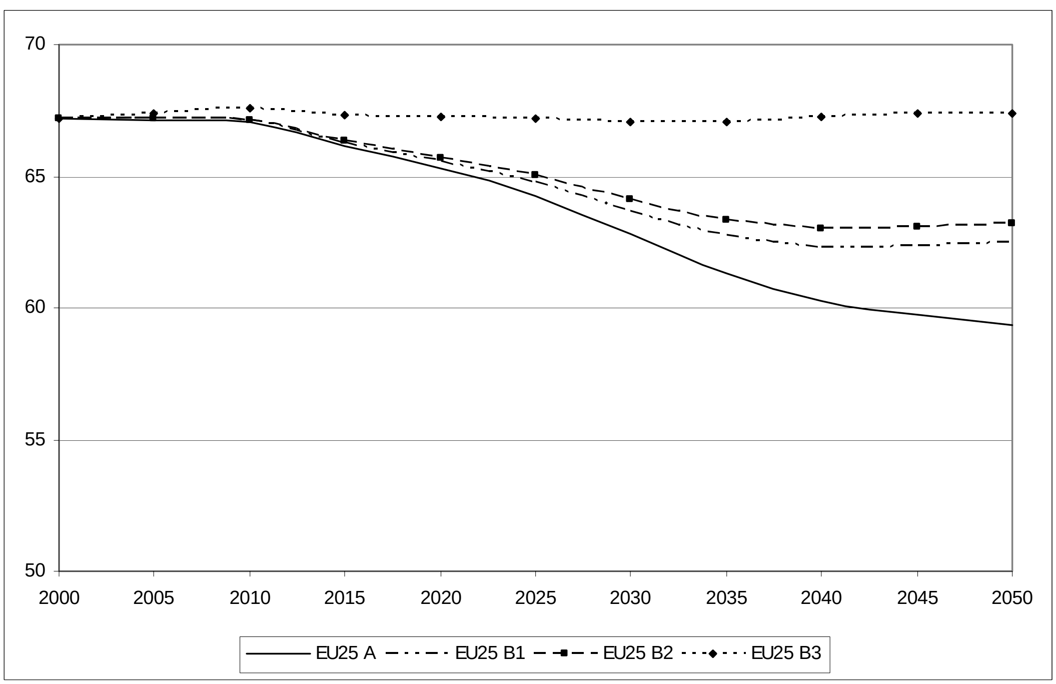


Figure A4.3 - % 15-64 years, EU29 2000-2050

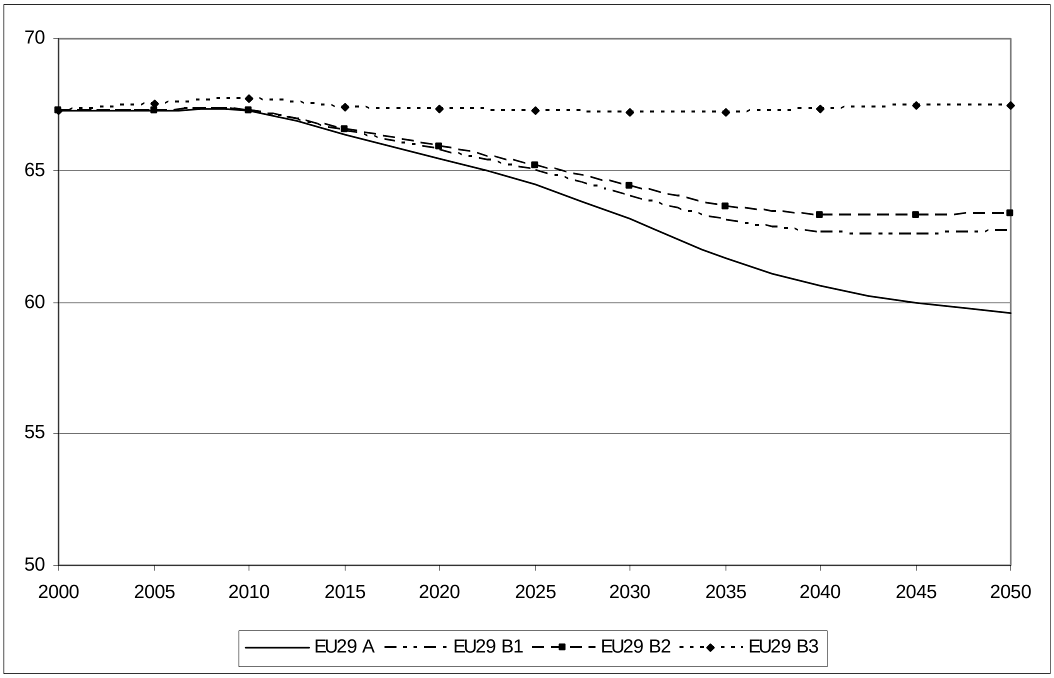


Figure A4.4 - % 15-64 years, by country - Model A

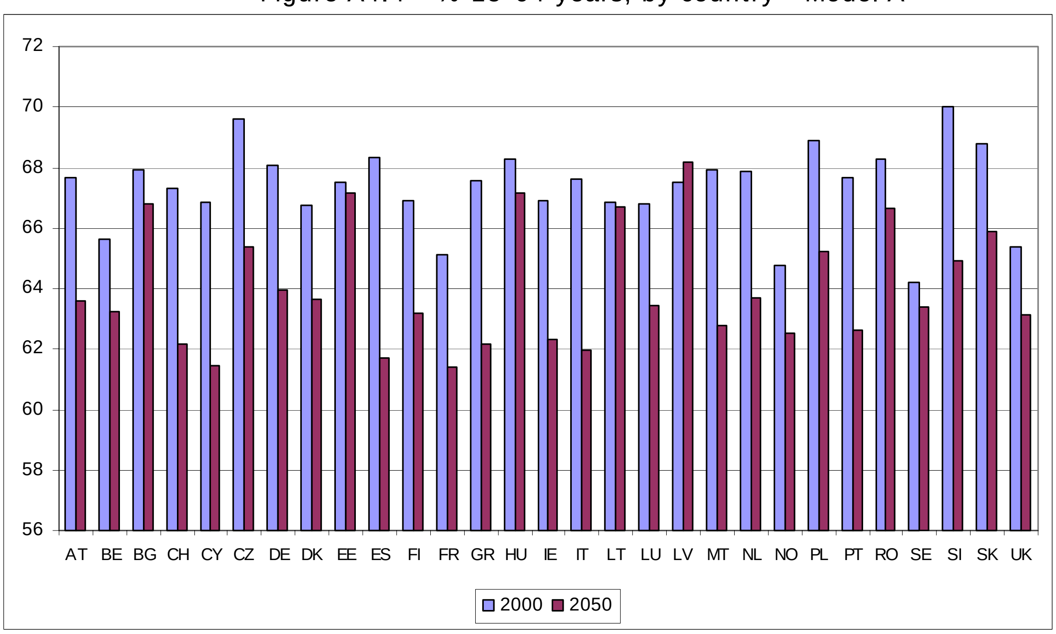


Figure A4.5 - % 15-64 years, by country - Model B1

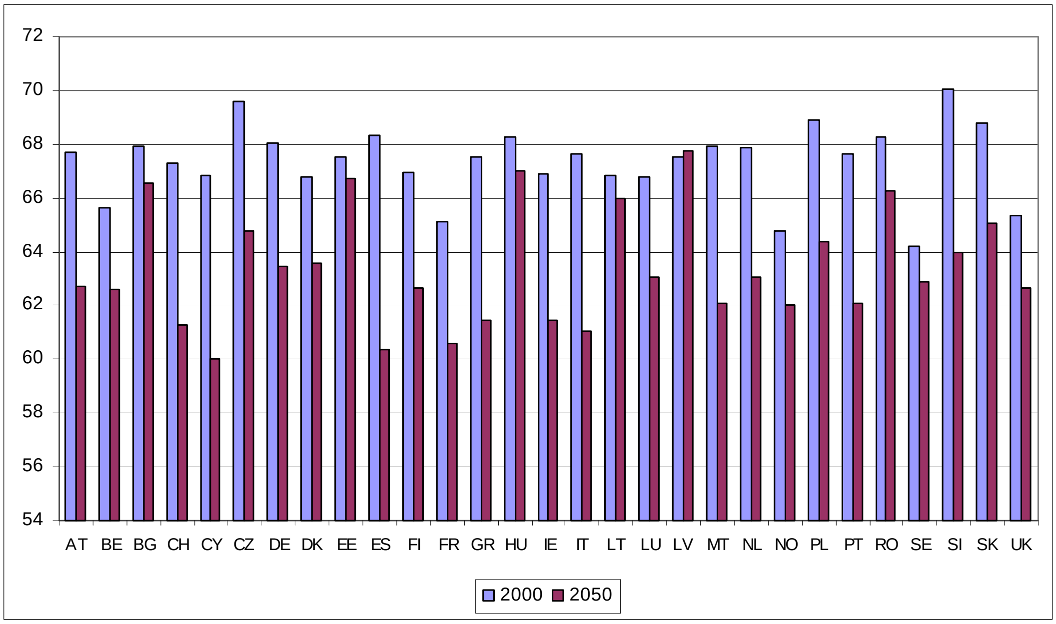


Figure A4.6 - % 15-64 years, by country - Model B2

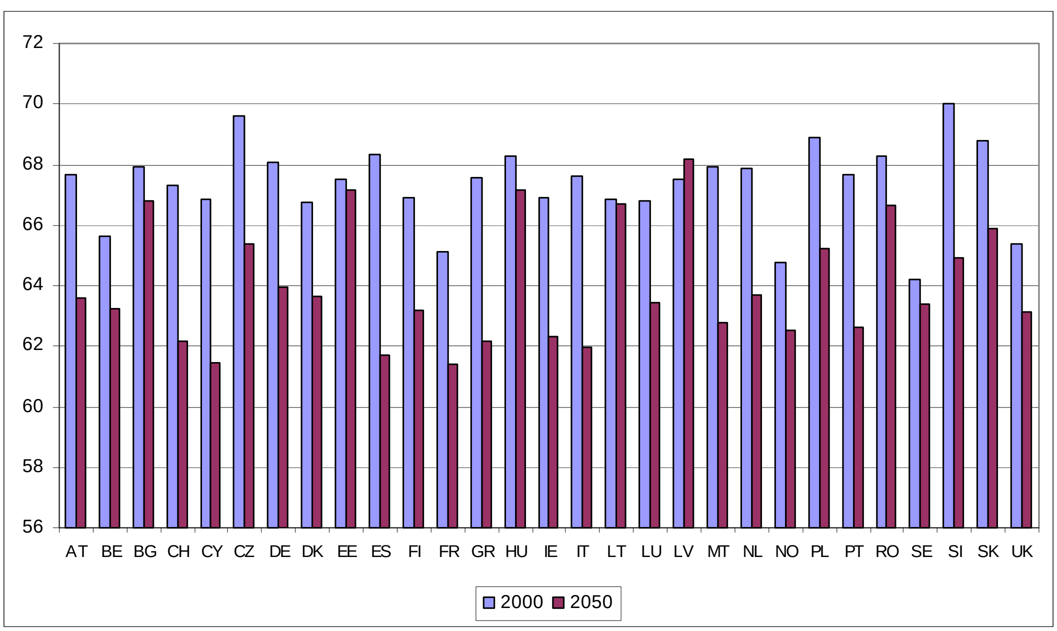


Figure A4.7 - % 15-64 years, by country - Model B3

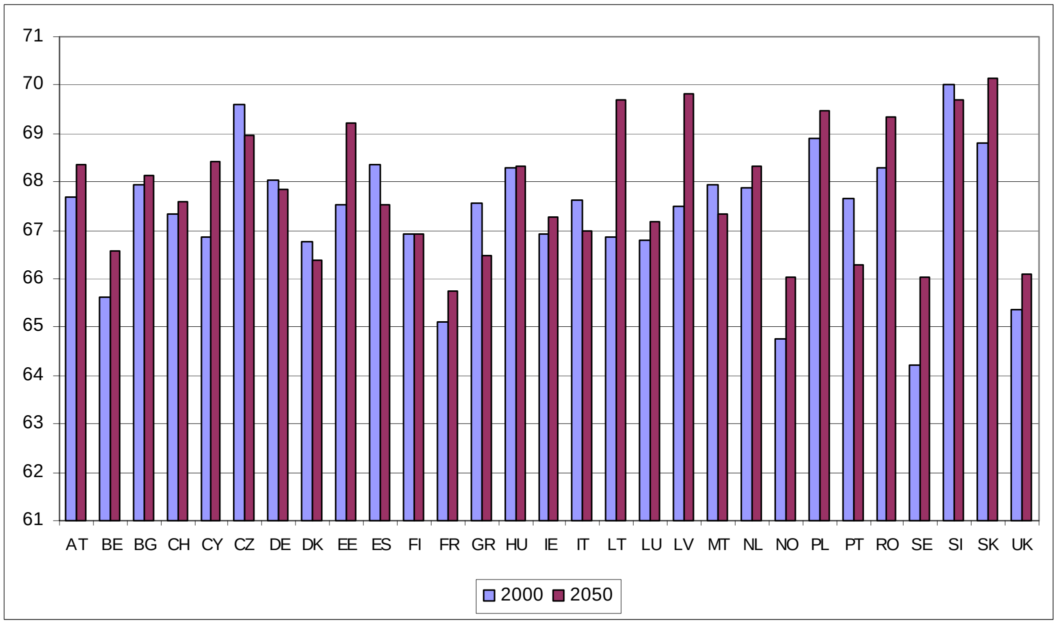
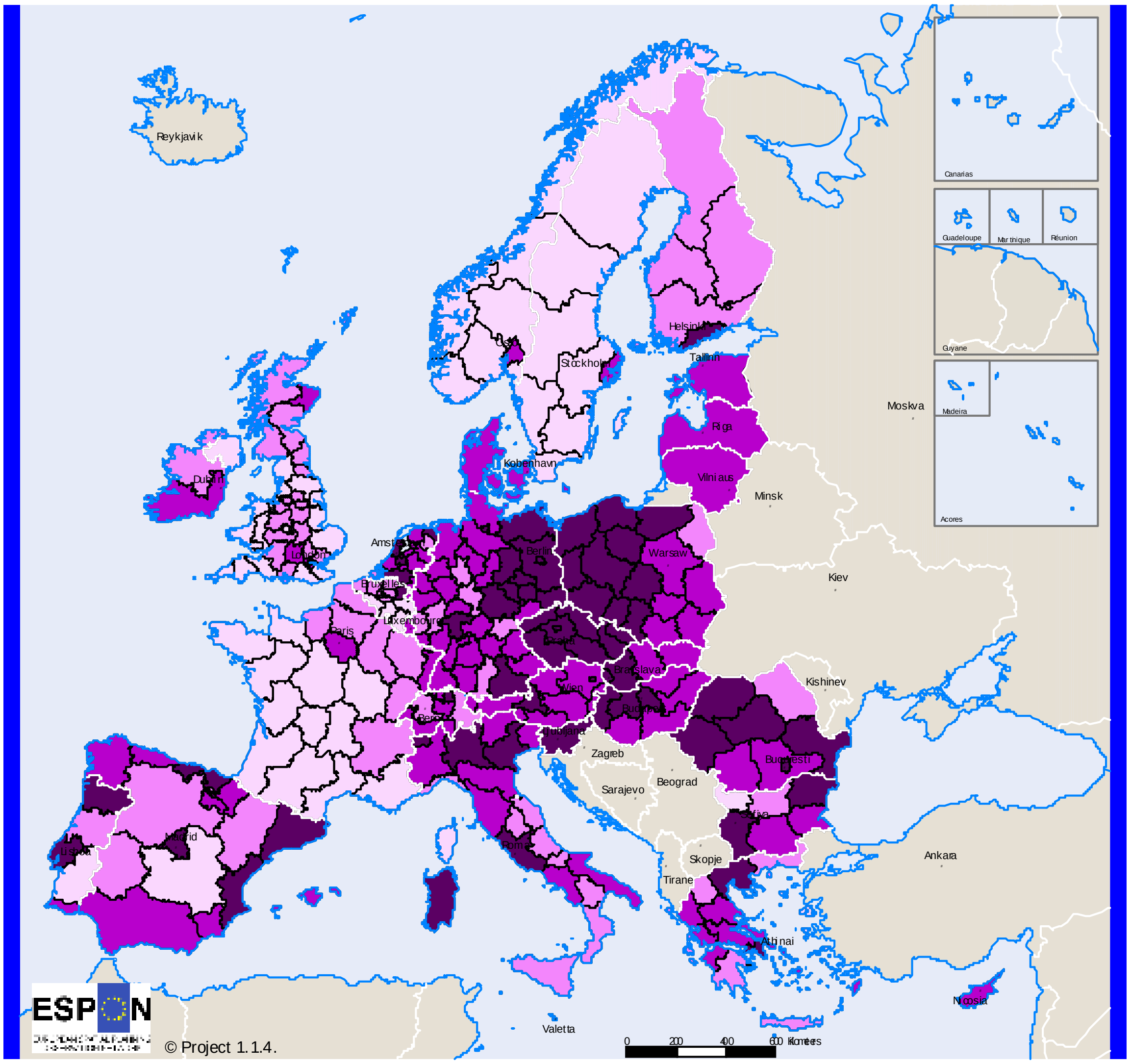


Figure A4.8 – Working age population by NUT 2, 2000/2025/2050 (Model A)

Labour force trends by NUT2



Population between 15 and 64 years old, 2000 (%)
Model A

- 61.6 to 64.7
- 64.7 to 66.5
- 66.5 to 68.4
- 68.4 to 72.1

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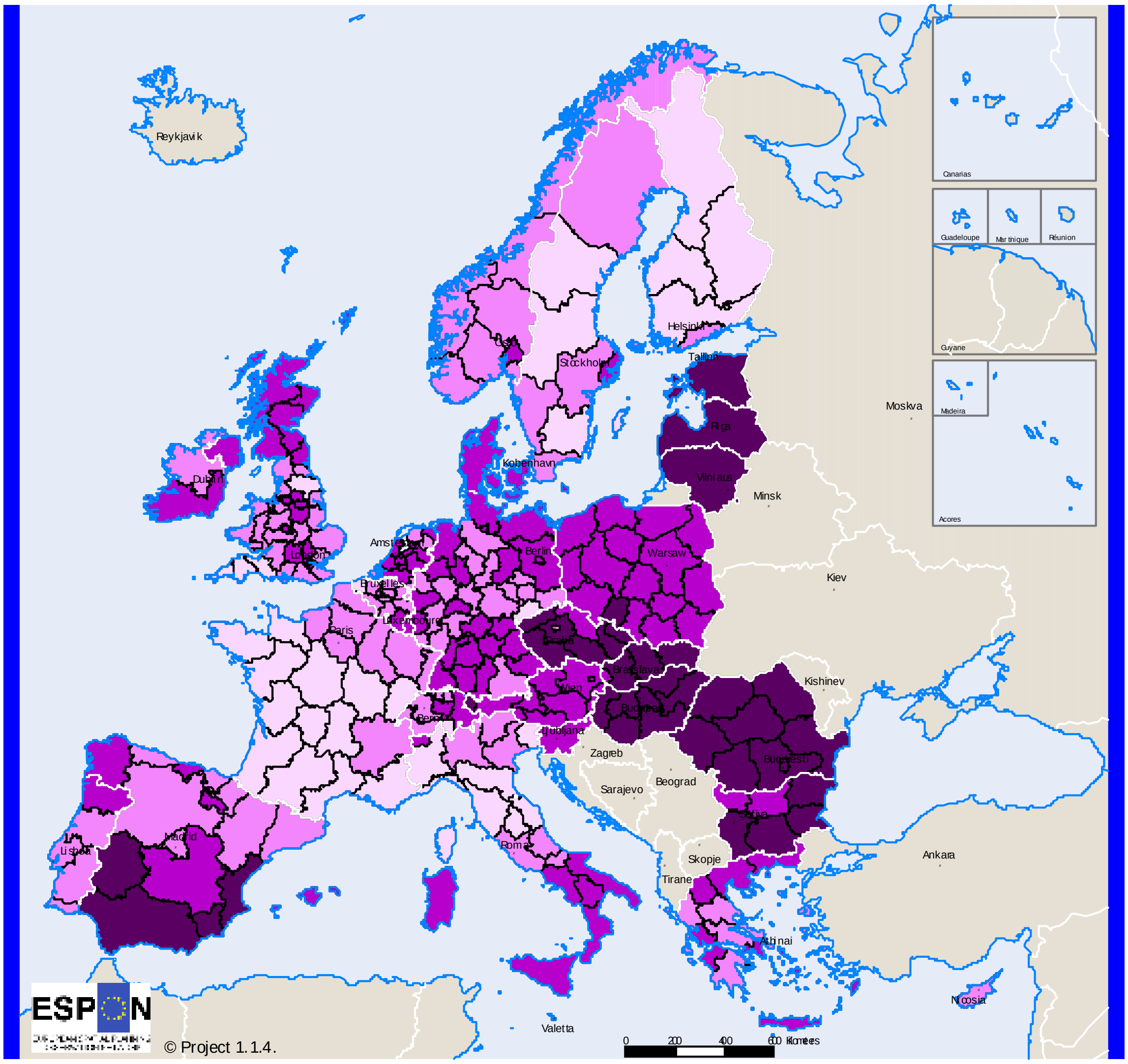
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



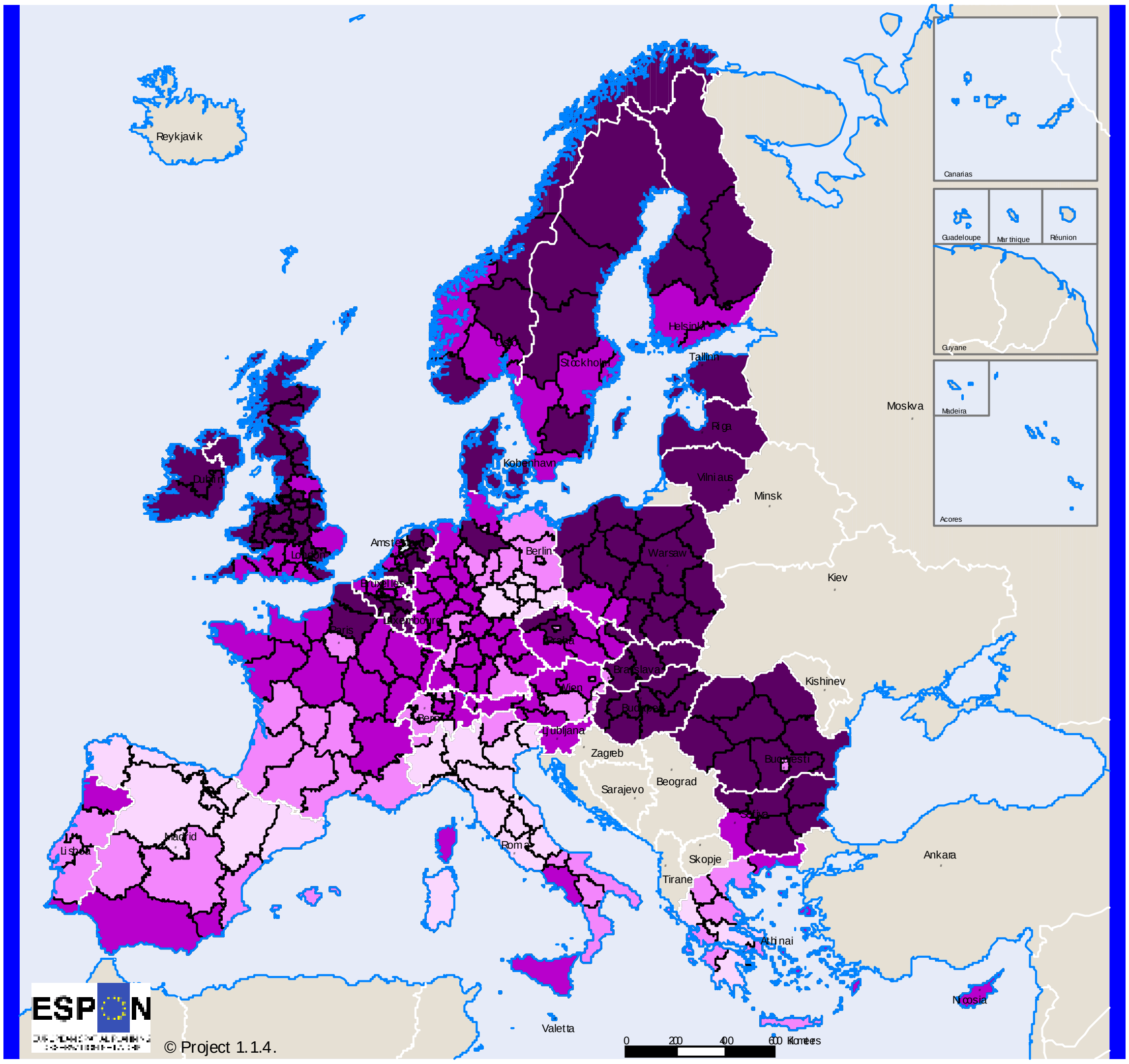
Population between 15 and 64 years old, 2025 (%)
Model A

- 59.6 to 62.2
- 62.2 to 64.2
- 64.2 to 66.2
- 66.2 to 69.7

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



Population between 15 and 64 years old, 2050 (%)
Model A

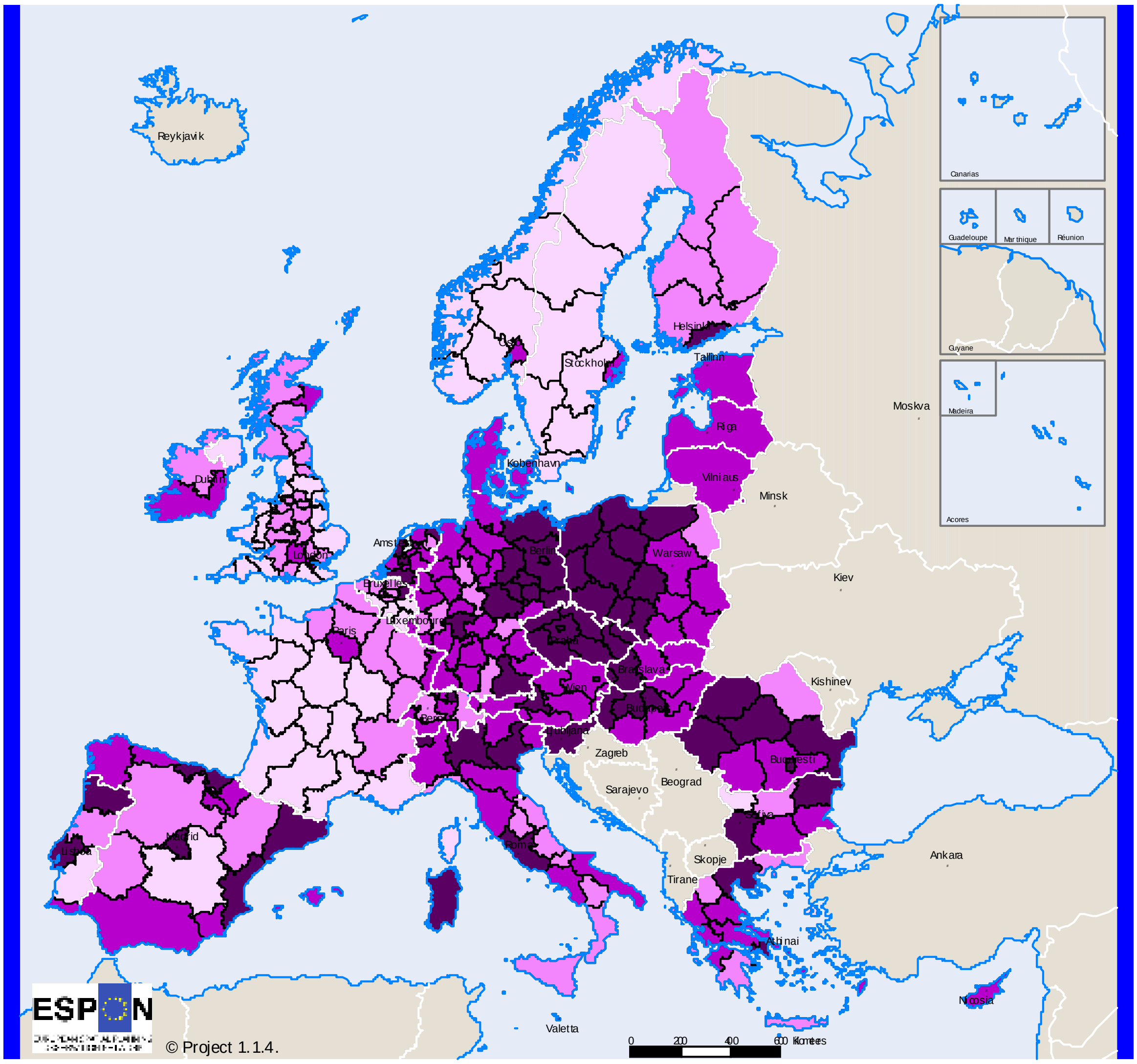
- 49.7 to 55.0
- 55.0 to 58.8
- 58.8 to 61.2
- 61.2 to 65.3

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Figure A4.9 – Working age population by NUT 2, 2000/2025/2050 (Model B1)

Labour force trends by NUT2



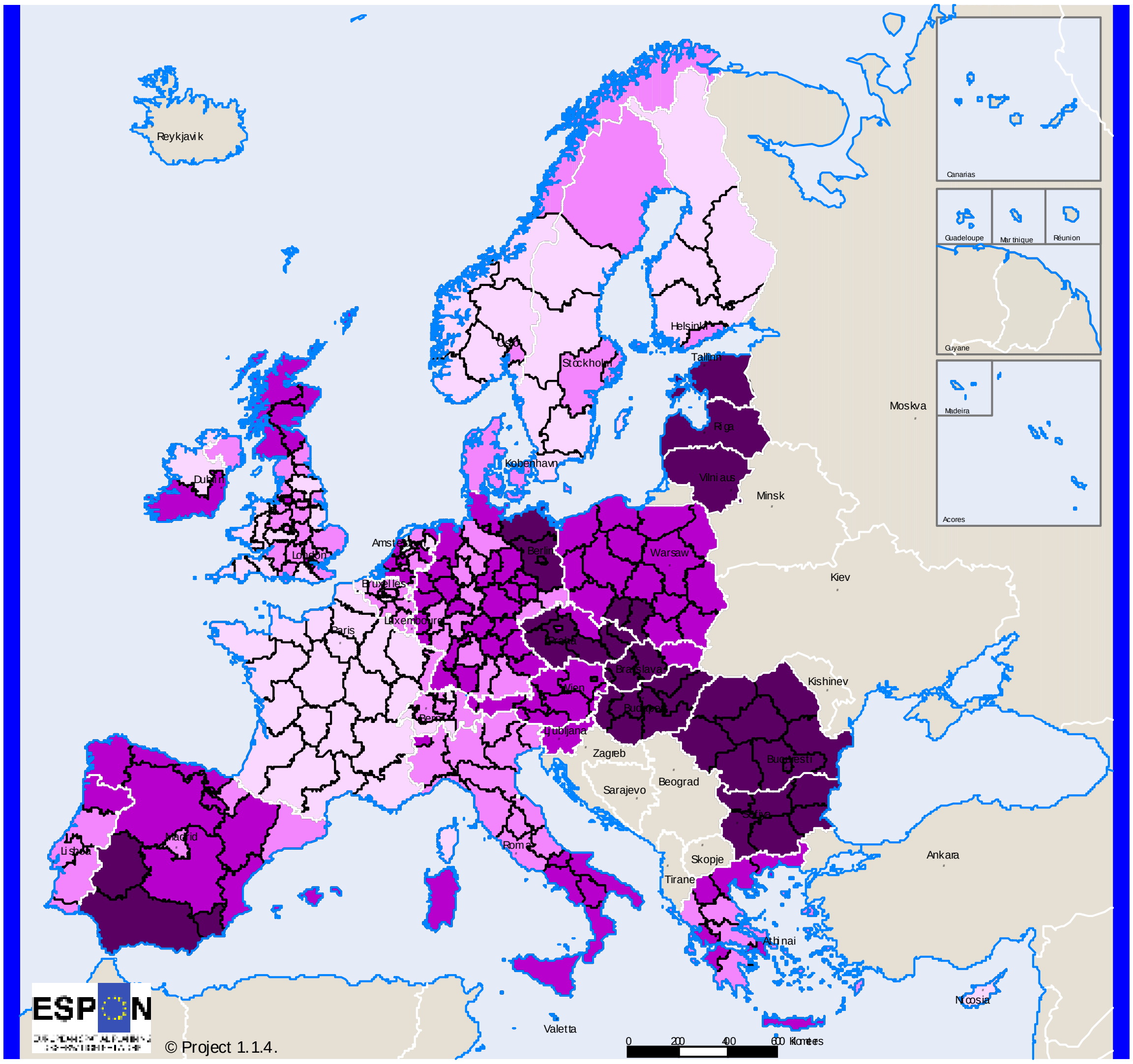
Population between 15 and 64 years old, 2000 (%)
Model B1

61.6 to 64.7
64.7 to 66.5
66.5 to 68.4
68.4 to 72.1

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



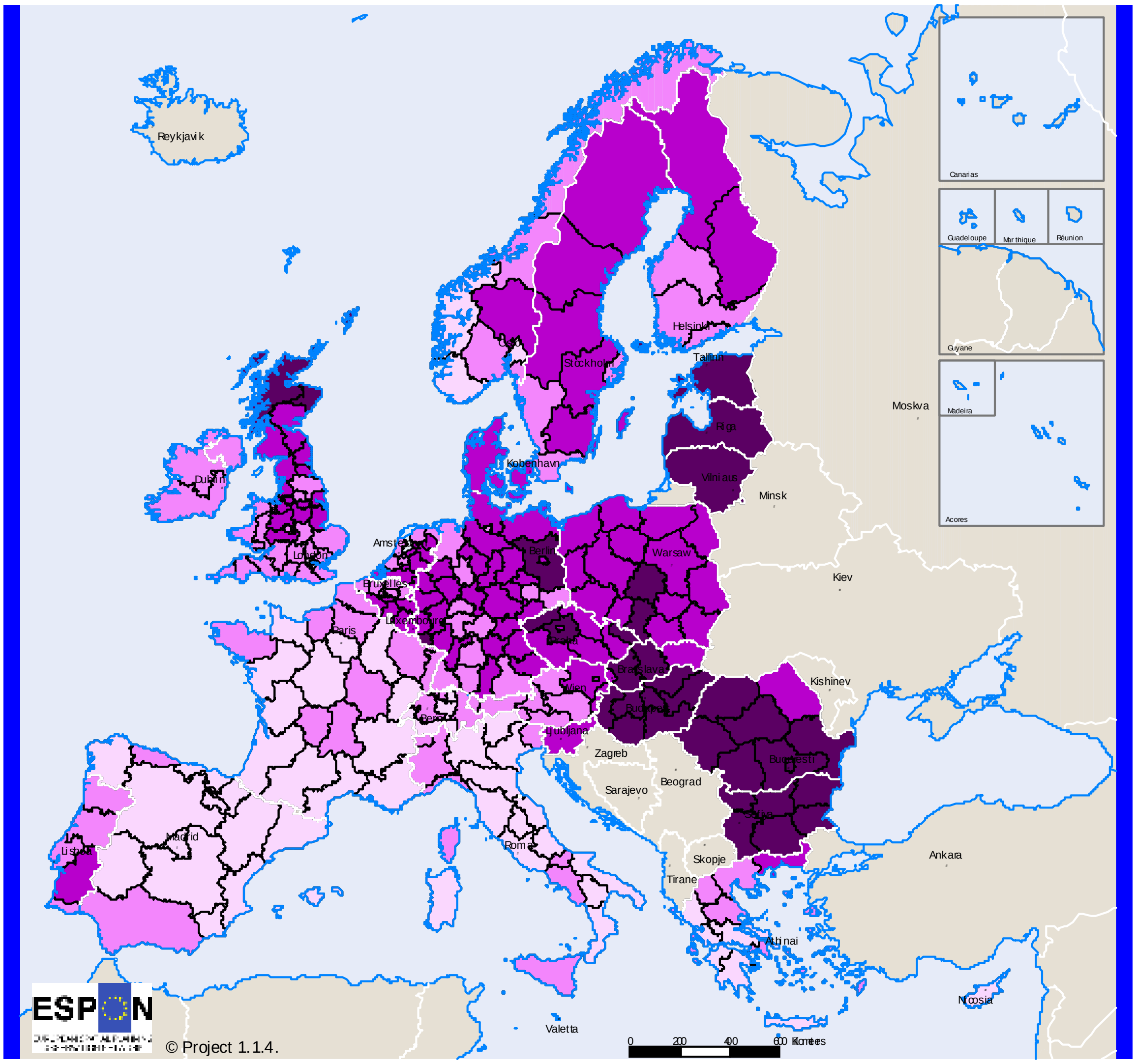
Population between 15 and 64 years old, 2025 (%)
Model B1

60.7 to 63.2
63.2 to 64.9
64.9 to 66.8
66.8 to 70.4

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



Population between 15 and 64 years old, 2050 (%)
Model B1

- 58.6 to 61.3
- 61.3 to 63.0
- 63.0 to 65.0
- 65.0 to 68.0

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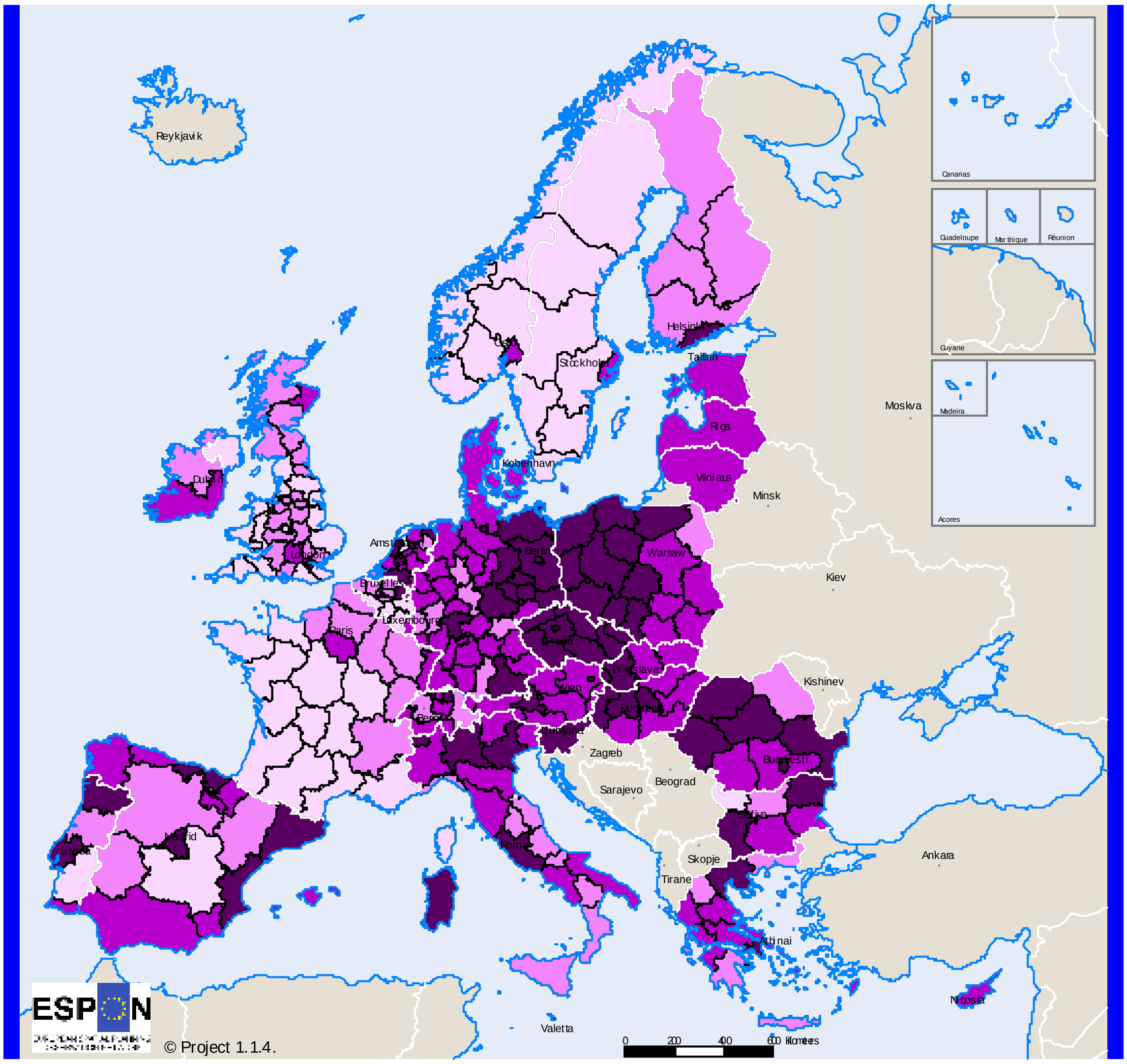
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Figure A4.10 – Working age population by NUT 2, 2000/2025/2050 (Model B2)

Labour force trends by NUT2



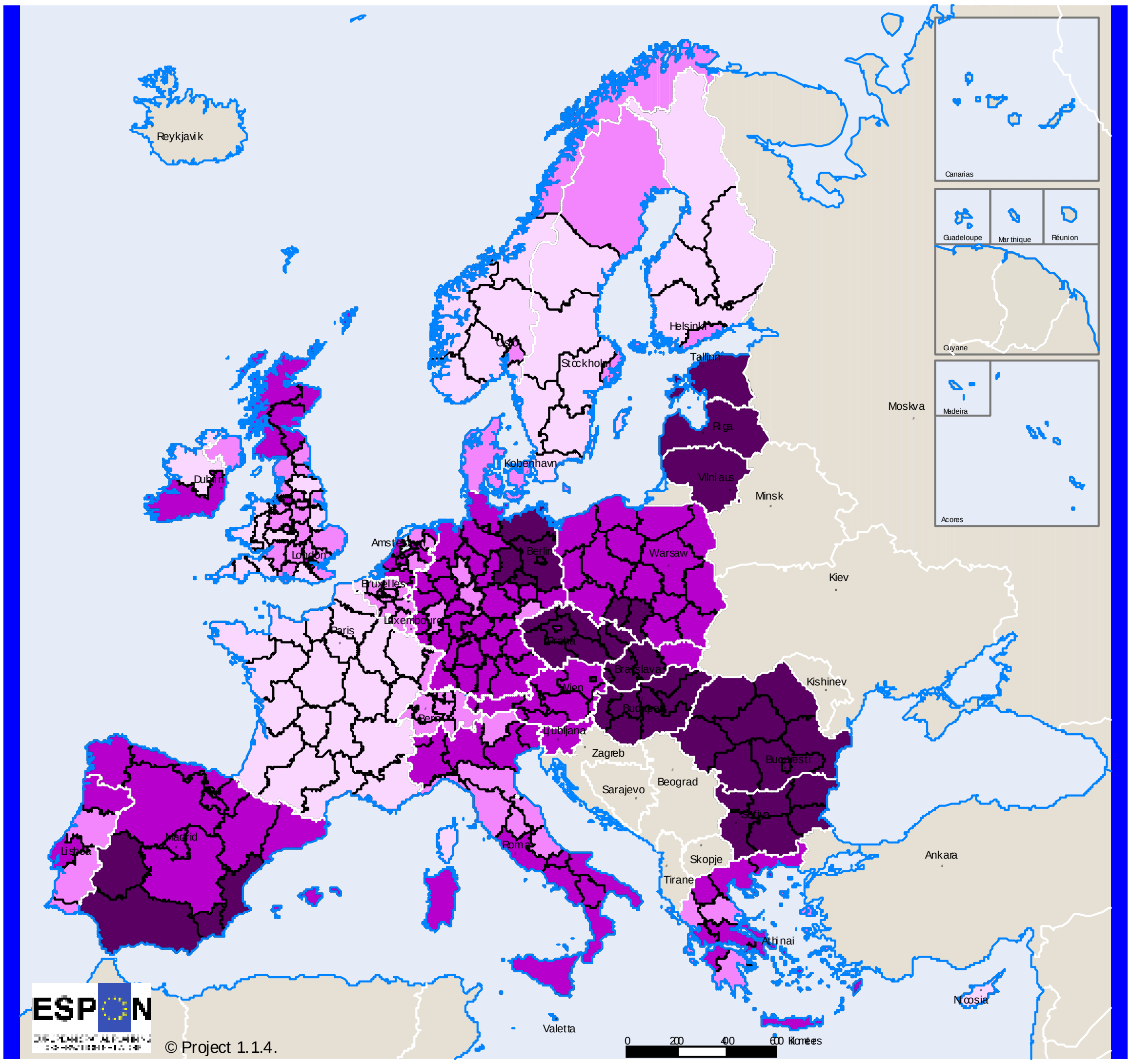
Population between 15 and 64 years old, 2000 (%)
Model B2

- 61.6 to 64.7
- 64.7 to 66.5
- 66.5 to 68.4
- 68.4 to 72.1

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



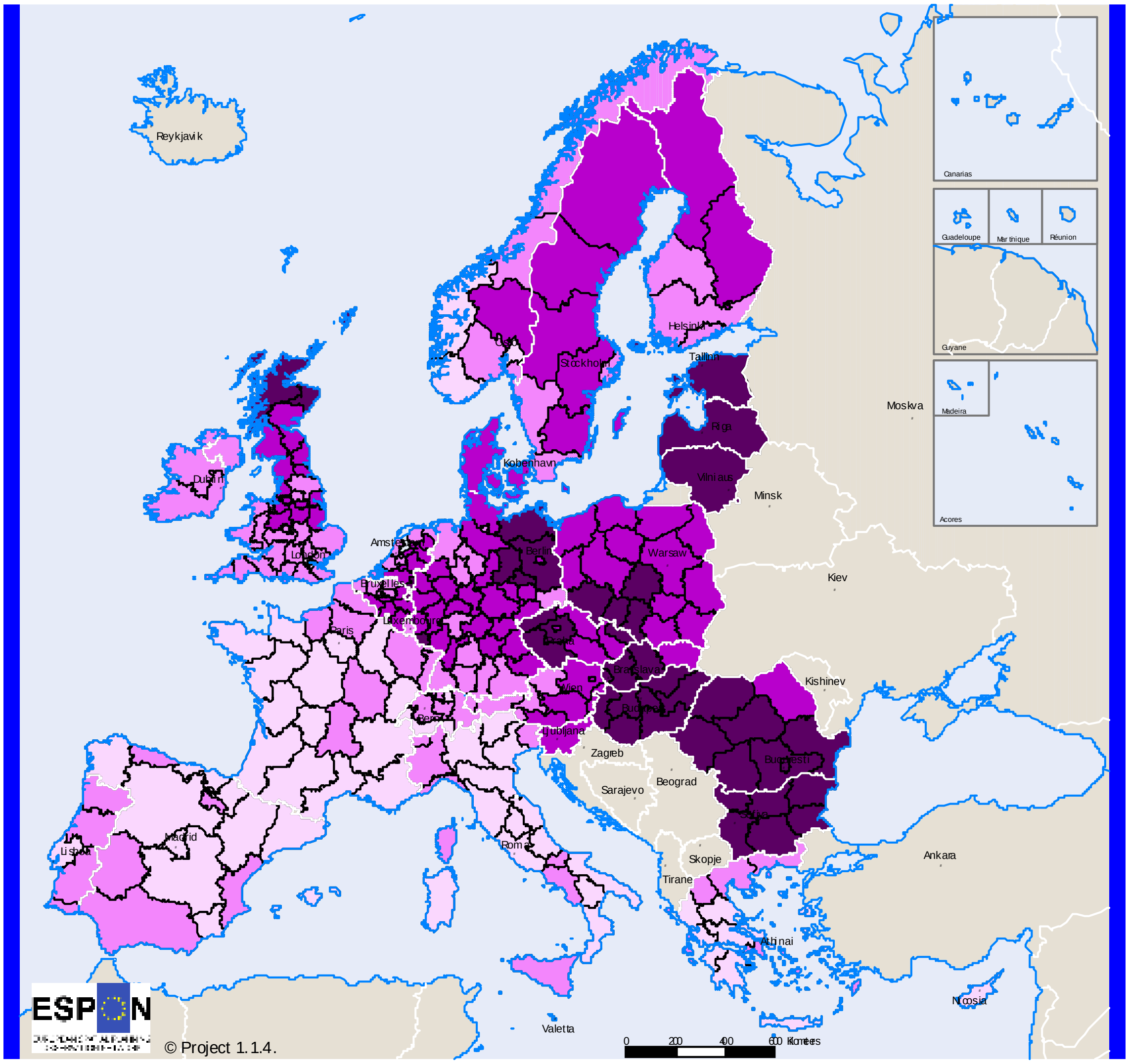
Population between 15 and 64 years old, 2025 (%)
Model B2

- 61.1 to 63.3
- 63.3 to 64.9
- 64.9 to 66.7
- 66.7 to 70.1

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



Population between 15 and 64 years old, 2050 (%)
Model B2

- 59.9 to 62.2
- 62.2 to 63.5
- 63.5 to 65.3
- 65.3 to 68.5

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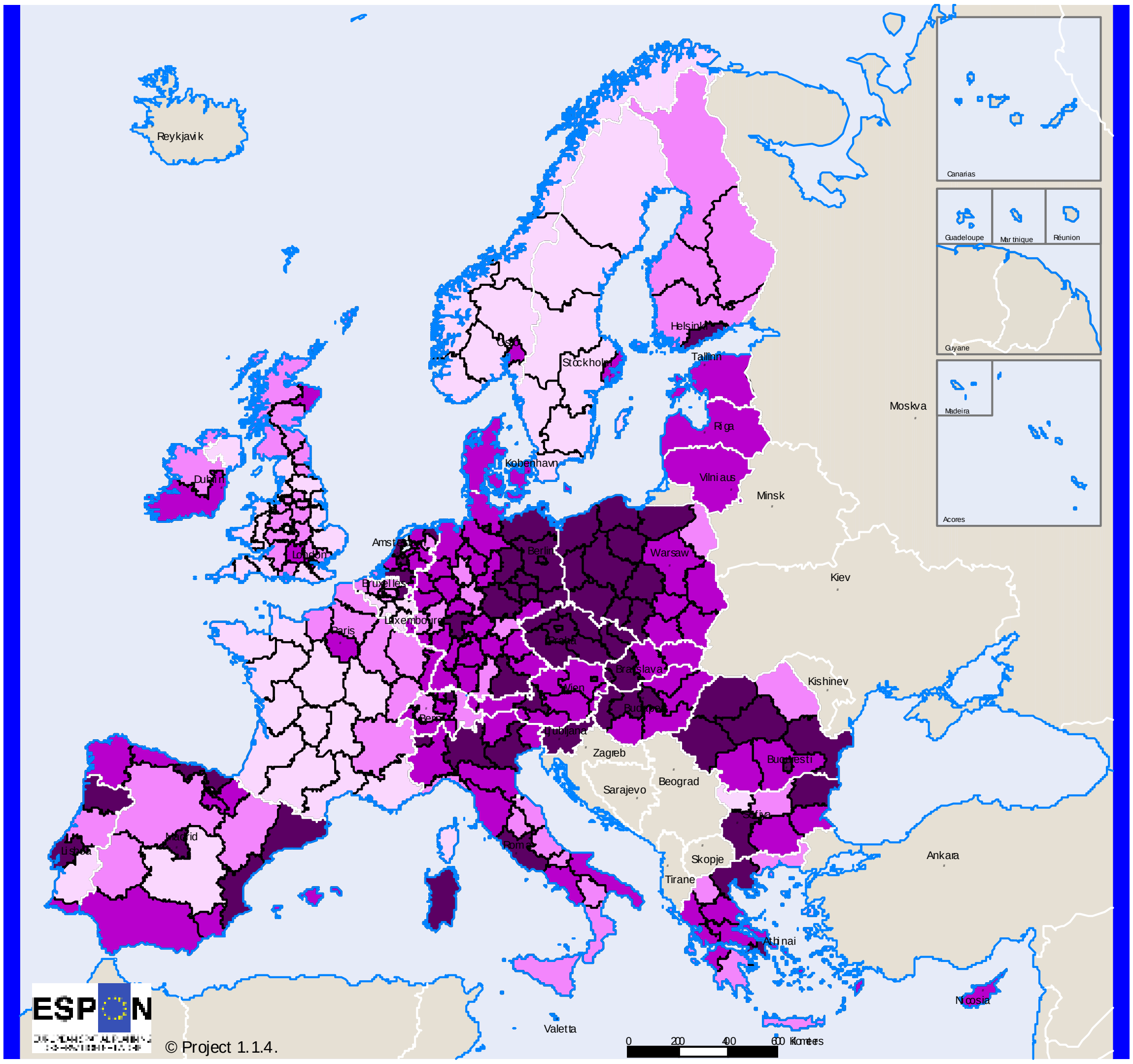
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Figure A4.11 – Working age population by NUT 2, 2000/2025/2050 (Model B3)

Labour force trends by NUT2



Population between 15 and 64 years old, 2000 (%)
Model B3

61.6 to 64.7

64.7 to 66.5

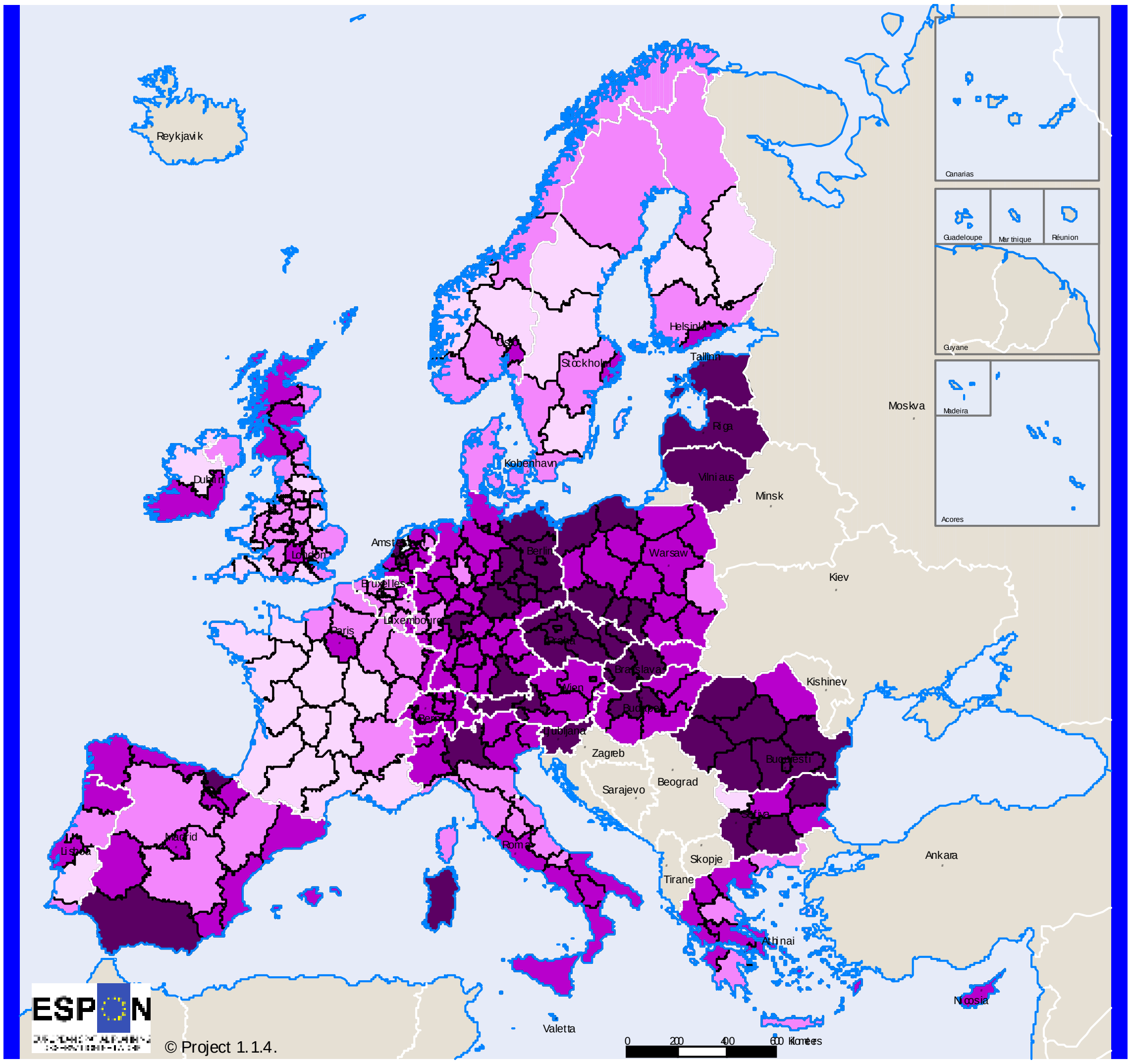
66.5 to 68.4

68.4 to 72.1

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

Labour force trends by NUT2



Population between 15 and 64 years old, 2025 (%)
Model B3

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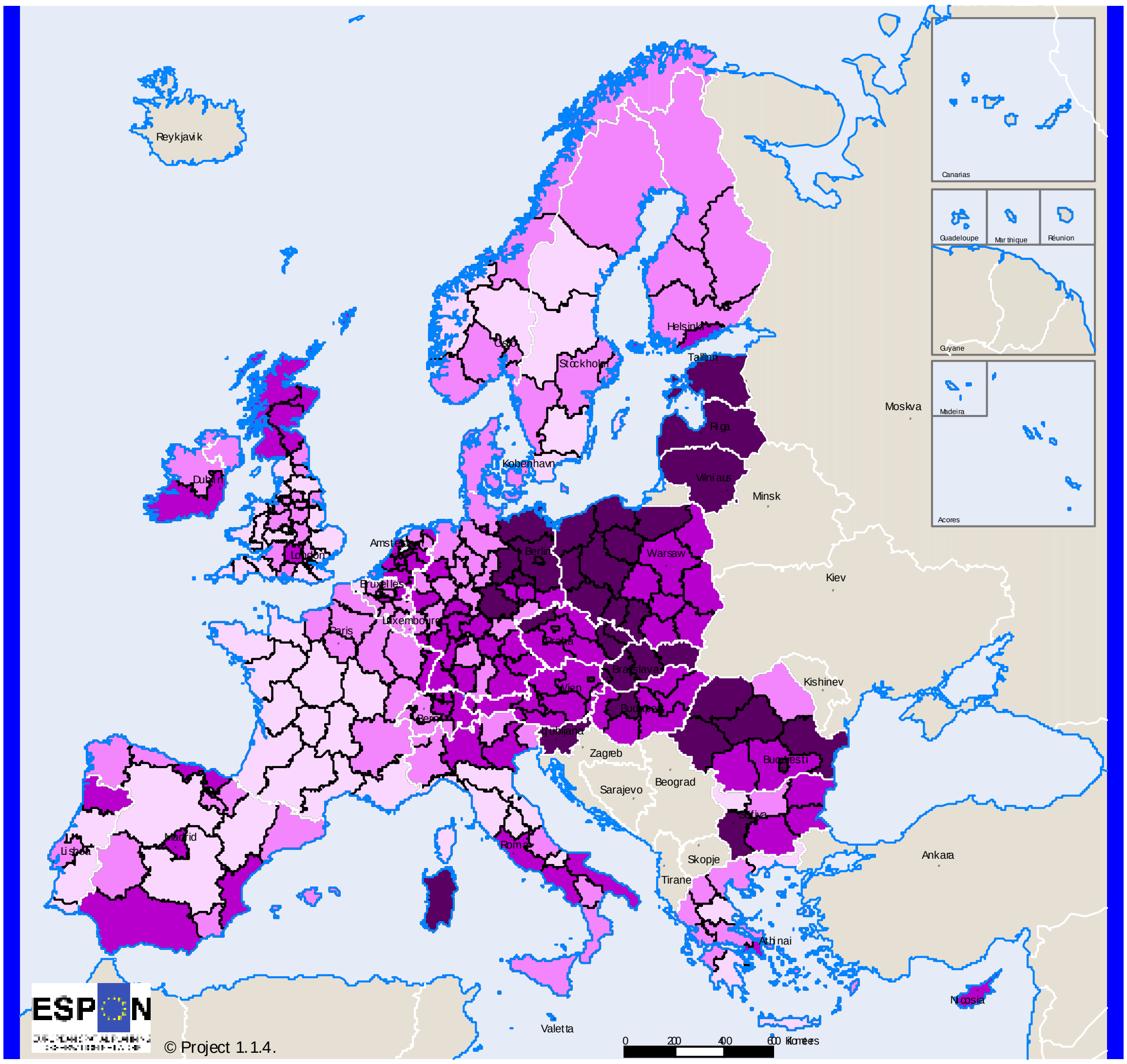
Origin of the data: Eurostat and others

Source: ESPON Data Base and others

	61.9 to 64.6
	64.6 to 66.6
	66.6 to 68.5
	68.5 to 71.3

Labour force trends by NUT2



Population between 15 and 64 years old, 2050 (%)
Model B3

- 62.0 to 65.7
- 65.7 to 67.4
- 67.4 to 69.0
- 69.0 to 71.3

Origin of the data: Eurostat and others

Source: ESPON Data Base and others

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