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# DEMIFER
# Demographic and migratory flows affecting European regions and cities

## Applied Research Project 2013/1/3

## Deliverable 7
## Regional population dynamics: a report assessing the effects of demographic developments on regional competitiveness and cohesion

Prepared by

Phil Rees, Peter Boden, Adam Dennett, John Stillwell, Martyna Jasińska
School of Geography, University of Leeds, Leeds

Andries de Jong, Mark ter Veer
Netherlands Environmental Assessment Agency, The Hague

Marek Kupiszewski, Dorota Kupiszewska
Central European Forum for Migration and Population Research, Warsaw

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# 1. OVERVIEW OF THE SCENARIO PROJECTIONS AND INDICATORS

## 1.1 Introduction

In this report we bring together the results of other deliverables designed to build a picture of the demographic future of Europe and discuss them in detail, drawing out implications for European cohesion and competitiveness. So in Deliverable D4 we reported on the multilevel scenario model, called MULTIPOLES, which was developed by IOM/CEFMR (Marek Kupiszewski and Dorota Kupiszewska). This model combines features of a full multiregional model with features of a simpler model for external migration but deals consistently with populations at two spatial scales: country (NUTS0) and region (NUTS2). In Deliverable D5 we reported on the application of the projection model with a set of simple assumptions that constitute our *Reference Scenarios*. The reference scenarios enable us to measure the impact of more sophisticated sets of assumptions. In this report we borrow the results of the Status Quo (STQ) scenario, in which the input demographic rates and flows of the years 2003 to 2006 with start populations as of 1.1.2005 are assumed constant over the time interval 2005 to 2050.

The STQ projection results give an anchor against which we can compare the projection results of the *Policy Scenarios*. These scenarios were discussed in detail in Deliverable D6 both in terms of theory (what effects we would expect from the application of a set of social, economic and demographic policies) and in terms of empirical outcomes for the scenario demographic drivers. We constructed a two class by two class framework for the four scenarios. The two dimensions were *Distribution-Fairness* and *Economy-Environment*. The two classes on the Distribution-Fairness dimension represented policy bundles which were either socially oriented or market oriented. The socially oriented policies were likely to be effective for improving cohesion across the countries and regions of Europe, reducing inequalities in the demographic rates and flows and therefore in the outcomes. The market oriented policies were likely to be effective in improving the competitiveness of European countries and regions but at the expense of greater inequality. The two classes on the Economy-Environment dimension represented bundles of policies likely to solve the climate change and resource depletion problems of Europe (e.g. develop sustainable energy supply) or bundles of policies that failed in this respect (e.g. do nothing). The four scenarios that come from combining these dimensions we labelled *Growing Social Europe* or *GSE* (successful economy-environment policies; effective cohesion policies), *Expanding Market Europe* or *EME* (successful economy-environment policies; policies favouring successful regions that neglect the also-ran regions), *Limited Social Europe* or *LSE* (*un*successful economy-environment policies; effective cohesion policies) and *Challenged Market Europe* or CME (*un*successful economy-environment policies; policies favouring

successful regions that neglect the also-ran regions).The report examines what might happen to the population of Europe under each scenario. We look and interpret the outcomes as contributing to the improvement of cohesion or not, and as contributing to the improvement of competitiveness or not. Cohesion is manifested by the coming together of population structures and dynamics; competitiveness is manifested by the diverging apart of population structures and dynamics.

The spatial framework used for reporting on the results consists of at the following levels: Europe (1 unit), Countries (31 units), Regions (287), Region types (7) and Region sub-types (19). In this first version of the report on regional demographic outcomes we focus on the full dynamics at Europe and country level via a collection of key time series graphs and capture the regional variety of experience through mapping the start situation in 2005 or 2005-10 and the end situation in 2050 or 2045-50. However, our Scenario workbooks contain the same detail at region, region type and region sub-type as we present here at Europe and country scale. Interested users can consult these Scenario workbooks to discover the alternative futures of their own regions or a set of regions of interest. The MULTIPOLES outputs for each projection are large sets of comma separated variable files (the standard format used for sharing data) which we have combined, labelled and made accessible in spreadsheets within multiple sheet work books. These menu driven and value added Workbooks are described in Chapter 6 of the report. The report also focuses on a broad description of the outcomes. This we would hope later to supplement through a statistical analysis of the projections using the 287 sets of observations as our data set to answer questions such as “does Europe’s population become more concentrated over the regions or less concentrated?” or “do the regional age structures across Europe become more similar or more different”. We will also examine the league tables of regions according to the demographic and labour force indicators, looking for any major changes in league position (“have any regions been able to replicate the experience of TSG 1899 Hoffenheim, a football club from a small town in Baden-Würrtemburg, which rose from the depths of the Bundesliga to achieve a seventh place finish in the 2008-9 season?”).

### 1.2 The projection model

The MULTIPOLES population projection program used to produce the policy scenario simulations implements a supranational multiregional hierarchical cohort-component model. A detailed description of the model is presented in Deliverable 4. The model, developed since mid 1990s, has been substantially modified to meet the requirements of the DEMIFER project. It allows for simultaneous projections and simulations of regional and national populations and labour force by country, region, 5-year age group (to 100+) and sex.

The model follows an idea by Rees (Rees et al., 1992; Rees, 1996) to handle migration on three levels: internal migration, international intra-system migration and international extra-system migration. The model has been improved and applied in several previous projects which have projected sets of European countries (Bijak et al. 2005, Bijak et al. 2007, Bijak et al. 2008) by the team led by Marek Kupiszewski at the Central European Forum for Population and Migration Research. Internal migration and inter-country migration are modelled and projected using emigration rates. Because all origins and destinations are included in each sub-model, in-migration flows are the sum for a destination of the emigration rates of origins multiplied by the origin population. For international extra-system migration, we use emigration rates and immigration numbers, as the rates of emigration from the "rest of the world" are difficult to estimate. Such a structure is particularly suitable for the modelling of large population systems, for which data quality and availability varies substantially.

The model requires data on population at the beginning of the projection (here 1 January 2005) by region, sex and 5-year age group up to 100+; mortality (mortality rates by region, sex and 5-year age group); fertility (fertility rates by region and 5-year age group 15-49); internal out-migration (rates by origin and destination region, sex and 5-year age group); emigration (rates by region, sex and 5-year age-group), percentage distribution of emigrants from each origin country among the destination countries (including the Rest of the world), by sex; distribution of immigrants arriving to each country from other countries of the system among the destination regions, by sex; annual number of immigrants from the Rest of the world arriving to each country; share of males among the immigrants from the Rest of the world, by destination country; age distribution of immigrants from the Rest of the world, by destination country and sex and distribution of immigrants arriving to each country from the Rest of the world among the destination regions, by sex. Apart from the demographic data, labour force participation rates are prepared by region, sex and 5-year age groups (15-75+). For large population systems, as was the case in DEMIFER project, data preparation is difficult and perhaps the most time consuming task. Detailed information on data requirements is given in Deliverable 4 and in Chapter 5 in this Deliverable. The methodology of the preparation of data for the policy scenarios can be found in Deliverable 6.

As the model was designed to facilitate the assessment of the impact of migration on population and labour force age structures, four diagnostic indicators were defined: the *old-age dependency ratio* (ODR), defined as the ratio of population aged 65 and more to population in the age group 15-64 years; the *economic old-age dependency* ratio (EODR), defined as the ratio of the economically inactive population at the retirement age (i.e. persons of 65 years or more) to the whole active population aged 15 years or more; the *labour market dependency ratio* (LMDR) defined as the ratio

of the whole economically inactive population to the whole active population and the *very old age dependency ratio* (VODR) defined as the population at the age 75+ to total economically active population aged 15+. These indicators are computed for each country, region type and region in each step of the simulation (every 5 years). Some more information on the ratios is in Deliverable 5.

The model outputs information on population and labour force by age (21 five-year age groups), sex, country and region and produces regional and national population accounts, with information on the numbers of birth, deaths, internal in- and out-migration events, international immigration and emigration within Europe, as well as extra-Europe immigration and emigration in each 5-year projection period. The results of projection may be aggregated, using an external typology. A detailed description of the output files including a list of variables is presented in Annex B of Deliverable 4.

### 1.3 Plan of the report

For convenience this first draft of Deliverable D7 gathers together the tables and figures that illustrate projection outcomes in a set after the text. Within the text, markers are placed to indicate that a table or figure should be read in conjunction with the text.

The first Chapter of the report has reminded the reader of the ingredients needed to carry out projections of the population of countries and regions in Europe. We need a model of the population dynamics, a set of benchmark period rates and flows and a set of assumptions for each of the five demographic components (mortality, fertility and three types of migration). The second Chapter discusses total population change and the component contributions for Europe, the countries and the regions for the four policy scenarios and status quo referent. Chapter 3 reviews the patterns of ageing of the populations of Europe and its member countries and their regions. Chapter 4 discusses the future labour force of Europe, countries and regions associated with the four policy scenarios, drawing out implications for cohesion and competitiveness. Chapter 5 describes the Scenario Workbooks for further use after project completion and approval. Chapter 6 synthesizes the scenario results and identifies their implications for regional development.

# 2. TOTAL POPULATION CHANGE

We examine first the changes in the total population of Europe as a whole and then the components of change as they are projected in our four scenarios and the status quo reference scenario. Then we turn our attention to the country level and repeat the analysis with brief comments on each of the 31 ESPON member states. Finally, we drill down to the regional level and summarise the changes in the patterns of population change between 2005 and 2050 for the population and between 2005-2010 and 2045-2050 for the components of change.

### 2.1 Europe-wide trends in population and components of change by scenario

Table 2.1 sets out the total populations for each decade between 2005 and 2050, as projected under the status quo scenario and the four policy scenarios. Under the status quo scenario the population of Europe declines by 40 million over the 45 years. In all of the policy scenarios the population remains steady or increases, even for the Limited Social Europe and Challenged Market Europe under which fertility remains low and immigration from the rest of the world moderate. The difference is explained by the lives saved as a result of lower mortality over the forty five years. So Europe is likely to see 40 million extra old people by mid-century provided that health services do not collapse.

[Table 2.1 about here]

These projections can be compared with the latest UN projections (medium, high and low) and the latest Eurostat projection (Table 2.2). Both central projections fall within our scenario range. The Eurostat projection mirrors the trajectories of our LSE and CME scenarios but at slightly higher level. The GSE and EME projections are well above both the Eurostat and UN high projection. This is to be expected: for the GSE and EME scenarios to be realised means that huge strides have been made in stimulating economic growth in Europe and solving its environmental challenges. The projections reported here provide some idea of the uncertainty in the future population. Uncertainty has been formally assessed through stochastic projections by Alho, Keilman and colleagues in their Uncertain Population of Europe probabilistic projections and by Lutz, Scherbov, Sanderson and colleagues in their IIASA world and European projections. We will extend our comparisons to these projections in the second version of this report.

[Table 2.2 about here]

In Figure 2.1 we graph a time series of population and the components of population change in absolute numbers. The input assumptions in terms of rates and flows have been described in

Deliverable D6. Population is reported at five year intervals and the components are counted for five year time periods. The scales refer to numbers of people, numbers born, numbers who die, numbers who migrate in millions over each 5 year period. In terms of total population (top left graph) the main difference within the policy scenarios is between the "successful" and "unsuccessful" scenarios. Within each pair the social versus market orientation of policy appears not to make much difference. However, that is a product of our assumptions: what the projections do is to reveal the fuller implications of those assumptions. Natural increase (top right hand graph) is mildly positive in the GSE and EME projections but increasingly negative in the LSE and CME scenarios though not as negative as in the STQ scenario. The net migration (wholly from/to the rest of the world in the case of Europe) graph (second down at the top right of Figure 2.1) is positive in all scenarios except for the CME where the European economy has become unattractive to immigrants and many have returned to their emerging country economies which are experiencing much better growth (the pattern of the last two decades). However, the EME and GSE assume much higher levels of immigration to supply the labour needs of successful Europe. Under the EME scenario the net immigration rises to 12 million per 5years or 2.4 million per year or circa 4.8 per thousand population. This level will require Europe to commit to be a world region that welcomes and integrates its immigrant population in a much more positive way than at present.

The other graphs in the bottom half of Figure 2.1 show a decomposition of these two summary components into their constituent parts. When we examine the natural change components we see that it is differences in fertility assumptions rather than mortality assumptions that differentiate the natural change numbers experienced. The deaths graph shows the biggest gap to be between the STQ and our policy scenarios. The second row of these graphs show that only net migration to/from the rest of the world is a contributor – the scales on the other graphs indicate just some small error noise. Note that when we look at the gross levels of migration, we see that total internal in-migration numbers are the same as total internal out-migration and that the same equality holds for inter-country migration within Europe.

[Figure 2.1 about here]

Tables 2.3 through 2.10 show the component contributions to the population changes in our scenarios for Europe as a whole. Under the status quo scenario births shrink by a quarter over the 45 years of the projection (Table 2.3). They shrink by about the same amount under our LSE scenario and further under the CME scenario. Although our GSE and EME scenarios are relatively optimistic with respect to fertility levels compared with most commentators, the increase in numbers born (because of the

way the population of women in the fertile ages is changing) is modest, with only a 12% increase between 2005-10 and 2045-50 under the GSE scenario.

[Table 2.3 about here]

The future trends in total deaths are set out in Table 2.4. All policy scenarios show the same pattern: a fall in numbers to mid-way through the period and then a rise. This reflects two competing forces: changes in the older populations mainly at risk and improvements in survival probabilities to and within old age. The improvements keep deaths falling until the baby boomers move into their 70s and 80s in the third, fourth and fifth decades of the century. The main difference is between the deaths under the four policy scenarios and those under the status quo scenario. Reducing mortality risks save about 10 million lives in 2045-50 in the policy scenarios compared with assuming no change in mortality in the status quo scenario. The corollary of this is increasing life expectancy, which we have discussed in Deliverable D6.

[Table 2.4 about here]

Table 2.5 presents the Europe natural increase totals. These are negative in the benchmark period for all scenarios but become positive in our optimistic GSE and EME scenarios. In the LSE and CME scenarios natural increase becomes increasingly negative though not as radically as in the status quo scenario.

[Table 2.5 about here]

Internal migration totals represent the sum over 23 countries of their inter-regional migration (Table 2.6). The table show that the volume of people migrating between NUTS2 regions in each quinquennium is larger than the total number of births and total number of deaths. In Deliverable D6 we explained that we were not confident enough in the 2000-6 time series in each country of inter-regional migration to propose any upwards or downwards trends. Therefore the overall numbers in the projections reflect the overall changes in the population at risk. So total internal migration numbers move up in the GSE and EME scenarios and down in the LSE and CME scenarios, as they do in the status quo scenario. That is not to say, however, that internal migration is not important in the demographic development of Europe, but that is expressed at regional rather than at national or European level (discussed later).

[Table 2.6 about here]

Projected inter-country migration figures are presented in Table 2.7. They are, unsurprisingly, much lower than the figures for internal migration. The costs of and barriers to movement between countries in Europe are much higher than between regions within countries. Nevertheless the numbers are still large: under the GSE scenario inter-country migration is about a third of internal migration. Inter-country migration is a smaller proportion, a fourth, for the CME scenario. The successful scenarios stimulate inter-country migration while the unsuccessful scenarios depress the flows.

[Table 2.7 about here]

The projected flows of immigrants from outside Europe (Extra-Europe) are set out in Table 2.8, with the counter flows of emigrants appearing in Table 2.9. Both sets of flows vary strongly with scenario and therefore with our assumptions, which were discussed in Deliverable D6. This is a migration sphere where policy does have a considerable influence. Under the EME scenario, economic growth draws in more immigrants (89% more in 2045-50 than in 2005-10) and also sends out more emigrants (57% more in 2045-50 compared with 2005-10). By contrast the LSE scenario sees immigrant numbers fall to 73% of their benchmark values by 2045-50, while emigrants fall to 49% of their starting interval numbers. The GSE scenario sees rising extra-Europe migration, while the CME scenario sees falling extra-Europe migration. The balance between these two flows is presented in Table 2.10. All scenarios see a positive net inward balance to Europe. Our arguments for this were set out in Deliverable D6. There is substantial migration pressure in developing countries and considerable demand for labour in a successful Europe, given changes in working age population (discussed later).

[Table 2.8 about here]
[Table 2.9 about here]
[Table 2.10 about here]

**2.2 Country trends in population and components of change by scenario**

The scenario projections generate all of the figures discussed at Europe level for the 31 countries and for the 287 regions. Our Scenario summary workbooks are set up to enable users to generate the equivalent of Figure 2.1 for any of the countries and any of the regions of Europe. As you drill down in scale the content of the graphs will change. At Europe scale neither internal nor inter-country migration alters directly the population numbers though both sets of flows may have some indirect effects because people are shifted from one demographic regime to another. At the country level inter-country migration within Europe does affect the future population and there will be gainers and losers.

We described the estimated patterns in Deliverable D6, using the outputs of the MIMOSA project. At the region level both internal and inter-country migration will affect the future population directly. The sets of graphs constitute a huge amount of diagnostic information to digest, of which we discuss two examples here: the cases of Romania and the United Kingdom. These countries are at opposite ends of the projected population spectrum: Romania will experience the greatest population loss over the projection period (Figure 2.2) while the UK will experience the greatest gain (Figure 2.3). We have placed in the Appendix the equivalent graphs for the other 29 countries (Figures A.1 to A.29). The reader can turn to his or her own country to learn more about its alternative demographic futures.

[Figure 2.2 about here]
[Figure 2.3 about here]

Romania's projected population decline is severe. Across the four population scenarios plus status quo scenarios, the population halves over the 45 year projection horizon. This is a consequence of very large natural decreases combined with very large net migration losses. Note that the net migration losses do diminish over time as the population shrinks. Large numbers of Romanians have been leaving their country since the demise of their communist regime in late 1989. We envisage this continuing given Romania's membership of the European Union since 1 January 2007. Births are projected to fall in Romania at a faster pace than deaths for all but one scenario leading to the increasing natural decrease. Towards the end of the projection horizon the projections show some rises in immigration from Europe and Extra-Europe under the EME and GSE scenarios.

The growth of population in the UK is projected to be substantial and is the subject of ongoing political debate. Under the EME scenario the UK is projected to be the most populous state in the European Union. Substantial gains are made through natural increase under the GSE and EME scenarios and small gains turning to losses under the LSE and CME scenarios. Net international migration remains strongly positive under all scenarios including the status quo, although under that scenario and the LSE scenario the net number do fall.

We note that the enormous gap between demographically dynamic United Kingdom and demographically depressed Romania poses issues of cross-EU cohesion.

### 2.3 Region trends in population and components of change by scenario

We switch now to a discussion of the scenario outcomes at regional scale. These will be presented through the medium of maps rather than graphs and the time dimension is represented by computing change variables where that is appropriate. We focus on a comparison of the start and end years of the

projection, 2005 and 2050, while recognizing that sometimes this may disguise intermediate behaviour where trends have ups and downs. The figures are arranged in pairs: the first figure maps the variable concerned for the status quo scenario; the second figure maps the variable for all four policy scenarios arranged in the following order: top right – GSE, top left – EME, bottom left – LSE and bottom right – CME.

We begin with the population stocks. Figure 2.4 shows the percentage change between 2005 and 2050 in the projected population of each region under the status quo scenario. Six classes are used on the map: three representing population gains and three population losses. Only one region in "metropolitan" Europe falls into the greater than 50% growth class along with three overseas regions. The majority of regions in the Accession 8 states, Germany, northern France, Northern Scandinavia, Greece, southern Italy, north and west Spain and Portugal will lose population. Most of the rest of western Europe will experience small population gains.

[Figure 2.4 about here]

The patterns of future population change under the four policy scenarios resemble the status quo pattern (Figure 2.5). This is not surprising as their benchmark data inputs are closely aligned though not exactly the same. What each policy scenario does is to shift the regions across the growth classification to a lesser or greater extent from their status quo position. The Expanding Market Europe lifts regions most and sees most regions in Scandinavia, the British Isles, France, north and central Italy and south and east Spain in the top growth class. Most of the former Iron curtain regions are projected to lose population but in the capital city regions of Warsaw, Prague, Budapest and Bucharest this loss is small. The regions of western Germany, parts of northern France and western Spain fall in the small (0 to -25%) class. The Growing Social Europe map is a smoothing of the EME map with fewer regions in the top or bottom classes and thus represents a gain in terms of cohesion. In the Challenged Market Europe scenario the majority of regions now show losses in population while the Limited Social Europe shrinks the variation so that there are fewer regions in the highest loss category (less than -50%).

[Figure 2.5 about here]

The maps of change in births between 2005 and 2050 repeat the structures seen in the population change maps but slightly narrower class intervals. Again the main differences are between the successful Europe scenarios (GSE, EME) and the unsuccessful (LSE, CME). In the latter scenarios

hardly any regions see an increase in births, whereas about half of regions post gains in the former scenarios.

[Figure 2.6 about here]
[Figure 2.7 about here]

The maps of percentage change in deaths (Figures 2.8 and 2.9) reveal the impact of our mortality improvement assumptions. Under the status quo scenario only a few regions experience falls in the number of deaths, while in all our policy scenarios a large number of regions show decreases in the numbers dying. This class contains the majority of regions in the GSE scenario and the largest number of regions in the EME scenario. The LSE and EME are slightly raised versions of their successful cousins.

[Figure 2.8 about here]
[Figure 2.9 about here]

Figures 2.10 through 2.13 present the net migration component results. Here we plot the actual rates per 1000 population in 2005-10 and 2045-50 because computing percentage changes is problematic if the sign attached to a variable can change. The maps of the reference scenario and the policy scenarios are virtually identical in 2005-10 as we assume no difference in the levels of internal migration between scenarios, only changing the destination attractiveness ratios after the first 5 year time interval. Any small difference is due to use of a 2003-6 base for the status quo scenario and an adjustment of this base to 2005-10 for the policy scenarios. The maps show that within each country there are regions in each class, making the map of Europe resemble a patchwork quilt. The preferred directions of migration differ from country to country depending on the structure of regional development. The pattern of net internal migration has changed by 2045-50 as a result of changes in the regional populations (the denominator) and the destination attractiveness factors which have been adjusted for each scenario (described in Deliverable D6). The maps are still patchworks reflecting the zero-sum nature of internal migration

[Figure 2.10 about here]
[Figure 2.11 about here]
[Figure 2.12 about here]
[Figure 2.13 about here]

Figure 2.14 maps net inter-country migration rates for 2005-10, Figure 2.15 maps the same rates for the four policy scenarios. Again the maps are virtually identical, as explained for internal migration. The regions with highest net in-migration rates are in northern Italy, parts of Austria, eastern Spain, Ireland and Budapest. France, Norway, Finland and Greece have low positive net migration rates. The regions of the Accession 8 countries, southern Italy, Portugal, Sweden, western and northern UK and some regions in Germany lose as a result of inter-country migration.

[Figure 2.14 about here]
[Figure 2.15 about here]

The inter-country net migration rates for 2045-50 are plotted in Figures 2.16 and 2.17. The scenario assumptions (see Deliverable D6) have dampened change but introduced contrasts between the social and market Europe scenarios. The rates in many regions in eastern Germany, Poland and the Czech Republic have become positive though Romanian rates remain firmly negative.

[Figure 2.16 about here]
[Figure 2.17 about here]

Figures 2.18 and 2.19 map the net extra-Europe migration rates in 2005-10 for the status quo and policy scenarios. The picture is predominantly a national one as international migration policy is still made differently at the country level. The countries of high net migration from outside Europe are Spain, Italy, Switzerland Sweden and the UK, all with very different migration histories. Most of the rest of Europe also experiences net extra-Europe migration. The only countries with strong negative rates are the Baltic republics, the Czech republic, Hungary, Romania and Bulgaria and some regions in Poland.

[Figure 2.18 about here]
[Figure 2.19 about here]

By 2045-50 this situation has changed as we have assumed growing international migration under all four policy scenarios. In the GSE and EME scenarios most regions have rates greater than 10 per 1000 though the net losses of regions in Latvia, the Czech Republic, Hungary and Romania persist. The Limited Social Europe is still quite similar to the status quo scenario.

[Figure 2.20 about here]
[Figure 2.21 about here]

### 2.4 Regional population re-distribution using density and income gradients

To understand some of the implications of the shifts in population recorded in the scenario projections, it is useful to carry out a regional gradient analysis. A gradient analysis classifies objects into classes using one significant indicator or more complex index. In health inequality analysis this is a frequently used method when individual level data linking health to the gradient variable is not available. Here we define two gradient variables: GDP per capita and population density, using Eurostat data and computing region areas for the density computation from their digital representation in Arc-GIS. GDP per capita is a reasonable proxy for household and personal income. Population density serves as a continuous measure of the urban/rural continuum. We sort the regions into quintiles on the basis of their income and density and aggregate the projected regional populations to quintile classes. The populations are then converted in percentage shares in 2005 and in 2050, by scenario. The results are presented in Table 2.11.

[Table 2.11 about here]

In 2005 the regional populations of Europe are concentrated in the higher density quintiles. This is simply a function of how the quintiles were defined. More interesting is the shifts by 2050 between the quintile classes (fixed at their definition in 2005). The changes are quite small and fairly uniform across density quintile. There are small falls in the lowest density quintiles (Q4 andQ5) and small gains in the highest density quintiles (Q1 and Q2). This indicates that, overall, the process of urbanization or per-urbanization continues.

The redistribution is much stronger when we use the income quintiles. The percentages in the lowest quintile nearly halve and those in the highest quintile increase by 8-9% with smaller gains in Q2 and smaller losses in Q4. The scenarios are projecting substantial redistribution of the population from the poorest to the richest areas. We must be aware of this shift in the projected population when we analyse our maps of change.

# 3. THE AGEING OF EUROPE

### 3.1 Europe-wide trends in population ageing by scenario

The ageing of Europe's population is a longstanding process, which is a consequence of two demographic transitions: the first consisted of a mortality decline followed by fertility decline which reduced the populations of younger age groups and kept older age groups larger for longer. The second demographic transition took fertility rates in nearly all countries in Europe to new lows well below replacement total fertility rates (2.05-2.15 depending on female mortality regime). In between these transitions was a 1950s and 1960s baby boom which will precipitate "super-ageing" as the baby boomers move into the older ages from 2010 onwards. A third demographic transition is currently underway in which gaps in the populations and labour forces of Europe are being filled by new migrants, who are also contributing to natural increase as they form families. In northern Europe a small fertility rise has occurred in several countries driven by a catch-up among native-born women of postponed births and higher contributions by foreign-born women. We can expect to see the consequences of this fertility history playing out in various ways in our projections. In this section we examine the ageing projected by the status quo and policy scenarios.

Table 3.1 sets out the broad age group results of our scenario projections. The population is divided into three age groups, which are conventionally used with projection models employing five year age groups: 0-14, 15-64 and 65+, designated somewhat approximately as the childhood, working and retired ages respectively. In fact, the age of exit from compulsory schooling is usually higher than 15 (16, 17 or 18 depending on country). Adolescents continue in school, further education or university until age 21 or 22 taking first level qualifications and then until 25, 26 or older if taking second level qualifications or doctoral degrees. Students at these ages also work part-time. The working ages in fact hold populations who are working full-time, part-time, seeking work or being economically inactive. The same fuzziness occurs at the boundary between working ages and retirement. Large numbers of men and women have retired well before age 65 under favourable pension and social security arrangements which governments, firms and individuals are recognizing as unviable.

[Table 3.1 about here]

We see from Table 3.1 that the working age population shrinks between 2005 and 2050 in all scenarios except the Expanding Market Europe and then grows only by 1%. The populations aged 65+ by contrast expand by 87 to 111% depending on policy scenario but only by 40% in the status quo projection. The population of children expands a little under the Growing Social Europe scenario and the Expanding Market Scenario but falls considerably under the Limited Social Europe and

Challenged Market Europe scenario with their lower fertility assumptions (see Deliverable D6 for details). The age composition of Europe's population changes radically over the 45 years: the working age population shrinks from 67% to 56 to 57% depending on policy scenario whereas the 65+ population expands from 17% to 29 to 32 % depending on policy scenario. There is little difference across the policy scenarios in the degree of ageing though collectively they exhibit additional ageing compared with the status quo scenario, mainly due to increase longevity. This degree of additional ageing in the projection horizon should be regarded as a triumph of human endeavour and social organization. The policy scenarios tell us that we will live 20-30 years further, depending on sex and scenario (as discussed in Deliverable D6), beyond the age, 65, at which Bismarck the inventor of European social security in old age set the retirement age. He was confident the social security system would not be expensive, having been told by his demographic experts that few people were expected to live beyond 65. So Bismarck has laid down a challenge for our societies: how to afford the transfer payments, health and social care.

This demographic challenge is made clear in diagrammatic form in Figure 3.1. The numbers are provided in Table 3.2. In the top panel of the figure we plot age-sex distributions of the population in 2005 and 2050 for the status quo and policy scenarios. These are conventionally called age-sex pyramids but for European population the time has long past when they had this shape. In 2005 there is clear evidence of the baby boomers in the ages 35-49 (born between 1955 and 1970). By 2050 these cohorts are aged 80-94. The age distribution has lost its middle aged bulge and the numbers at older ages have grown substantially. Note the greater growth of older men than older women reflecting the catch up process as mortality risks lower at older ages (that is, the survival curve shifts to the right).

The bottom panel of Figure 3.1 tracks the directions of change of four dependency ratios for the scenarios (see Chapter 1 of the report for definitions). Here we comment on the purely demographic ratios, the ODR and VODR. These all rise steadily, as expected but slightly more in the social scenarios (GSE, LSE) than in the market scenarios (EME, CME) and much more than in the status quo scenario. The gap between the ODR and VODR is larger in the successful scenarios (GSE, EME) than in the unsuccessful scenarios (LSE, CME). We will draw out the lessons for policy makers in the final chapter of the report.

[Figure 3.1 about here]

[Table 3.2 about here]

### 3.2 Country trends in population ageing by scenario

The scenarios workbooks contain versions of Figure 3.1 (age-sex distributions and dependency ratio graphs) for each of the 31 countries and 287 regions. We reproduce the country profiles in Appendix Figures A.30 to A.58, so that readers can check out their own national situation in 2050. As in the previous chapter we examine two national profiles at the extremes of the ageing continuum, Romania (Figure 3.2) and the United Kingdom (Figure 3.3).

[Figure 3.2 about here]
[Figure 3.3 about here]

The Romanian age-sex distribution in 2005 already shows signs of a severe baby bust and gaps in the age structure in middle age (indicative of earlier fertility fluctuations in the 1960s and subsequent out-migration). The age-sex distribution in 2050 is uniquely top heavy (high degree of ageing) and evidence of heavy out-migration of women in the 30-59 ages (as far we can judge this is a "real scenario" effect not an artefact of poor data). The dependency ratios are very high compared with those of Europe as a whole.

The United Kingdom age-sex profile is much smoother and more balanced, particularly in the GSE and EME scenarios (Figure 3.3). We should point out that the age-sex distributions in the figures are all plotted on the same relative scale and in the case of the UK conceal the high population growth that we have commented on in Chapter 2. The dependency ratios grow as elsewhere but remain well below the European average.

### 3.3 Region trends in population ageing by scenario

We now examine the regional variation of population ageing in a series of maps that parallel those of Chapter 2. We begin by looking at the changes between 2005 and 2050 in the three broad ages. Figure 3.4 presents the status quo change as a reference while Figure 3.5 draws the maps for each policy scenario. In the status quo, LSE and CME scenarios the map is almost covered by regions experiencing decreases. Only southern UK, Ireland, western and southern France, north and central Italy and south central Spain will see small increases. The GSE and EME scenarios, with their higher fertility assumptions will have higher growth in child numbers in these regions and lesser decreases across the rest of Europe.

[Figure 3.4 about here]
[Figure 3.5 about here]

The working age group changes are mapped in Figures 3.6 (status quo) and 3.7 (policy scenarios). The most hot spots of growth in working ages occur in the EME scenarios in southern England, Ireland, north and central Italy and south central Spain with lesser growth in France, Austria, other regions in Spain, Austria and the southern populated parts of the Nordic countries (except Denmark). Regions in central and eastern Europe are projected to see declines in the working ages. These declines expand in extent as you move from EME scenario to GSE scenario to CME scenario to LSE scenario to STQ scenario.

[Figure 3.6 about here]
[Figure 3.7 about here]

The final age group changes we map are for the population aged 65 and over in Figures 3.8 and 3.9. Here the main contrast is between the status quo scenario and all of the policy scenarios, which are a sea of hot spots of greater than 50% expansion in this age group over the 45 years of the projection. This is a consequence of the favourable mortality assumptions adopted in our policy scenarios (discussed in Deliverable D6). Only regions in Romania and Bulgaria fail to enjoy this societal success.

[Figure 3.8 about here]
[Figure 3.9 about here]

The maps of the ODR and VODR variables are presented in Figures 3.10 to 3.13. Note that all classes on these maps are positive indicating increase in the dependency ratios. The successful scenarios (GSE and EME) come with higher increases in ODRs and more difference between regions. Hot spots will be in central and eastern regions, where many regions face increases in ODR and VODR of 200%. By mid-century this part of Europe will be a land of the old.

[Figure 3.10 about here]
[Figure 3.11 about here]
[Figure 3.12 about here]
[Figure 3.13 about here]

# 4. The future labour force of Europe

In this section the results of the four policy scenarios on the labour force will be presented. As the assumptions on labour force participation rates by sex and age group have been made at the spatial level of NUTS2 (see the section on labour force participation in Deliverable 6), the labour force participation rates at higher spatial levels are a result of the computations. In this section three aspects of the future labour force will be presented. Firstly, the labour force participation rates for the ESPON space, the countries and the clusters will be presented. Secondly, the results on the labour force will be analysed on all regional levels (including the regions). Thirdly, the effect of changes in the labour force in terms of dependency ratios will be discussed.

## 4.1 Labour force participation

### *4.1.1 Labour force participation rates: ESPON space*

A comparison of the situation in 2050 according to the four policy scenarios with 2005 leads to the following conclusions. For men most age-specific activity rates of the Limited Social Europe scenario are somewhat below those observed in 2005. In contrast, all activity rates of the Expanding Market scenario are (substantially) above the latest observed figures. For the Growing Social Europe scenario a mixed pattern emerges, for young and older men the rates are well above the 2005 pattern and slightly above for men at prime age. For the Challenged Market Europe the rates quite similar to those of 2005.

The picture is slightly different for women. Again the Limited Social Europe scenario is well below that of 2005, especially at the prime working ages. A rather steep rise is projected for all ages in the Growing Social Europe and Expanding Market Europe. Again the pattern of the Challenged Market Europe scenario resembles that 2005.

[Figure 4.1 about here]

### *4.1.2 Labour force participation rates: national*

**Males**

Four geographic clusters of countries can be distinguished on the basis of age patterns of participation rates, namely the northern, western, southern and eastern part of the ESPON space. In [Figure  for each geographic cluster one country has been chosen as its representative.

In 2005 a large variability in male participation rates exist predominantly at both young and old ages. Denmark (representing the northern cluster) is characterised by high participation rates among young males. In contrast, in Germany, Italy and Poland (representing the western, southern and eastern cluster respectively) youth participation is fairly low. With respect to the prime working ages all four countries resemble each other. With respect to the participation at higher ages a fairly strong differentiation exists between the four countries. In Poland participation rates are already dropping in the age-group 40-44, while in Germany and Italy this drop starts in the age-group 50-44. In Denmark a severe drop in male participation is visible in the age-group 60-64.

According to the four policy scenarios current differences between the countries will more or less persist. In the Growing Social Europe and the Limited Social Europe scenario the differences between the countries will be somewhat smaller, especially at higher ages. In contrast, in the Challenged Market Europe and the Expanding Market Europe the differences between the four countries are larger. In the Expanding Market Europe scenario the participation at higher ages is raised, at a level quite similar to that of the prime working ages. Especially for Germany this implies a significant rise in elderly participation.

[Figure 4.2 about here]
[Table 4.1 about here]

**Females**

The current international differences in female participation rates are considerably larger than for men. The northern cluster takes the lead at almost all ages while in the southern cluster female participation is still fairly low. In the southern cluster, except Portugal the traditional pattern of leaving the labour market after childbirth is still dominant. Most countries of the western cluster are in a transition stage, in which having children has a limited effect on the labour participation rate of women. In the northern cluster, family obligations no longer interfere with having a paid job. In the Eastern cluster the participation rates resembles those of the Western cluster at the prime working ages, while at young and high ages participation is much lower.

According to the four policy scenarios the participation rate for women in the western, southern and Eastern cluster will move substantially upwards in the direction of the northern cluster. However, the degree of this convergence differs between the four scenarios. A fairly close convergence is reached in the Growing Social Europe scenario. This will lead to a virtual disappearance of the traditional age pattern in the southern countries. In the Limited Social Europe scenario and the Challenged Market

Europe scenario the degree convergence is much smaller (in the first due to harsh economic circumstances leading to falling participation rates and in the latter as a result of the market philosophy of this scenario). In the Expanding Market Europe scenario the degree of convergence is intermediate: a booming economy leads to rising activity rates in especially low scoring countries. Between the western and northern cluster fairly small differences in participation rates will be left.

[Figure 4.3 about here]
[Table 4.2 about here]

*4.1.3 Activity rates: clusters*

In compiling the four policy scenarios, differences between regions are due to differences in economic growth, leading to a general rise or fall of activity rates in all regions, although the extent of it differs between the specified age groups and the two sexes. Another main assumption of the scenarios concern the theme of divergence or convergence of labour participation between the regions. In the Challenged Market Europe scenario and the Expanding Market Europe scenario a (different) degree of divergence is assumed, while in the Growing Social Europe scenario and the Limited Social Europe scenario a (different) degree of convergence is envisaged. In this paragraph the consequences for the participation rates at the level of the 7 types of regional clusters are analysed.

With respect to males the results show that the differences in age participation rates between the clusters are fairly small. Only the Overseas cluster stands out for having substantial lower participation rates. In the future, according to the Growing Social Europe scenario a process of integration will invoke economic convergence at the scale of clusters, leading to shrinking differences in activity rates between the clusters, although the age pattern of the Overseas cluster still deviates to a large degree from that of the other cluster. More or lees the same applies to the Limited Social Europe scenario, with the main difference with the previous scenario that all age specific activity rates are much lower. According to the two market based scenarios (Challenged Market Europe and Expanding Market Europe) the contrast in the age pattern of participation rates between the Overseas cluster and the other clusters will even become more impressive in the future.

With respect to females the age pattern of participation rates show more differences between the clusters than in case of the males. Again the Overseas cluster stands out for having much lower participation rates. But now, also the age pattern of the Young Potential cluster is quite deviant. It is characterised by a rather old fashioned age pattern of steep falling activity rates after childbirth. In the Challenge of Ageing and the Challenge of Labour Force cluster the activity rates at higher ages are significantly lower than in the Euro Standard and Challenge of Decline cluster.

In the future a strong convergence in age pattern will happen according to the Growing Social Europe scenario. As a result, the traditional age pattern of the Young Potential cluster will be transformed in a modern age pattern, with no signs of falling activity rates after childbirth. In the Limited Social Europe this tendency to convergence is blocked by the meagre economic circumstances. According to the two market based scenarios the cluster specific patterns of activity rates will not change significantly in the future.

[Figure 4.4 about here]
[Table 4.3 about here]
[Figure 4.5 about here]
[Table 4.4 about here]

## 4.2 Trends in the labour force

### *4.2.1 ESPON space*

Labour force scenarios result from the multiplication of population numbers with labour force activity rates. The combination of quite divergent assumptions in the policy scenarios on population growth with significant divergent assumptions on labour force participation will lead to rather extreme divergent developments between the four scenarios in the size and composition of the labour force. In the Expanding Market Scenario the size of the labour force will grow between 2005 and 2050 with more than 20%. In the other three scenarios the labour force will not increase. In the Growing Social Europe scenario the labour force will hardly shrink, but in the other two scenarios the decline is considerable. In the Limited Social Europe scenario the size of the labour force will be about 20% smaller in 2050 against about 10% in the Challenged Market Europe scenario.

Over the last decades the male and female labour force has developed in different ways: the share of men in the labour force has declined while the share of women has risen. In the Expanding Market Europe scenario a gradual feminisation of the labour force is likely to happen: the growth rate for females is higher than for males. In the Limited Social Europe scenario and the Challenged Market Europe scenario the opposite will happen: the decline in the female labour force is larger than that of the male labour force. In the Growing Social Europe scenario both the male and the female labour force will be confronted with a minimal decrease in the future.

[Figure 4.6 about here]

[Table 4.5 about here])

*4.2.2 National trends*

According to the Expanding Market Europe scenario up to 2050 the labour force will grow considerable in about half of the countries belonging to the ESPON space, while in about the other half a considerable decrease will happen. In the other three policy scenarios the labour force is expected to shrink in most countries. The Challenged Market Europe scenario and the Growing Social Europe scenario show almost the same pattern of countries with a declining and growing labour force. Also the extent of decrease and increase is quite similar. In the Limited Social Europe scenario a quite dramatic shrinking labour force is envisaged: in nearly half of the countries the decline will amount to almost 40%.

In all four policy scenarios the trends in the labour force are more or less alike for men and women, although in general the degree of growth or decline is somewhat larger for women.

[Figure 4.7 about here]
[Figure 4.8 about here]
[Figure 4.9 about here]
[Table 4.6 about here]

*4.2.3 Cluster trends*

The Challenged Market Europe scenario and the Limited Social Europe scenario are more or less the same with respect the regional patterns of growth of the labour force. The two clusters Challenge of Labour Force and Challenge of Decline will face a downsizing of 40% of the labour force between 2005 and 2050. In contrast, the Overseas cluster may expect a growth of 40%. In the Euro Standard cluster a decline of 10% is foreseen in the Challenged Market scenario against a decline of 15% in the Limited Social Europe scenario. The other clusters will suffer a decrease up to 10% in both scenarios (with the exception of the Young Potential cluster with a growth of about 5% in the Challenged Market scenario).

In the other two scenarios, the Expanding Market Europe and the Growing Social Europe scenario, the decline of the labour force in the two cluster Challenge of Labour Force and Challenge of Decline is considerable lower with about -30%. The cluster Overseas is expected to have a huge growth of the labour force with 60%. Also the clusters Young Potentials and Challenge of Ageing are heading for a

considerable growing labour force: both with about 40% in the Expanding Market Europe scenario against 30% in the Growing Social Europe scenario. Also for the Family Potential cluster a growing labour force is envisaged with about 25% in the Expanding Market Europe scenario and 15% in the Growing Social Europe scenario.

[Figure 4.10 about here]
[Figure 4.11 about here]
[Figure 4.12 about here]
[Figure 4.13 about here]
[Figure 4.14 about here]
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[Figure 4.18 about here]
[Figure 4.19 about here]
[Figure 4.20 about here]
[Figure 4.21 about here]

*4.2.4 Regional trends*

In the future a lot of regions will be struck by a shrinking labour force. Dependent on the specific policy scenario the seriousness of the decline of the labour force will be less or more. In the Expanding Market Europe scenario a minority of the regions will be facing a declining labour force: only 35% of the regions of the ESPON space will have a shrinking labour force (of more than 10%) between 2005 and 2050. In the Growing Social Europe scenario this percentage is somewhat higher with 40%. In the Challenged Market Europe scenario the percentage is much higher with 55%, while the Limited Social Europe scenario a large majority of the regions will be the confronted with a setback, namely 70% of the regions see the labour force decline with over 10%. In the last scenario most regions located in the Eastern part of the ESPON space and a lot of regions in the Southern part will suffer a decline of the labour force with more than 30%. Also a lot of regions located in Germany and Austria will suffer a loss of over 30%. In the Expanding Market Europe scenario a lot of regions located in the western and northern part of the ESPON space will have a substantially growing labour force. The contrast with a eastern part is sharp, where a majority of the regions will have to endure a shrinking labour force. Although in the Growing Social Europe scenario the percentage of shrinking regions is almost the same, the percentage of regions with a high labour force growth is significantly higher. This is due to the convergence assumption of this scenario (in contrast to a divergence assumption in the Expanding Market scenario).

The regional trends in the male and female labour force resemble each other, although in the Limited Social Europe scenario the percentage of regions with a shrinking female labour force is much higher than the percentage with a shrinking male labour force. In this scenario round 75% of the regions will have a more than 10% shrinking female labour force against 60% of the regions with a more than 10% declining male labour force. In the Growing Social Europe scenario the percentage of regions with a shrinking male labour force is slightly higher (with round 40%) than the percentage of regions with a shrinking female labour force (with about 35%).

[Figure 4.22 about here]
[Figure 4.23 about here]
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[Figure 4.30 about here]
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[Figure 4.32 about here]
[Figure 4.33 about here]

## 4.3 Dependency ratio

### *4.3.1 Dependency ratio: ESPON space*

The dependency ratio gives an indication of the pressure on the labour force brought to bear by providing for the non-working population. This pressure can be distinguished by the contribution of specified age groups, namely the green pressure (by young people under 20), grey pressure (by people over 65) and the pressure exercised by non-working people at prime working ages.

The dependency ratio of the ESPON space amounts to 1.1 in 2005; the contribution of the three age groups to this ratio is almost the same although the prima age pressure is slightly higher than that of the other two age groups In all four policy scenarios it is envisaged that the dependency ratio is going to rise substantially in the future. According to the Limited Social Europe scenario the rise is the steepest, with a dependency ratio of 1.7 in 2050. This is no wonder considering the lowest

participation rates of this scenario. In the Challenged Market Europe the dependency ratio will be somewhat smaller in 2050. In the other two scenario stronger economic growth leads to higher participation rates and as a result to lower dependency ratios in 2050; in the Expanding Market Europe scenario a ratio of 1.4 is foreseen. Looking at the contribution of the specified age groups to the dependency ratio, it is clear that the enormous rise of this ratio in all four scenarios is predominantly caused by the huge rise of the grey pressure. In all four scenarios this type of pressure is (more than) doubled. Especially in the Limited Social Europe scenario the grey pressure will gain momentum, with an increase from 0.4 in 2005 to 0.8 in 2050. Also in the Challenged Market Europe scenario the grey pressure will rise fast. With respect to the prime age pressure, these two scenarios foresee almost the same degree of pressure in 2050 as in 2005, while in the other two scenarios a slight fall is expected. Also the green pressure will be more or less stable in the future, although a slight fall is expected in the Challenged Market Europe scenario and the Limited Social Europe scenario.

[Figure 4.34 about here]

*4.3.2 Dependency ratios: national*

The disparity in the dependency ratios of the countries belonging to the ESPON space is fairly large. In several small countries the ratio is well below 1 while in some other countries it is close to 1.5. Looking at the contribution of the age groups, especially the prime age pressure shows large fluctuations. The green pressure is the least volatile.

According to the Limited Social Europe scenario the disparity is even much greater in 2050: a lot of countries will have a dependency ratio near 2. The green pressure is by then almost the same as in 2005. In contrast, the prime age pressure has increased in most countries. However, the largest contribution to the rising dependency ratio in the future is made by the eldest age group. In all countries the grey pressure will more than double. In the Growing Social Europe scenario the dependency ratio in 2050 is generally lower than that in the Limited Social Europe scenario. Also the differences between the countries are less impressive. In this scenario the prime age pressure is generally lower than in the Limited Social Europe scenario, while the grey pressure and green pressure is more or less the same. The country specific patterns of the dependency ratios are more or less the same in the Challenged Market Europe scenario and the Expanding Market Europe scenario.

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[Figure 4.36 about here]

[Figure 4.37 about here]
[Figure 4.38 about here]
[Figure 4.39 about here]

*4.3.3 Dependency ratios: clusters*

The disparity in the dependency ratios of the 7 clusters is very small in 2005. The only exception consists of the Overseas cluster with a much higher dependency ratio, namely 1.7 against round 1.1 for the other 6 clusters. Both the green pressure and the prime age pressure is considerable higher in the Overseas cluster, while the grey pressure is in line with that of the other clusters.

In the future, according to all four scenarios the gap between the dependency ratio of the Overseas cluster and the other clusters is going to get much smaller, although its 'leading position' will remain. Notably in the Growing Social Europe scenario the Overseas cluster has no longer a significantly higher dependency ratio. In this scenario the Challenge of Labour Force cluster and Challenge of decline cluster have a dependency ratio that is nearly as high. The Overseas cluster still has a much higher green pressure and prime age pressure but the grey pressure is much lower than that of most other clusters.

[Figure 4.40 about here]
[Figure 4.41 about here]
[Figure 4.42 about here]
[Figure 4.43 about here]
[Figure 4.44 about here]

# 5. PROJECTION DATABASE

The projection database consists of a set of Scenario Summary spreadsheets containing the main results from the Scenario projections. The following scenarios are included: Status Quo (for comparison), Growing Social Europe, Expanding Market Europe, Limited Social Europe and Challenged Market Europe. The files containing the components of change are listed in Table 5.1. The files containing population change by 5 year age groups are listed in Table 5.2.

# 6. WHAT THE RESULTS SAY ABOUT ALTERNATIVE FUTURES FOR COHESION AND COMPETITIVENESS

This report has presented a large amount of evidence about the demographic future of Europe, its countries and its regions. In this final section we offer some thoughts about the implications of our projections for two policy concerns of European regional development policy: cohesion and competitiveness.

By *cohesion* we understand two related ideas. The first is that levels of living and welfare should be fairly distributed across groups in the population defined by their spatial location. The second is that cohesion is achieved in societies when all groups differing in terms of national origin or ethnic identity have equal chances to succeed. Now demographic attributes do not speak directly to these issues but they do have implications for them.

The first observation is that Europe is still incredibly divided in its demographic regimes and potentials by an invisible “iron curtain”. Time and time again the distinctiveness of regions in the central and eastern countries which were part of the Soviet empire was apparent. These regions face population decline and far more ageing than those in western, northern and southern Europe. Our successful policy scenarios seemed to contribute a little to narrowing the gaps but not much. There are some reasons for optimism. The experience of southern European states in the EU has been of some convergence, though the current recession may set that back. The investment by the German state in its eastern Länder has meant their demographic position is less extreme than that of countries such as Romania and Bulgaria. So the European Union has to address the issue of how much it is prepared to invest in its new members and how fast, in the face of a decade of reduced fiscal means.

Another observation can be made about this issue. The regional maps themselves may be deceptive if we ignore the size of the populations who live in those regions. In 2050 a poor declining region may face a difficult future of shrinking markets and high dependency ratios. However, compared with the

2005 situation fewer people are living there. They have shifted both through internal, inter-country and differential extra-Europe migration to wealthier regions. The family living in a depressed and redundant coalfield region may have moved to a metropolis offering better opportunities at least for their offspring, who may in turn have migrated to a more dynamic city to a long and successful career. None of these dynamics will be apparent on the static or dynamic maps.

Cohesion will also be an issue for the demographically favoured regions. Their future population growth and slower ageing will be a function of immigration from other regions, countries and continents. The integration of these newcomers into the fabric of society through programmes of language and skills training will be vital.

What do our results say about competitiveness? Those countries, types and regions which are growing could be viewed as favoured (expanding markets, increasing labour supply), while those countries, types and regions which are declining could be viewed as disadvantaged. There are counter-arguments put forward by the Greens that downsizing will reduce pressure on resources and the environment. However, regions with declining populations are not attractive to economic enterprises that create jobs though they may attract retired migrants. The countries, regions, region types which will be most competitive will be those with the largest concentration of their populations in the working ages. The countries, regions, region types which will be least competitive will be those with the smallest concentration of their populations in the working ages.

The most important message to policy makers and politicians is about population ageing. They have been told by demographers about the future challenges. Our policy scenarios show that population ageing in Europe could be greater than hitherto appreciated. Policies that shift pension/social security ages rapidly upwards are needed; policies which make easy to work beyond age 65 are needed; policies which remove the privileges of insiders with good pensions taken at early ages paid for by the rest of society are no longer viable. David Willets, the UK Member of Parliament, has argued convincingly that social policy has been dominated over the past decades by the interests of the baby boomers (Willetts, 2010). They are now beginning to retire and demand their social transfers and protections which are unsustainable. However, these remarks stray somewhat from the demographic analysis we have focussed on. We will develop and refine these observations in the next edition of the report.

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**Table 2.1: Europe: projected populations for the policy scenarios, 2005-2050**

| Scenario | 2005 | 2010 | 2020 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|---|
| | Population (millions) | | | | | |
| Status Quo | 503 | 507 | 507 | 499 | 483 | 463 |
| Growing Social Europe | 503 | 507 | 521 | 543 | 568 | 592 |
| Expanding Market Europe | 503 | 507 | 523 | 547 | 576 | 605 |
| Limited Social Europe | 503 | 506 | 510 | 512 | 509 | 502 |
| Challenged Market Europe | 503 | 506 | 510 | 510 | 507 | 500 |
| | Time series | | | | | |
| Status Quo | 100 | 101 | 101 | 99 | 96 | 92 |
| Growing Social Europe | 100 | 101 | 104 | 108 | 113 | 118 |
| Expanding Market Europe | 100 | 101 | 104 | 109 | 114 | 120 |
| Limited Social Europe | 100 | 100 | 101 | 102 | 101 | 100 |
| Challenged Market Europe | 100 | 100 | 101 | 101 | 101 | 99 |

**Table 2.2: Europe: projected populations, UN and Eurostat, 2005-2050**

| | 2005 | 2010 | 2020 | 2030 | 2040 | 2050 |
|---|---|---|---|---|---|---|
| **United Nations** | Populations (millions) | | | | | |
| Medium | 502 | 510 | 519 | 520 | 516 | 509 |
| High | 502 | 510 | 529 | 544 | 556 | 572 |
| Low | 502 | 510 | 508 | 495 | 476 | 451 |
| | Time series | | | | | |
| Medium | 100 | 102 | 103 | 103 | 103 | 101 |
| High | 100 | 102 | 105 | 108 | 111 | 114 |
| Low | 100 | 102 | 101 | 99 | 95 | 90 |
| **Eurostat** | Populations (millions) | | | | | |
| | 501 | 512 | 527 | 534 | 535 | 530 |
| | Time series | | | | | |
| | 100 | 102 | 105 | 107 | 107 | 106 |

Sources:
United Nations: sum of World Population Prospects 2008 projections of 31 ESPON countries.
Eurostat: sum of central projections of EU 27 member states.

**Table 2.3: Europe: projected births for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Births (millions) | | | | |
| Status Quo | 25.9 | 24.2 | 22.4 | 21.5 | 20.7 |
| Growing Social Europe | 26.5 | 26.8 | 27.1 | 28.0 | 28.8 |
| Expanding Market Europe | 26.4 | 26.6 | 27.1 | 28.5 | 29.5 |
| Limited Social Europe | 26.0 | 24.2 | 22.3 | 21.2 | 20.2 |
| Challenged Market Europe | 25.6 | 22.8 | 20.2 | 19.0 | 17.9 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 94 | 87 | 83 | 80 |
| Growing Social Europe | 100 | 101 | 102 | 106 | 109 |
| Expanding Market Europe | 100 | 101 | 103 | 108 | 112 |
| Limited Social Europe | 100 | 93 | 86 | 82 | 78 |
| Challenged Market Europe | 100 | 89 | 79 | 74 | 70 |

**Table 2.4: Europe: projected deaths for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Deaths (millions) | | | | |
| Status Quo | 26.6 | 30.3 | 32.9 | 35.5 | 37.2 |
| Growing Social Europe | 28.0 | 25.4 | 24.6 | 25.1 | 26.1 |
| Expanding Market Europe | 28.0 | 25.8 | 25.2 | 25.9 | 27.1 |
| Limited Social Europe | 28.0 | 26.5 | 26.5 | 27.5 | 28.8 |
| Challenged Market Europe | 28.0 | 26.9 | 27.1 | 28.3 | 29.7 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 114 | 124 | 134 | 140 |
| Growing Social Europe | 100 | 91 | 88 | 90 | 93 |
| Expanding Market Europe | 100 | 92 | 90 | 93 | 97 |
| Limited Social Europe | 100 | 95 | 95 | 98 | 103 |
| Challenged Market Europe | 100 | 96 | 97 | 101 | 106 |

**Table 2.5: Europe: projected natural increase for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Natural increase (millions) | | | | |
| Status Quo | -0.7 | -6.1 | -10.5 | -14.0 | -16.4 |
| Growing Social Europe | -1.4 | 1.4 | 2.5 | 3.0 | 2.7 |
| Expanding Market Europe | -1.5 | 0.8 | 1.9 | 2.6 | 2.4 |
| Limited Social Europe | -2.0 | -2.3 | -4.2 | -6.3 | -8.6 |
| Challenged Market Europe | -2.4 | -4.1 | -6.9 | -9.3 | -11.8 |

**Table 2.6: Europe: projected internal migration for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Deaths (millions) | | | | |
| Status Quo | 32.8 | 32.4 | 31.2 | 30.4 | 29.5 |
| Growing Social Europe | 32.8 | 33.0 | 33.3 | 34.6 | 36.2 |
| Expanding Market Europe | 32.8 | 33.3 | 34.0 | 36.0 | 38.2 |
| Limited Social Europe | 32.7 | 32.4 | 31.3 | 30.7 | 30.1 |
| Challenged Market Europe | 32.8 | 32.4 | 31.6 | 30.9 | 30.2 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 99 | 95 | 93 | 90 |
| Growing Social Europe | 100 | 101 | 101 | 106 | 110 |
| Expanding Market Europe | 100 | 101 | 104 | 110 | 116 |
| Limited Social Europe | 100 | 99 | 96 | 94 | 92 |
| Challenged Market Europe | 100 | 99 | 96 | 94 | 92 |

**Table 2.7: Europe: projected inter-country migration for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Natural increase (millions) | | | | |
| Status Quo | 7.9 | 7.3 | 6.6 | 6.2 | 5.7 |
| Growing Social Europe | 8.6 | 9.4 | 10.1 | 10.5 | 10.4 |
| Expanding Market Europe | 8.9 | 10.5 | 12.1 | 12.9 | 13.0 |
| Limited Social Europe | 8.1 | 7.2 | 6.3 | 5.8 | 5.4 |
| Challenged Market Europe | 8.3 | 8.3 | 8.1 | 7.7 | 7.1 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 92 | 84 | 78 | 72 |
| Growing Social Europe | 100 | 109 | 118 | 122 | 121 |
| Expanding Market Europe | 100 | 119 | 137 | 145 | 146 |
| Limited Social Europe | 100 | 89 | 78 | 71 | 66 |
| Challenged Market Europe | 100 | 99 | 97 | 93 | 86 |

**Table 2.8: Europe: projected Extra-Europe immigration for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Immigration (millions) | | | | |
| Status Quo | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 |
| Growing Social Europe | 11.4 | 13.9 | 16.5 | 17.5 | 17.5 |
| Expanding Market Europe | 11.9 | 16.3 | 20.7 | 22.5 | 22.5 |
| Limited Social Europe | 10.2 | 9.1 | 8.0 | 7.5 | 7.5 |
| Challenged Market Europe | 10.8 | 11.5 | 12.2 | 12.5 | 12.5 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 100 | 100 | 100 | 100 |
| Growing Social Europe | 100 | 123 | 145 | 154 | 154 |
| Expanding Market Europe | 100 | 137 | 174 | 189 | 189 |
| Limited Social Europe | 100 | 89 | 78 | 73 | 73 |
| Challenged Market Europe | 100 | 107 | 113 | 116 | 116 |

**Table 2.9: Europe: projected Extra-Europe emigration for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Emigration (millions) | | | | |
| Status Quo | 6.1 | 5.7 | 5.3 | 5.0 | 4.7 |
| Growing Social Europe | 6.5 | 7.0 | 7.6 | 7.9 | 7.9 |
| Expanding Market Europe | 6.8 | 8.2 | 9.6 | 10.4 | 10.6 |
| Limited Social Europe | 6.0 | 4.7 | 3.6 | 3.1 | 2.9 |
| Challenged Market Europe | 6.2 | 5.8 | 5.4 | 5.2 | 4.9 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 94 | 87 | 82 | 78 |
| Growing Social Europe | 100 | 108 | 116 | 120 | 122 |
| Expanding Market Europe | 100 | 121 | 142 | 153 | 157 |
| Limited Social Europe | 100 | 79 | 60 | 51 | 49 |
| Challenged Market Europe | 100 | 93 | 87 | 82 | 78 |

**Table 2.10: Europe: projected Extra-Europe net migration for the policy scenarios, 2005-2050**

| Scenario | 2005-10 | 2015-20 | 2025-30 | 2035-40 | 2045-50 |
|---|---|---|---|---|---|
| | Net migration (millions) | | | | |
| Status Quo | 4.5 | 4.9 | 5.3 | 5.6 | 5.9 |
| Growing Social Europe | 4.8 | 6.9 | 8.9 | 9.6 | 9.6 |
| Expanding Market Europe | 5.1 | 8.1 | 11.1 | 12.1 | 11.9 |
| Limited Social Europe | 4.3 | 4.4 | 4.4 | 4.4 | 4.6 |
| Challenged Market Europe | 4.6 | 5.7 | 6.8 | 7.3 | 7.6 |
| | Time series (2005-10 =100) | | | | |
| Status Quo | 100 | 108 | 117 | 124 | 130 |
| Growing Social Europe | 100 | 143 | 184 | 199 | 198 |
| Expanding Market Europe | 100 | 159 | 217 | 236 | 232 |
| Limited Social Europe | 100 | 102 | 102 | 104 | 107 |
| Challenged Market Europe | 100 | 125 | 149 | 161 | 168 |

**Table 2.11: The regional redistribution of population under four policy scenarios, 2005-2045**

| DENSITY QUINTILE | Q1 High Density | Q2 | Q3 | Q4 | Q5 Low Density | Total |
|---|---|---|---|---|---|---|
| 2005 | 28.6 | 23.0 | 19.9 | 17.2 | 11.3 | 100 |
| 2050 STQ | 30.2 | 24.6 | 19.1 | 15.2 | 10.9 | 100 |
| 2050 GSE | 30.7 | 24.7 | 19.1 | 14.9 | 10.7 | 100 |
| 2050 EME | 30.9 | 24.7 | 18.9 | 14.7 | 10.9 | 100 |
| 2050 LSE | 30.2 | 24.0 | 19.4 | 15.4 | 11.0 | 100 |
| 2050 CME | 30.6 | 24.3 | 19.1 | 15.1 | 11.0 | 100 |
| INCOME QUINTILE | Q1 High Income | Q2 | Q3 | Q4 | Q5 Low Income | Total |
| 2005 | 25.4 | 19.5 | 18.6 | 15.8 | 20.8 | 100 |
| 2050 STQ | 33.7 | 22.6 | 18.7 | 14.4 | 10.6 | 100 |
| 2050 GSE | 34.1 | 22.7 | 18.7 | 14.2 | 10.3 | 100 |
| 2050 EME | 34.4 | 22.8 | 18.4 | 13.9 | 10.5 | 100 |
| 2050 LSE | 33.7 | 22.0 | 19.0 | 14.7 | 10.7 | 100 |
| 2050 CME | 34.1 | 22.3 | 18.6 | 14.3 | 10.7 | 100 |

**Table 3.1: Europe: projected age group populations for the policy scenarios, 2005-2050**

| Variable | Scenario | 2005 | | | | 2050 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 0-14 | 15-64 | 65+ | Total | 0-14 | 15-64 | 65+ | Total |
| Population (millions) | STQ | 81.5 | 338.6 | 83.4 | 503.5 | 64.1 | 282.1 | 117.0 | 463.2 |
| | GSE | 81.5 | 338.6 | 83.4 | 503.5 | 86.7 | 329.7 | 176.1 | 592.5 |
| | EME | 81.5 | 338.6 | 83.4 | 503.5 | 88.7 | 342.8 | 173.2 | 604.7 |
| | LSE | 81.5 | 338.6 | 83.4 | 503.5 | 63.0 | 280.5 | 158.9 | 502.4 |
| | CME | 81.5 | 338.6 | 83.4 | 503.5 | 56.8 | 287.1 | 156.1 | 500.0 |
| Population time series | STQ | 100 | 100 | 100 | 100 | 78.6 | 83.3 | 140.3 | 92.0 |
| | GSE | 100 | 100 | 100 | 100 | 106.4 | 97.4 | 211.3 | 117.7 |
| | EME | 100 | 100 | 100 | 100 | 108.8 | 101.2 | 207.8 | 120.1 |
| | LSE | 100 | 100 | 100 | 100 | 77.2 | 82.9 | 190.6 | 99.8 |
| | CME | 100 | 100 | 100 | 100 | 69.7 | 84.8 | 187.2 | 99.3 |
| % ages | STQ | 16.2 | 67.3 | 16.6 | 100 | 13.8 | 60.9 | 25.3 | 100 |
| | GSE | 16.2 | 67.3 | 16.6 | 100 | 14.6 | 55.6 | 29.7 | 100 |
| | EME | 16.2 | 67.3 | 16.6 | 100 | 14.7 | 56.7 | 28.6 | 100 |
| | LSE | 16.2 | 67.3 | 16.6 | 100 | 12.5 | 55.8 | 31.6 | 100 |
| | CME | 16.2 | 67.3 | 16.6 | 100 | 11.4 | 57.4 | 31.2 | 100 |

**Table 3.2: Europe: projected age structure indicators for the status quo and policy scenarios, 2005-2050**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Scenario** | | STQ | Status Quo | | | | | | | | |
| | | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Old age dependency ratio | ODR | 22.44 | 23.62 | 26.01 | 28.64 | 31.48 | 34.36 | 36.94 | 38.92 | 40.43 | 41.55 |
| Economic old age dependency ratio | EODR | 29.85 | 31.45 | 34.40 | 37.89 | 41.80 | 45.66 | 49.05 | 51.70 | 53.78 | 55.29 |
| Labour market dependency ratio | LMDR | 72.57 | 74.67 | 77.16 | 80.96 | 85.62 | 89.92 | 93.49 | 96.18 | 98.16 | 99.57 |
| Very old age dependency ratio | VODR | 13.98 | 15.09 | 16.03 | 17.08 | 19.31 | 21.66 | 23.95 | 25.94 | 27.51 | 28.59 |
| **Scenario** | | GSE | Growing Social Europe | | | | | | | | |
| | | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Old age dependency ratio | ODR | 22.44 | 23.33 | 26.25 | 30.07 | 34.60 | 39.58 | 44.68 | 49.45 | 53.83 | 57.86 |
| Economic old age dependency | EODR | 29.85 | 30.97 | 34.39 | 39.21 | 45.07 | 51.39 | 57.70 | 63.52 | 68.83 | 73.56 |
| Labour market dependency | LMDR | 72.59 | 73.76 | 75.94 | 80.26 | 86.22 | 92.38 | 98.18 | 103.24 | 107.67 | 111.53 |
| Very old age dependency | VODR | 13.98 | 14.70 | 16.03 | 18.23 | 22.22 | 26.93 | 32.18 | 37.55 | 42.75 | 47.53 |
| **Scenario** | | LSE | Limited Social Europe | | | | | | | | |
| | | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Old age dependency ratio | ODR | 22.44 | 23.34 | 26.19 | 29.80 | 34.10 | 38.94 | 44.01 | 48.88 | 53.55 | 58.07 |
| Economic old age dependency | EODR | 29.85 | 31.17 | 34.88 | 39.91 | 46.06 | 52.89 | 60.00 | 66.94 | 73.71 | 80.23 |
| Labour market dependency | LMDR | 72.59 | 74.82 | 78.70 | 84.66 | 92.26 | 100.18 | 108.05 | 115.60 | 122.82 | 129.79 |
| Very old age dependency | VODR | 13.98 | 14.80 | 16.21 | 18.37 | 22.33 | 27.05 | 32.43 | 38.16 | 43.96 | 49.61 |
| **Scenario** | | EME | Expanding Market Europe | | | | | | | | |
| | | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Old age dependency ratio | ODR | 22.44 | 23.31 | 26.10 | 29.67 | 33.80 | 38.16 | 42.46 | 46.40 | 49.96 | 53.23 |
| Economic old age dependency | EODR | 29.85 | 30.92 | 34.14 | 38.57 | 43.83 | 49.23 | 54.39 | 59.05 | 63.25 | 66.98 |
| Labour market dependency | LMDR | 72.59 | 73.62 | 75.44 | 79.18 | 84.26 | 89.19 | 93.54 | 97.25 | 100.45 | 103.25 |
| Very old age dependency | VODR | 13.98 | 14.67 | 15.89 | 17.84 | 21.43 | 25.53 | 29.92 | 34.28 | 38.42 | 42.16 |
| **Scenario** | | CME | Challenged Market Europe | | | | | | | | |
| | | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Old age dependency ratio | ODR | 22.44 | 23.32 | 26.05 | 29.43 | 33.38 | 37.75 | 42.25 | 46.58 | 50.79 | 54.98 |
| Economic old age dependency | EODR | 29.85 | 31.07 | 34.47 | 38.98 | 44.35 | 50.13 | 56.01 | 61.71 | 67.34 | 72.90 |
| Labour market dependency | LMDR | 72.59 | 74.37 | 77.35 | 82.16 | 88.18 | 94.17 | 99.98 | 105.57 | 111.05 | 116.57 |
| Very old age dependency | VODR | 13.98 | 14.75 | 15.99 | 17.85 | 21.32 | 25.36 | 29.85 | 34.55 | 39.28 | 43.91 |

## Table 4.1: Labour force participation rates of males

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2005** | | | | | | | | | | | | |
| **AT** | 46 | 77 | 88 | 93 | 94 | 93 | 92 | 85 | 64 | 17 | 7 | 4 | 2 |
| **BE** | 11 | 63 | 93 | 95 | 95 | 93 | 92 | 83 | 58 | 22 | 5 | 3 | 2 |
| **BG** | 7 | 59 | 79 | 85 | 85 | 83 | 80 | 76 | 61 | 30 | 9 | 4 | 2 |
| **CH** | 55 | 79 | 93 | 97 | 97 | 96 | 95 | 94 | 89 | 65 | 22 | 13 | 5 |
| **CY** | 13 | 75 | 96 | 97 | 96 | 96 | 95 | 93 | 85 | 62 | 28 | 18 | 12 |
| **CZ** | 9 | 66 | 93 | 97 | 97 | 96 | 94 | 91 | 82 | 33 | 11 | 6 | 2 |
| **DE** | 31 | 71 | 83 | 93 | 94 | 94 | 93 | 89 | 80 | 38 | 8 | 4 | 2 |
| **DK** | 60 | 81 | 87 | 93 | 94 | 92 | 93 | 89 | 88 | 50 | 18 | 10 | 3 |
| **EE** | 14 | 72 | 91 | 94 | 91 | 92 | 88 | 82 | 72 | 48 | 26 | 14 | 2 |
| **ES** | 26 | 71 | 89 | 95 | 95 | 94 | 92 | 88 | 75 | 48 | 6 | 2 | 1 |
| **FI** | 34 | 74 | 88 | 91 | 91 | 90 | 88 | 82 | 69 | 36 | 9 | 4 | 1 |
| **FR** | 18 | 64 | 91 | 94 | 93 | 93 | 92 | 88 | 63 | 15 | 4 | 2 | 0 |
| **GR** | 12 | 58 | 87 | 92 | 92 | 91 | 90 | 85 | 69 | 42 | 14 | 5 | 2 |
| **HU** | 6 | 52 | 87 | 90 | 89 | 85 | 79 | 72 | 57 | 20 | 6 | 2 | 0 |
| **IE** | 29 | 78 | 92 | 93 | 94 | 93 | 92 | 86 | 75 | 57 | 23 | 13 | 7 |
| **IS** | 74 | 83 | 89 | 94 | 97 | 94 | 96 | 94 | 92 | 87 | 62 | 24 | 6 |
| **IT** | 16 | 60 | 82 | 91 | 94 | 94 | 93 | 85 | 56 | 29 | 12 | 6 | 2 |
| **LI** | 55 | 79 | 93 | 97 | 97 | 96 | 95 | 94 | 89 | 65 | 22 | 13 | 5 |
| **LT** | 7 | 59 | 89 | 94 | 92 | 92 | 88 | 86 | 74 | 53 | 12 | 6 | 1 |
| **LU** | 10 | 52 | 91 | 98 | 98 | 97 | 94 | 92 | 58 | 15 | 2 | 1 | 1 |
| **LV** | 16 | 73 | 91 | 91 | 92 | 89 | 91 | 86 | 76 | 42 | 28 | 15 | 2 |
| **MT** | 36 | 81 | 96 | 97 | 96 | 95 | 91 | 88 | 73 | 24 | 8 | 3 | 1 |
| **NL** | 60 | 83 | 93 | 95 | 94 | 94 | 93 | 90 | 78 | 33 | 14 | 6 | 3 |
| **NO** | 45 | 74 | 86 | 90 | 90 | 89 | 88 | 86 | 80 | 58 | 23 | 13 | 3 |
| **PL** | 11 | 64 | 90 | 92 | 91 | 89 | 84 | 72 | 48 | 26 | 14 | 8 | 4 |
| **PT** | 23 | 68 | 91 | 94 | 95 | 93 | 93 | 87 | 73 | 51 | 36 | 25 | 17 |
| **RO** | 20 | 56 | 82 | 87 | 89 | 86 | 84 | 74 | 55 | 34 | 28 | 24 | 21 |
| **SE** | 28 | 72 | 87 | 93 | 93 | 91 | 90 | 88 | 84 | 64 | 18 | 9 | 2 |
| **SI** | 9 | 72 | 94 | 95 | 96 | 95 | 91 | 87 | 79 | 19 | 4 | 2 | 0 |
| **SK** | 18 | 67 | 91 | 97 | 97 | 94 | 91 | 81 | 63 | 22 | 16 | 11 | 6 |
| **UK** | 47 | 80 | 88 | 90 | 90 | 89 | 88 | 85 | 76 | 55 | 18 | 7 | 2 |
| | **2050 Challenged Market Europe** | | | | | | | | | | | | |
| **AT** | 45 | 74 | 87 | 93 | 94 | 93 | 91 | 84 | 69 | 29 | 8 | 4 | 2 |
| **BE** | 10 | 61 | 91 | 95 | 95 | 93 | 91 | 82 | 65 | 32 | 7 | 3 | 2 |
| **BG** | 7 | 57 | 78 | 85 | 85 | 84 | 79 | 76 | 67 | 37 | 9 | 5 | 2 |
| **CH** | 53 | 76 | 91 | 97 | 97 | 96 | 94 | 90 | 84 | 58 | 20 | 13 | 5 |
| **CY** | 12 | 73 | 94 | 97 | 96 | 96 | 94 | 90 | 81 | 56 | 25 | 18 | 12 |
| **CZ** | 8 | 64 | 92 | 97 | 97 | 96 | 93 | 88 | 79 | 39 | 11 | 6 | 2 |
| **DE** | 30 | 69 | 82 | 93 | 94 | 94 | 92 | 87 | 78 | 42 | 9 | 4 | 2 |
| **DK** | 57 | 79 | 86 | 93 | 94 | 92 | 92 | 87 | 83 | 49 | 17 | 10 | 3 |
| **EE** | 14 | 70 | 90 | 94 | 91 | 92 | 87 | 81 | 74 | 48 | 23 | 14 | 1 |
| **ES** | 25 | 69 | 88 | 95 | 95 | 94 | 91 | 86 | 75 | 48 | 8 | 2 | 1 |
| **FI** | 33 | 72 | 86 | 91 | 91 | 90 | 87 | 81 | 72 | 40 | 9 | 4 | 1 |
| **FR** | 17 | 62 | 89 | 93 | 93 | 93 | 91 | 86 | 68 | 28 | 5 | 2 | 0 |
| **GR** | 12 | 56 | 85 | 92 | 92 | 91 | 89 | 83 | 72 | 44 | 14 | 5 | 2 |
| **HU** | 6 | 51 | 86 | 91 | 90 | 86 | 79 | 74 | 65 | 31 | 7 | 2 | 1 |
| **IE** | 28 | 75 | 90 | 93 | 94 | 93 | 91 | 85 | 76 | 53 | 21 | 13 | 7 |
| **IS** | 71 | 80 | 88 | 94 | 97 | 94 | 95 | 90 | 85 | 71 | 52 | 24 | 6 |
| **IT** | 16 | 59 | 81 | 92 | 94 | 95 | 92 | 84 | 64 | 37 | 12 | 6 | 2 |
| **LI** | 53 | 76 | 91 | 97 | 97 | 96 | 94 | 91 | 84 | 58 | 20 | 13 | 5 |
| **LT** | 6 | 57 | 88 | 94 | 92 | 92 | 88 | 84 | 75 | 51 | 12 | 6 | 1 |
| **LU** | 9 | 51 | 89 | 98 | 98 | 97 | 93 | 89 | 65 | 28 | 4 | 1 | 1 |
| **LV** | 15 | 71 | 89 | 91 | 92 | 89 | 91 | 84 | 76 | 44 | 25 | 15 | 1 |
| **MT** | 34 | 79 | 95 | 97 | 96 | 95 | 90 | 86 | 74 | 33 | 9 | 2 | 1 |
| **NL** | 58 | 80 | 91 | 95 | 94 | 94 | 92 | 87 | 77 | 39 | 14 | 6 | 3 |
| **NO** | 44 | 72 | 84 | 90 | 90 | 89 | 87 | 84 | 78 | 54 | 21 | 13 | 3 |
| **PL** | 11 | 63 | 89 | 93 | 92 | 90 | 84 | 73 | 60 | 35 | 14 | 8 | 4 |
| **PT** | 22 | 65 | 88 | 93 | 94 | 93 | 92 | 85 | 74 | 50 | 31 | 25 | 17 |
| **RO** | 19 | 54 | 79 | 86 | 88 | 86 | 83 | 74 | 63 | 39 | 24 | 24 | 21 |
| **SE** | 27 | 70 | 85 | 93 | 93 | 91 | 89 | 86 | 81 | 58 | 16 | 9 | 2 |
| **SI** | 9 | 70 | 92 | 95 | 96 | 95 | 90 | 85 | 78 | 30 | 6 | 2 | 0 |
| **SK** | 17 | 65 | 89 | 97 | 97 | 94 | 90 | 80 | 68 | 32 | 15 | 11 | 6 |
| **UK** | 45 | 78 | 87 | 90 | 90 | 89 | 87 | 83 | 76 | 52 | 17 | 7 | 2 |

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2050 Expanding Market Europe** | | | | | | | | | | | | |
| **AT** | 50 | 81 | 92 | 95 | 96 | 95 | 94 | 89 | 76 | 31 | 8 | 4 | 2 |
| **BE** | 11 | 66 | 96 | 97 | 96 | 95 | 94 | 87 | 71 | 34 | 7 | 3 | 2 |
| **BG** | 7 | 62 | 82 | 87 | 87 | 85 | 82 | 81 | 74 | 40 | 10 | 5 | 2 |
| **CH** | 59 | 83 | 96 | 97 | 97 | 97 | 96 | 95 | 91 | 62 | 20 | 13 | 5 |
| **CY** | 14 | 79 | 96 | 98 | 98 | 97 | 96 | 95 | 89 | 60 | 25 | 18 | 12 |
| **CZ** | 9 | 70 | 97 | 98 | 98 | 98 | 96 | 94 | 87 | 41 | 12 | 6 | 2 |
| **DE** | 33 | 75 | 87 | 95 | 96 | 95 | 94 | 92 | 86 | 45 | 9 | 4 | 2 |
| **DK** | 64 | 86 | 91 | 95 | 96 | 94 | 94 | 92 | 91 | 52 | 17 | 10 | 2 |
| **EE** | 16 | 76 | 95 | 96 | 93 | 94 | 89 | 86 | 81 | 51 | 24 | 14 | 1 |
| **ES** | 28 | 75 | 93 | 96 | 96 | 96 | 94 | 92 | 83 | 51 | 8 | 2 | 1 |
| **FI** | 37 | 79 | 91 | 93 | 93 | 92 | 90 | 86 | 79 | 43 | 10 | 4 | 1 |
| **FR** | 19 | 67 | 94 | 95 | 95 | 95 | 94 | 91 | 75 | 30 | 5 | 2 | 0 |
| **GR** | 13 | 61 | 90 | 93 | 94 | 92 | 91 | 88 | 78 | 47 | 14 | 5 | 2 |
| **HU** | 7 | 56 | 91 | 93 | 92 | 88 | 82 | 79 | 71 | 33 | 7 | 2 | 1 |
| **IE** | 31 | 82 | 96 | 95 | 96 | 95 | 94 | 90 | 83 | 56 | 21 | 13 | 7 |
| **IS** | 79 | 87 | 93 | 95 | 99 | 96 | 98 | 96 | 93 | 76 | 54 | 24 | 6 |
| **IT** | 18 | 65 | 86 | 94 | 96 | 96 | 95 | 90 | 70 | 39 | 12 | 6 | 2 |
| **LI** | 59 | 83 | 96 | 99 | 99 | 98 | 97 | 96 | 92 | 62 | 20 | 13 | 5 |
| **LT** | 7 | 62 | 93 | 95 | 94 | 94 | 90 | 89 | 82 | 54 | 12 | 6 | 1 |
| **LU** | 10 | 55 | 94 | 98 | 98 | 99 | 96 | 94 | 72 | 30 | 4 | 1 | 1 |
| **LV** | 17 | 77 | 95 | 93 | 94 | 91 | 93 | 89 | 83 | 47 | 25 | 15 | 1 |
| **MT** | 38 | 86 | 96 | 99 | 98 | 97 | 93 | 91 | 81 | 36 | 9 | 2 | 1 |
| **NL** | 65 | 88 | 97 | 97 | 96 | 96 | 94 | 93 | 84 | 41 | 14 | 6 | 3 |
| **NO** | 49 | 79 | 89 | 92 | 91 | 91 | 90 | 90 | 86 | 58 | 22 | 13 | 3 |
| **PL** | 12 | 69 | 94 | 95 | 93 | 92 | 86 | 78 | 66 | 37 | 14 | 8 | 4 |
| **PT** | 25 | 71 | 92 | 95 | 95 | 94 | 94 | 89 | 81 | 53 | 32 | 25 | 17 |
| **RO** | 21 | 59 | 84 | 88 | 90 | 87 | 85 | 79 | 69 | 42 | 25 | 24 | 21 |
| **SE** | 30 | 76 | 90 | 94 | 95 | 93 | 92 | 91 | 88 | 61 | 17 | 9 | 2 |
| **SI** | 10 | 76 | 97 | 97 | 98 | 96 | 93 | 91 | 85 | 32 | 6 | 2 | 0 |
| **SK** | 19 | 71 | 94 | 99 | 98 | 96 | 92 | 85 | 75 | 34 | 15 | 11 | 6 |
| **UK** | 51 | 85 | 92 | 92 | 92 | 91 | 90 | 89 | 83 | 55 | 18 | 7 | 2 |
| | **2050 Growing Social Europe** | | | | | | | | | | | | |
| **AT** | 48 | 79 | 90 | 94 | 95 | 94 | 93 | 87 | 73 | 31 | 8 | 4 | 2 |
| **BE** | 11 | 64 | 94 | 96 | 96 | 94 | 93 | 85 | 69 | 33 | 7 | 3 | 2 |
| **BG** | 7 | 61 | 81 | 86 | 86 | 84 | 81 | 80 | 71 | 39 | 10 | 5 | 2 |
| **CH** | 57 | 81 | 94 | 97 | 97 | 97 | 96 | 94 | 89 | 61 | 20 | 13 | 5 |
| **CY** | 13 | 77 | 98 | 98 | 97 | 97 | 95 | 93 | 86 | 59 | 25 | 18 | 12 |
| **CZ** | 9 | 68 | 95 | 98 | 98 | 97 | 95 | 92 | 84 | 40 | 12 | 6 | 2 |
| **DE** | 32 | 73 | 85 | 94 | 95 | 95 | 94 | 90 | 83 | 44 | 9 | 4 | 2 |
| **DK** | 62 | 83 | 89 | 94 | 95 | 93 | 93 | 90 | 89 | 51 | 17 | 10 | 2 |
| **EE** | 15 | 74 | 93 | 95 | 92 | 93 | 88 | 84 | 78 | 50 | 24 | 14 | 2 |
| **ES** | 27 | 73 | 91 | 96 | 96 | 95 | 93 | 90 | 80 | 50 | 8 | 2 | 1 |
| **FI** | 36 | 77 | 90 | 92 | 92 | 91 | 89 | 85 | 76 | 42 | 10 | 4 | 1 |
| **FR** | 18 | 66 | 93 | 94 | 94 | 94 | 93 | 89 | 72 | 29 | 5 | 2 | 0 |
| **GR** | 12 | 60 | 88 | 93 | 93 | 92 | 90 | 86 | 76 | 46 | 14 | 5 | 2 |
| **HU** | 7 | 54 | 89 | 92 | 91 | 87 | 81 | 77 | 69 | 32 | 7 | 2 | 1 |
| **IE** | 30 | 80 | 94 | 94 | 95 | 94 | 93 | 88 | 80 | 55 | 21 | 13 | 7 |
| **IS** | 77 | 85 | 91 | 95 | 98 | 95 | 97 | 94 | 91 | 74 | 53 | 24 | 6 |
| **IT** | 17 | 63 | 84 | 93 | 95 | 96 | 94 | 88 | 68 | 38 | 12 | 6 | 2 |
| **LI** | 57 | 81 | 95 | 98 | 98 | 97 | 96 | 94 | 89 | 61 | 20 | 13 | 5 |
| **LT** | 7 | 60 | 91 | 94 | 93 | 93 | 89 | 88 | 80 | 53 | 12 | 6 | 2 |
| **LU** | 10 | 54 | 93 | 98 | 98 | 98 | 95 | 92 | 69 | 29 | 4 | 1 | 1 |
| **LV** | 16 | 75 | 93 | 92 | 93 | 90 | 92 | 88 | 81 | 46 | 25 | 15 | 1 |
| **MT** | 37 | 84 | 98 | 98 | 97 | 96 | 92 | 89 | 79 | 35 | 9 | 3 | 1 |
| **NL** | 62 | 85 | 95 | 96 | 95 | 95 | 93 | 91 | 82 | 40 | 14 | 6 | 3 |
| **NO** | 47 | 77 | 88 | 91 | 90 | 90 | 89 | 88 | 83 | 56 | 21 | 13 | 3 |
| **PL** | 12 | 67 | 93 | 94 | 93 | 91 | 85 | 76 | 64 | 36 | 14 | 8 | 4 |
| **PT** | 24 | 69 | 91 | 94 | 95 | 93 | 93 | 88 | 79 | 52 | 32 | 25 | 17 |
| **RO** | 20 | 57 | 83 | 87 | 89 | 86 | 84 | 77 | 67 | 41 | 25 | 24 | 21 |
| **SE** | 29 | 74 | 89 | 93 | 94 | 92 | 91 | 89 | 86 | 60 | 17 | 9 | 2 |
| **SI** | 9 | 74 | 96 | 96 | 97 | 96 | 92 | 89 | 82 | 32 | 6 | 2 | 0 |
| **SK** | 19 | 69 | 92 | 98 | 98 | 95 | 92 | 84 | 72 | 34 | 15 | 11 | 6 |
| **UK** | 49 | 82 | 90 | 91 | 91 | 90 | 89 | 87 | 81 | 54 | 18 | 7 | 2 |

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2050 Limited Social Europe** | | | | | | | | | | | | |
| **AT** | 43 | 72 | 85 | 91 | 92 | 91 | 90 | 82 | 67 | 29 | 8 | 4 | 2 |
| **BE** | 10 | 59 | 89 | 93 | 93 | 91 | 90 | 80 | 63 | 31 | 7 | 3 | 2 |
| **BG** | 6 | 56 | 76 | 83 | 83 | 82 | 79 | 75 | 65 | 37 | 9 | 5 | 2 |
| **CH** | 51 | 74 | 89 | 95 | 95 | 94 | 93 | 88 | 81 | 57 | 19 | 13 | 5 |
| **CY** | 12 | 71 | 93 | 95 | 95 | 94 | 93 | 88 | 79 | 55 | 24 | 18 | 12 |
| **CZ** | 8 | 62 | 90 | 95 | 95 | 94 | 92 | 86 | 77 | 38 | 11 | 6 | 2 |
| **DE** | 29 | 67 | 80 | 91 | 93 | 92 | 91 | 85 | 76 | 41 | 9 | 4 | 2 |
| **DK** | 55 | 76 | 84 | 91 | 92 | 90 | 91 | 85 | 81 | 48 | 17 | 10 | 2 |
| **EE** | 13 | 68 | 88 | 92 | 90 | 91 | 86 | 79 | 71 | 47 | 23 | 14 | 1 |
| **ES** | 24 | 67 | 86 | 93 | 93 | 92 | 90 | 84 | 73 | 47 | 8 | 2 | 1 |
| **FI** | 32 | 70 | 85 | 90 | 89 | 88 | 87 | 80 | 70 | 40 | 9 | 4 | 1 |
| **FR** | 16 | 60 | 87 | 92 | 91 | 91 | 90 | 84 | 66 | 27 | 5 | 2 | 0 |
| **GR** | 11 | 55 | 83 | 90 | 90 | 89 | 88 | 81 | 69 | 43 | 13 | 5 | 2 |
| **HU** | 6 | 49 | 84 | 89 | 88 | 84 | 79 | 72 | 63 | 30 | 7 | 2 | 1 |
| **IE** | 27 | 73 | 88 | 92 | 92 | 91 | 90 | 83 | 73 | 52 | 21 | 13 | 7 |
| **IS** | 68 | 78 | 86 | 92 | 95 | 92 | 94 | 89 | 83 | 70 | 52 | 24 | 6 |
| **IT** | 15 | 57 | 79 | 90 | 92 | 93 | 91 | 82 | 62 | 36 | 12 | 6 | 2 |
| **LI** | 51 | 74 | 89 | 95 | 95 | 94 | 94 | 89 | 81 | 57 | 19 | 13 | 5 |
| **LT** | 6 | 55 | 86 | 92 | 91 | 90 | 87 | 82 | 72 | 50 | 12 | 6 | 2 |
| **LU** | 9 | 49 | 88 | 97 | 97 | 95 | 92 | 87 | 63 | 27 | 4 | 1 | 0 |
| **LV** | 15 | 69 | 88 | 89 | 90 | 87 | 90 | 83 | 74 | 44 | 25 | 15 | 1 |
| **MT** | 33 | 77 | 93 | 95 | 94 | 93 | 89 | 84 | 72 | 33 | 9 | 2 | 1 |
| **NL** | 55 | 78 | 90 | 93 | 93 | 92 | 91 | 86 | 75 | 38 | 14 | 6 | 3 |
| **NO** | 42 | 70 | 83 | 88 | 88 | 88 | 86 | 83 | 76 | 53 | 21 | 13 | 3 |
| **PL** | 10 | 61 | 87 | 91 | 90 | 88 | 83 | 72 | 58 | 34 | 13 | 8 | 4 |
| **PT** | 21 | 63 | 86 | 92 | 93 | 91 | 91 | 83 | 72 | 49 | 31 | 25 | 17 |
| **RO** | 18 | 52 | 78 | 85 | 87 | 84 | 82 | 73 | 61 | 38 | 24 | 24 | 21 |
| **SE** | 25 | 68 | 84 | 91 | 91 | 90 | 89 | 84 | 78 | 57 | 16 | 9 | 2 |
| **SI** | 8 | 68 | 90 | 93 | 94 | 93 | 90 | 84 | 75 | 30 | 6 | 2 | 0 |
| **SK** | 16 | 63 | 87 | 95 | 95 | 92 | 89 | 79 | 66 | 32 | 15 | 11 | 6 |
| **UK** | 43 | 75 | 85 | 89 | 89 | 88 | 86 | 82 | 74 | 51 | 17 | 7 | 2 |

## Table 4.2: Labour force participation rates of females

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2005** | | | | | | | | | | | | |
| **AT** | 34 | 70 | 80 | 79 | 81 | 83 | 80 | 71 | 36 | 8 | 3 | 2 | 1 |
| **BE** | 7 | 56 | 83 | 82 | 80 | 77 | 72 | 58 | 33 | 9 | 2 | 1 | 1 |
| **BG** | 7 | 45 | 65 | 75 | 81 | 83 | 80 | 72 | 44 | 8 | 3 | 2 | 1 |
| **CH** | 52 | 79 | 85 | 79 | 78 | 81 | 84 | 78 | 70 | 41 | 11 | 5 | 2 |
| **CY** | 9 | 68 | 82 | 81 | 79 | 79 | 73 | 67 | 42 | 23 | 9 | 6 | 1 |
| **CZ** | 7 | 51 | 64 | 74 | 86 | 91 | 91 | 87 | 47 | 13 | 6 | 2 | 1 |
| **DE** | 26 | 65 | 74 | 77 | 79 | 82 | 82 | 77 | 62 | 21 | 4 | 2 | 0 |
| **DK** | 58 | 72 | 80 | 85 | 86 | 87 | 86 | 83 | 79 | 30 | 7 | 4 | 1 |
| **EE** | 10 | 52 | 71 | 75 | 83 | 90 | 92 | 86 | 73 | 37 | 18 | 5 | 1 |
| **ES** | 17 | 60 | 80 | 74 | 70 | 68 | 62 | 51 | 36 | 20 | 3 | 1 | 0 |
| **FI** | 39 | 68 | 76 | 80 | 82 | 87 | 89 | 85 | 71 | 30 | 4 | 2 | 0 |
| **FR** | 11 | 56 | 80 | 79 | 81 | 82 | 81 | 75 | 52 | 13 | 2 | 1 | 0 |
| **GR** | 9 | 50 | 73 | 71 | 71 | 68 | 59 | 48 | 30 | 19 | 5 | 1 | 0 |
| **HU** | 4 | 42 | 65 | 65 | 74 | 79 | 76 | 69 | 42 | 9 | 3 | 1 | 0 |
| **IE** | 23 | 69 | 80 | 74 | 66 | 67 | 65 | 58 | 45 | 26 | 7 | 2 | 1 |
| **IS** | 77 | 76 | 80 | 82 | 86 | 90 | 84 | 88 | 85 | 71 | 38 | 4 | 1 |
| **IT** | 11 | 46 | 64 | 69 | 68 | 65 | 61 | 51 | 31 | 9 | 3 | 1 | 0 |
| **LI** | 52 | 79 | 86 | 79 | 78 | 81 | 84 | 79 | 70 | 41 | 11 | 5 | 2 |
| **LT** | 3 | 38 | 79 | 86 | 89 | 91 | 89 | 84 | 67 | 23 | 7 | 2 | 0 |
| **LU** | 6 | 46 | 82 | 77 | 73 | 71 | 69 | 55 | 36 | 10 | 2 | 0 | 0 |
| **LV** | 11 | 52 | 76 | 79 | 83 | 89 | 83 | 80 | 63 | 32 | 16 | 6 | 1 |
| **MT** | 31 | 72 | 63 | 44 | 34 | 32 | 29 | 22 | 17 | 3 | 1 | 0 | 0 |
| **NL** | 61 | 81 | 85 | 81 | 79 | 78 | 77 | 69 | 48 | 17 | 6 | 2 | 0 |
| **NO** | 51 | 71 | 78 | 81 | 83 | 83 | 82 | 80 | 69 | 48 | 16 | 7 | 1 |
| **PL** | 8 | 52 | 76 | 79 | 83 | 83 | 78 | 56 | 27 | 13 | 7 | 4 | 1 |
| **PT** | 16 | 58 | 85 | 87 | 85 | 83 | 78 | 69 | 53 | 37 | 22 | 14 | 7 |
| **RO** | 12 | 45 | 68 | 71 | 75 | 72 | 69 | 56 | 37 | 25 | 23 | 19 | 17 |
| **SE** | 34 | 66 | 81 | 84 | 87 | 88 | 88 | 85 | 79 | 57 | 9 | 3 | 0 |
| **SI** | 8 | 60 | 74 | 82 | 91 | 94 | 93 | 85 | 26 | 7 | 2 | 1 | 0 |
| **SK** | 12 | 53 | 81 | 88 | 86 | 85 | 82 | 65 | 26 | 10 | 8 | 5 | 2 |
| **UK** | 47 | 70 | 74 | 73 | 75 | 78 | 80 | 75 | 63 | 31 | 10 | 4 | 1 |
| | **2050 Challenged Market Europe** | | | | | | | | | | | | |
| **AT** | 33 | 68 | 78 | 79 | 81 | 82 | 80 | 70 | 34 | 8 | 3 | 2 | 1 |
| **BE** | 7 | 54 | 81 | 82 | 80 | 78 | 74 | 59 | 32 | 9 | 2 | 1 | 1 |
| **BG** | 7 | 43 | 65 | 76 | 81 | 83 | 80 | 72 | 42 | 8 | 3 | 2 | 1 |
| **CH** | 50 | 76 | 83 | 79 | 78 | 81 | 83 | 77 | 67 | 40 | 10 | 5 | 2 |
| **CY** | 8 | 66 | 80 | 80 | 79 | 79 | 74 | 67 | 40 | 22 | 9 | 6 | 1 |
| **CZ** | 7 | 50 | 65 | 75 | 85 | 89 | 89 | 85 | 45 | 13 | 6 | 2 | 1 |
| **DE** | 24 | 62 | 73 | 77 | 79 | 82 | 81 | 75 | 60 | 20 | 4 | 2 | 0 |
| **DK** | 56 | 70 | 78 | 84 | 85 | 86 | 85 | 81 | 76 | 29 | 7 | 3 | 1 |
| **EE** | 9 | 50 | 70 | 76 | 82 | 88 | 90 | 84 | 71 | 36 | 18 | 5 | 2 |
| **ES** | 16 | 58 | 78 | 75 | 72 | 70 | 66 | 53 | 34 | 19 | 3 | 1 | 0 |
| **FI** | 37 | 66 | 75 | 80 | 82 | 86 | 87 | 83 | 69 | 30 | 4 | 2 | 1 |
| **FR** | 10 | 54 | 78 | 79 | 81 | 81 | 81 | 74 | 50 | 13 | 2 | 1 | 0 |
| **GR** | 9 | 48 | 72 | 73 | 73 | 71 | 63 | 51 | 29 | 19 | 5 | 1 | 0 |
| **HU** | 4 | 41 | 66 | 69 | 77 | 81 | 78 | 70 | 41 | 9 | 3 | 1 | 0 |
| **IE** | 22 | 66 | 78 | 75 | 69 | 70 | 68 | 59 | 43 | 26 | 7 | 2 | 1 |
| **IS** | 74 | 74 | 78 | 81 | 85 | 88 | 83 | 85 | 81 | 69 | 38 | 4 | 1 |
| **IT** | 11 | 47 | 66 | 74 | 72 | 71 | 66 | 54 | 31 | 9 | 3 | 1 | 0 |
| **LI** | 50 | 77 | 83 | 79 | 79 | 81 | 83 | 77 | 68 | 40 | 11 | 5 | 2 |
| **LT** | 3 | 37 | 77 | 84 | 87 | 89 | 87 | 82 | 64 | 23 | 7 | 2 | 0 |
| **LU** | 6 | 45 | 80 | 77 | 74 | 73 | 71 | 57 | 34 | 9 | 2 | 0 | 0 |
| **LV** | 11 | 51 | 75 | 79 | 82 | 87 | 83 | 78 | 61 | 31 | 15 | 6 | 2 |
| **MT** | 30 | 70 | 63 | 52 | 44 | 42 | 40 | 27 | 17 | 3 | 1 | 0 | 0 |
| **NL** | 59 | 78 | 83 | 81 | 80 | 79 | 78 | 68 | 46 | 17 | 6 | 2 | 0 |
| **NO** | 49 | 69 | 77 | 81 | 82 | 83 | 82 | 78 | 67 | 47 | 16 | 7 | 1 |
| **PL** | 7 | 51 | 75 | 80 | 83 | 83 | 79 | 58 | 26 | 13 | 7 | 4 | 1 |
| **PT** | 15 | 55 | 82 | 85 | 83 | 82 | 78 | 69 | 51 | 36 | 21 | 14 | 7 |
| **RO** | 12 | 43 | 67 | 73 | 76 | 74 | 71 | 57 | 36 | 25 | 22 | 19 | 17 |
| **SE** | 33 | 64 | 79 | 83 | 86 | 87 | 86 | 83 | 76 | 56 | 9 | 3 | 0 |
| **SI** | 8 | 58 | 73 | 82 | 89 | 91 | 90 | 83 | 25 | 6 | 2 | 1 | 0 |
| **SK** | 12 | 51 | 79 | 86 | 85 | 84 | 81 | 65 | 25 | 10 | 8 | 5 | 2 |
| **UK** | 45 | 68 | 73 | 75 | 76 | 79 | 80 | 74 | 60 | 30 | 10 | 4 | 1 |

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2050 Expanding Market Europe** | | | | | | | | | | | | |
| **AT** | 37 | 75 | 85 | 85 | 86 | 88 | 86 | 76 | 38 | 8 | 3 | 2 | 1 |
| **BE** | 8 | 59 | 88 | 87 | 86 | 83 | 79 | 64 | 36 | 9 | 2 | 1 | 1 |
| **BG** | 8 | 48 | 71 | 81 | 87 | 88 | 85 | 78 | 47 | 9 | 3 | 2 | 1 |
| **CH** | 56 | 84 | 90 | 84 | 84 | 86 | 89 | 84 | 76 | 43 | 11 | 5 | 2 |
| **CY** | 9 | 72 | 86 | 86 | 85 | 84 | 79 | 73 | 45 | 24 | 9 | 6 | 1 |
| **CZ** | 8 | 55 | 70 | 80 | 91 | 94 | 94 | 91 | 51 | 14 | 6 | 2 | 1 |
| **DE** | 27 | 69 | 79 | 82 | 84 | 87 | 86 | 82 | 67 | 22 | 5 | 2 | 1 |
| **DK** | 63 | 77 | 85 | 89 | 91 | 92 | 90 | 88 | 85 | 31 | 7 | 3 | 1 |
| **EE** | 10 | 55 | 76 | 81 | 88 | 94 | 96 | 91 | 79 | 38 | 19 | 5 | 2 |
| **ES** | 18 | 64 | 84 | 80 | 77 | 75 | 70 | 57 | 38 | 21 | 3 | 1 | 0 |
| **FI** | 42 | 73 | 82 | 85 | 87 | 92 | 93 | 91 | 77 | 32 | 4 | 2 | 0 |
| **FR** | 11 | 60 | 85 | 84 | 86 | 87 | 86 | 80 | 56 | 13 | 2 | 1 | 0 |
| **GR** | 10 | 53 | 79 | 78 | 78 | 75 | 68 | 55 | 33 | 20 | 5 | 1 | 0 |
| **HU** | 4 | 46 | 72 | 74 | 82 | 86 | 84 | 76 | 46 | 10 | 3 | 1 | 0 |
| **IE** | 25 | 73 | 85 | 80 | 74 | 74 | 73 | 64 | 48 | 28 | 8 | 2 | 1 |
| **IS** | 83 | 82 | 85 | 87 | 91 | 94 | 88 | 93 | 91 | 74 | 39 | 4 | 1 |
| **IT** | 12 | 52 | 73 | 79 | 77 | 76 | 71 | 59 | 35 | 10 | 3 | 1 | 0 |
| **LI** | 56 | 84 | 90 | 84 | 84 | 87 | 89 | 84 | 76 | 43 | 11 | 5 | 2 |
| **LT** | 3 | 41 | 84 | 90 | 93 | 95 | 93 | 89 | 72 | 24 | 7 | 2 | 0 |
| **LU** | 7 | 49 | 86 | 83 | 79 | 78 | 76 | 62 | 38 | 10 | 2 | 1 | 0 |
| **LV** | 12 | 56 | 81 | 85 | 88 | 93 | 88 | 85 | 68 | 34 | 16 | 6 | 1 |
| **MT** | 34 | 77 | 69 | 55 | 47 | 45 | 42 | 30 | 19 | 3 | 1 | 0 | 0 |
| **NL** | 66 | 86 | 90 | 86 | 85 | 84 | 83 | 74 | 52 | 18 | 6 | 2 | 0 |
| **NO** | 55 | 76 | 83 | 86 | 88 | 89 | 87 | 85 | 75 | 51 | 17 | 7 | 1 |
| **PL** | 8 | 56 | 81 | 85 | 88 | 88 | 84 | 63 | 29 | 14 | 7 | 4 | 1 |
| **PT** | 17 | 61 | 88 | 90 | 88 | 87 | 83 | 74 | 57 | 38 | 22 | 14 | 7 |
| **RO** | 13 | 47 | 73 | 77 | 81 | 78 | 75 | 62 | 40 | 26 | 23 | 19 | 17 |
| **SE** | 37 | 71 | 86 | 88 | 92 | 93 | 92 | 90 | 85 | 60 | 9 | 3 | 1 |
| **SI** | 9 | 65 | 79 | 87 | 95 | 97 | 96 | 90 | 28 | 7 | 2 | 1 | 0 |
| **SK** | 13 | 56 | 85 | 91 | 90 | 90 | 86 | 70 | 28 | 11 | 9 | 5 | 2 |
| **UK** | 50 | 75 | 80 | 79 | 81 | 84 | 85 | 80 | 67 | 32 | 11 | 4 | 1 |
| | **2050 Growing Social Europe** | | | | | | | | | | | | |
| **AT** | 35 | 73 | 83 | 85 | 87 | 88 | 86 | 76 | 37 | 8 | 3 | 2 | 1 |
| **BE** | 8 | 58 | 85 | 87 | 87 | 85 | 82 | 67 | 34 | 9 | 2 | 1 | 1 |
| **BG** | 8 | 46 | 71 | 83 | 87 | 88 | 86 | 78 | 45 | 8 | 3 | 2 | 1 |
| **CH** | 54 | 81 | 87 | 85 | 85 | 87 | 88 | 82 | 73 | 42 | 11 | 5 | 2 |
| **CY** | 9 | 70 | 85 | 86 | 86 | 86 | 82 | 73 | 44 | 24 | 9 | 6 | 1 |
| **CZ** | 7 | 53 | 71 | 82 | 90 | 92 | 92 | 89 | 49 | 13 | 6 | 2 | 1 |
| **DE** | 26 | 67 | 78 | 84 | 86 | 87 | 87 | 81 | 64 | 21 | 4 | 2 | 1 |
| **DK** | 60 | 75 | 83 | 88 | 90 | 90 | 89 | 86 | 82 | 31 | 7 | 3 | 1 |
| **EE** | 10 | 54 | 76 | 83 | 88 | 92 | 93 | 89 | 76 | 37 | 18 | 5 | 1 |
| **ES** | 18 | 62 | 83 | 83 | 81 | 80 | 76 | 61 | 37 | 20 | 3 | 1 | 0 |
| **FI** | 40 | 71 | 81 | 86 | 88 | 91 | 91 | 88 | 74 | 31 | 4 | 2 | 1 |
| **FR** | 11 | 58 | 83 | 85 | 87 | 87 | 87 | 80 | 54 | 13 | 2 | 1 | 0 |
| **GR** | 9 | 51 | 78 | 81 | 82 | 80 | 75 | 59 | 32 | 20 | 5 | 1 | 0 |
| **HU** | 4 | 44 | 72 | 78 | 84 | 87 | 85 | 76 | 44 | 10 | 3 | 1 | 0 |
| **IE** | 24 | 71 | 83 | 82 | 79 | 79 | 78 | 67 | 46 | 27 | 8 | 2 | 1 |
| **IS** | 80 | 79 | 83 | 87 | 90 | 92 | 88 | 90 | 88 | 73 | 39 | 4 | 1 |
| **IT** | 12 | 50 | 73 | 81 | 81 | 80 | 77 | 62 | 33 | 10 | 3 | 1 | 0 |
| **LI** | 54 | 82 | 88 | 85 | 86 | 87 | 88 | 83 | 73 | 42 | 11 | 5 | 2 |
| **LT** | 3 | 39 | 83 | 89 | 91 | 92 | 91 | 87 | 69 | 24 | 7 | 2 | 0 |
| **LU** | 7 | 48 | 85 | 84 | 83 | 82 | 80 | 65 | 37 | 10 | 2 | 0 | 0 |
| **LV** | 11 | 54 | 80 | 85 | 88 | 91 | 88 | 84 | 66 | 33 | 16 | 6 | 2 |
| **MT** | 33 | 75 | 70 | 67 | 62 | 61 | 59 | 38 | 18 | 3 | 1 | 0 | 0 |
| **NL** | 64 | 84 | 87 | 86 | 86 | 86 | 84 | 75 | 50 | 17 | 6 | 2 | 0 |
| **NO** | 53 | 73 | 82 | 86 | 88 | 88 | 87 | 83 | 72 | 50 | 16 | 7 | 1 |
| **PL** | 8 | 54 | 80 | 86 | 88 | 88 | 85 | 66 | 28 | 14 | 7 | 4 | 1 |
| **PT** | 16 | 59 | 86 | 89 | 89 | 87 | 85 | 75 | 55 | 38 | 22 | 14 | 7 |
| **RO** | 13 | 46 | 73 | 81 | 83 | 82 | 80 | 65 | 39 | 26 | 23 | 19 | 17 |
| **SE** | 35 | 69 | 84 | 88 | 90 | 91 | 90 | 87 | 82 | 58 | 9 | 3 | 0 |
| **SI** | 9 | 63 | 78 | 87 | 93 | 94 | 93 | 88 | 27 | 7 | 2 | 1 | 0 |
| **SK** | 12 | 54 | 83 | 90 | 90 | 89 | 87 | 72 | 27 | 10 | 8 | 5 | 2 |
| **UK** | 48 | 72 | 79 | 82 | 84 | 85 | 86 | 80 | 65 | 31 | 10 | 4 | 1 |

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2050 Limited Social Europe** | | | | | | | | | | | | |
| **AT** | 31 | 65 | 76 | 75 | 77 | 79 | 77 | 67 | 33 | 7 | 3 | 2 | 1 |
| **BE** | 7 | 52 | 78 | 78 | 76 | 73 | 69 | 55 | 31 | 8 | 2 | 1 | 1 |
| **BG** | 7 | 42 | 61 | 72 | 77 | 79 | 76 | 68 | 40 | 8 | 3 | 2 | 1 |
| **CH** | 48 | 73 | 80 | 75 | 74 | 77 | 80 | 74 | 65 | 39 | 10 | 5 | 2 |
| **CY** | 8 | 63 | 77 | 77 | 75 | 75 | 69 | 63 | 39 | 22 | 8 | 6 | 1 |
| **CZ** | 7 | 48 | 61 | 70 | 82 | 87 | 87 | 82 | 44 | 12 | 6 | 2 | 1 |
| **DE** | 23 | 60 | 70 | 73 | 75 | 78 | 77 | 72 | 57 | 20 | 4 | 2 | 0 |
| **DK** | 54 | 67 | 76 | 81 | 82 | 83 | 82 | 78 | 73 | 28 | 7 | 3 | 1 |
| **EE** | 9 | 48 | 67 | 71 | 79 | 86 | 88 | 81 | 68 | 35 | 18 | 5 | 2 |
| **ES** | 16 | 56 | 75 | 71 | 66 | 64 | 59 | 48 | 33 | 19 | 3 | 1 | 0 |
| **FI** | 36 | 64 | 72 | 76 | 78 | 84 | 85 | 81 | 66 | 29 | 4 | 2 | 1 |
| **FR** | 10 | 52 | 75 | 75 | 77 | 78 | 77 | 71 | 48 | 12 | 2 | 1 | 0 |
| **GR** | 8 | 46 | 69 | 68 | 67 | 65 | 56 | 46 | 28 | 19 | 5 | 1 | 0 |
| **HU** | 4 | 40 | 62 | 63 | 72 | 77 | 74 | 66 | 39 | 9 | 2 | 1 | 0 |
| **IE** | 21 | 64 | 75 | 70 | 63 | 64 | 62 | 55 | 41 | 25 | 7 | 2 | 1 |
| **IS** | 71 | 71 | 76 | 78 | 82 | 86 | 80 | 83 | 78 | 67 | 37 | 4 | 1 |
| **IT** | 11 | 45 | 62 | 68 | 66 | 64 | 59 | 49 | 29 | 9 | 3 | 1 | 0 |
| **LI** | 48 | 74 | 81 | 75 | 74 | 77 | 80 | 74 | 65 | 39 | 10 | 5 | 2 |
| **LT** | 3 | 36 | 75 | 82 | 85 | 86 | 85 | 79 | 62 | 22 | 7 | 2 | 0 |
| **LU** | 6 | 43 | 77 | 73 | 69 | 68 | 66 | 52 | 33 | 9 | 2 | 0 | 0 |
| **LV** | 10 | 49 | 72 | 75 | 79 | 85 | 79 | 75 | 59 | 31 | 15 | 6 | 2 |
| **MT** | 29 | 67 | 59 | 42 | 32 | 30 | 28 | 21 | 16 | 3 | 1 | 0 | 0 |
| **NL** | 56 | 75 | 80 | 77 | 76 | 75 | 73 | 65 | 44 | 16 | 6 | 2 | 0 |
| **NO** | 47 | 66 | 74 | 77 | 79 | 80 | 78 | 75 | 64 | 46 | 16 | 7 | 1 |
| **PL** | 7 | 49 | 72 | 76 | 79 | 79 | 75 | 53 | 25 | 13 | 7 | 4 | 1 |
| **PT** | 14 | 53 | 79 | 82 | 80 | 78 | 74 | 65 | 49 | 35 | 21 | 14 | 7 |
| **RO** | 11 | 41 | 64 | 68 | 71 | 68 | 65 | 53 | 34 | 24 | 22 | 19 | 17 |
| **SE** | 31 | 62 | 77 | 80 | 83 | 84 | 84 | 80 | 73 | 54 | 9 | 3 | 0 |
| **SI** | 8 | 56 | 70 | 78 | 87 | 90 | 88 | 80 | 24 | 6 | 2 | 1 | 0 |
| **SK** | 11 | 49 | 76 | 83 | 82 | 81 | 77 | 61 | 24 | 10 | 8 | 5 | 2 |
| **UK** | 43 | 65 | 70 | 70 | 71 | 74 | 76 | 71 | 57 | 29 | 10 | 4 | 1 |

## Table 4.3: Labour force participation rates of males, clusters

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2005** | | | | | | | | | | | | |
| **Euro Standard** | 34 | 73 | 87 | 93 | 94 | 93 | 92 | 87 | 74 | 41 | 11 | 5 | 2 |
| **Challenge of Labour Force** | 14 | 62 | 88 | 92 | 92 | 90 | 86 | 78 | 61 | 32 | 16 | 10 | 7 |
| **Family Potentials** | 33 | 71 | 89 | 92 | 93 | 92 | 91 | 87 | 70 | 34 | 12 | 6 | 2 |
| **Challenge of Ageing** | 21 | 65 | 86 | 93 | 95 | 95 | 93 | 87 | 62 | 33 | 12 | 6 | 2 |
| **Challenge of Decline** | 24 | 67 | 83 | 91 | 92 | 91 | 89 | 85 | 74 | 38 | 9 | 5 | 2 |
| **Young Potentials** | 27 | 72 | 90 | 95 | 95 | 94 | 92 | 89 | 75 | 48 | 8 | 3 | 1 |
| **Overseas** | 17 | 59 | 83 | 85 | 85 | 85 | 84 | 80 | 58 | 17 | 4 | 1 | 0 |
| | **2050 Challenged Market Europe** | | | | | | | | | | | | |
| **Euro Standard** | 33 | 71 | 87 | 93 | 93 | 93 | 91 | 85 | 75 | 43 | 12 | 5 | 2 |
| **Challenge of Labour Force** | 15 | 61 | 86 | 92 | 92 | 90 | 86 | 78 | 67 | 38 | 15 | 10 | 6 |
| **Family Potentials** | 33 | 70 | 88 | 92 | 92 | 92 | 90 | 85 | 73 | 40 | 12 | 6 | 2 |
| **Challenge of Ageing** | 20 | 63 | 85 | 93 | 95 | 95 | 92 | 85 | 67 | 38 | 12 | 6 | 2 |
| **Challenge of Decline** | 24 | 65 | 82 | 91 | 92 | 91 | 89 | 84 | 75 | 42 | 10 | 5 | 2 |
| **Young Potentials** | 27 | 70 | 89 | 95 | 95 | 94 | 91 | 86 | 75 | 48 | 9 | 3 | 2 |
| **Overseas** | 15 | 55 | 79 | 83 | 83 | 83 | 82 | 79 | 65 | 28 | 5 | 1 | 0 |
| | **2050 Expanding Market Europe** | | | | | | | | | | | | |
| **Euro Standard** | 37 | 77 | 92 | 95 | 95 | 94 | 93 | 91 | 82 | 46 | 12 | 5 | 2 |
| **Challenge of Labour Force** | 17 | 66 | 91 | 94 | 94 | 92 | 89 | 83 | 73 | 40 | 15 | 9 | 6 |
| **Family Potentials** | 38 | 76 | 93 | 94 | 94 | 94 | 92 | 90 | 80 | 43 | 13 | 6 | 2 |
| **Challenge of Ageing** | 22 | 68 | 89 | 95 | 96 | 96 | 95 | 90 | 74 | 40 | 12 | 6 | 2 |
| **Challenge of Decline** | 27 | 71 | 86 | 93 | 94 | 93 | 91 | 89 | 83 | 44 | 10 | 5 | 2 |
| **Young Potentials** | 30 | 76 | 94 | 96 | 97 | 96 | 94 | 92 | 83 | 51 | 10 | 3 | 2 |
| **Overseas** | 17 | 60 | 84 | 85 | 85 | 85 | 84 | 84 | 71 | 29 | 5 | 1 | 0 |
| | **2050 Growing Social Europe** | | | | | | | | | | | | |
| **Euro Standard** | 36 | 75 | 90 | 94 | 94 | 93 | 92 | 89 | 80 | 45 | 12 | 5 | 2 |
| **Challenge of Labour Force** | 16 | 65 | 89 | 93 | 93 | 91 | 88 | 82 | 71 | 40 | 15 | 10 | 6 |
| **Family Potentials** | 36 | 74 | 91 | 93 | 93 | 93 | 92 | 88 | 77 | 41 | 12 | 6 | 2 |
| **Challenge of Ageing** | 21 | 66 | 87 | 94 | 96 | 96 | 94 | 89 | 71 | 40 | 12 | 6 | 2 |
| **Challenge of Decline** | 26 | 69 | 85 | 92 | 93 | 92 | 90 | 87 | 80 | 44 | 10 | 5 | 2 |
| **Young Potentials** | 28 | 74 | 92 | 96 | 96 | 95 | 93 | 90 | 80 | 50 | 9 | 3 | 2 |
| **Overseas** | 17 | 58 | 82 | 84 | 84 | 84 | 83 | 82 | 69 | 29 | 5 | 1 | 0 |
| | **2050 Limited Social Europe** | | | | | | | | | | | | |
| **Euro Standard** | 32 | 69 | 85 | 91 | 91 | 91 | 90 | 83 | 73 | 42 | 12 | 5 | 2 |
| **Challenge of Labour Force** | 14 | 59 | 84 | 90 | 90 | 89 | 85 | 77 | 65 | 37 | 15 | 10 | 6 |
| **Family Potentials** | 31 | 68 | 86 | 91 | 91 | 90 | 89 | 83 | 70 | 39 | 12 | 6 | 2 |
| **Challenge of Ageing** | 19 | 61 | 83 | 91 | 93 | 93 | 92 | 83 | 65 | 37 | 12 | 6 | 2 |
| **Challenge of Decline** | 23 | 63 | 80 | 89 | 90 | 89 | 88 | 82 | 73 | 41 | 10 | 5 | 2 |
| **Young Potentials** | 25 | 68 | 87 | 93 | 93 | 92 | 90 | 84 | 73 | 47 | 9 | 3 | 2 |
| **Overseas** | 15 | 53 | 78 | 82 | 81 | 82 | 81 | 77 | 63 | 27 | 5 | 1 | 0 |

## Table 4.4: Labour force participation rates of females, clusters

| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2005** | | | | | | | | | | | | |
| **Euro Standard** | 31 | 64 | 76 | 76 | 78 | 80 | 79 | 74 | 58 | 24 | 6 | 2 | 1 |
| **Challenge of Labour Force** | 10 | 50 | 72 | 76 | 79 | 80 | 76 | 63 | 37 | 17 | 10 | 6 | 4 |
| **Family Potentials** | 30 | 62 | 76 | 75 | 76 | 77 | 77 | 71 | 53 | 21 | 6 | 2 | 1 |
| **Challenge of Ageing** | 16 | 56 | 76 | 78 | 76 | 75 | 70 | 61 | 40 | 15 | 5 | 2 | 1 |
| **Challenge of Decline** | 21 | 59 | 72 | 75 | 78 | 82 | 80 | 75 | 57 | 21 | 5 | 2 | 1 |
| **Young Potentials** | 19 | 62 | 80 | 75 | 70 | 69 | 64 | 53 | 37 | 20 | 3 | 1 | 0 |
| **Overseas** | 9 | 44 | 63 | 62 | 63 | 64 | 63 | 59 | 41 | 11 | 2 | 1 | 0 |
| | **2050 Challenged Market Europe** | | | | | | | | | | | | |
| **Euro Standard** | 31 | 63 | 75 | 77 | 79 | 80 | 80 | 73 | 56 | 23 | 6 | 2 | 1 |
| **Challenge of Labour Force** | 11 | 50 | 72 | 77 | 80 | 80 | 77 | 64 | 35 | 16 | 8 | 5 | 3 |
| **Family Potentials** | 30 | 62 | 75 | 76 | 77 | 78 | 78 | 70 | 51 | 21 | 6 | 3 | 1 |
| **Challenge of Ageing** | 15 | 54 | 74 | 78 | 77 | 76 | 72 | 62 | 38 | 14 | 4 | 2 | 1 |
| **Challenge of Decline** | 20 | 57 | 71 | 76 | 79 | 81 | 79 | 72 | 55 | 21 | 5 | 2 | 1 |
| **Young Potentials** | 19 | 60 | 78 | 76 | 72 | 71 | 67 | 55 | 35 | 20 | 3 | 1 | 0 |
| **Overseas** | 8 | 42 | 62 | 65 | 66 | 67 | 66 | 59 | 39 | 10 | 2 | 1 | 0 |
| | **2050 Expanding Market Europe** | | | | | | | | | | | | |
| **Euro Standard** | 34 | 70 | 82 | 82 | 84 | 86 | 85 | 79 | 63 | 25 | 6 | 2 | 1 |
| **Challenge of Labour Force** | 12 | 55 | 78 | 82 | 85 | 86 | 82 | 69 | 40 | 17 | 8 | 5 | 3 |
| **Family Potentials** | 34 | 68 | 81 | 81 | 82 | 83 | 83 | 76 | 57 | 23 | 6 | 3 | 1 |
| **Challenge of Ageing** | 17 | 59 | 80 | 83 | 82 | 81 | 77 | 67 | 43 | 15 | 5 | 2 | 1 |
| **Challenge of Decline** | 23 | 64 | 78 | 81 | 84 | 86 | 84 | 79 | 62 | 22 | 5 | 2 | 1 |
| **Young Potentials** | 21 | 66 | 85 | 81 | 77 | 76 | 71 | 59 | 40 | 21 | 4 | 1 | 0 |
| **Overseas** | 9 | 46 | 67 | 69 | 70 | 71 | 71 | 64 | 43 | 11 | 2 | 1 | 0 |
| | **2050 Growing Social Europe** | | | | | | | | | | | | |
| **Euro Standard** | 33 | 67 | 80 | 84 | 85 | 86 | 86 | 79 | 60 | 24 | 6 | 2 | 1 |
| **Challenge of Labour Force** | 11 | 53 | 77 | 84 | 86 | 86 | 84 | 70 | 38 | 16 | 8 | 5 | 3 |
| **Family Potentials** | 32 | 66 | 80 | 83 | 84 | 85 | 84 | 76 | 55 | 22 | 6 | 3 | 1 |
| **Challenge of Ageing** | 16 | 57 | 79 | 85 | 85 | 84 | 81 | 69 | 41 | 14 | 4 | 2 | 1 |
| **Challenge of Decline** | 22 | 61 | 77 | 83 | 85 | 87 | 85 | 78 | 60 | 22 | 5 | 2 | 1 |
| **Young Potentials** | 20 | 64 | 83 | 83 | 81 | 80 | 77 | 62 | 38 | 21 | 3 | 1 | 0 |
| **Overseas** | 9 | 45 | 69 | 75 | 77 | 77 | 77 | 66 | 42 | 11 | 2 | 1 | 0 |
| | **2050 Limited Social Europe** | | | | | | | | | | | | |
| **Euro Standard** | 29 | 61 | 72 | 73 | 74 | 76 | 76 | 70 | 54 | 23 | 6 | 2 | 1 |
| **Challenge of Labour Force** | 10 | 48 | 68 | 73 | 76 | 76 | 73 | 60 | 34 | 16 | 8 | 5 | 3 |
| **Family Potentials** | 28 | 59 | 72 | 72 | 73 | 74 | 73 | 67 | 49 | 20 | 6 | 3 | 1 |
| **Challenge of Ageing** | 14 | 52 | 71 | 74 | 73 | 71 | 67 | 58 | 37 | 14 | 4 | 2 | 1 |
| **Challenge of Decline** | 19 | 55 | 68 | 72 | 74 | 77 | 75 | 69 | 53 | 20 | 5 | 2 | 1 |
| **Young Potentials** | 18 | 58 | 75 | 71 | 67 | 65 | 60 | 50 | 34 | 19 | 3 | 1 | 0 |
| **Overseas** | 8 | 40 | 58 | 58 | 59 | 60 | 59 | 55 | 37 | 10 | 2 | 1 | 0 |

**Table 4.5: Labour force, ESPON space (x mln)**

| | | 2050 | | | |
|---|---|---|---|---|---|
| | 2005 | Challenged Market Europe | Expanding Market Europe | Growing Social Europe | Limited Social Europe |
| **Male** | 131 | 114 | 141 | 134 | 108 |
| **Female** | 106 | 87 | 112 | 108 | 80 |
| **Total** | 237 | 201 | 254 | 241 | 189 |

## Table 4.6: Labour force (x 1 000 )

| | 2005 | 2050 | | | |
|---|---|---|---|---|---|
| | | Challenged Market Europe | Expanding Market Europe | Growing Social Europe | Limited Social Europe |
| | Male | | | | |
| AT | 2180 | 2142 | 2747 | 2394 | 1874 |
| BE | 2563 | 2628 | 3260 | 2908 | 2378 |
| BG | 1774 | 903 | 994 | 1032 | 948 |
| CH | 2262 | 2362 | 3091 | 2347 | 1853 |
| CY | 213 | 154 | 169 | 126 | 125 |
| CZ | 2868 | 1615 | 1771 | 1808 | 1658 |
| DE | 22264 | 15064 | 18361 | 17648 | 14596 |
| DK | 1549 | 1364 | 1636 | 1494 | 1287 |
| EE | 337 | 196 | 213 | 230 | 216 |
| ES | 12078 | 11535 | 15059 | 13761 | 10463 |
| FI | 1350 | 1241 | 1517 | 1426 | 1196 |
| FR | 14925 | 15478 | 18236 | 17940 | 15212 |
| GR | 2867 | 2255 | 2851 | 2740 | 2172 |
| HU | 2264 | 1308 | 1470 | 1543 | 1407 |
| IE | 1155 | 1545 | 1863 | 1455 | 1291 |
| IS | 92 | 108 | 123 | 83 | 82 |
| IT | 14620 | 14244 | 19381 | 18387 | 13161 |
| LI | 11 | 5 | 6 | 5 | 6 |
| LT | 827 | 494 | 562 | 583 | 522 |
| LU | 119 | 188 | 237 | 114 | 99 |
| LV | 589 | 300 | 317 | 378 | 352 |
| MT | 112 | 74 | 85 | 75 | 72 |
| NL | 4704 | 4001 | 4815 | 4643 | 3936 |
| NO | 1255 | 1288 | 1563 | 1435 | 1212 |
| PL | 9306 | 5789 | 6758 | 6704 | 5919 |
| PT | 2962 | 2235 | 2659 | 2660 | 2254 |
| RO | 5407 | 2954 | 3234 | 3475 | 3225 |
| SE | 2430 | 2578 | 3218 | 2921 | 2379 |
| SI | 551 | 387 | 479 | 481 | 381 |
| SK | 1450 | 1069 | 1278 | 1135 | 973 |
| UK | 16087 | 18528 | 23272 | 21568 | 17243 |

| | 2005 | 2050 | | | |
|---|---|---|---|---|---|
| | | Challenged Market Europe | Expanding Market Europe | Growing Social Europe | Limited Social Europe |
| | Female | | | | |
| AT | 1803 | 1714 | 2327 | 2034 | 1458 |
| BE | 2007 | 1865 | 2379 | 2182 | 1658 |
| BG | 1547 | 701 | 788 | 835 | 720 |
| CH | 1888 | 1828 | 2496 | 1921 | 1426 |
| CY | 164 | 78 | 90 | 62 | 55 |
| CZ | 2274 | 1285 | 1476 | 1482 | 1274 |
| DE | 18150 | 11841 | 15010 | 14622 | 11276 |
| DK | 1358 | 1178 | 1472 | 1332 | 1092 |
| EE | 330 | 175 | 192 | 206 | 186 |
| ES | 8457 | 7965 | 10907 | 10274 | 6804 |
| FI | 1257 | 1121 | 1408 | 1312 | 1057 |
| FR | 13074 | 12252 | 14800 | 14655 | 11779 |
| GR | 1968 | 1388 | 1805 | 1850 | 1292 |
| HU | 1914 | 1138 | 1352 | 1421 | 1145 |
| IE | 839 | 1025 | 1277 | 1053 | 833 |
| IS | 81 | 90 | 107 | 75 | 72 |
| IT | 9828 | 9734 | 14040 | 13788 | 8359 |
| LI | 9 | 4 | 5 | 4 | 4 |
| LT | 794 | 392 | 437 | 450 | 410 |
| LU | 87 | 133 | 177 | 90 | 69 |
| LV | 549 | 243 | 253 | 298 | 276 |
| MT | 49 | 30 | 35 | 38 | 25 |
| NL | 3799 | 3184 | 4043 | 3898 | 3036 |
| NO | 1121 | 1144 | 1447 | 1323 | 1056 |
| PL | 7791 | 4362 | 5214 | 5293 | 4366 |
| PT | 2557 | 1938 | 2457 | 2427 | 1870 |
| RO | 4452 | 1644 | 1630 | 1943 | 1888 |
| SE | 2207 | 2352 | 3059 | 2740 | 2126 |
| SI | 454 | 233 | 271 | 277 | 237 |
| SK | 1199 | 674 | 785 | 711 | 619 |
| UK | 13661 | 15637 | 20626 | 19272 | 13993 |

| | 2005 | 2050 | | | |
|---|---|---|---|---|---|
| | | Challenged Market Europe | Expanding Market Europe | Growing Social Europe | Limited Social Europe |
| | Total | | | | |
| AT | 3983 | 3856 | 5074 | 4428 | 3331 |
| BE | 4569 | 4493 | 5639 | 5090 | 4036 |
| BG | 3321 | 1604 | 1782 | 1867 | 1668 |
| CH | 4149 | 4191 | 5587 | 4268 | 3280 |
| CY | 377 | 232 | 258 | 188 | 180 |
| CZ | 5142 | 2900 | 3247 | 3289 | 2932 |
| DE | 40414 | 26904 | 33371 | 32270 | 25872 |
| DK | 2907 | 2542 | 3108 | 2826 | 2379 |
| EE | 668 | 372 | 406 | 436 | 403 |
| ES | 20535 | 19499 | 25966 | 24035 | 17268 |
| FI | 2607 | 2362 | 2925 | 2738 | 2253 |
| FR | 27999 | 27730 | 33036 | 32595 | 26991 |
| GR | 4835 | 3644 | 4656 | 4591 | 3464 |
| HU | 4177 | 2447 | 2822 | 2965 | 2552 |
| IE | 1994 | 2571 | 3140 | 2508 | 2124 |
| IS | 173 | 197 | 231 | 158 | 153 |
| IT | 24448 | 23977 | 33421 | 32175 | 21520 |
| LI | 20 | 10 | 11 | 10 | 10 |
| LT | 1621 | 885 | 999 | 1033 | 931 |
| LU | 206 | 321 | 414 | 204 | 168 |
| LV | 1138 | 543 | 570 | 676 | 628 |
| MT | 162 | 104 | 120 | 114 | 97 |
| NL | 8502 | 7185 | 8858 | 8541 | 6972 |
| NO | 2376 | 2432 | 3011 | 2759 | 2268 |
| PL | 17097 | 10151 | 11972 | 11997 | 10285 |
| PT | 5519 | 4173 | 5116 | 5087 | 4125 |
| RO | 9859 | 4598 | 4864 | 5418 | 5113 |
| SE | 4637 | 4930 | 6276 | 5661 | 4505 |
| SI | 1006 | 620 | 750 | 758 | 618 |
| SK | 2649 | 1743 | 2063 | 1846 | 1592 |
| UK | 29748 | 34165 | 43898 | 40840 | 31237 |

**Table 5.1: Scenario output files for total populations and components of change**

| Workbook file | Contents |
|---|---|
| **Components of change** | |
| *Components – Europe – Final v1 – April 2010.xls* | Header: Graphical demographic profile including for each scenario – Population change, natural increase and net migration, and components of natural increase and net migration over projection period.<br>Datasheet: summary of components of change for each scenario<br>Raw data: 7 sheets of multipoles components of change output for GSE, LSE, EME, CME, STQ, NMI and NEM scenarios |
| *Components – National – Final v1 – April 2010.xls* | Header: Selection facility allowing choice of country. Graphical demographic profile including for each scenario – Population change, natural increase and net migration, and components of natural increase and net migration over projection period.<br>DataSheet: summary of components of change for each scenario. Total, Male and Female data<br>Raw data: 7 sheets of multipoles components of change output for GSE, LSE, EME, CME, STQ, NMI and NEM scenarios |
| *Components – Regional – Final v1 – April 2010.xls* | Header: Selection facility allowing choice of region. Graphical demographic profile including for each scenario – Population change, natural increase and net migration, and components of natural increase and net migration over projection period.<br>Datasheet: summary of components of change for each scenario<br>ChangeByRegion: Change in Births, Deaths, inter-Europe net and extra-Europe net migration by scenario<br>Raw data: 7 sheets of multipoles components of change output for GSE, LSE, EME, CME, STQ, NMI and NEM scenarios |

Notes: The database work books are in zip archives (.zip) containing the information in MS Excel 2003 (.xls) format: Components Final v1.zip.

**Table 5.2: Scenario output files for populations by 5 year age groups**

| Workbook file | Contents |
|---|---|
| **Change by 5 year age group**<br>*Age Profle – National - Final v1.xls* | Header: Selection facility allowing for choice of country<br><br>Population: Tabulated data for each scenario. 5 year age groups all years 2005-2050 based on header selection<br>PopPyramids: Tabular and graphical representation of male/female population counts and proportions for each scenario, 2005 base. Selection facility allowing comparison of 2005 with any projection year.<br><br>PopChange: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each country, by scenario<br>PopChange0-14: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each country, by scenario<br>PopChange15-64: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each country, by scenario<br>PopChange65+: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each country, by scenario<br>PopChangeEUSummary: Summary of previous three sheets for Europe<br>RankPopChange: Tabular summary of ranked total population change 2005-2050<br>Labour_force_dependency: Tabular and graphical summary of old age dependency ratio (ODR), economic old age dependency ratio (EODR), labour market dependency ratio (LMDR) and very old age dependency ratio (VODR) for each scenario, 2005-2050<br>RawData: 30 sheets of multipoles output |
| *Age Profle – Regional - Final v1.xls* | Header: Selection facility allowing for choice of region<br><br>Population: Tabulated data for each scenario. 5 year age groups all years 2005-2050 based on header selection<br>PopPyramids: Tabular and graphical representation of male/female population counts and proportions for each scenario, 2005 base. Selection facility allowing comparison of 2005 with any projection year.<br>PopChange: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each country, by scenario<br>PopChange0-14: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each region, by scenario<br>PopChange15-64: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each region, by scenario<br>PopChange65+: Total Population 2005 and 2050, increase/decrease between these periods, rank increase/decrease for each region, by scenario<br>RankPopChange: Tabular summary of ranked total population change 2005-2050<br>Labour_force_dependency: Tabular and graphical summary of old age dependency ratio (ODR), economic old age dependency ratio (EODR), labour market dependency ratio (LMDR) and very old age dependency ratio (VODR) for each scenario, 2005-2050<br>RawData: 30 sheets of multipoles output |

Notes: The database work books are in zip archives (.zip) containing the information in MS Excel 2003 (.xls) format: Age Profile – Files – Finalv1.zip.

# FIGURES

*Scenario profile (data in 000s)* :

# Demifer - Europe

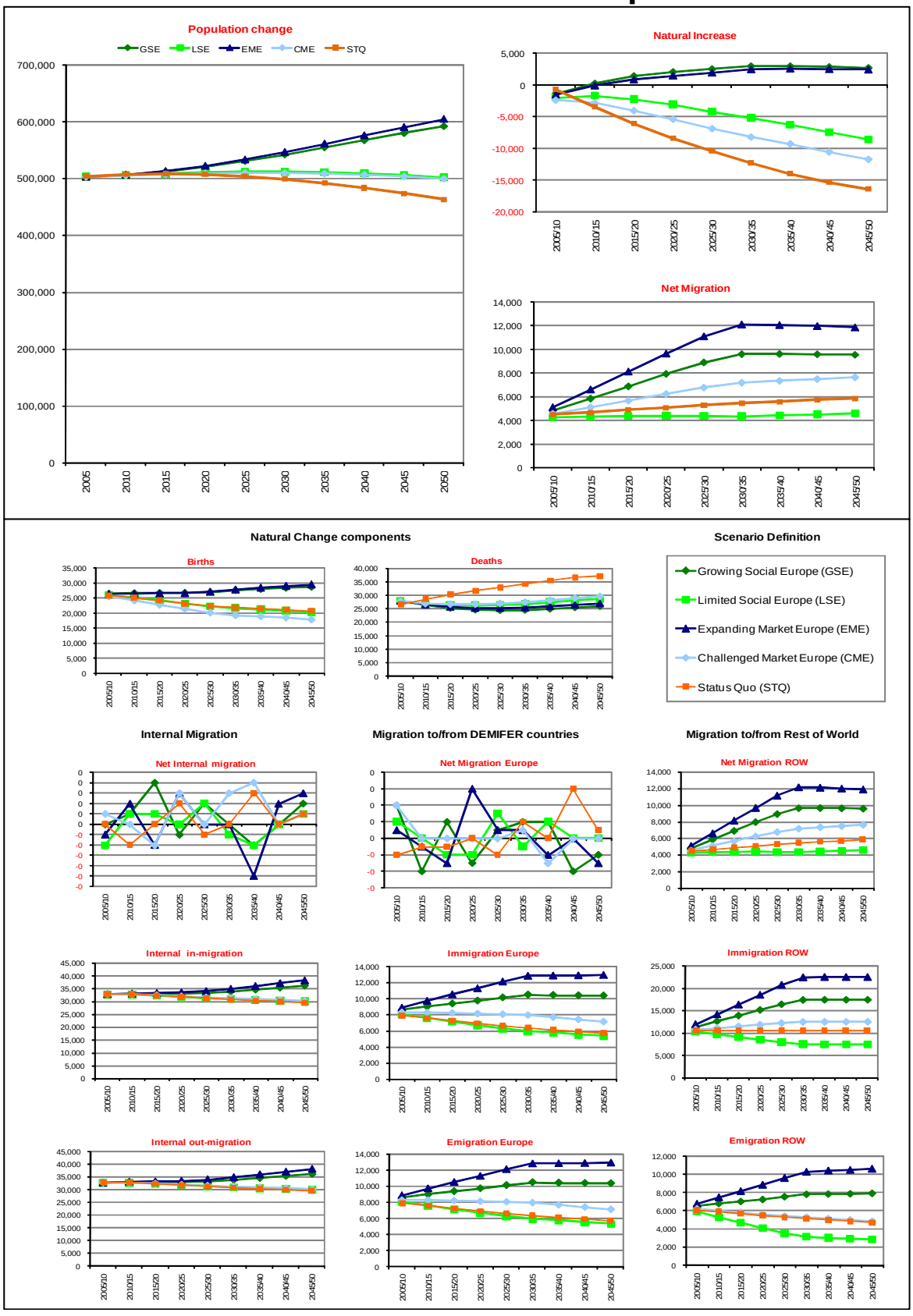



**Figure 2.1: Scenario profile for population stocks and components of change, 2005-50: Europe**

***Scenario profile*** **:** **Romania**

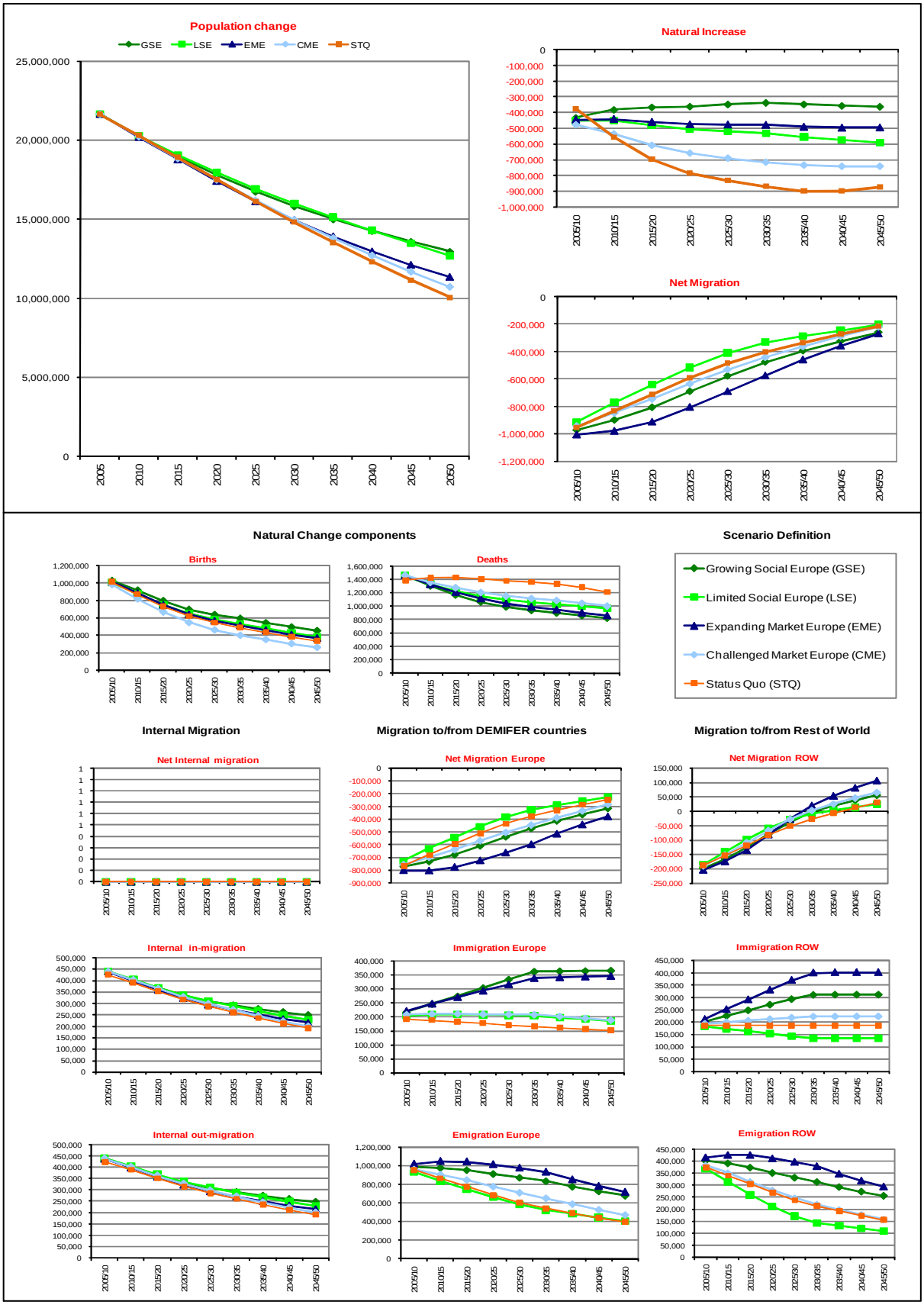



**Figure 2.2: Scenario profile for population stocks and components of change, 2005-50: Romania**

***Scenario profile*** **:** **United Kingdom**

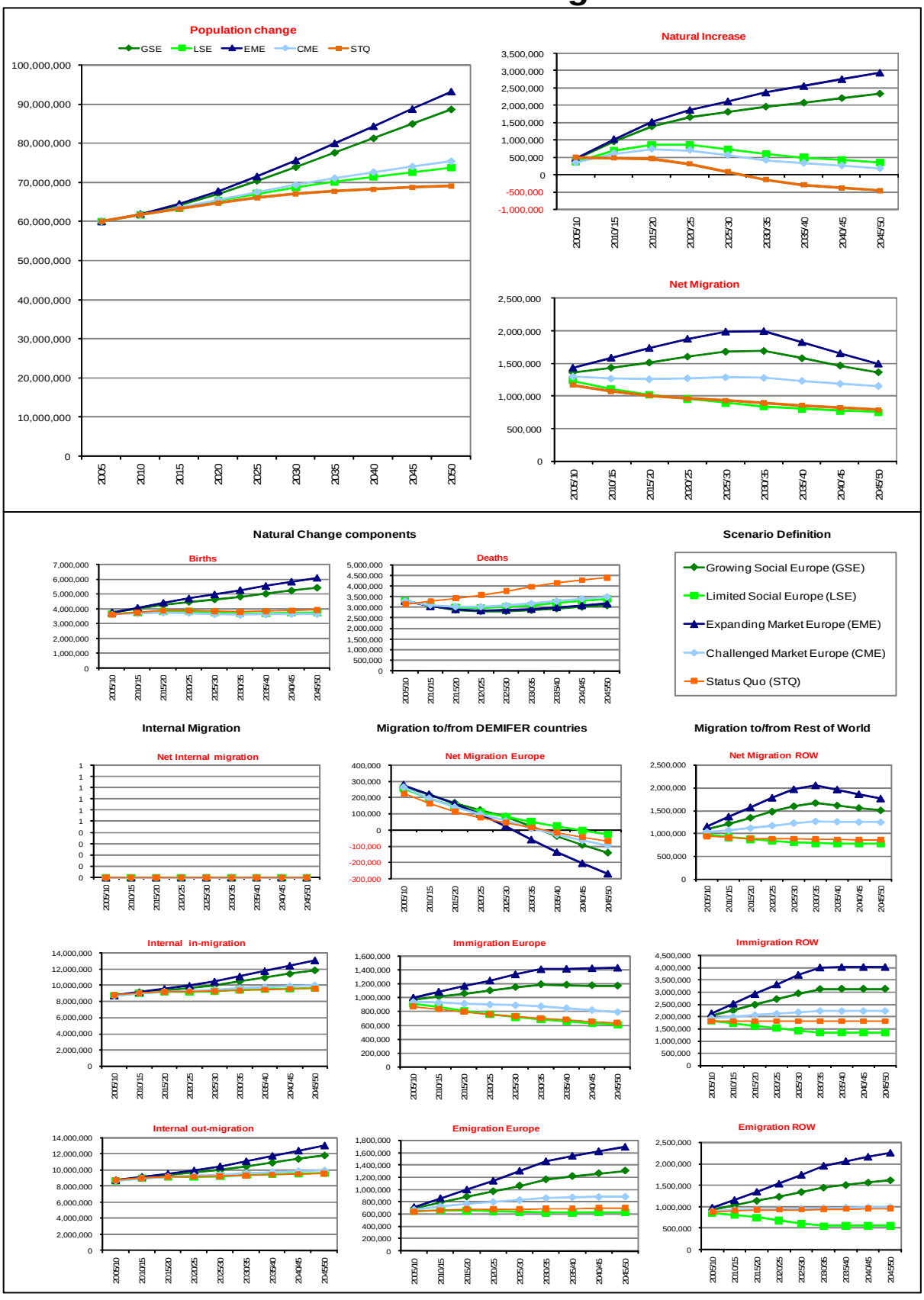



**Figure 2.3: Scenario profile for population stocks and components of change, 2005-50: United Kingdom**

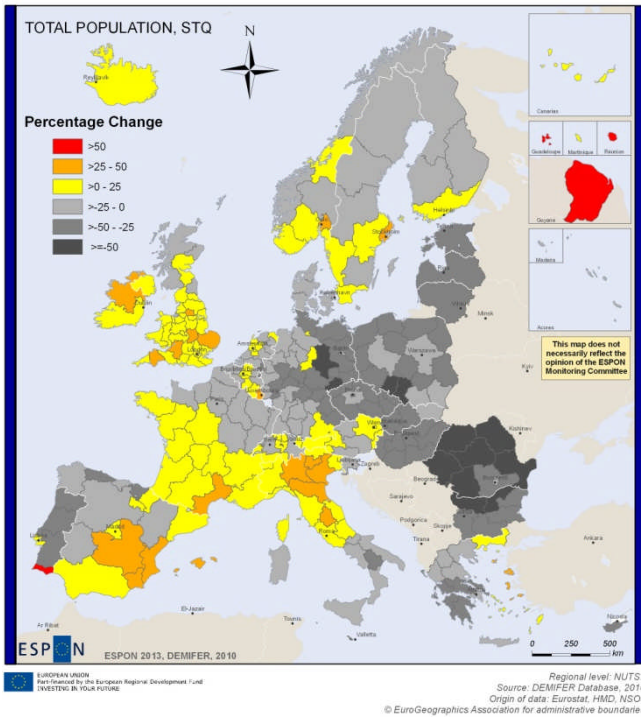
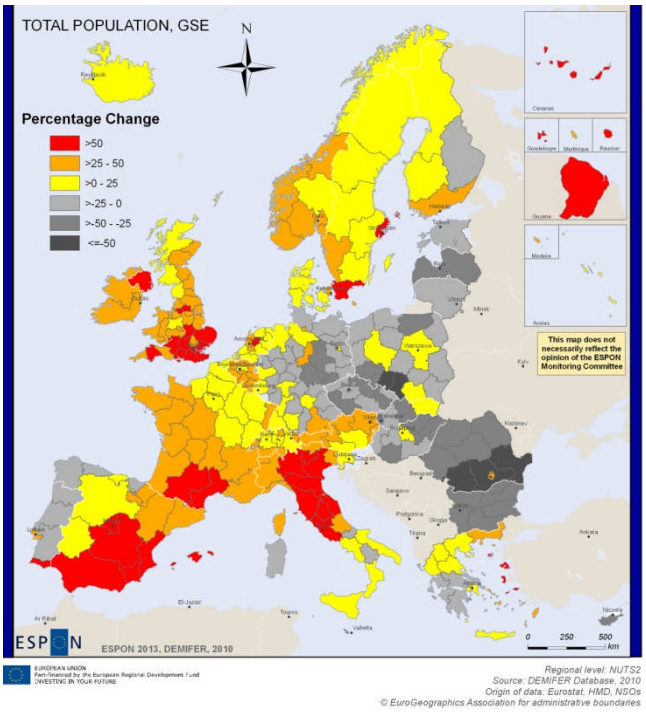
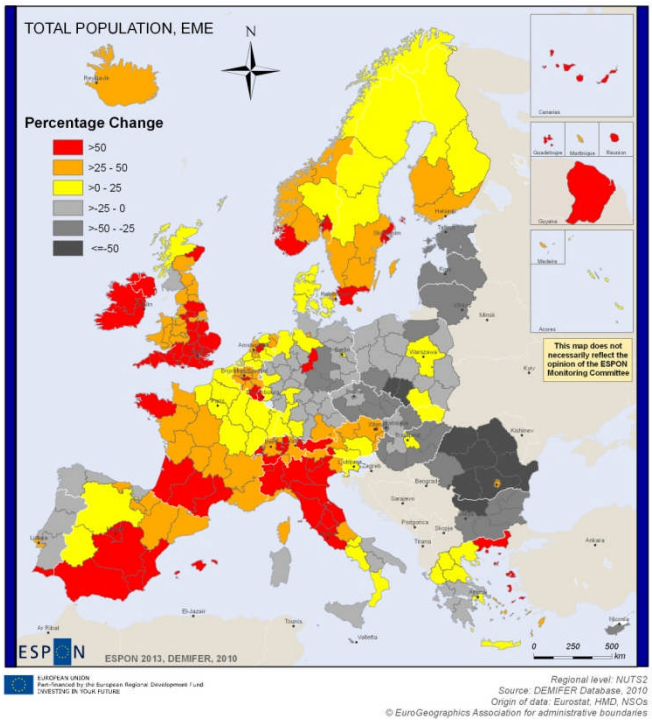


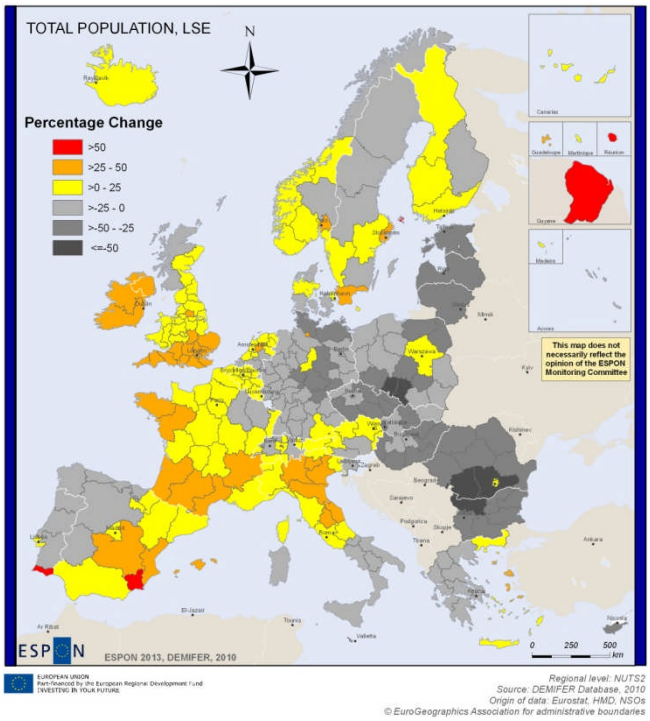

**Figure 2.4: Percentage change in regional populations, status quo projection, 2005-50**



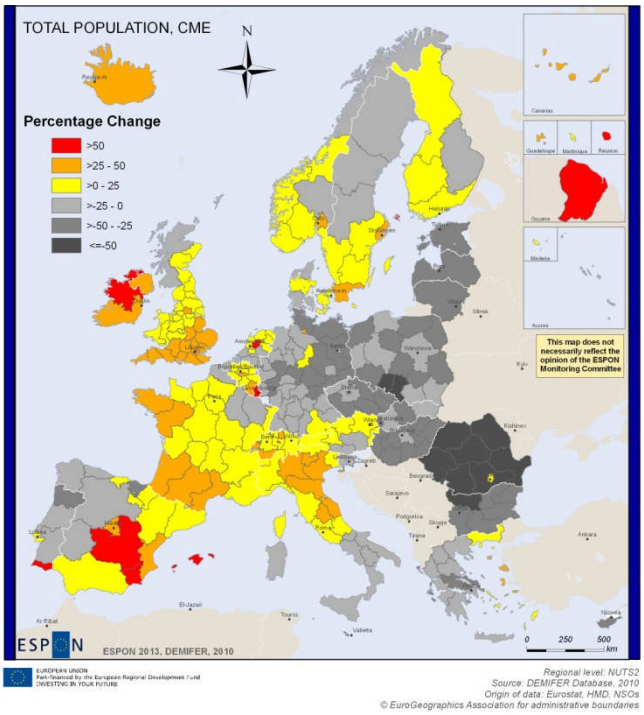

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.5: Percentage change in regional populations, four policy scenarios, 2005-50**

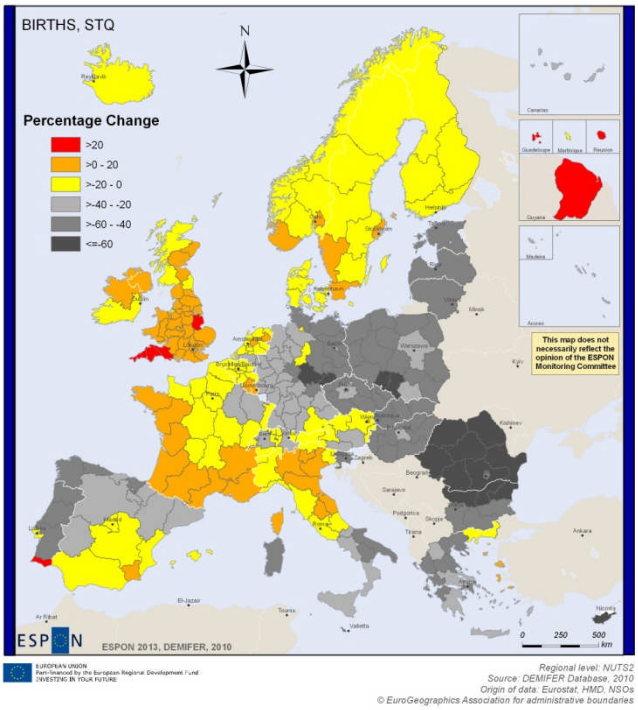
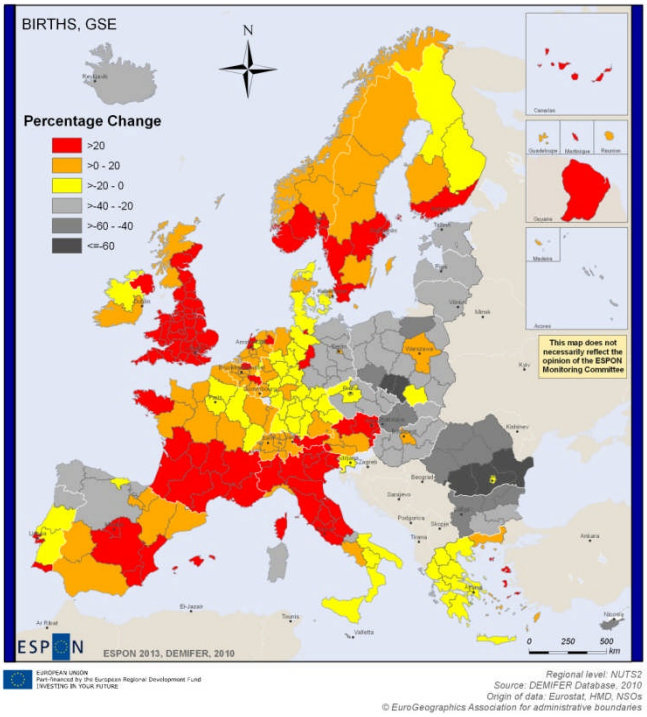
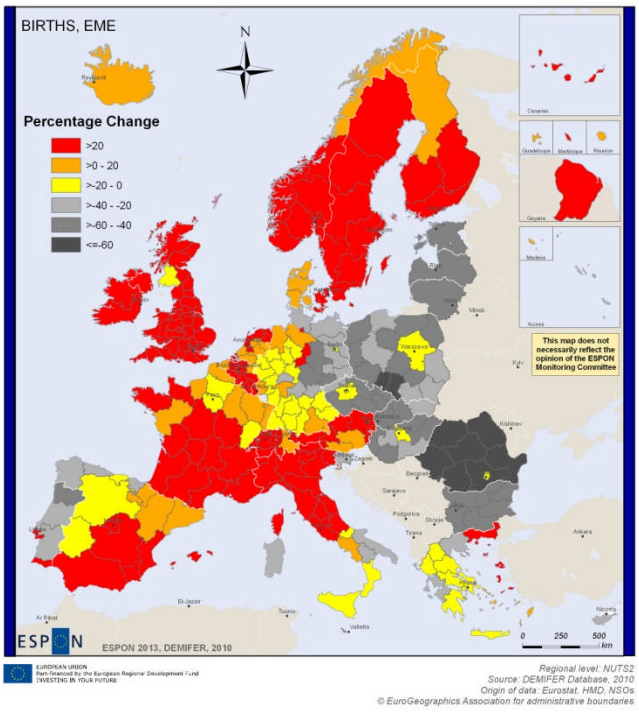


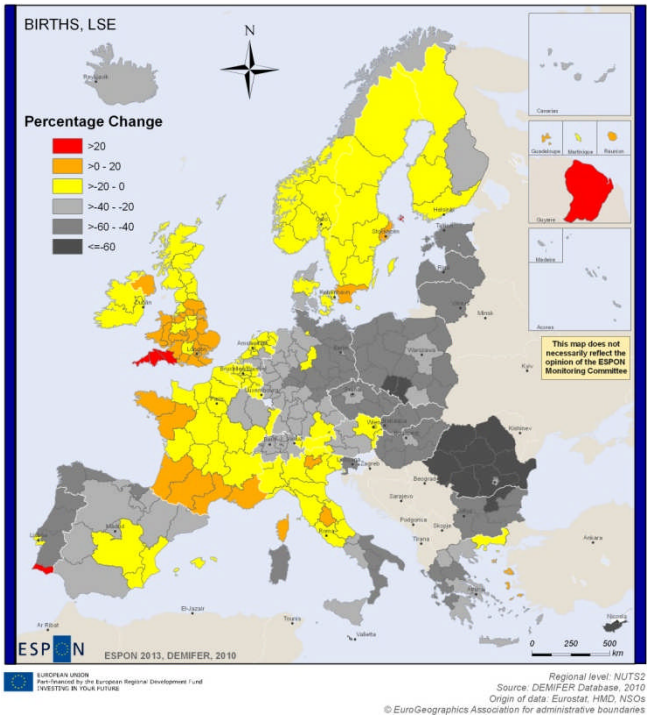

**Figure 2.6: Percentage change in regional births, status quo projection, 2005-50**



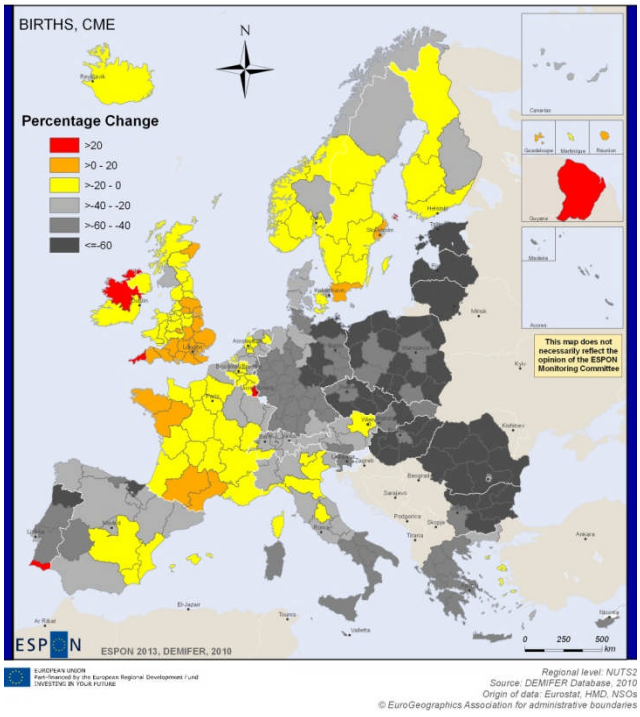

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.7: Percentage change in regional births, four policy scenarios, 2005-50**

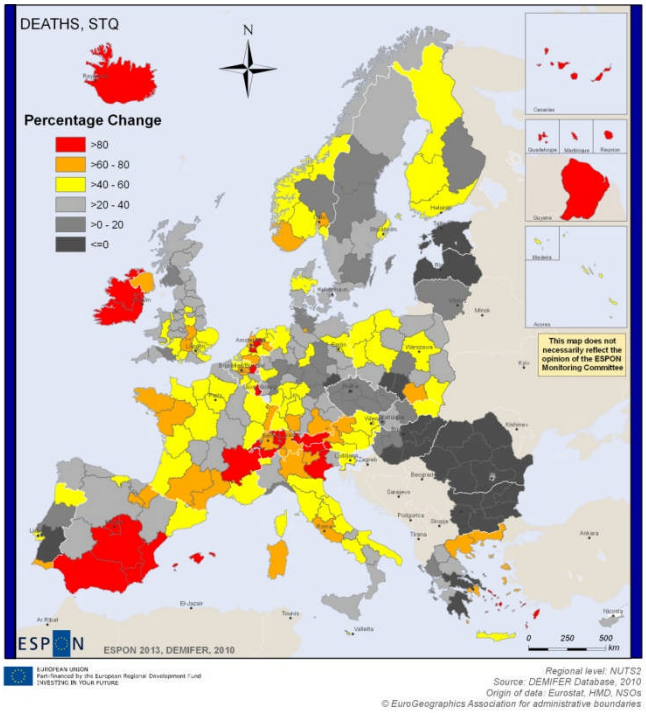
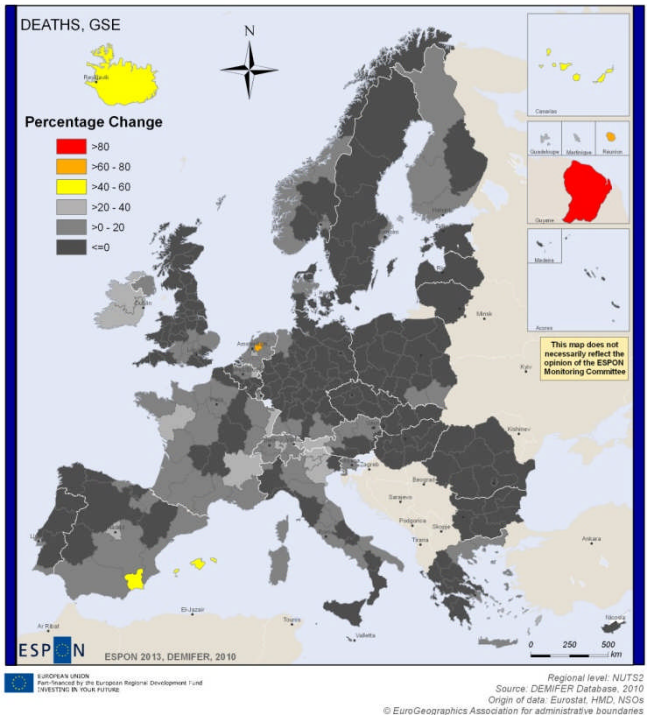
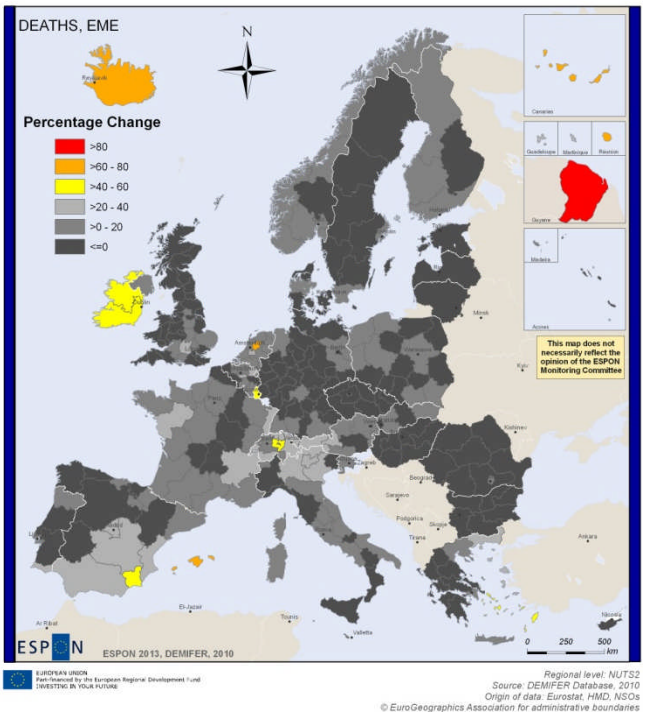


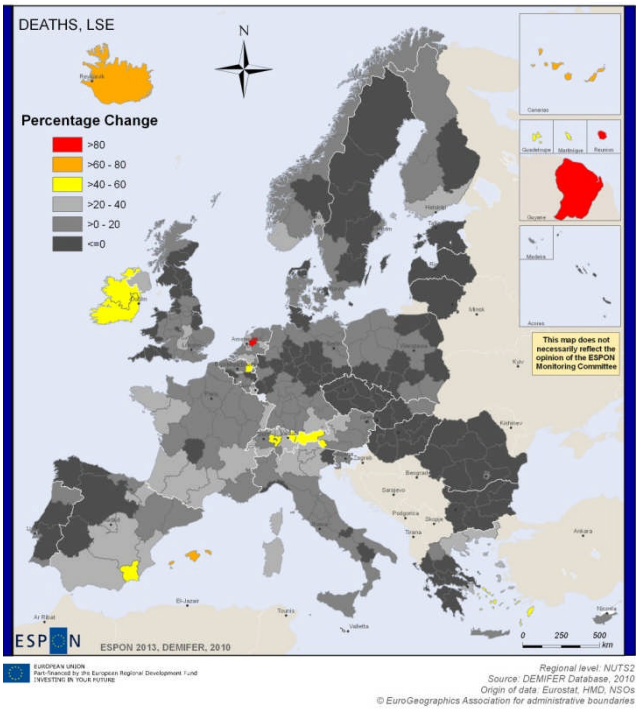

**Figure 2.8: Percentage change in regional deaths, status quo projection, 2005-50**



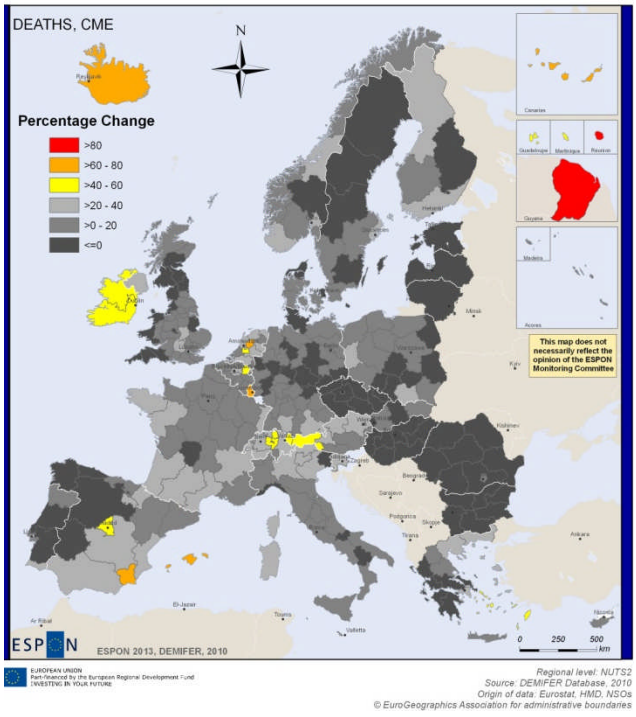

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.9: Percentage change in regional deaths, four policy scenarios, 2005-50**

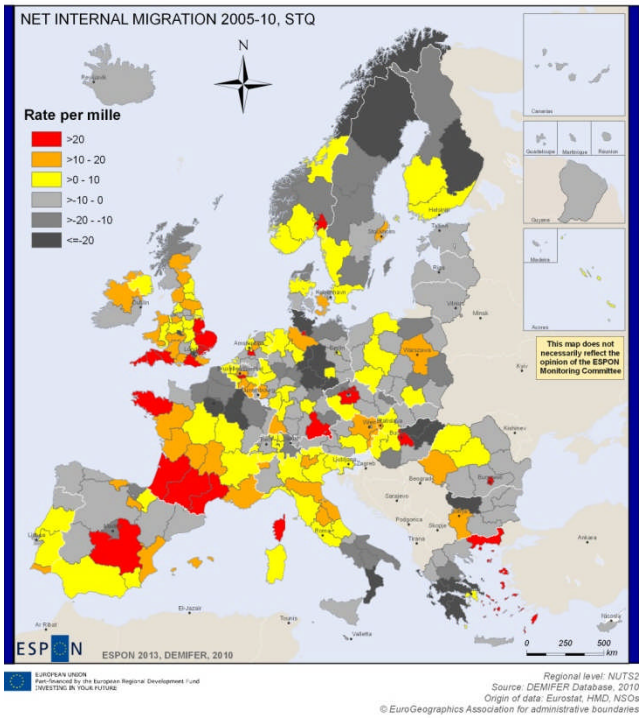
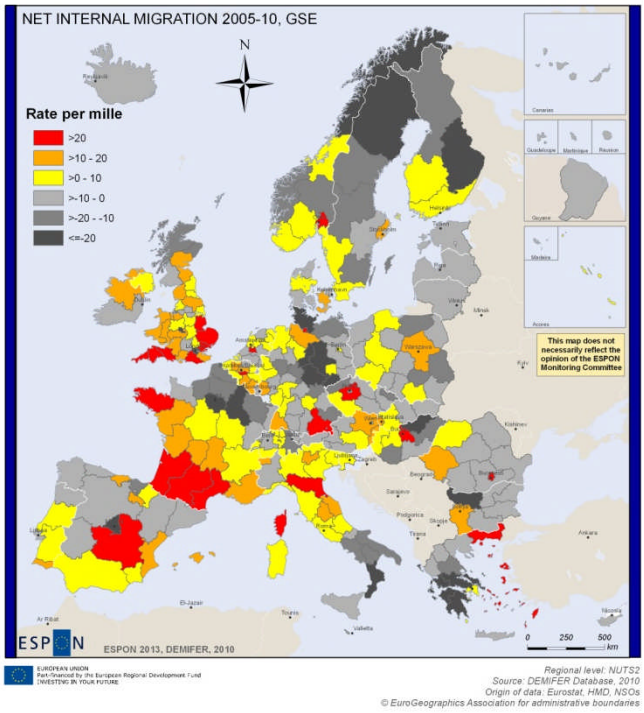
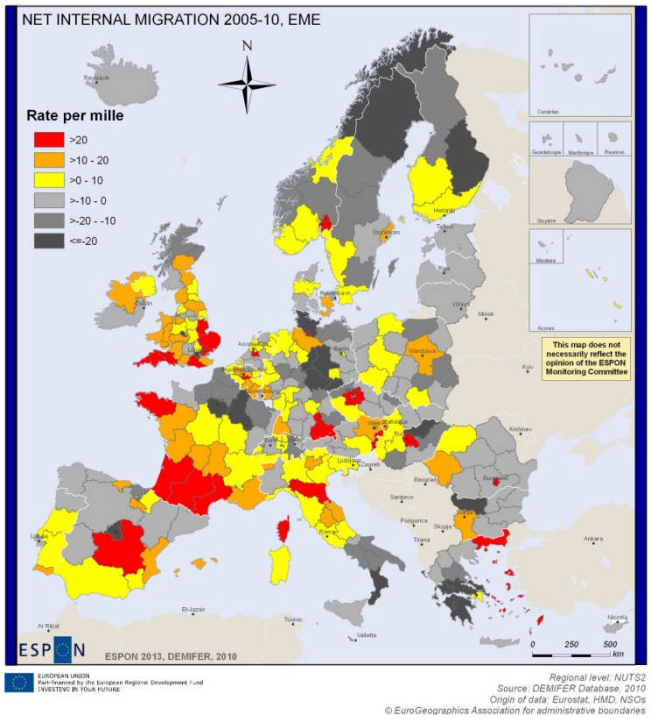


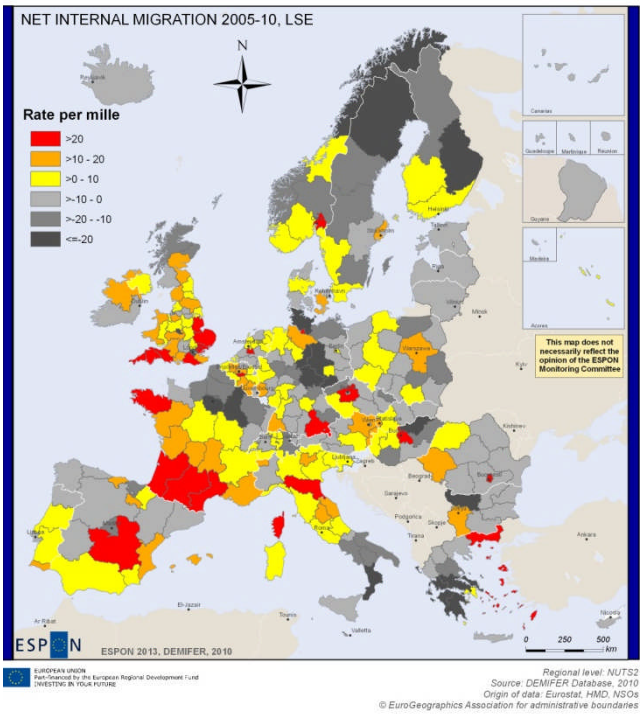

**Figure 2.10: Net internal migration rates per 1000 population, status quo projection, 2005-10**



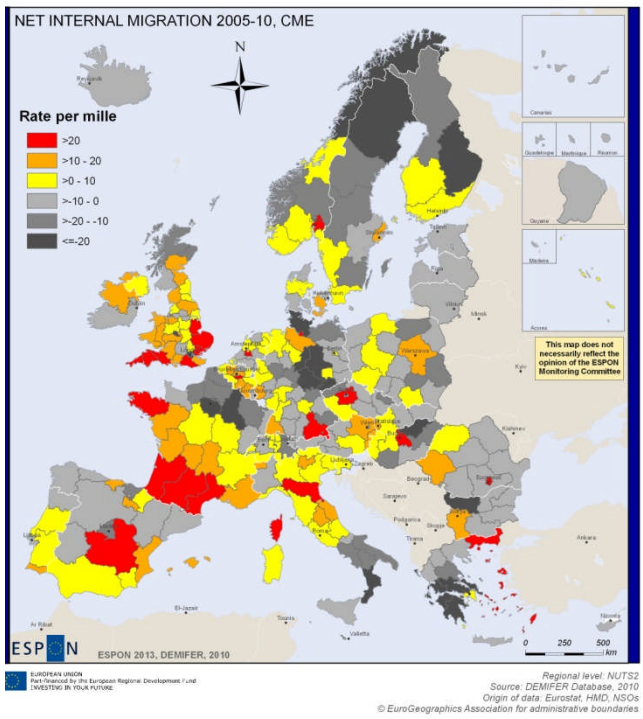

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.11: Net internal migration rates per 1000 population, four policy scenarios, 2005-10**

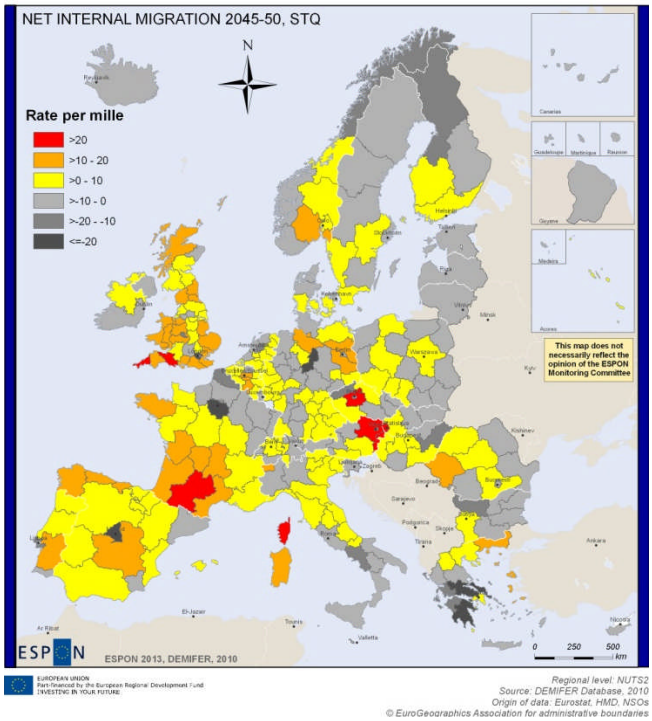
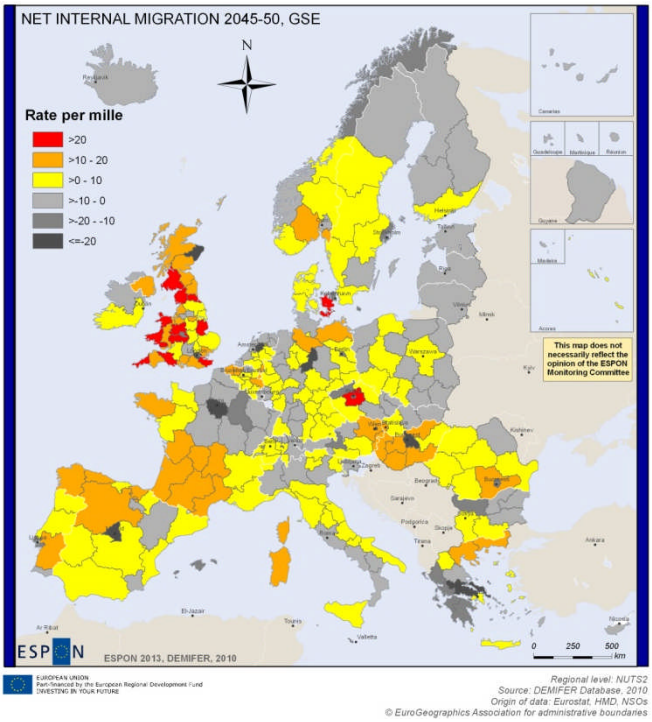
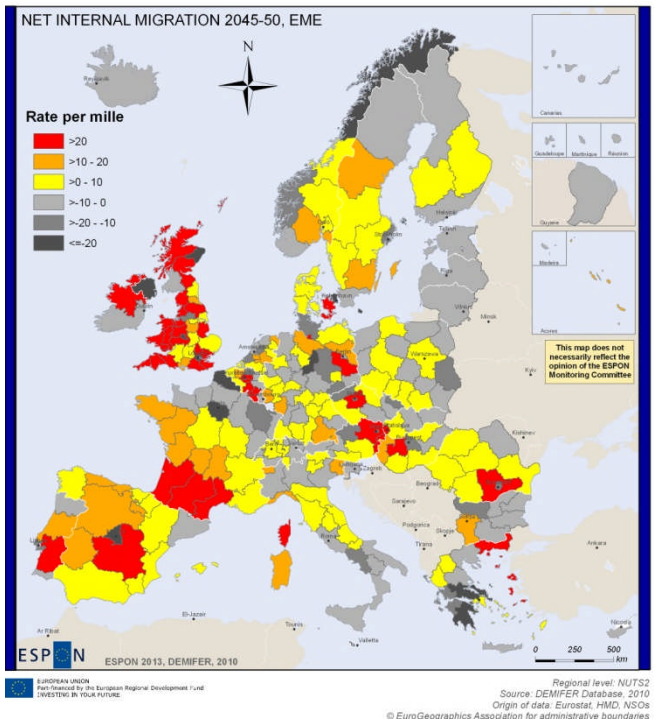


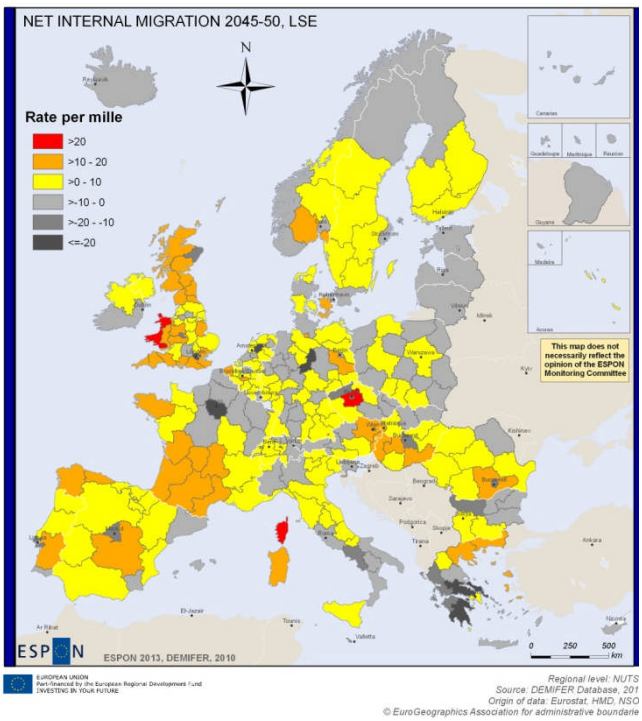

**Figure 2.12: Net internal migration rates per 1000 population, status quo projection, 2045-50**



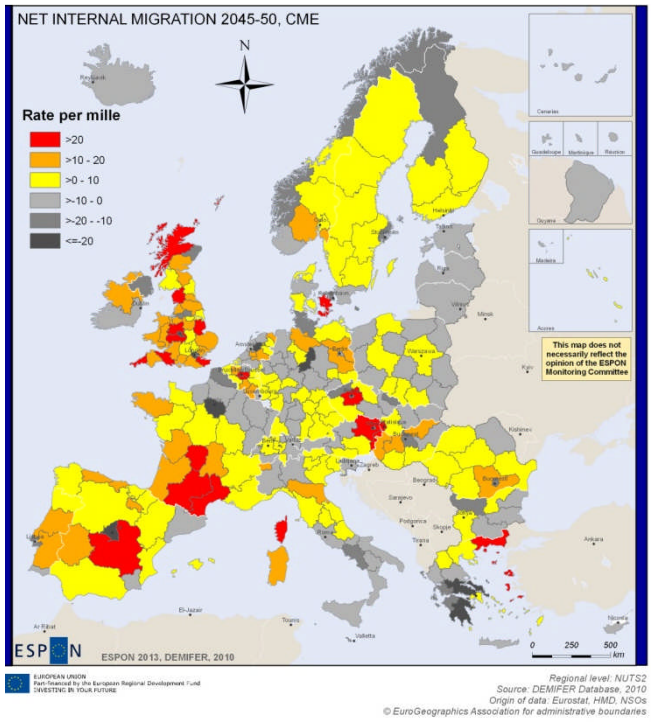

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.13: Net internal migration rates per 1000 population, four policy scenarios, 2045-50**

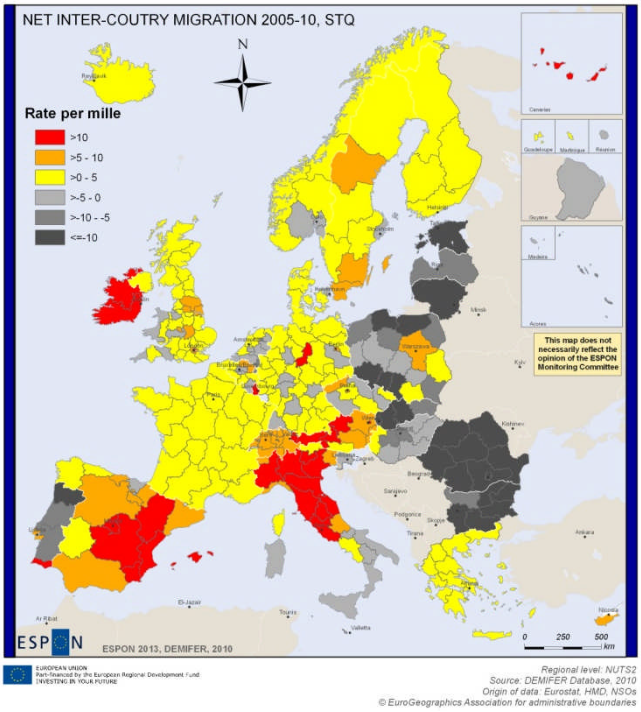
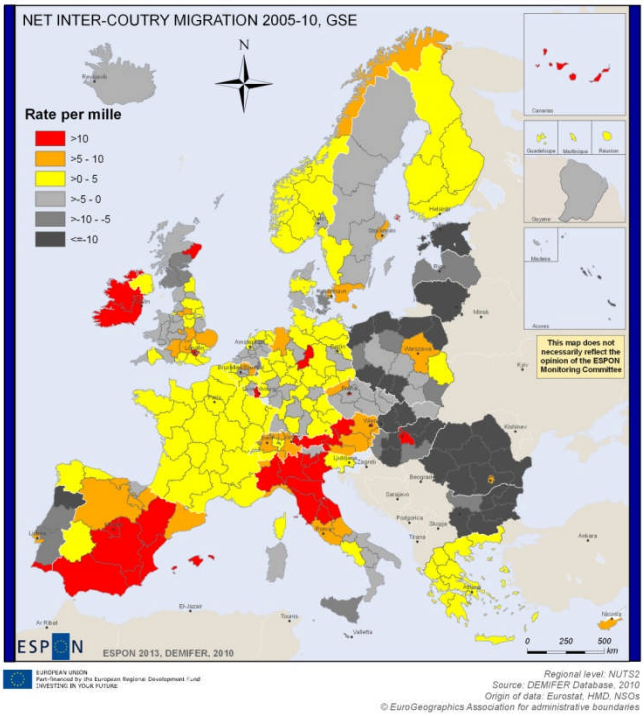
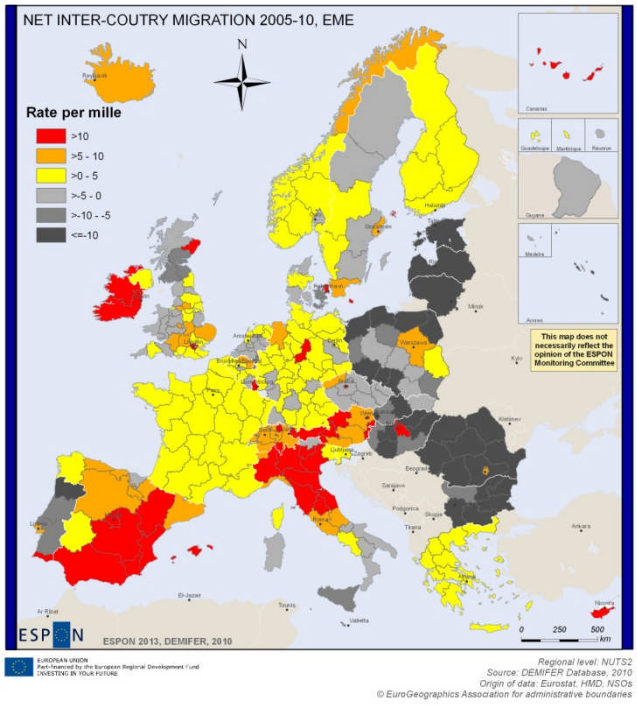


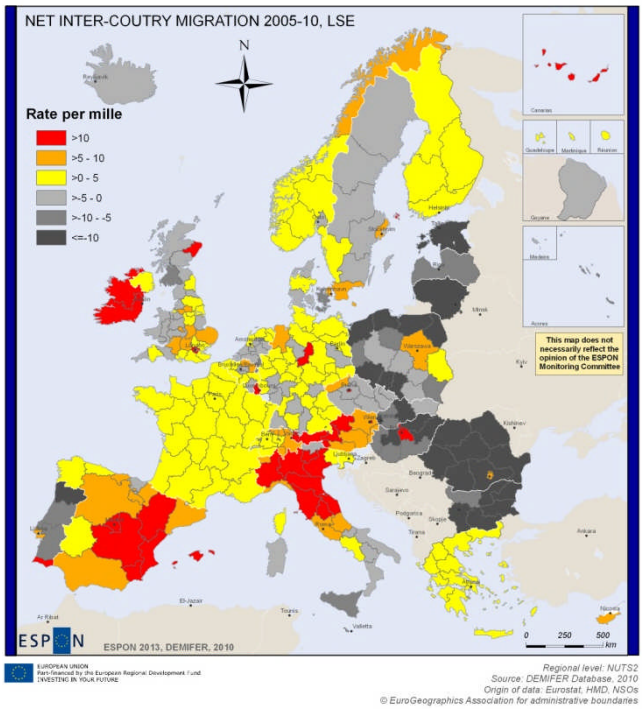

**Figure 2.14: Net inter-country migration rates per 1000 population, status quo projection, 2005-10**



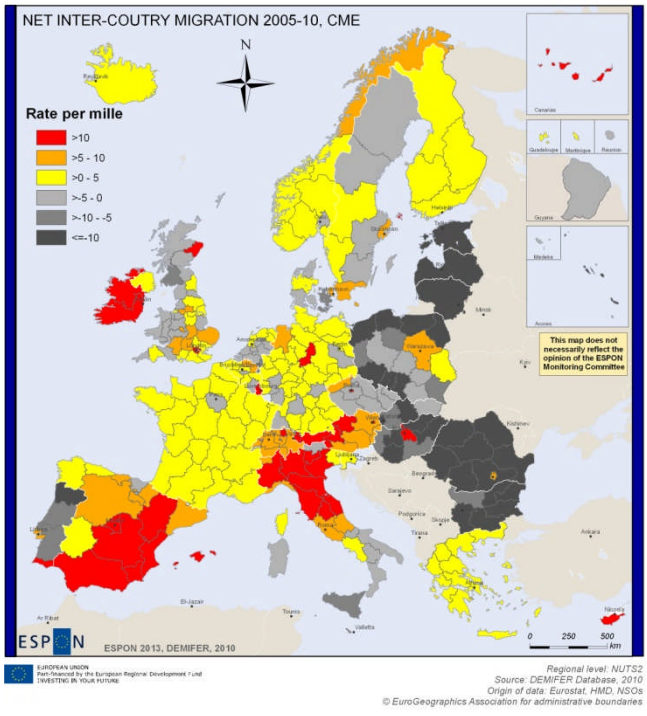

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.15: Net inter-country migration rates per 1000 population, four policy scenarios, 2005-10**

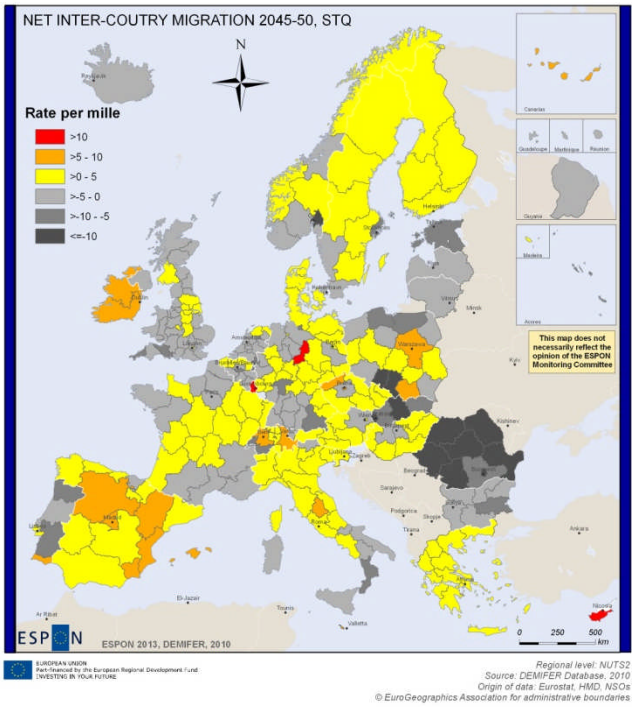
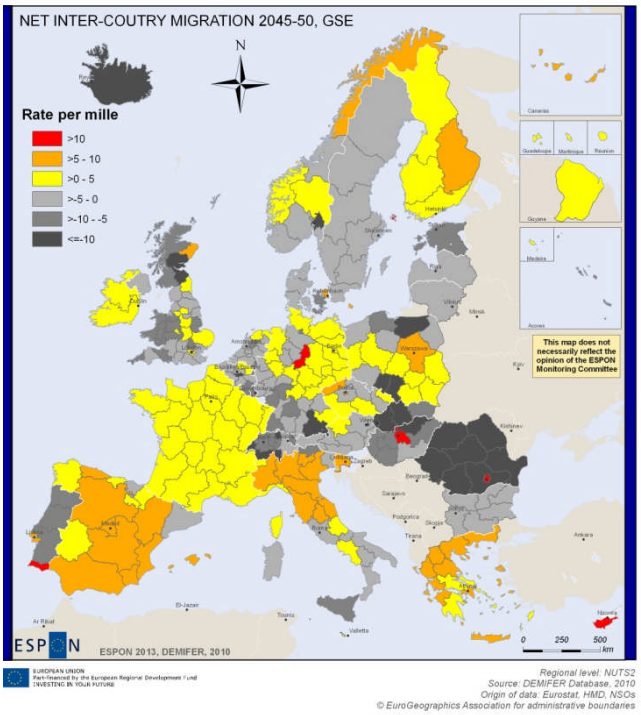
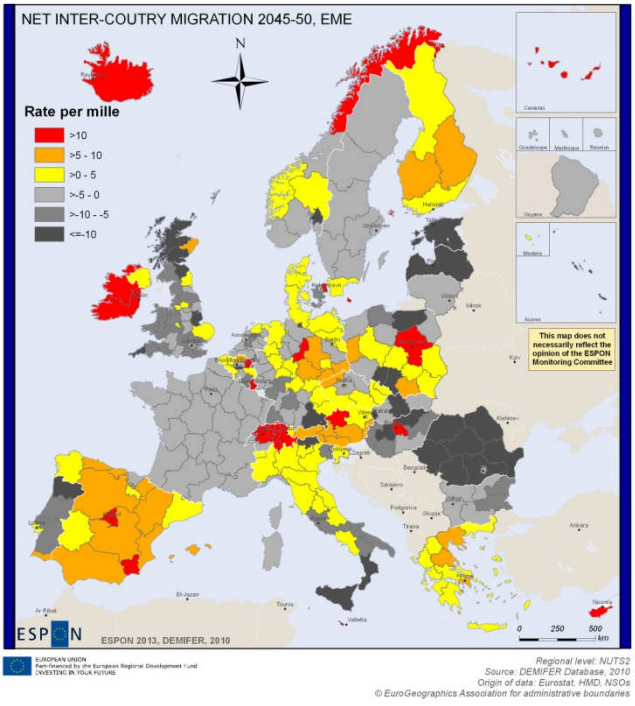


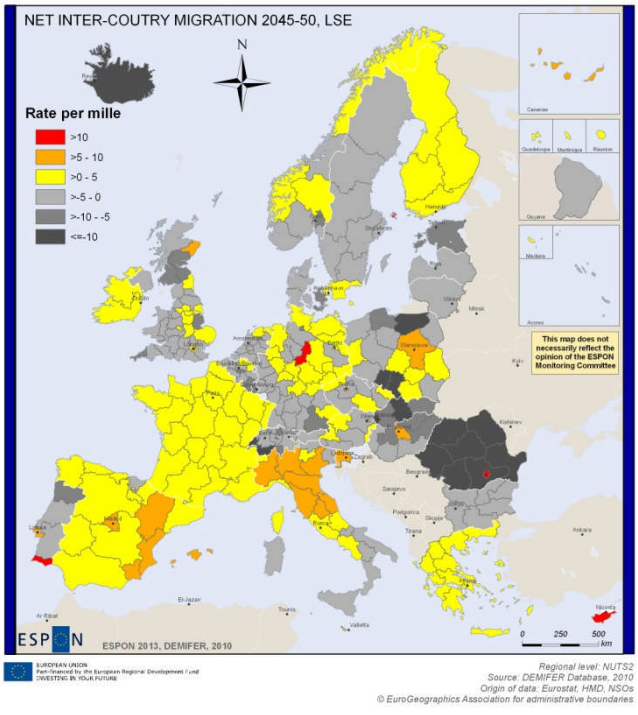

**Figure 2.16: Net inter-country migration rates per 1000 population, status quo projection, 2045-50**



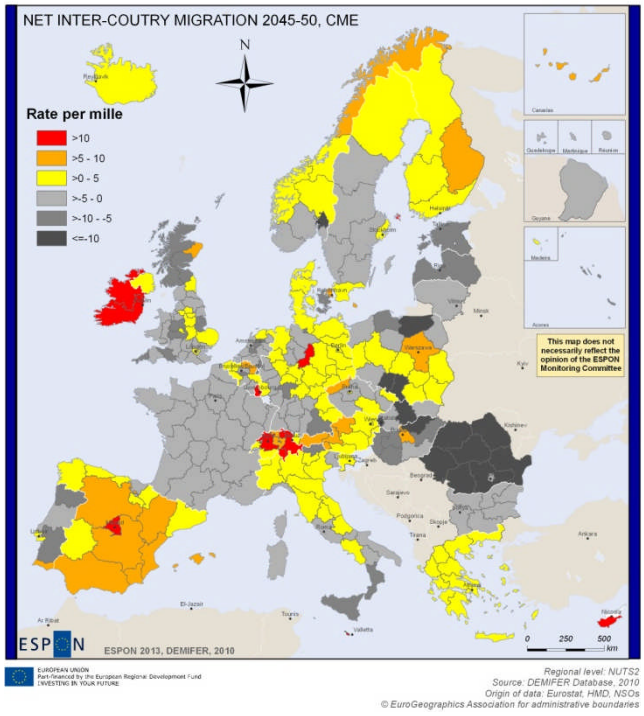

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.17: Net inter-country migration rates per 1000 population, four policy scenarios, 2045-50**

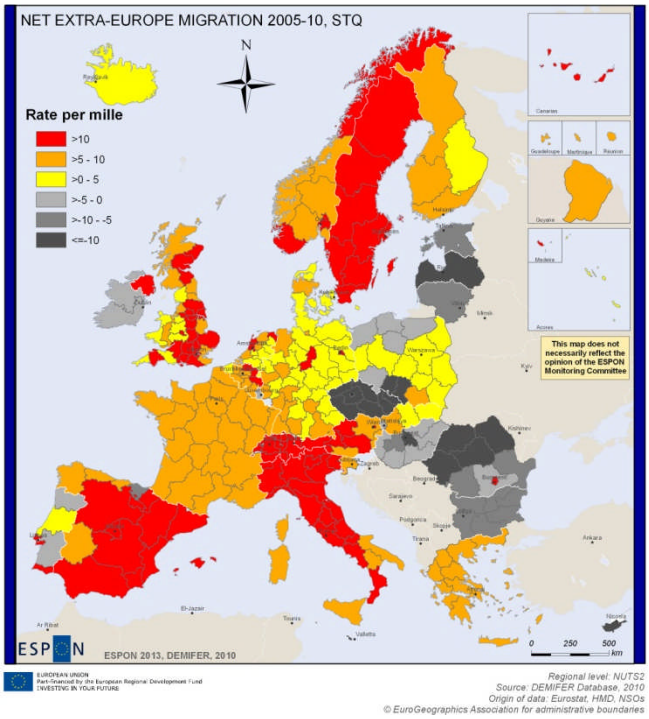
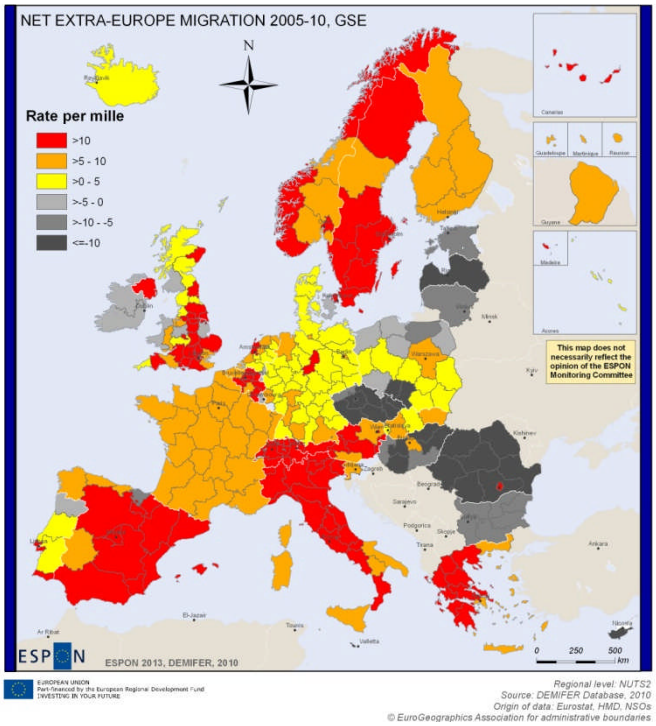
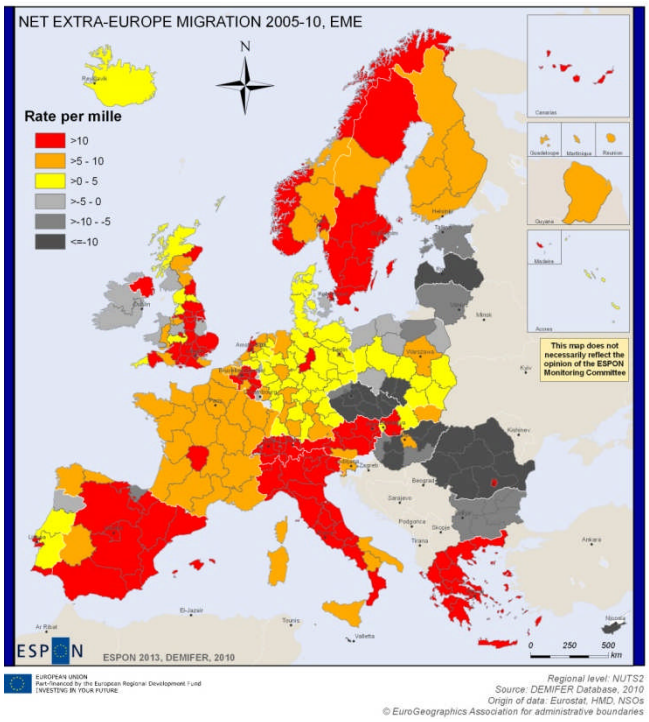


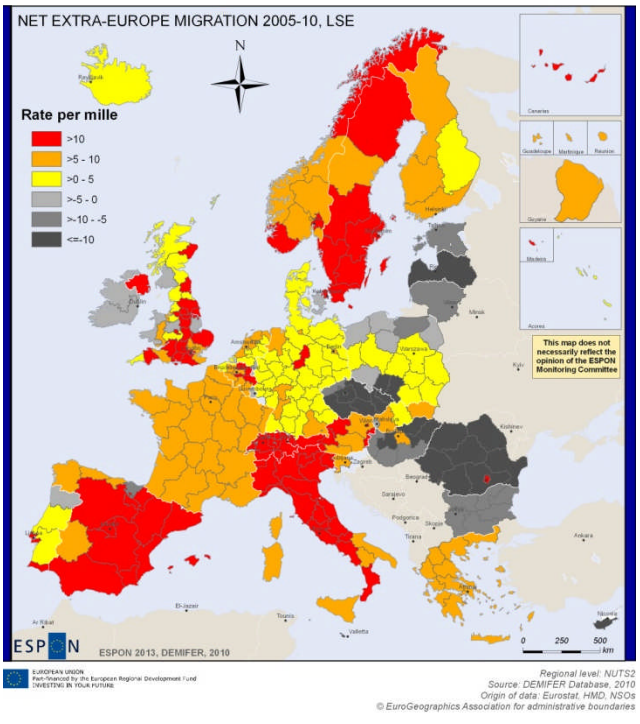

**Figure 2.18: Net extra-Europe migration rates per 1000 population, status quo projection, 2005-10**



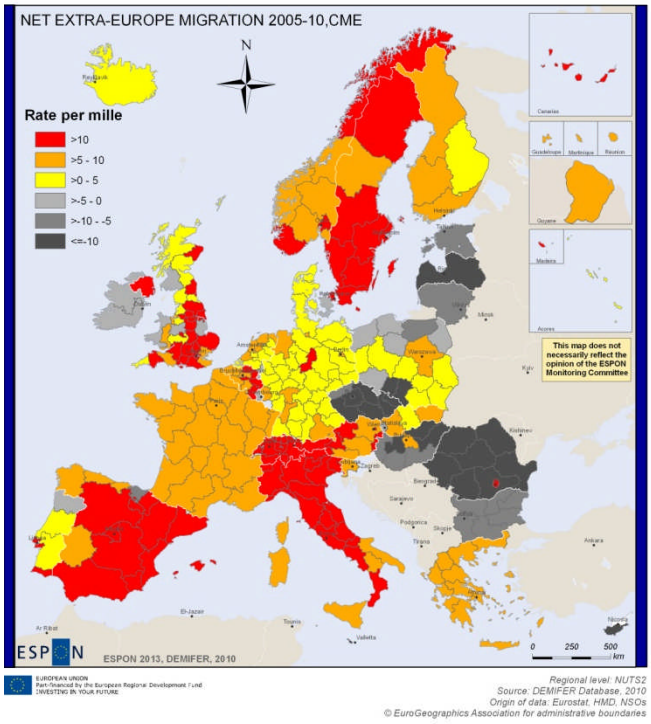

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.19: Net extra-Europe migration rates per 1000 population, four policy scenarios, 2005-10**

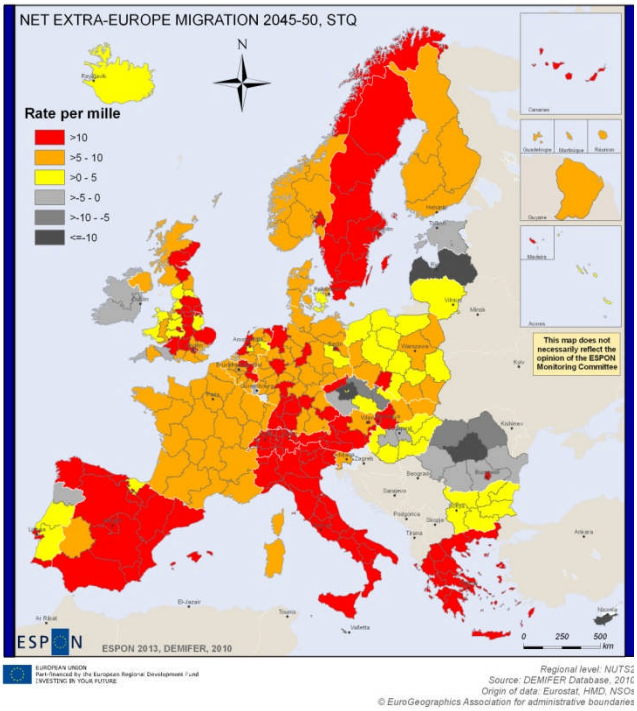
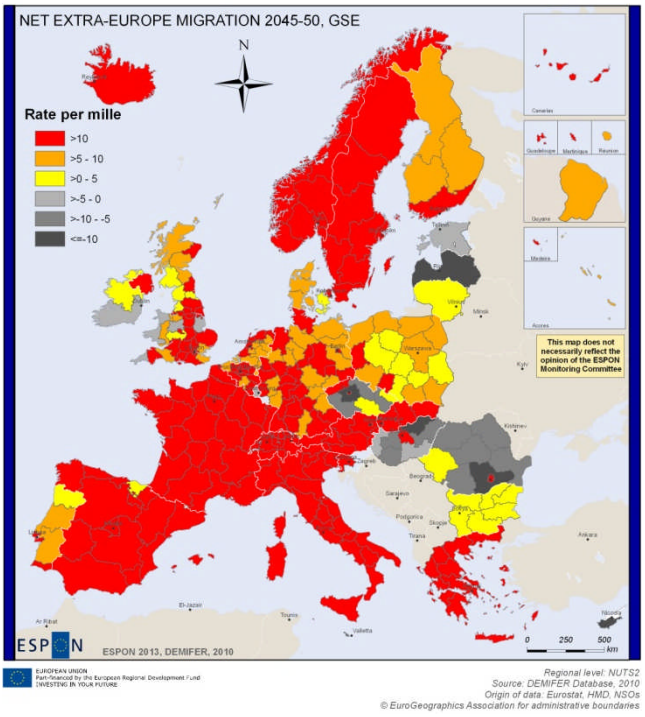
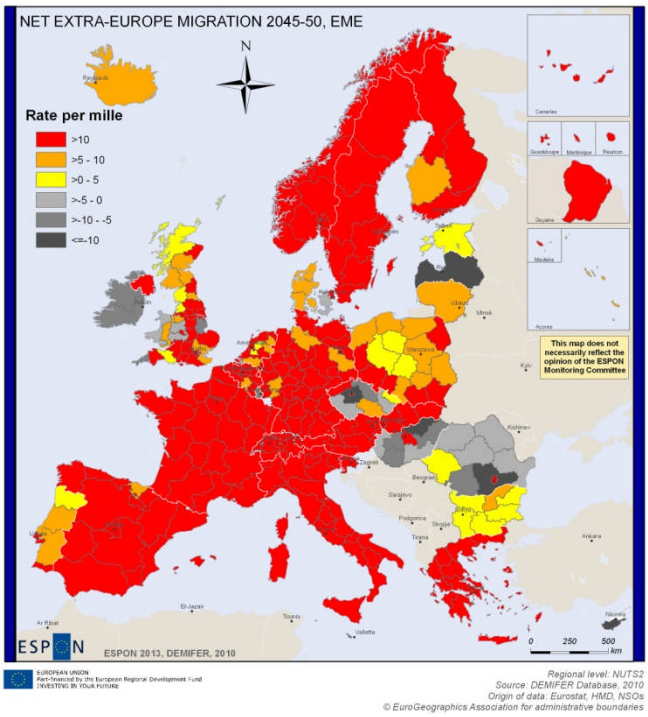


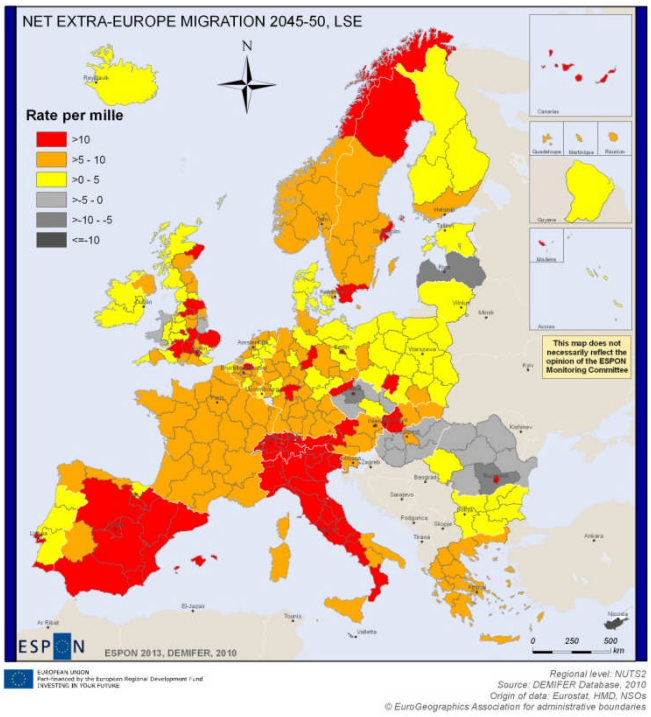

**Figure 2.20: Net extra-Europe migration rates per 1000 population, status quo projection, 2045-50**



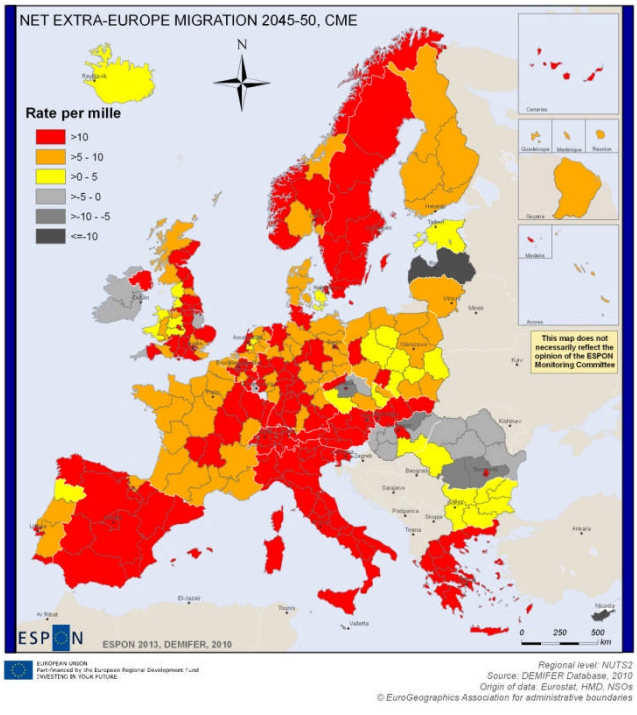

a) Growing Social Europe




b) Expanding Market Europe

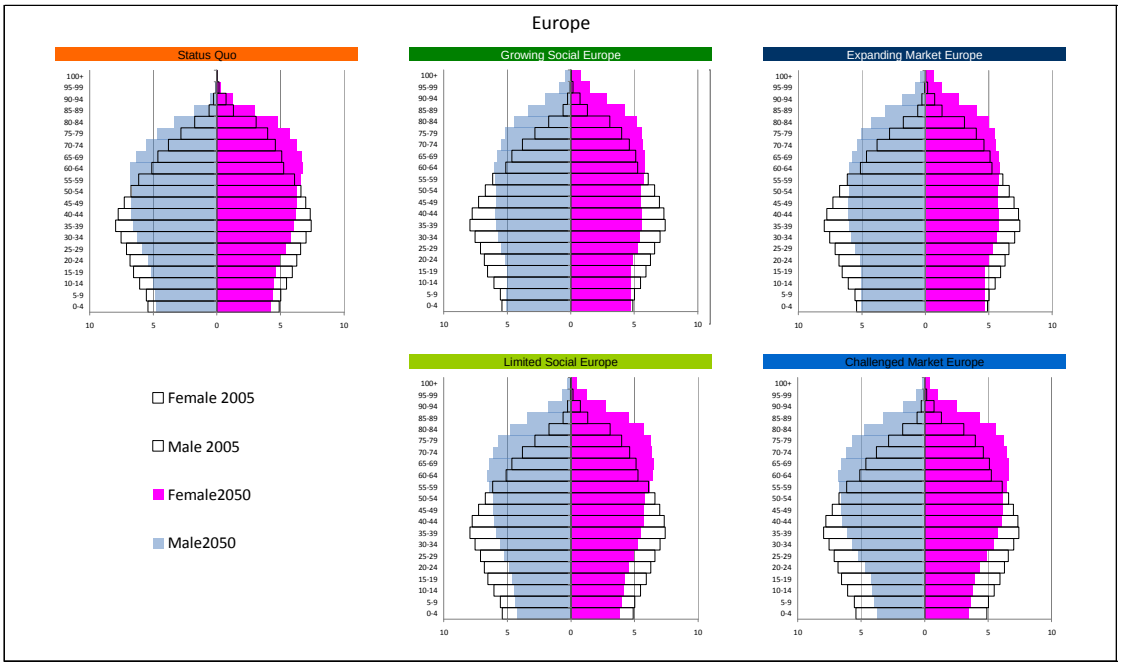



c) Limited Social Europe




d) Challenged Market Europe

**Figure 2.21: Net extra-Europe migration rates per 1000 population, four policy scenarios, 2045-50**



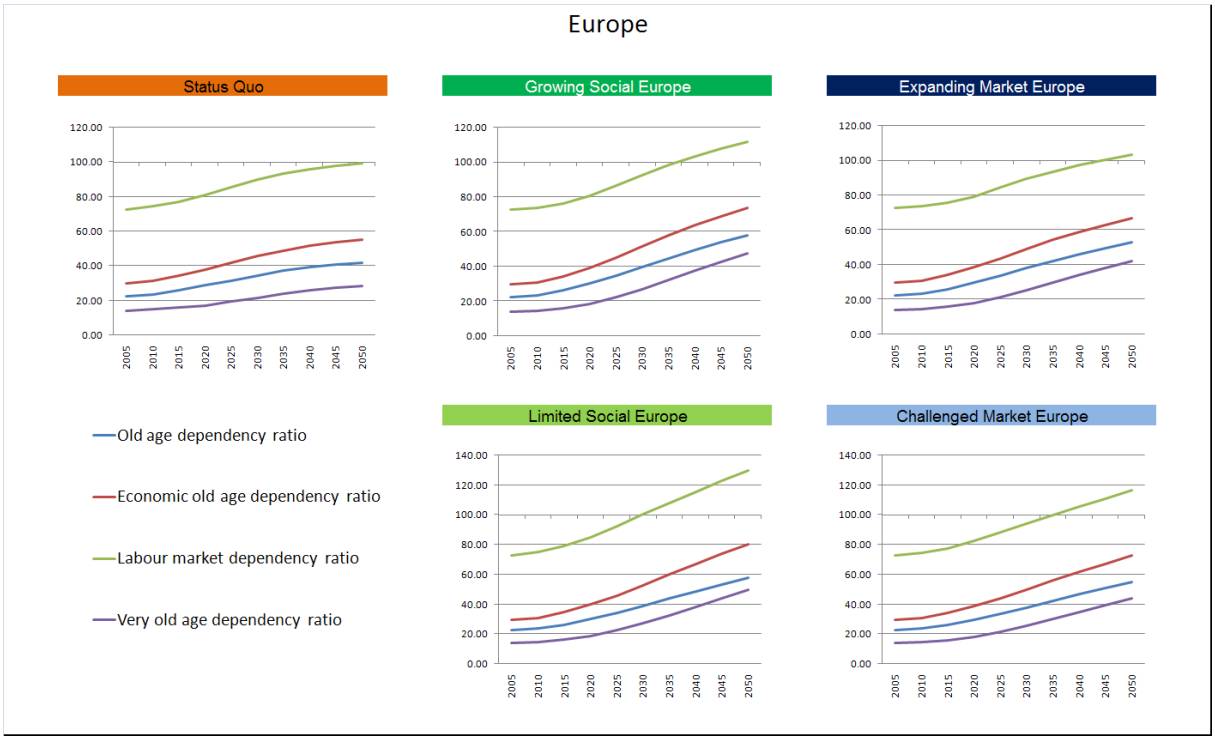
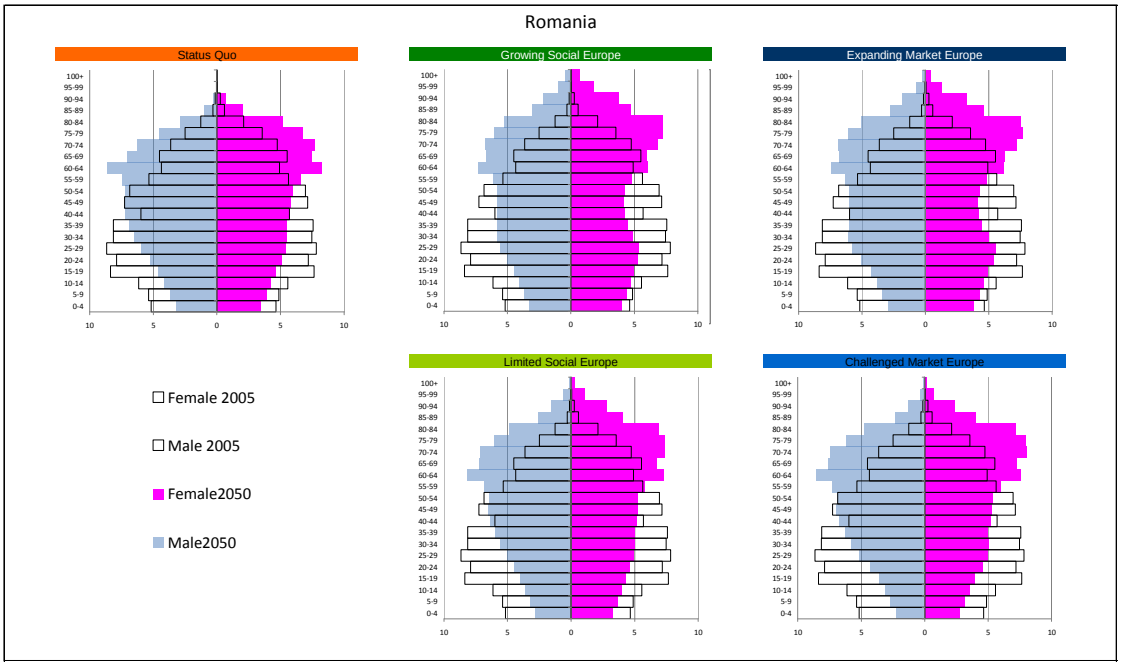




**Figure 3.1: Scenario profile for population ageing and dependency ratios, 2005-50: Europe**



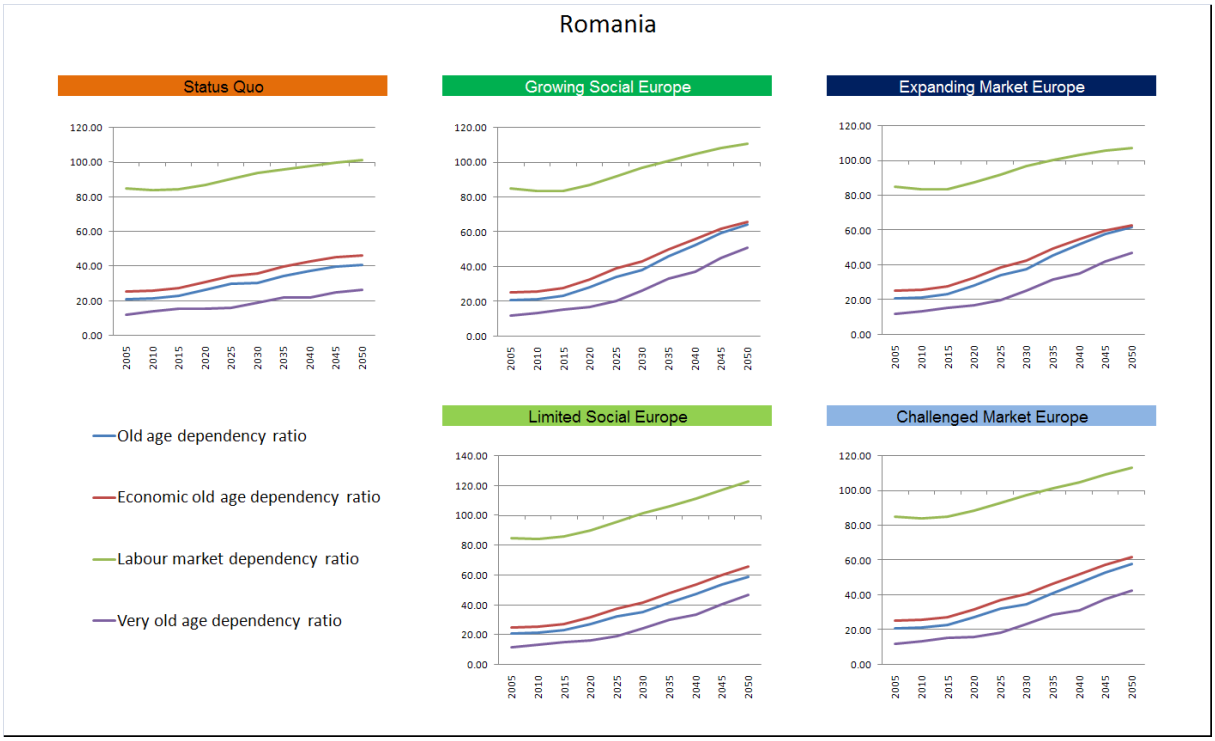
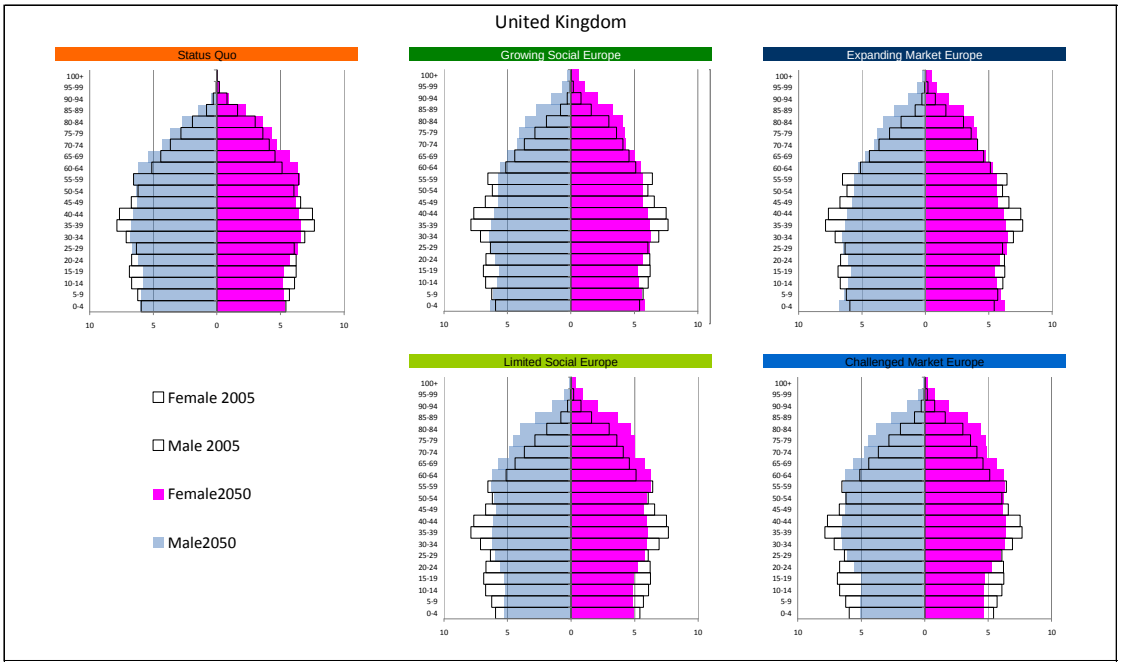




**Figure 3.2: Scenario profile for population ageing and dependency ratios, 2005-50: Romania**



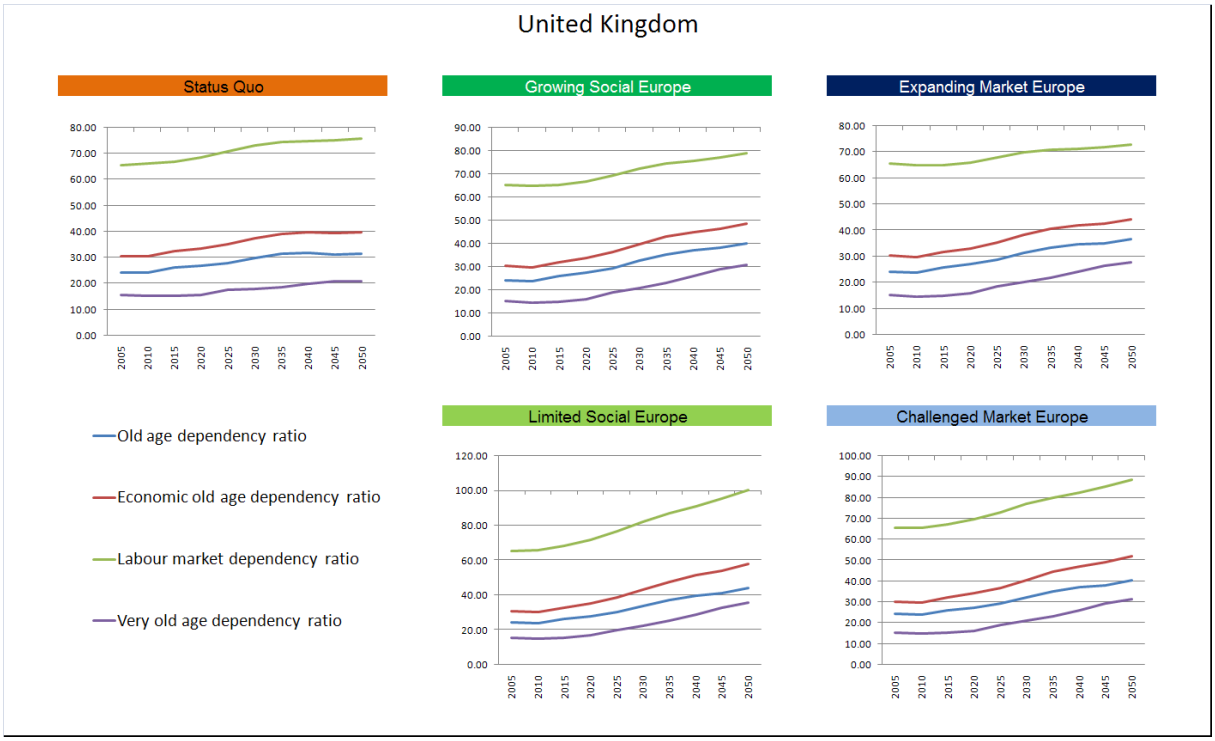




**Figure 3.3: Scenario profile for population ageing and dependency ratios, 2005-50: United Kingdom**

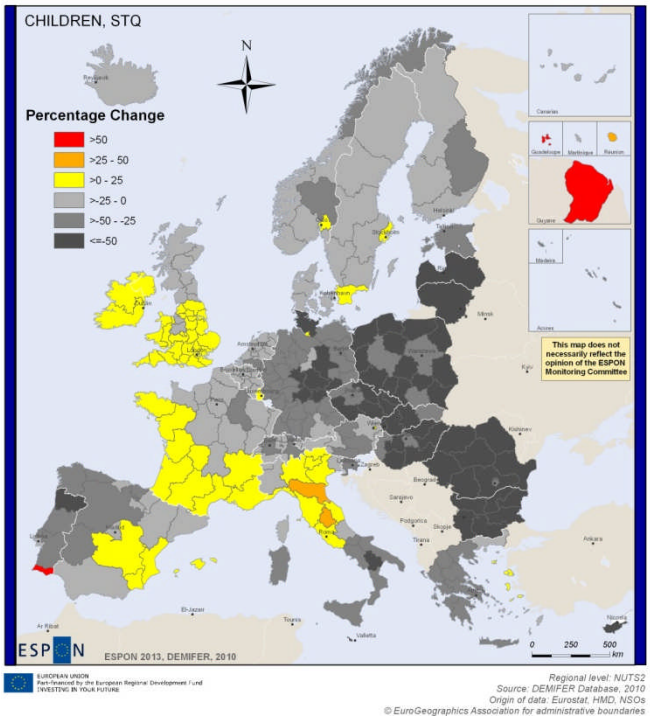
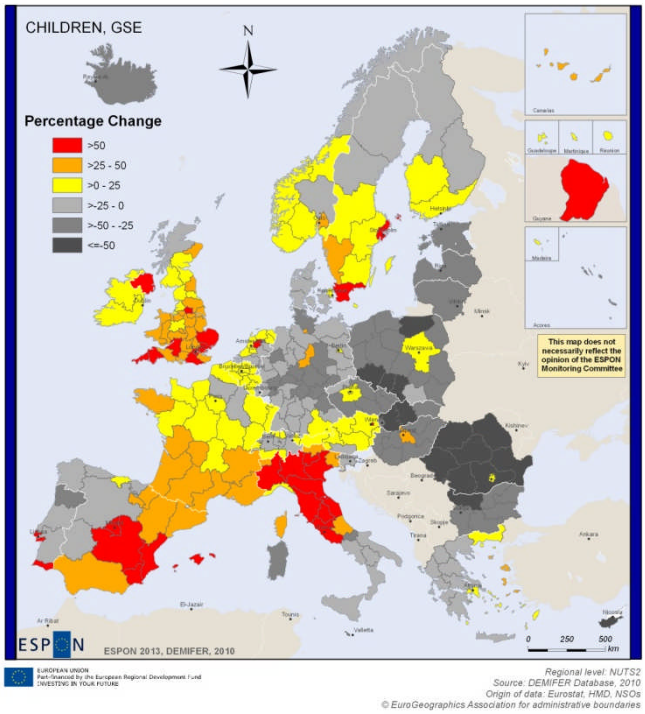
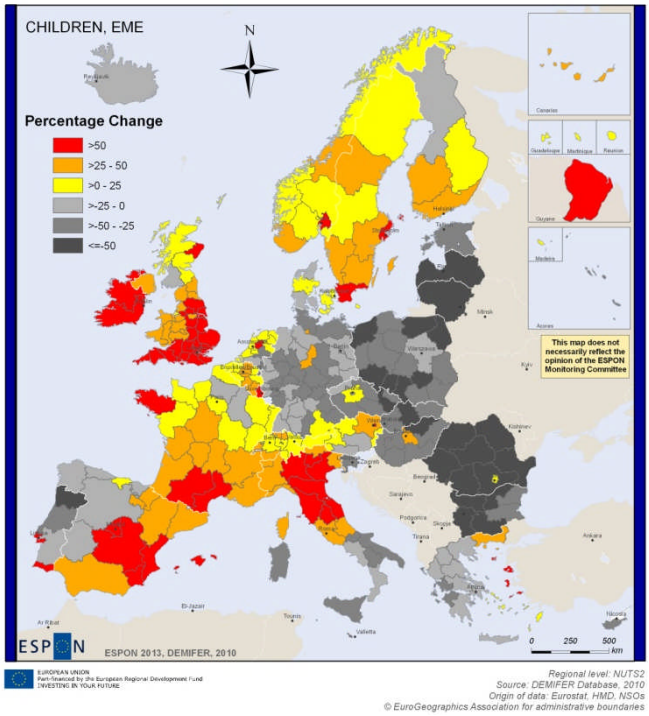


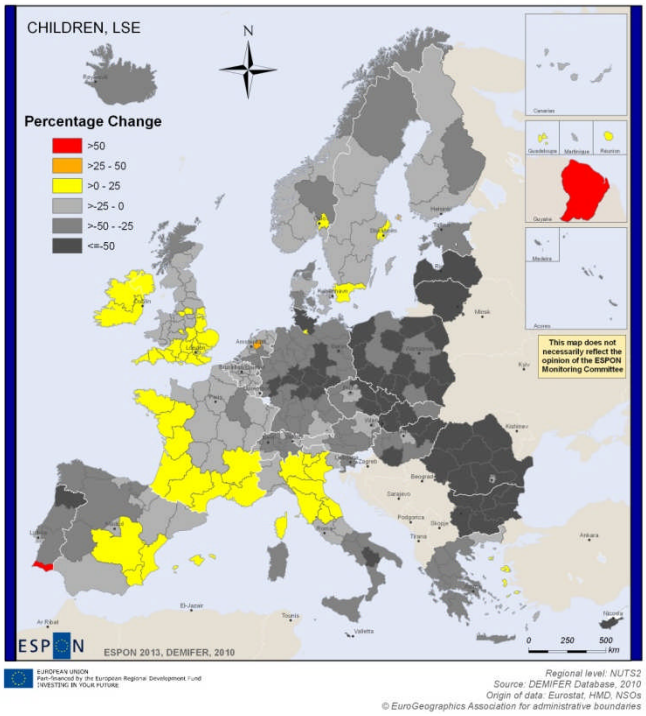

**Figure 3.4: Percentage change in child ages (ages 0-14), status quo projection, 2005-50**



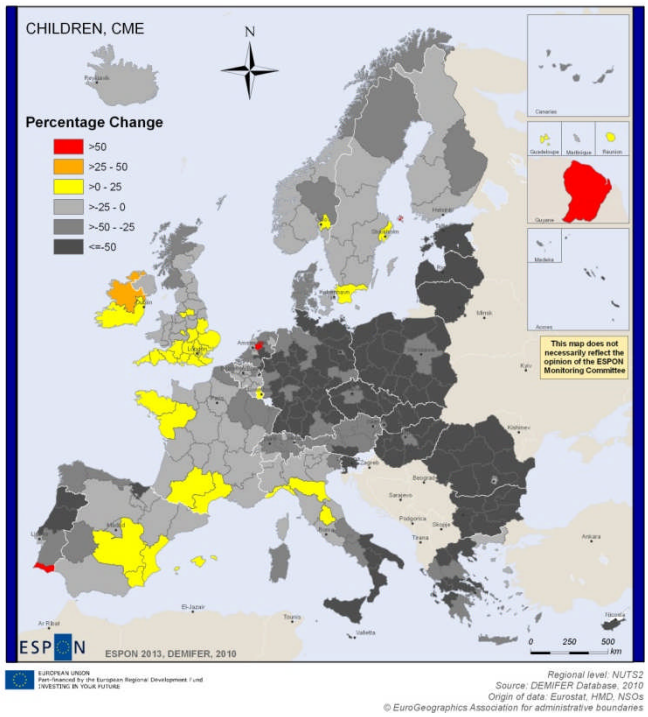

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 3.5: Percentage change in child ages (ages 0-14), four policy scenarios, 2005-50**

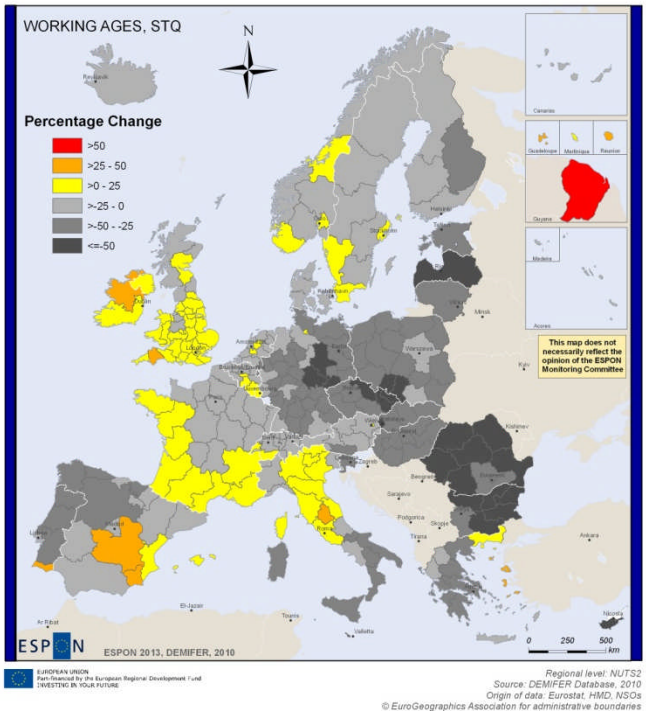
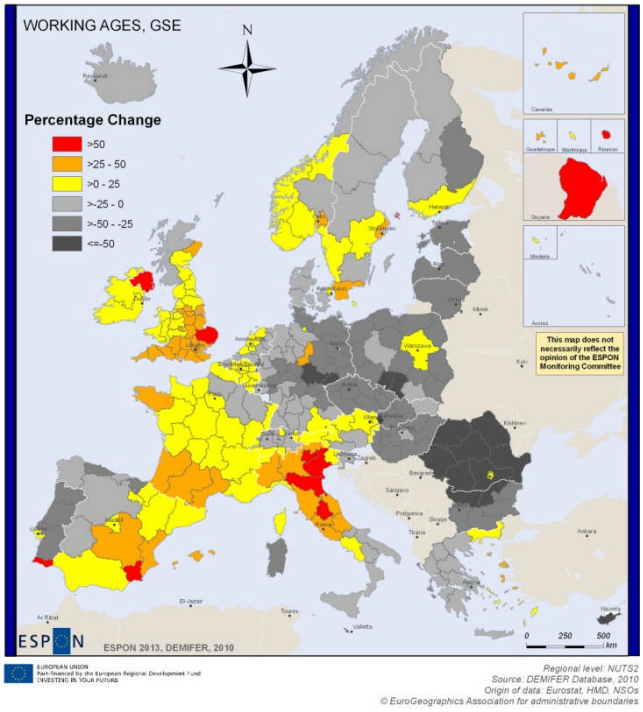
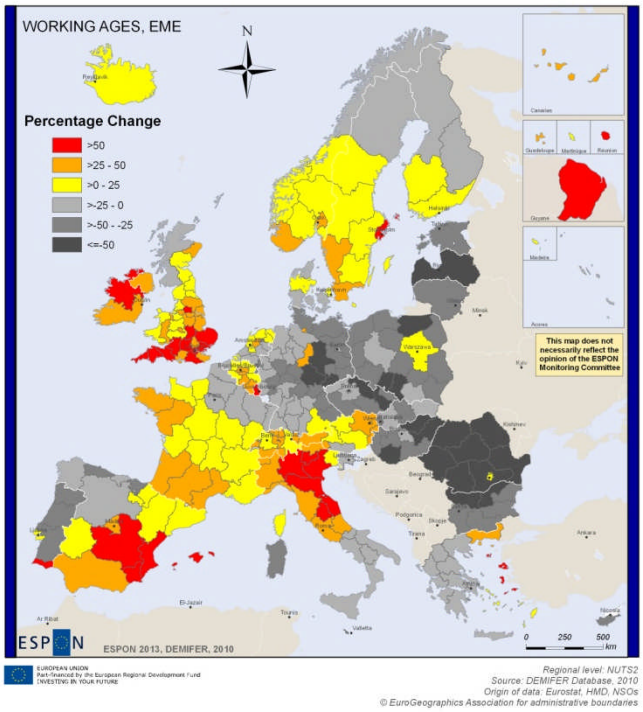


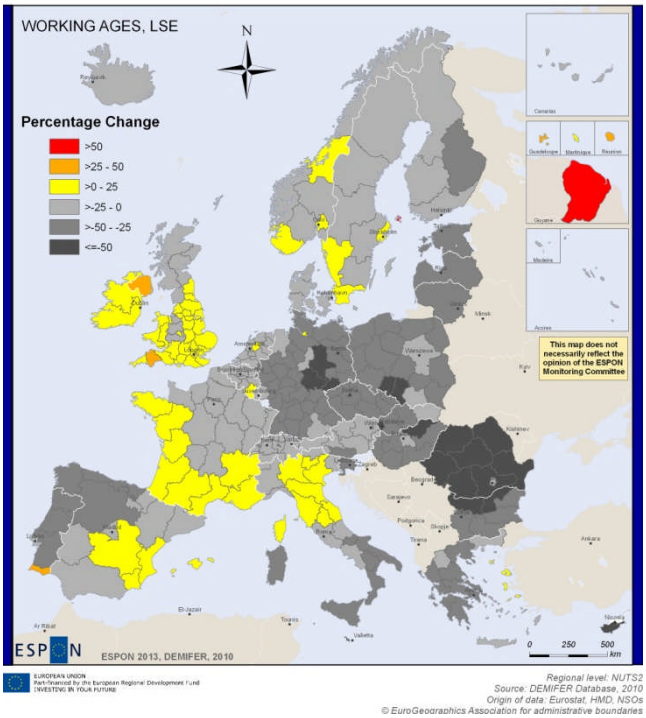

**Figure 3.6: Percentage change in working ages (ages 15-64), status quo projection, 2005-50**



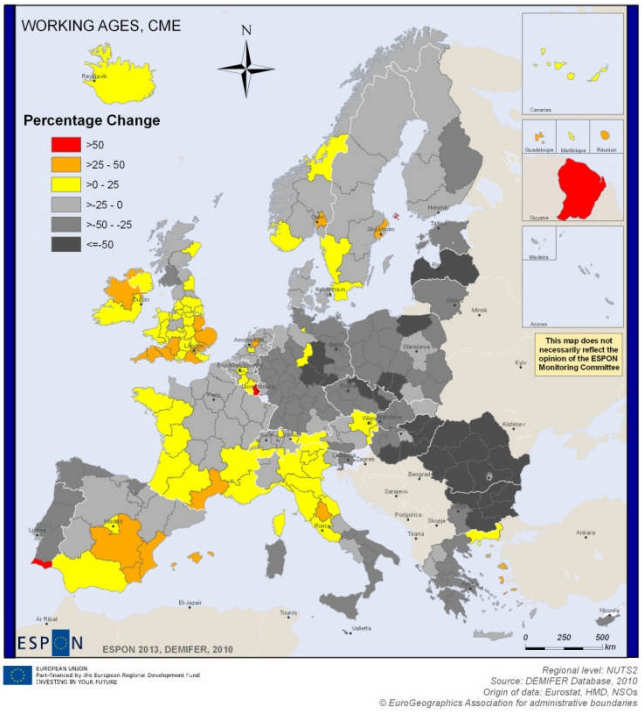

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 3.7: Percentage change in working ages (ages 15-64), four policy scenarios, 2005-50**

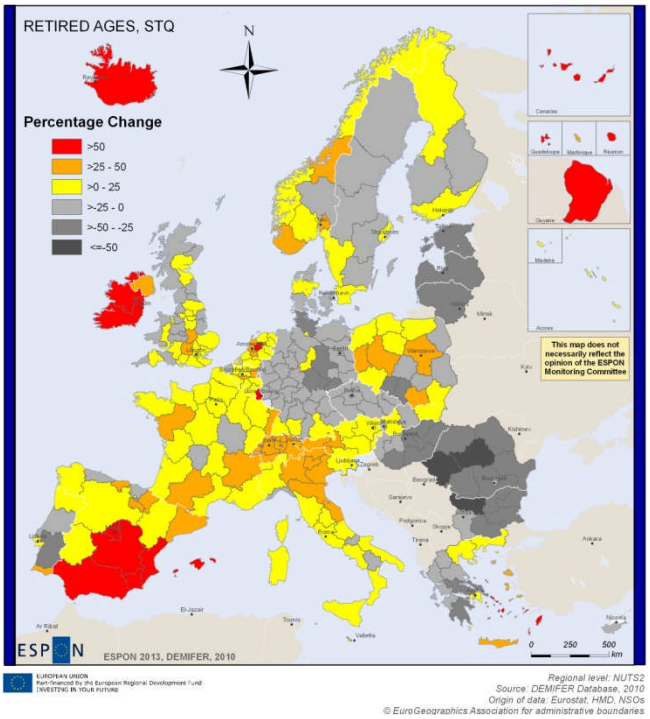
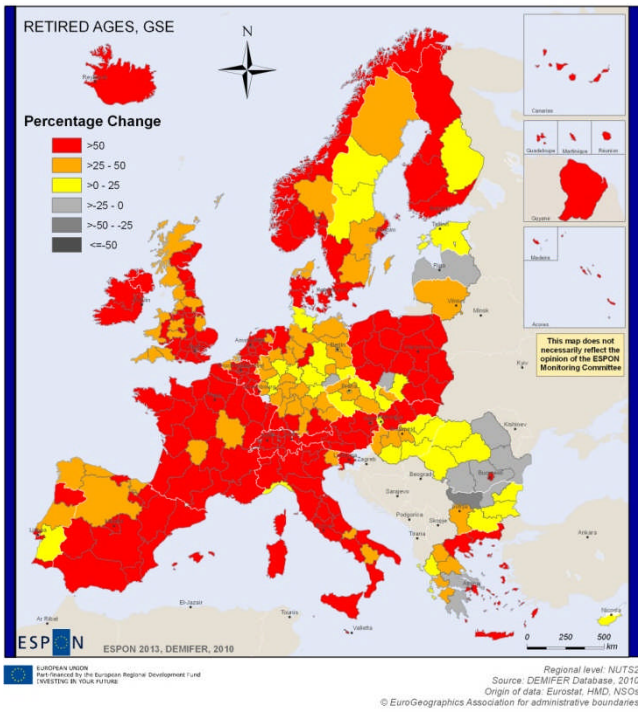
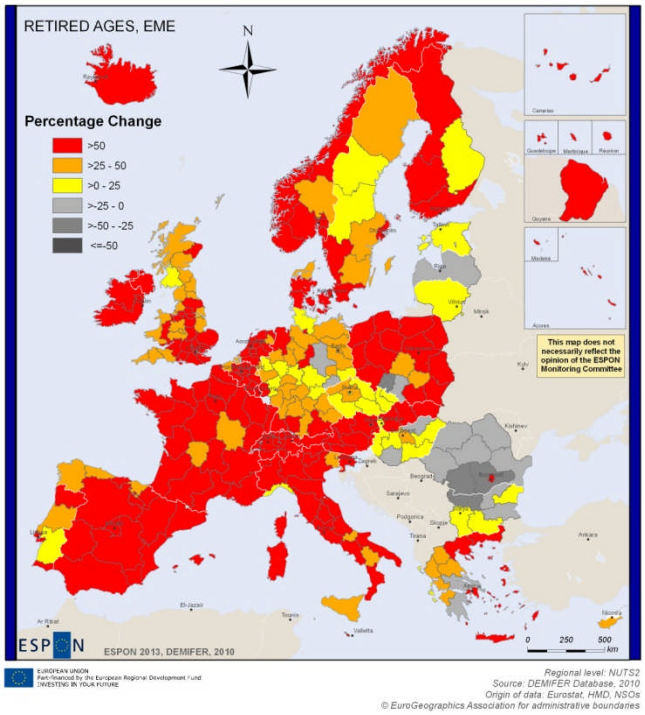


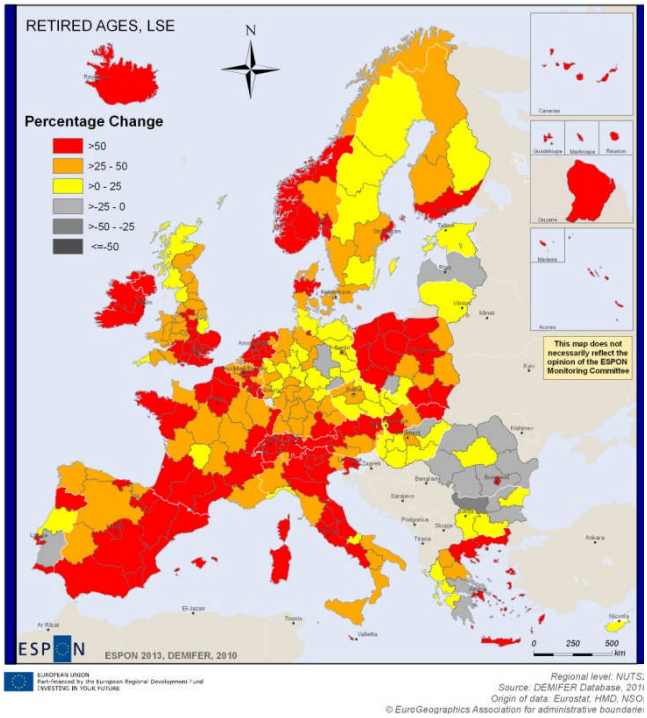

**Figure 3.8: Percentage change in older ages (ages 65+), status quo projection, 2005-50**



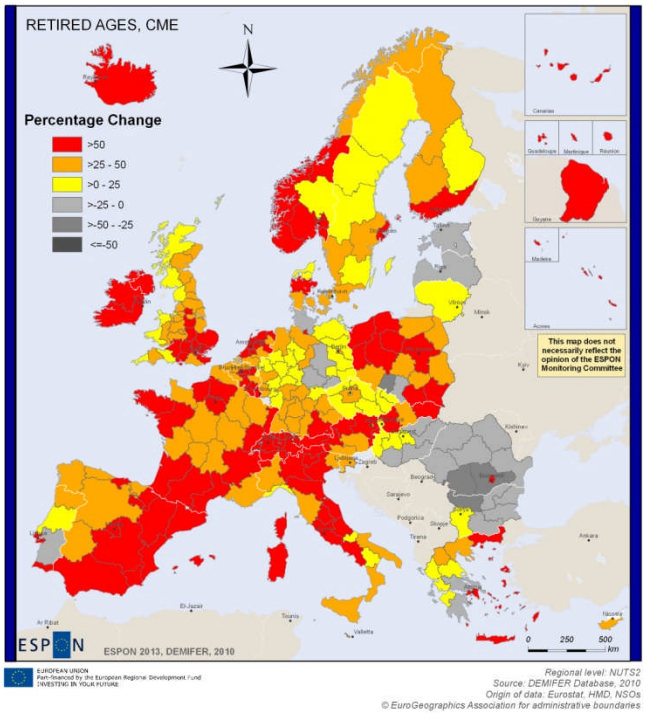

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 3.9: Percentage change in older ages (ages 65+), four policy scenarios, 2005-50**

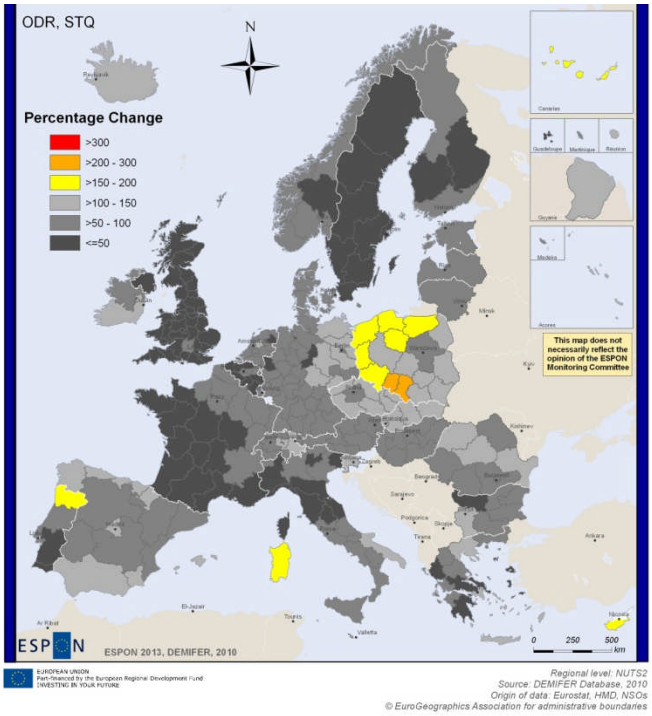
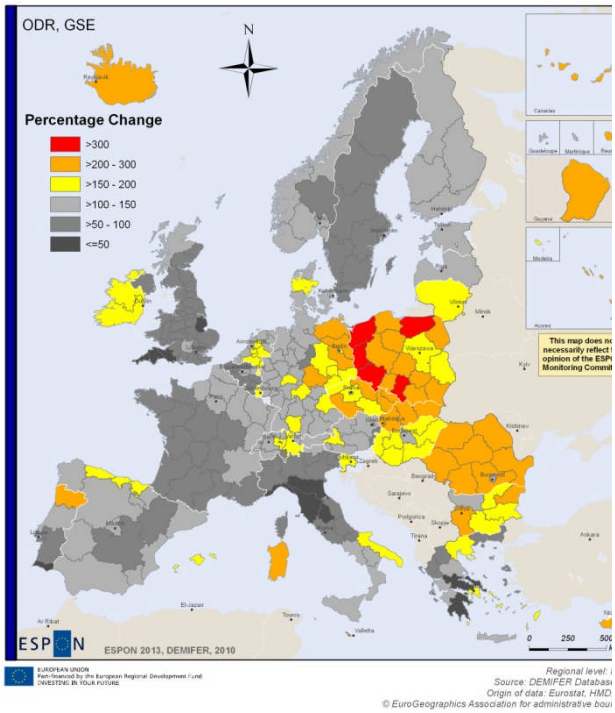
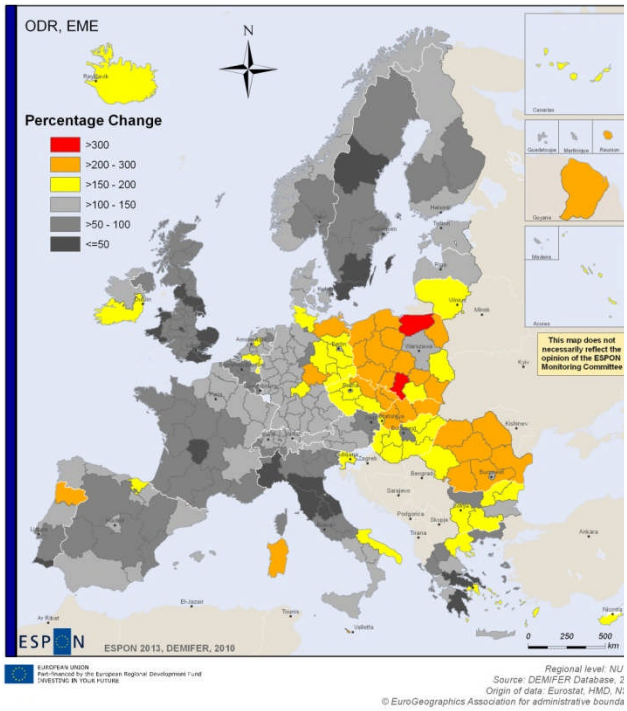


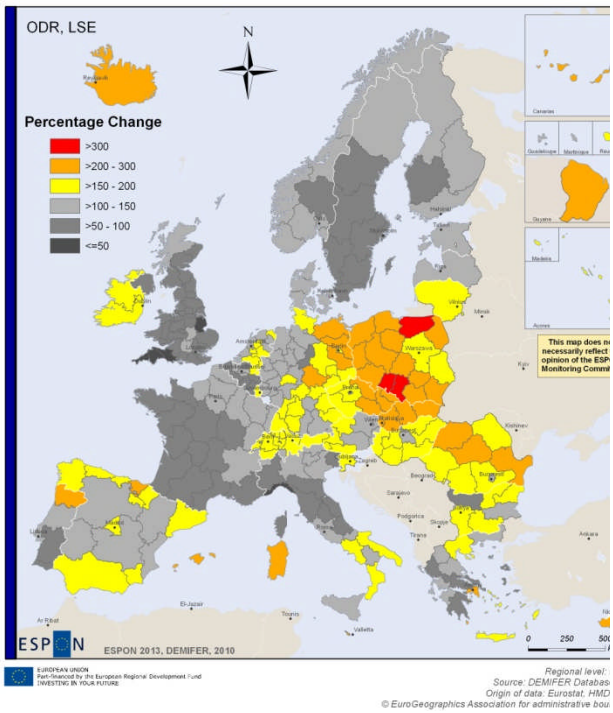

**Figure 3.10: Percentage change in old-age dependency ratios, status quo projection, 2005-50**



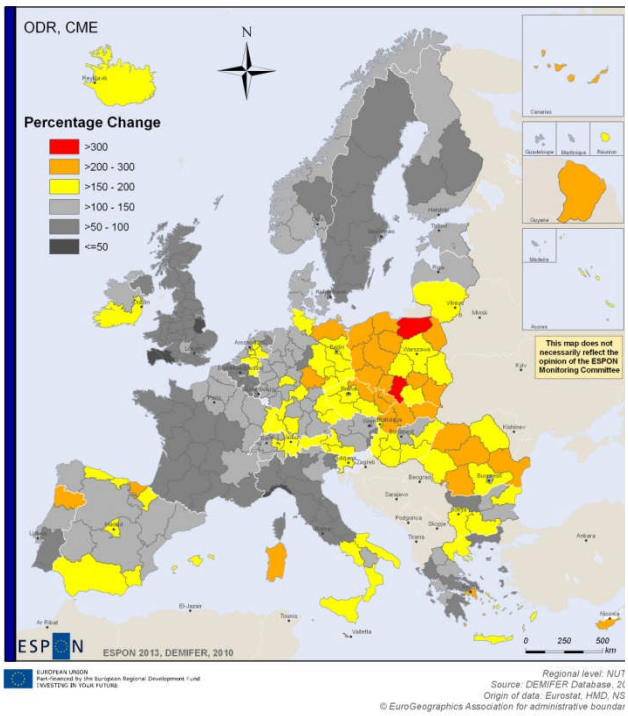

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 3.11: Percentage change in old-age dependency ratios, 2005-50**

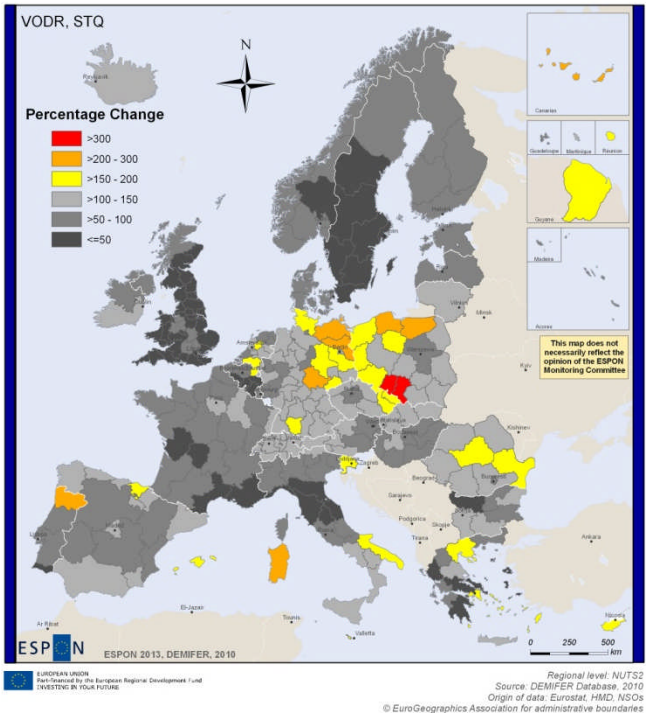
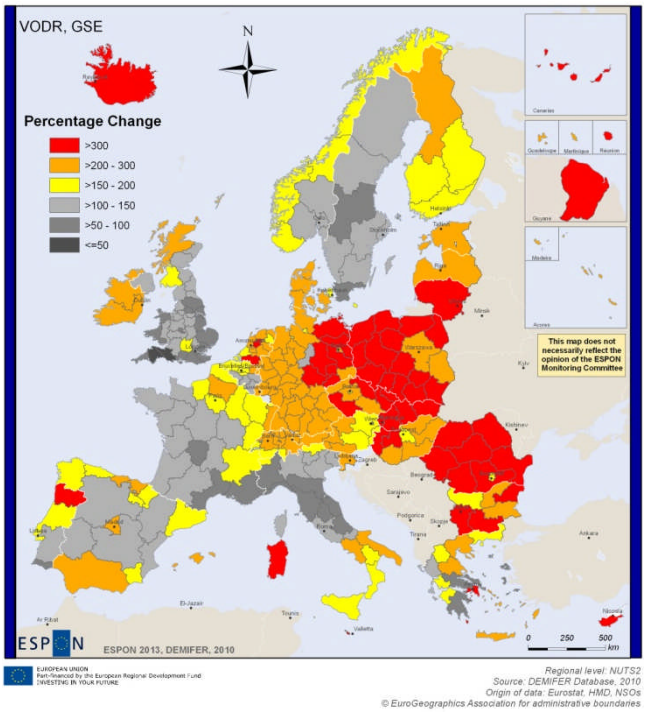
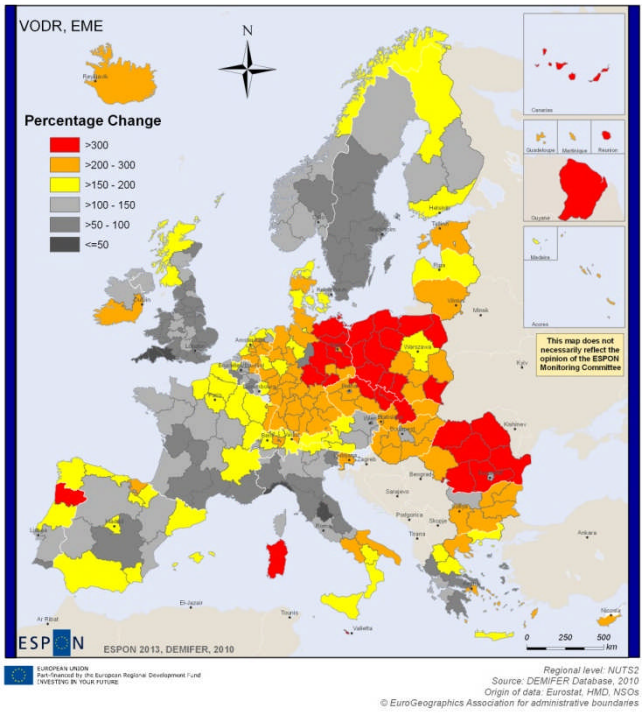


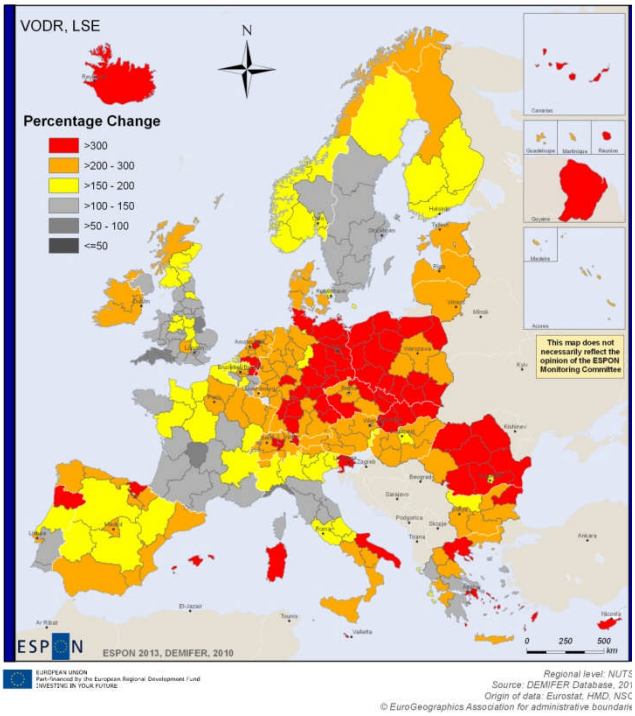

**Figure 3.12: Percentage change in very-old-age dependency ratios, status quo projection, 2005-50**



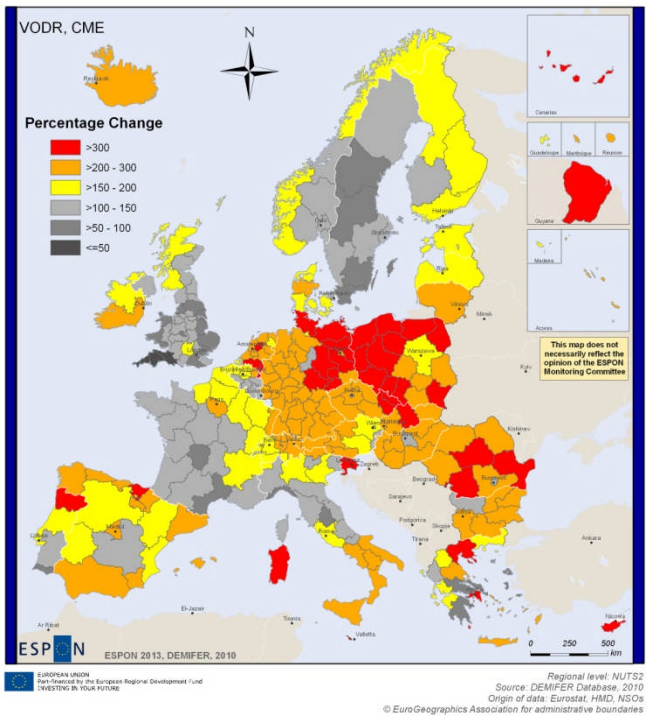

a) Growing Social Europe




b) Expanding Market Europe




c) Limited Social Europe




d) Challenged Market Europe

**Figure 3.13: Percentage change in very-old-age dependency ratios, four policy scenarios, 2005-50**

**Figure 4.1: Labour force participation, ESPON countries, 2005 and 2050**

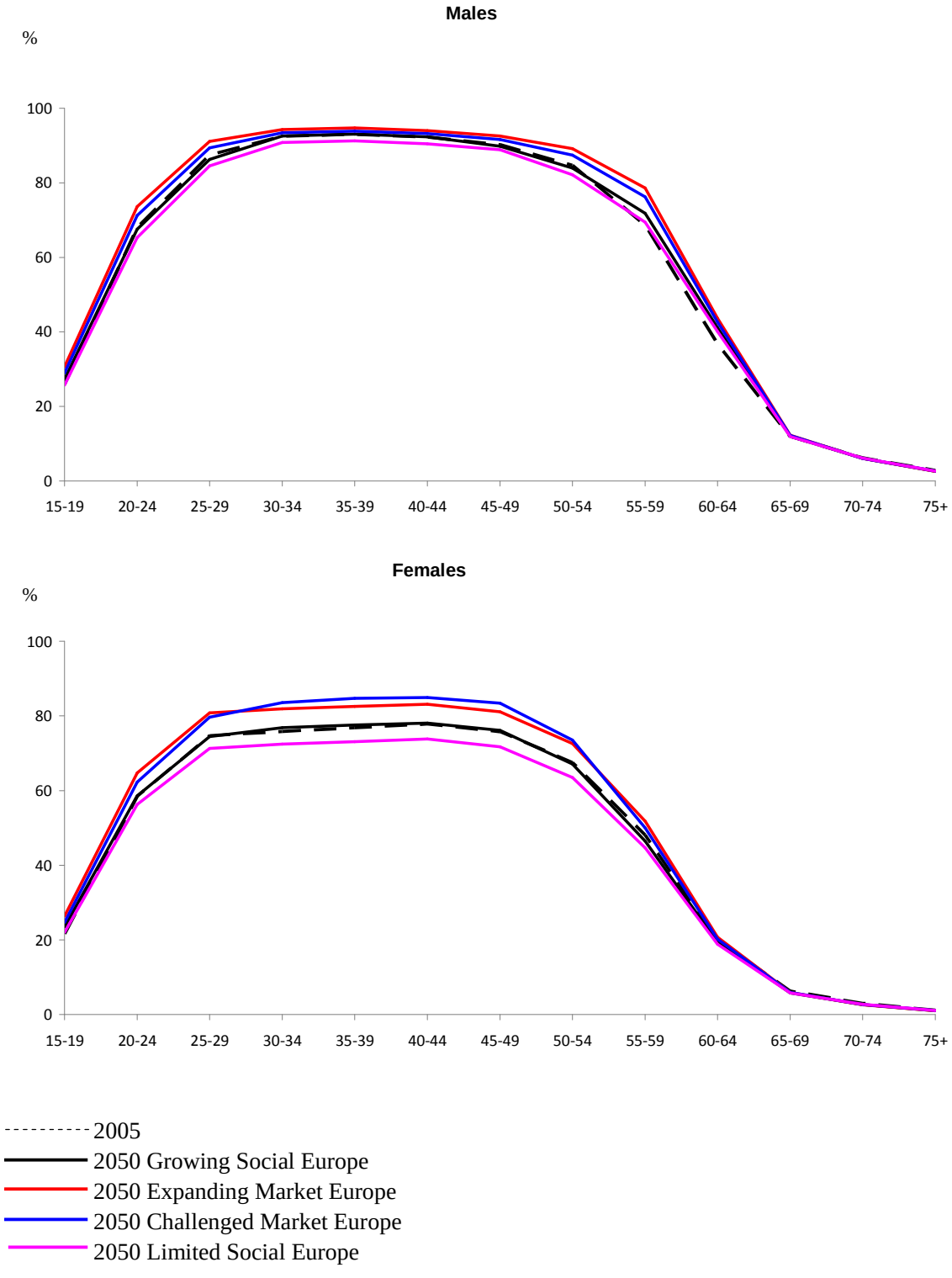
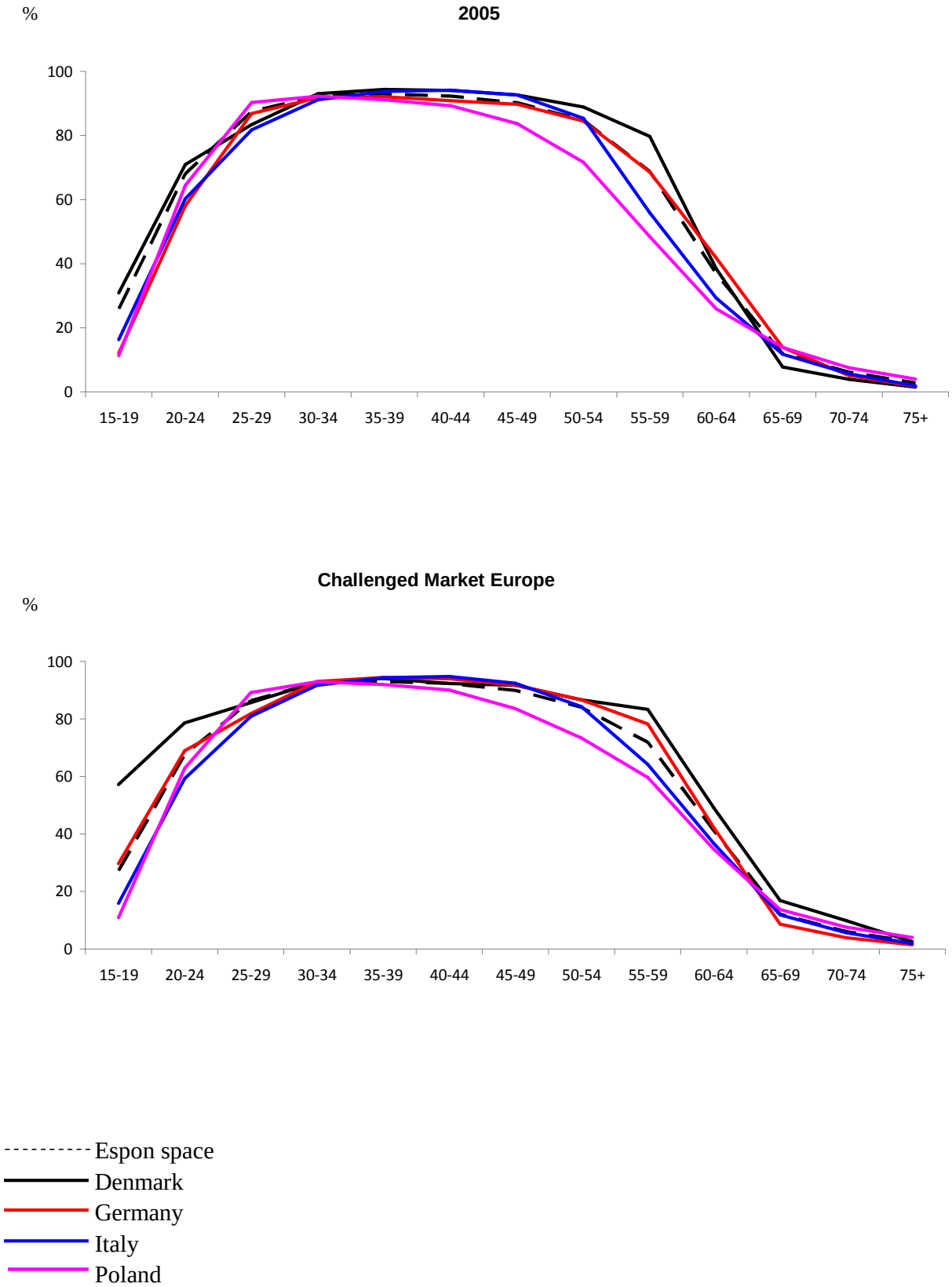
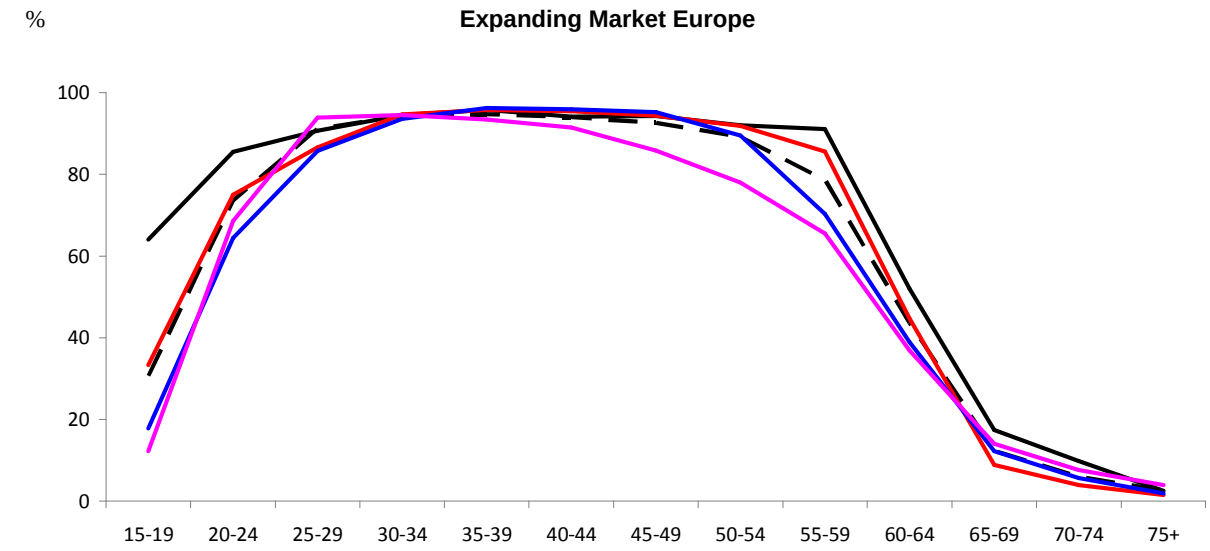
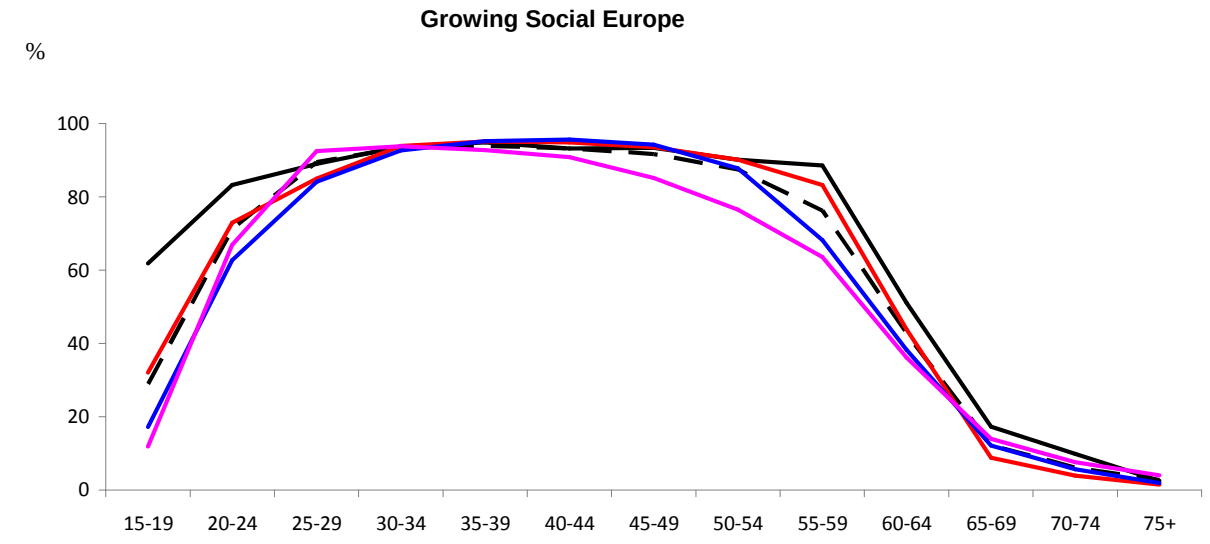


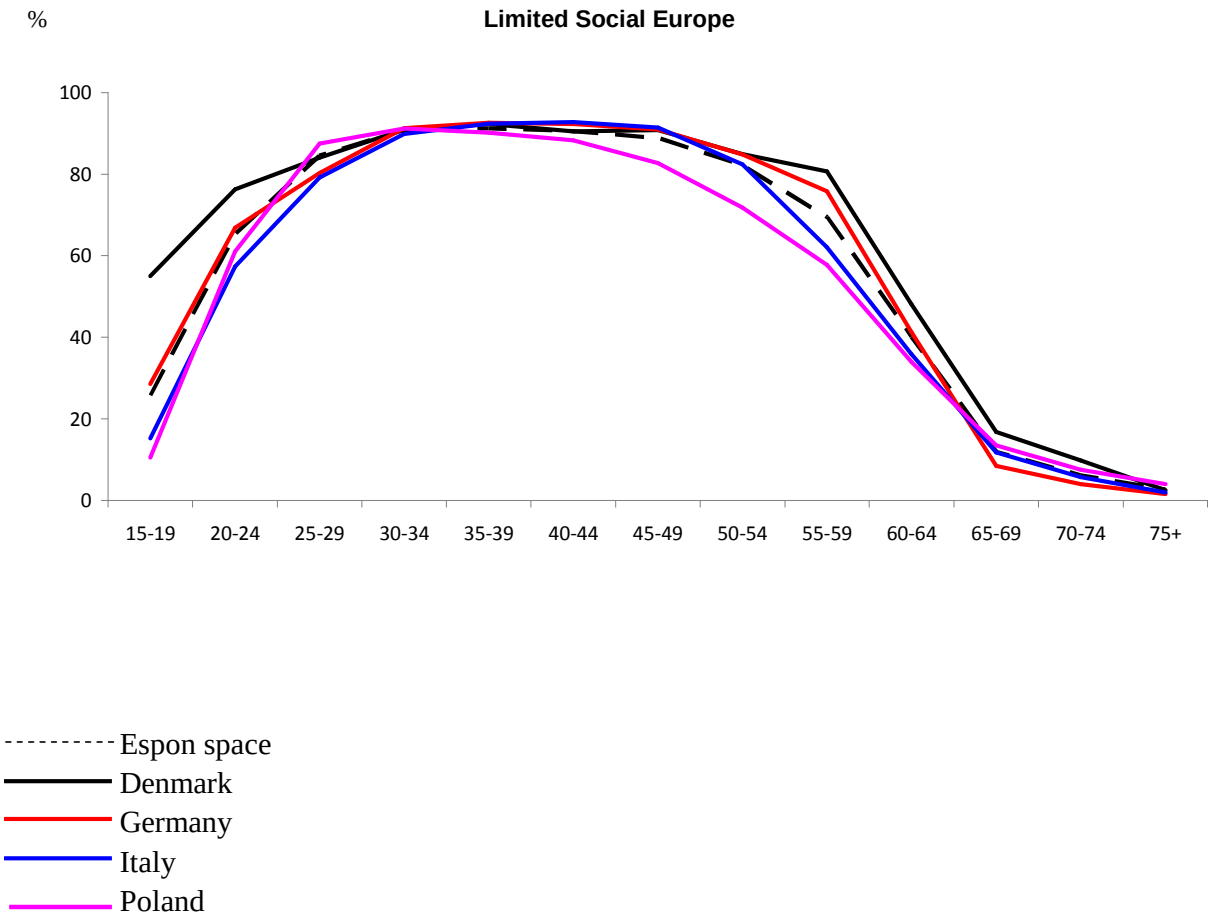
**Figure 4.2: Labour force participation of males, four selected countries, 2005 and 2050**






Espon space
Denmark
Germany
Italy
Poland


%
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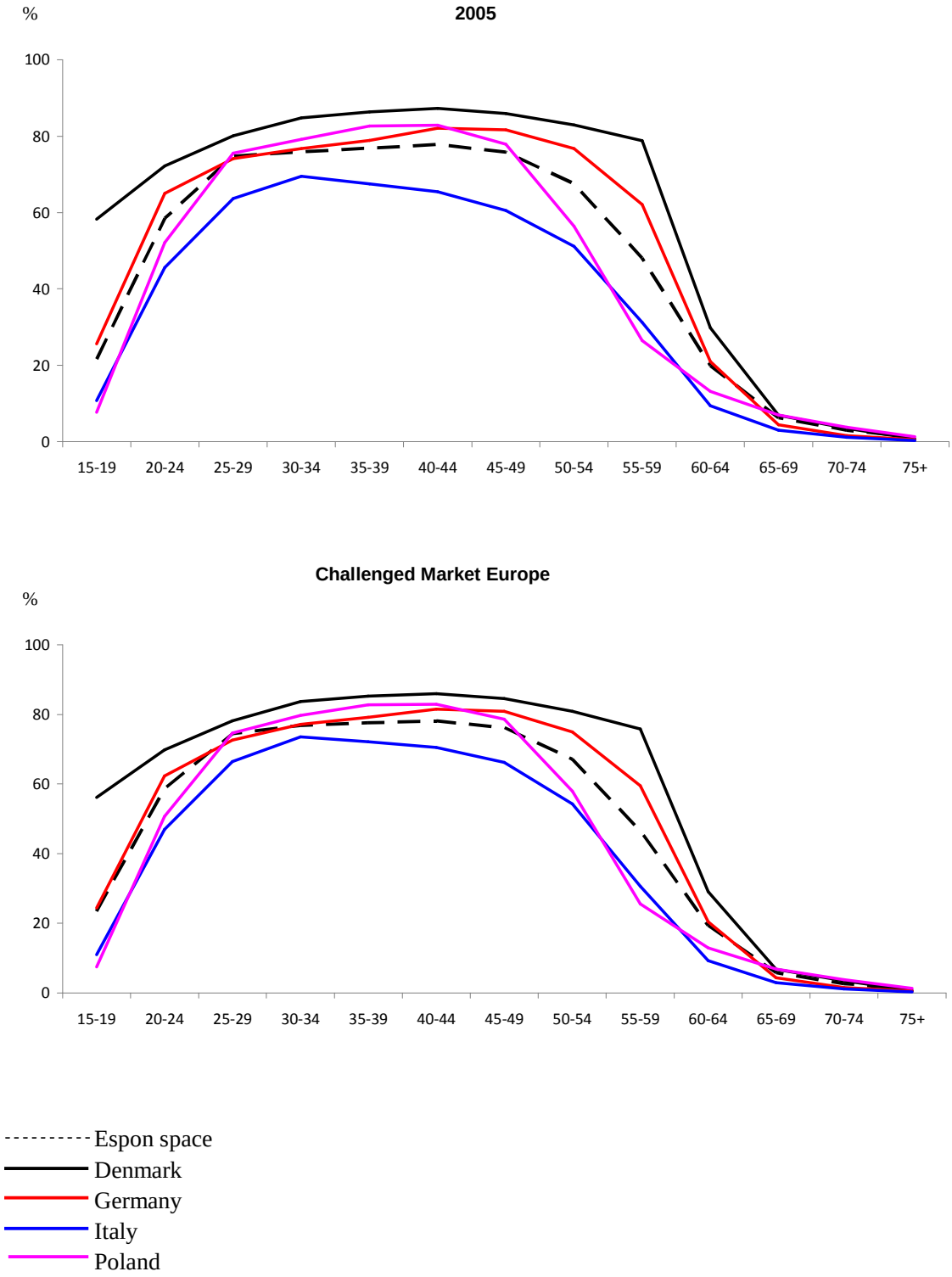
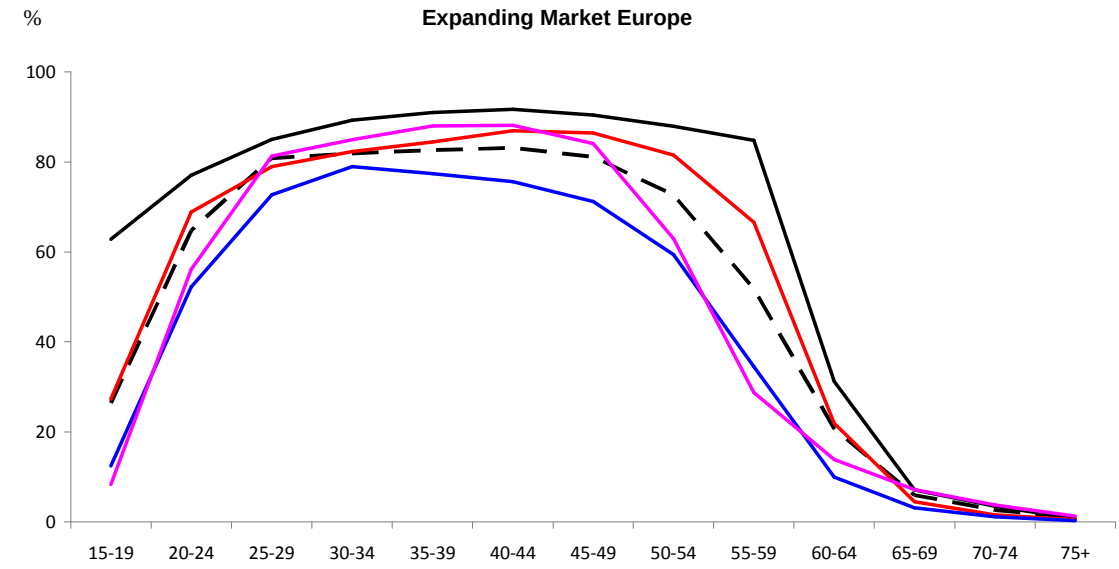
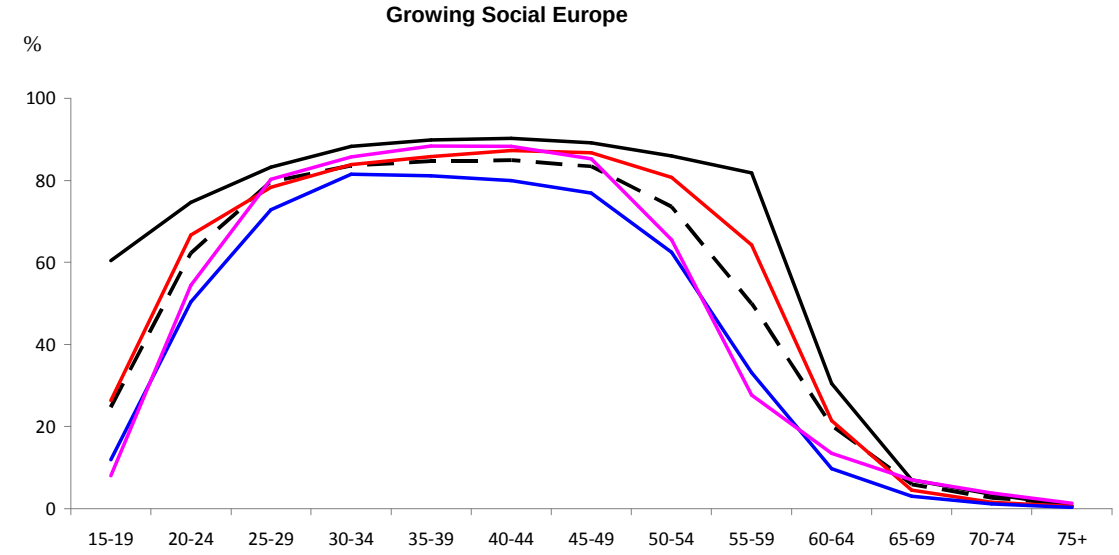
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75+
Espon space
Denmark
Germany
Italy
Poland

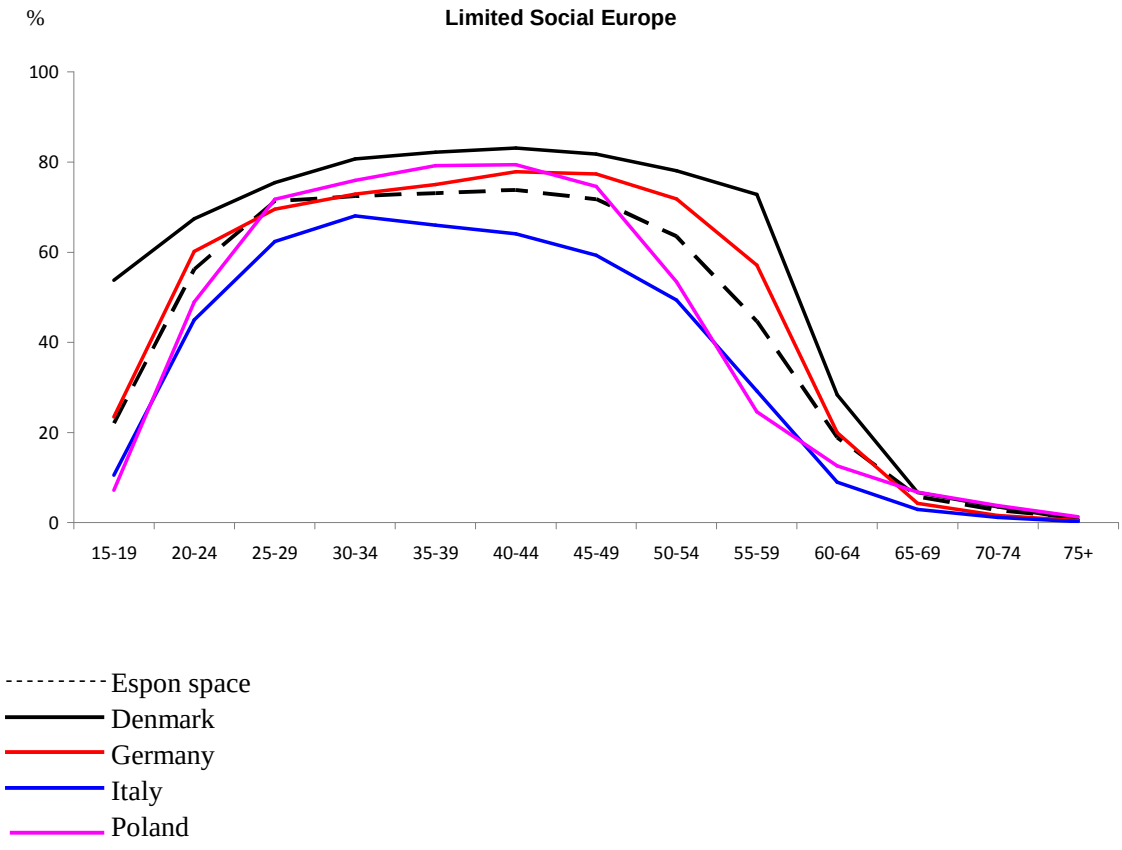
**Figure 4.3: Labour force participation of females, four selected countries, 2005 and 2050**






Espon space
Denmark
Germany
Italy
Poland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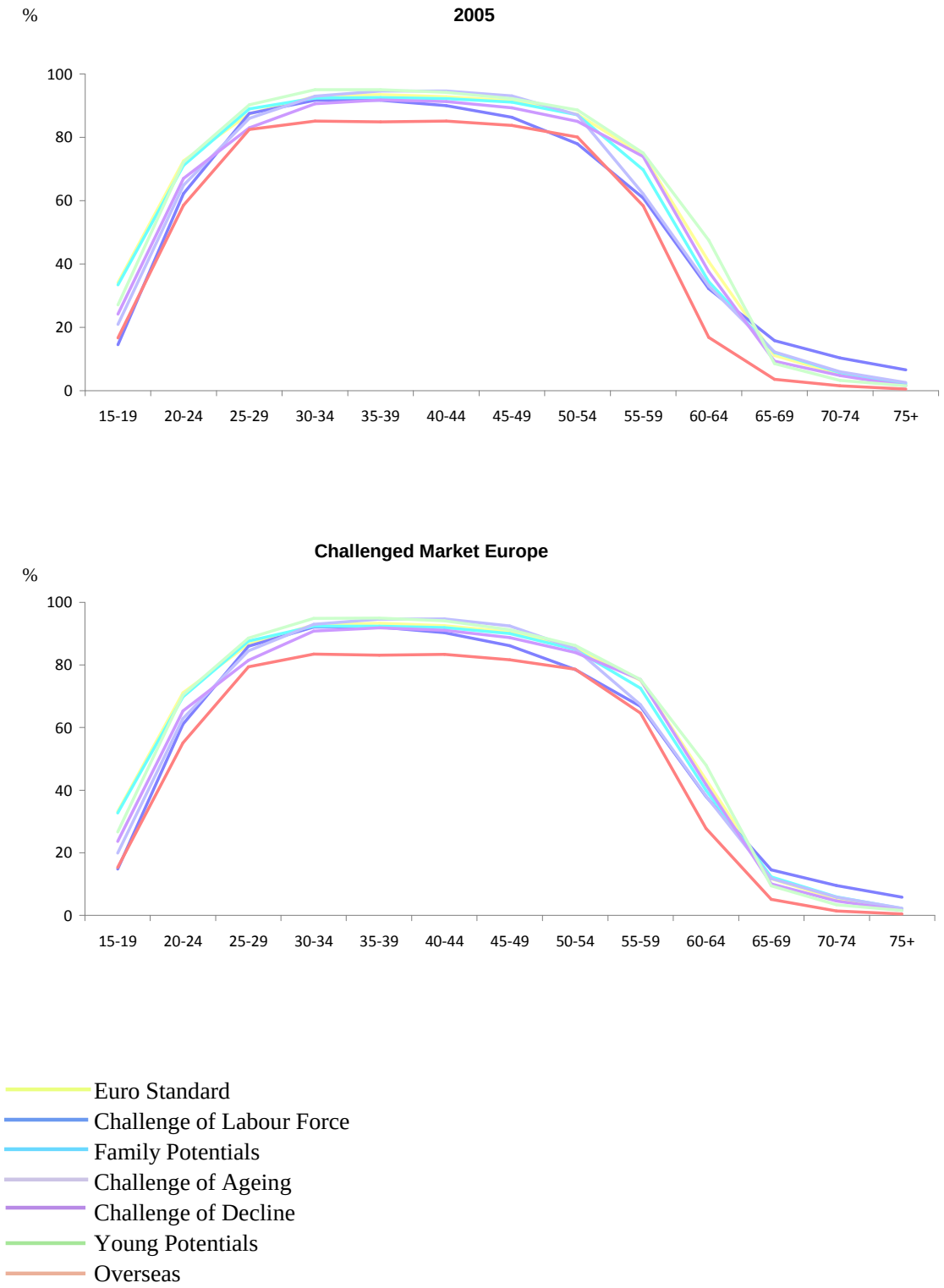
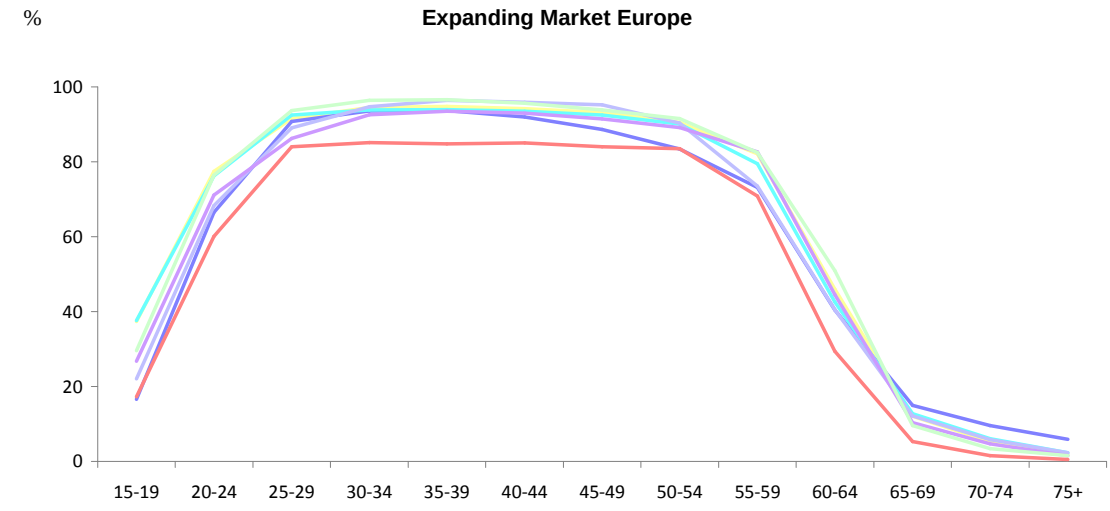
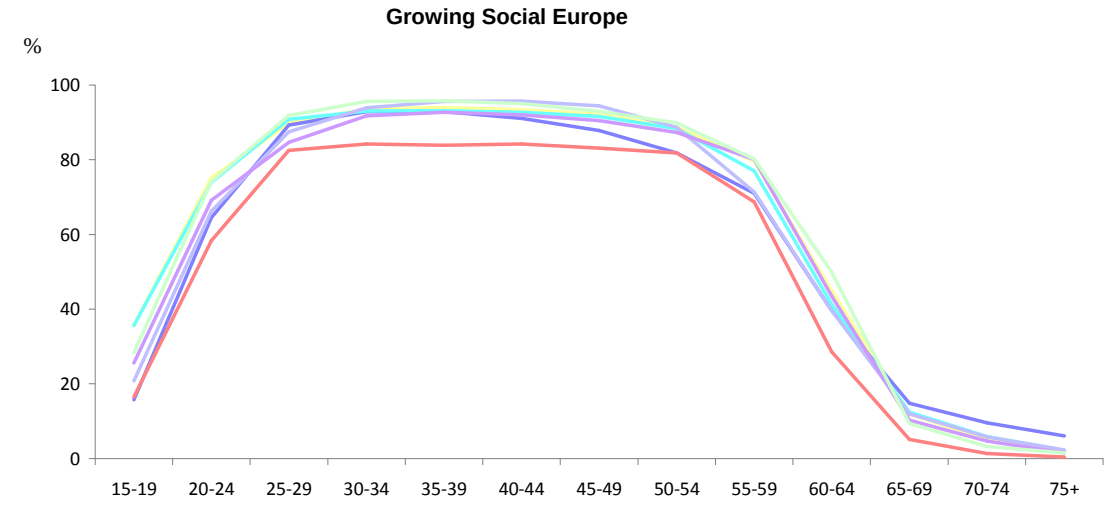
50-54
55-59
60-64
65-69
70-74
75+
Espon space
Denmark
Germany
Italy
Poland

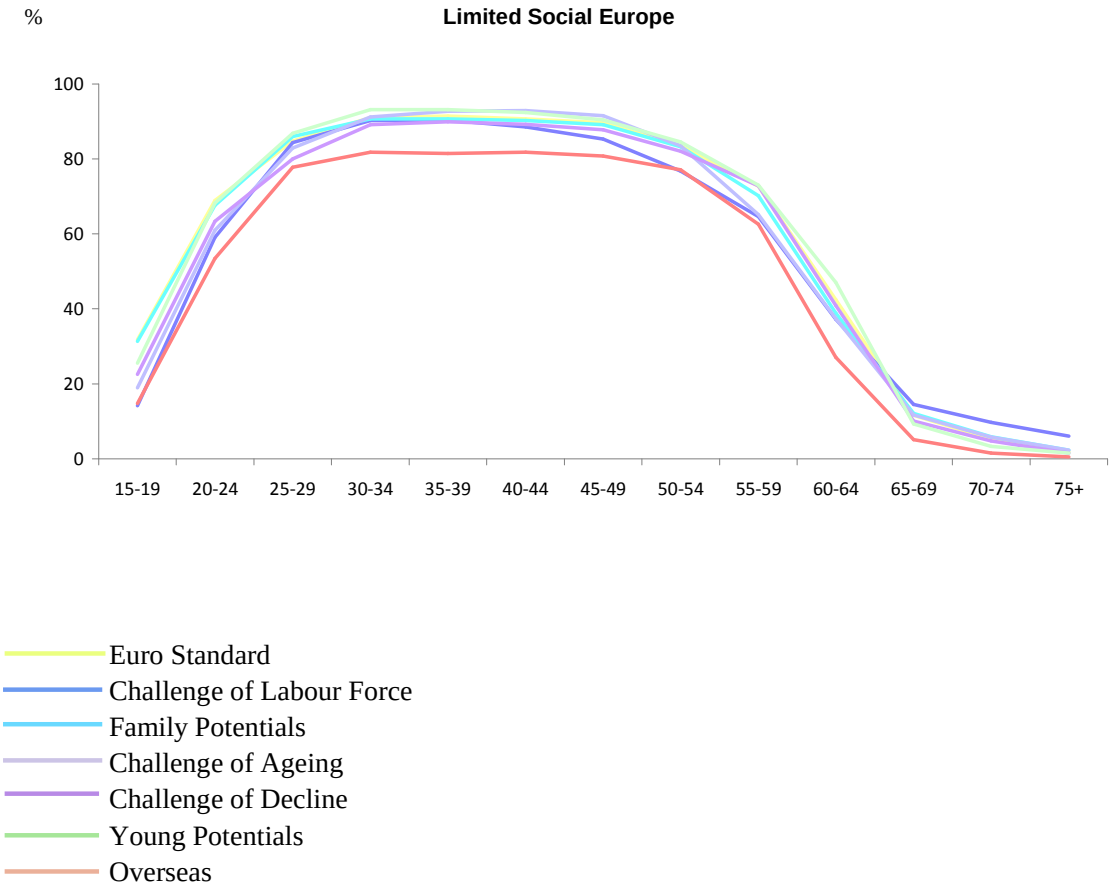
**Figure 4.4: Labour force participation of males, clusters, 2005 and 2050**






Euro Standard
Challenge of Labour Force
Family Potentials
Challenge of Ageing
Challenge of Decline
Young Potentials
Overseas


%
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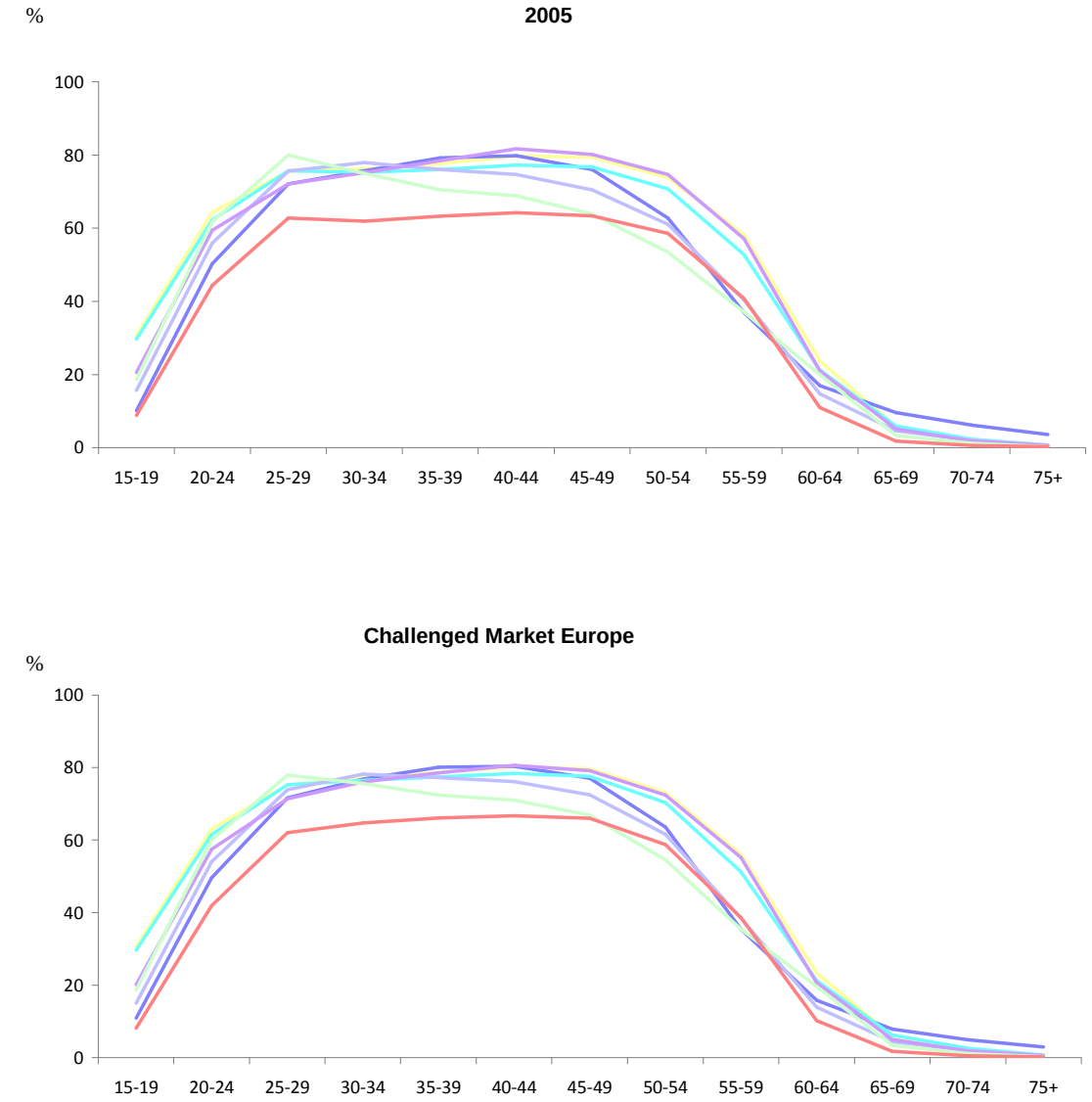
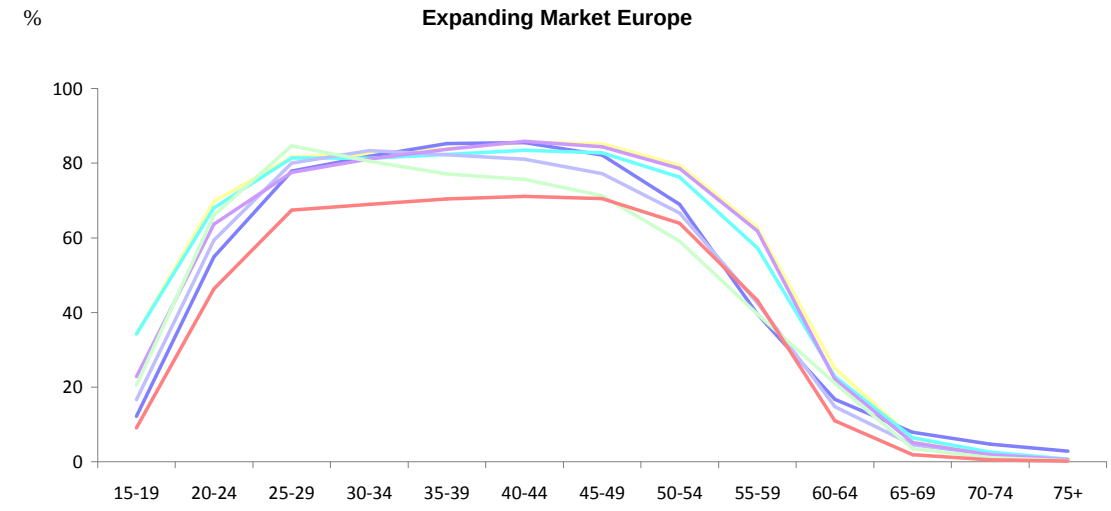
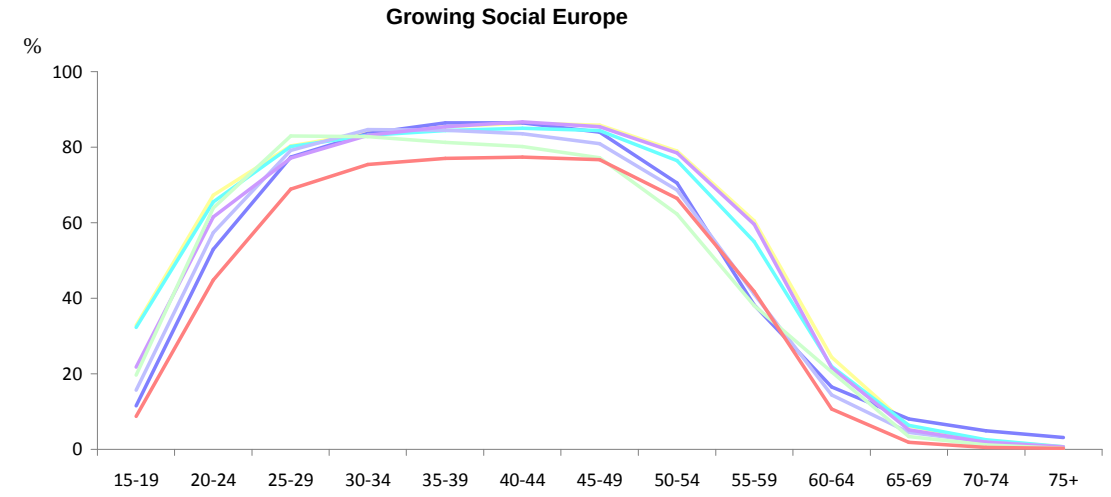
45-49
50-54
55-59
60-64
65-69
70-74
75+
Euro Standard
Challenge of Labour Force
Family Potentials
Challenge of Ageing
Challenge of Decline
Young Potentials
Overseas

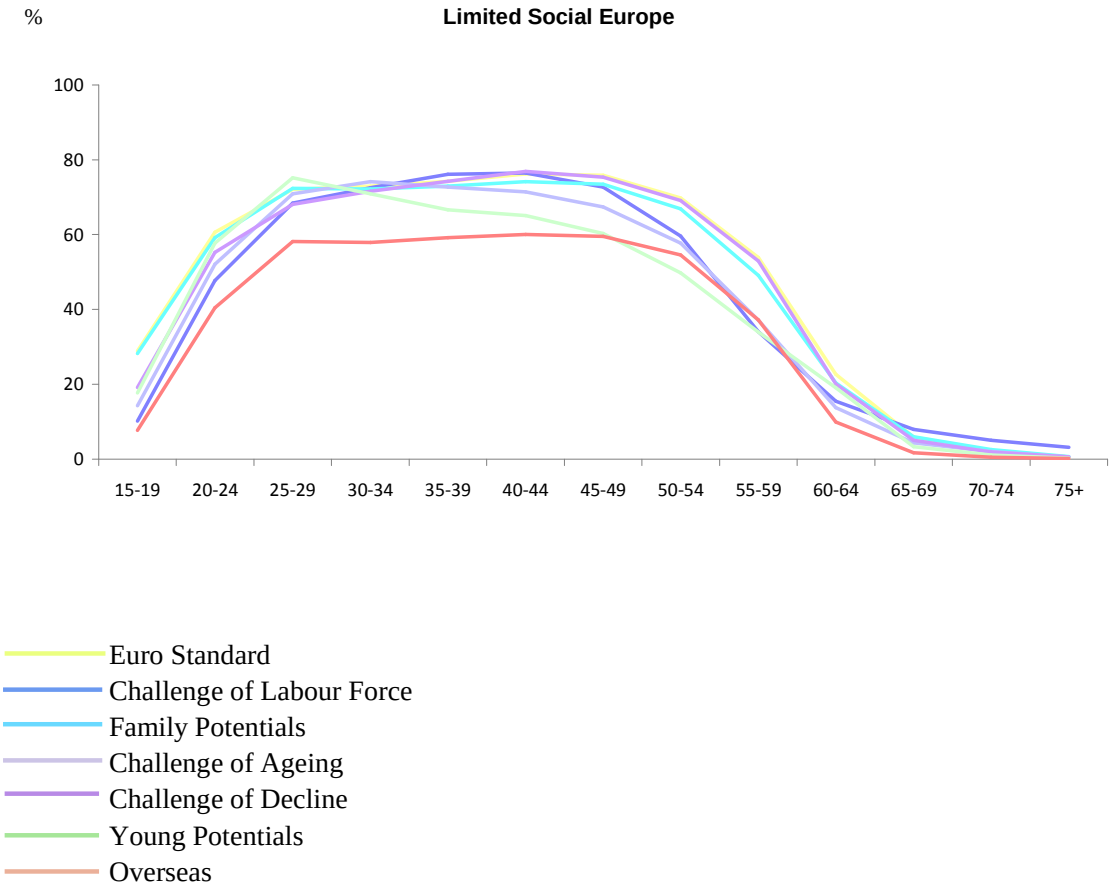
**Figure 4.5: Labour force participation of females, clusters, 2005 and 2050**






Euro Standard
Challenge of Labour Force
Family Potentials
Challenge of Ageing
Challenge of Decline
Young Potentials
Overseas


%
Limited Social Europe
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40-44
45-49
50-54
55-59
60-64
65-69
70-74
75+
Euro Standard
Challenge of Labour Force
Family Potentials
Challenge of Ageing
Challenge of Decline
Young Potentials
Overseas

## Figure 4.6: Females labour force change 2005-2050, ESPON space

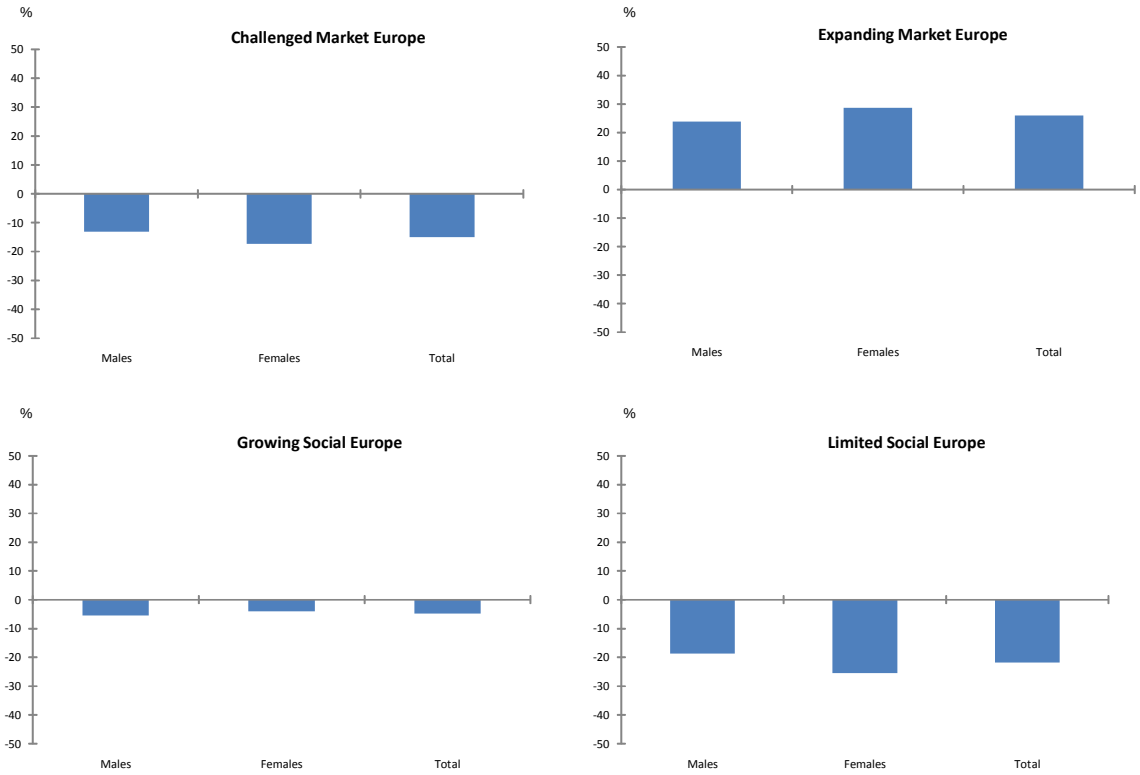
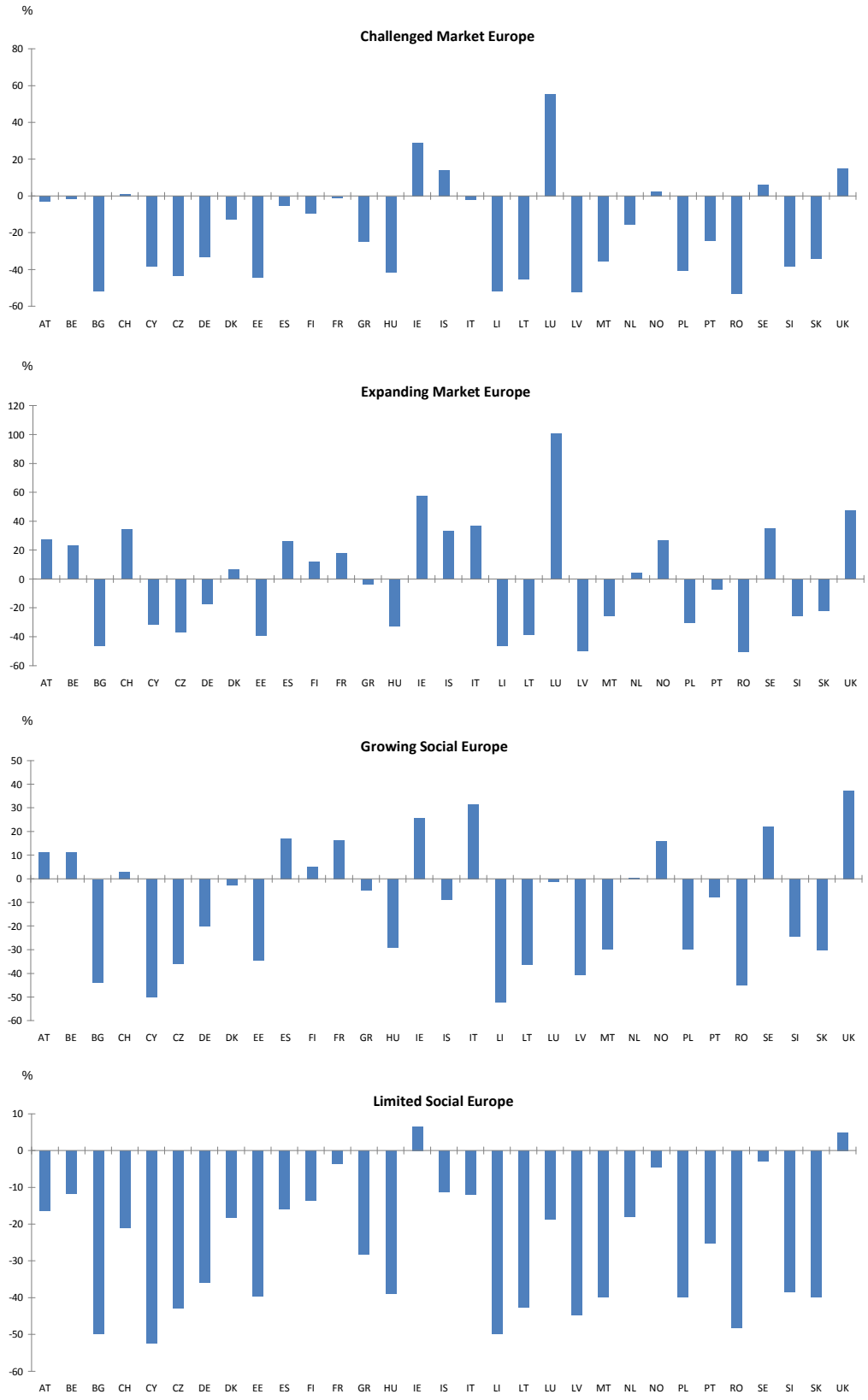
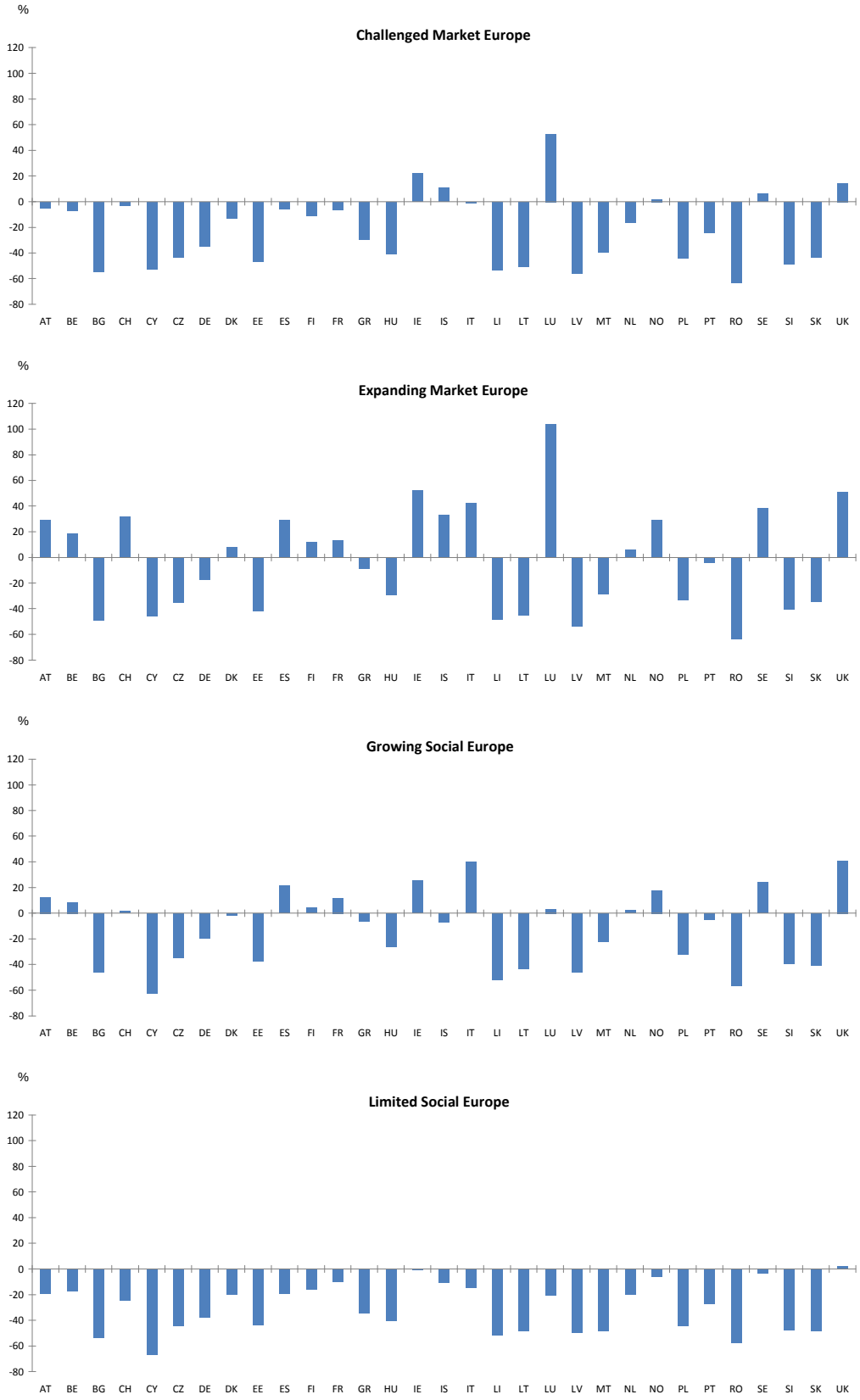


**Figure 4.7: Labour force change 2005-2050, countries**



## Figure 4.8: Male labour force change 2005-2050, countries



## Figure 4.9: Female labour force change 2005-2050, countries

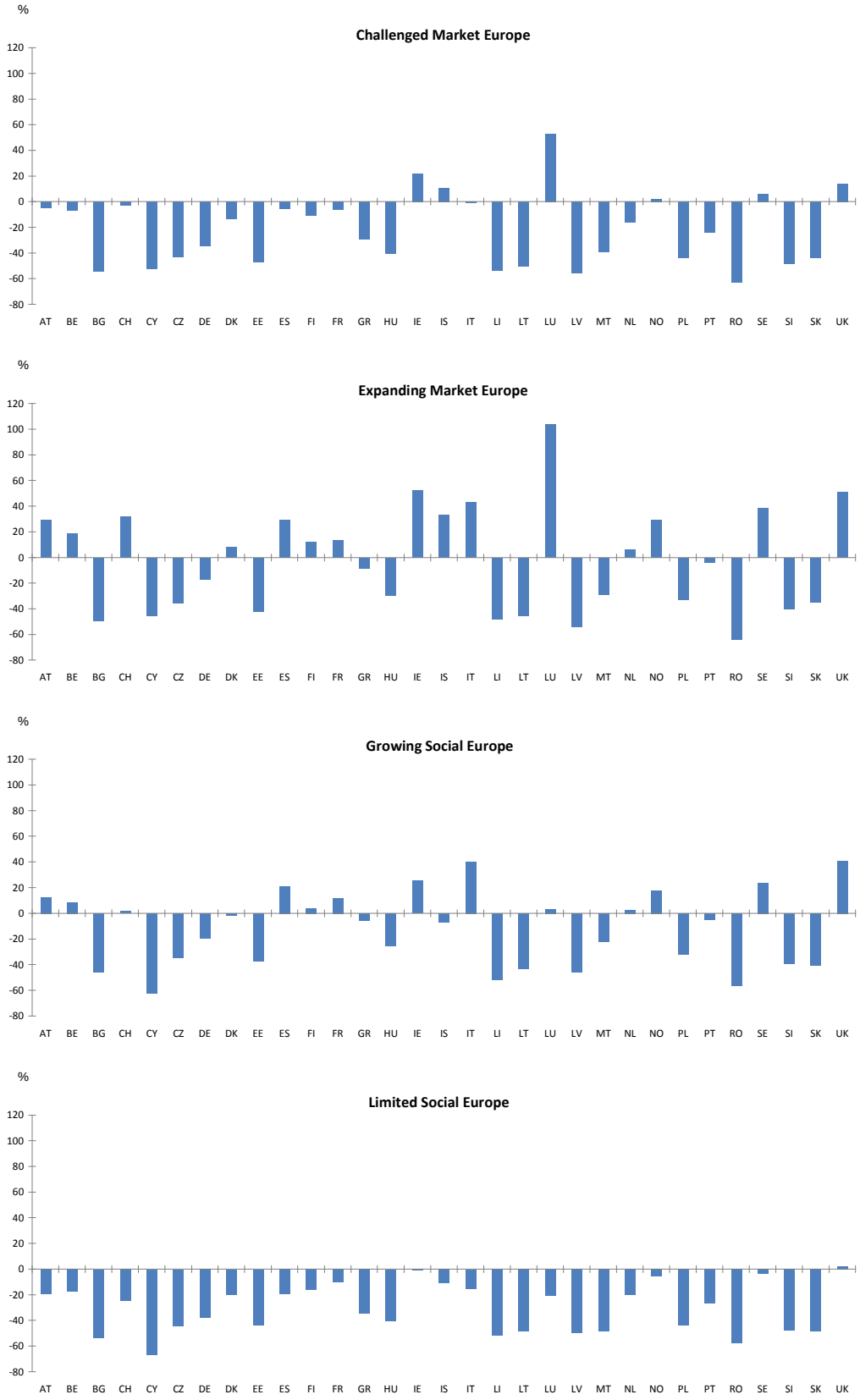


**Figure 4.10: Male labour force change 2005-2050, clusters, Challenged Market Europe scenario**

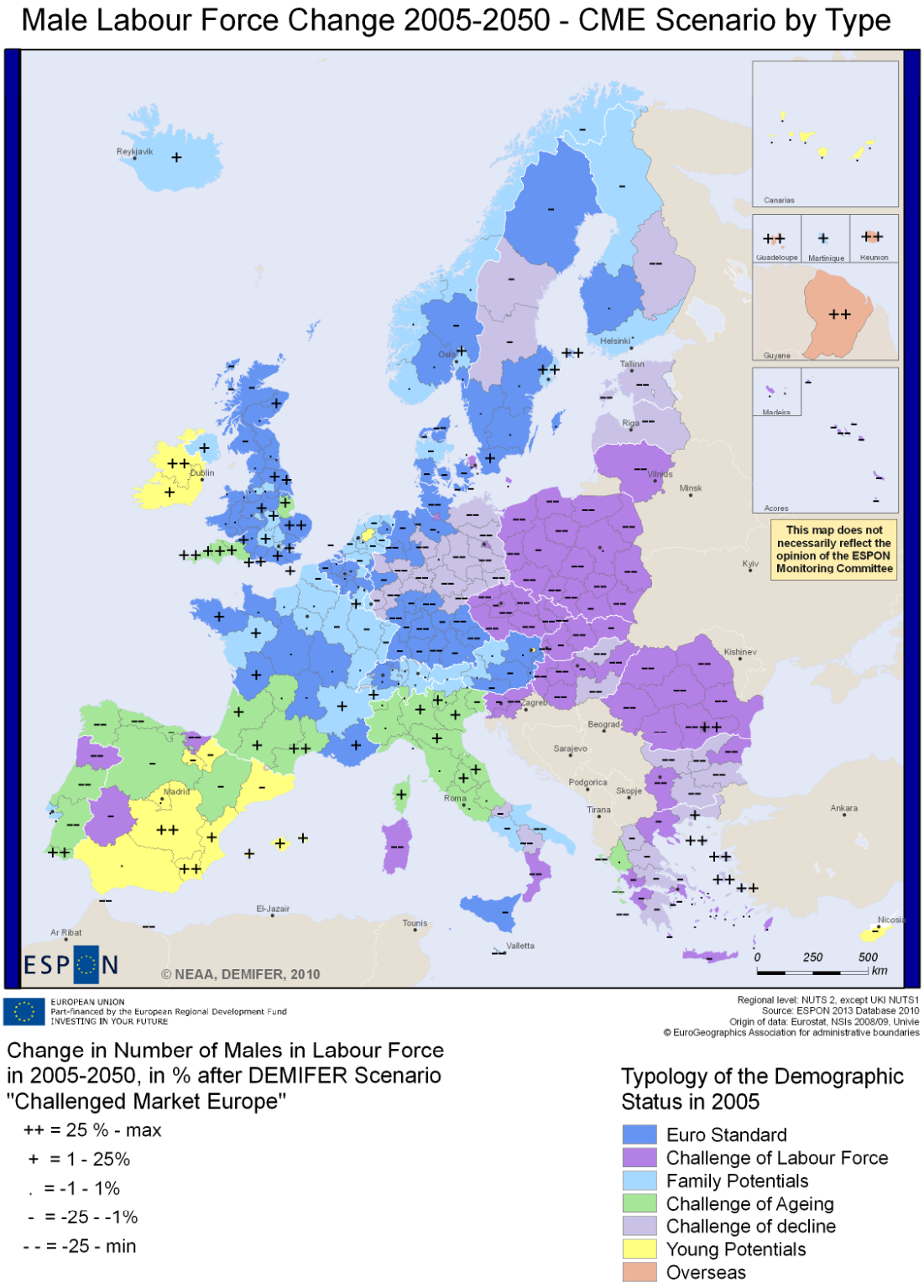


**Figure 4.11: Male labour force change 2005-2050, clusters, Expanding Market Europe scenario**

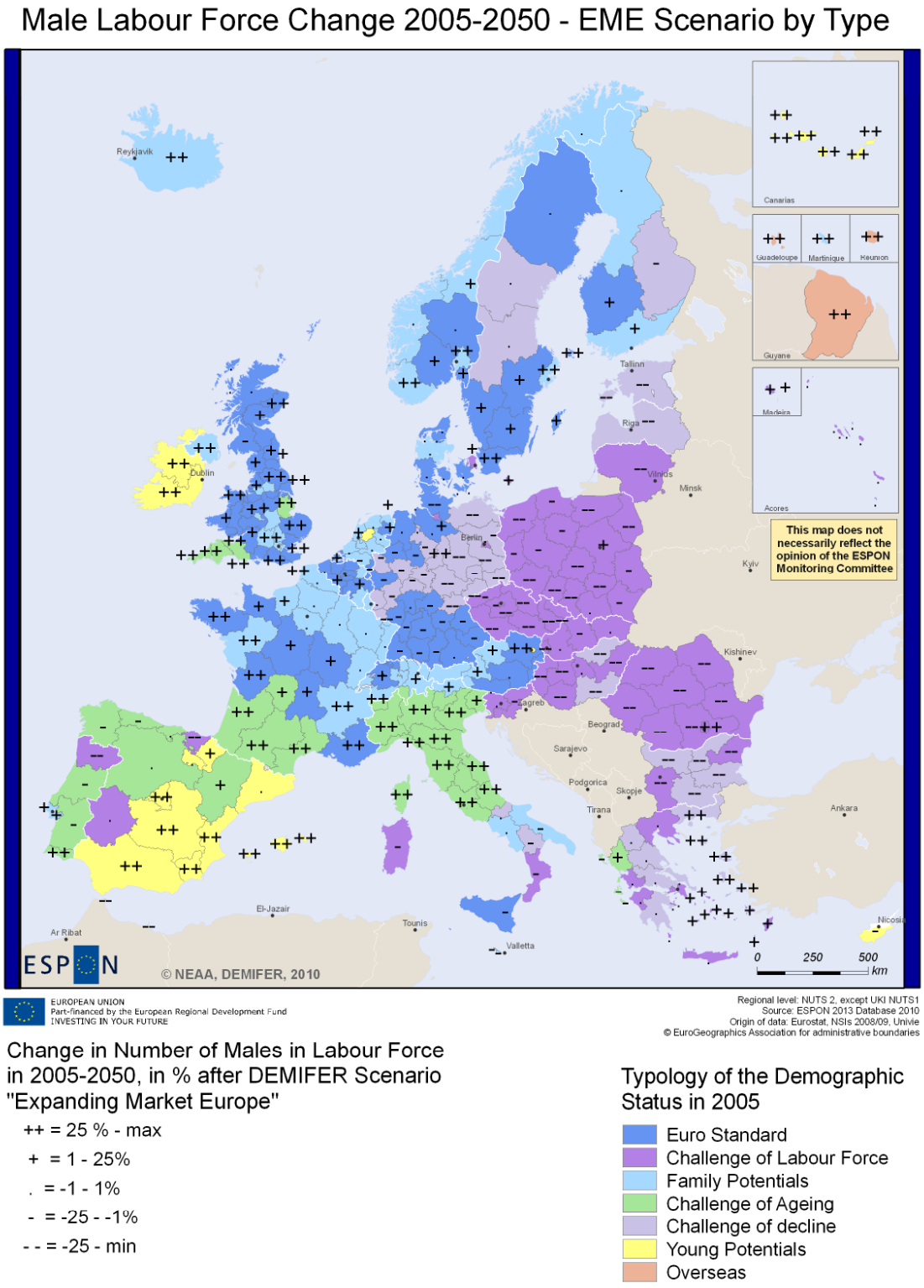


**Figure 4.12: Male labour force change 2005-2050, clusters, Growing Social Europe scenario**

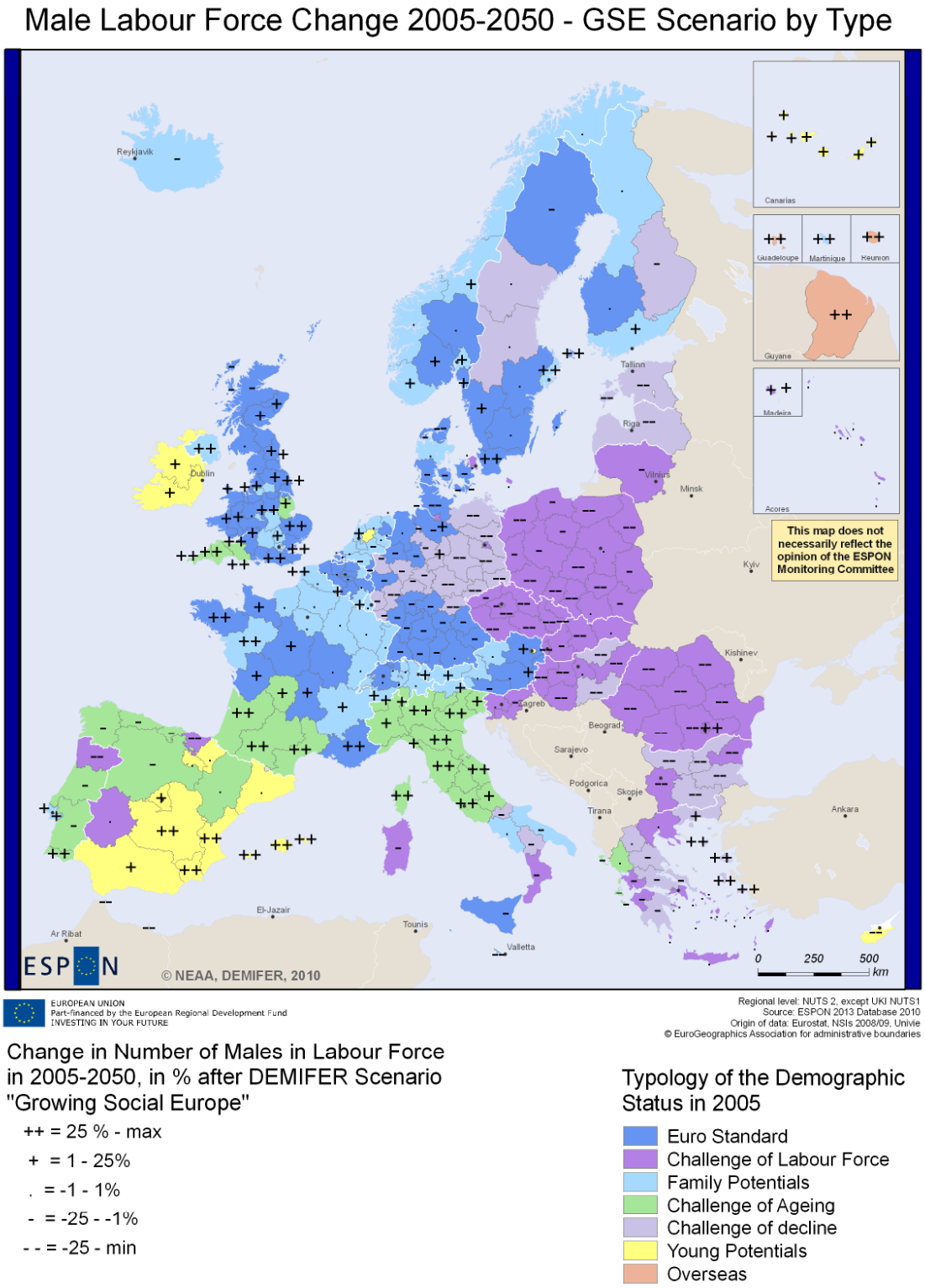


**Figure 4.13: Male labour force change 2005-2050, clusters, Limited Social Europe scenario**

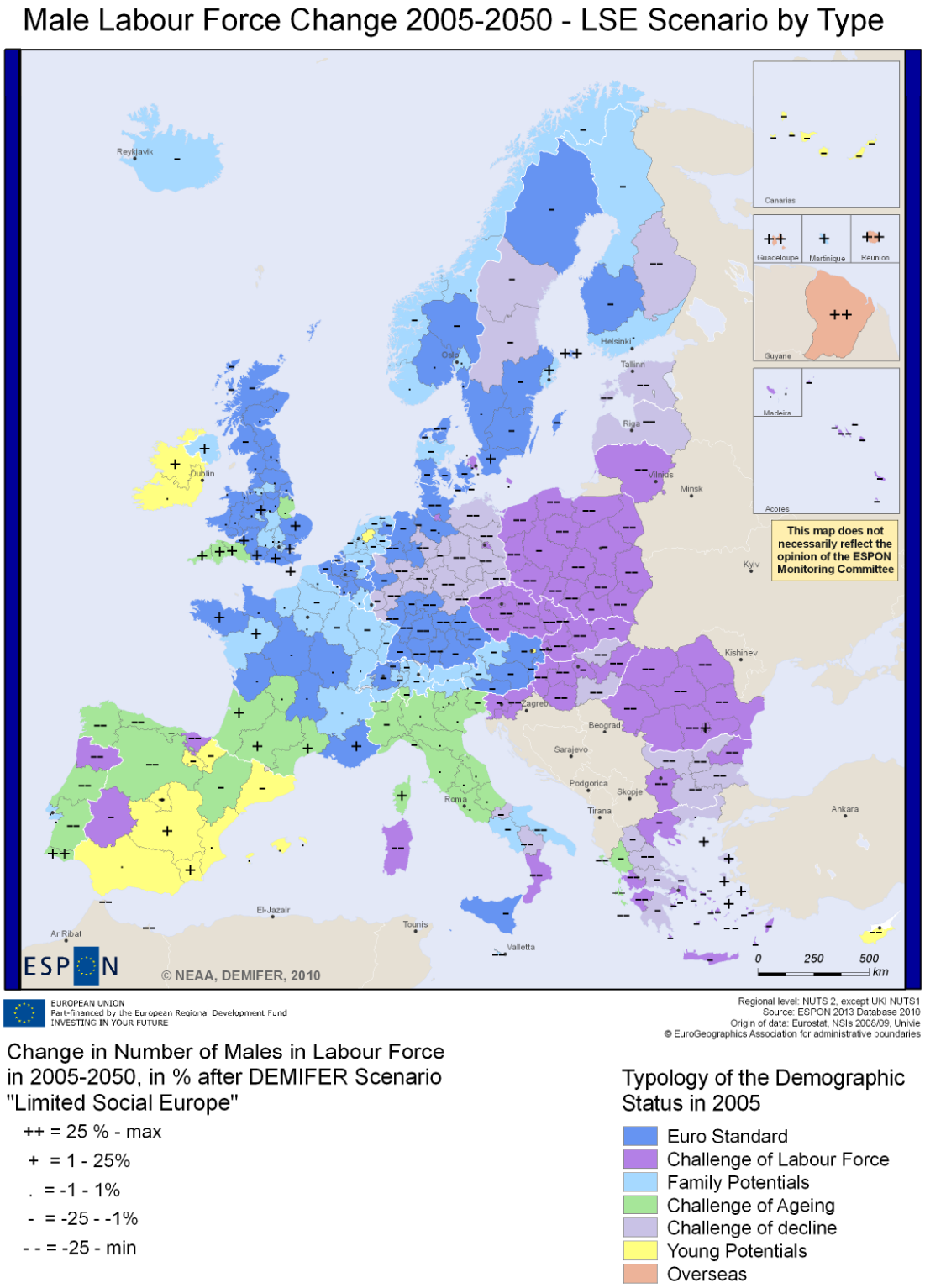


**Figure 4.14: Female labour force change 2005-2050, clusters, Challenged Market Europe scenario**

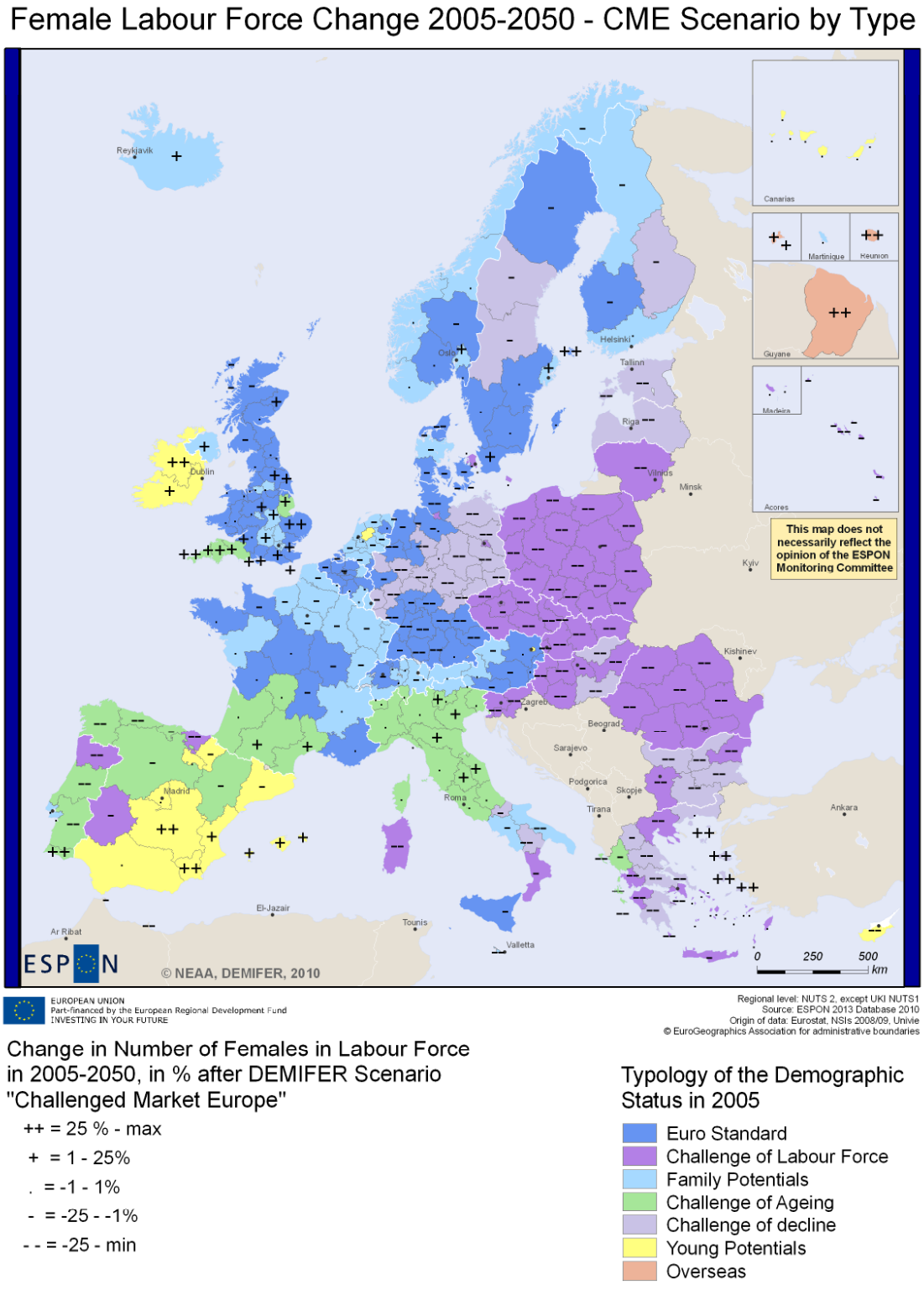


**Figure 4.15: Female labour force change 2005-2050, clusters, Expanding Market Europe scenario**

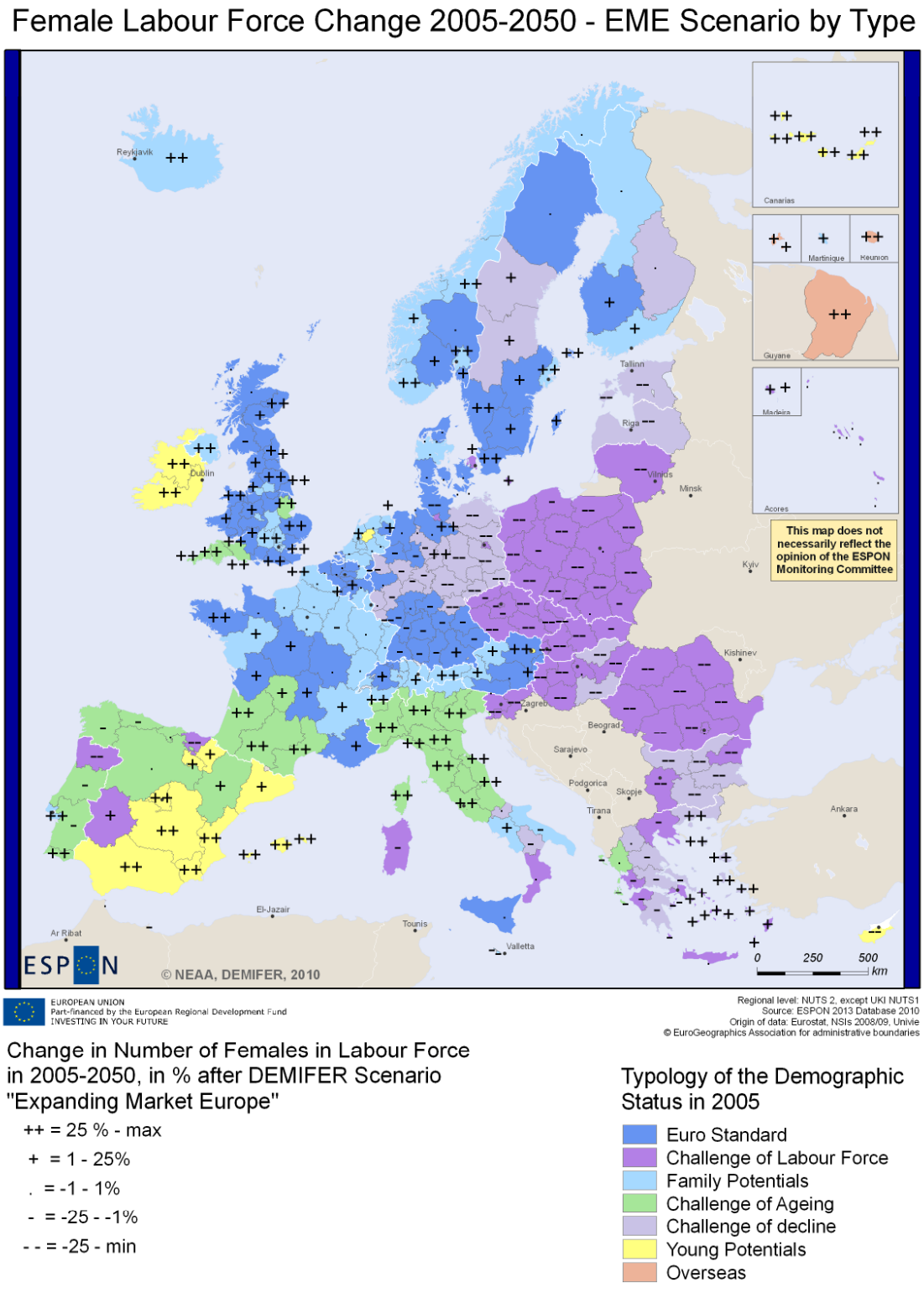


**Figure 4.16: Female labour force change 2005-2050, clusters, Growing Social Europe scenario**

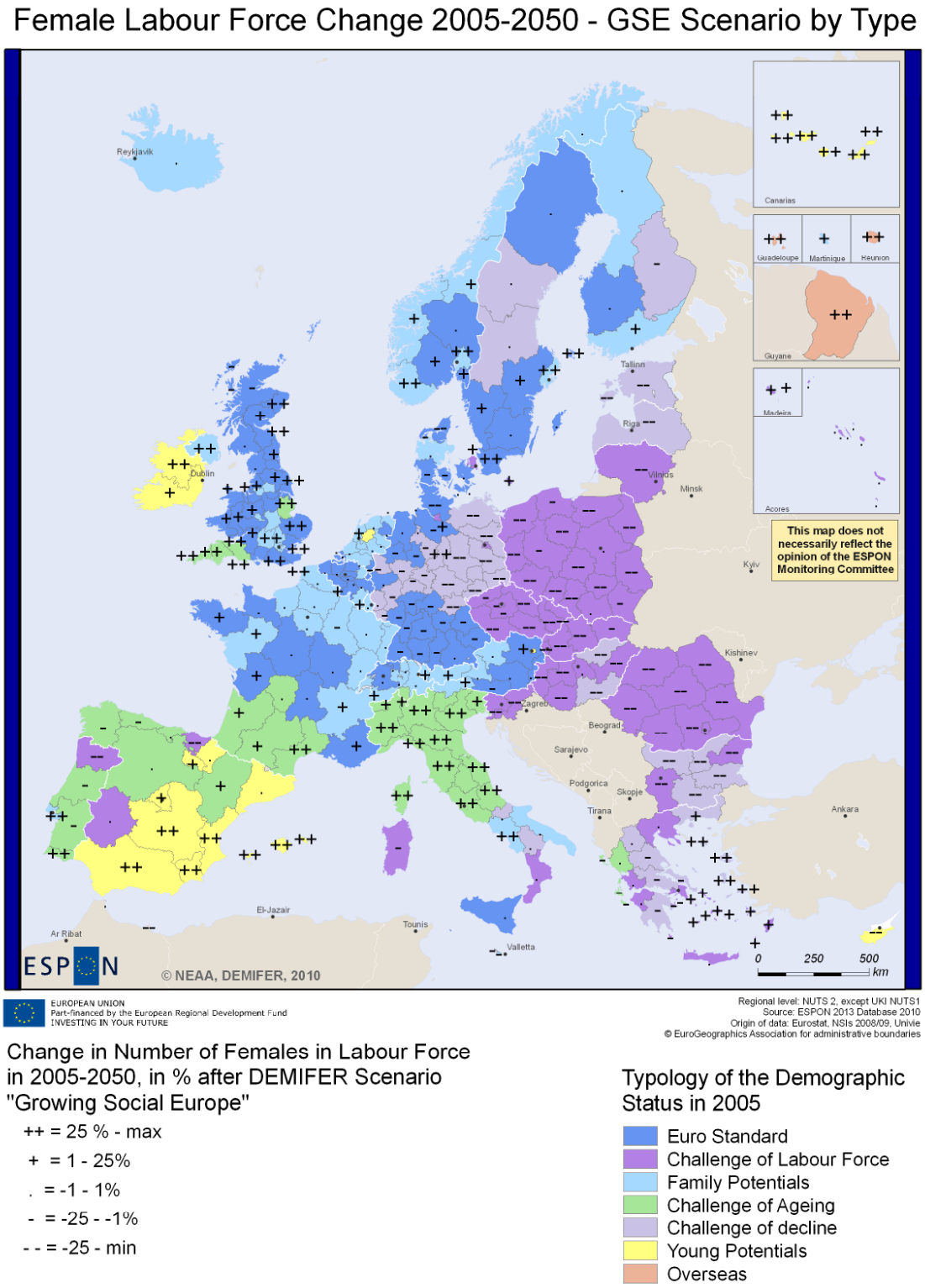


**Figure 4.17: Female labour force change 2005-2050, clusters, Limited Social Europe scenario**

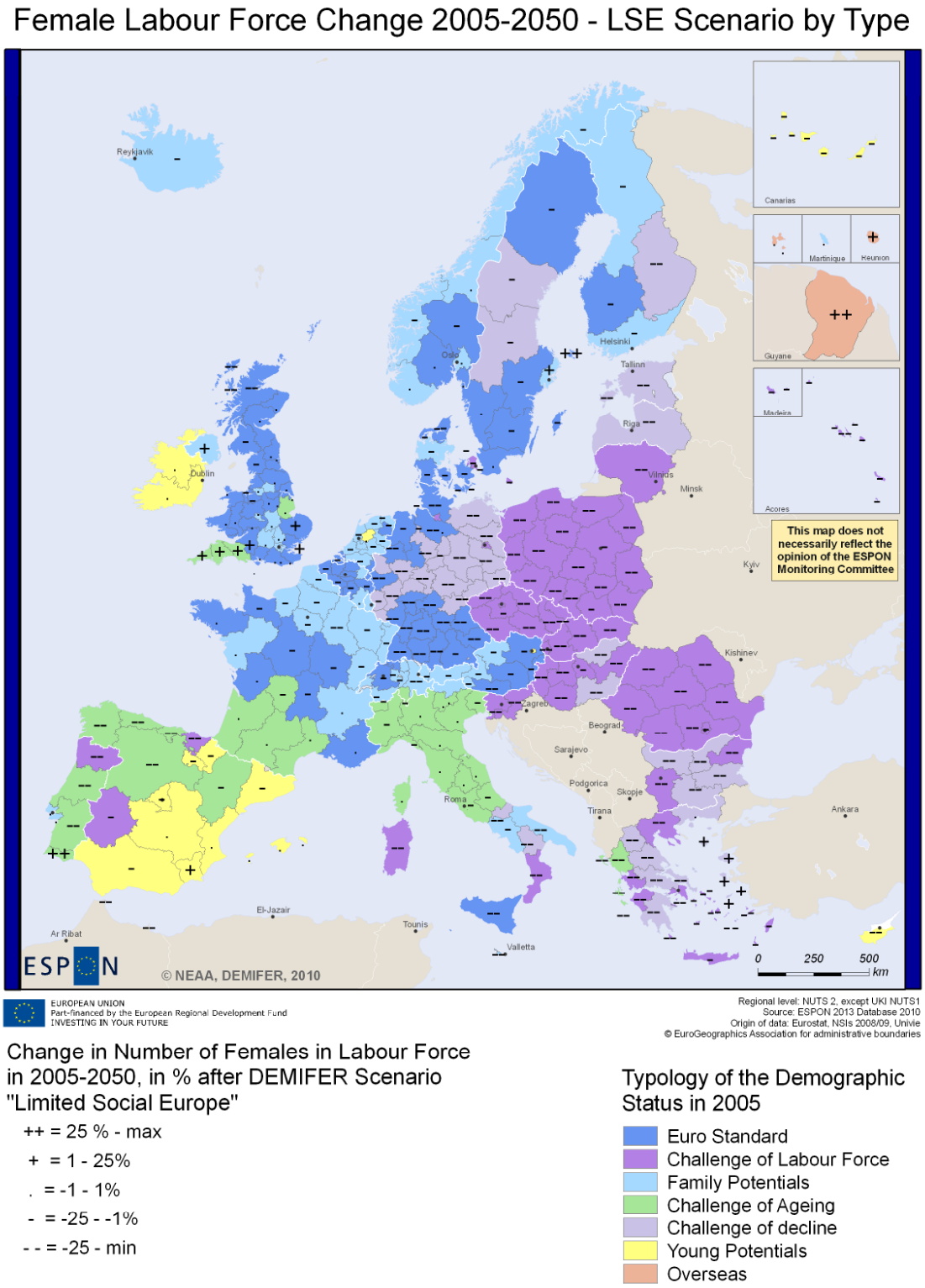


**Figure 4.18:Labour force change 2005-2050, clusters, Challenged Market Europe scenario**

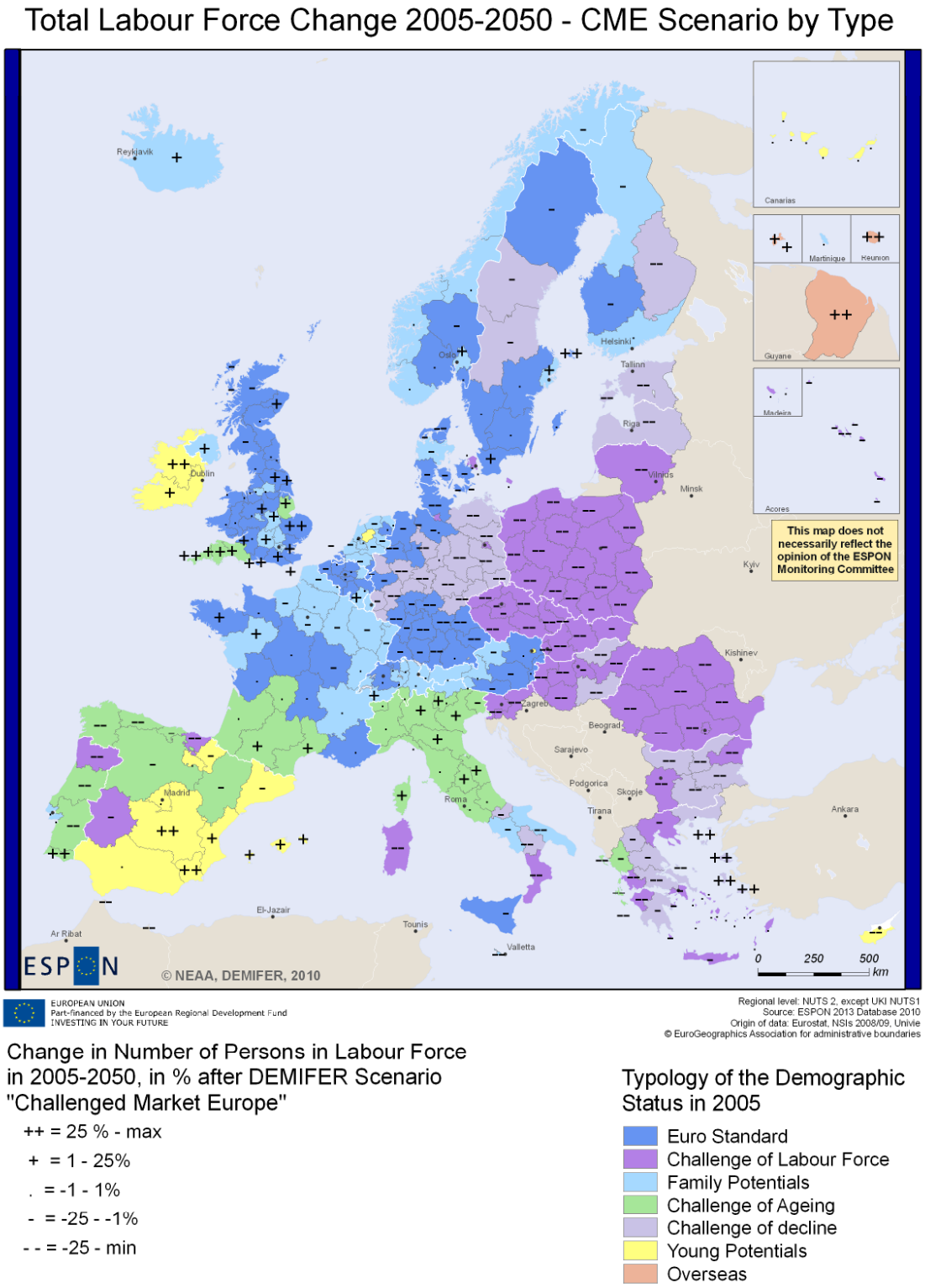


**Figure 4.19: Labour force change 2005-2050, clusters, Expanding Market Europe scenario**

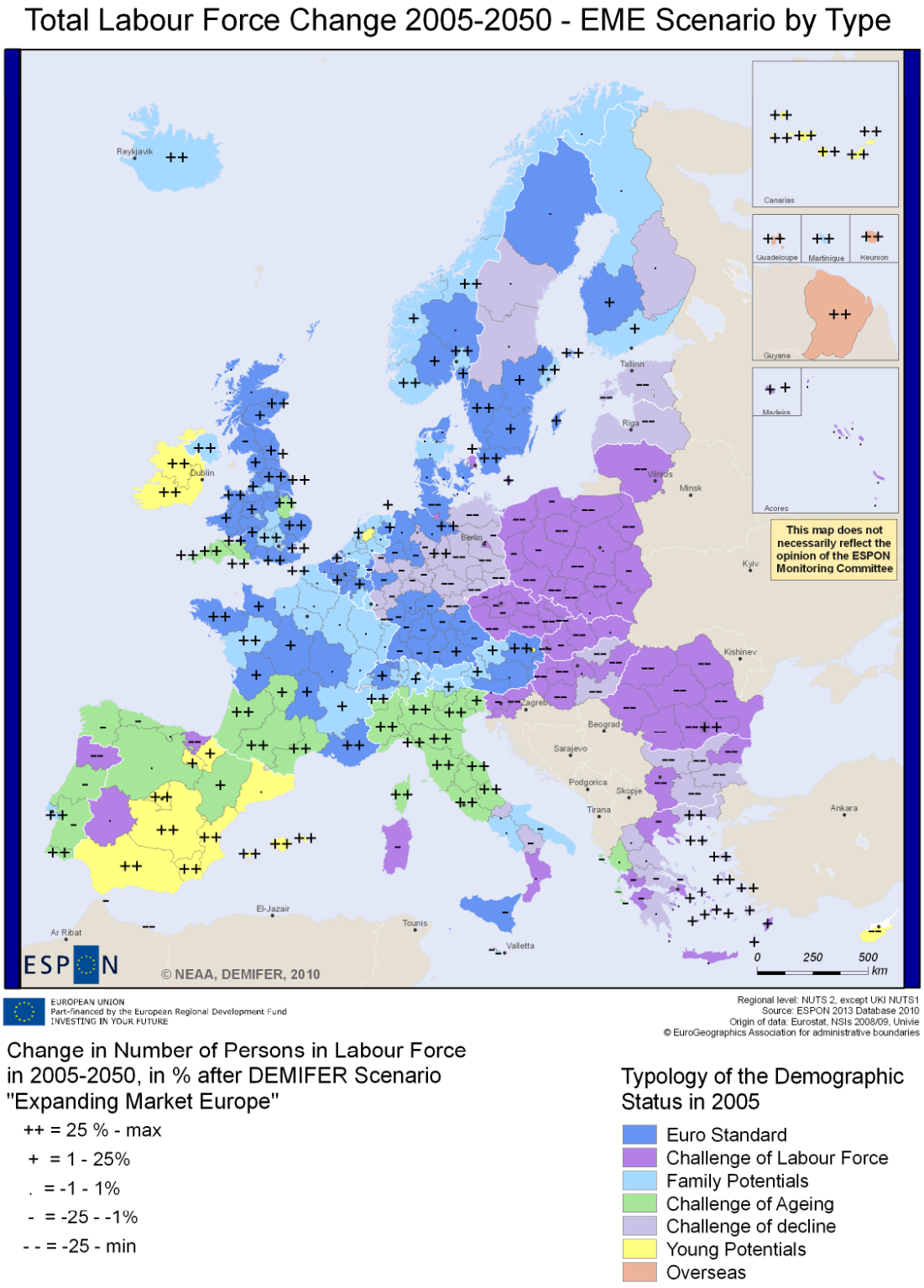


**Figure 4.20: Labour force change 2005-2050, clusters, Growing Social Europe scenario**

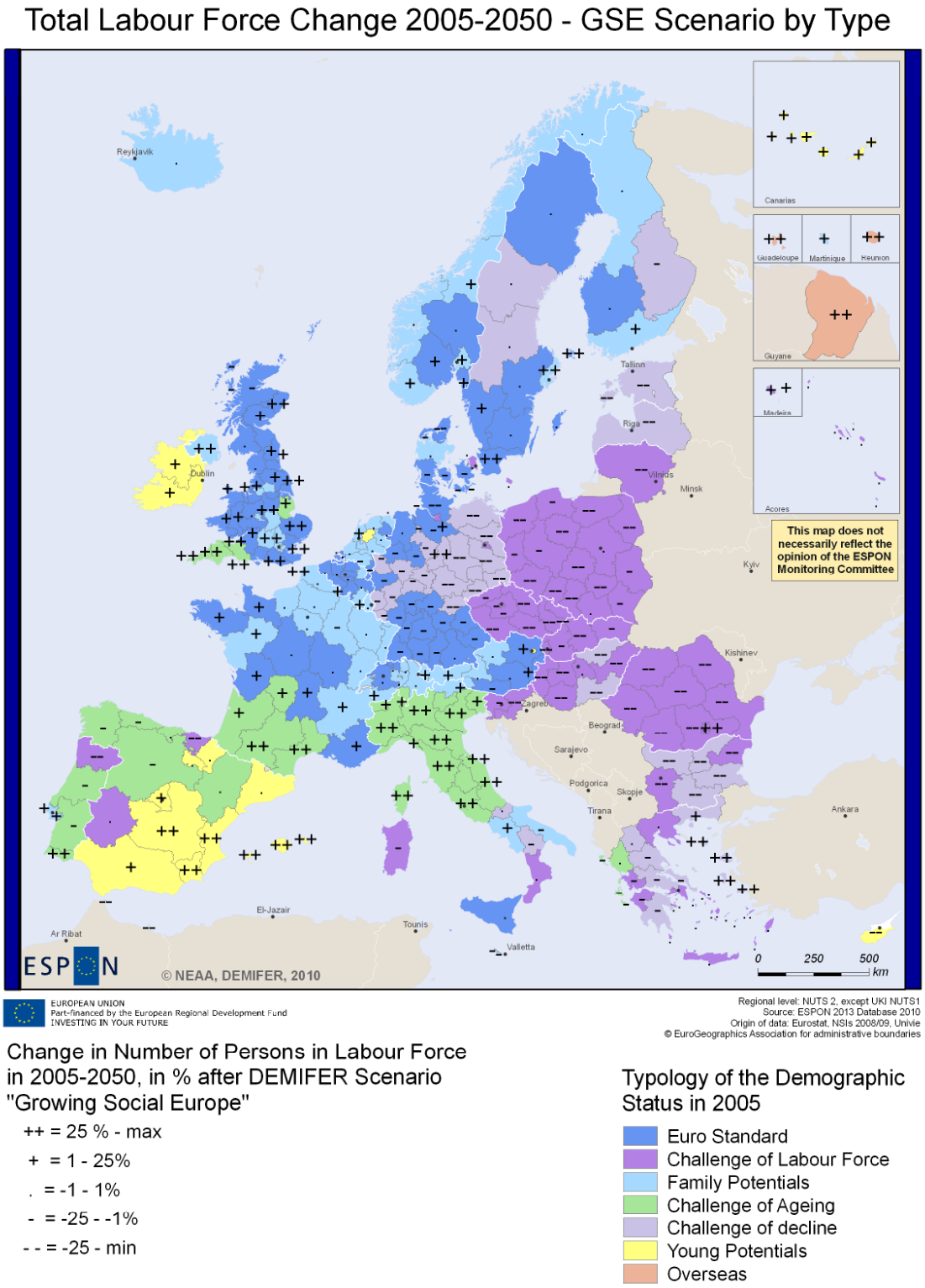


**Figure 4.21: Labour force change 2005-2050, clusters, Limited Social Europe scenario**

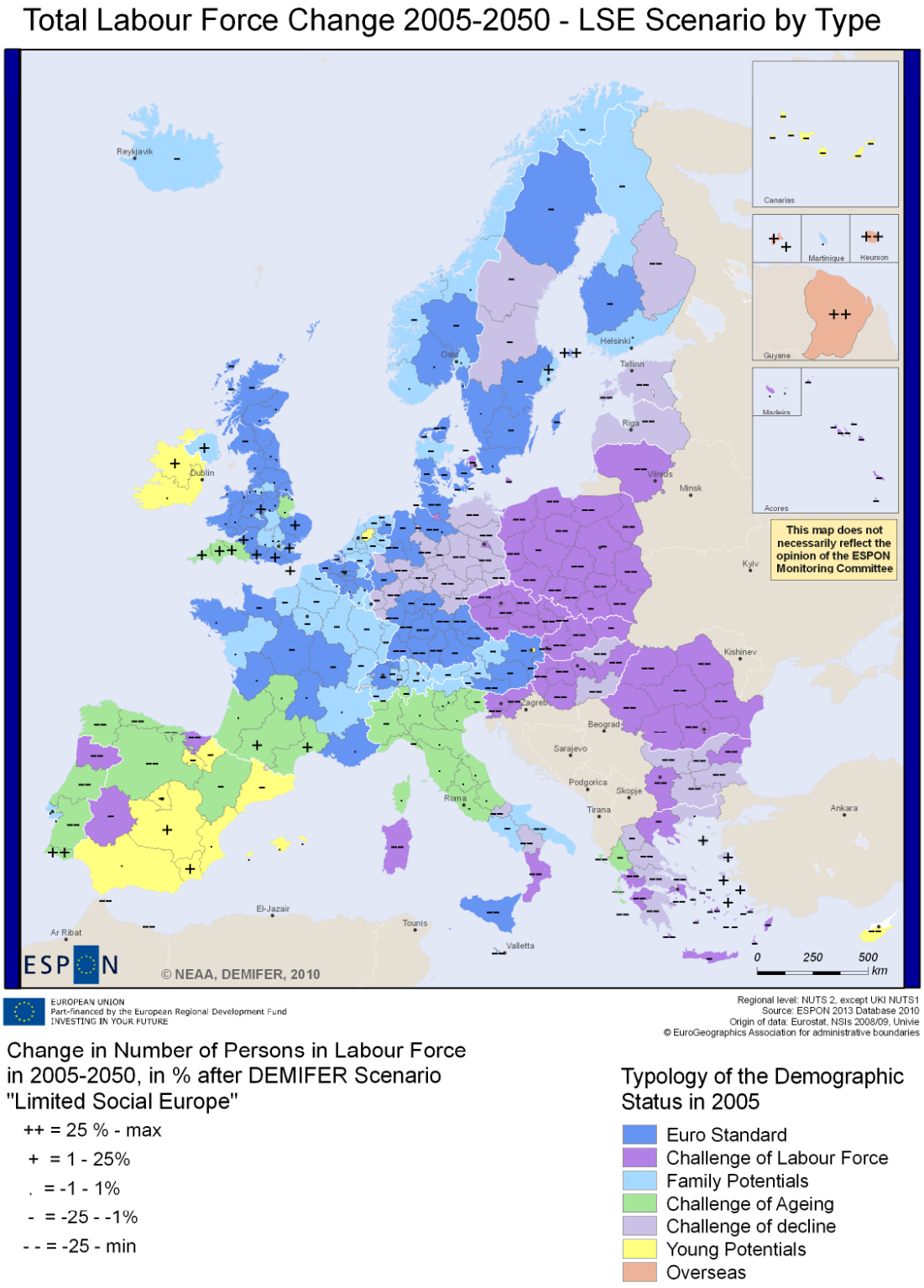


**Figure 4.22: Male labour force change 2005-2050, regions, Challenged Market Europe scenario**

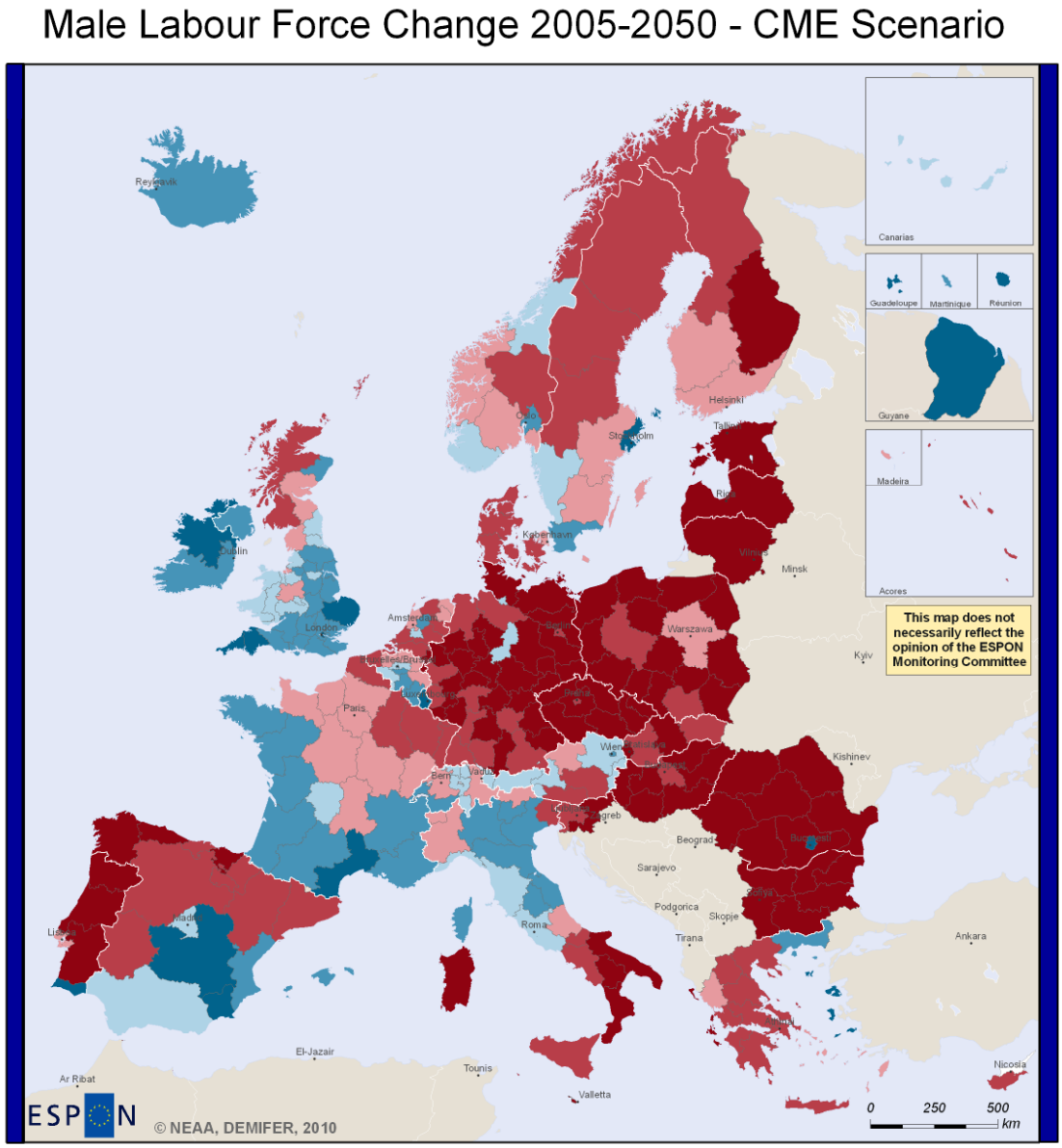


**Figure 4.23: Male labour force change 2005-2050, regions, Expanding Market Europe scenario**

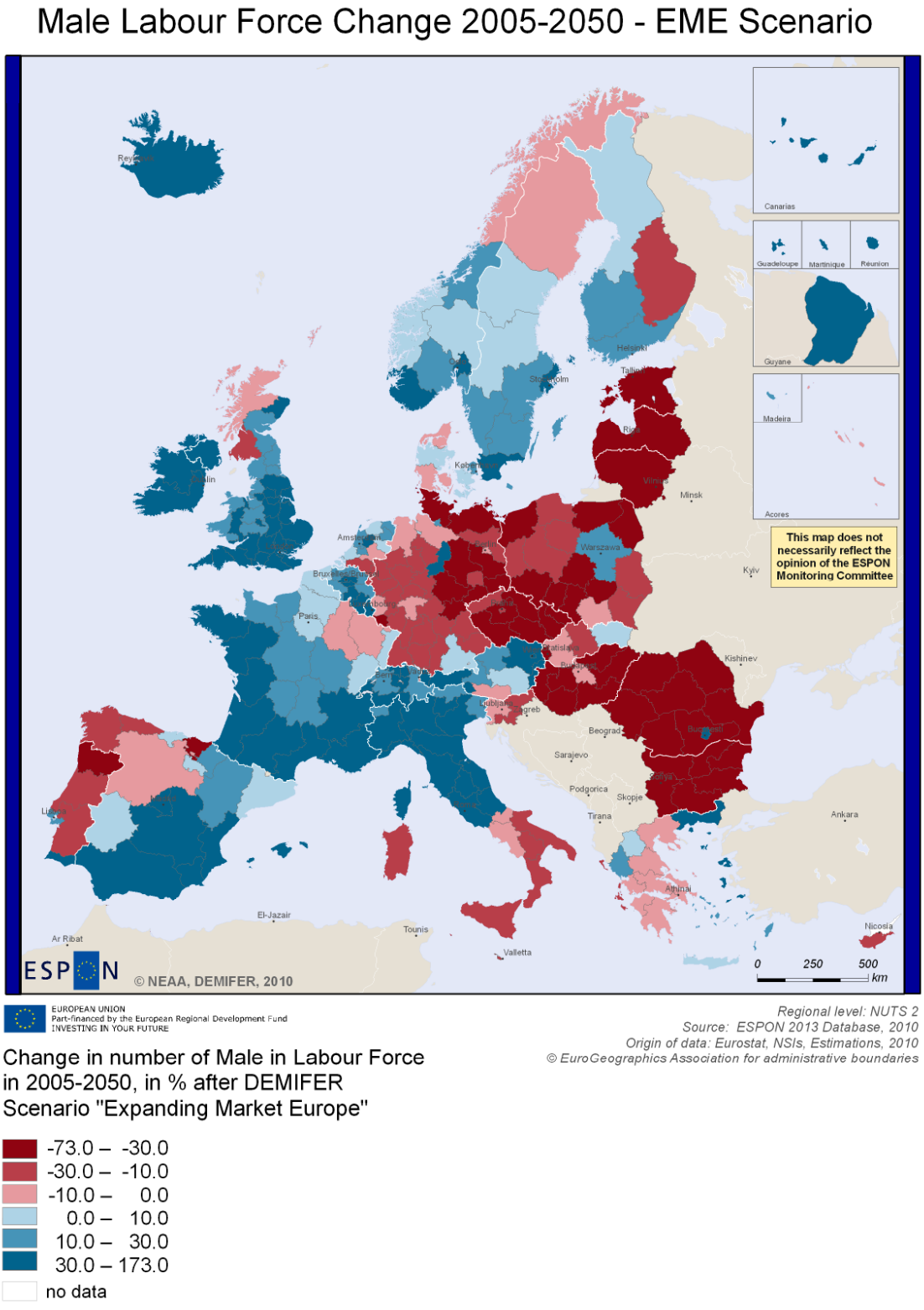


**Figure 4.24: Male labour force change 2005-2050, regions, Growing Social Europe scenario**

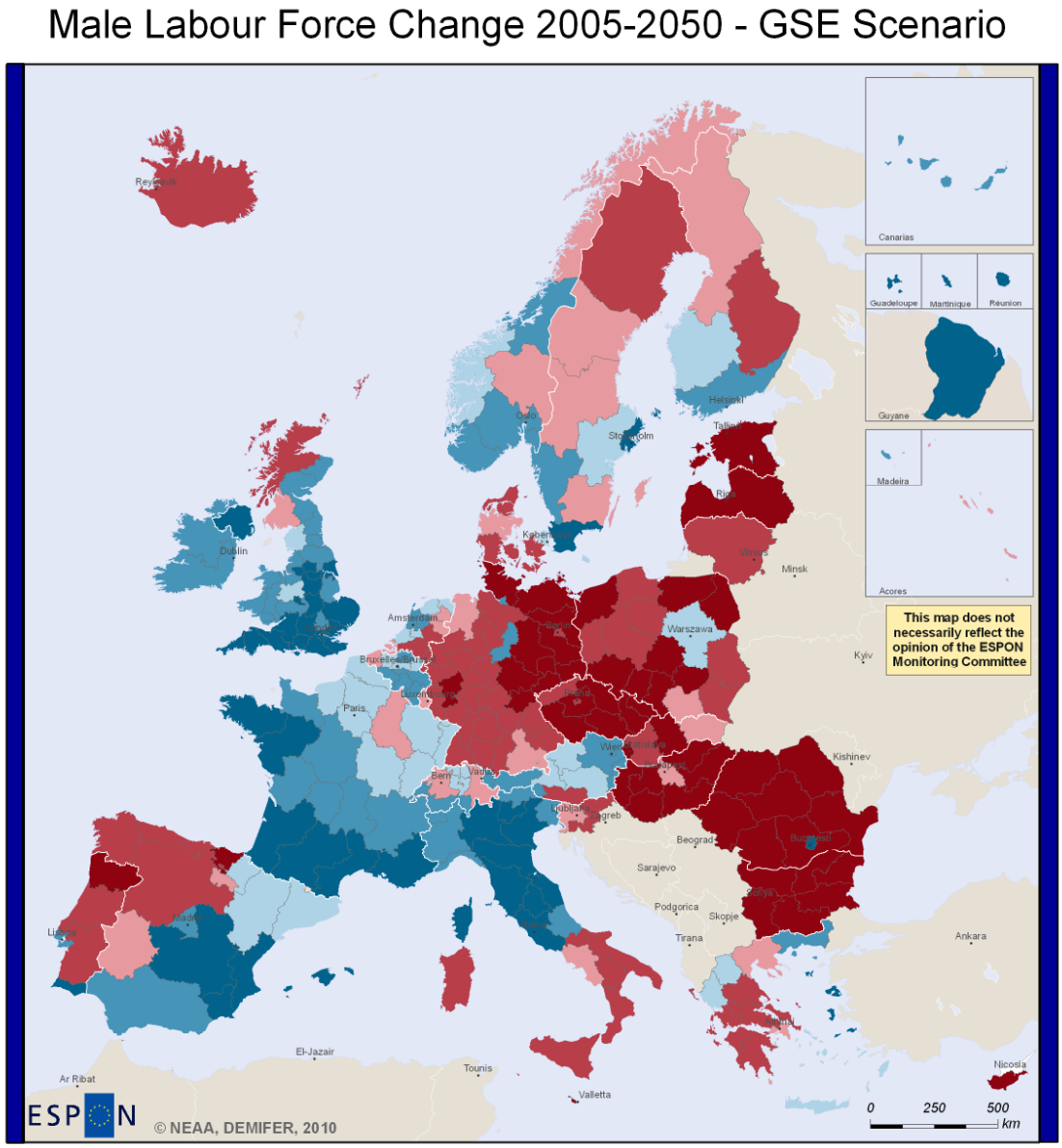


**Figure 4.25: Male labour force change 2005-2050, regions, Limited Social Europe scenario**

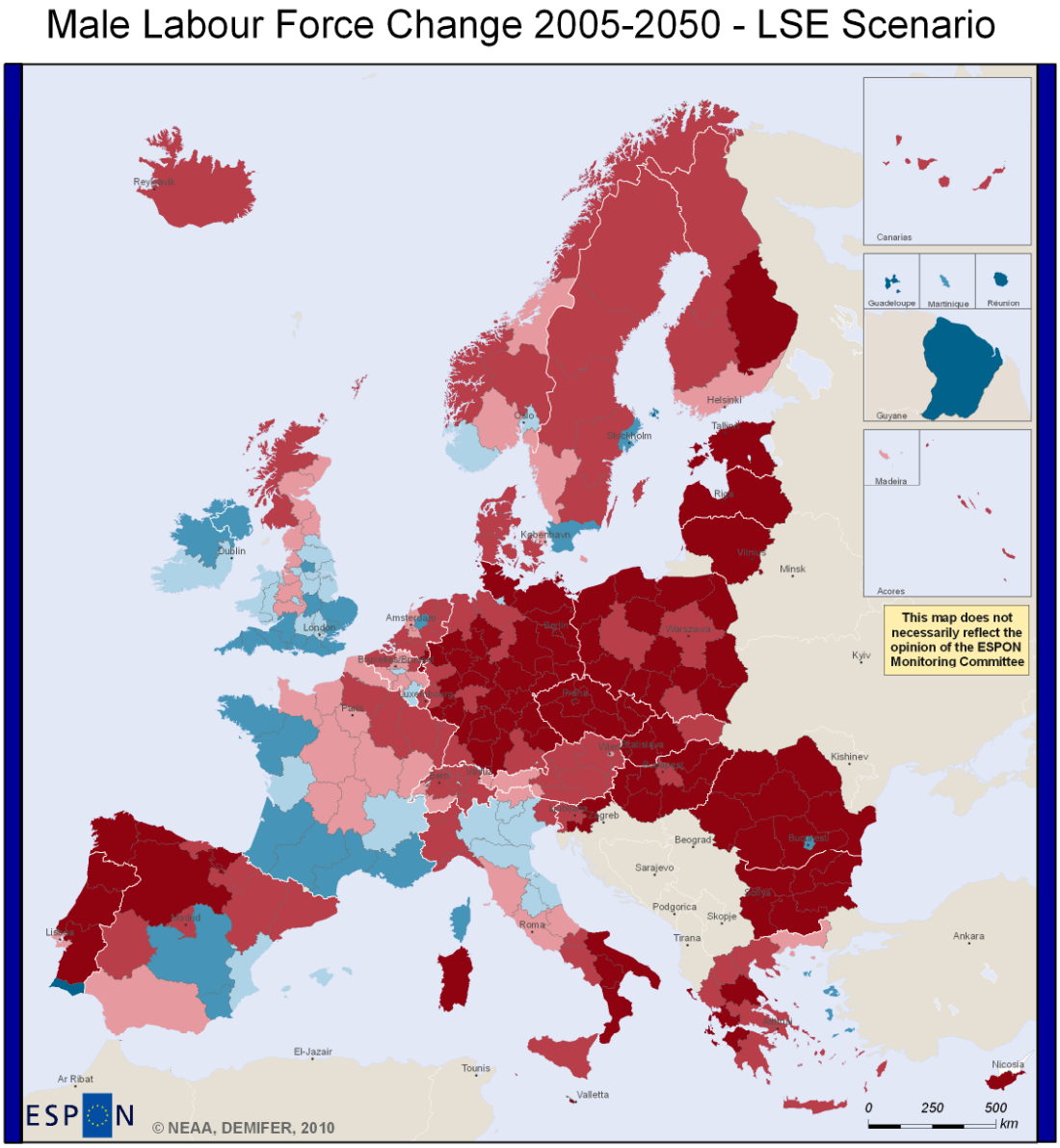


**Figure 4.26: Female labour force change 2005-2050, regions, Challenged Market Europe scenario**

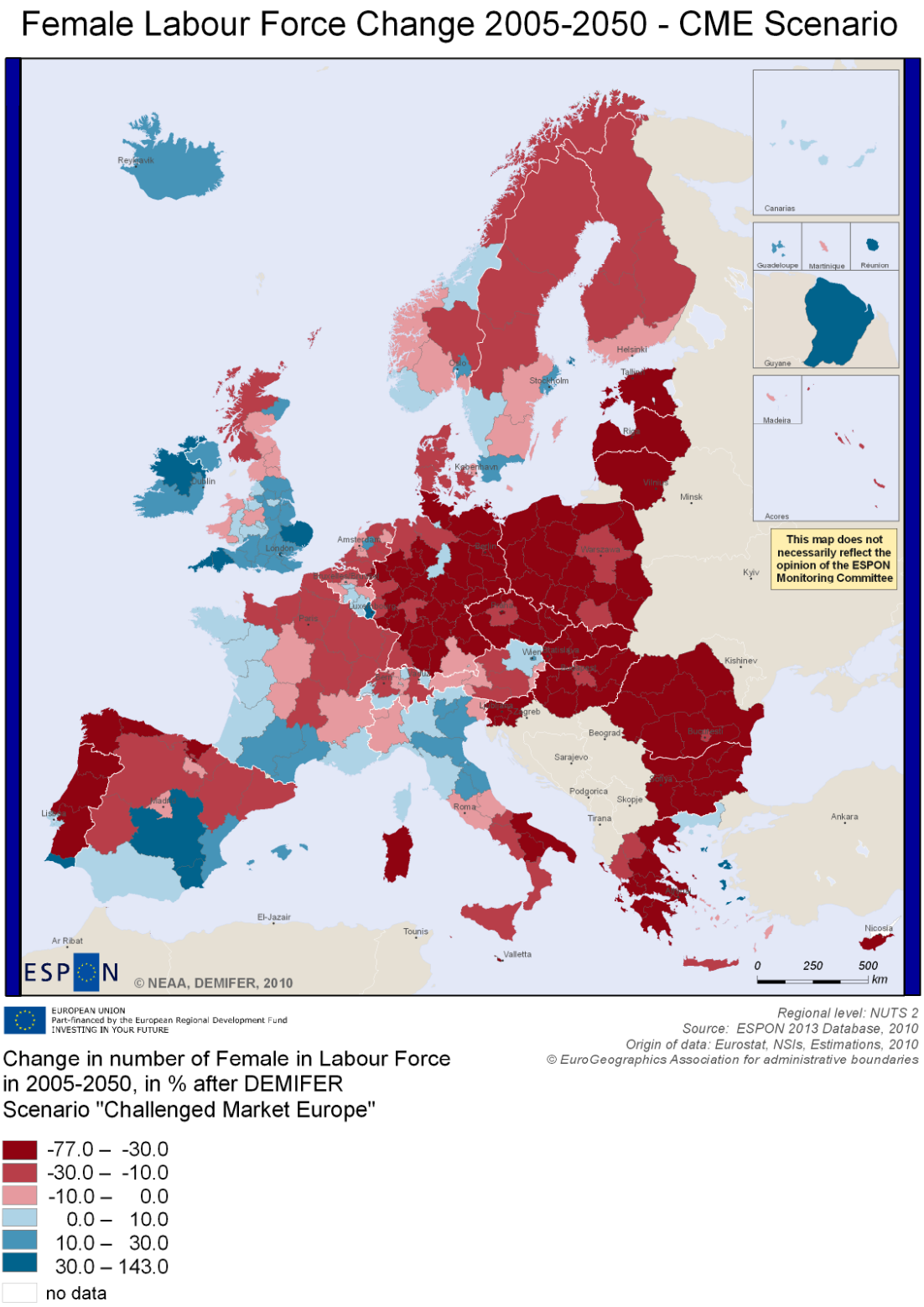


**Figure 4.27: Female labour force change 2005-2050, regions, Expanding Market Europe scenario**

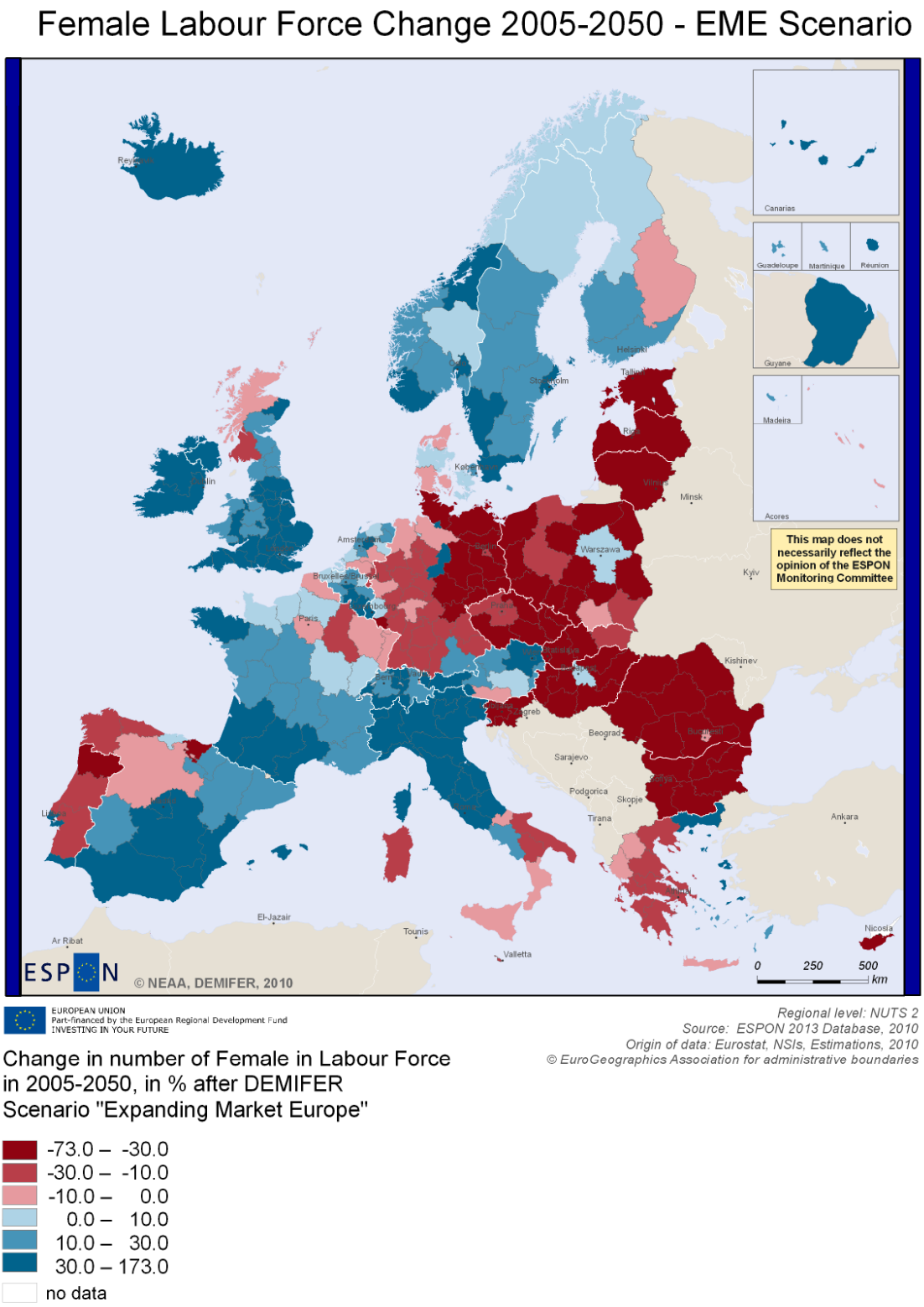


**Figure 4.28: Female labour force change 2005-2050, regions, Growing Social Europe scenario**

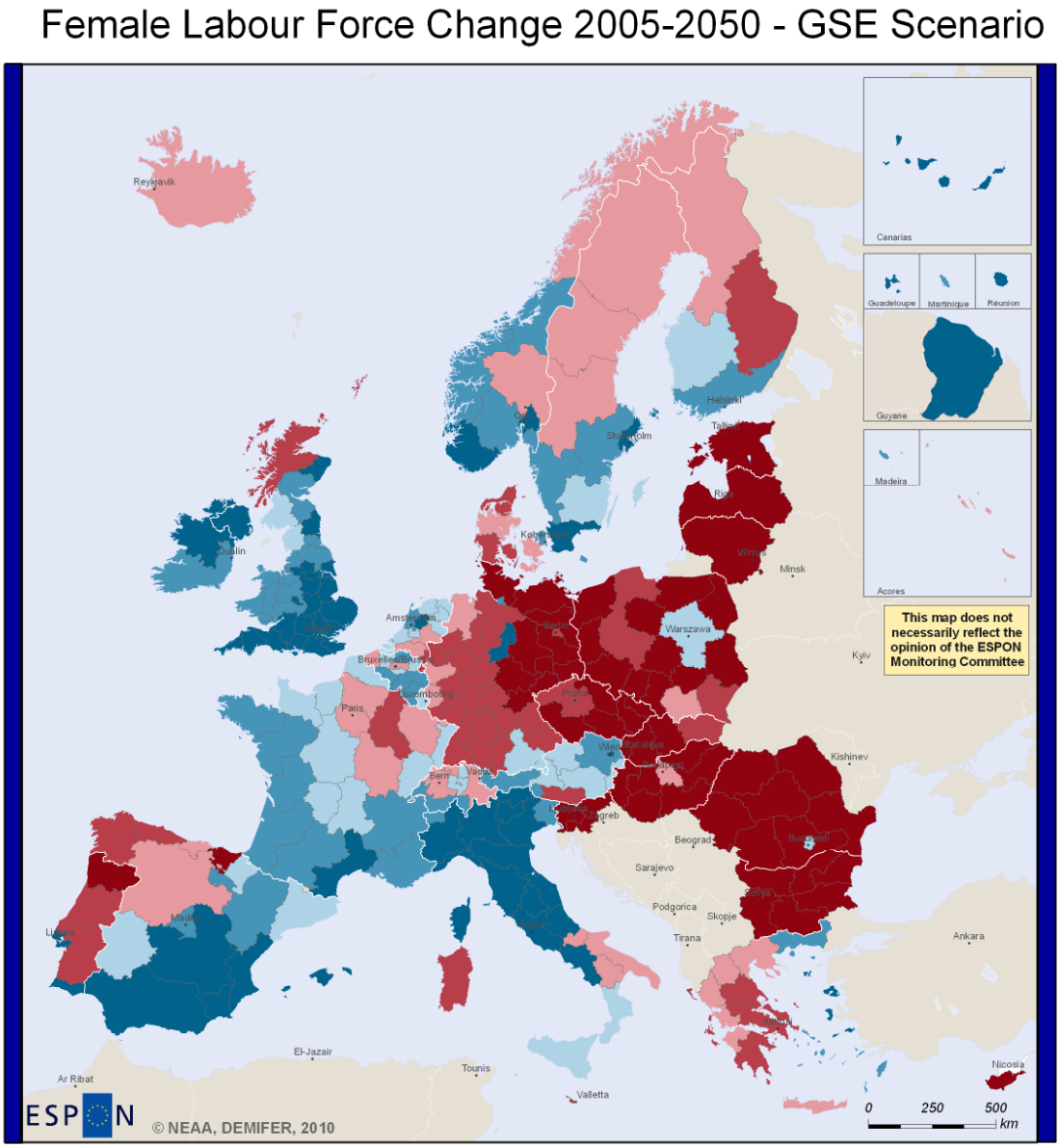


**Figure 4.29: Female labour force change 2005-2050, regions, Limited Social Europe scenario**

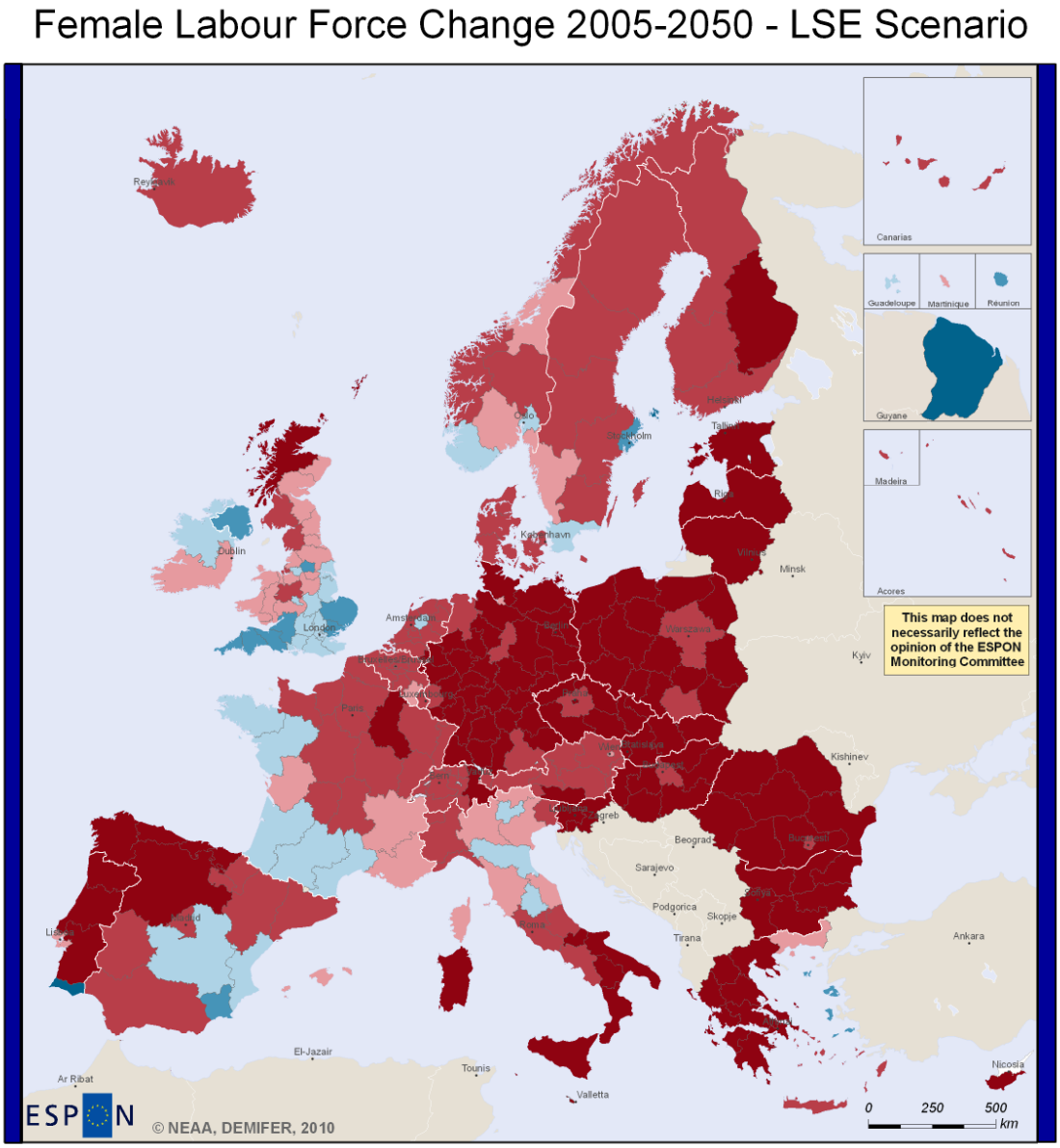


**Figure 4.30: Labour force change 2005-2050, regions, Challenged Market Europe scenario**

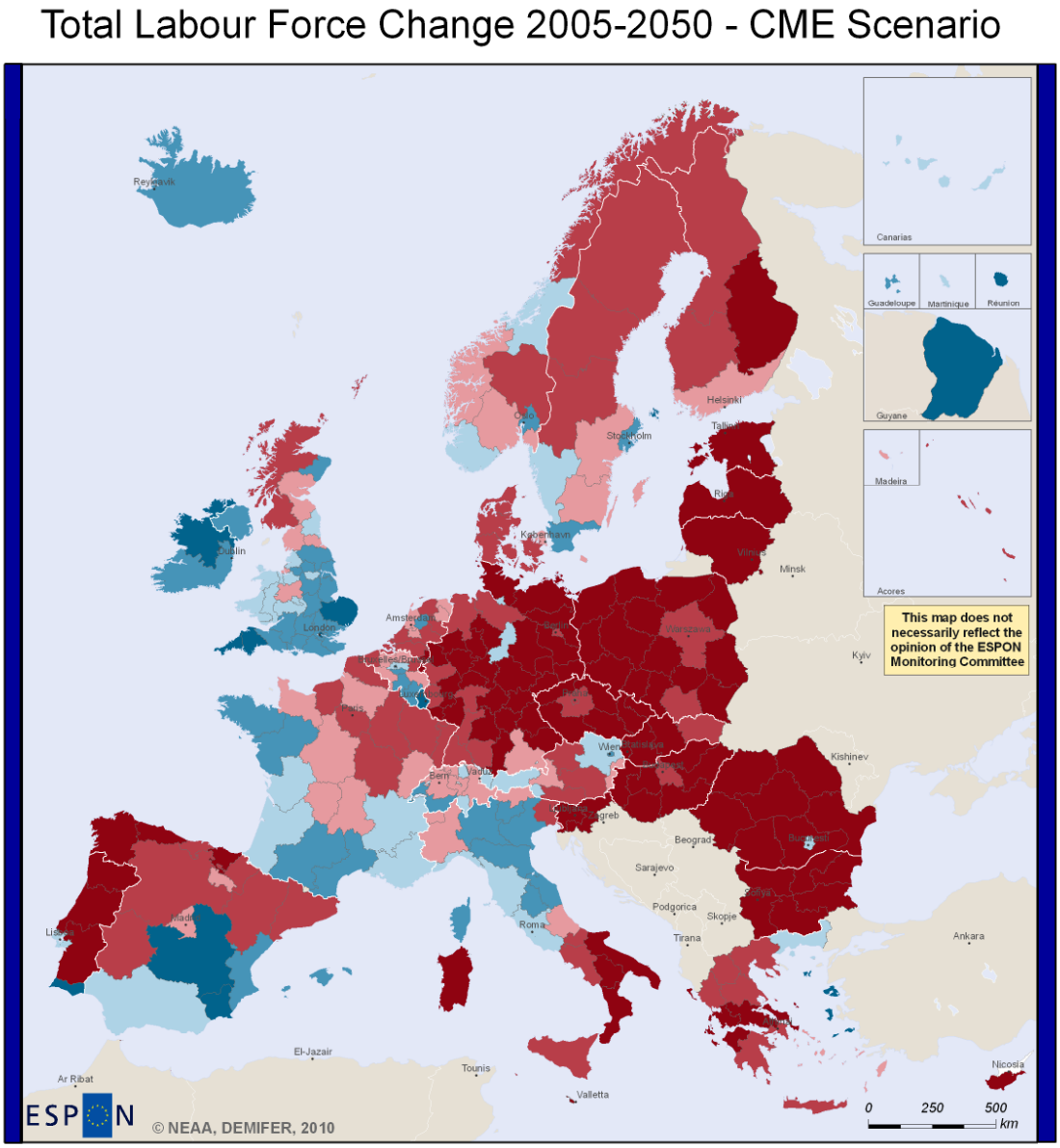


**Figure 4.31: Labour force change 2005-2050, regions, Expanding Market Europe scenario**

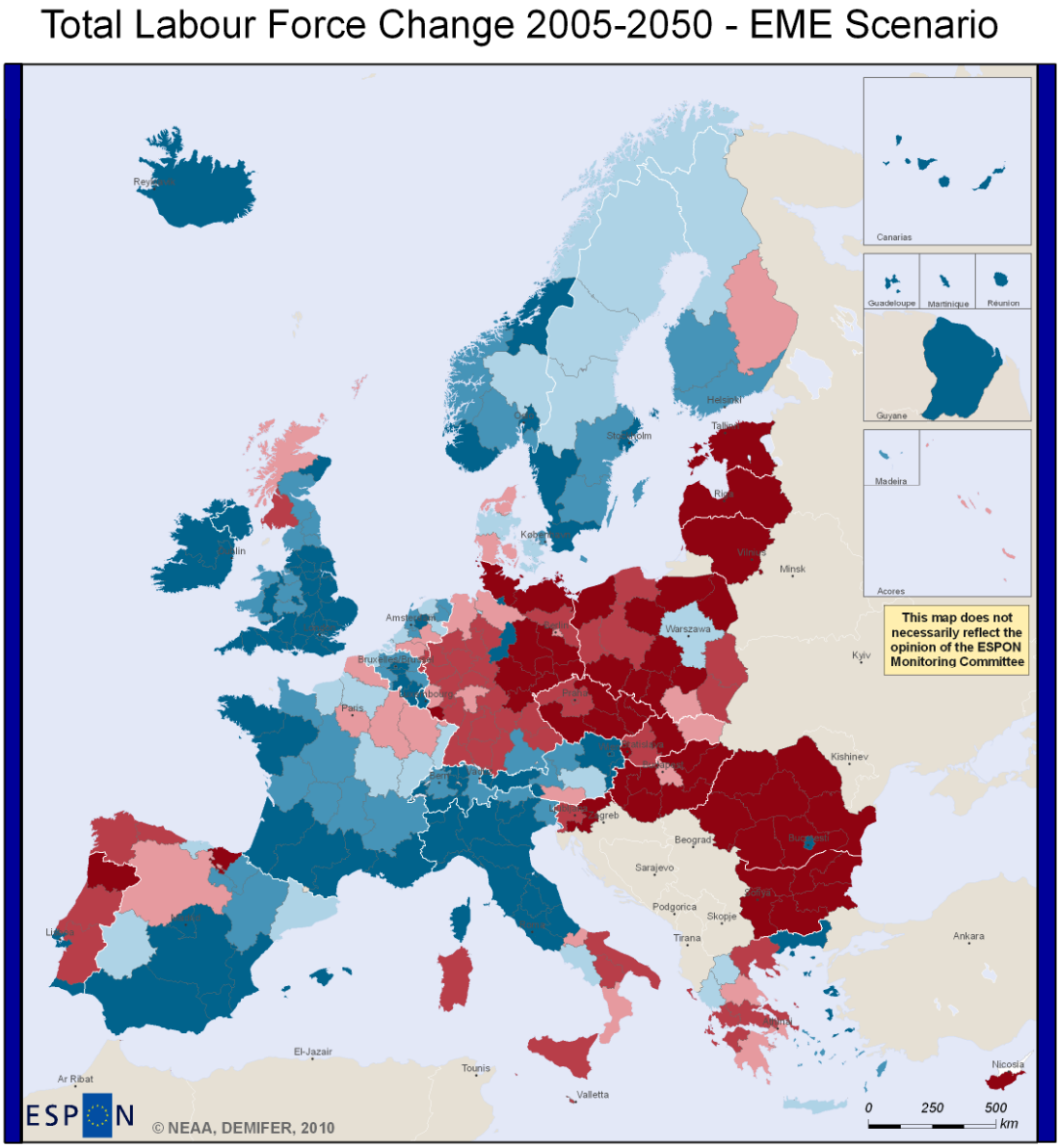


**Figure 4.32: Labour force change 2005-2050, regions, Growing Social Europe scenario**

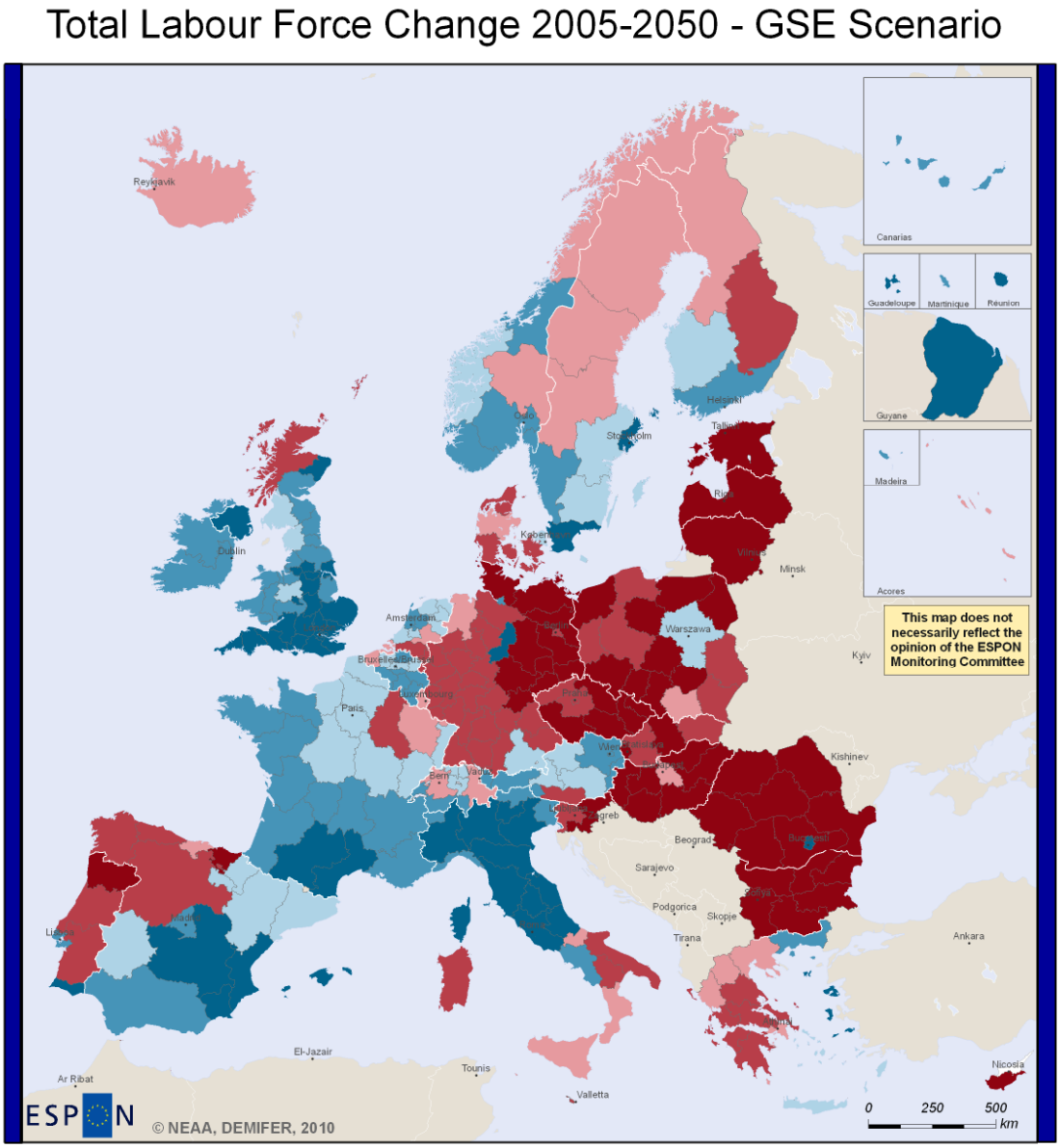
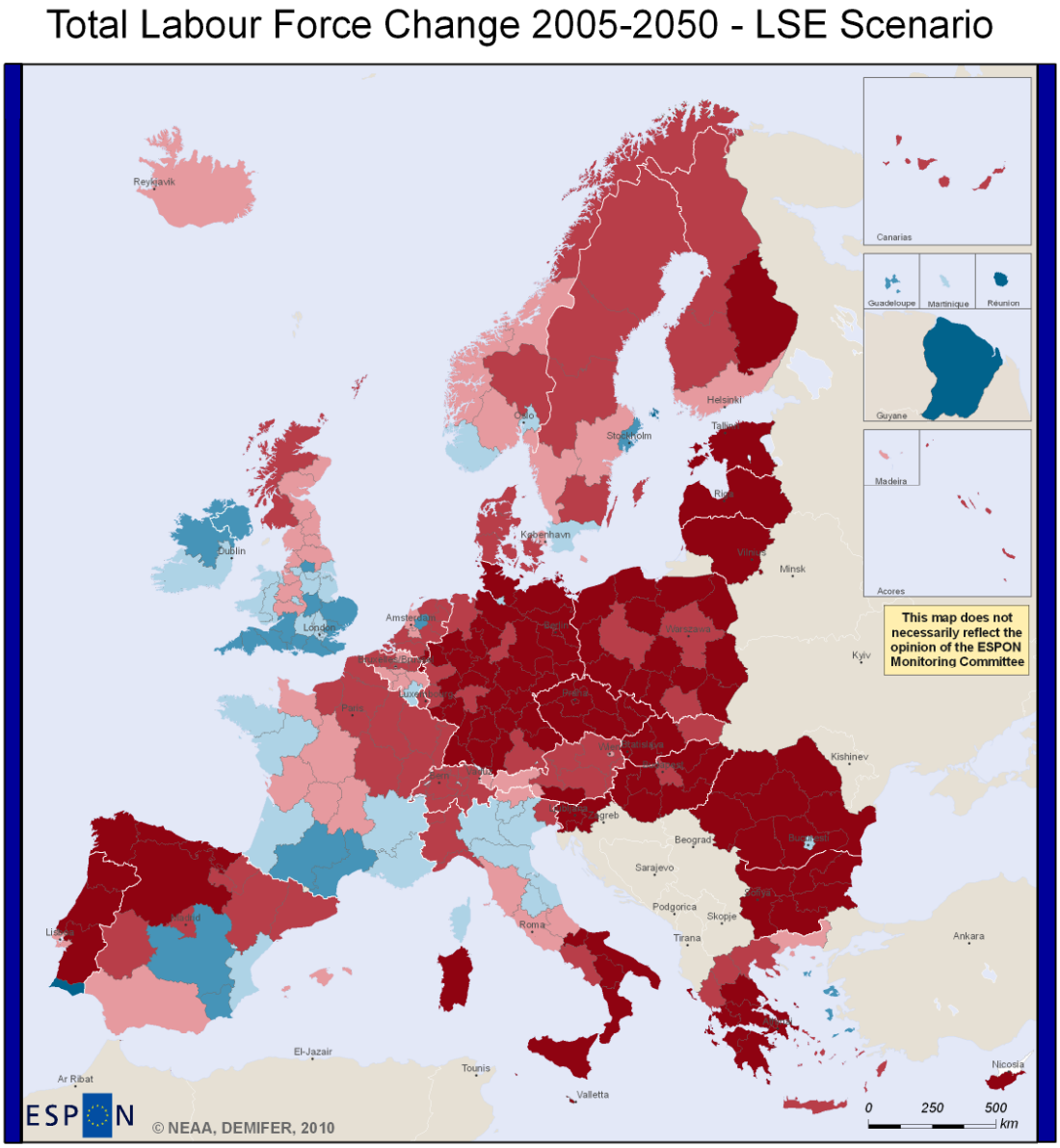
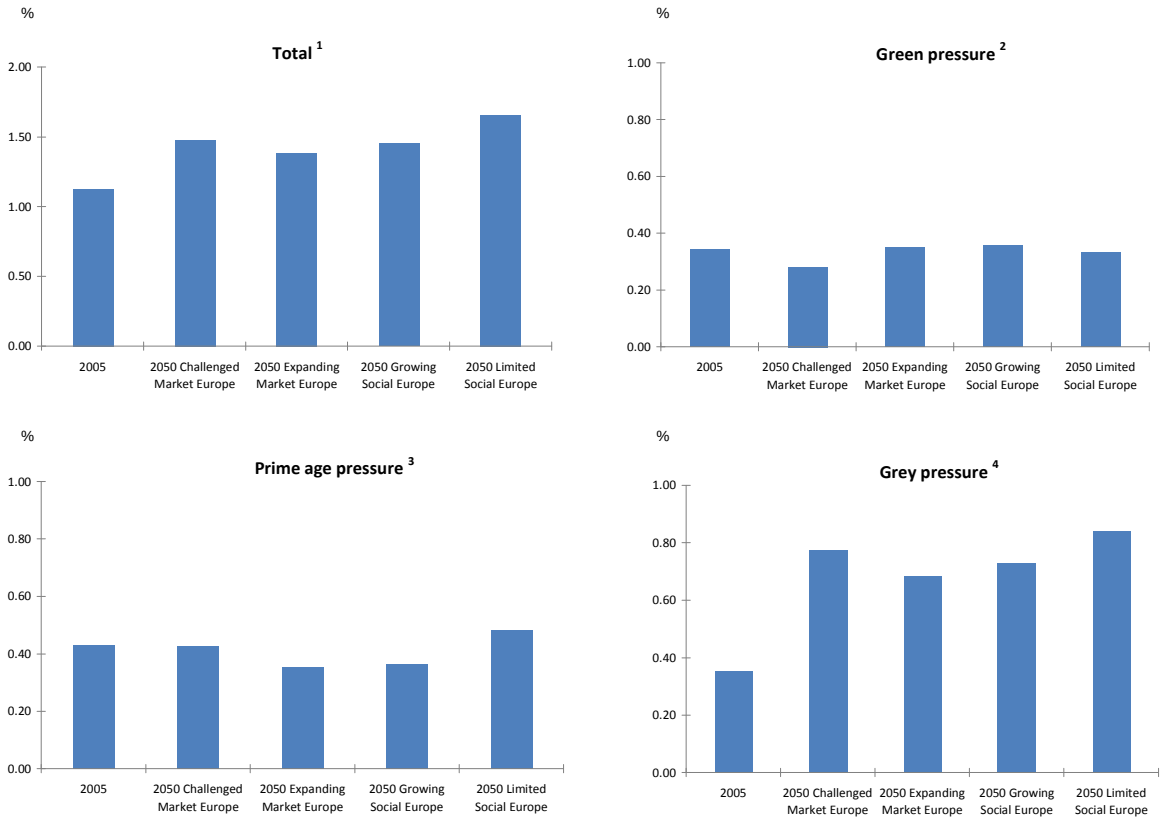


**Figure 4.33: Labour force change 2005-2050, regions, Limited Social Europe scenario**

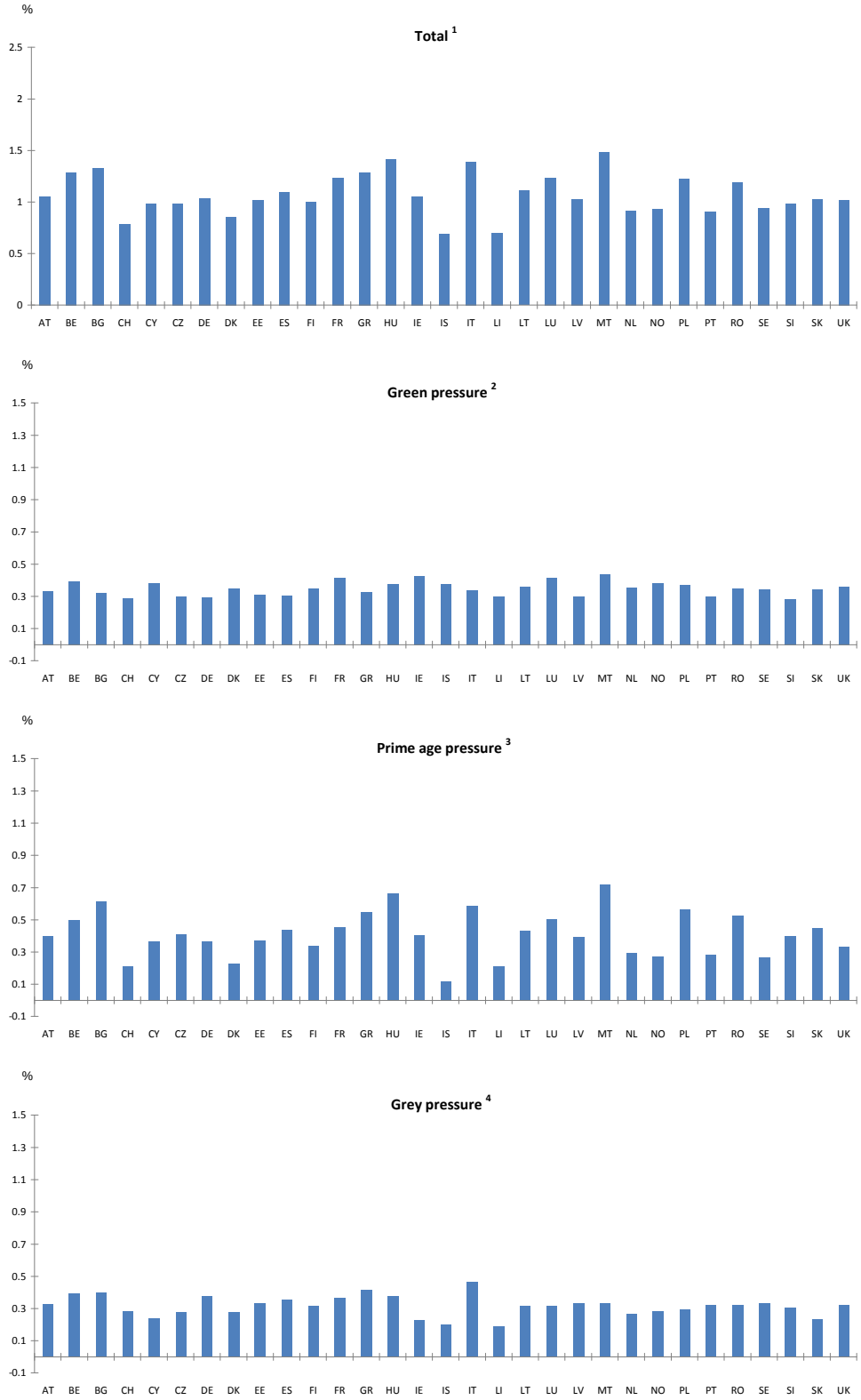


## Figure 4.34: Dependency ratio, 2005 and 2050, ESPON space



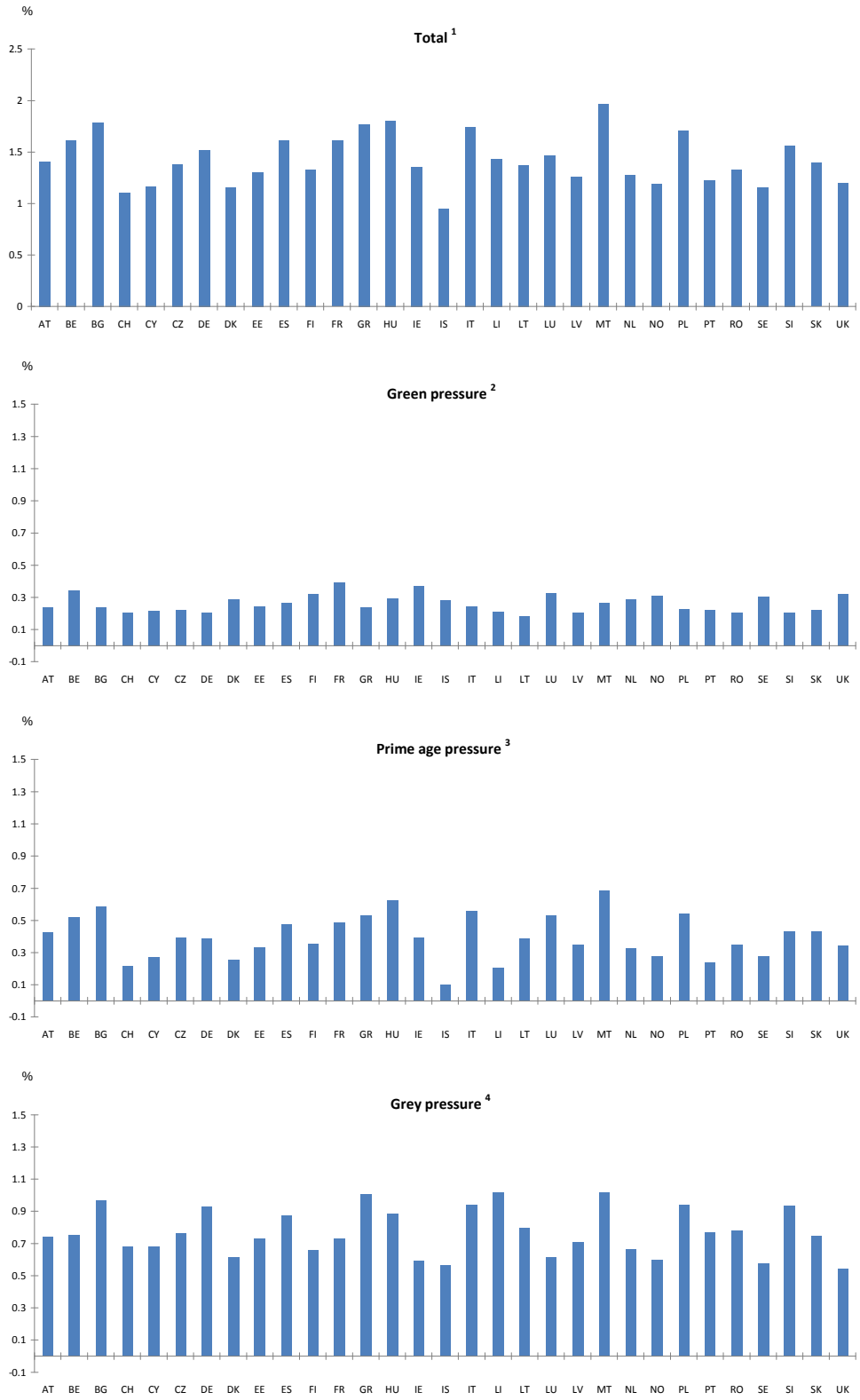

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.35: Dependency ratio, 2005, countries



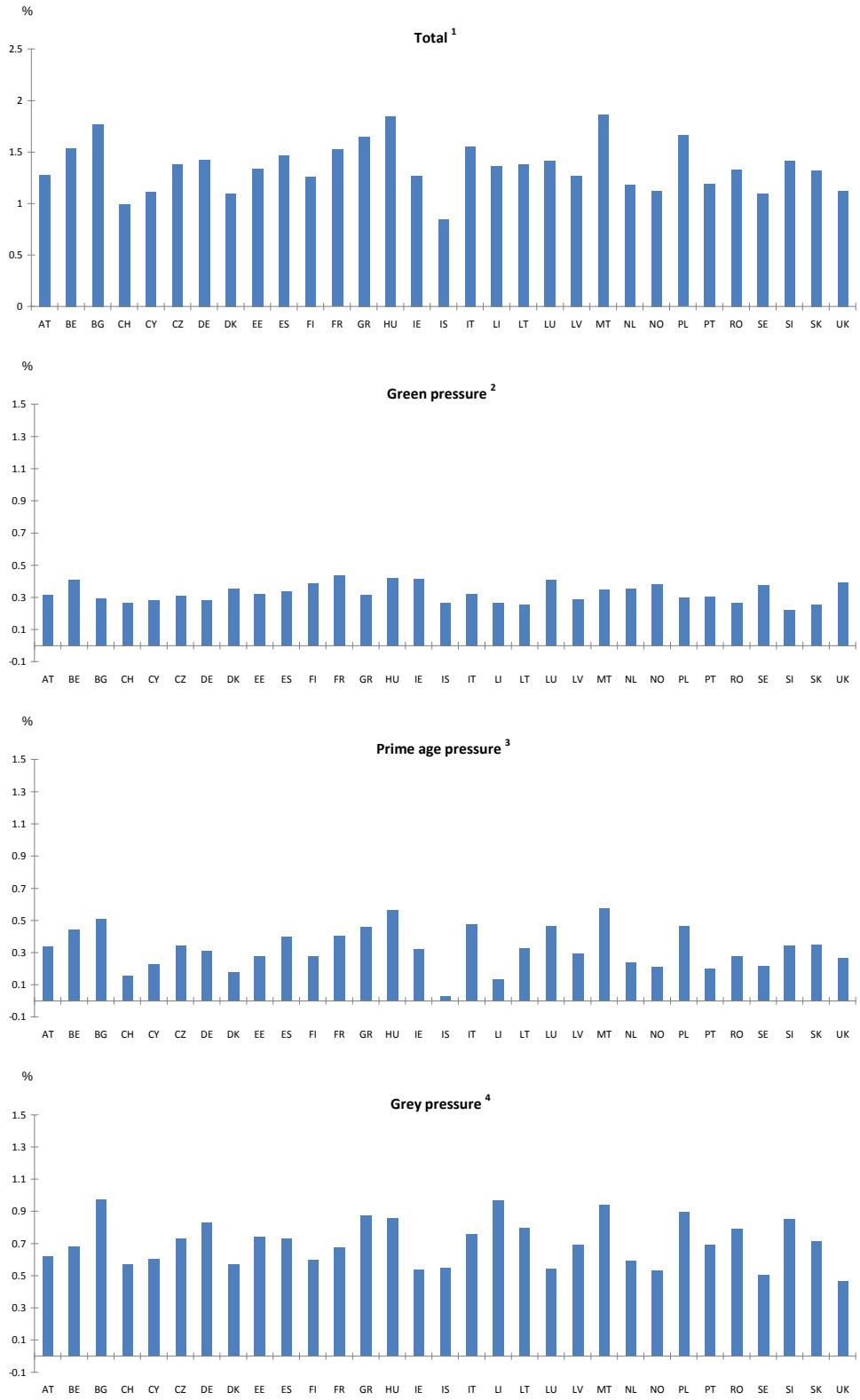

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.36: Dependency ratio, 2050, Challenged Market Europe scenario, countries



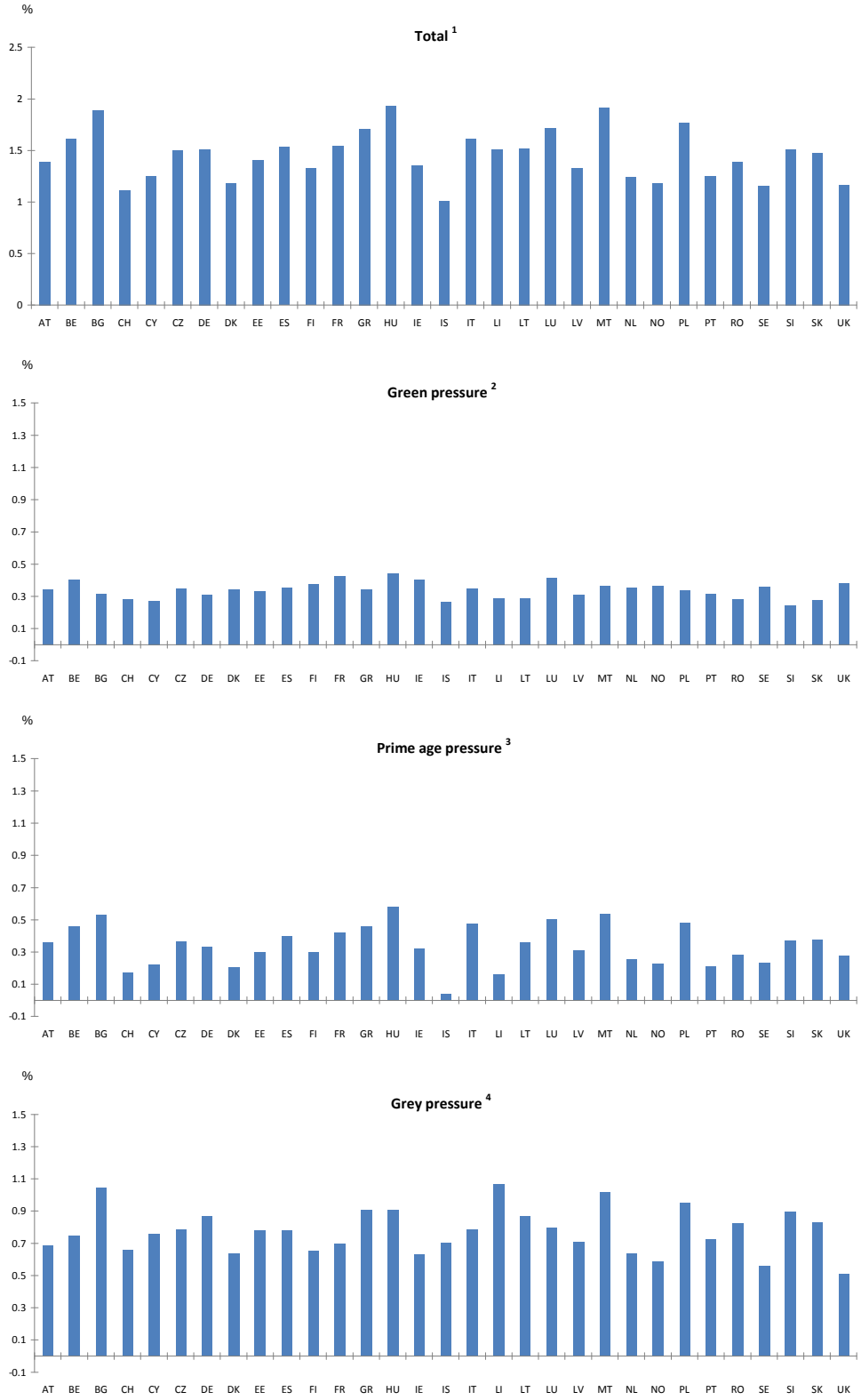

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.37: Dependency ratio, 2050, Expanding Market Europe scenario, countries



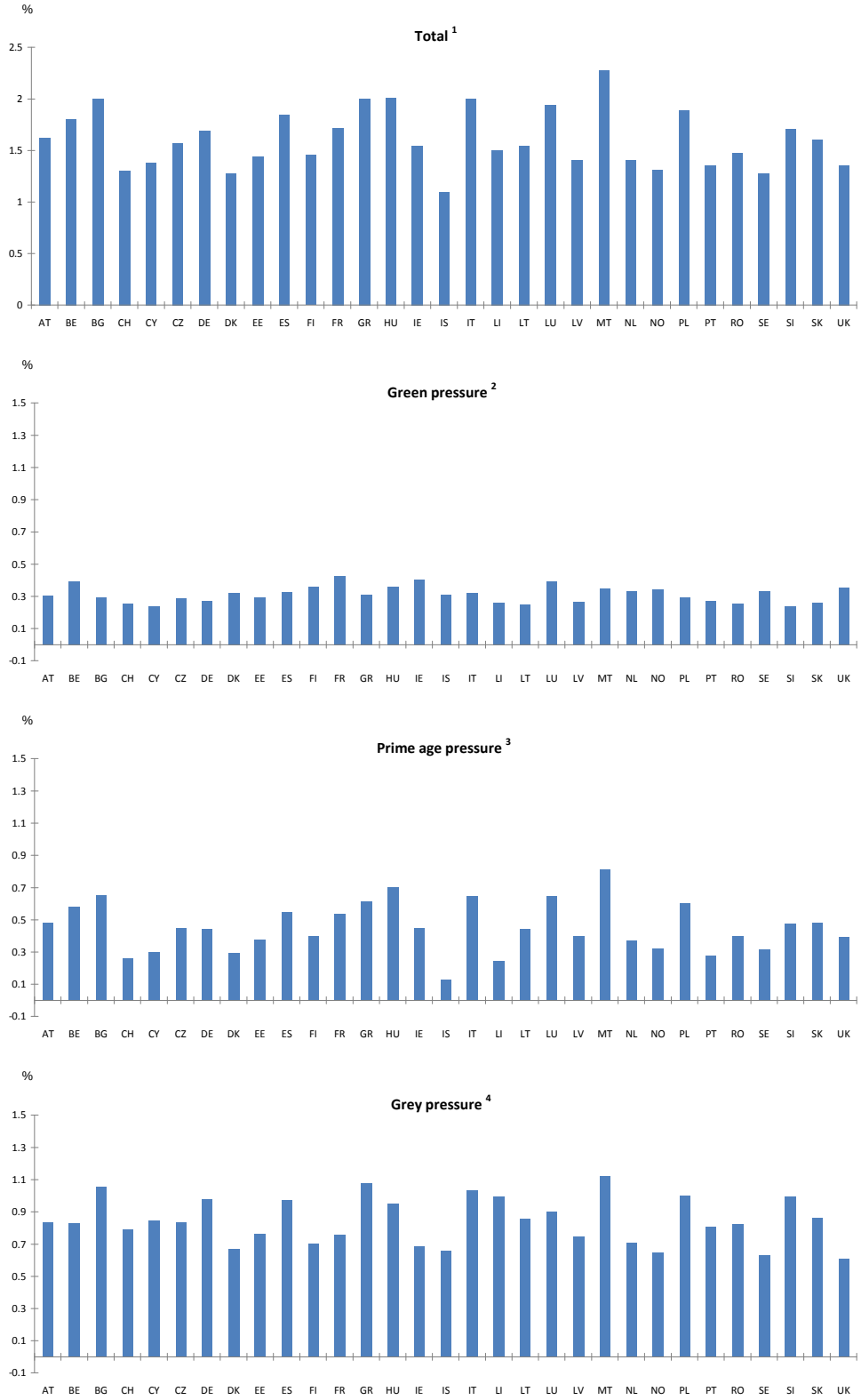

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.38: Dependency ratio, 2050, Growing Social Europe scenario, countries



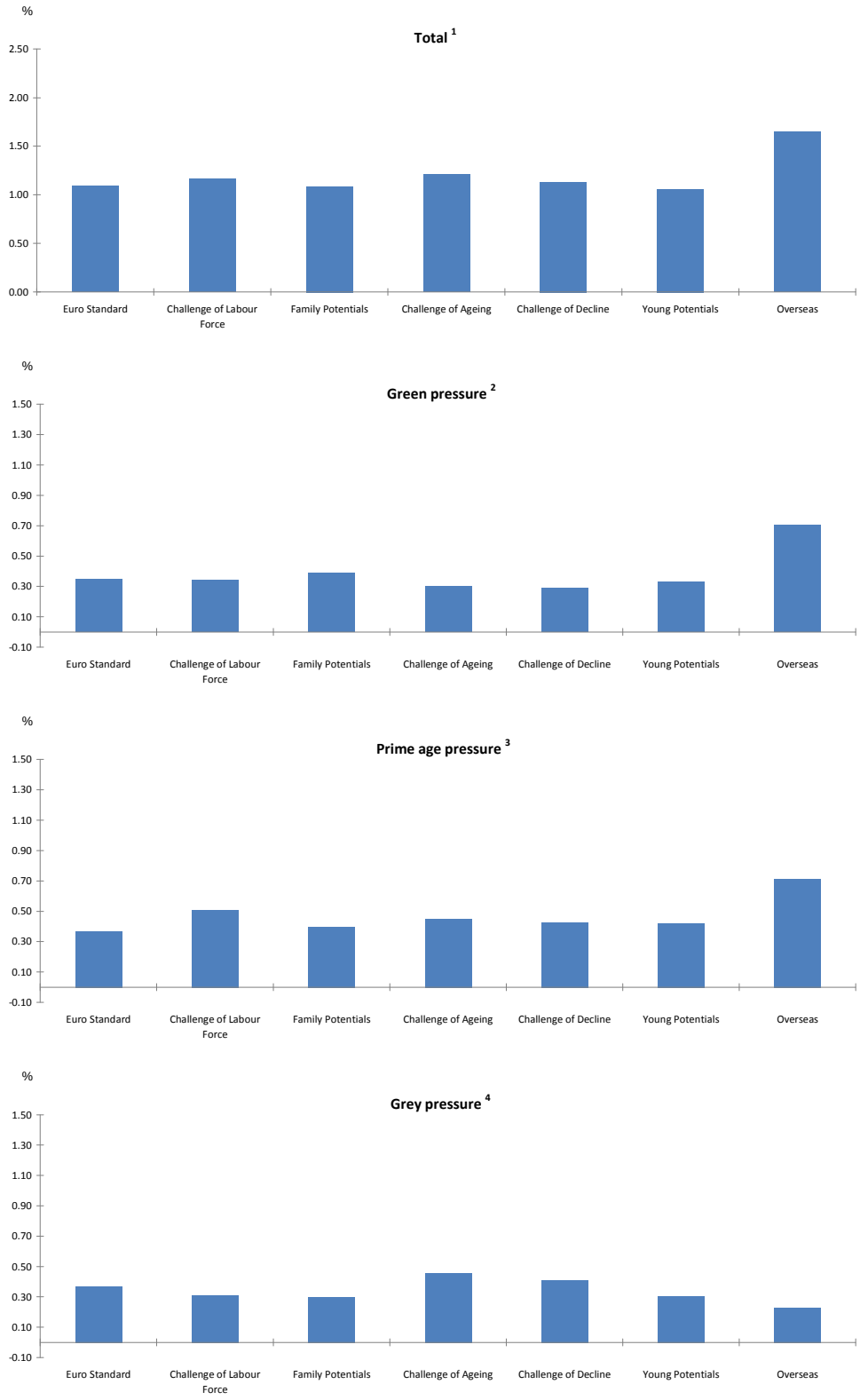

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.39: Dependency ratio, 2050, Limited Social Europe scenario, countries



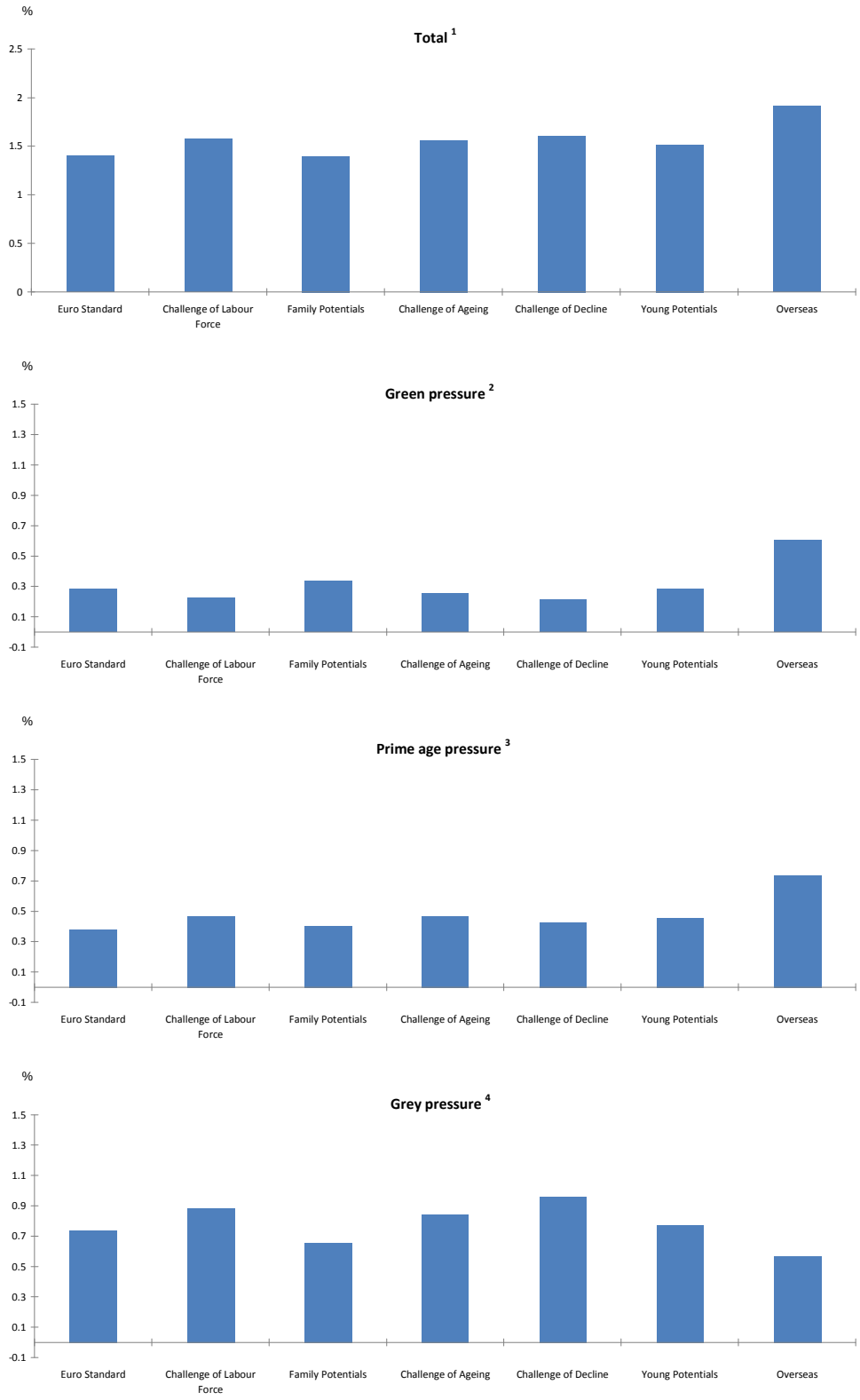

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.40: Dependency ratio, 2005, clusters



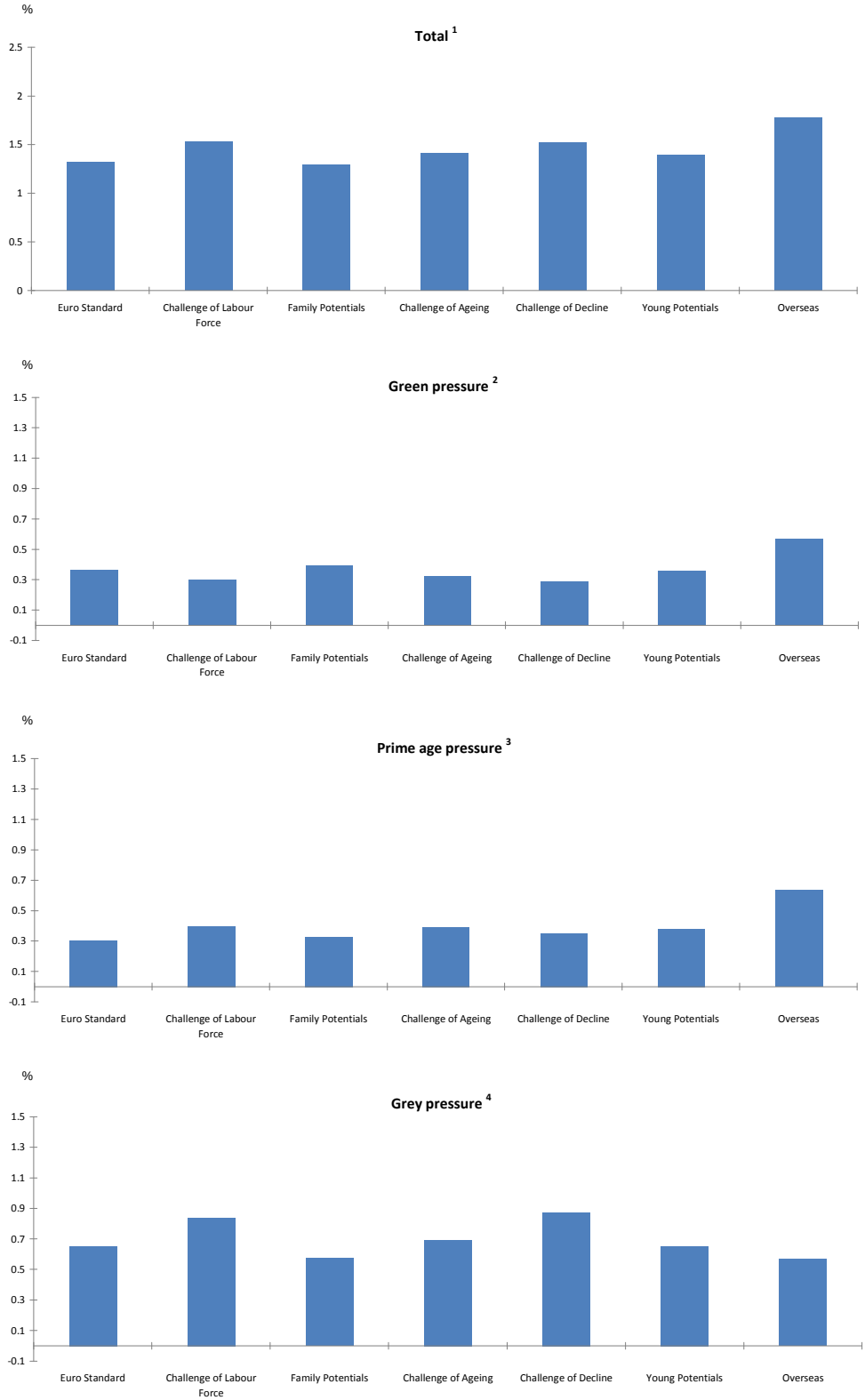

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.41: Dependency ratio, 2050 Challenged Market Europe, clusters



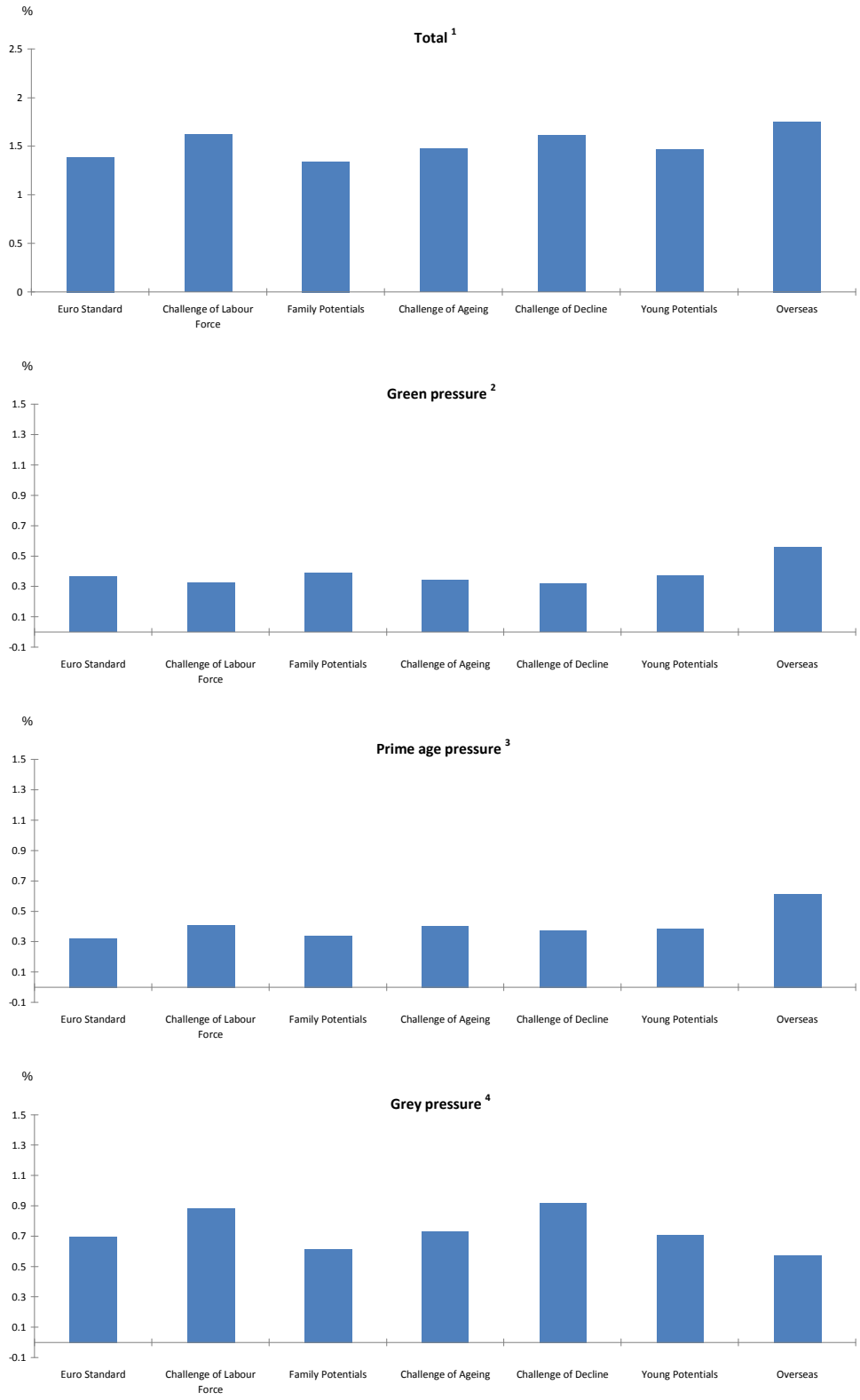

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.42: Dependency ratio, 2050 Expanding Market Europe, clusters



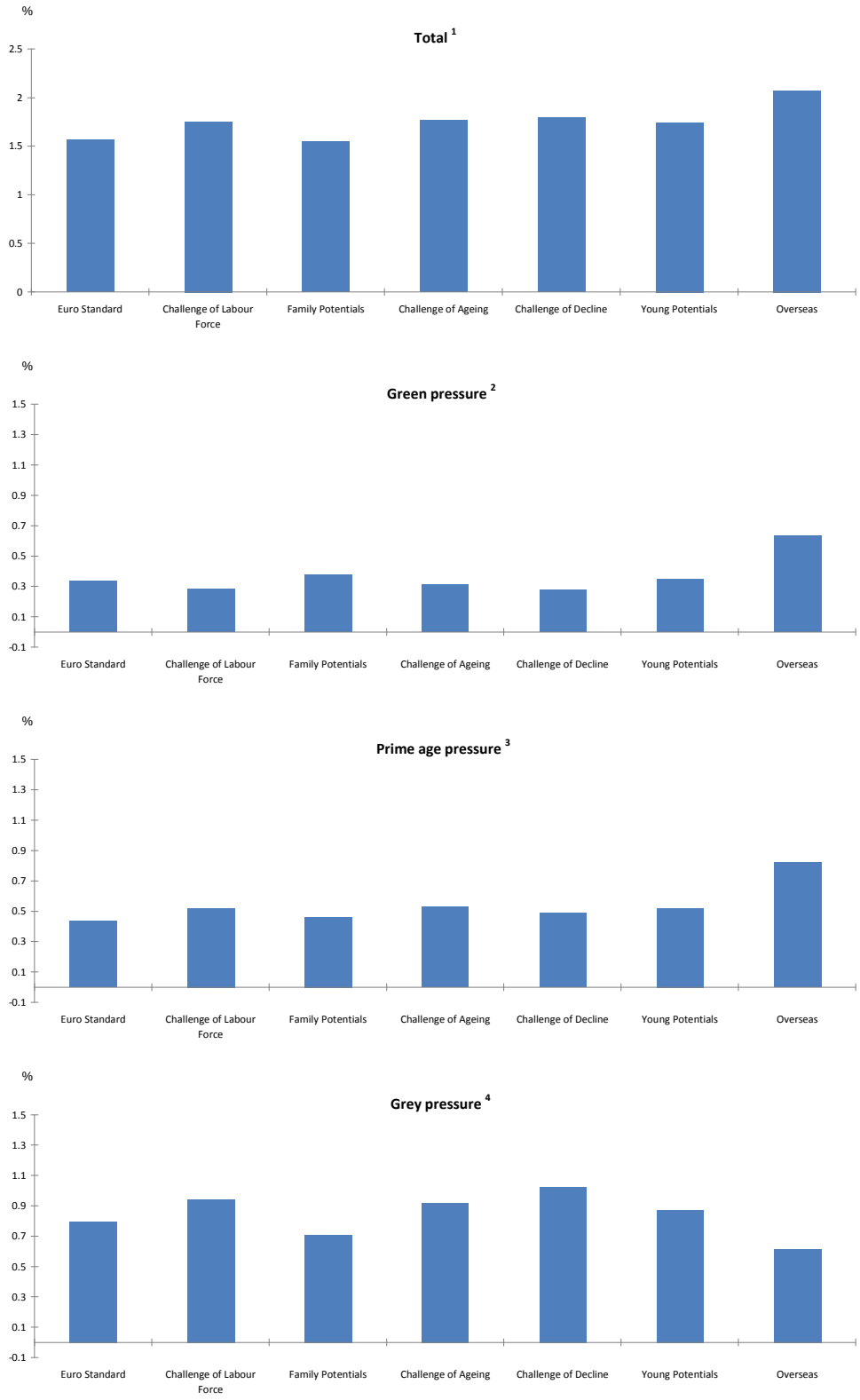

[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.43: Dependency ratio, 2050 Growing Social Europe, clusters




[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

## Figure 4.44: Dependency ratio, 2050 Limited Social Europe, clusters




[1] Non-active population related to active population
[2] Population aged 19 and below related to active population
[3] Population aged 20-59 related to active population
[4] Population aged 60 and over related to active population

# APPENDIX

***Scenario profile*** **:** **Austria**

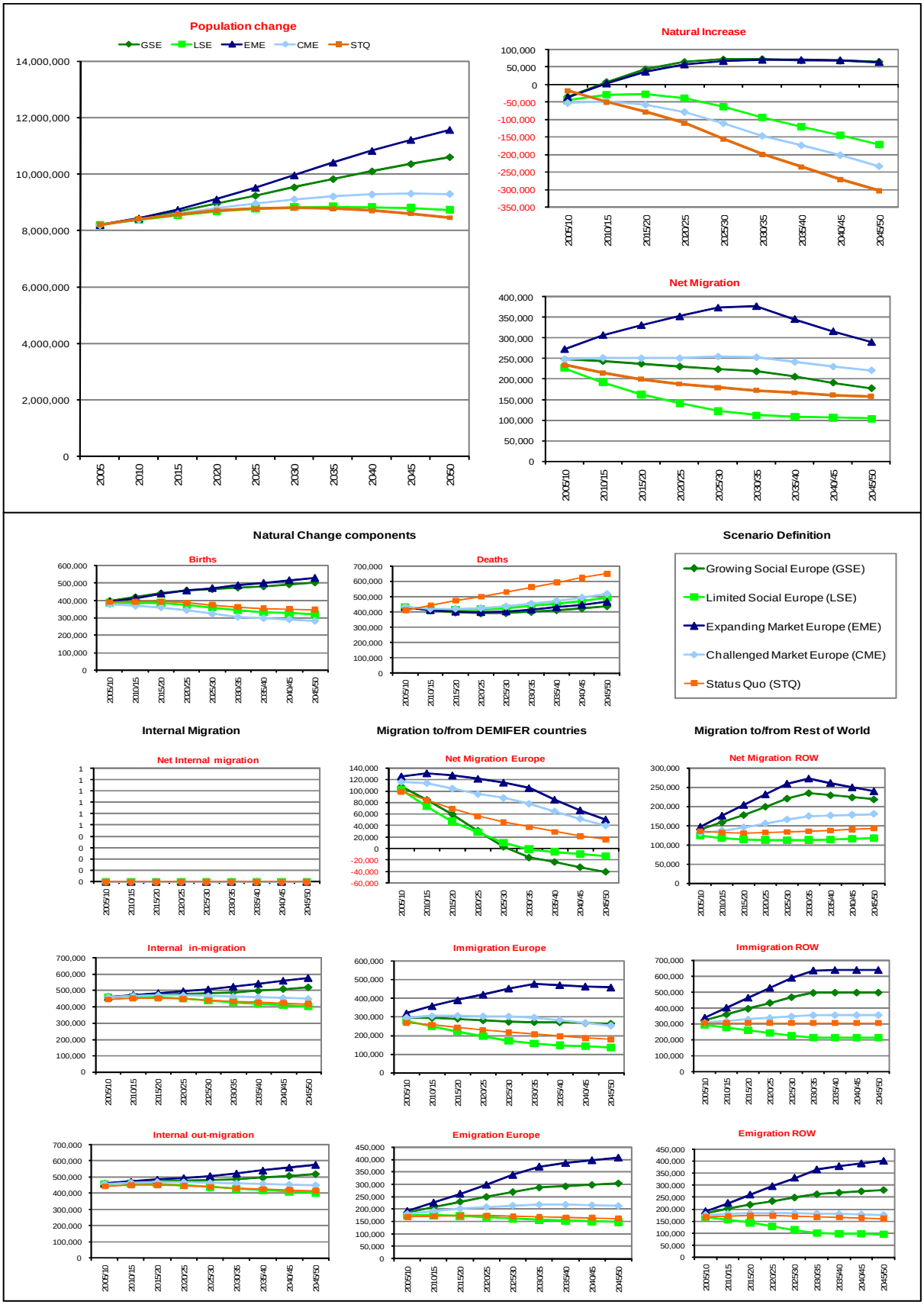



**Figure A.1: Scenario profile for population stocks and components of change, 2005-50: Austria**

***Scenario profile* :** **Belgium**

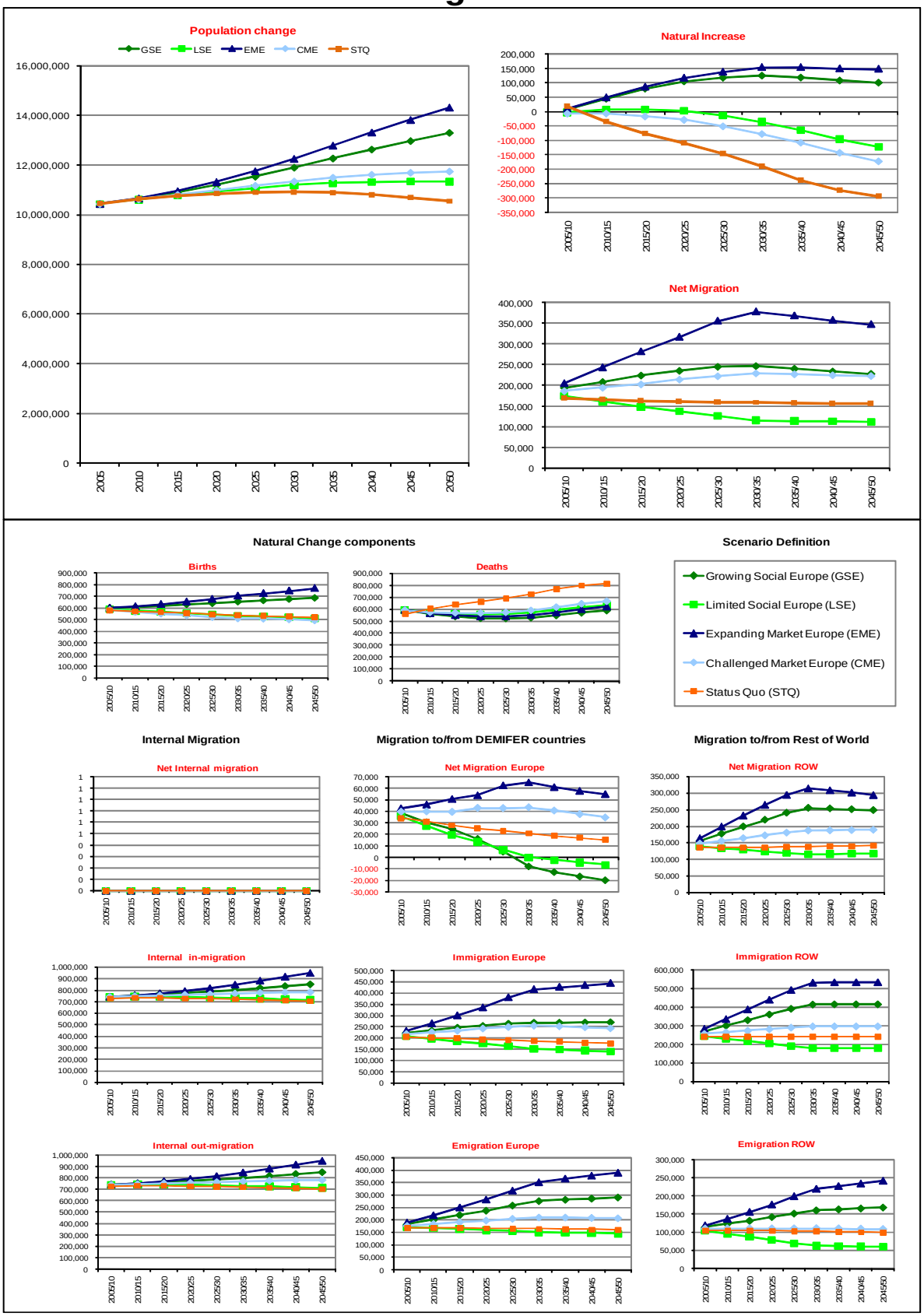



**Figure A.2: Scenario profile for population stocks and components of change, 2005-50: Belgium**

***Scenario profile*** **:** **Bulgaria**

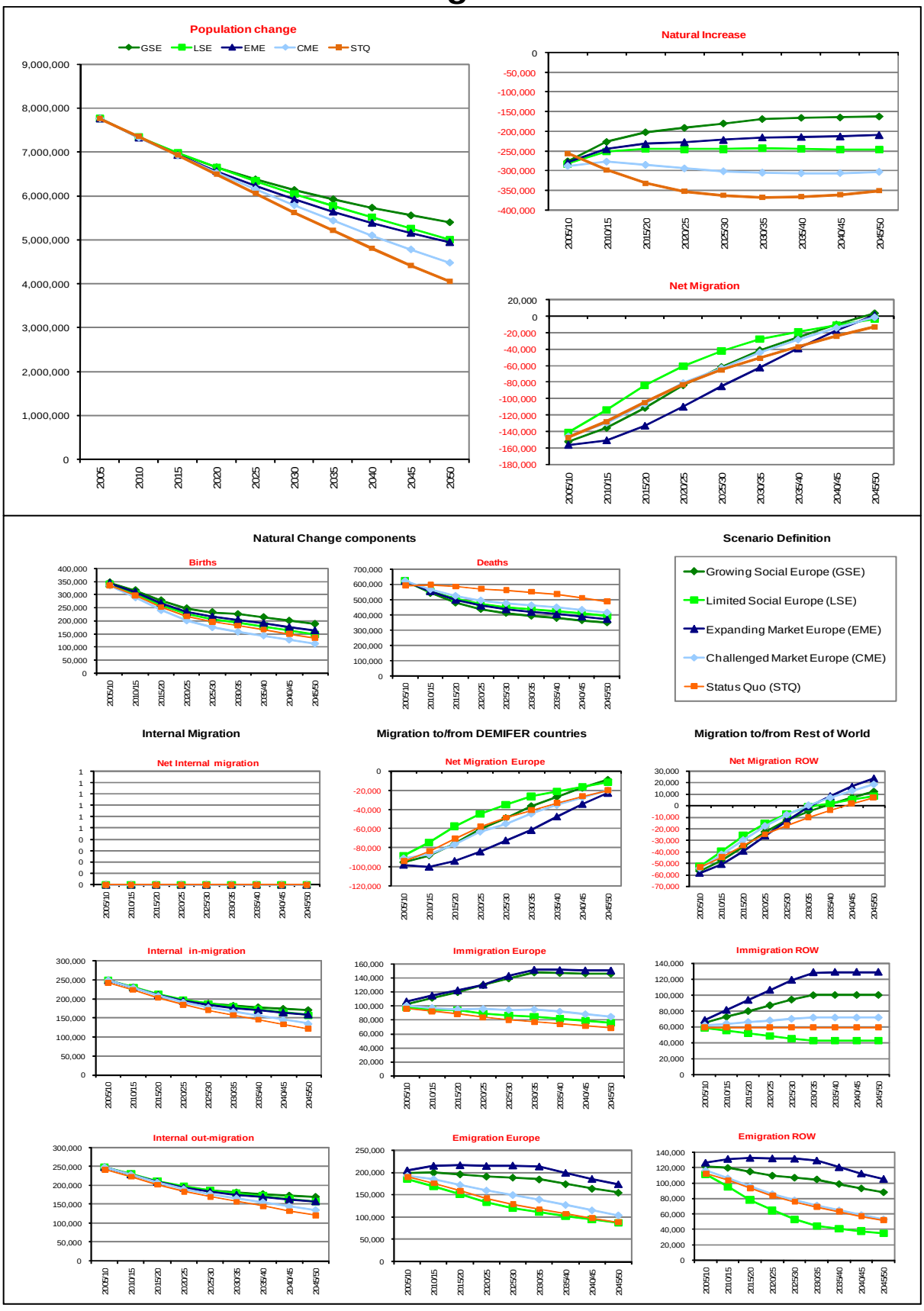



**Figure A.3: Scenario profile for population stocks and components of change, 2005-50: Bulgaria**

***Scenario profile* :** **Cyprus**

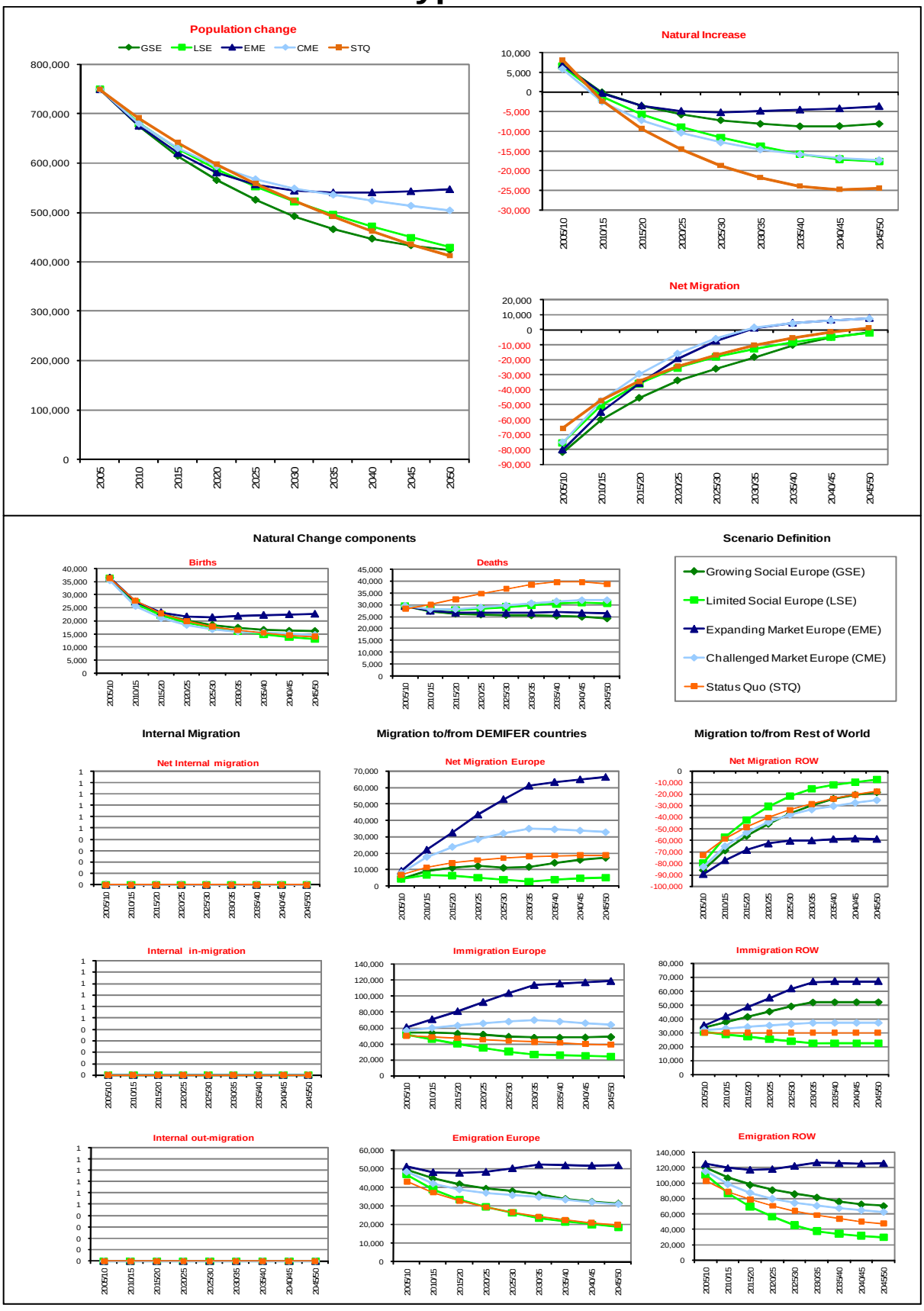



**Figure A.4: Scenario profile for population stocks and components of change, 2005-50: Cyprus**

***Scenario profile*** **:** **Czech Republic**

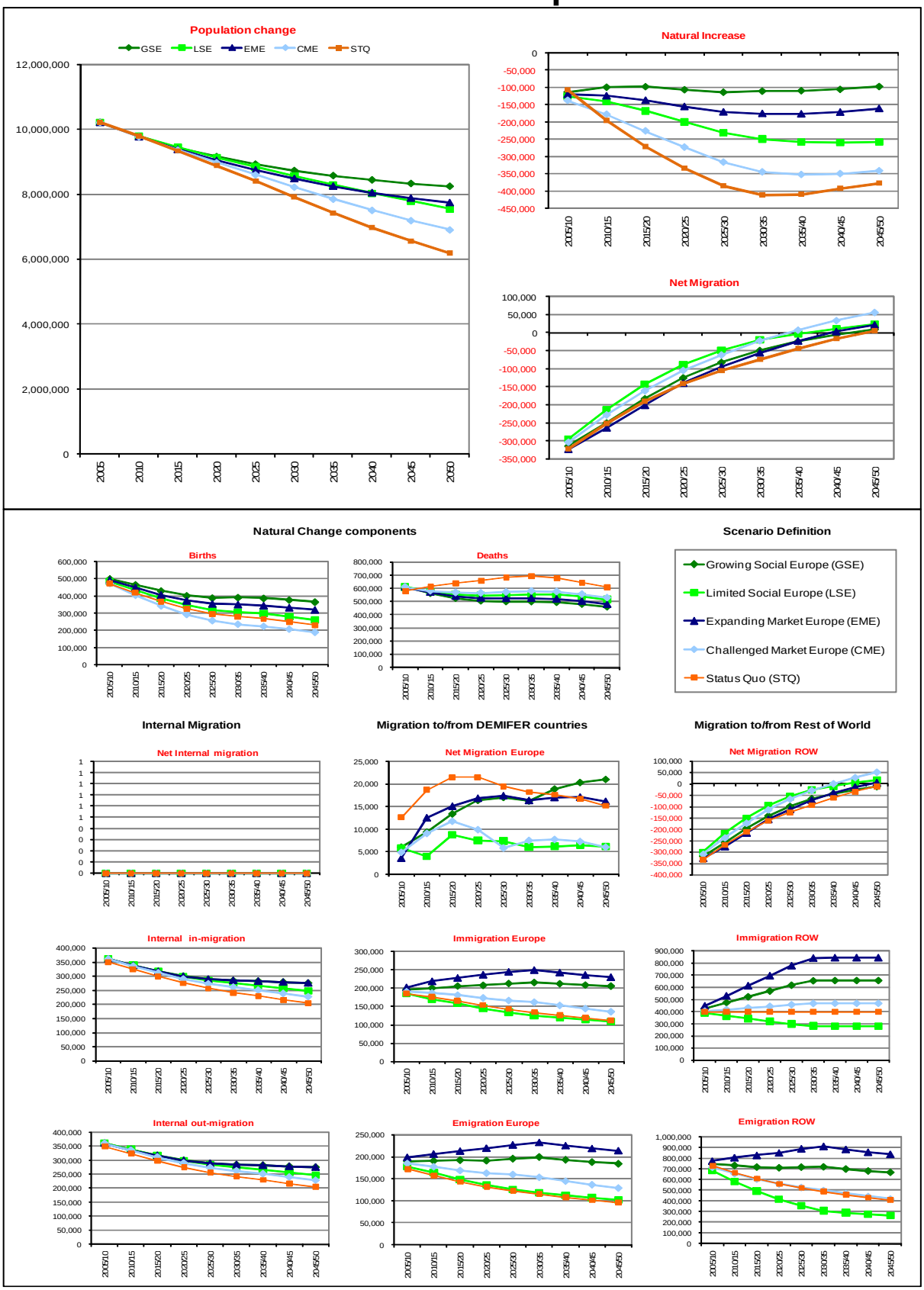



**Figure A.5: Scenario profile for population stocks and components of change, 2005-50: Czech Republic**

***Scenario profile*** **:** **Denmark**

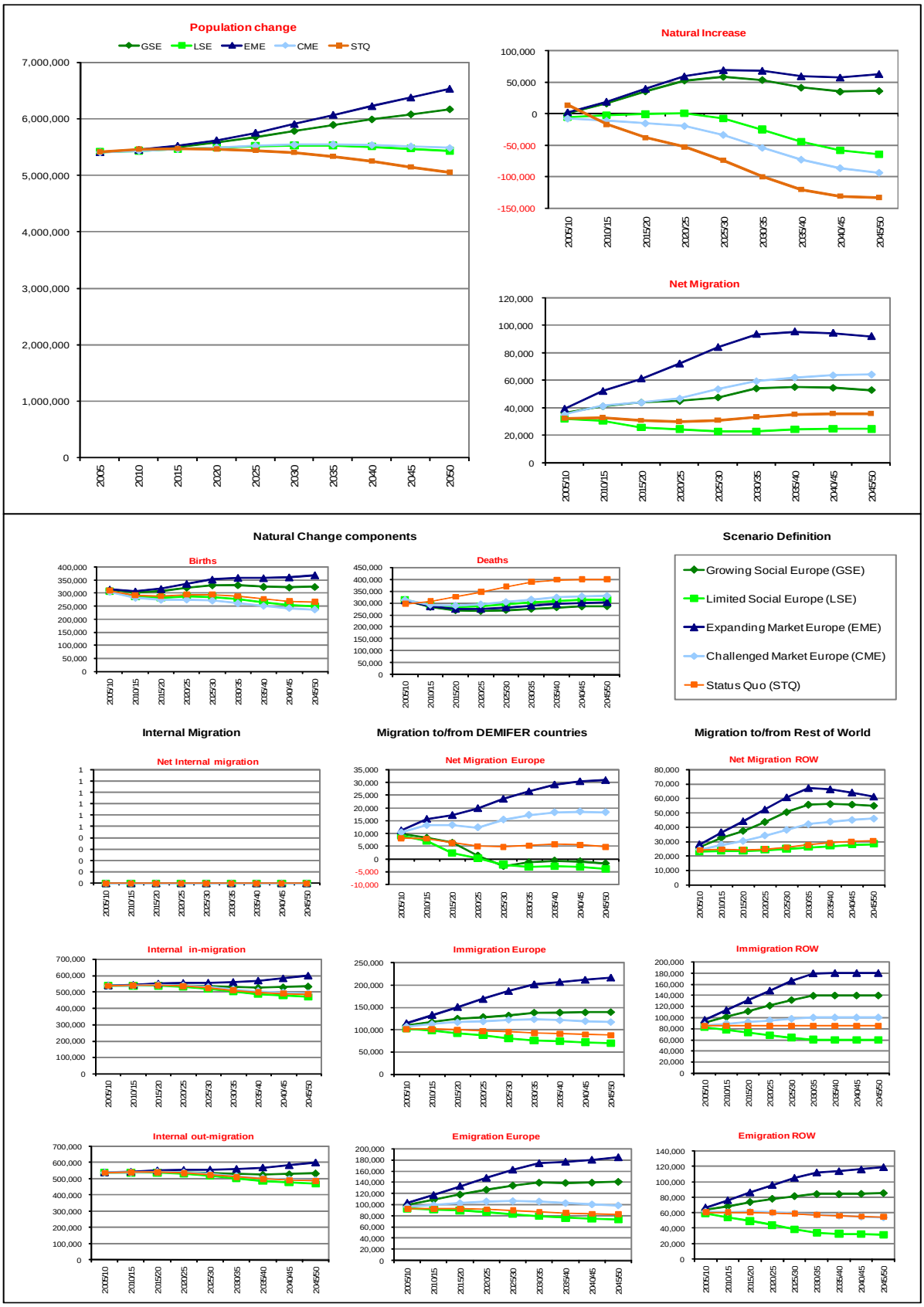



**Figure A.6: Scenario profile for population stocks and components of change, 2005-50: Denmark**

***Scenario profile*** **:** **Estonia**

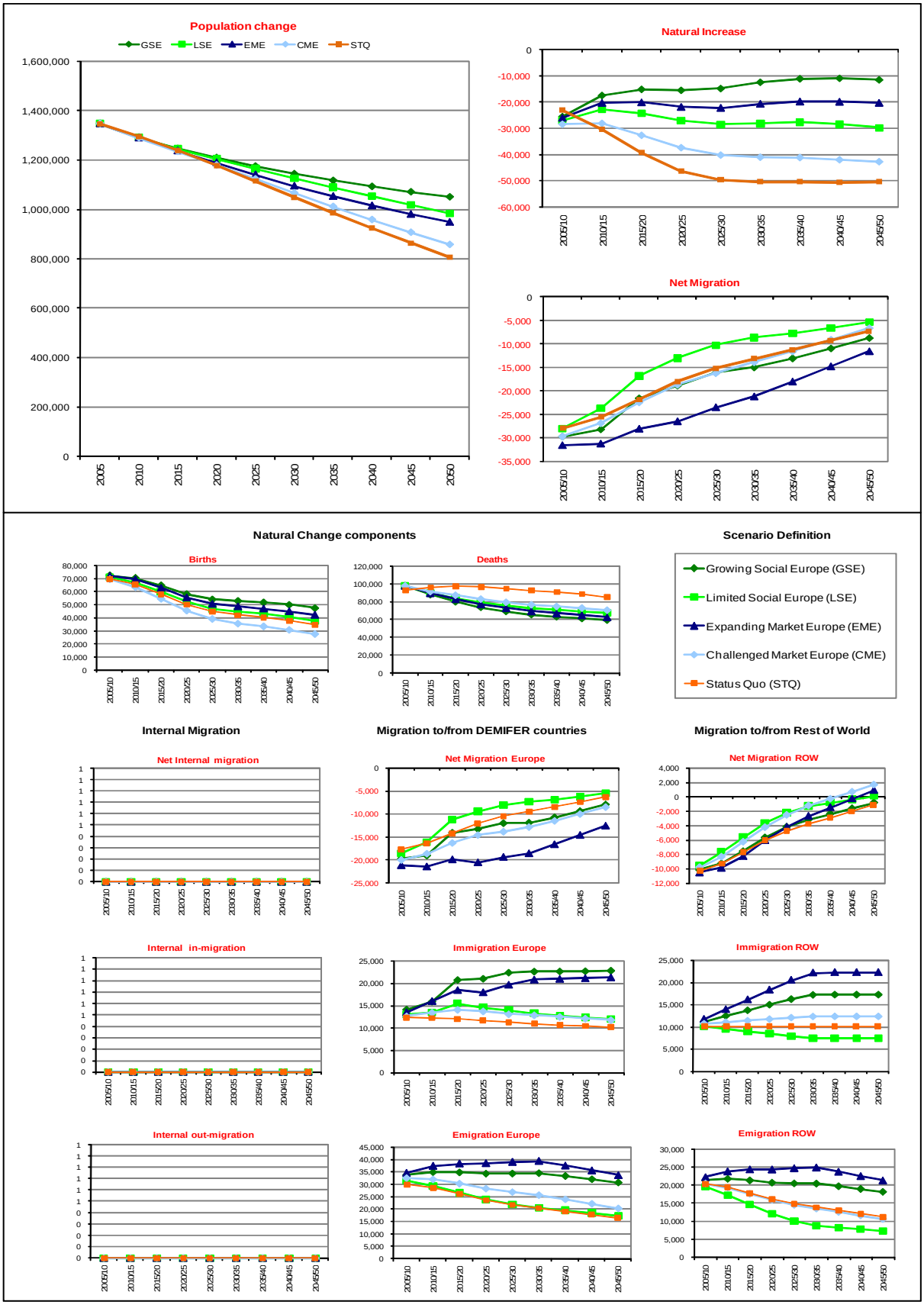



**Figure A.7: Scenario profile for population stocks and components of change, 2005-50: Estonia**

***Scenario profile* :** **Finland**

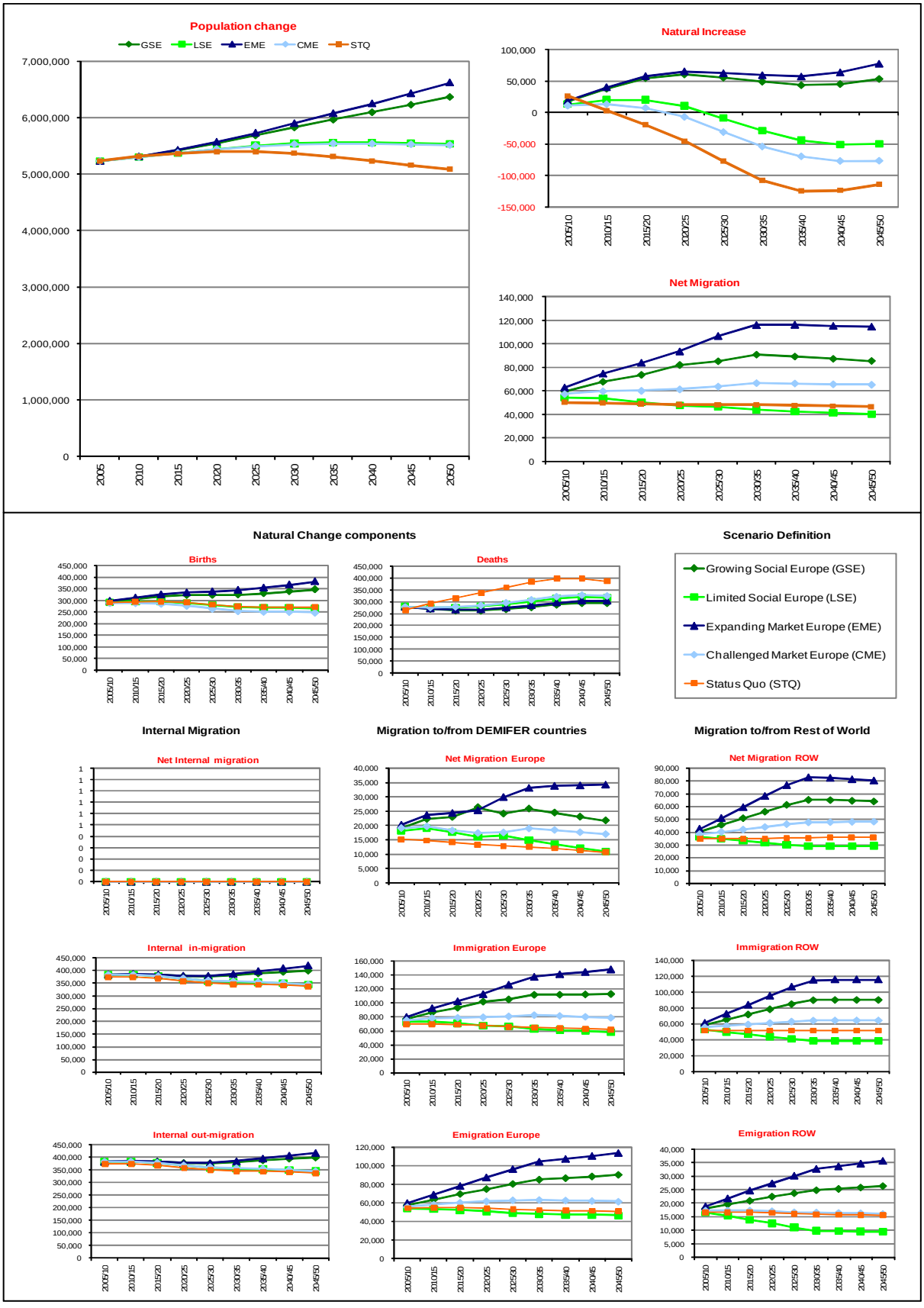



**Figure A.8: Scenario profile for population stocks and components of change, 2005-50: Finland**

***Scenario profile* :** **France**

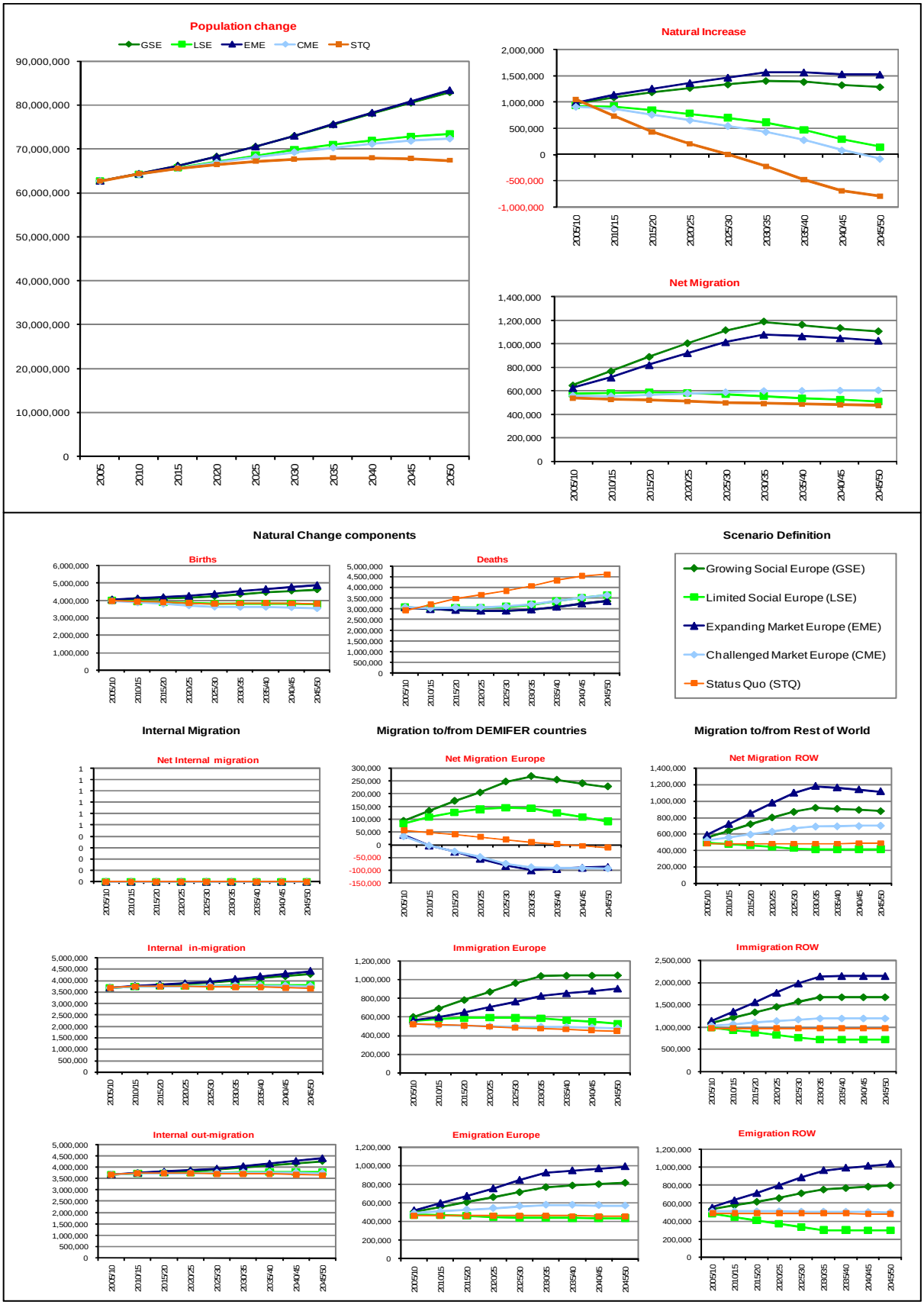



**Figure A.9: Scenario profile for population stocks and components of change, 2005-50: France**

***Scenario profile*** **:** **Germany**

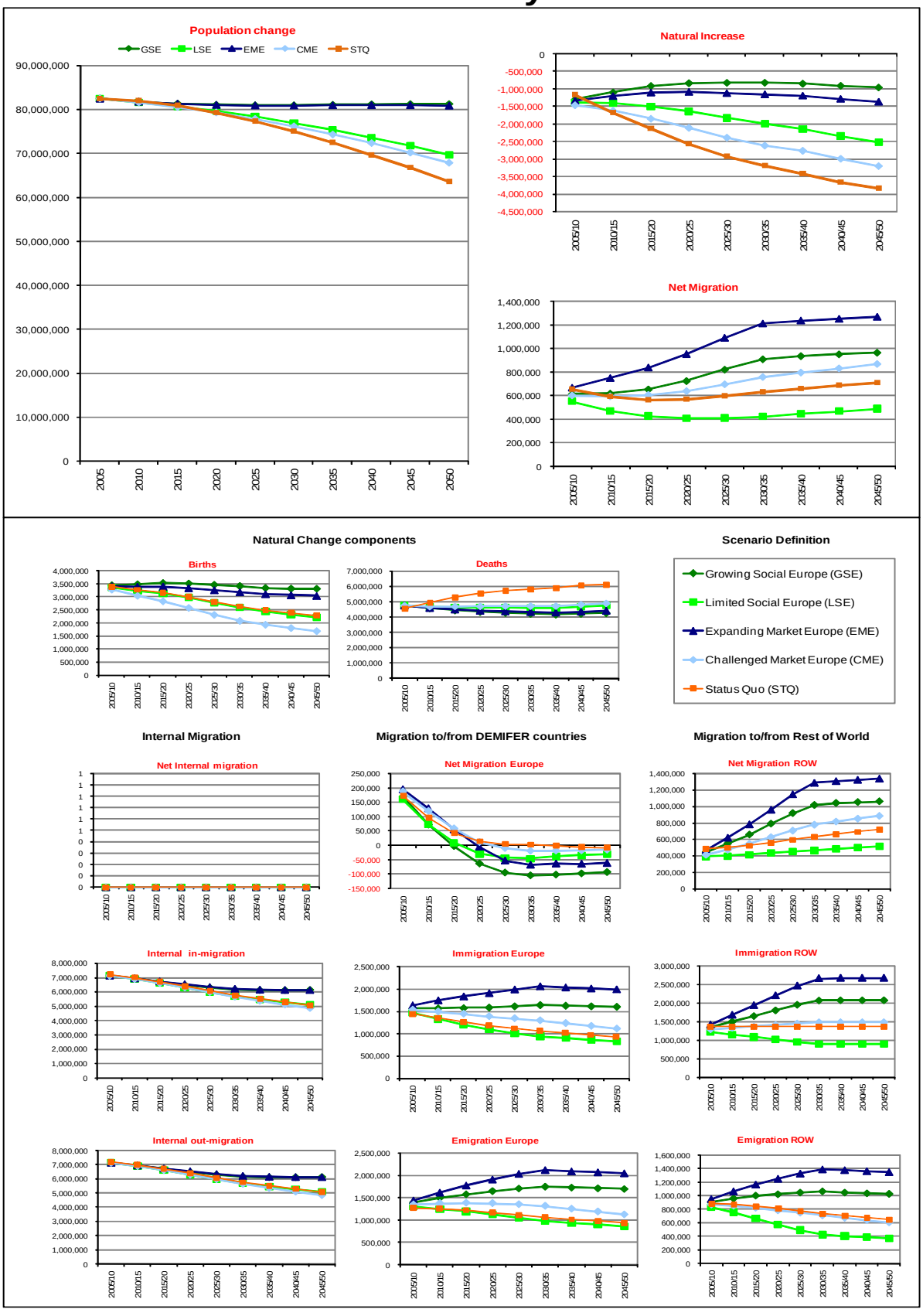



**Figure A.10: Scenario profile for population stocks and components of change, 2005-50: Germany**

***Scenario profile*** **:** **Greece**

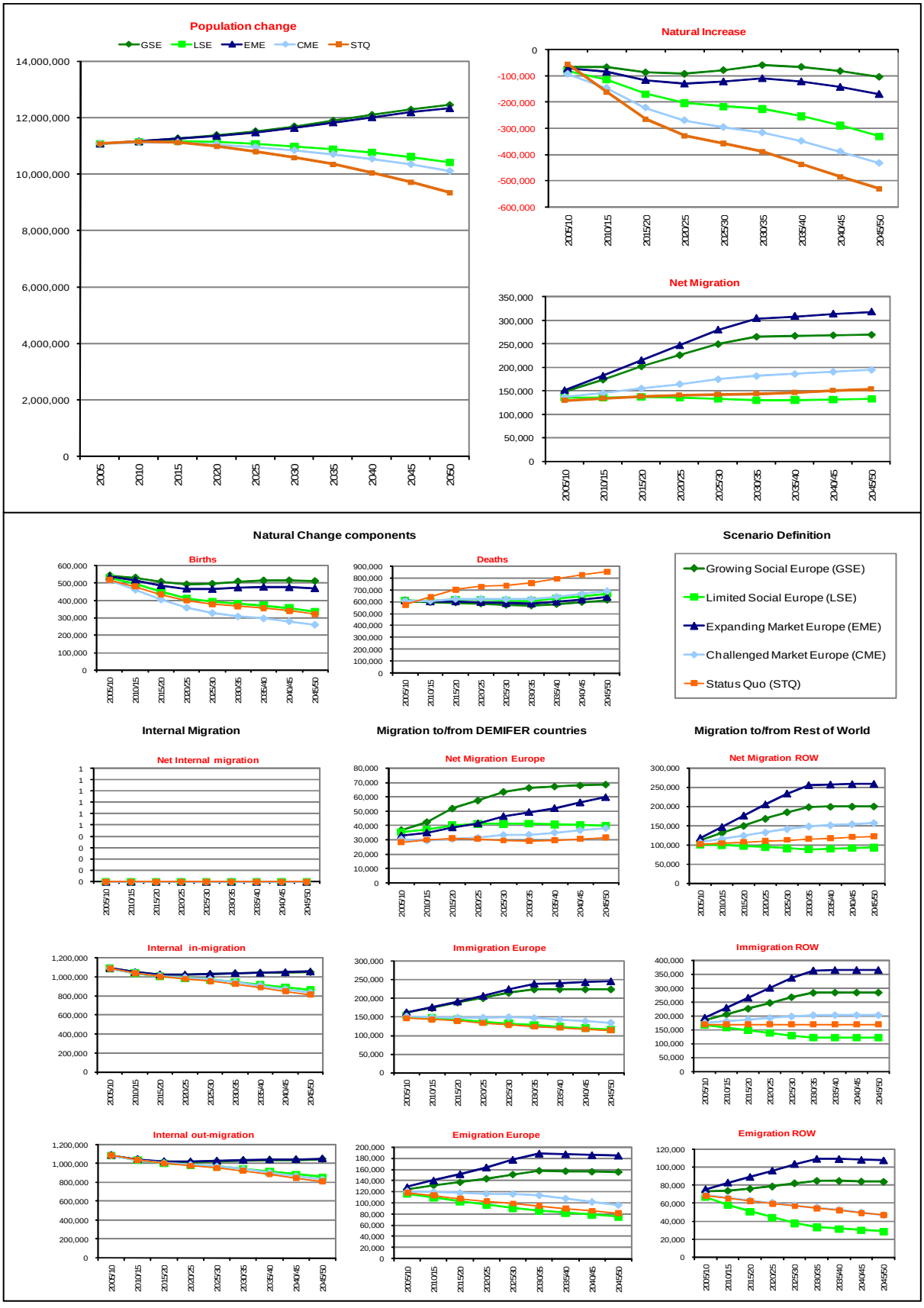



**Figure A.11: Scenario profile for population stocks and components of change, 2005-50: Greece**

***Scenario profile*** **:** **Hungary**

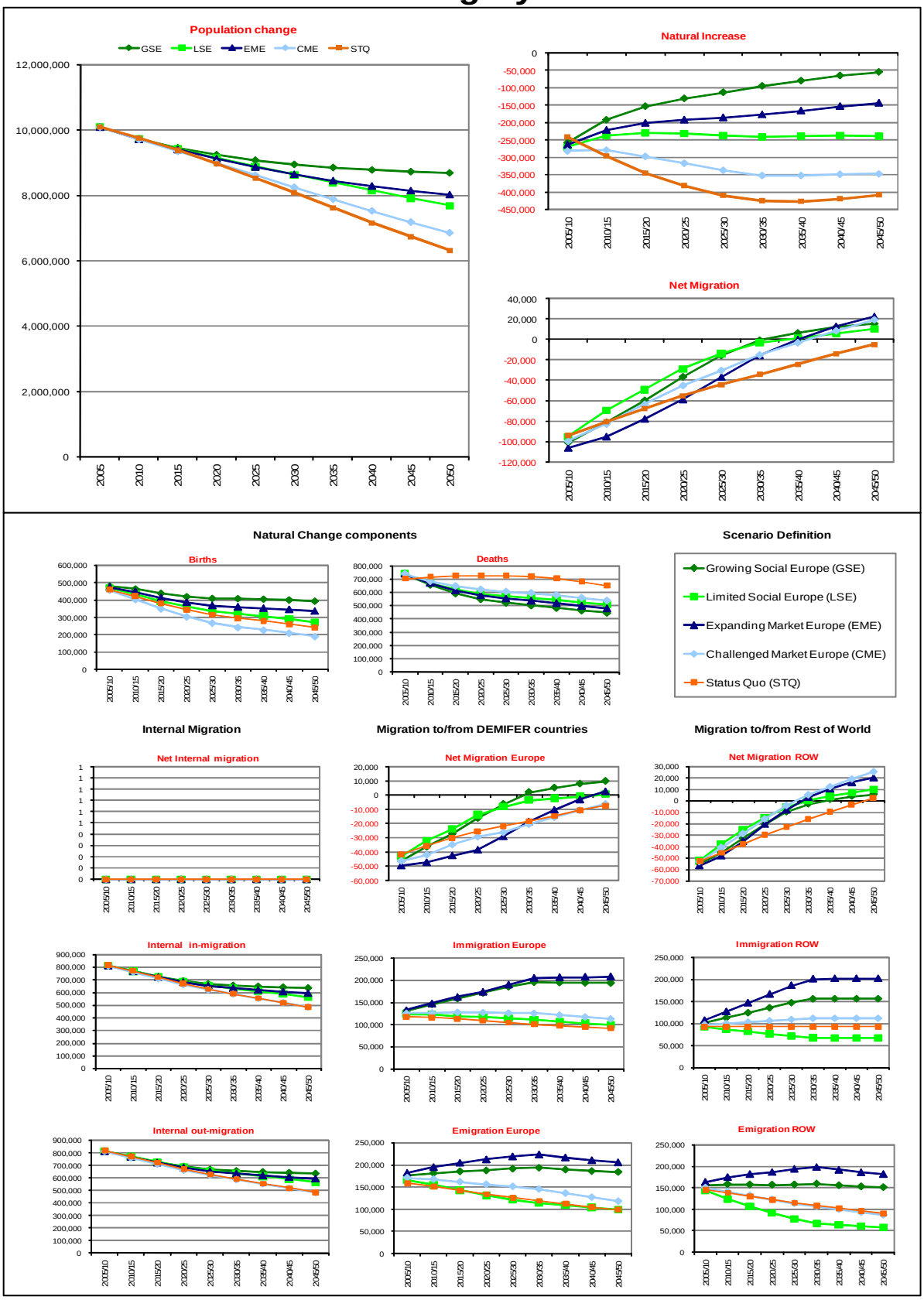



**Figure A.12: Scenario profile for population stocks and components of change, 2005-50: Hungary**

***Scenario profile*** **:** **Iceland**

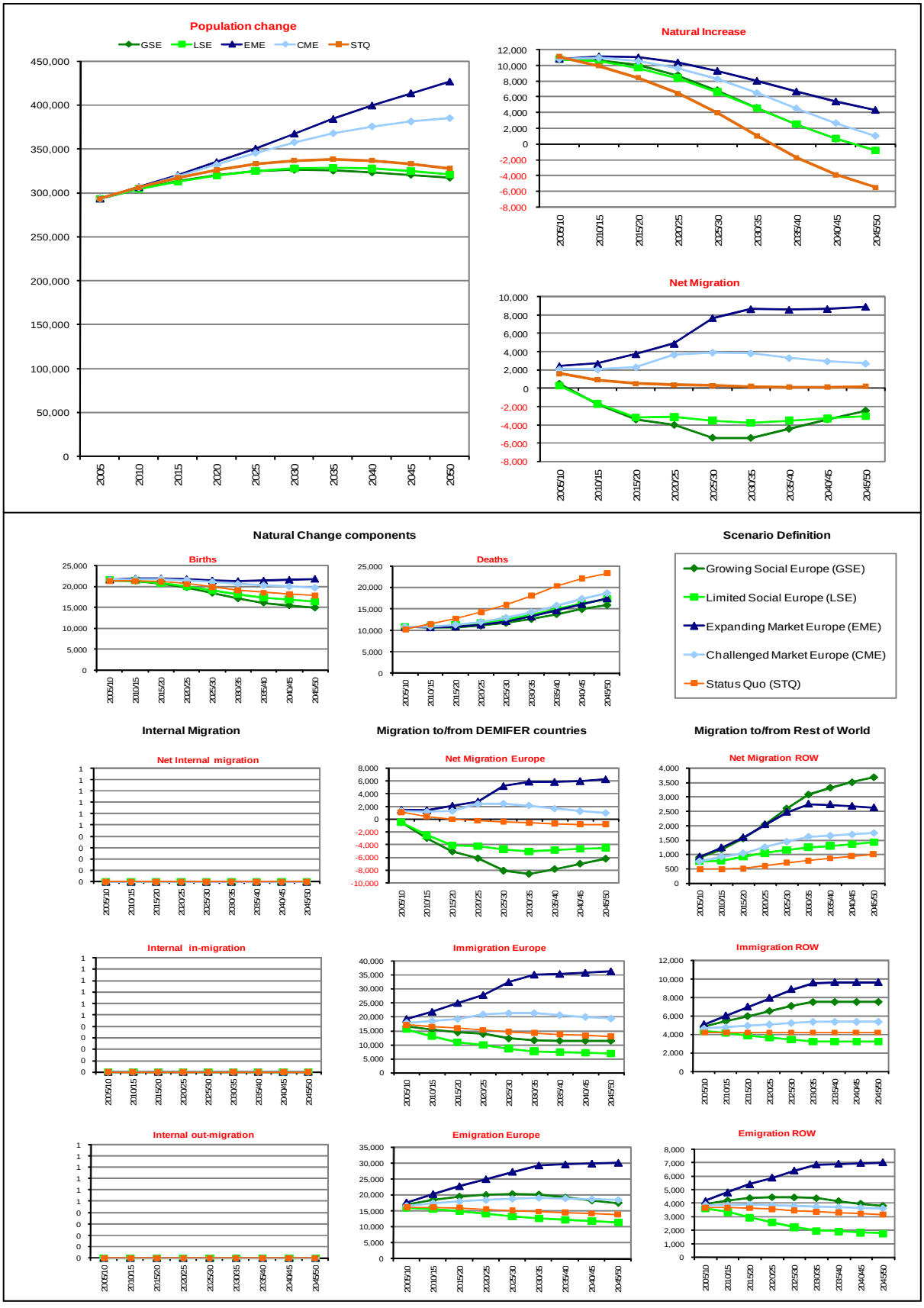



**Figure A.13: Scenario profile for population stocks and components of change, 2005-50: Iceland**

***Scenario profile*** **:** **Ireland**

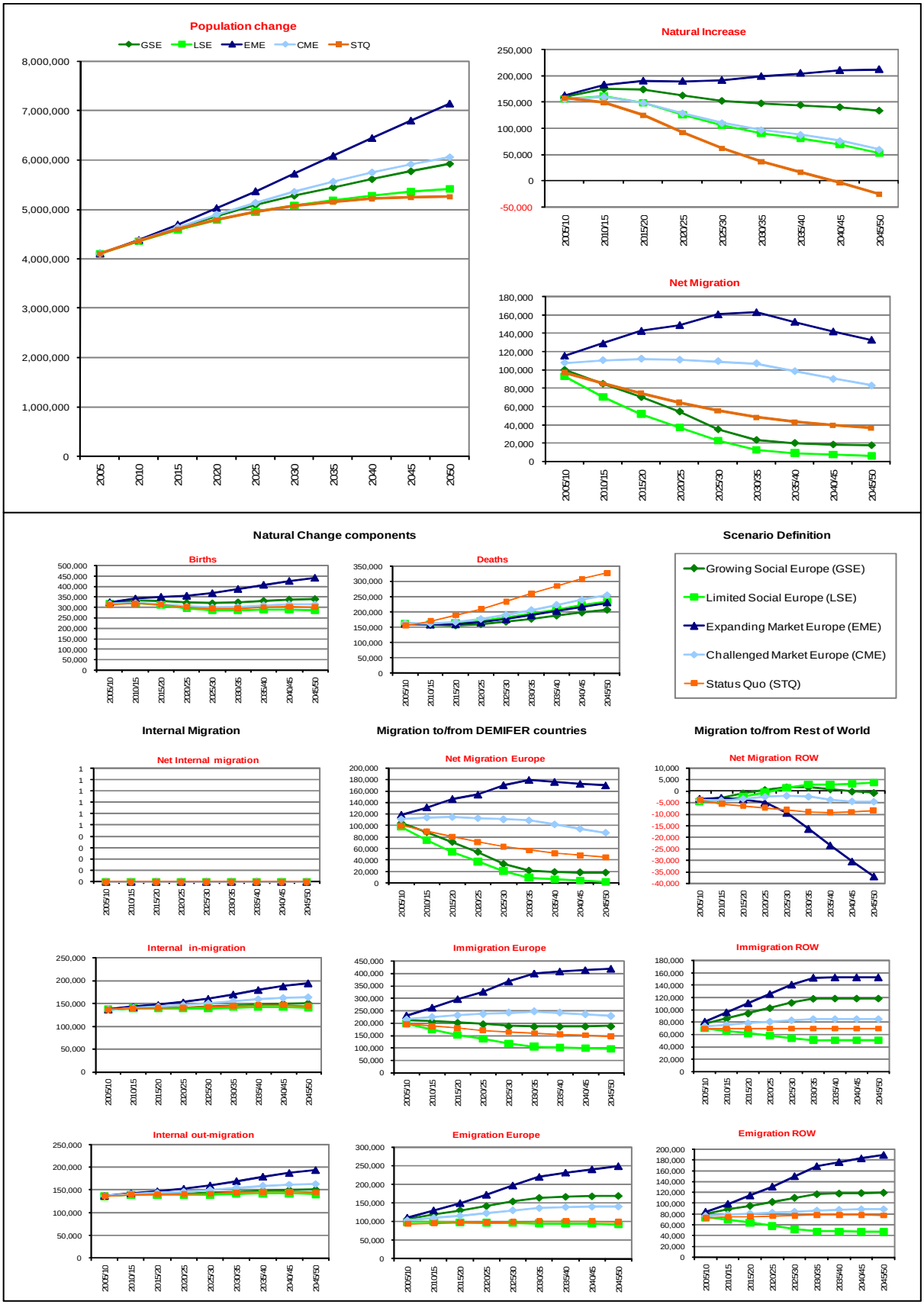



**Figure A.14: Scenario profile for population stocks and components of change, 2005-50: Ireland**

***Scenario profile*** **:** **Italy**

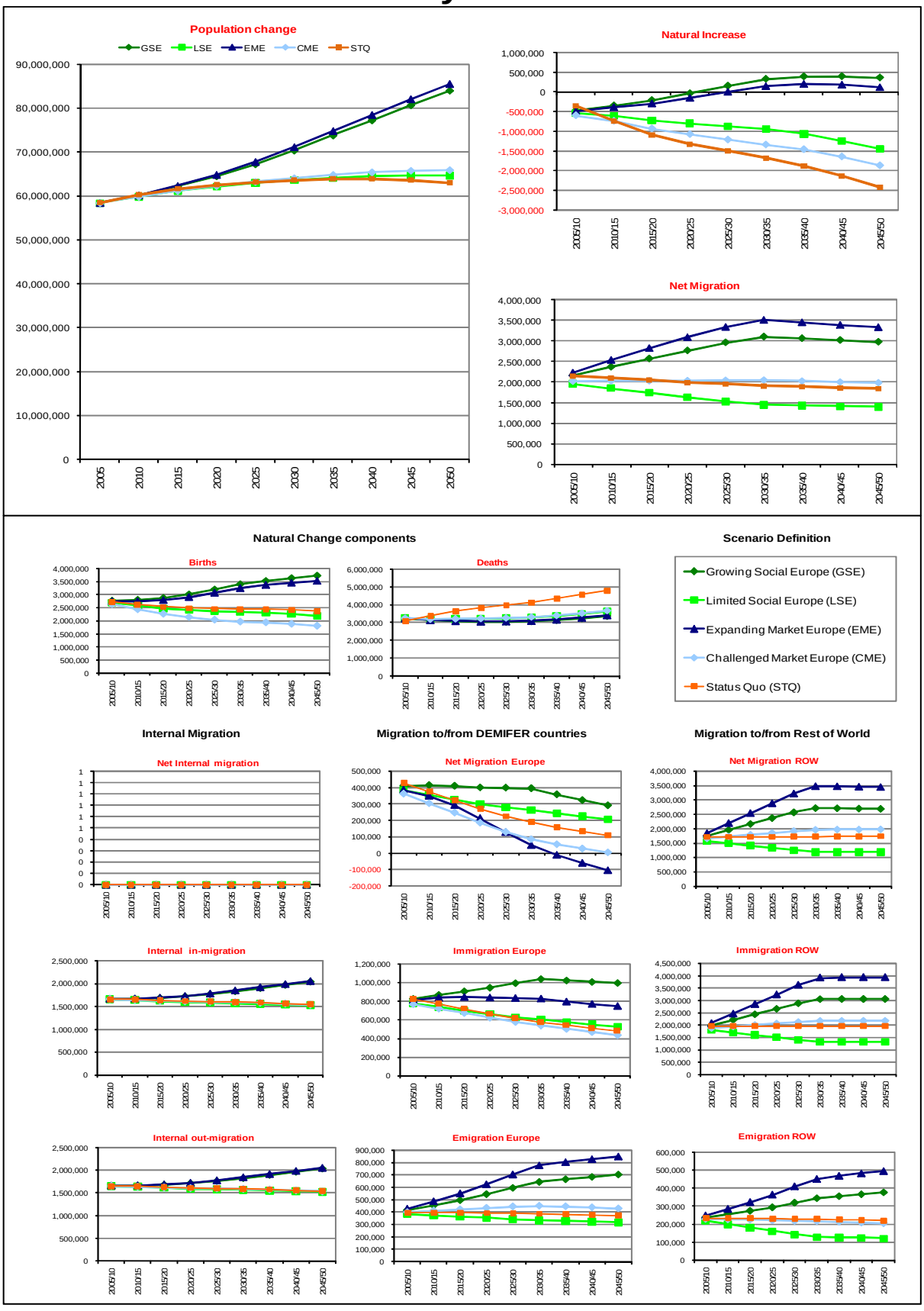



**Figure A.15: Scenario profile for population stocks and components of change, 2005-50: Italy**

***Scenario profile*** **:** **Latvia**

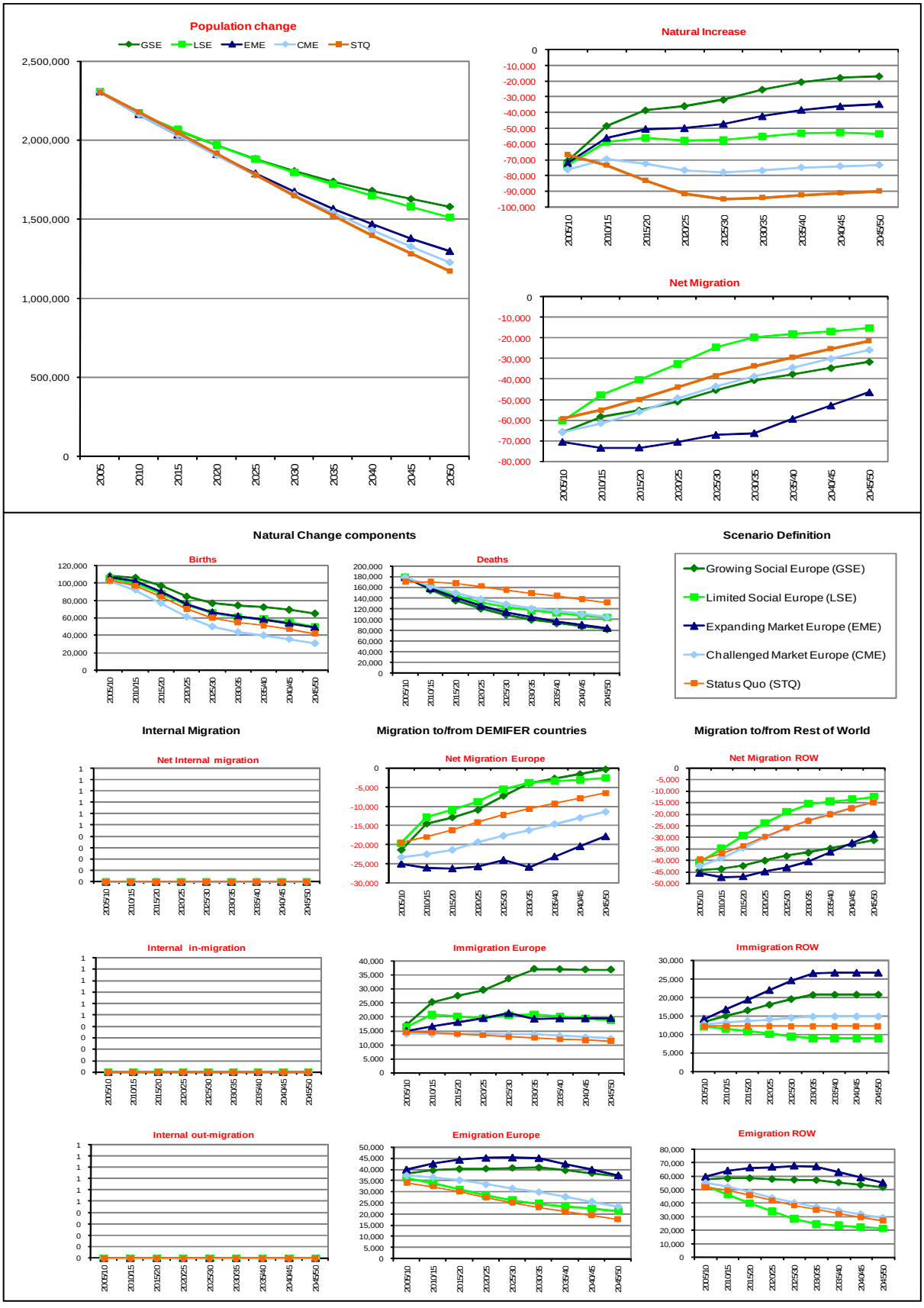



**Figure A.16: Scenario profile for population stocks and components of change, 2005-50: Latvia**

***Scenario profile*** **:** **Liechtenstein**

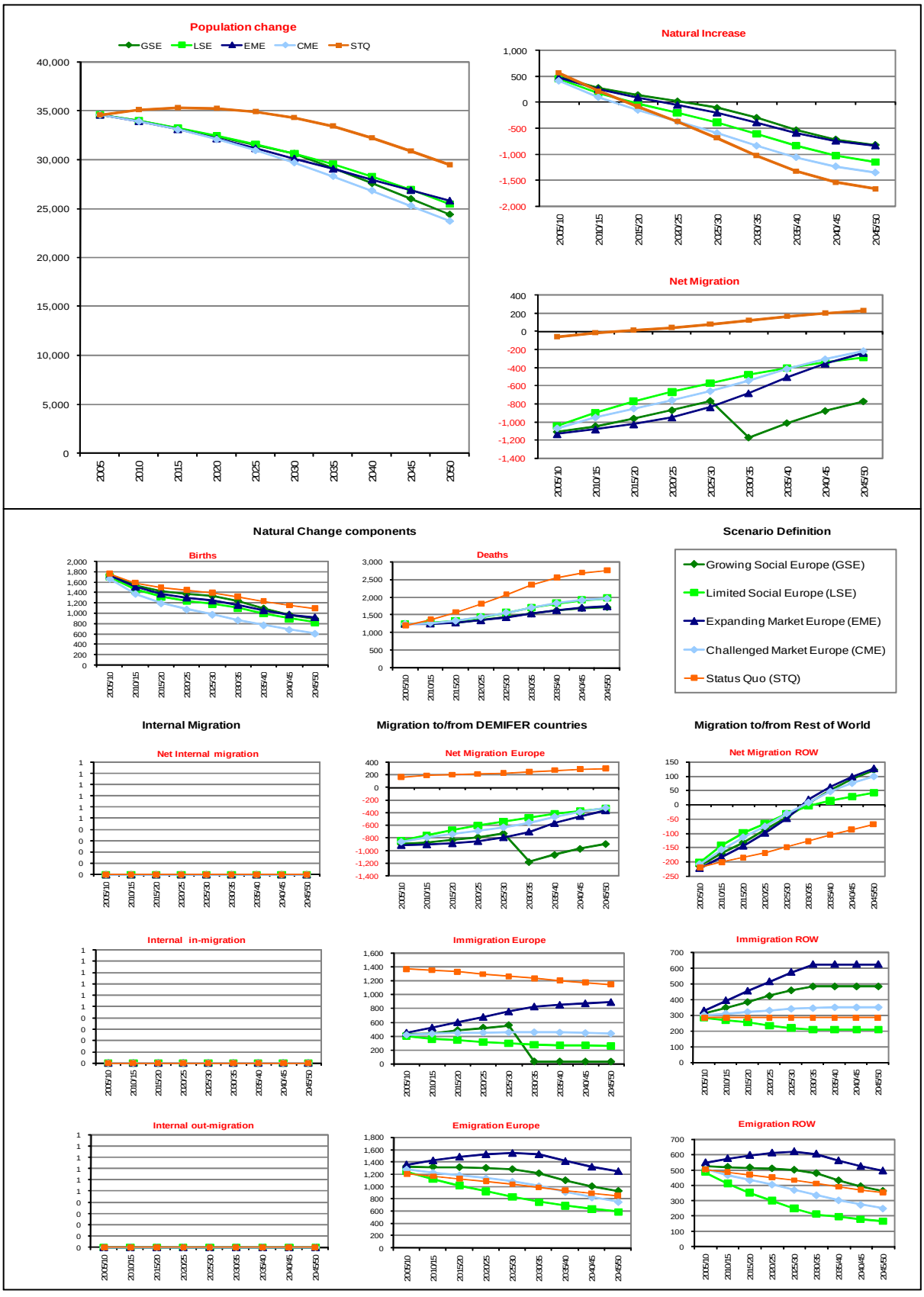



**Figure A.17: Scenario profile for population stocks and components of change, 2005-50: Liechtenstein**

***Scenario profile*** **:** **Lithuania**

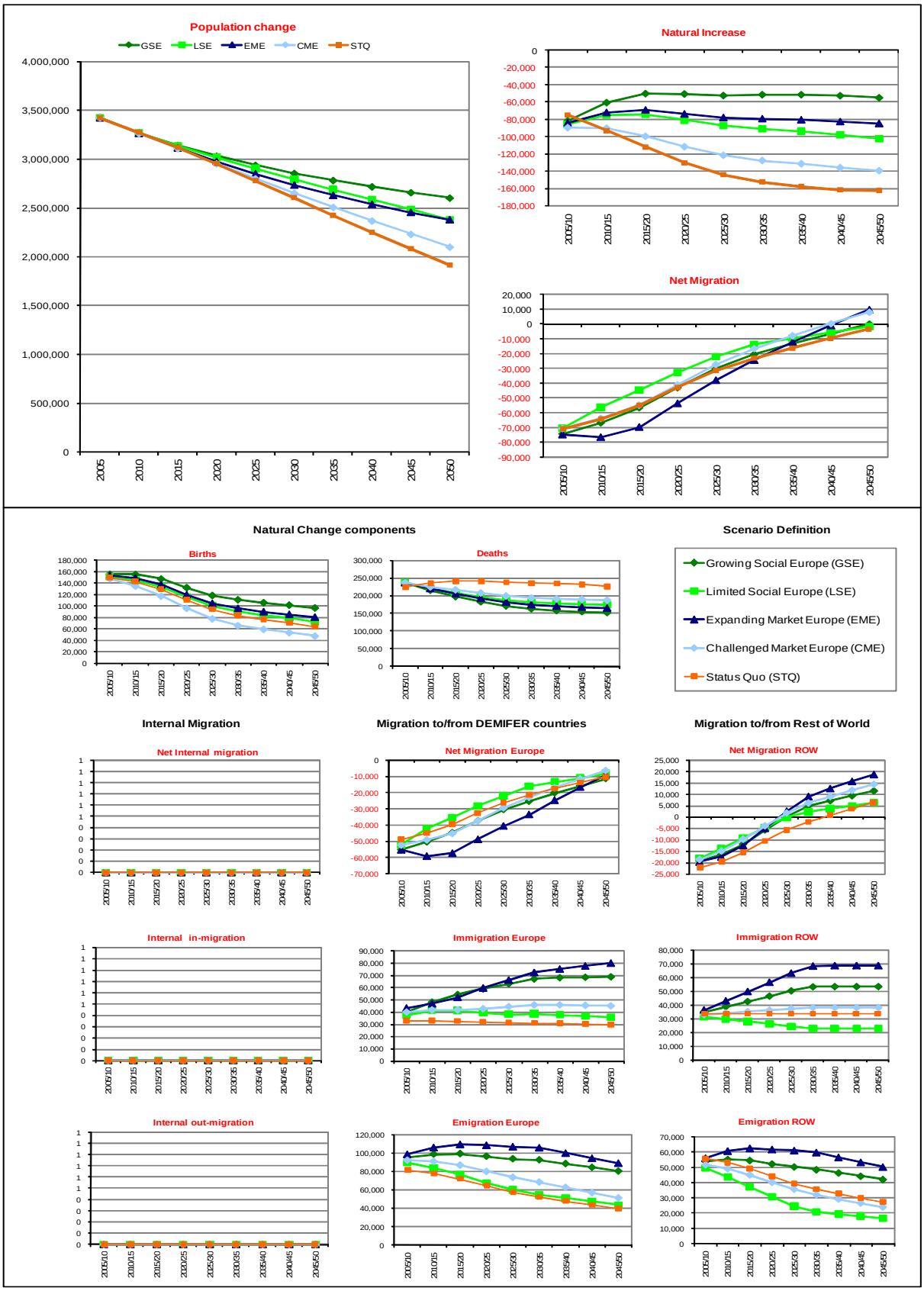



**Figure A.18: Scenario profile for population stocks and components of change, 2005-50: Lithuania**

***Scenario profile* :** **Luxembourg**

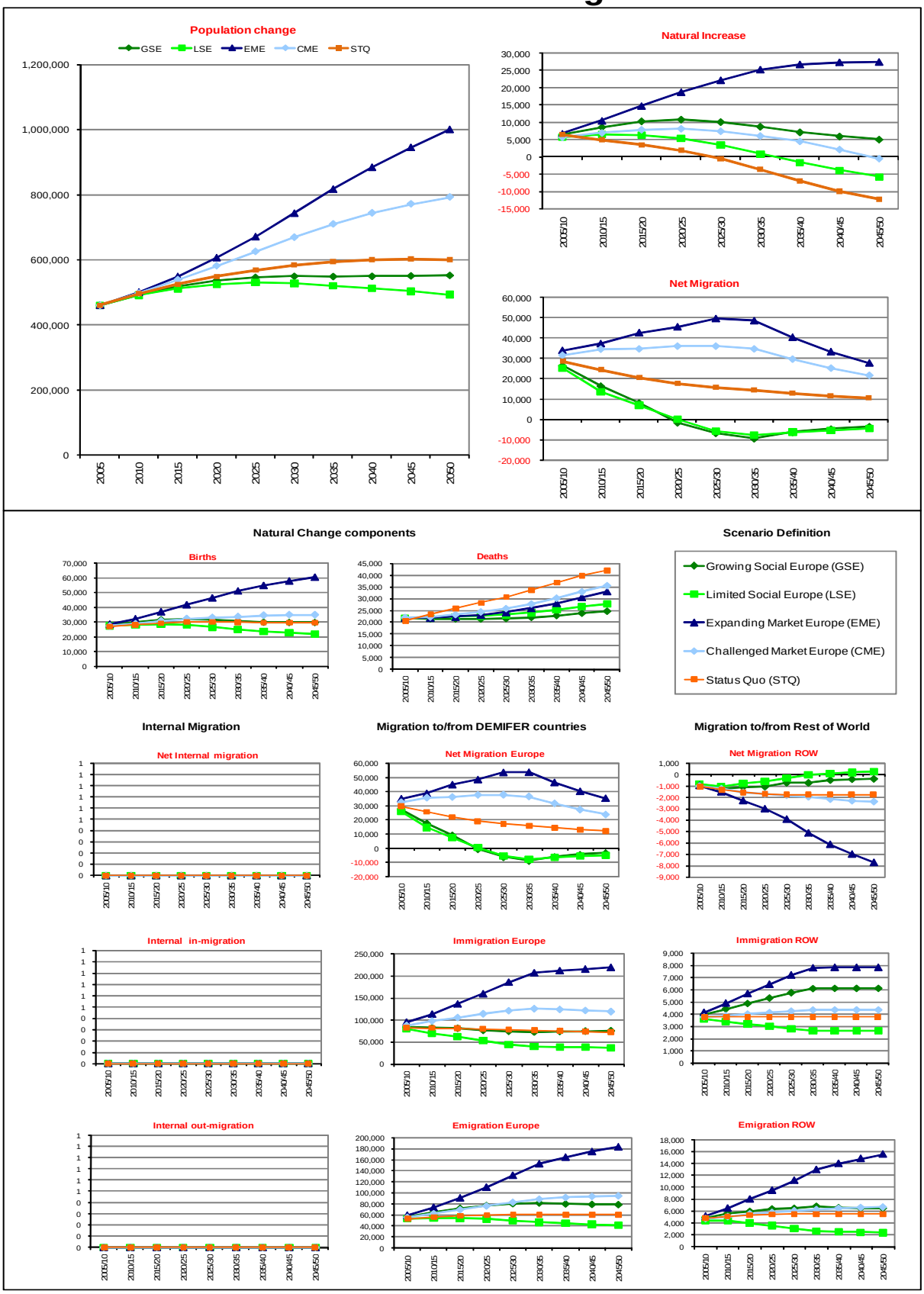



**Figure A.19: Scenario profile for population stocks and components of change, 2005-50: Luxembourg**

***Scenario profile*** **:** **Malta**

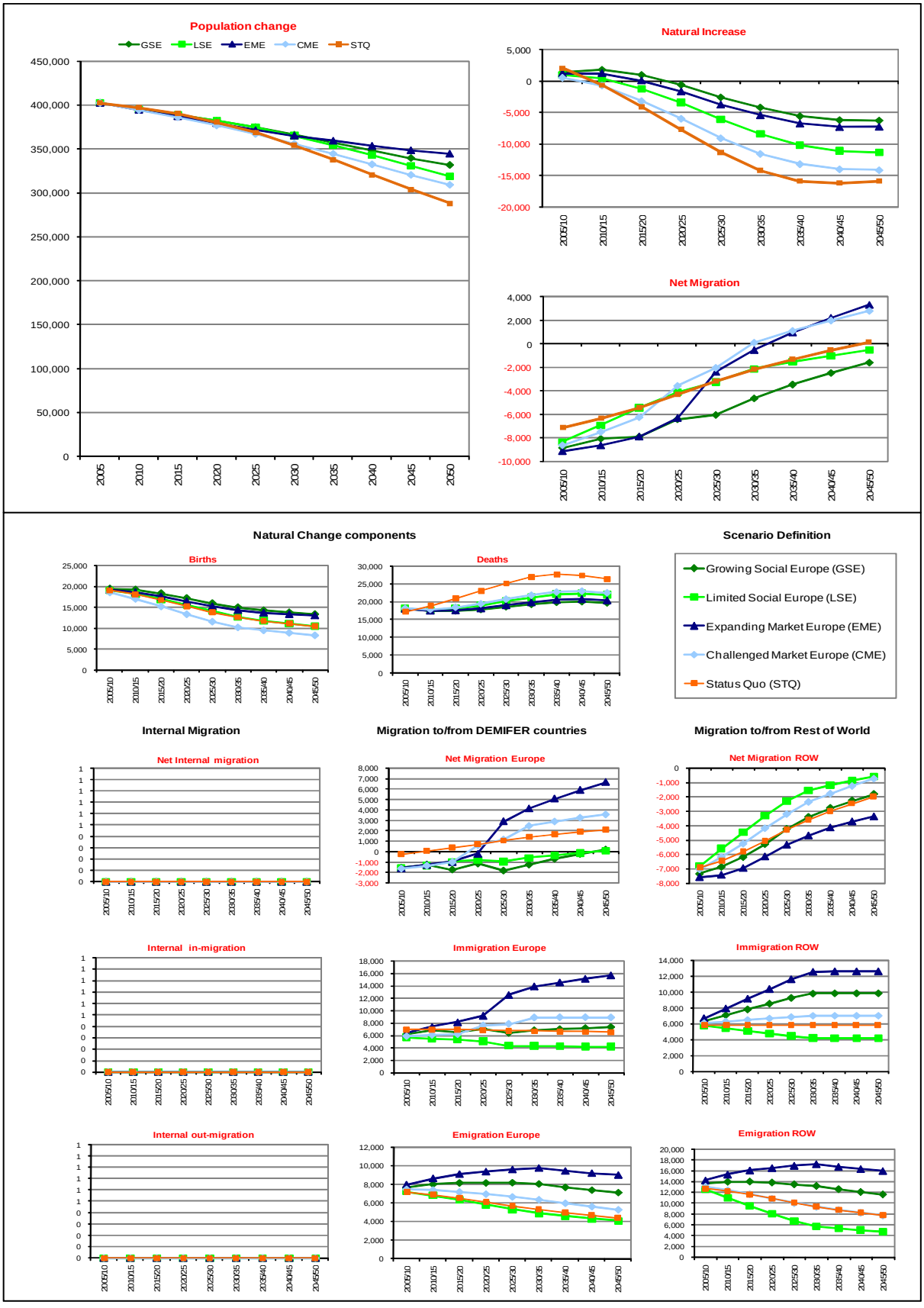



**Figure A.20: Scenario profile for population stocks and components of change, 2005-50: Malta**

***Scenario profile*** **:** **Netherlands**

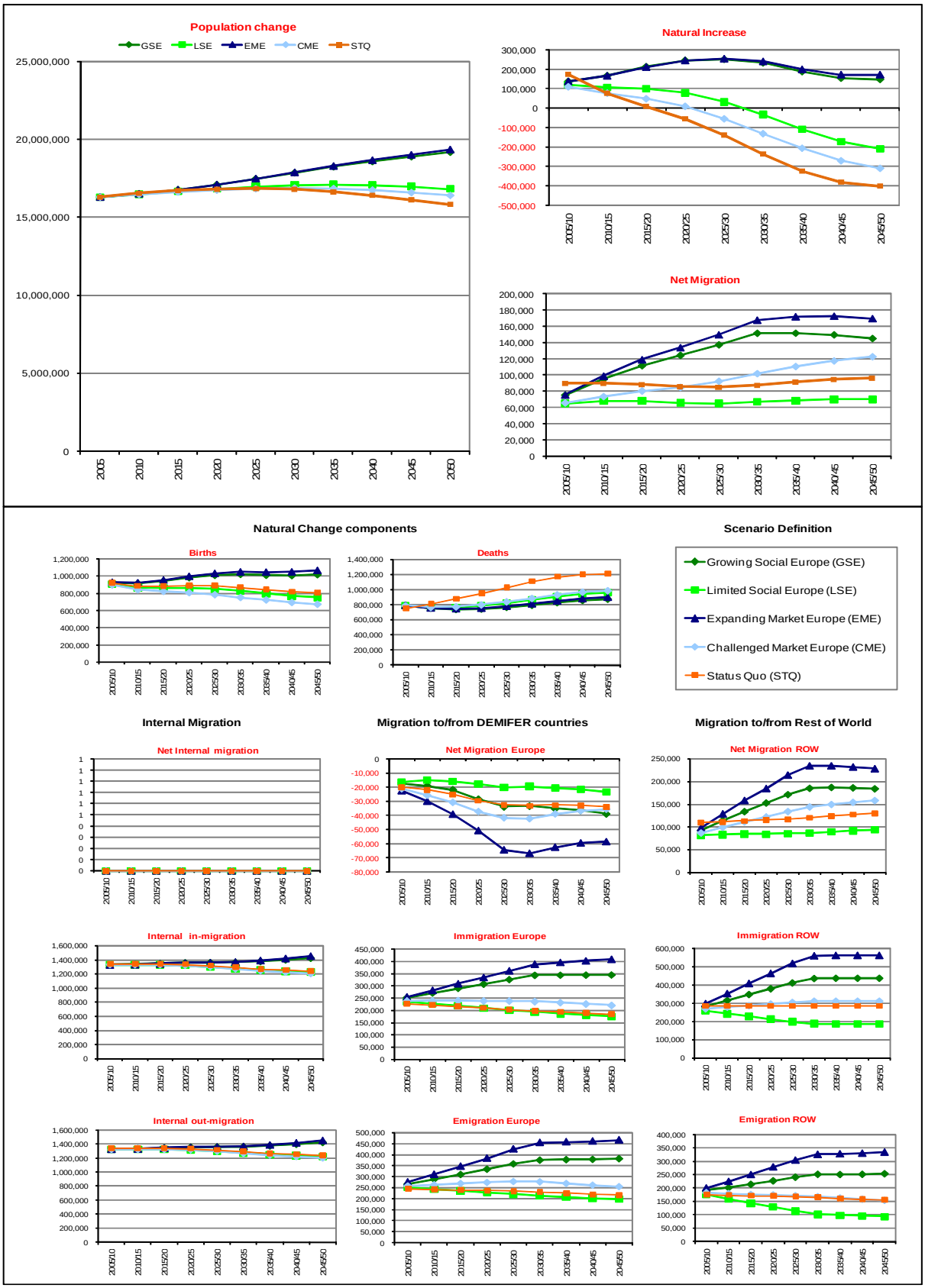



**Figure A.21: Scenario profile for population stocks and components of change, 2005-50: Netherlands**

***Scenario profile*** **:** **Norway**

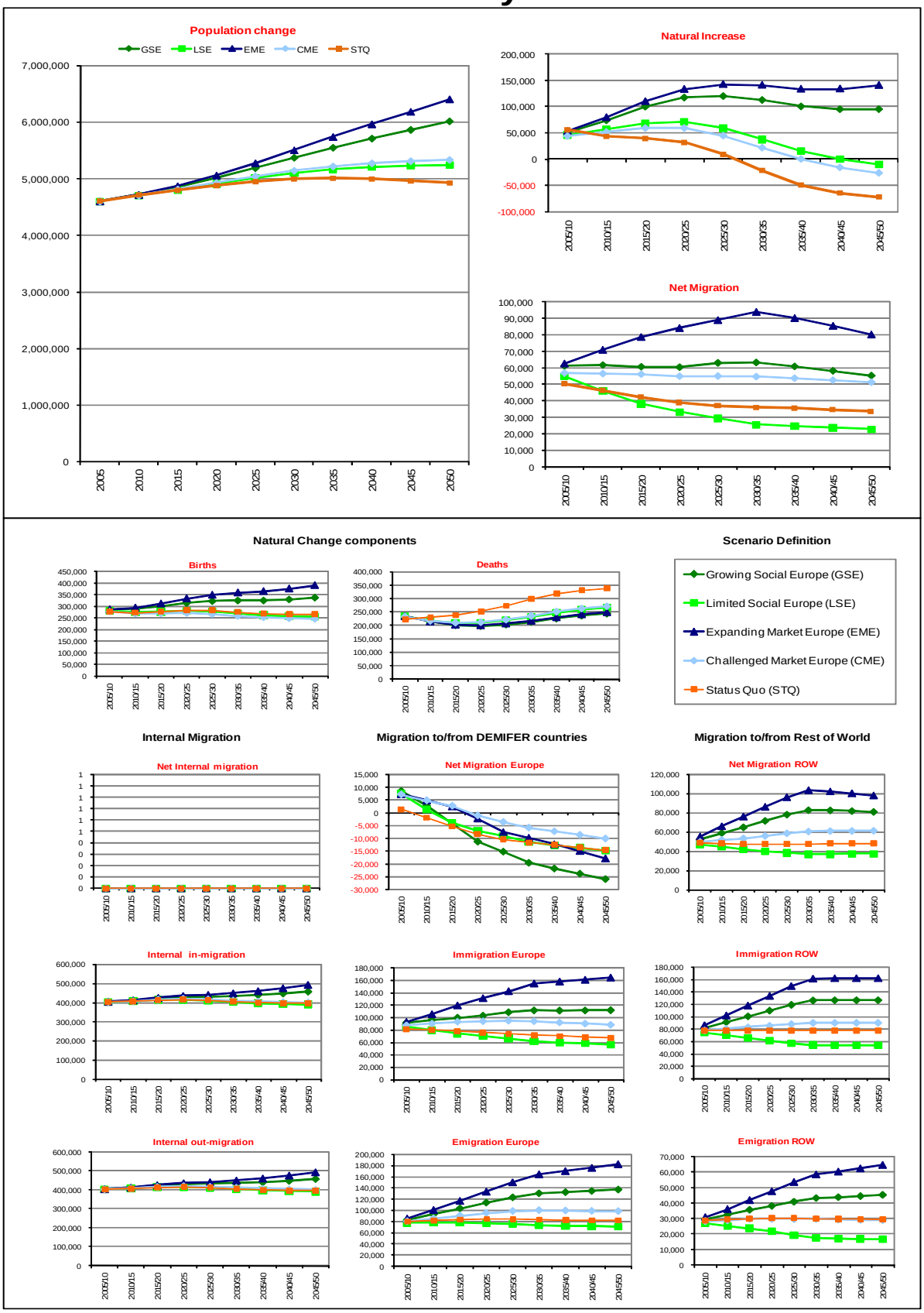



**Figure A.22: Scenario profile for population stocks and components of change, 2005-50: Norway**

***Scenario profile*** **:** **Poland**

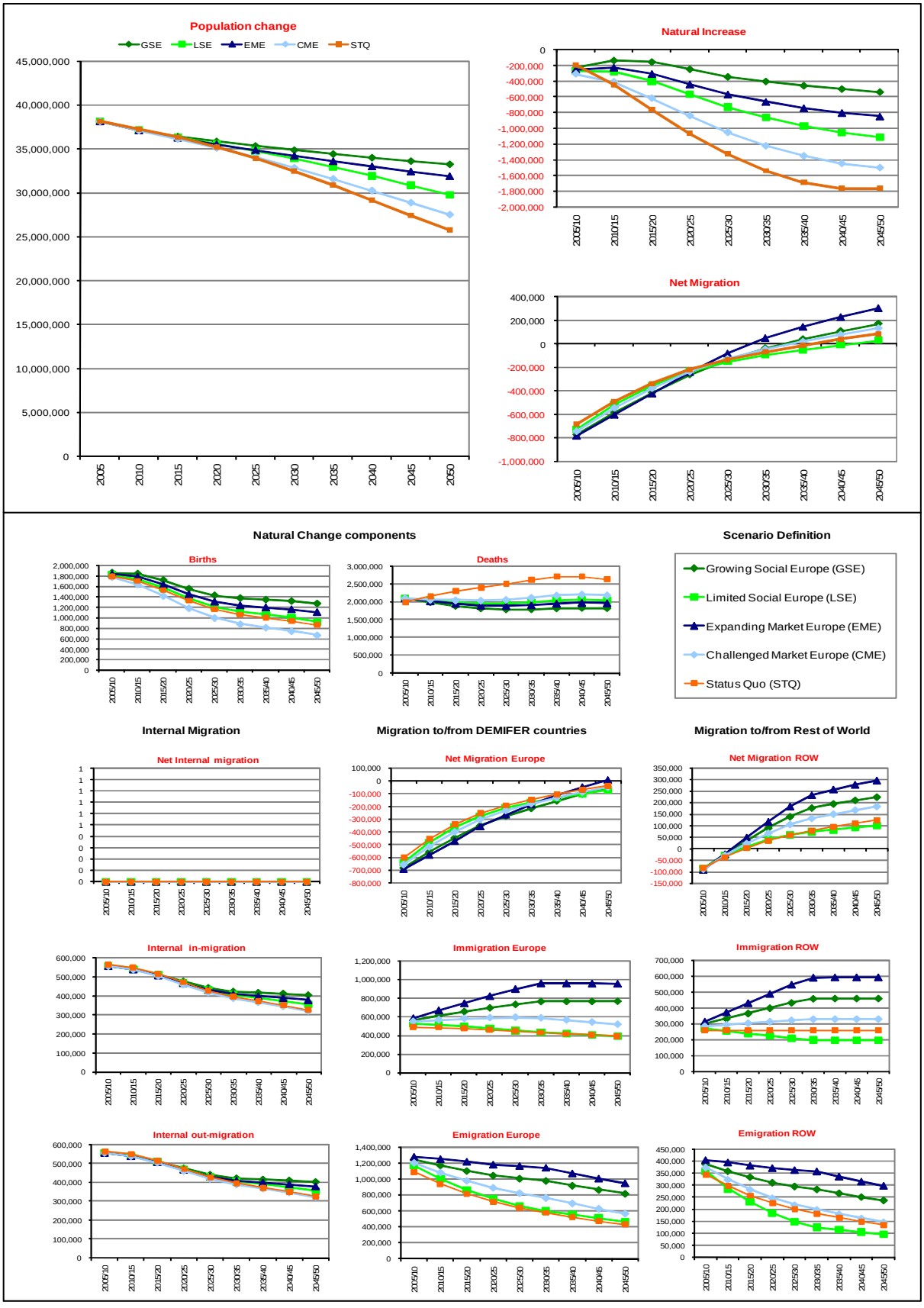



**Figure 2.23: Scenario profile for population stocks and components of change, 2005-50: Poland**

***Scenario profile*:** **Portugal**

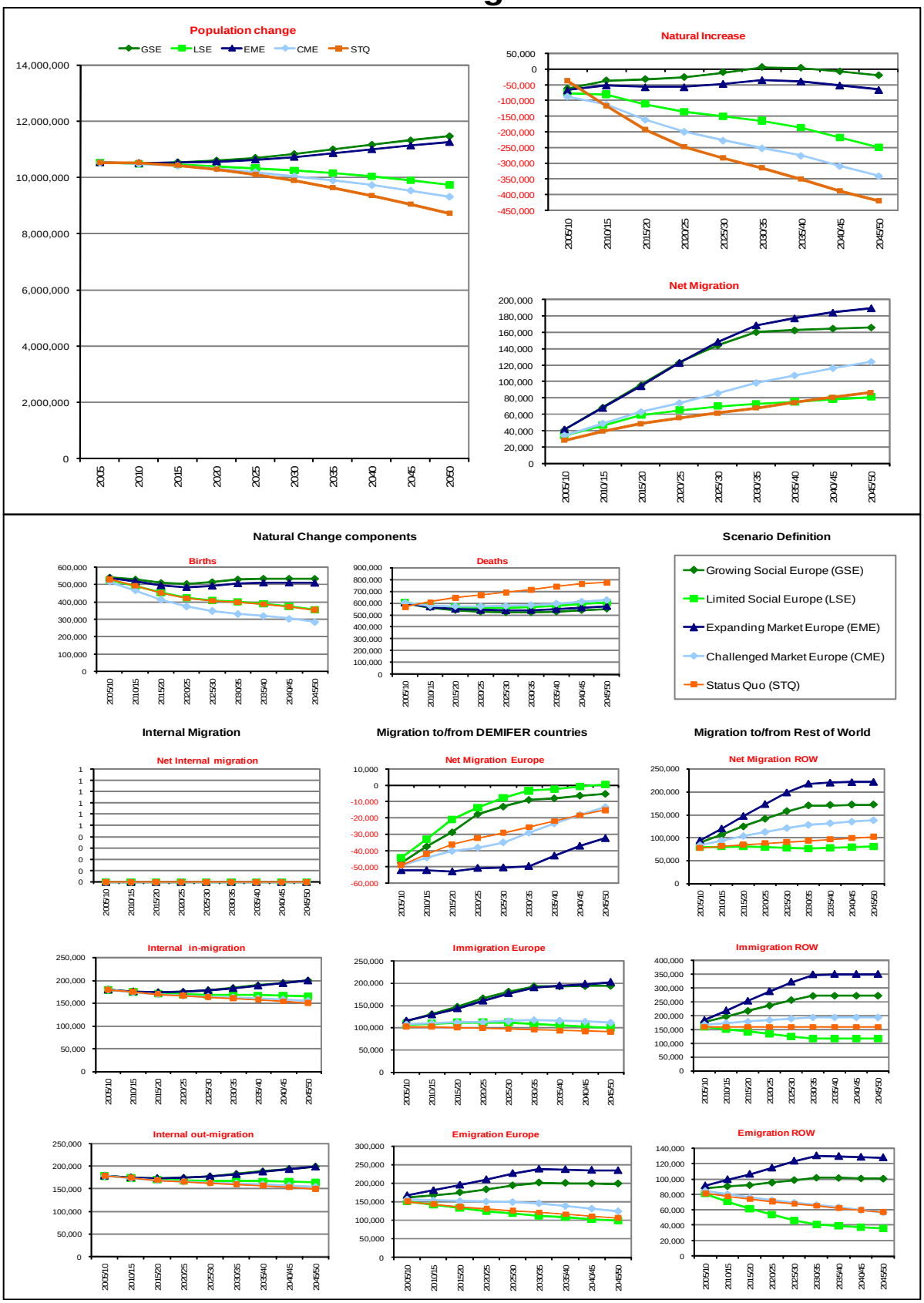



**Figure 2.24: Scenario profile for population stocks and components of change, 2005-50: Portugal**

***Scenario profile*** **:** **Slovakia**

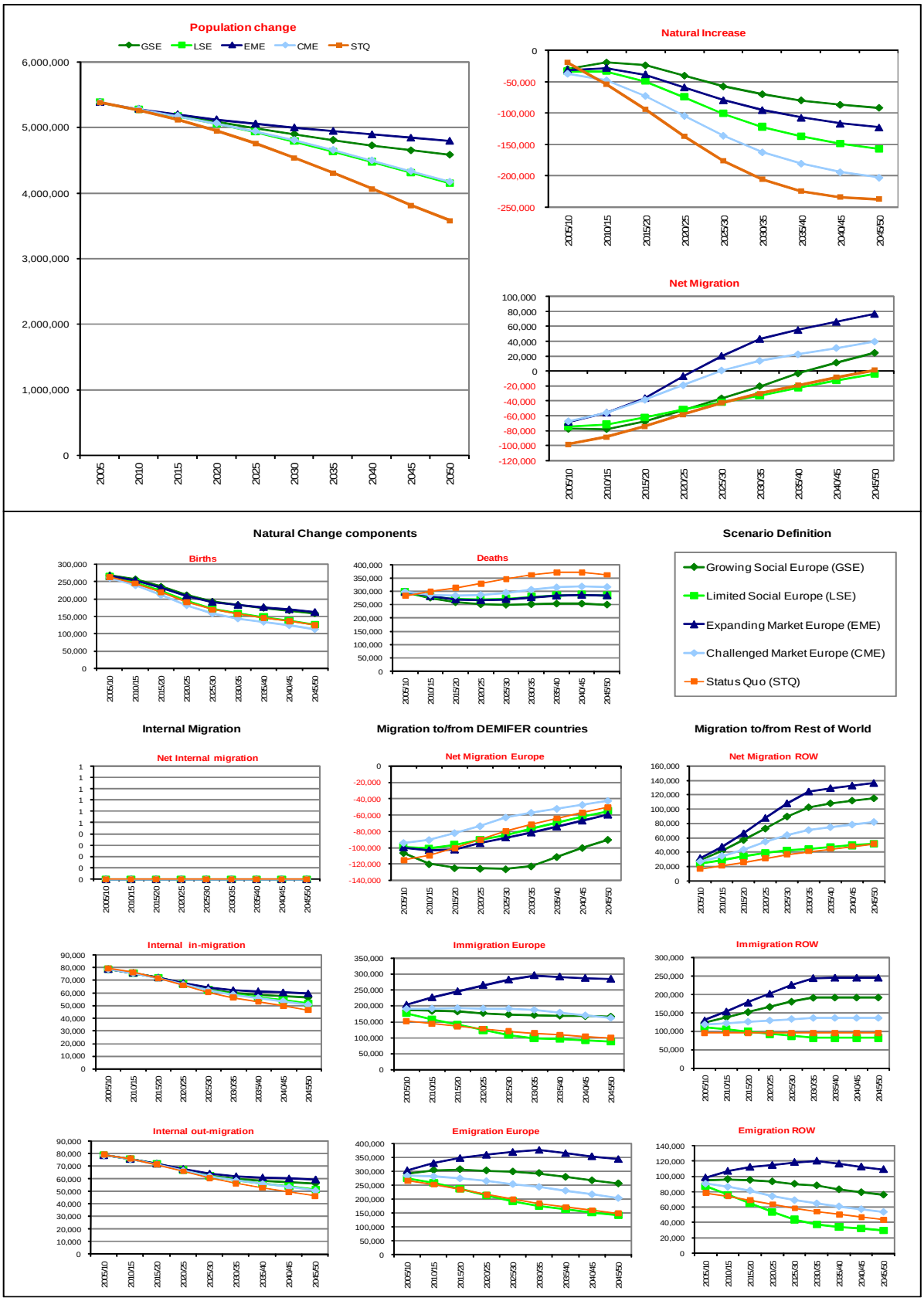



**Figure A.25: Scenario profile for population stocks and components of change, 2005-50: Slovakia**

***Scenario profile* :** **Slovenia**

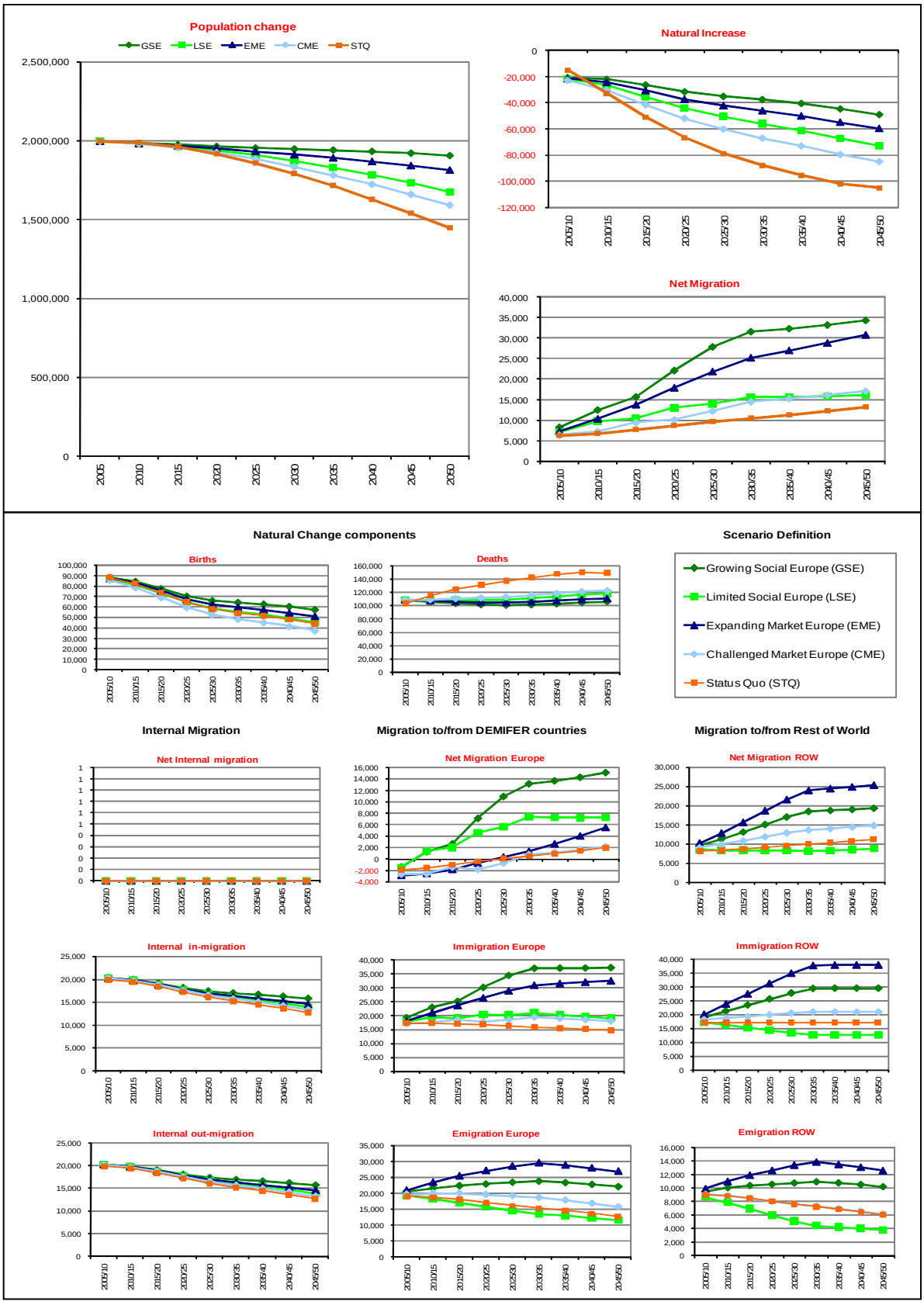



**Figure A.26: Scenario profile for population stocks and components of change, 2005-50: Slovenia**

***Scenario profile*** **:** **Spain**

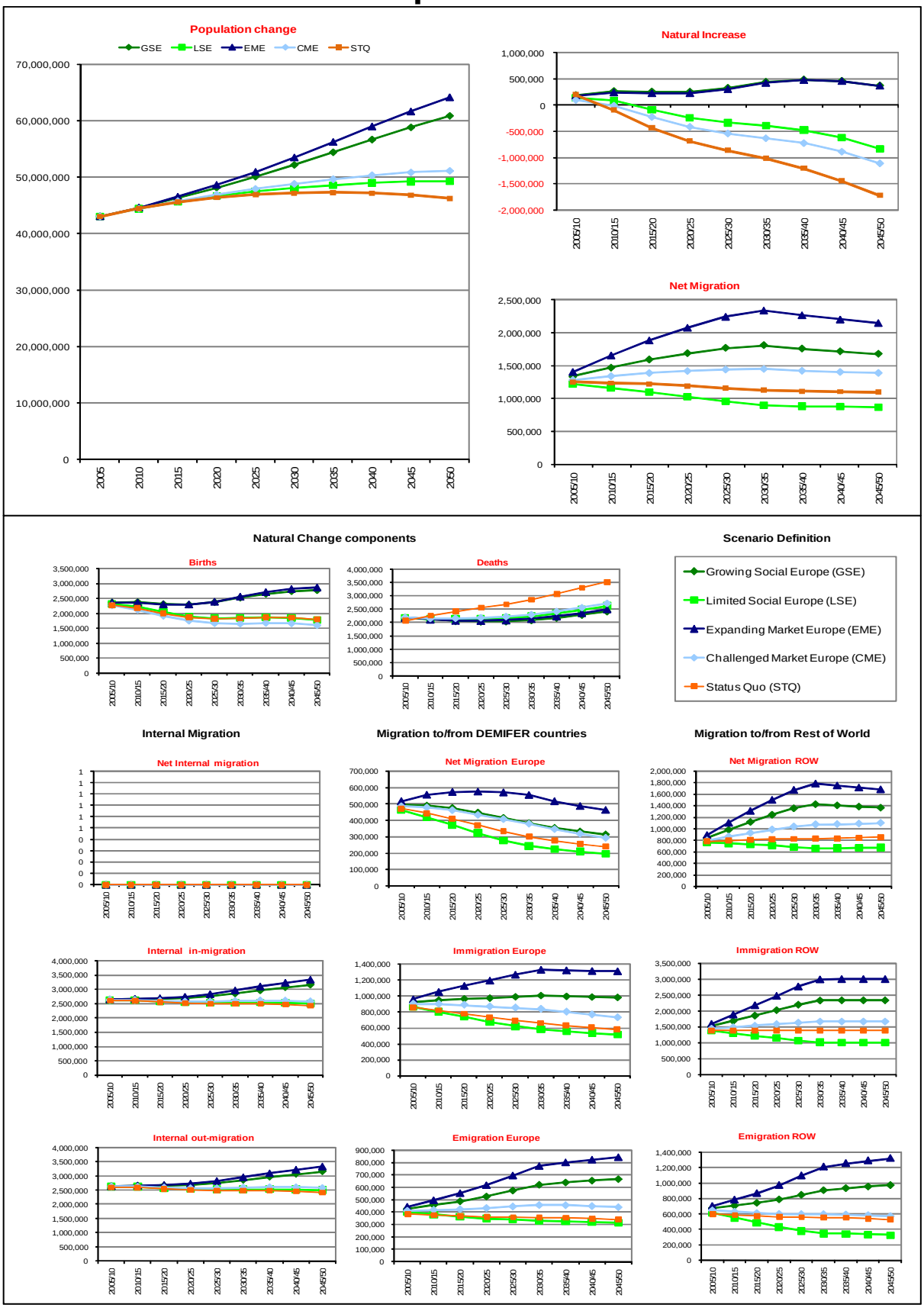



**Figure A.27: Scenario profile for population stocks and components of change, 2005-50: Spain**

***Scenario profile*** **:** **Sweden**

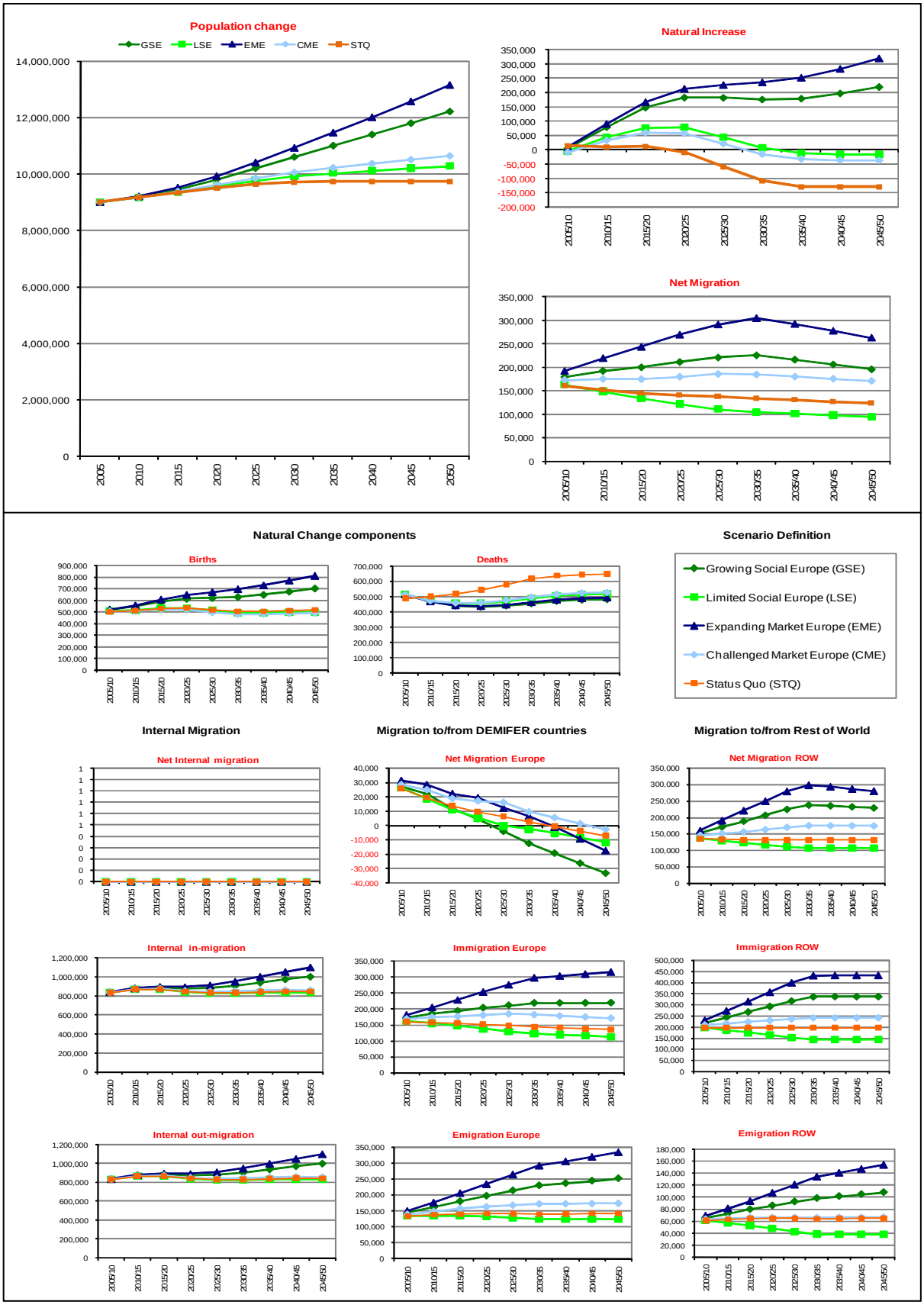



**Figure A.28: Scenario profile for population stocks and components of change, 2005-50: Sweden**

***Scenario profile*** **:** **Switzerland**

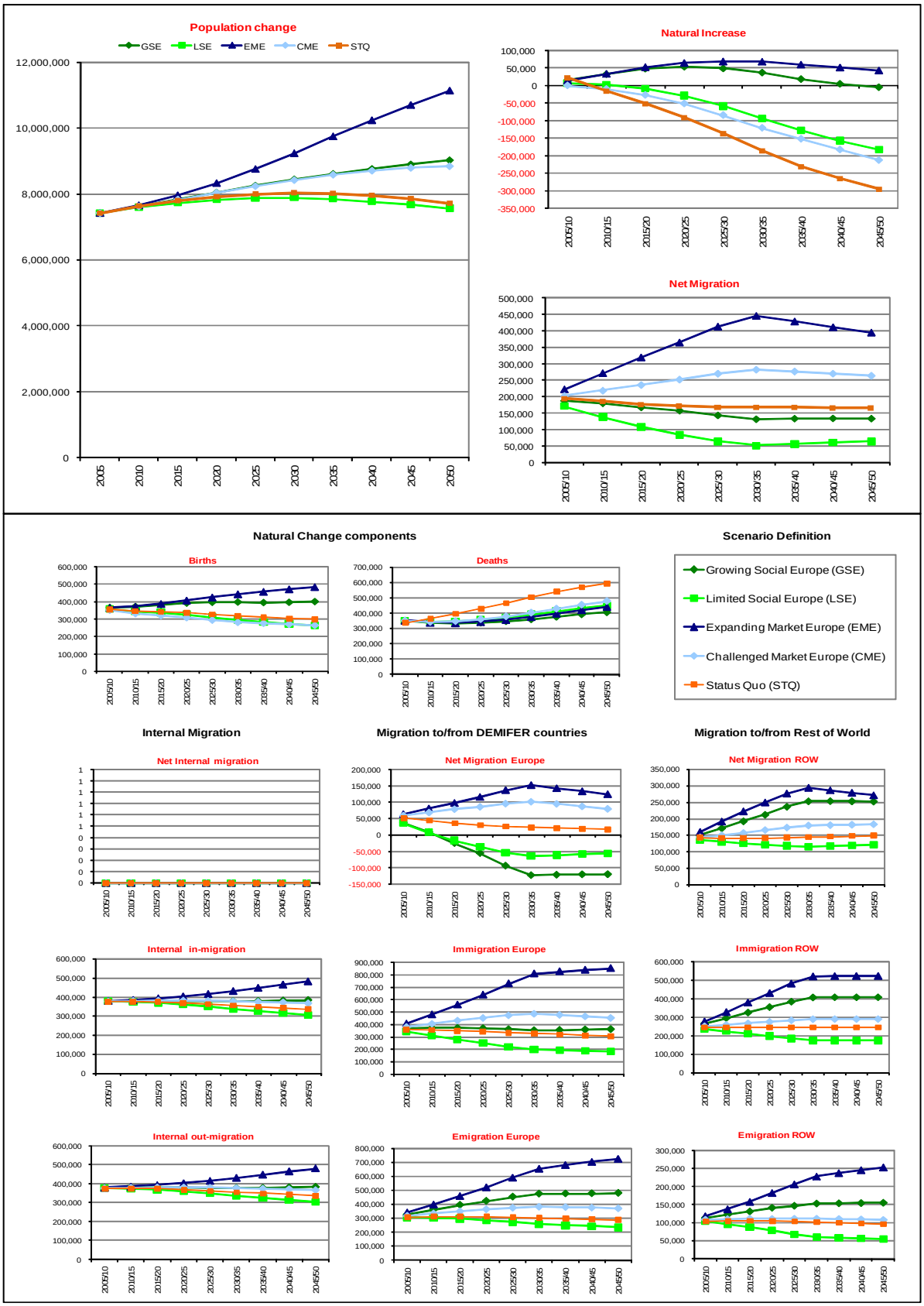



**Figure A.29: Scenario profile for population stocks and components of change, 2005-50: Switzerland**


**Figure A.30: Scenario profile for population ageing and dependency ratios, 2005-50: Austria**

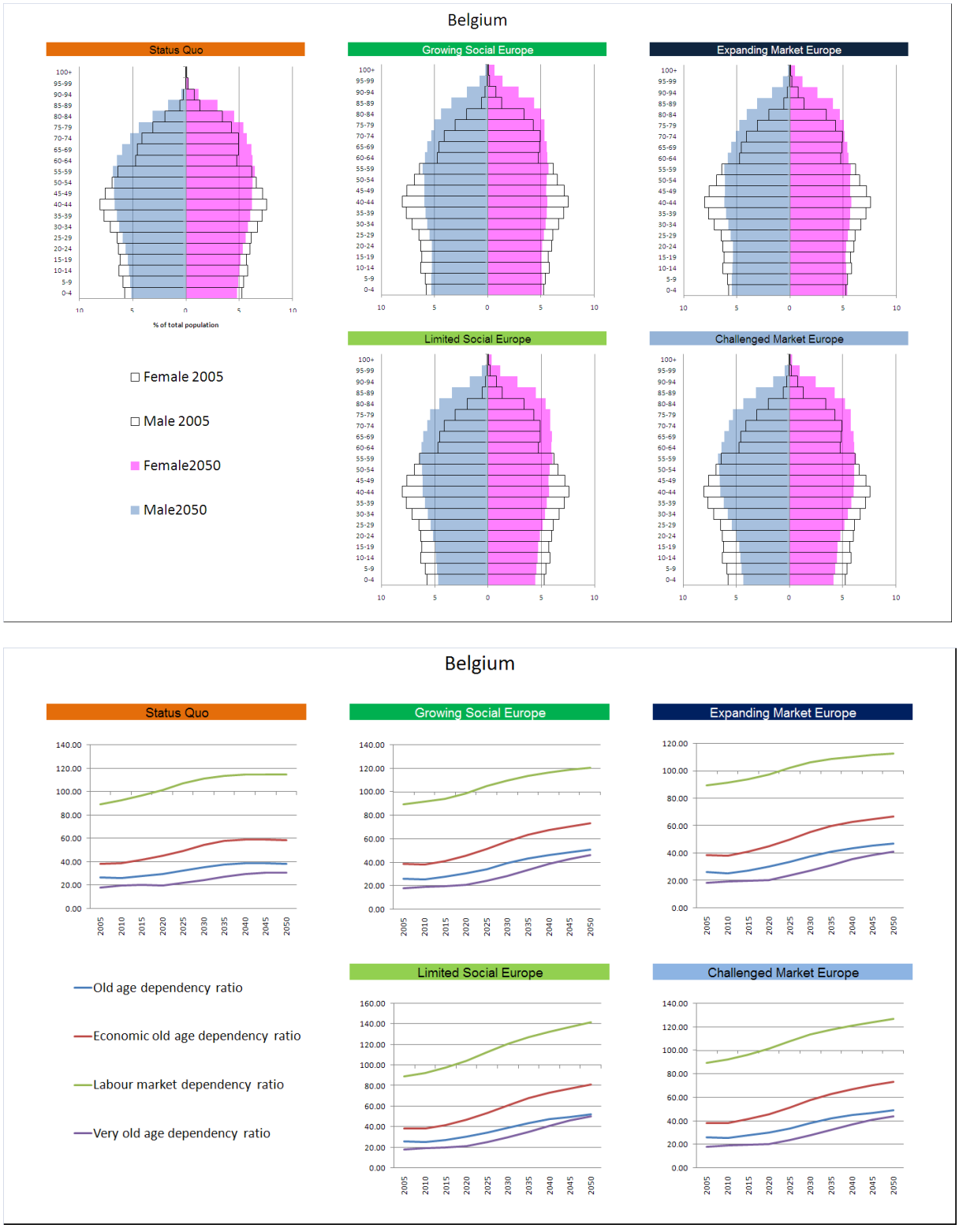
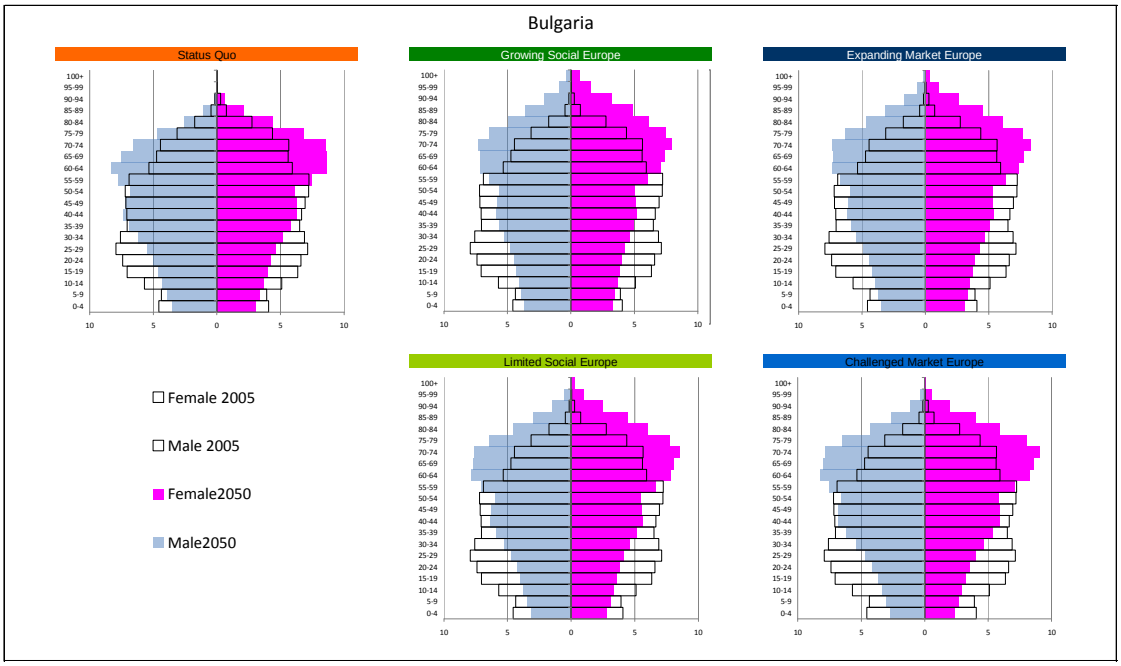



**Figure A.31: Scenario profile for population ageing and dependency ratios, 2005-50: Belgium**



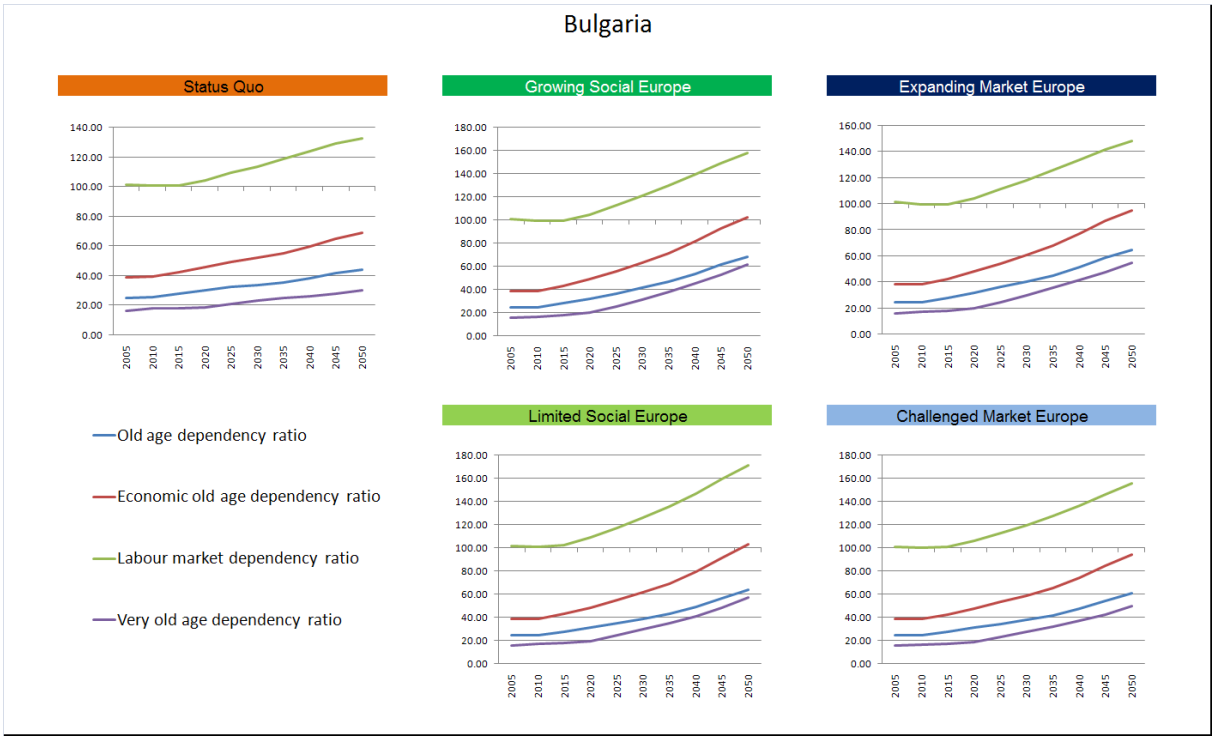
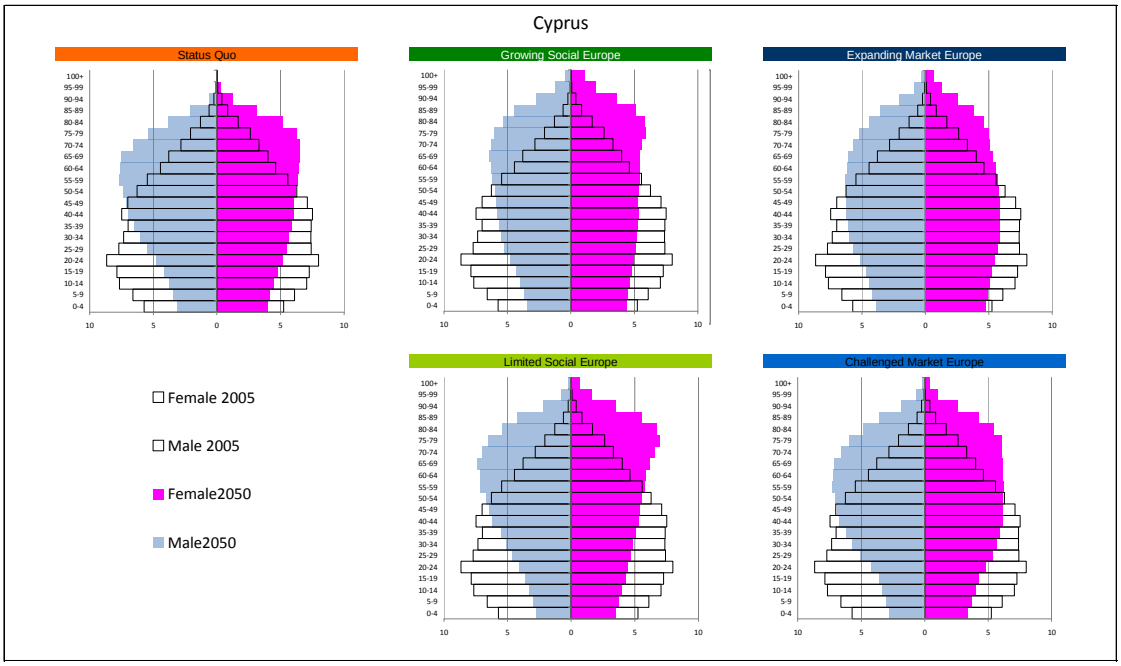




**Figure A.32: Scenario profile for population ageing and dependency ratios, 2005-50: Bulgaria**



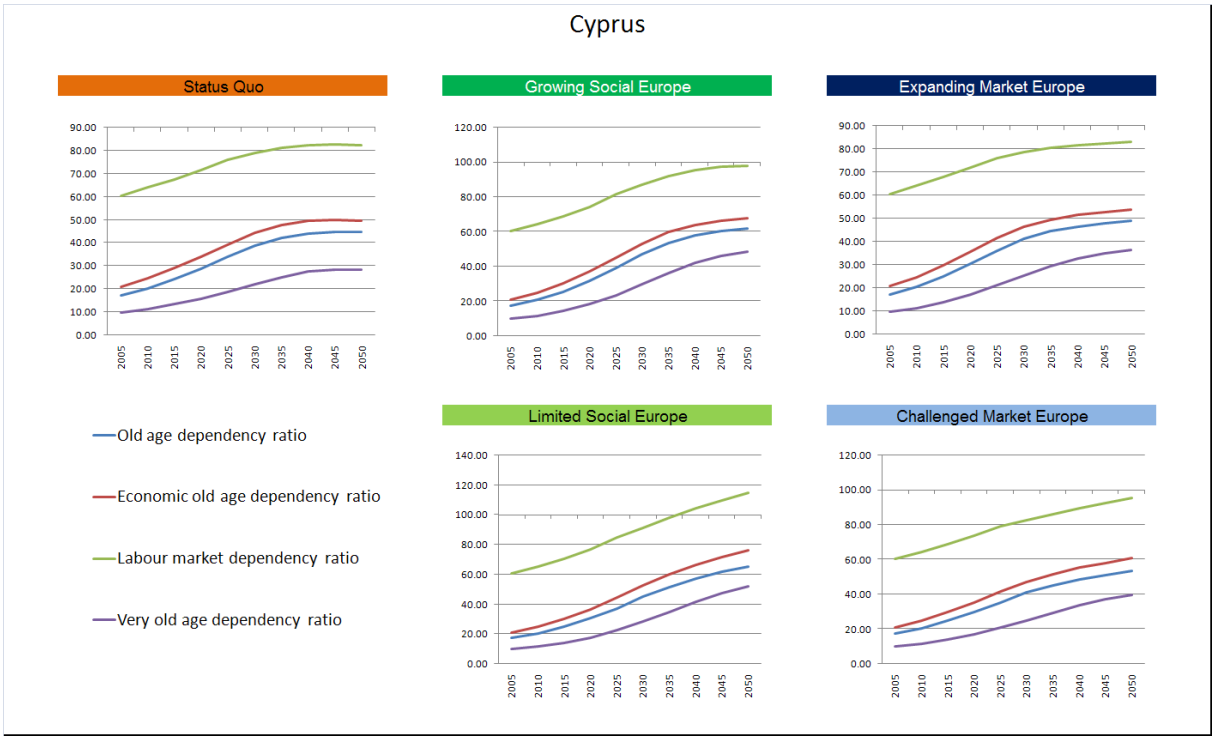
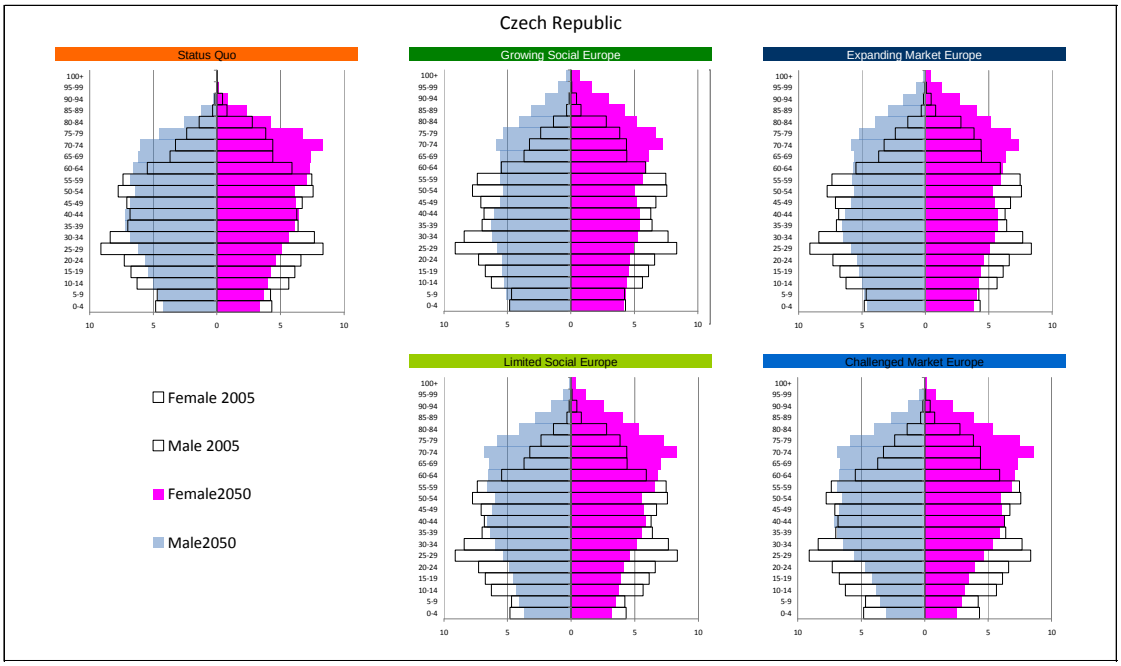




**Figure A.33: Scenario profile for population ageing and dependency ratios, 2005-50: Cyprus**



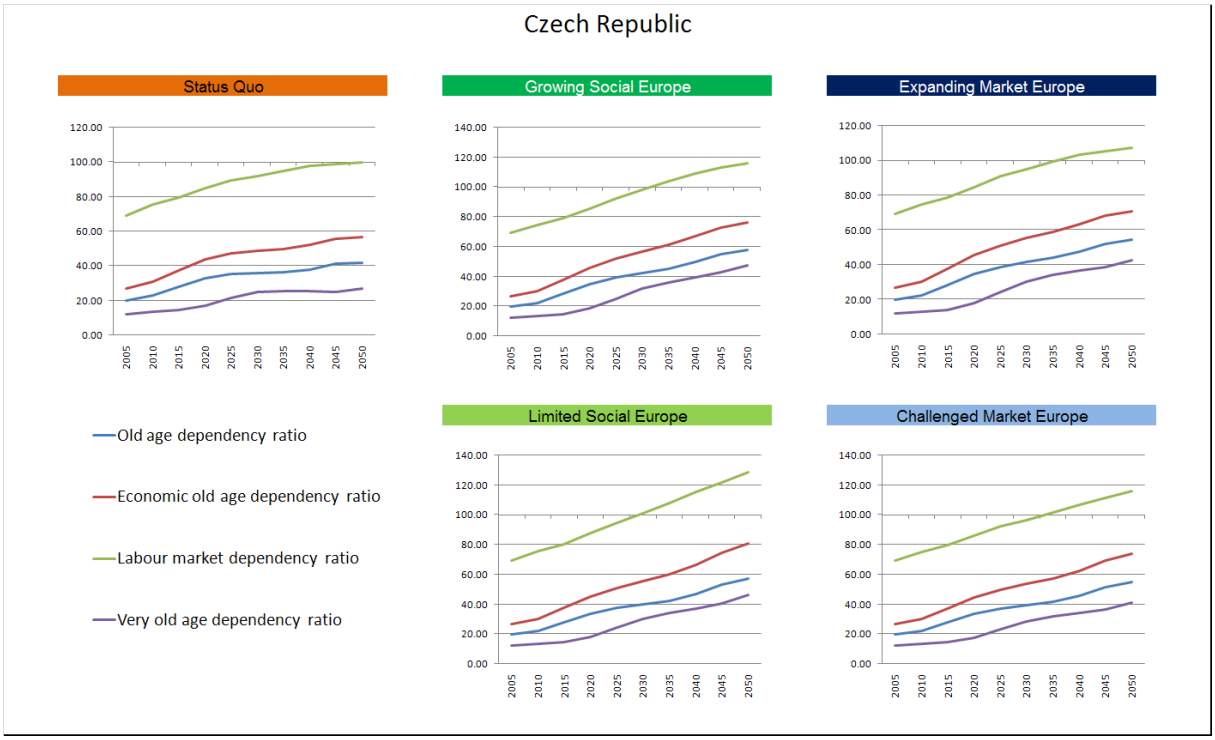
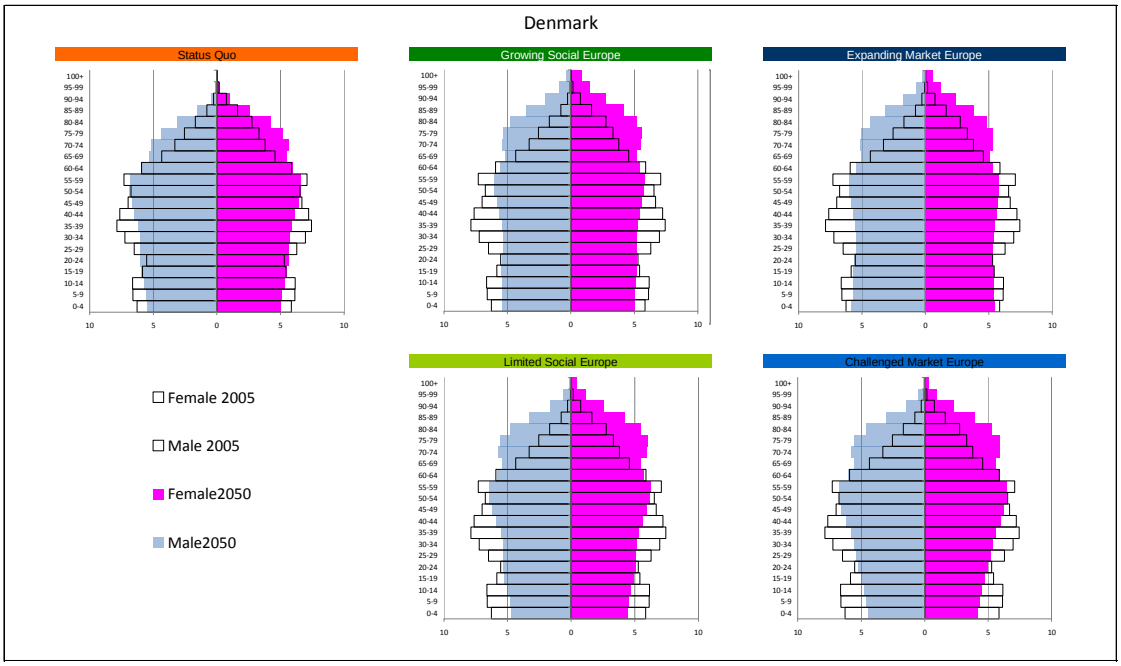




**Figure A.34: Scenario profile for population ageing and dependency ratios, 2005-50: Czech Republic**



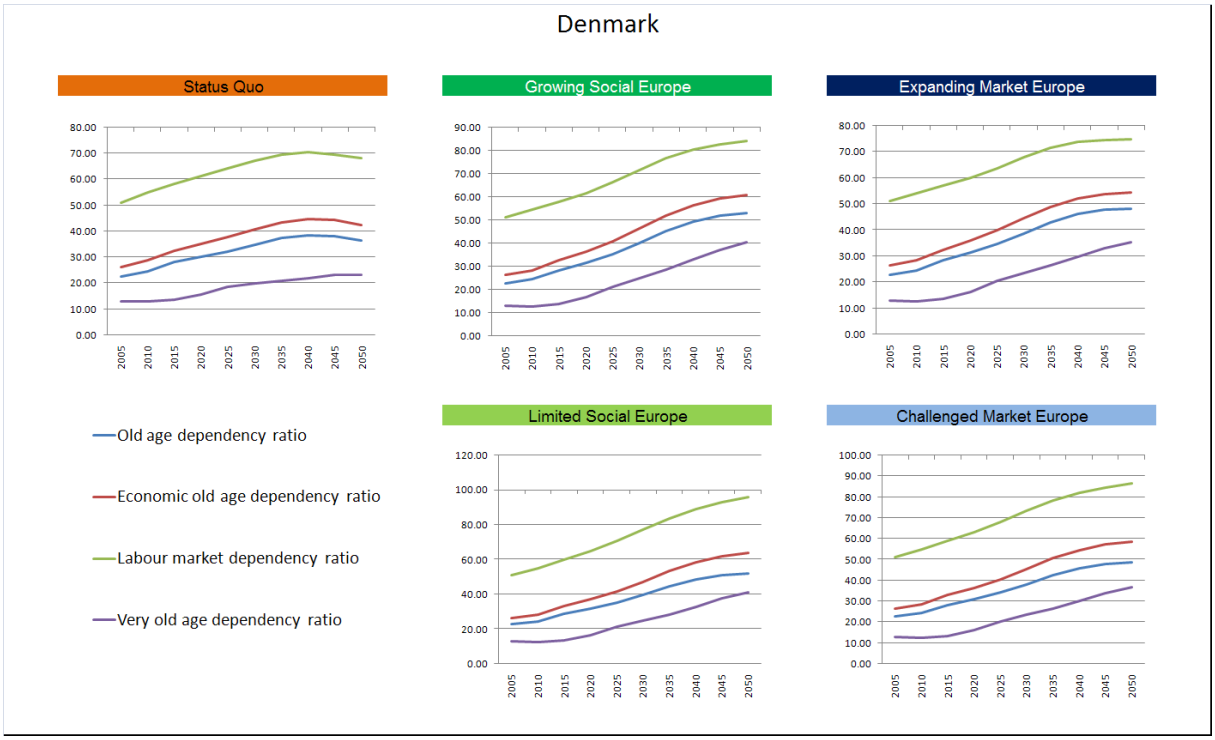
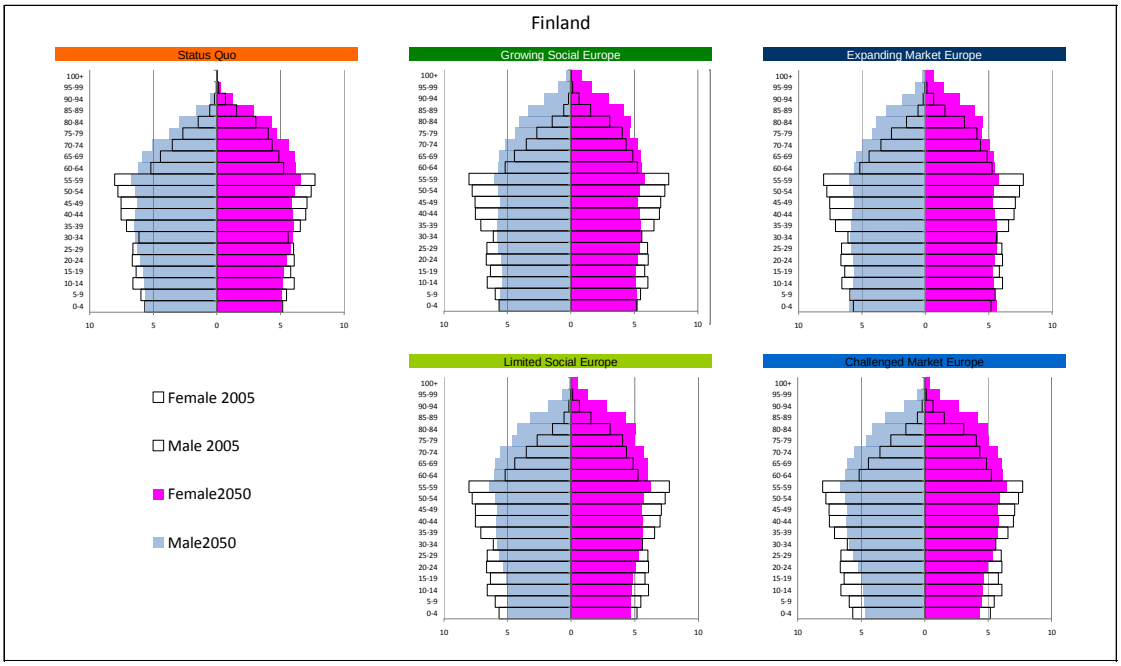




**Figure A.35: Scenario profile for population ageing and dependency ratios, 2005-50: Denmark**


**Figure A.36: Scenario profile for population ageing and dependency ratios, 2005-50: Estonia**



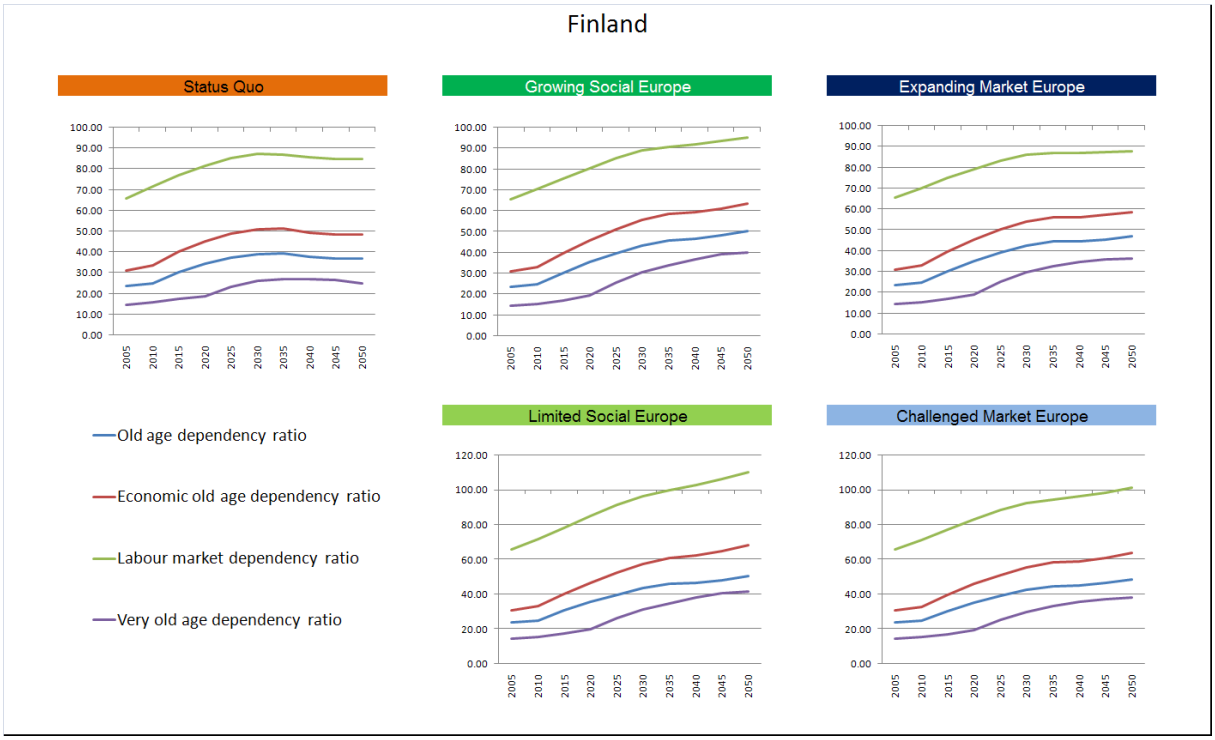
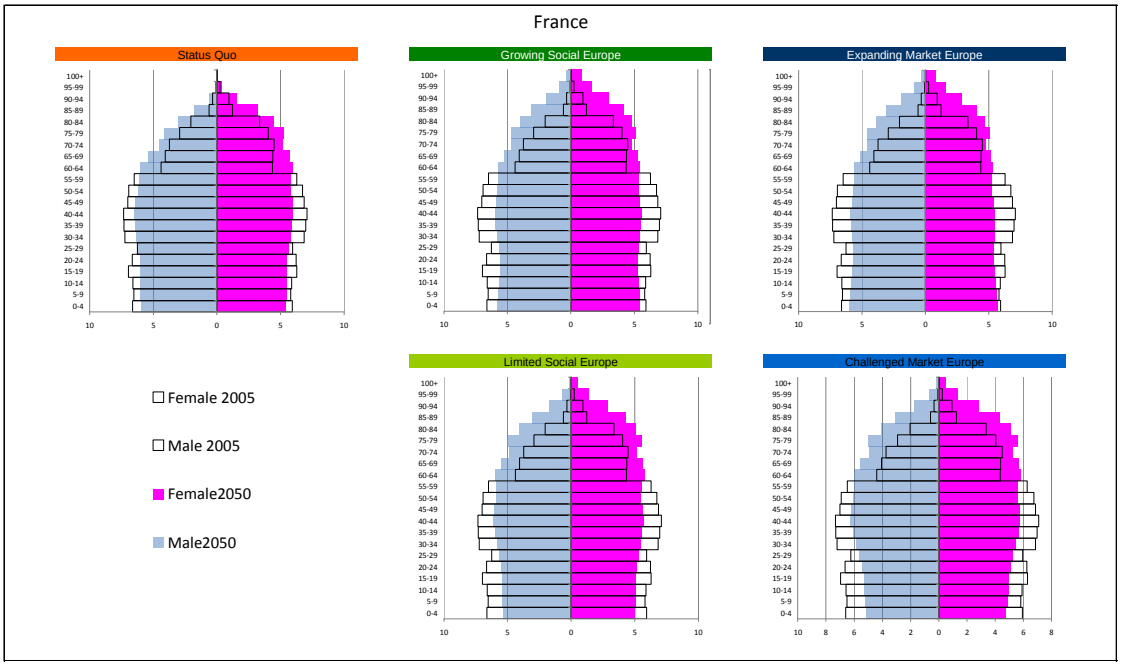




**Figure A.37: Scenario profile for population ageing and dependency ratios, 2005-50: Finland**



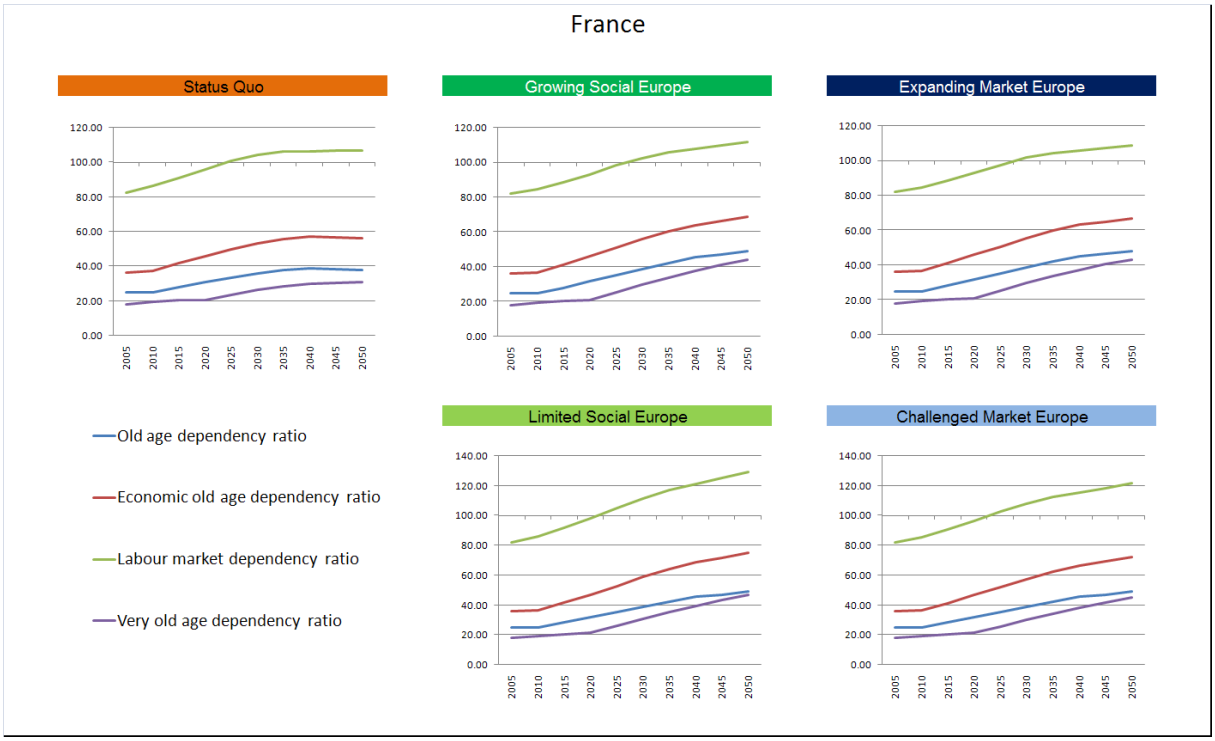
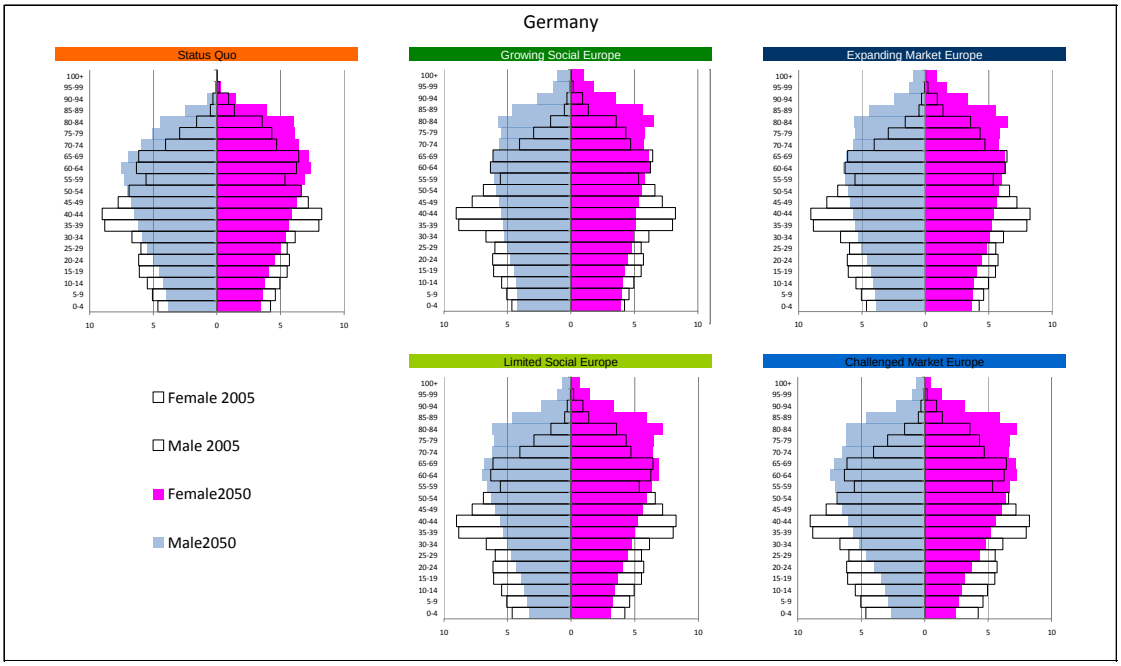




**Figure A.38: Scenario profile for population ageing and dependency ratios, 2005-50: France**



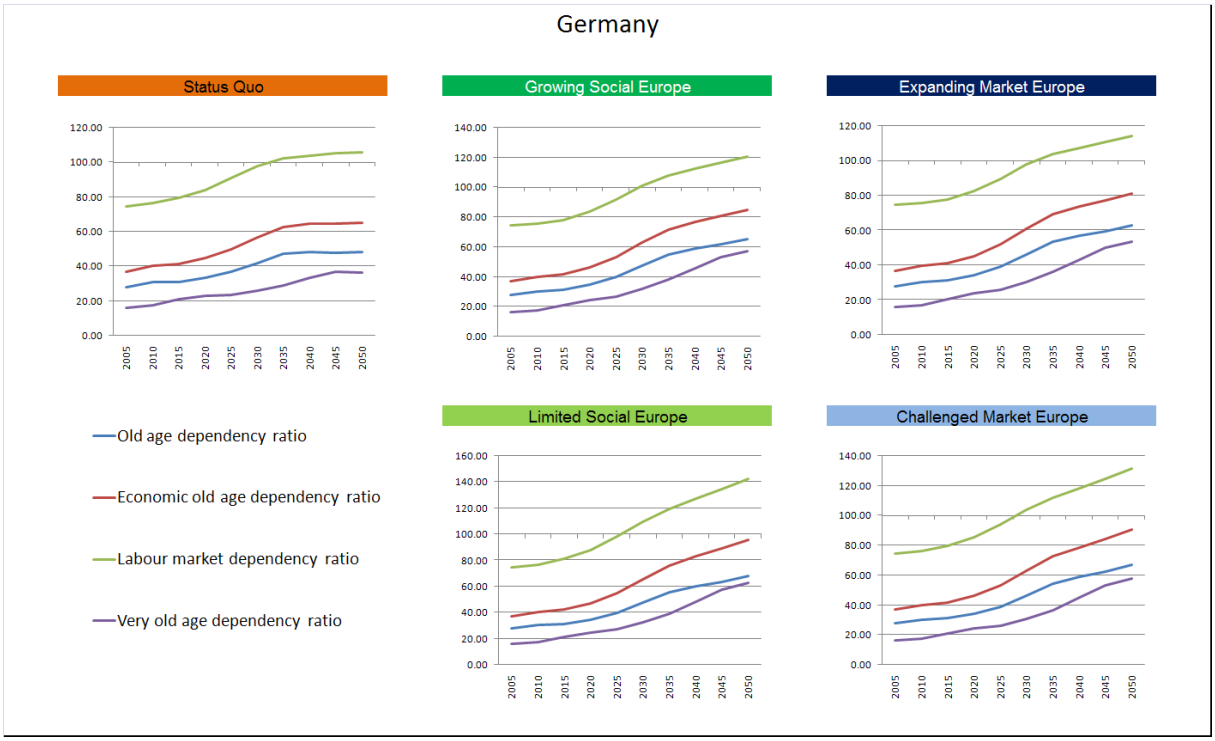




**Figure A.39: Scenario profile for population ageing and dependency ratios, 2005-50: Germany**

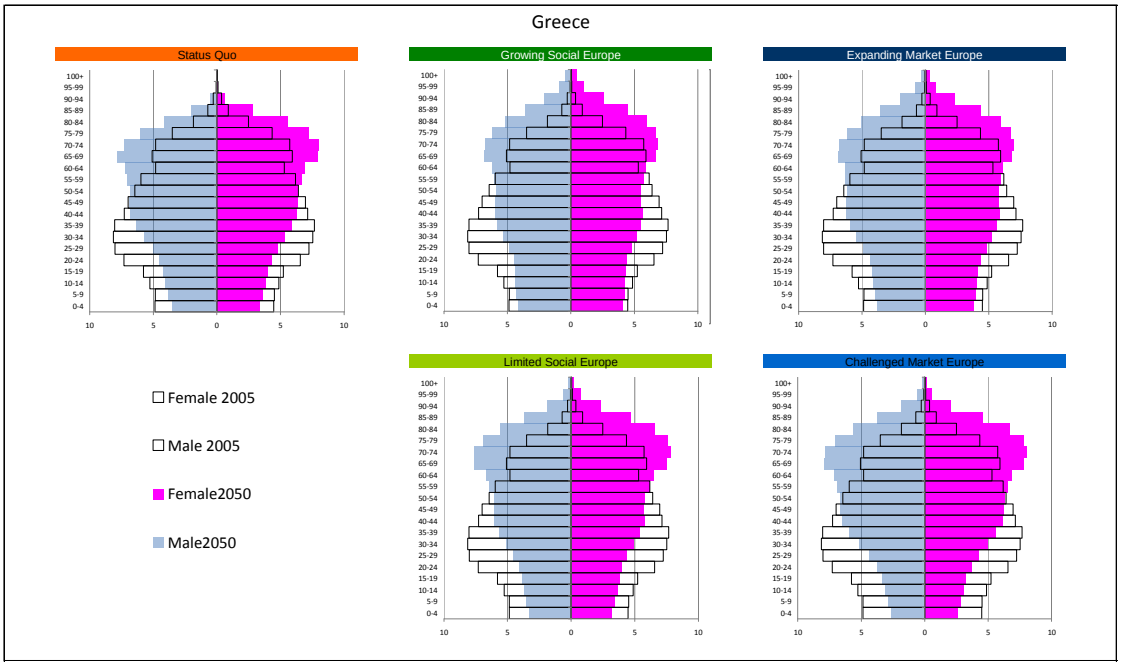
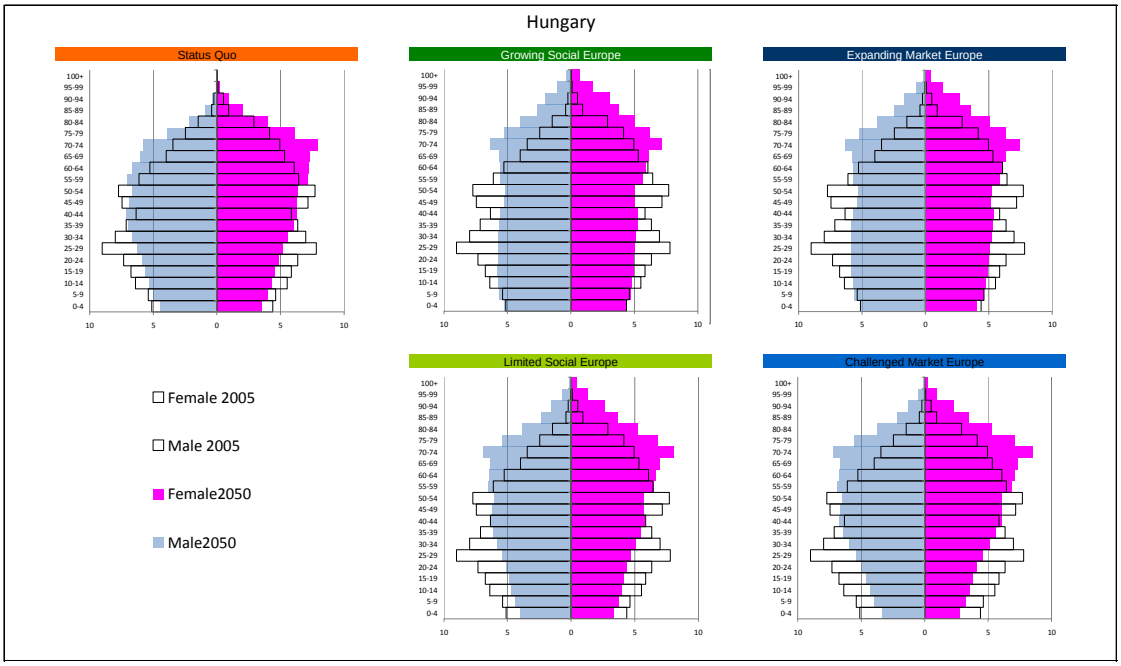




**Figure A.40: Scenario profile for population ageing and dependency ratios, 2005-50: Greece**



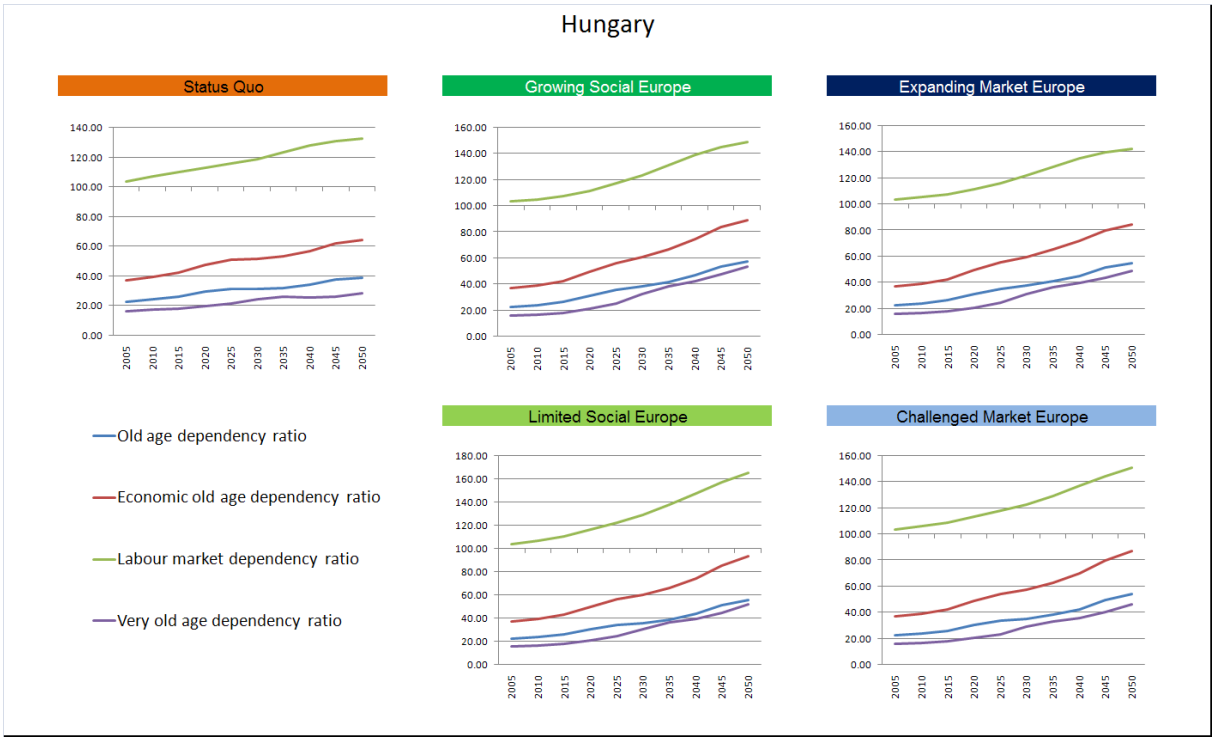
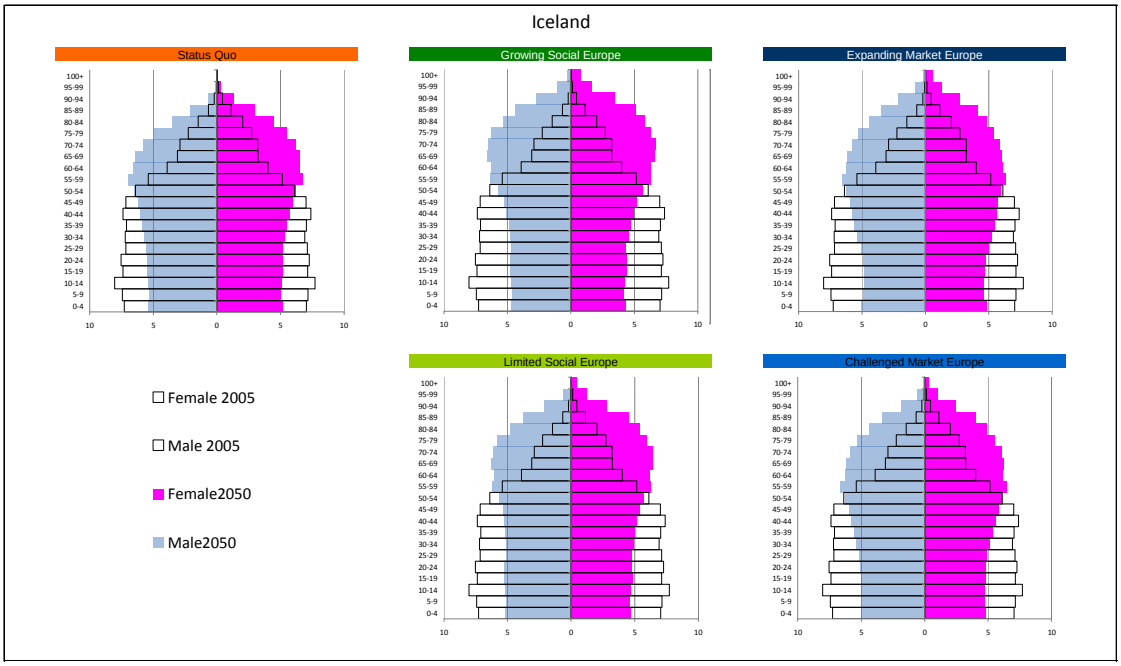




**Figure A.41: Scenario profile for population ageing and dependency ratios, 2005-50: Hungary**



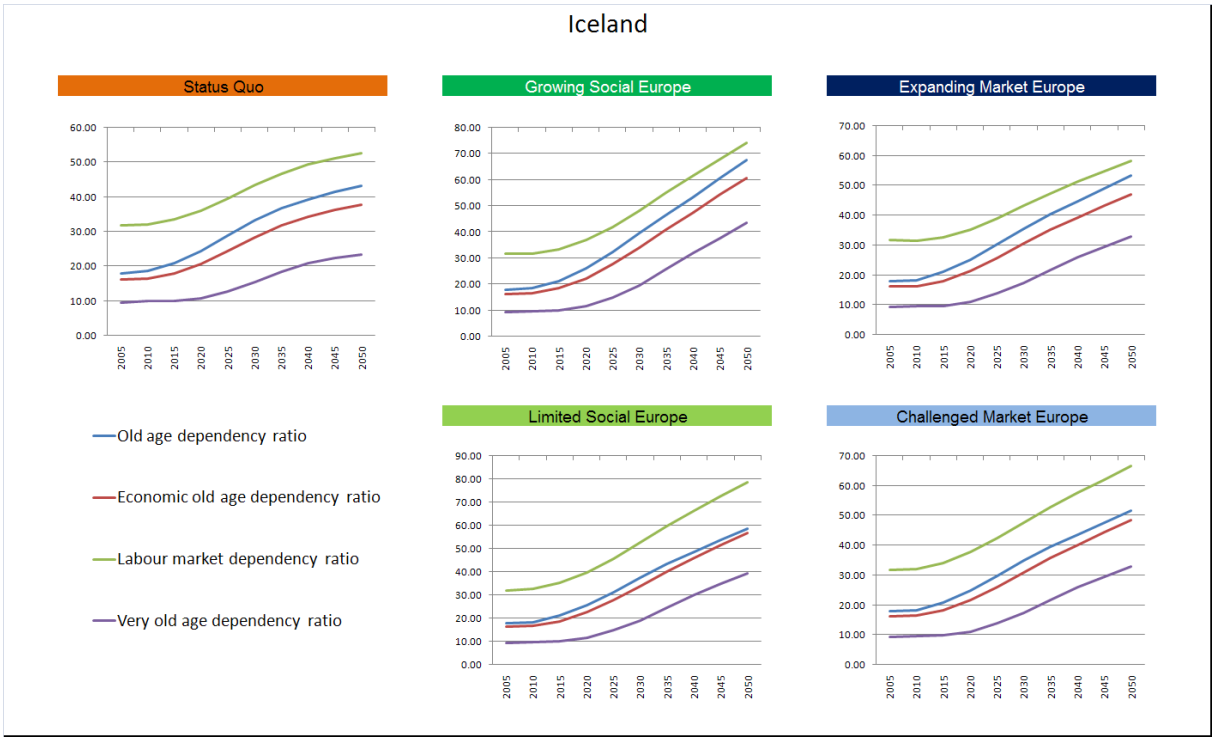
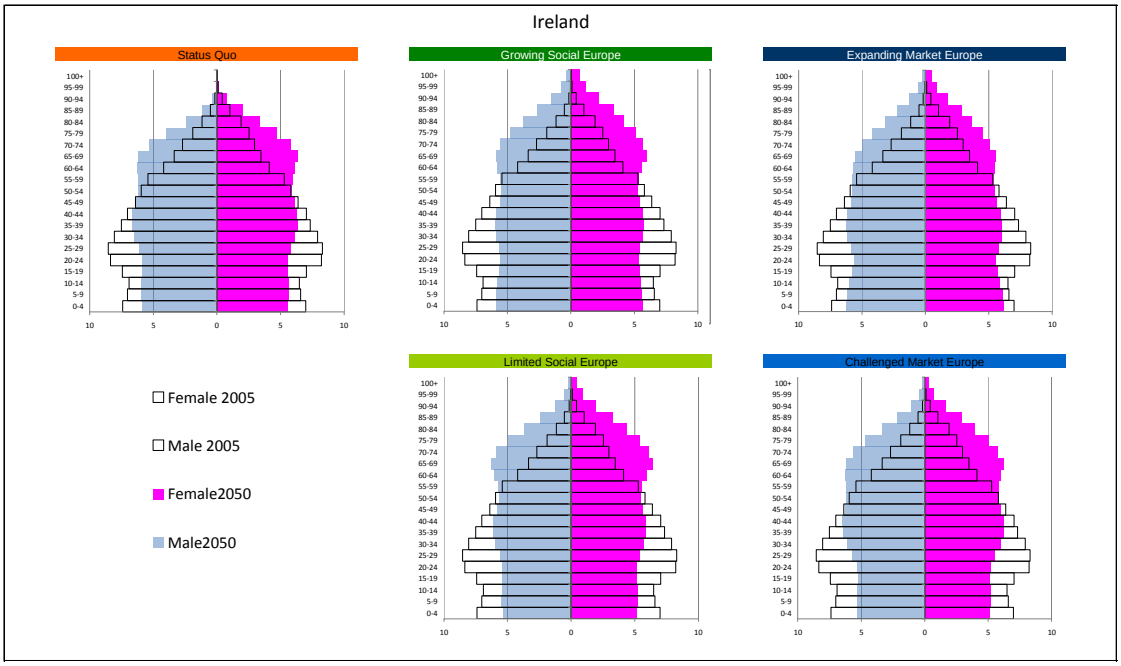




**Figure A.42: Scenario profile for population ageing and dependency ratios, 2005-50: Iceland**



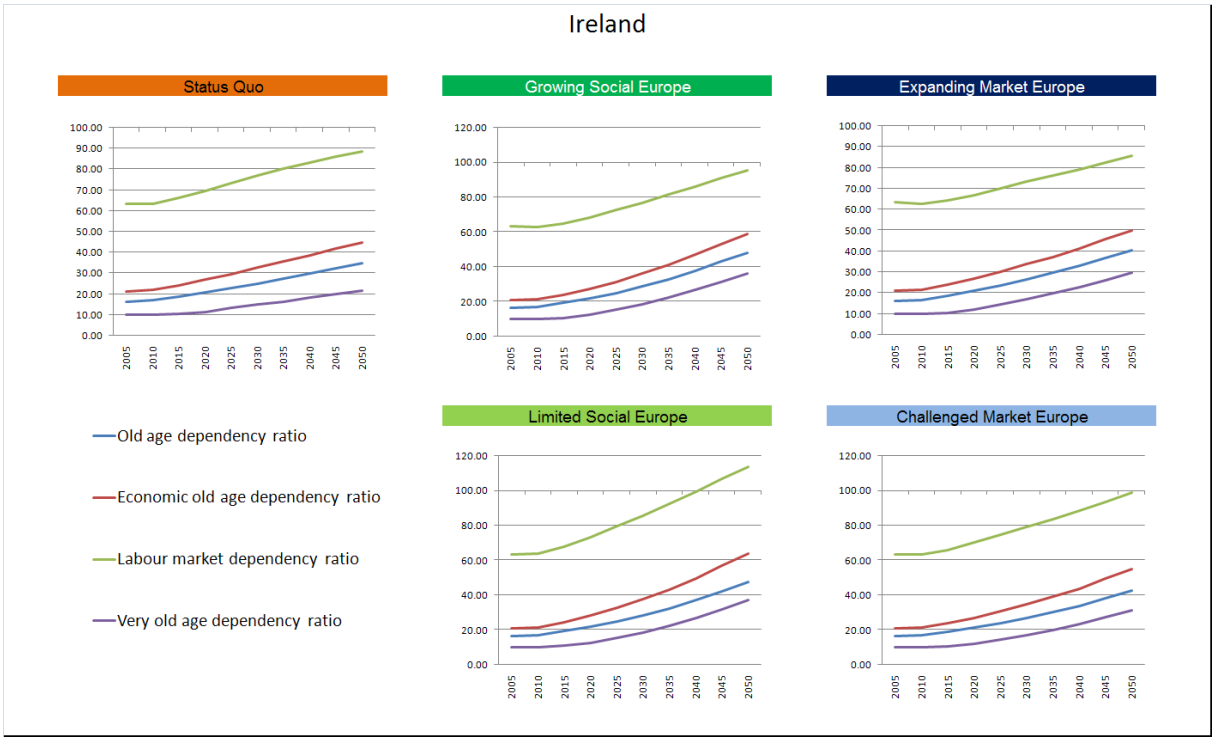
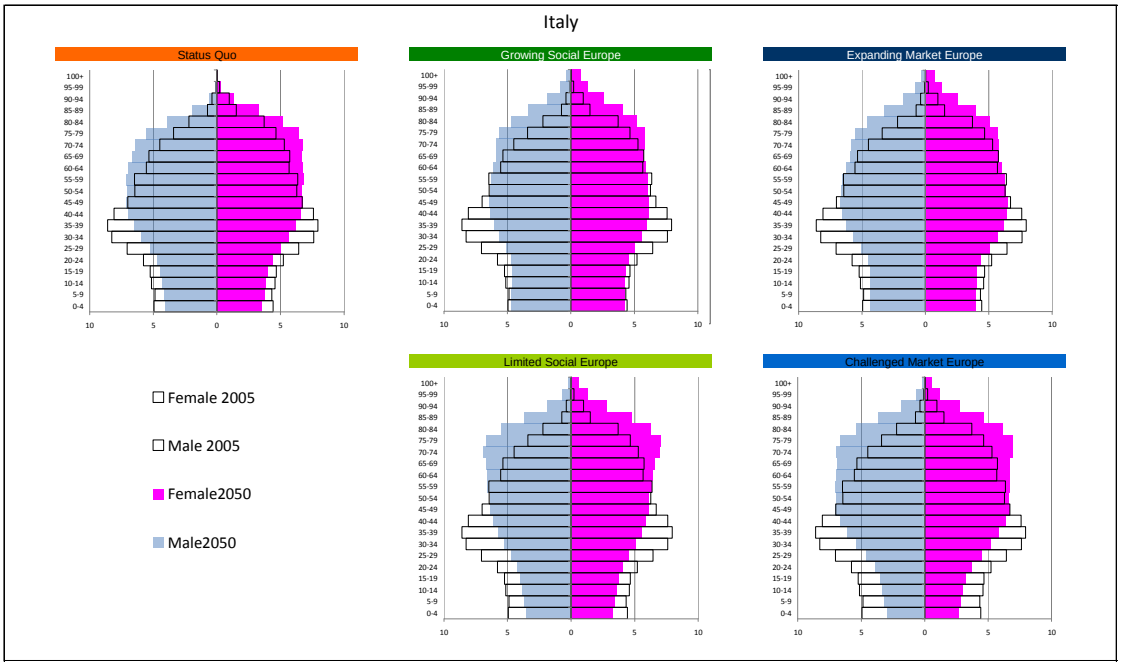




**Figure A.43: Scenario profile for population ageing and dependency ratios, 2005-50: Ireland**



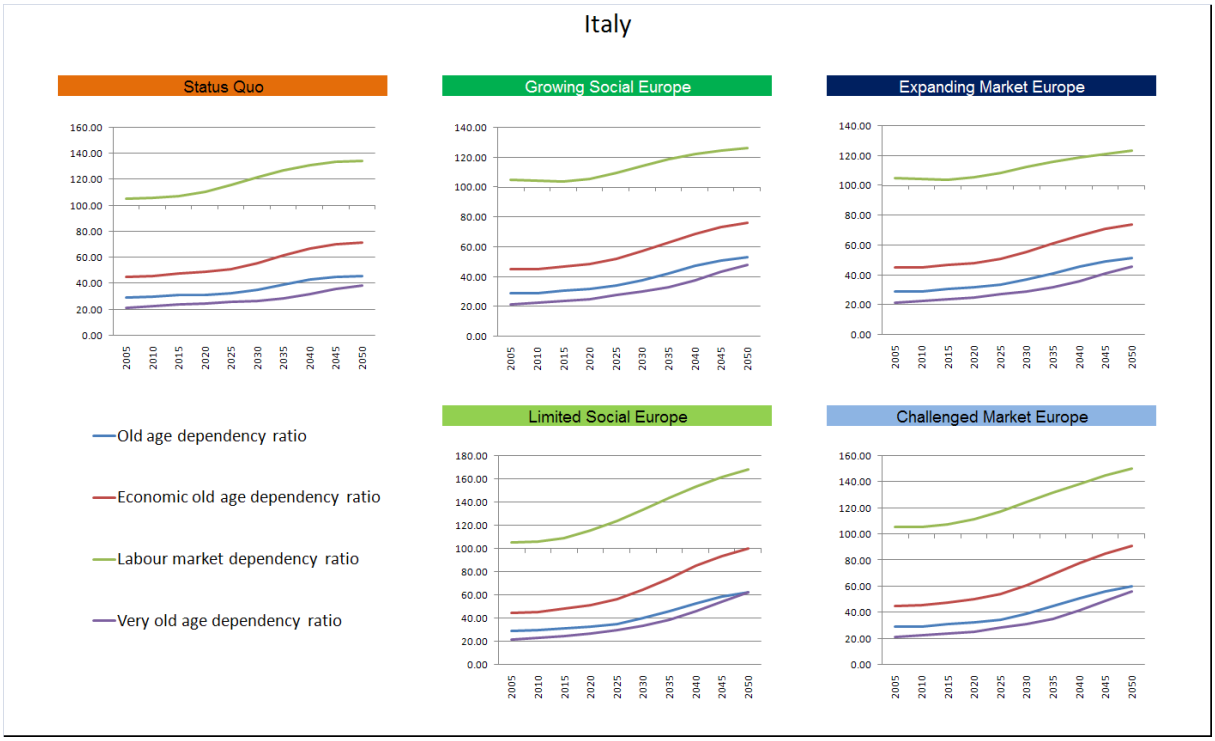
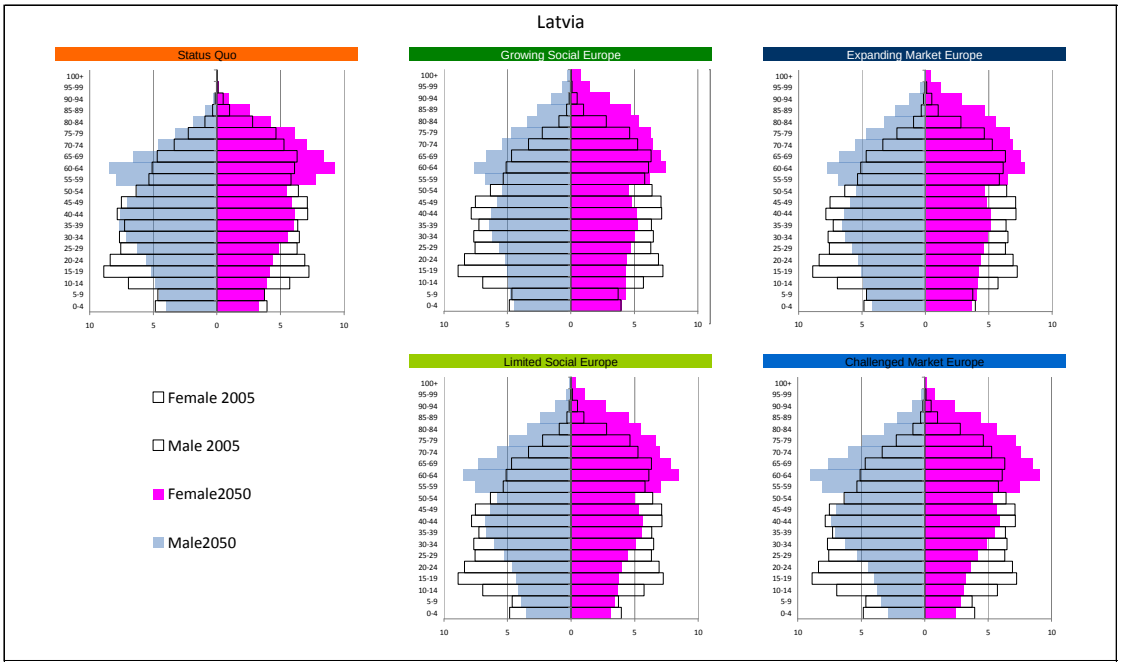




**Figure A.44: Scenario profile for population ageing and dependency ratios, 2005-50: Italy**



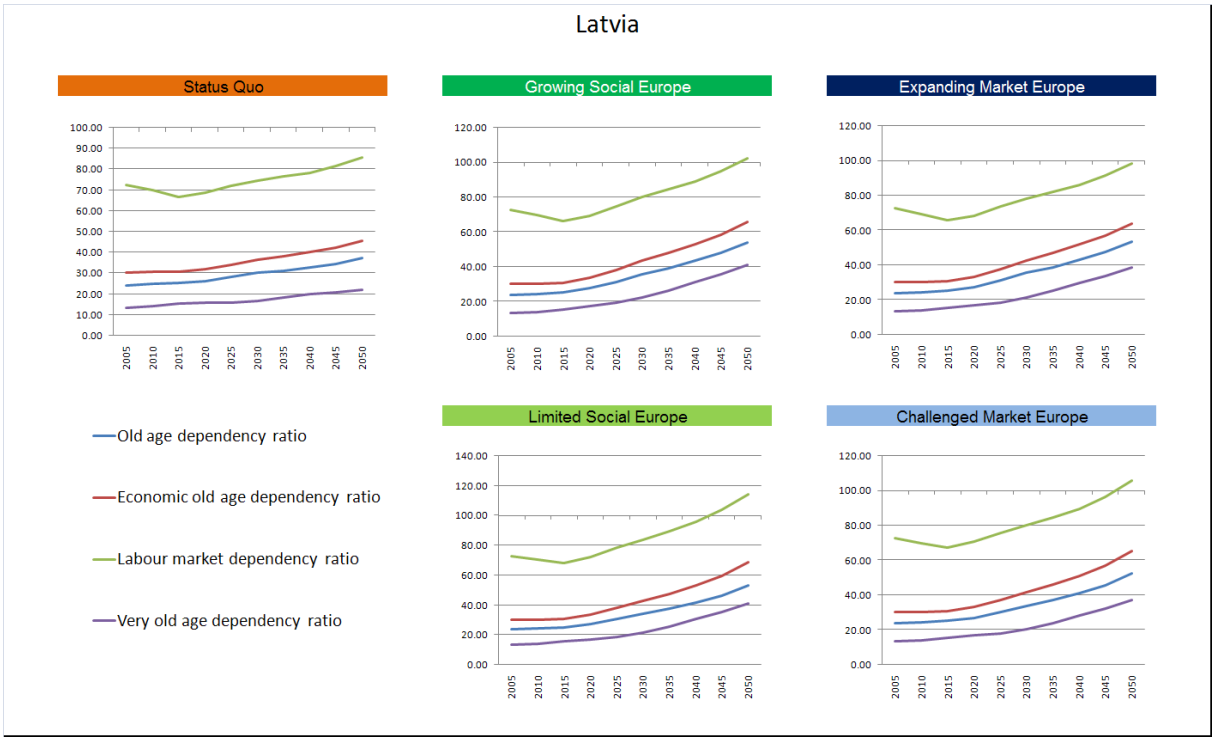
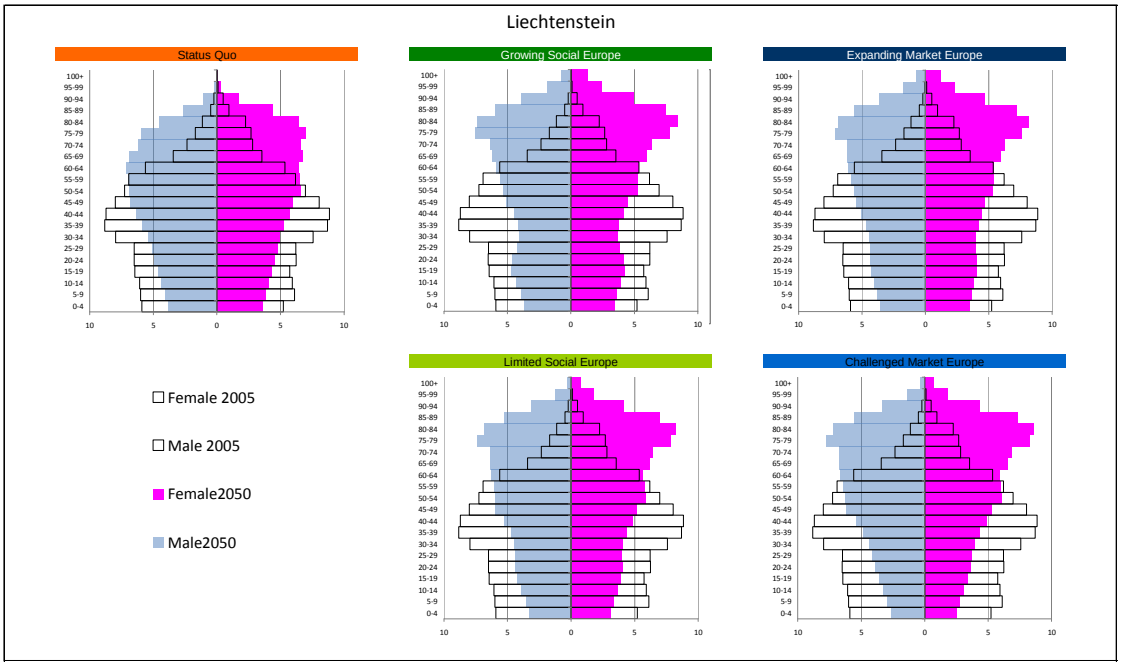




**Figure A.45: Scenario profile for population ageing and dependency ratios, 2005-50: Latvia**



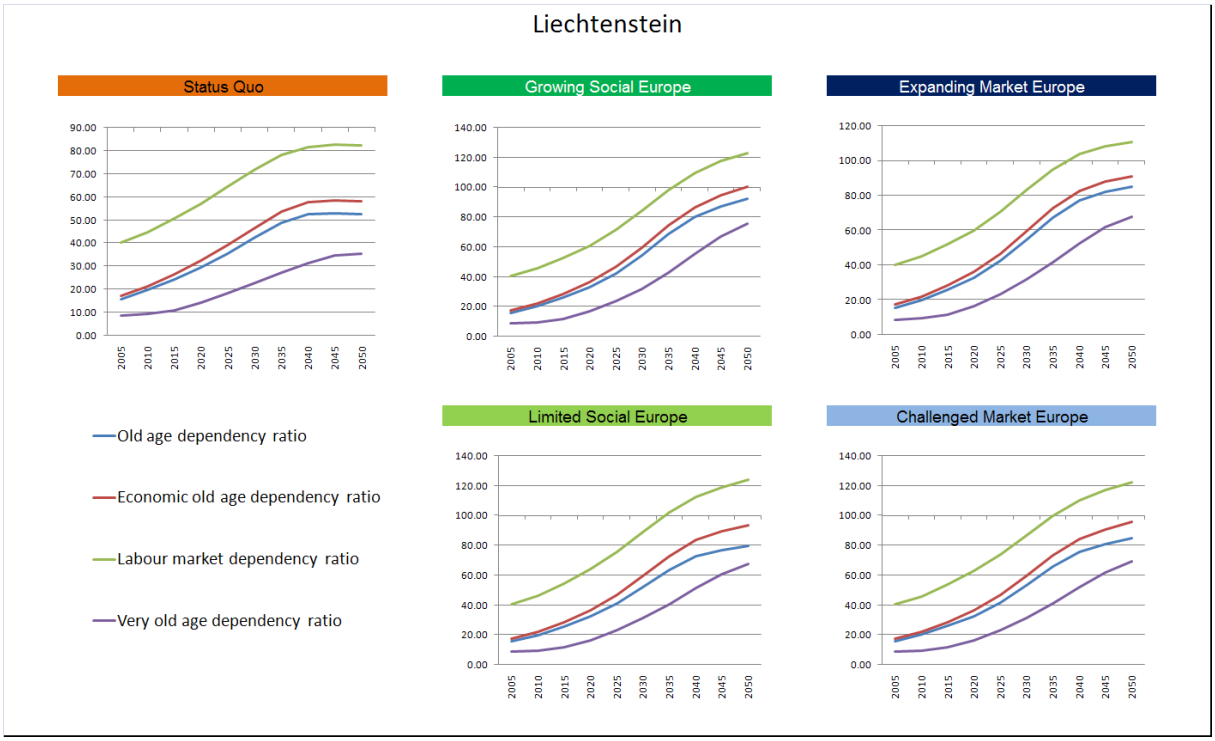
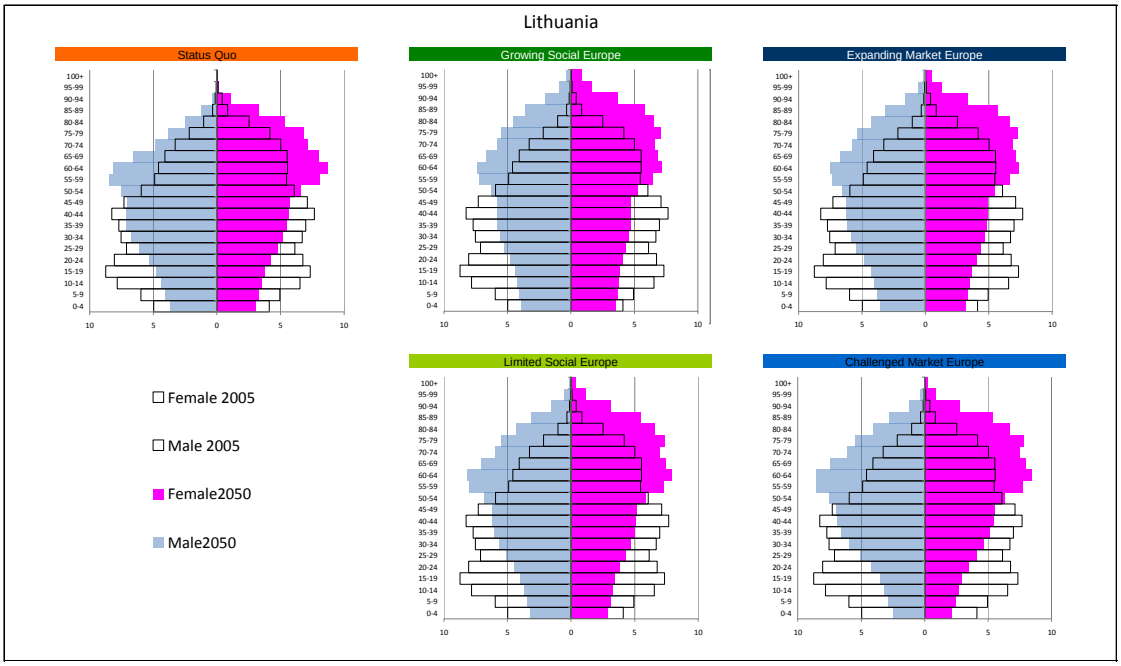




**Figure A.46: Scenario profile for population ageing and dependency ratios, 2005-50: Liechtenstein**



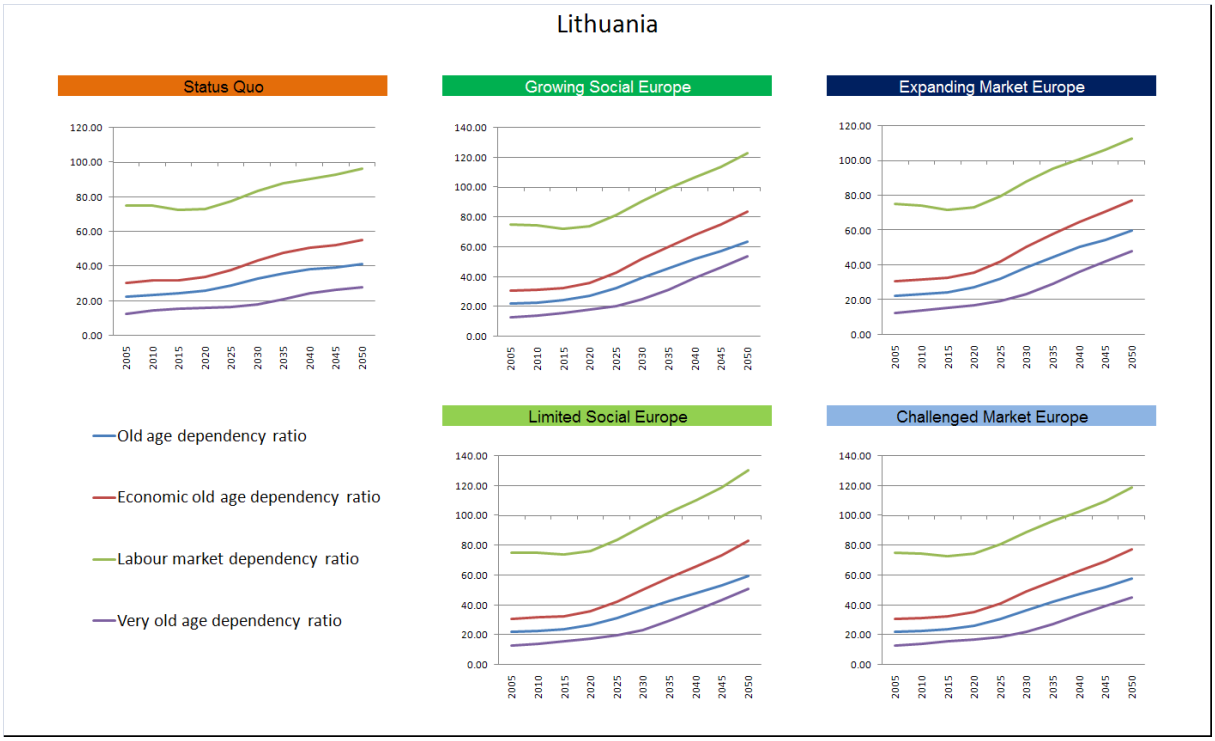
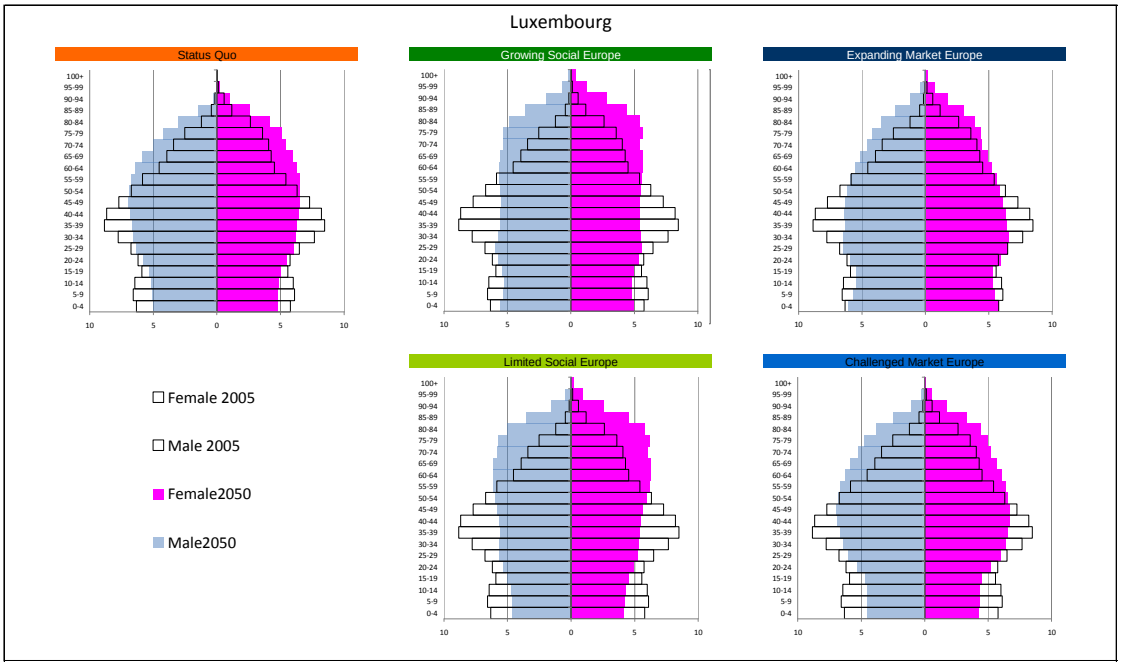




**Figure A.47: Scenario profile for population ageing and dependency ratios, 2005-50: Lithuania**



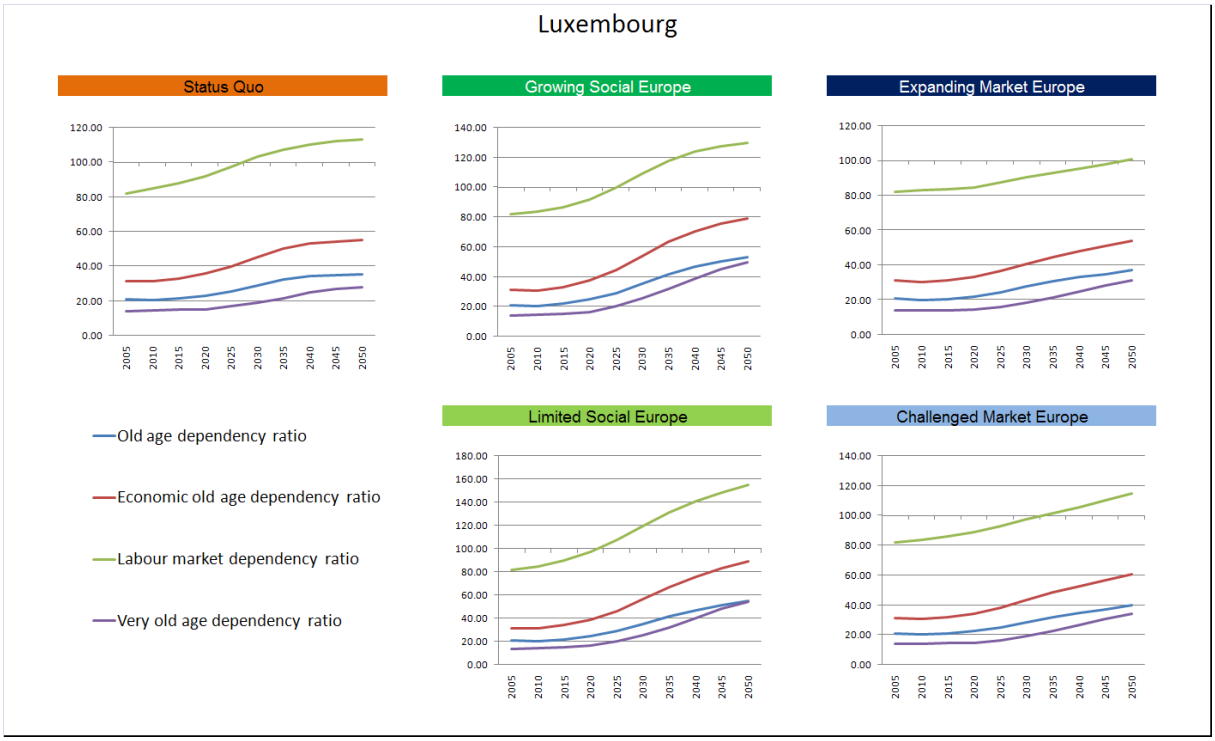
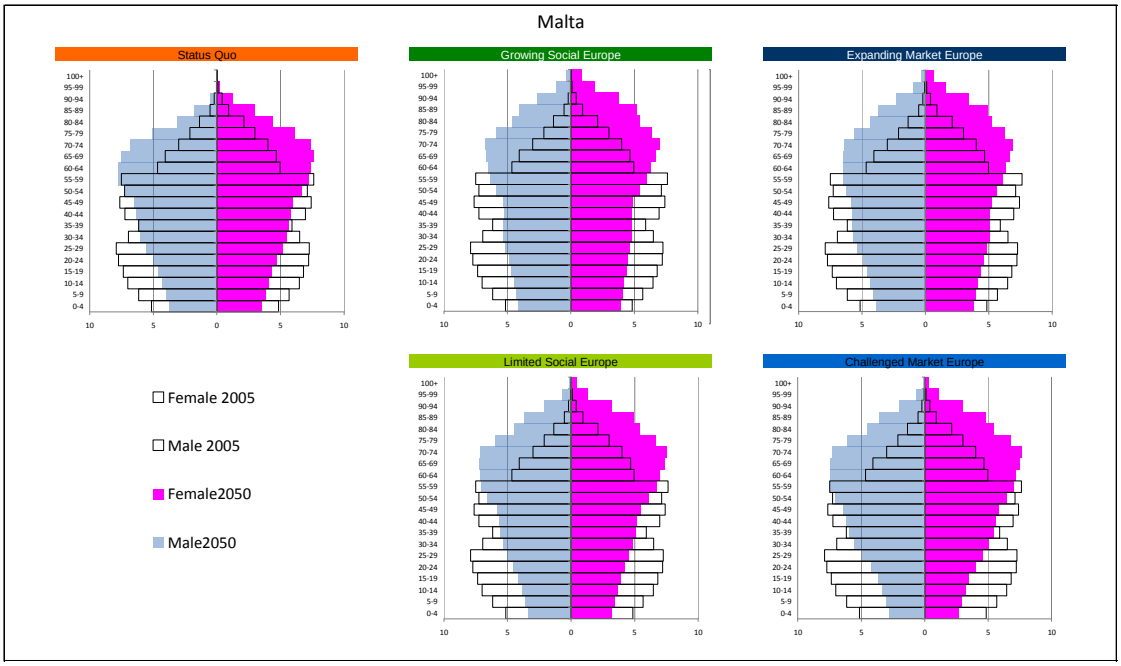




**Figure A.48: Scenario profile for population ageing and dependency ratios, 2005-50: Luxembourg**



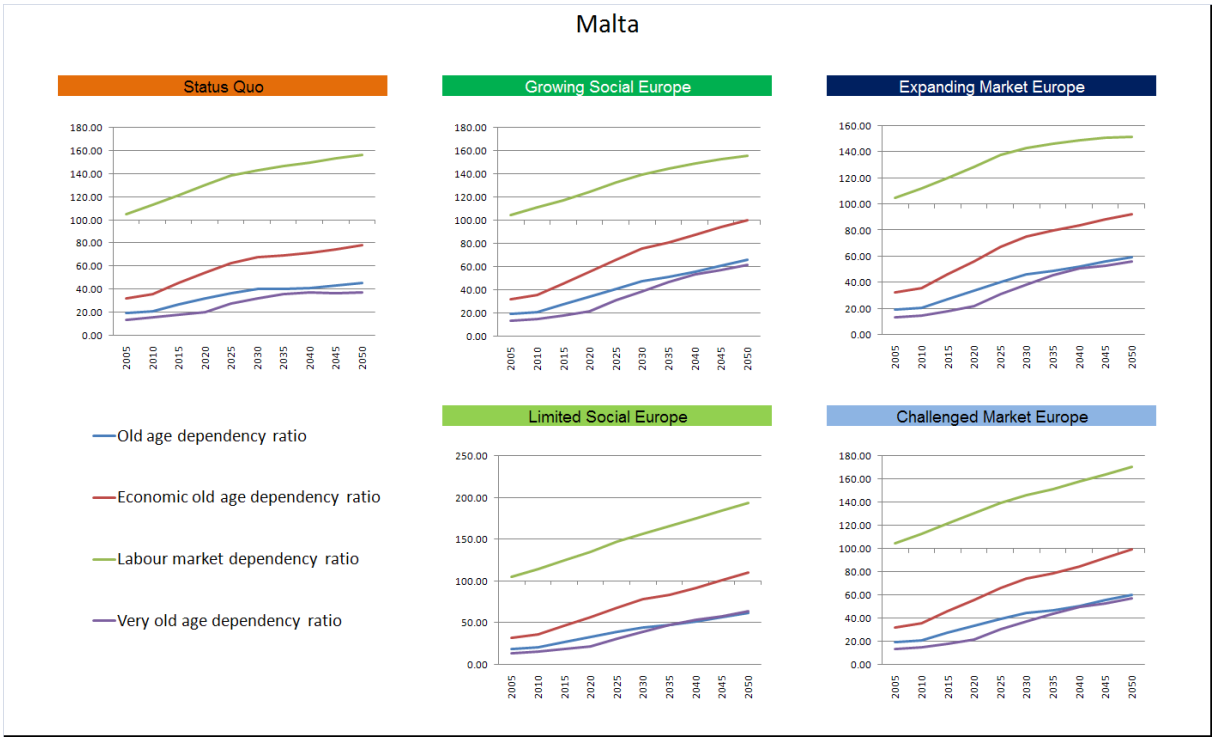
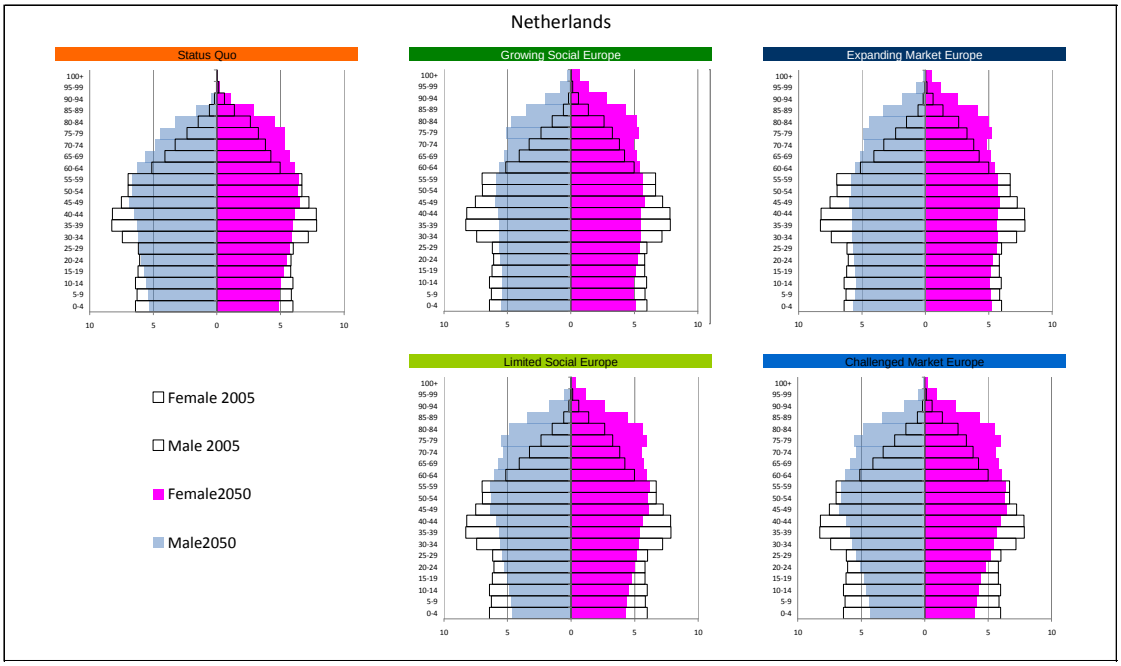




**Figure A.49: Scenario profile for population ageing and dependency ratios, 2005-50: Malta**



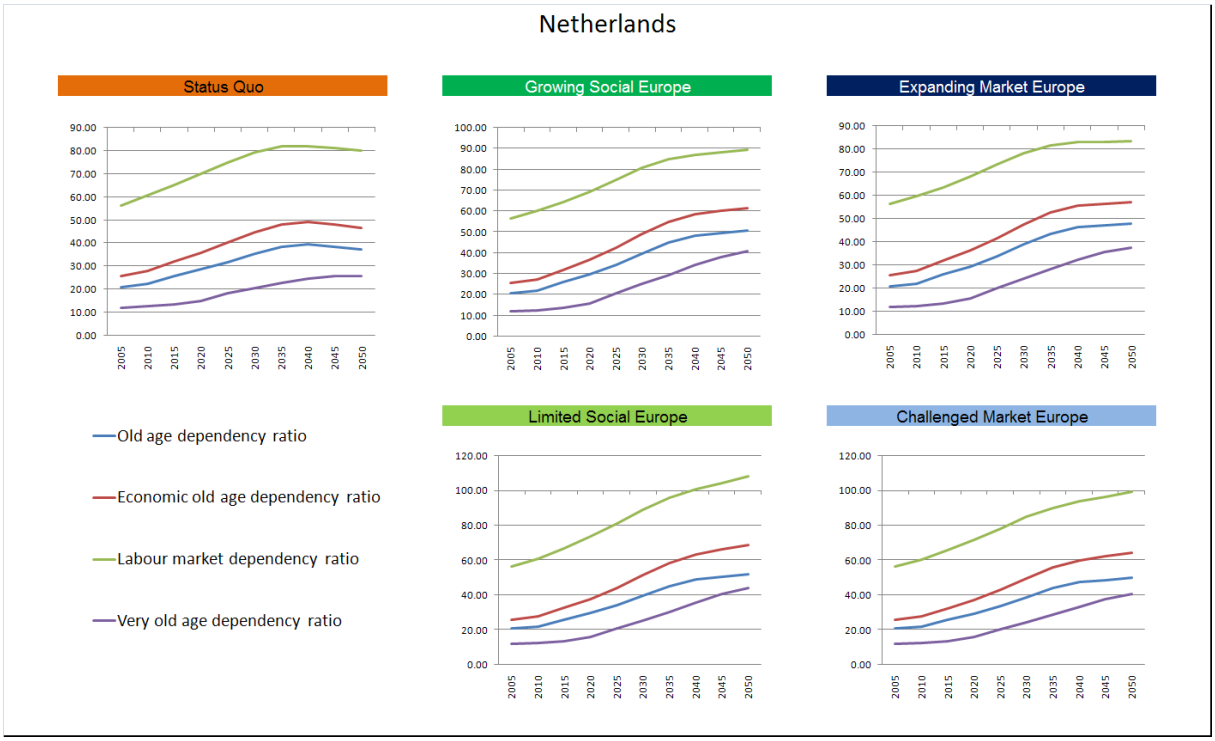
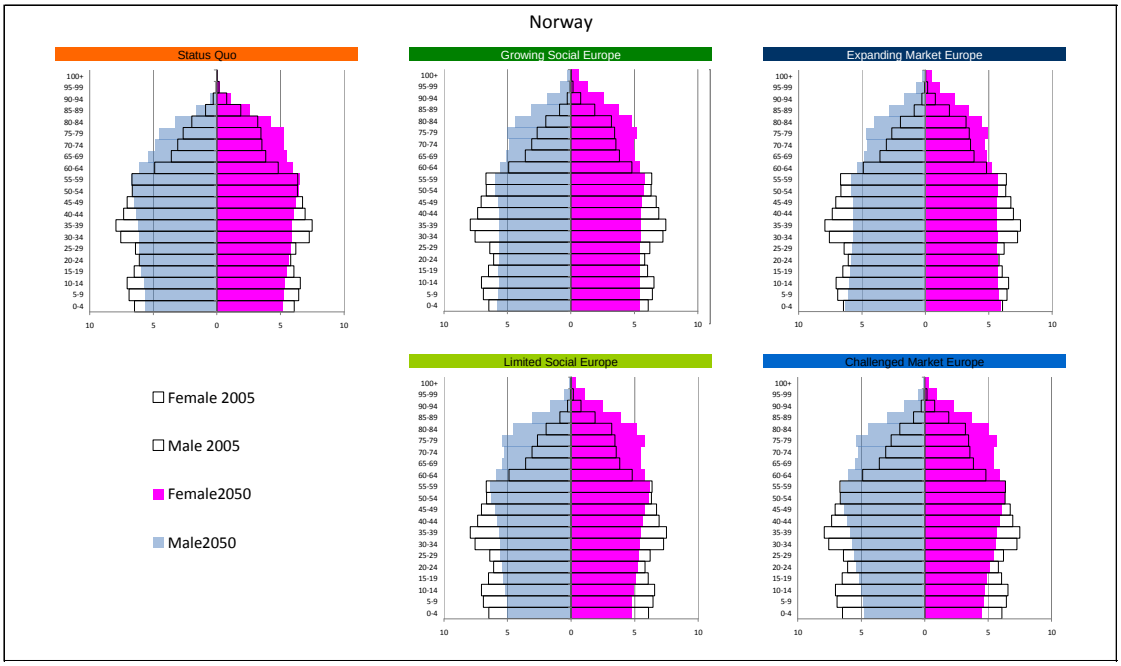




**Figure A.50: Scenario profile for population ageing and dependency ratios, 2005-50: Netherlands**



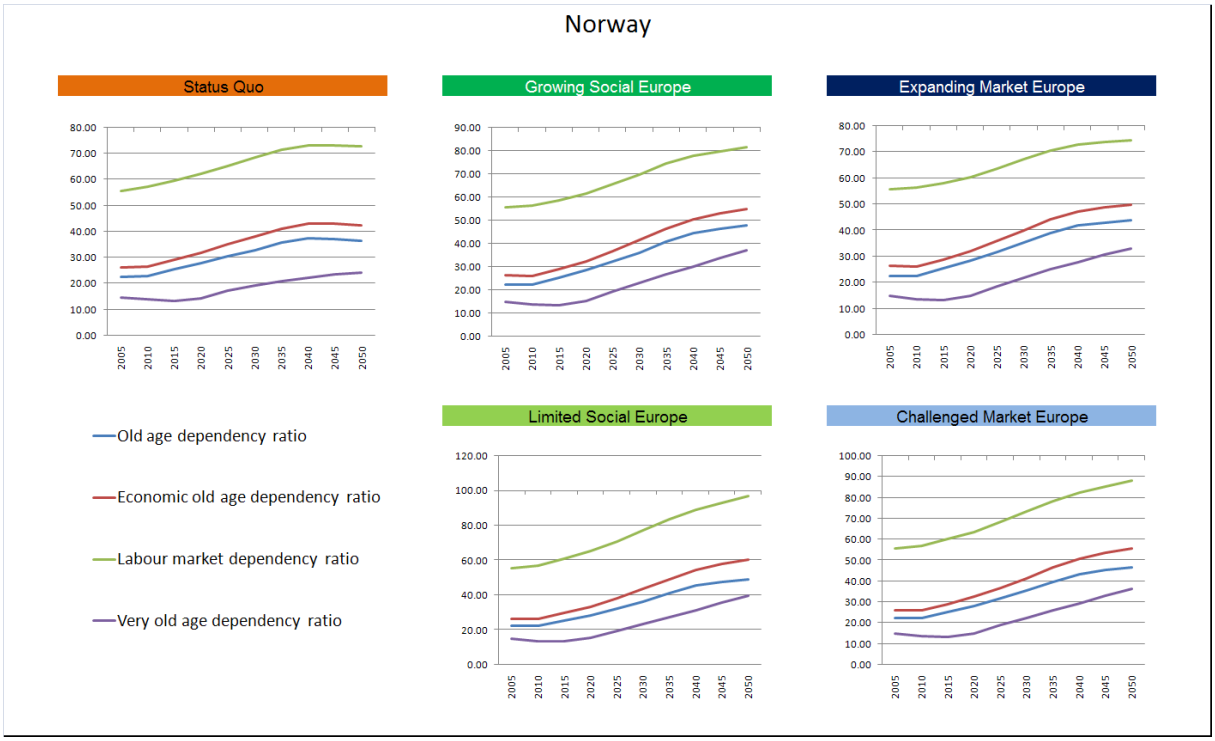
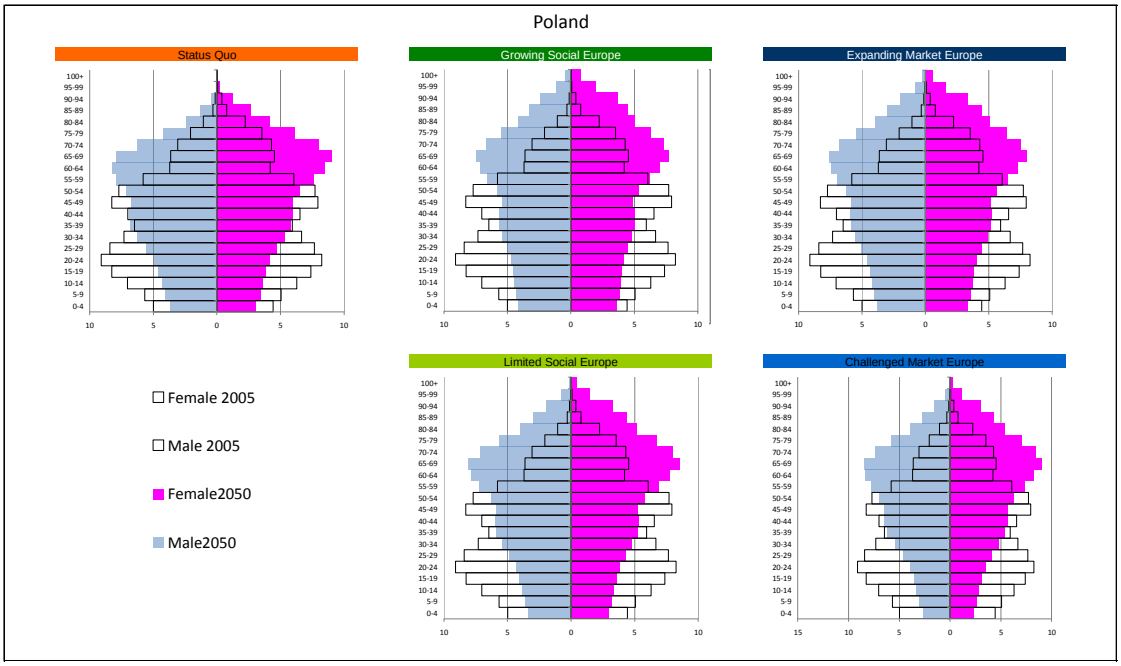




**Figure A.51: Scenario profile for population ageing and dependency ratios, 2005-50: Norway**



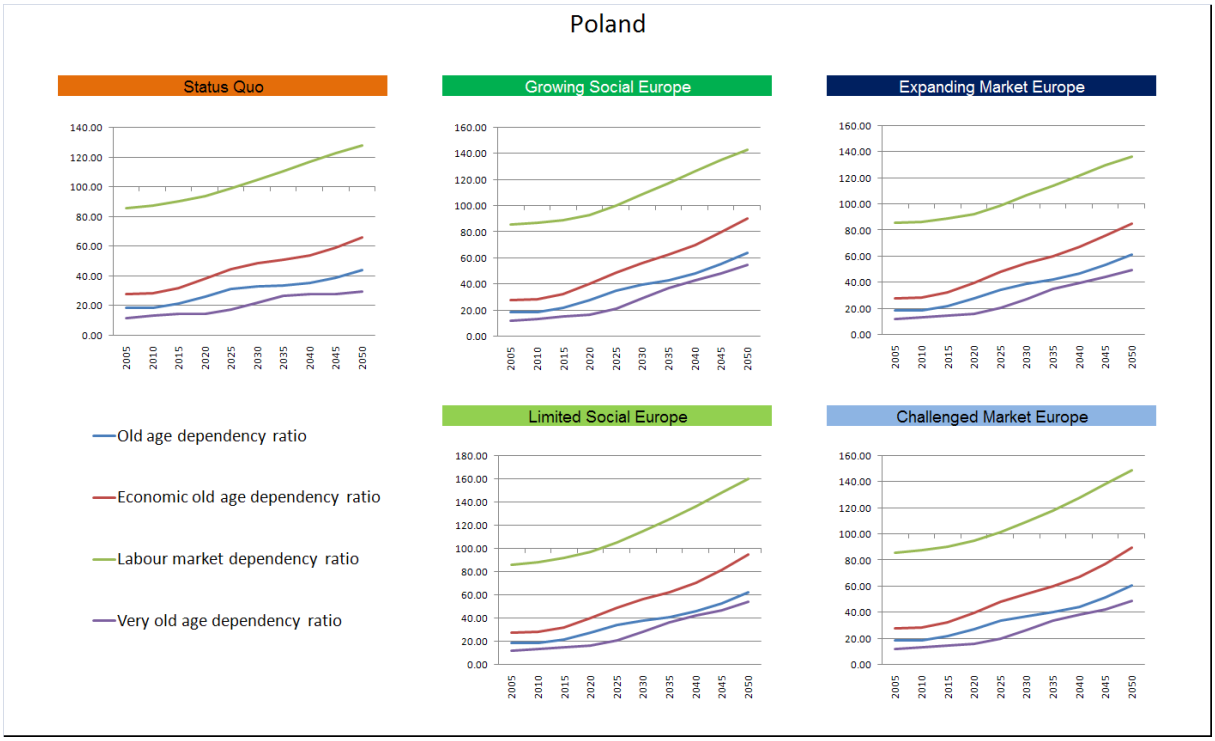
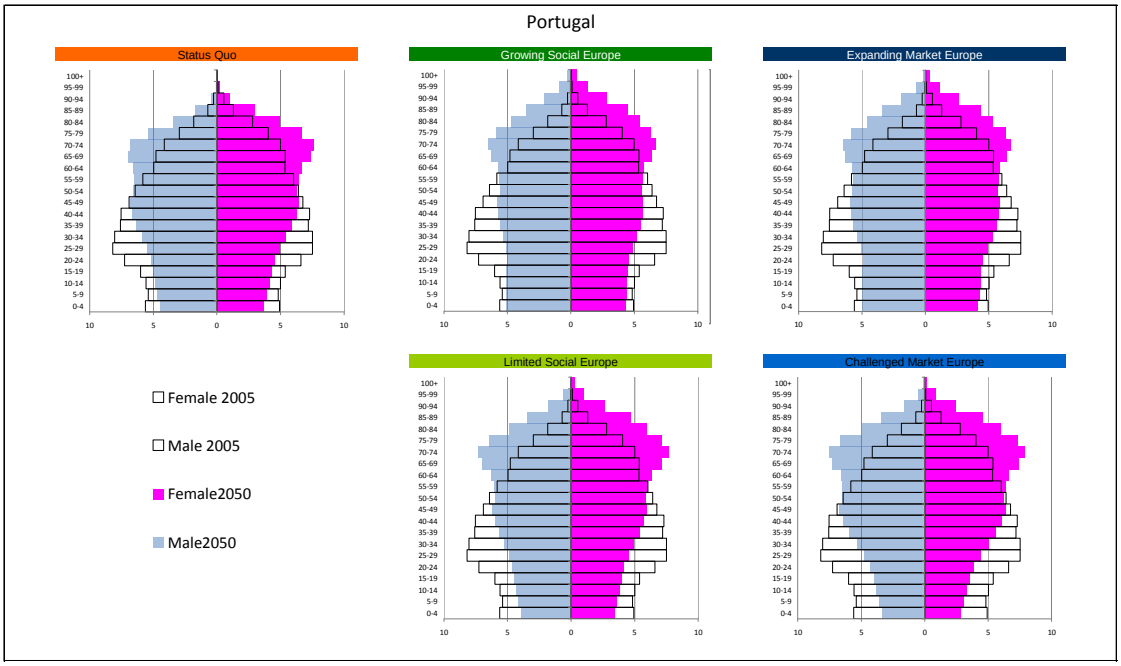




**Figure A.52: Scenario profile for population ageing and dependency ratios, 2005-50: Poland**



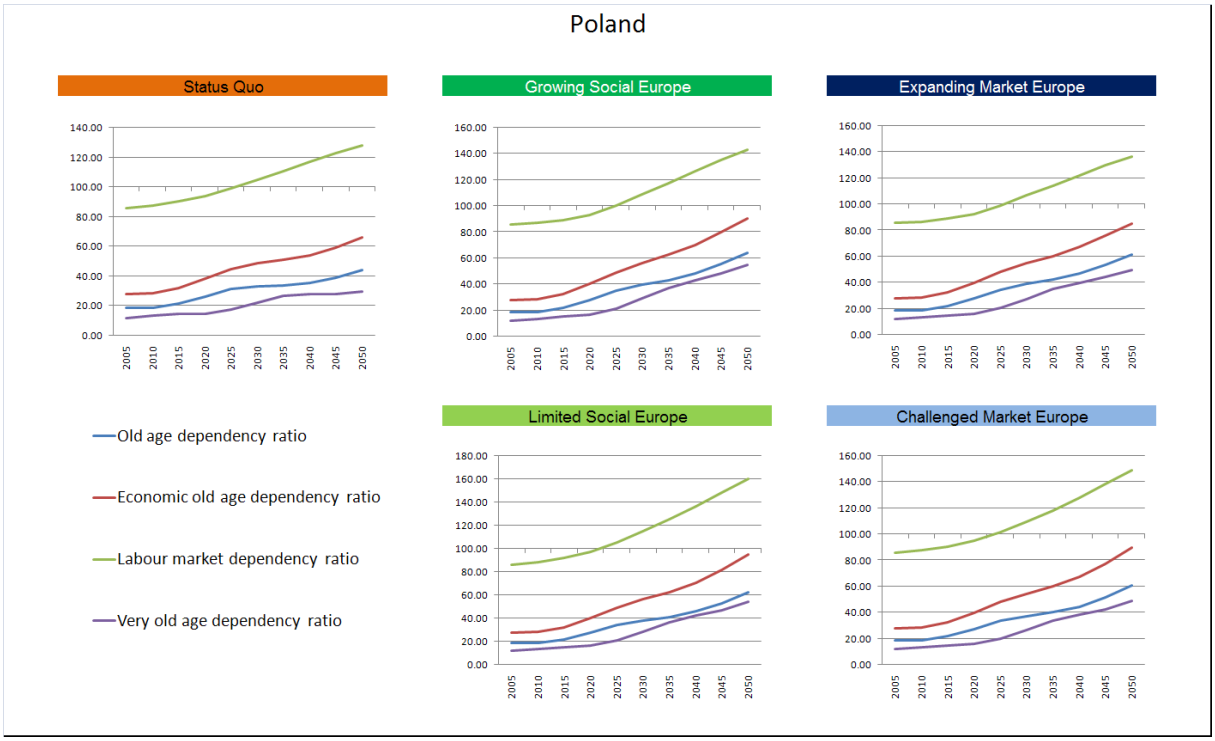
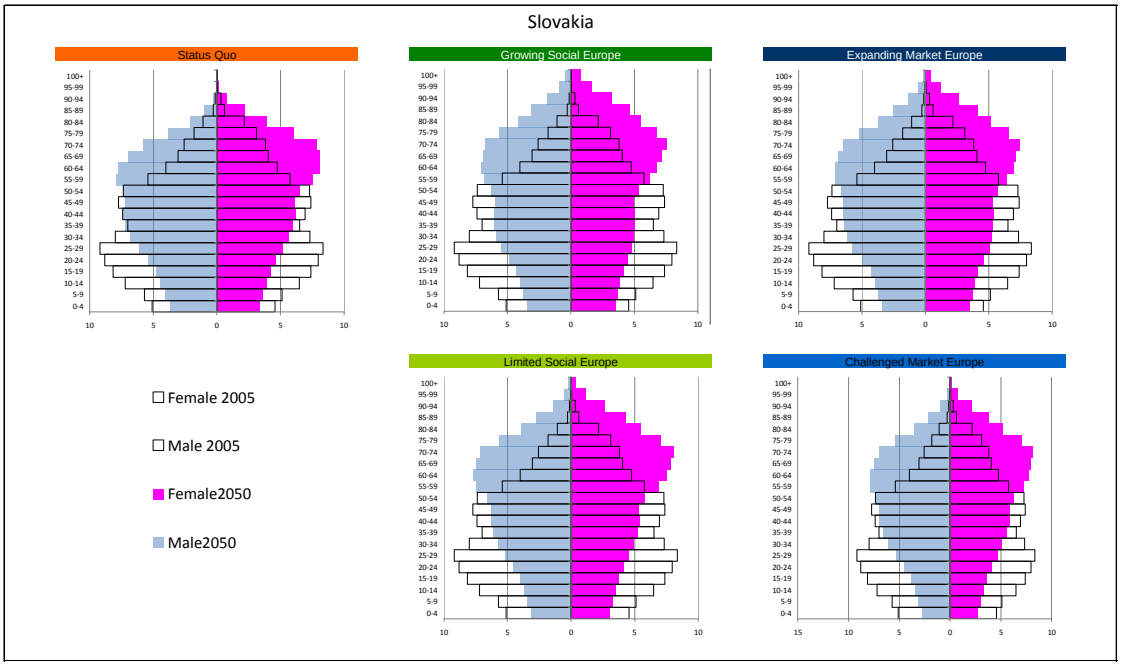




**Figure A.53: Scenario profile for population ageing and dependency ratios, 2005-50: Portugal**



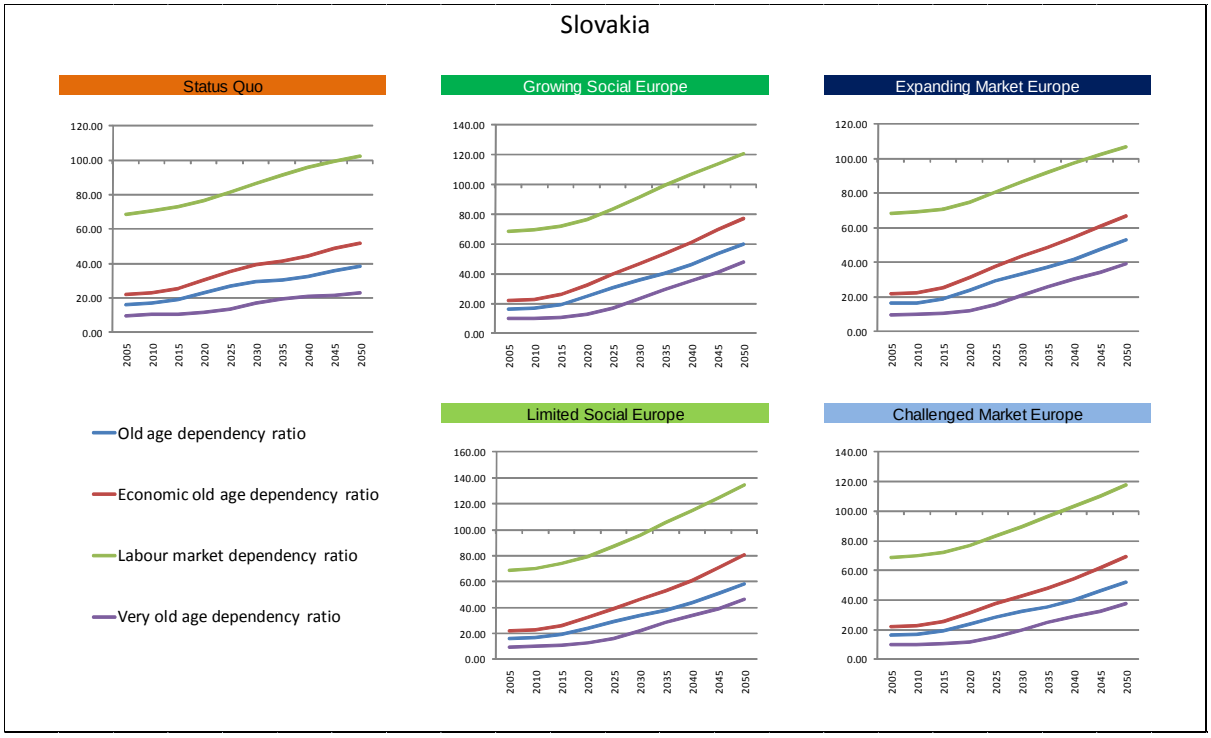
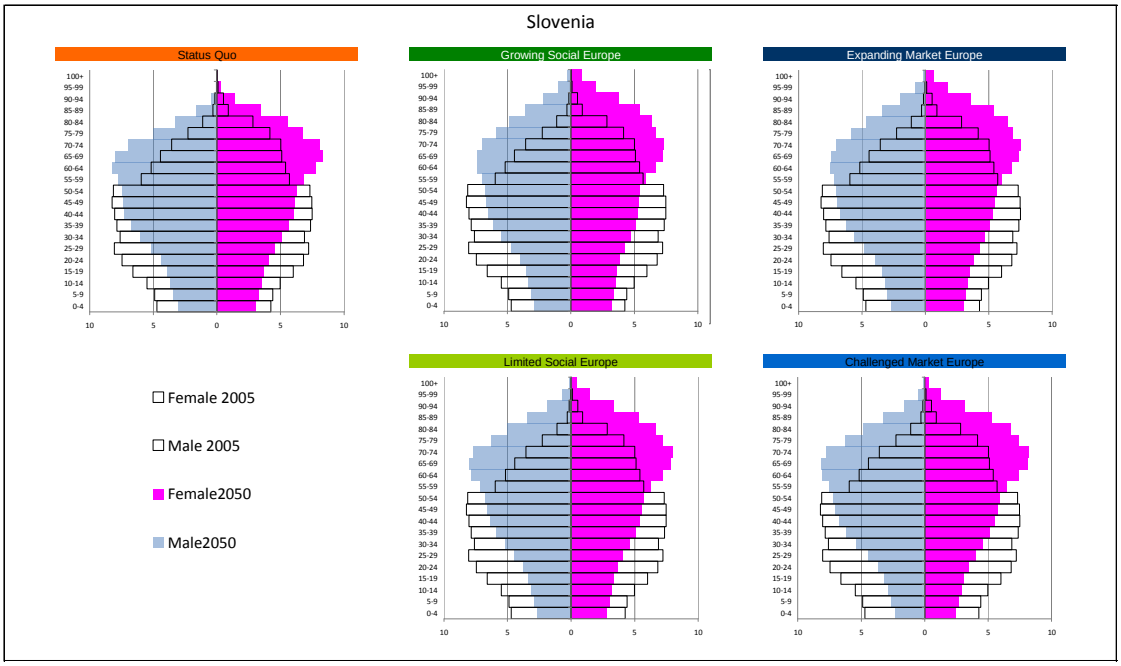




**Figure A.54: Scenario profile for population ageing and dependency ratios, 2005-50: Slovakia**



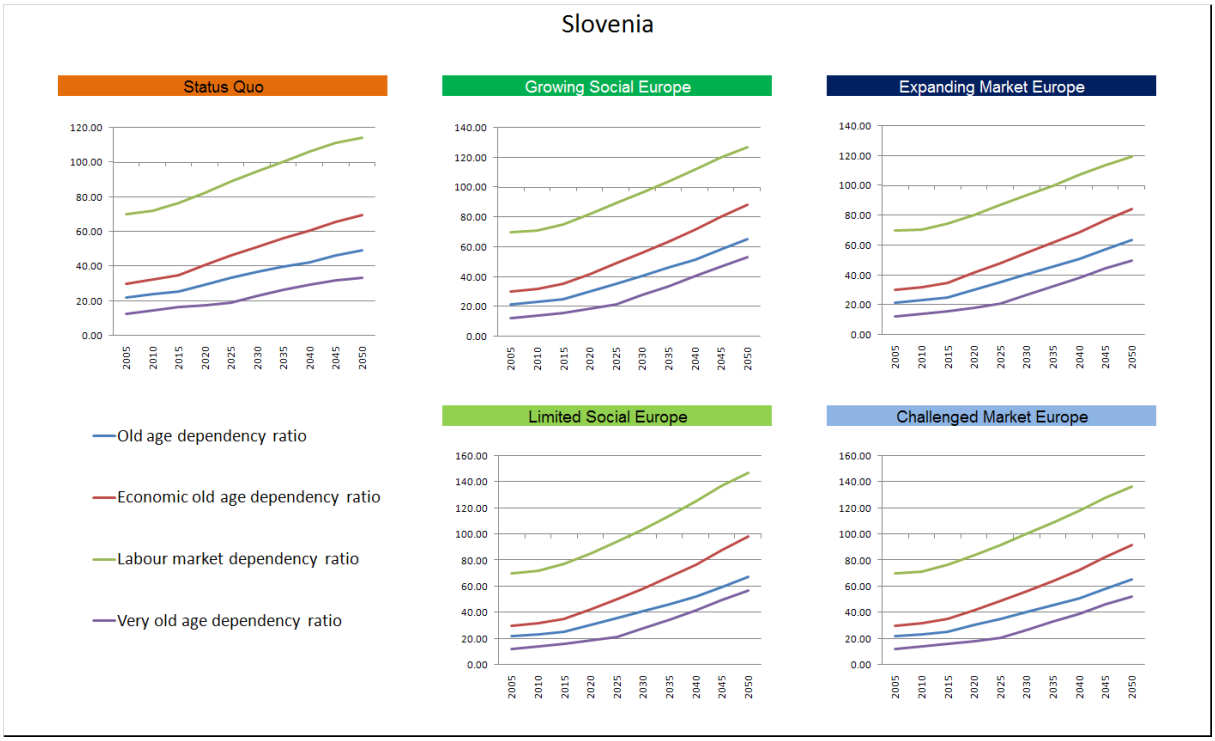
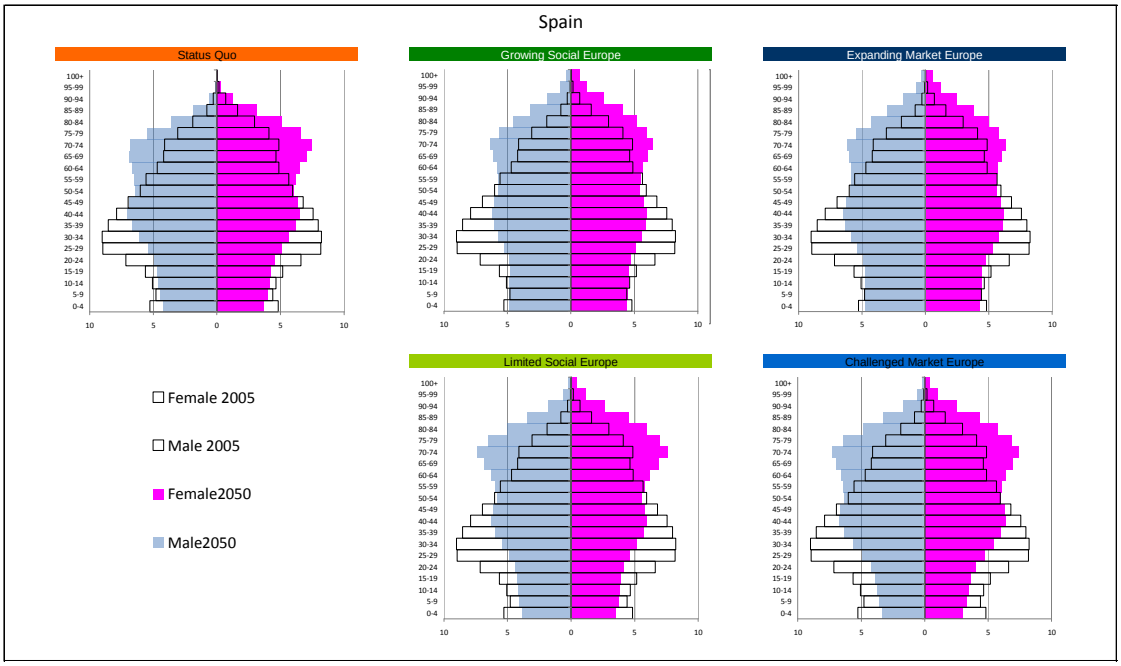




**Figure A.55: Scenario profile for population ageing and dependency ratios, 2005-50: Slovenia**



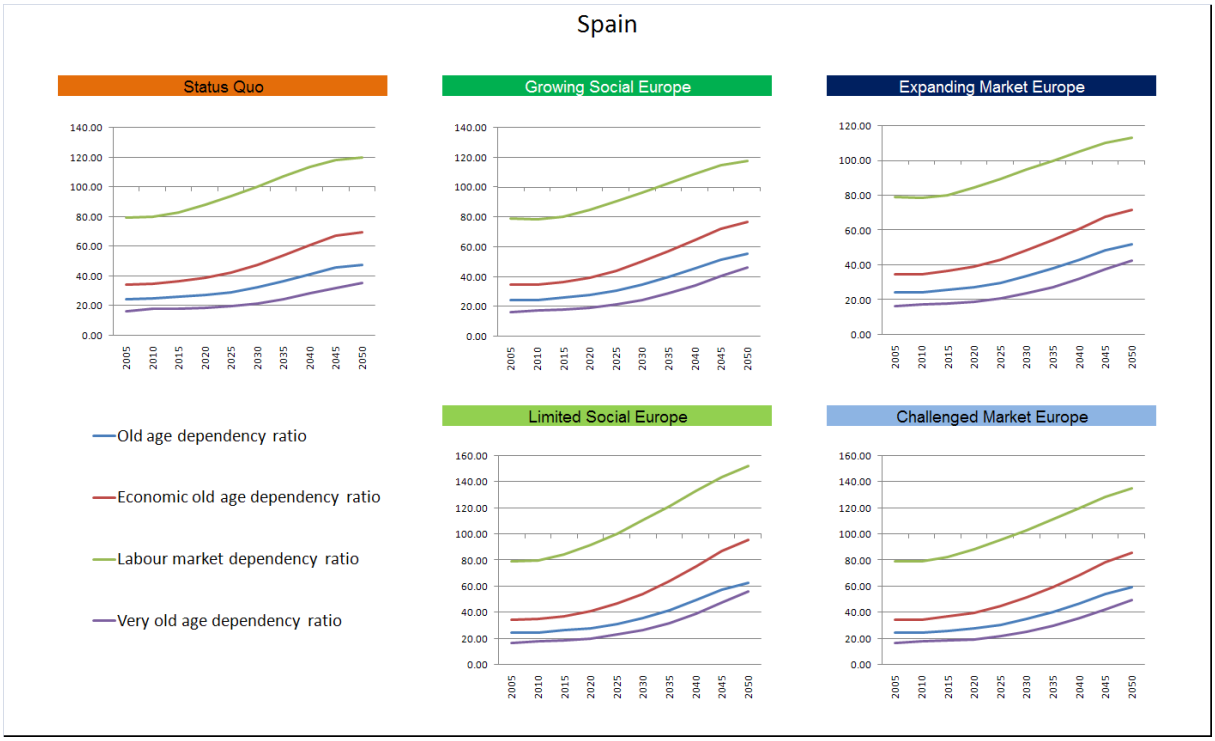
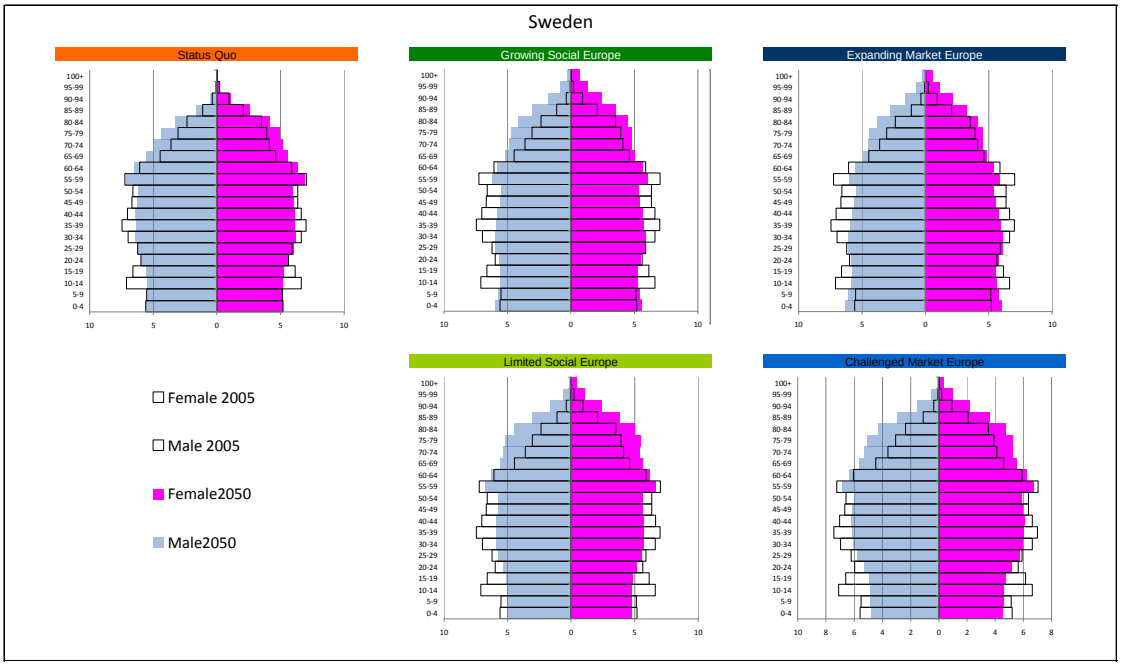




**Figure A.56: Scenario profile for population ageing and dependency ratios, 2005-50: Spain**



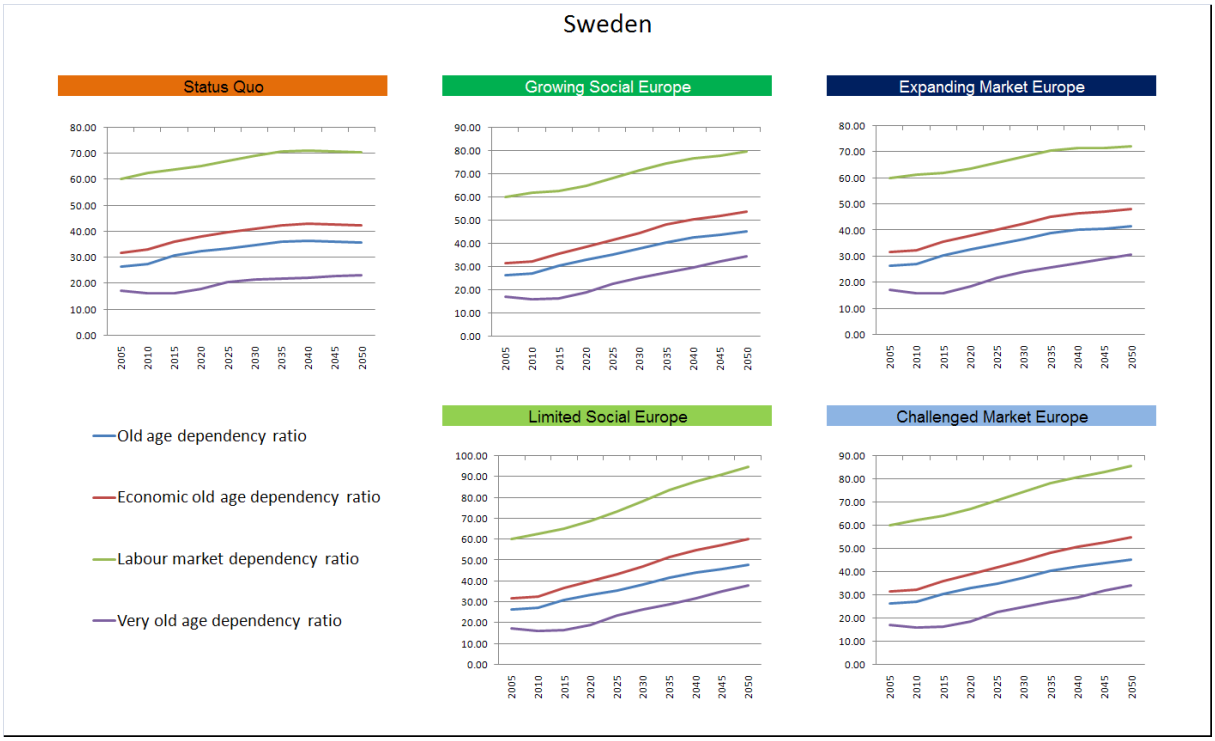
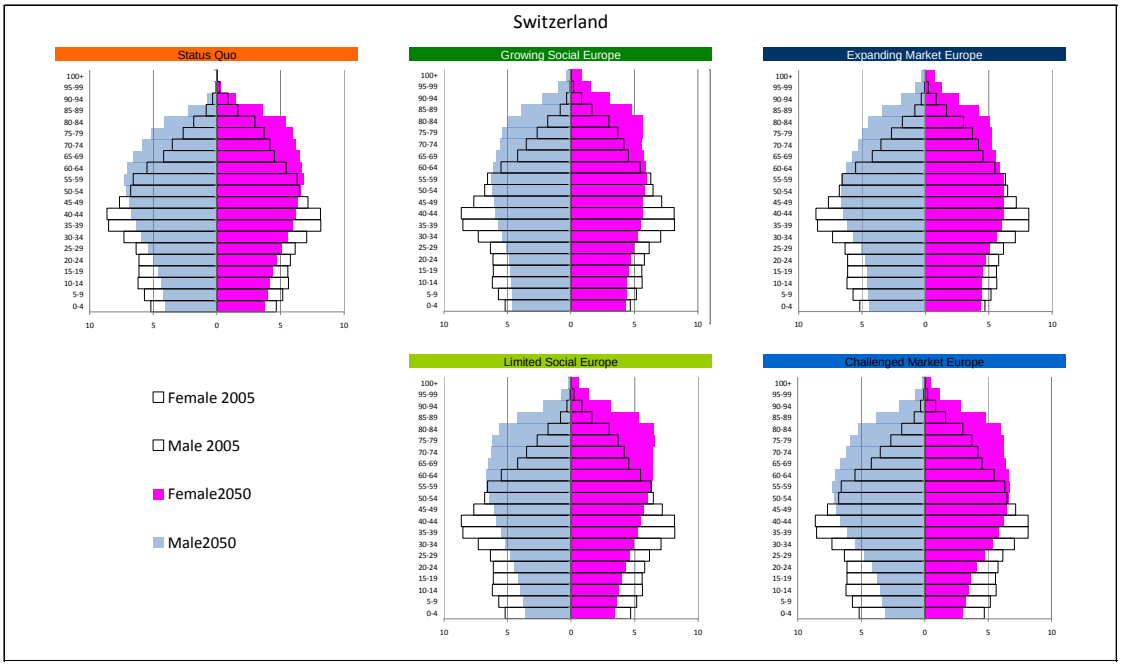




**Figure A.57: Scenario profile for population ageing and dependency ratios, 2005-50: Sweden**



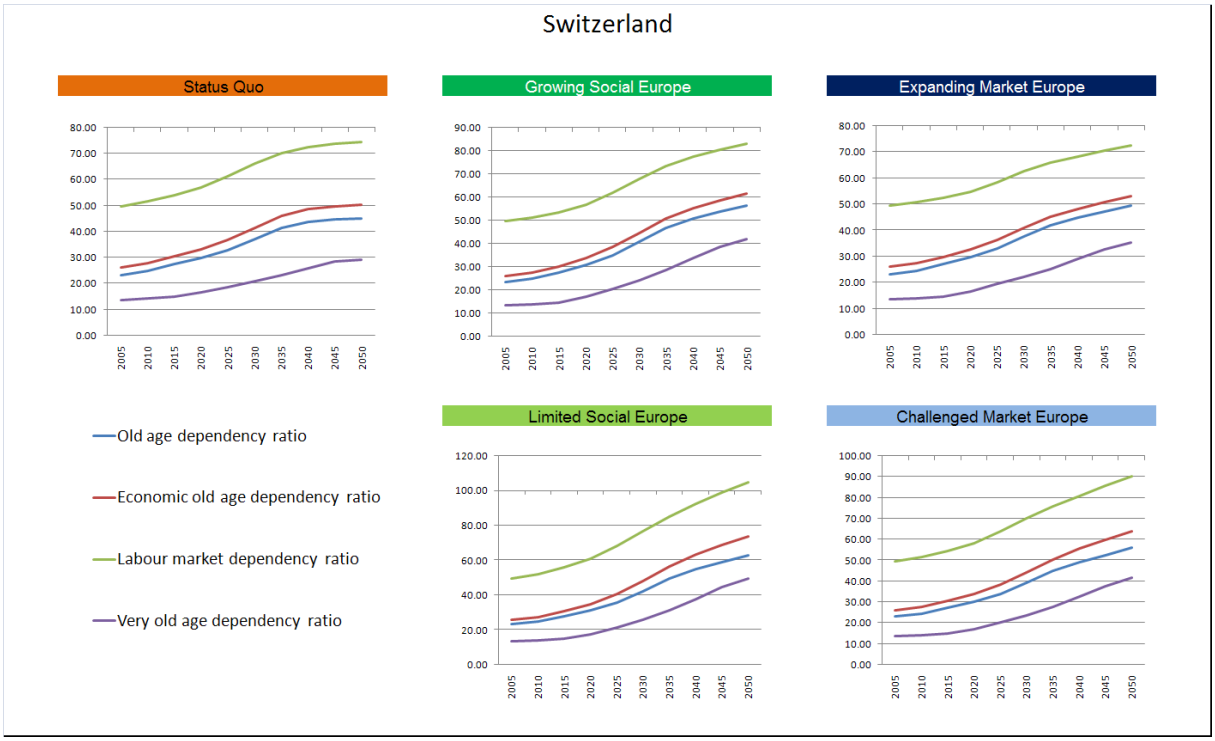




**Figure A.58: Scenario profile for population ageing and dependency ratios, 2005-50: Switzerland**