The demographic situation in the European Union

1995

Note to the reader:

All the statistics presented in this report were supplied by the Statistical Office of the European Communities. The authors would like to thank their Eurostat colleagues for their help and hard work.

Cataloguing data can be found at the end of this publication

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1. The population of the Union: overview and perspectives

Introduction

The 1994 report on the demographic situation provided a detailed description of the situation in the European Union and analysed its origins. The Commission's intention was thus to present a general reference framework relating to the main aspects of European population trends.

This second report continues this approach by taking a look at the medium and long-term perspectives. It is, however, more selective, in that the emphasis is on providing a first Community study focusing on the dominant factor in our demographic future: the extent and acceleration of the ageing process.

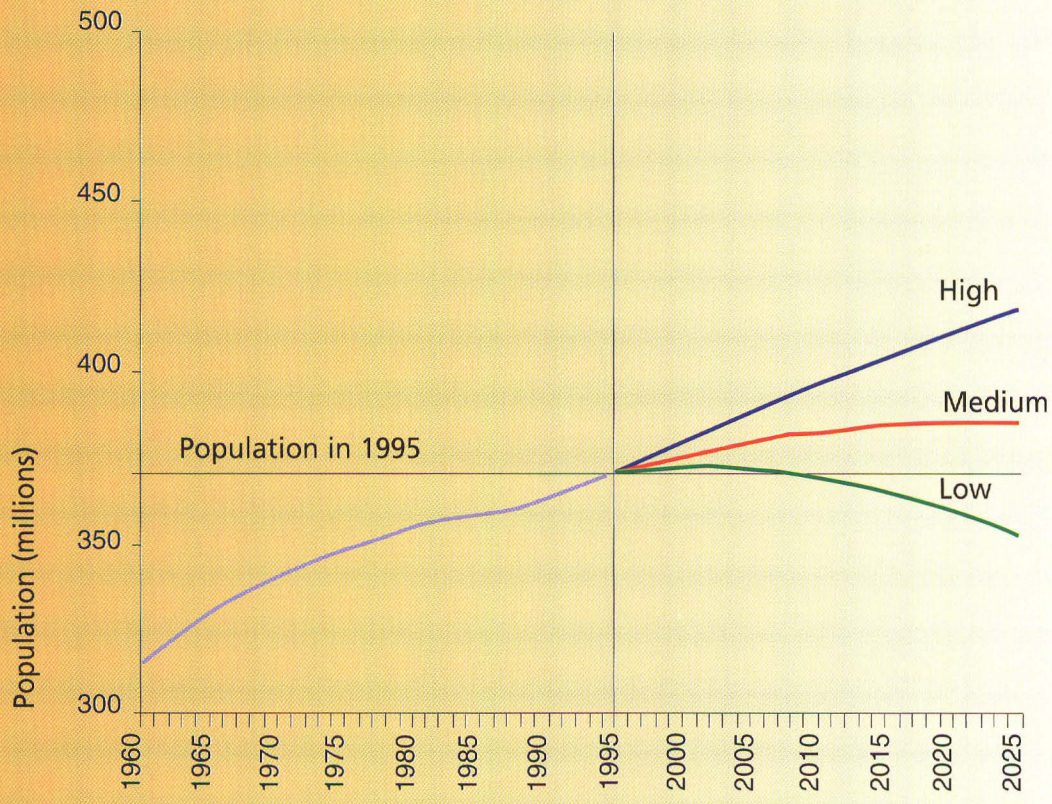
Although demographic ageing is by no means a new phenomenon, it has now assumed unprecedented proportions owing to the post-war 'baby boom', and the 'baby bust' which immediately followed. Over the next few decades, Europe will increasingly be confronted with the consequences of these past demographic upheavals. The recent demographic changes mean that Member States will experience ageing in different ways and to differing degrees, but in all of them there will be numerous effects in fields such as the economy (in its widest sense), social protection, solidarity between generations, and the dialogue between the social partners.

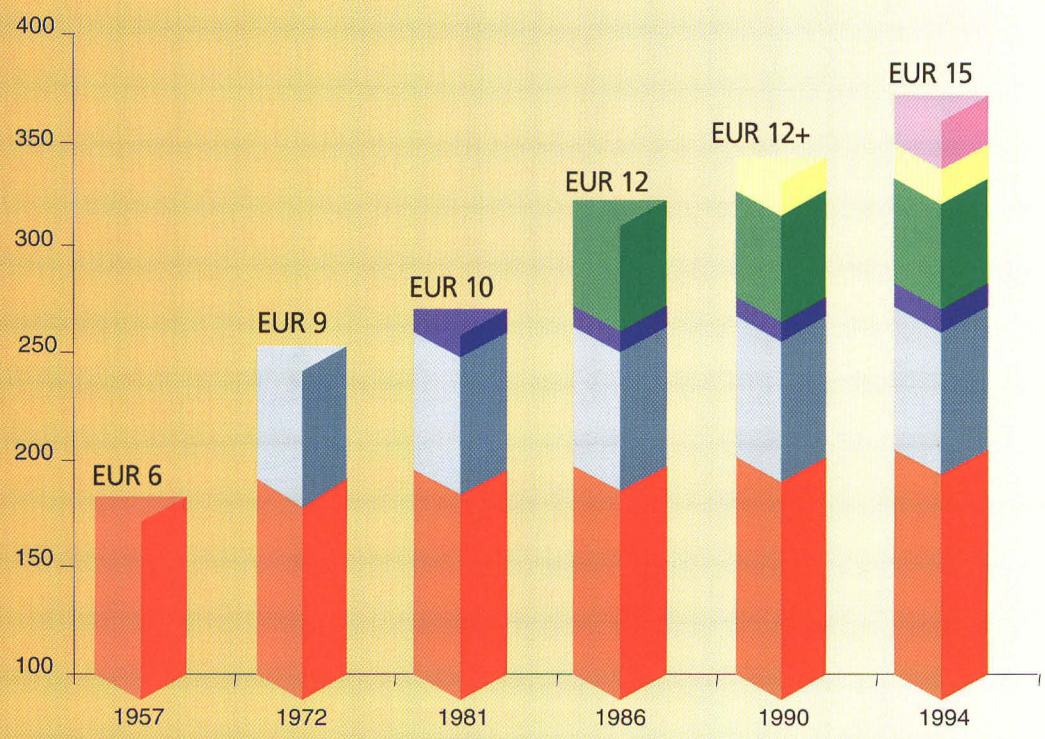
As a result of the interdependence and the balance between the various factors and, above all, the specific situations in each country, there is no single answer to the question as to how best to adapt our systems to the foreseeable demographic changes. Nevertheless, it may be useful to develop at EU level coherent means of measuring the effects of ageing, based on identical methods and consistent statistical data. This approach will make it possible to produce an initial draft framework for any discussion and analysis of the economic and social changes which the Commission may seek to pursue in the future. In this context the aim of the report is to give an input both to the debate initiated by the Commission on the future of social protection ('The future of social protection: a framework for a European debate' COM(95) 466 final) and to the development of the European employment strategy ('The European employment strategy: recent progress and prospects for the future' COM(95) 465 final).

This is the concept applied in the following report, where the question is to quantify the role played by purely demographic changes in various aspects of economic and social life in the EU. The report does not claim to provide the elements for economic forecasting, far from it; it merely attempts to pinpoint the constraints which future demographic changes, regardless of any other factors, will impose in related areas.

Figure 1

The moderate growth of the Union's population and the effects of successive enlargements





1. The population of the Union: overview and perspectives

Economic performance, employment and social protection are currently sources of concern to all Member States of the Union. At Community level, the situation has given rise to extensive discussions, coordination and even, in the case of employment, the formulation of specific objectives such as those set out at the Essen and Cannes summits. The European Union is now witnessing a specific type of demographic change requiring it to face up to the knock-on effects of previous major age-pyramid irregularities. This development imposes new conditions affecting how questions of employment and social protection are to be approached. It should certainly be taken into account, all the more so because it makes it possible to take a long-term view and evaluate such aspects as the likely effects of the Union's demographic development in these two areas. Let us therefore start by considering the parameters of this demographic future.

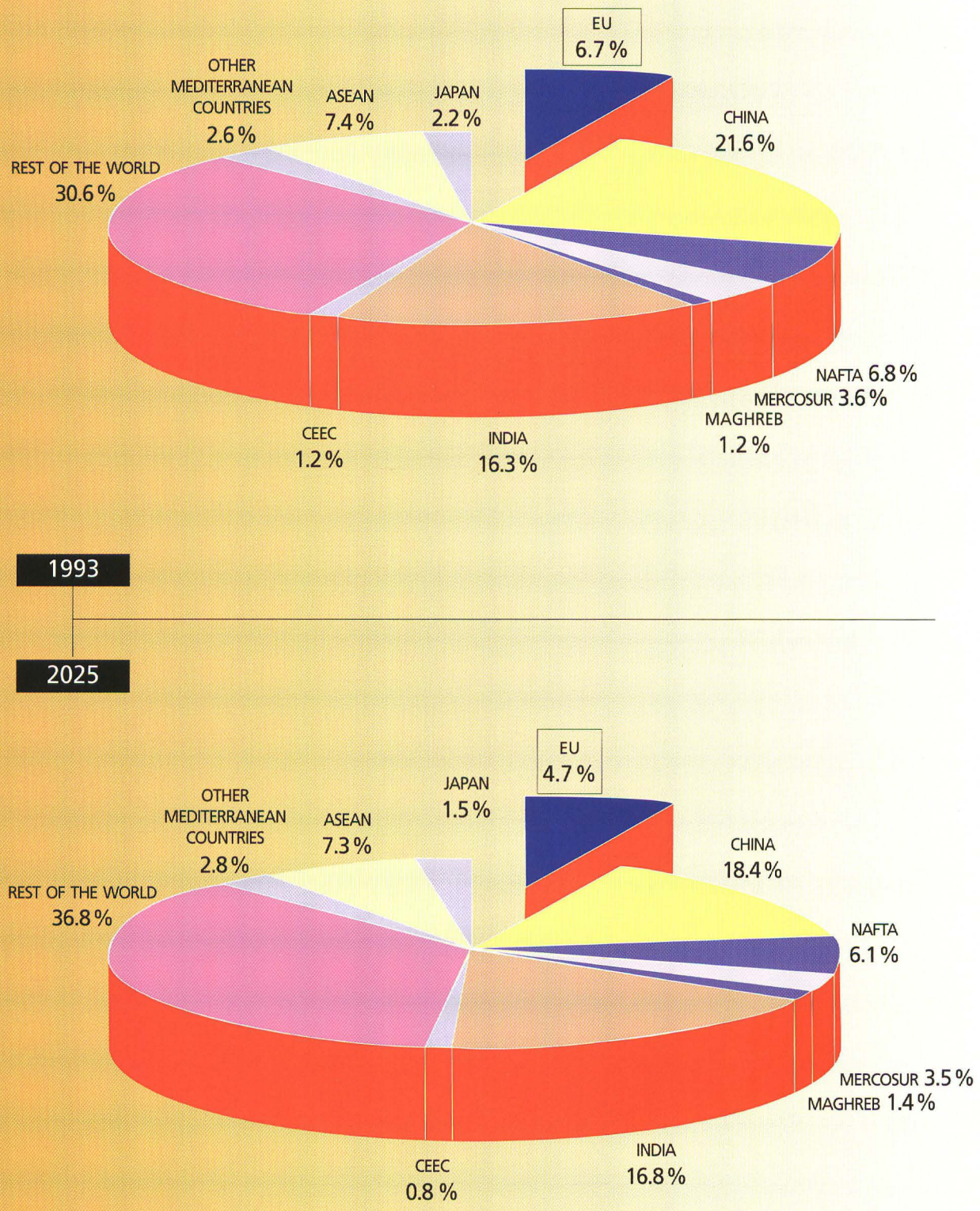
Towards a shrinking population?

Regardless of the development scenario adopted by Eurostat, future population growth should be no faster than in the past. A glance at the figures since 1960 reveals that apart from the 'spurts' resulting from the various enlargements of the Community, population growth in the Union has been slow.

No sudden changes are likely in the future. Moderate immigration and the continuation of recent fertility trends might even lead to a fall in total population.

Figure 2

The declining demographic importance of the Union on a world scale



The slow growth experienced by the Union is not a worldwide phenomenon.

Although mortality and fertility are declining worldwide, and even more rapidly than initially estimated by the United Nations Statistical Office (which is revising its forecasts accordingly), the fall thus started is by no means giving rise to an absolute decrease in numbers: fertility is still very high in developing countries, where it applies to very young populations (many women of childbearing age). The result is that during the next century the Union's demographic weight in the world will decline.

HOW SHOULD THESE FORECASTS BE INTERPRETED?

In order to estimate future trends within a population, three types of trends must be examined: the birth rate, death rate and migration. Moreover, each of these trends must be examined in terms not only of age group (fertility) but also in terms of age and sex (mortality and migration). There is a definite, if rather imprecise, link between demographic change and the socio-economic environment: working conditions, social status, standard of living, education, state of health, all these factors may have implications on fertility, mortality and migration. This means there is a link between economic policies, particularly with regard to employment, or social policies, and the demographic changes envisaged in Eurostat's three scenarios. In these scenarios, the links between demographic postulations and the socioeconomic context can de described as follows.

HIGH: high fertility (approaching two children per woman in 2025); low mortality (rapid increase in life expectancy to 84 to 86 years in 2025 for women and 79 to 82 years for men); considerable immigration (800 000 persons per year).
This would, for example, require: greater support for women and families, less poverty and exclusion, better health, fewer immigration controls and good employment conditions.

LOW: low fertility (stagnation or continued decrease); high mortality (little improvement in life expectancy: 79 to 81 years for women and 74 to 76 years for men); low immigration (250 000 per year).
This would for example, require: lowering of social protection standards, slower progress in terms of living standards and health conditions, closure to immigration or less significant economic incentives.

MEDIUM: the average of the results of the two preceding scenarios.

These projections have the advantage of permitting comparability between all the Member States. Eurostat is currently compiling more detailed scenarios allowing forecasts up to the year 2050, a timescale needed if certain demographic processes are to be assessed. However, it should be noted that the results of projections involve a certain degree of uncertainty, particularly as regards age distribution. This aspect was also covered in the 1994 report on the demographic situation (see Chapter 1.6).

DEMOGRAPHIC AGEING MUST NOT BE CONFUSED WITH A DECREPIT SOCIETY

Demographic ageing should in no way be assimilated to the concept of regression occasionally associated with biological ageing. This process actually arises from two major trends characterizing modern societies:

- the scope for couples to decide the number and spacing of their offspring freely and independently has led to a drop in fertility;
- social and medical progress has permitted a longer lifespan in better health, resulting in a continued drop in mortality.

However, these successes are fragile, and care is needed to maintain what has been achieved. Several fundamental questions immediately arise.

- Are couples really having the children they want? Many European surveys on this subject show, for example, that Europeans want more children than they actually have.[1]
- Where are the limits in the progress of health? Victory over infectious diseases and improvements in living conditions have been the key factors in enhancing life expectancy. However, given the changes observed in certain pathogenic agents, there are doubts as to whether this advance can be maintained.
- What does our society offer those ever-increasing numbers of very old people?

BIRTH OF A NEW CATEGORY: THE 'OVER 80s'

Whereas improved life expectancy was initially achieved by cutting infant mortality, further improvements are now principally due to falling mortality at advanced ages: death is occurring later and later. Nowadays, children who have reached their first birthday are unlikely to die before the age of 60.

This means that the concept of 'the elderly', which lumped together all pensioners, in fact comprises two quite different categories in social and economic terms:

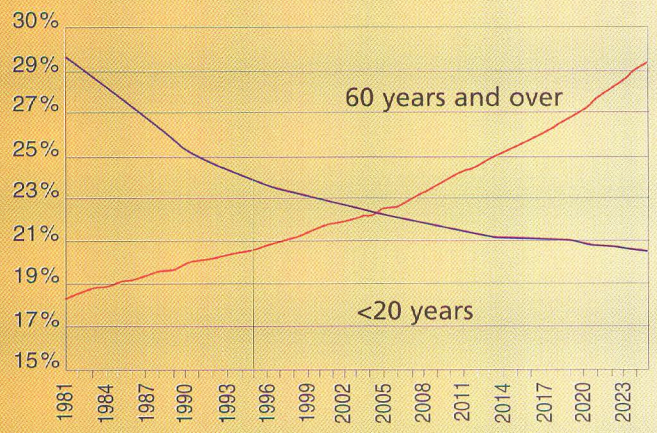
- retired people who are alert, in full possession of their physical and mental capacities and are well-integrated in the economy as consumers and as part of the informal economy (exchange of goods and services);
- those persons who really are biologically 'aged', with reduced functional autonomy, and dependent on external resources in order to be able to ensure good living conditions.

Strictly speaking, there is no specific age at which one passes from one group to the other. The boundary between them does in fact vary and could be defined as the age at which, on average, there are only a few years left to live. In any case, this category includes the majority of persons aged over 80, and especially the over-90s. Thirty years from now, there will be two or three times as many people in this age category as there are now, bringing with it a proportional increase in the specific infrastructure needed to cope with their particular requirements.

[1] See *inter alia*, Eurobarometer Survey No 32 'The family and the number of children', August 1990.

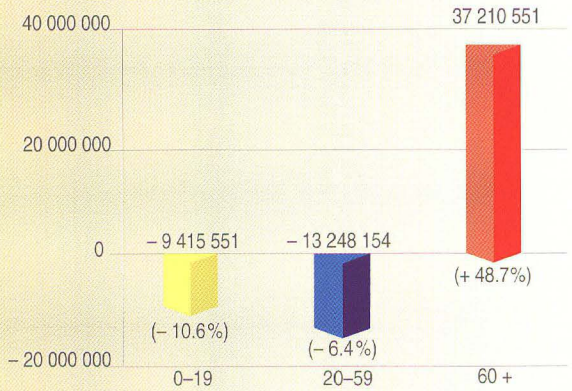
Figure 3

Young and old people: reversal of the relative proportions of the population



Based on the 'medium' scenario

Growth in numbers between 1995 and 2025



More old and fewer young people: the ageing process

The most striking feature of Community demography is the nature of ageing, as reflected by a faster increase in the elderly to young people ratio. The extent of Community ageing takes a number of forms.

The median age (the age separating the population into two groups of equal size) increased by only four years (from 32 to 36) between 1960 and 1995. Between now and 2025, a shorter period, it will increase by more than twice that, to 45.

The proportions of the population aged less than 20 or more than 60 years respectively will reverse by 2025. The younger group is currently larger, but the relative sizes will approach equality by around 2025, after which the proportion accounted for by the older group will grow continuously.

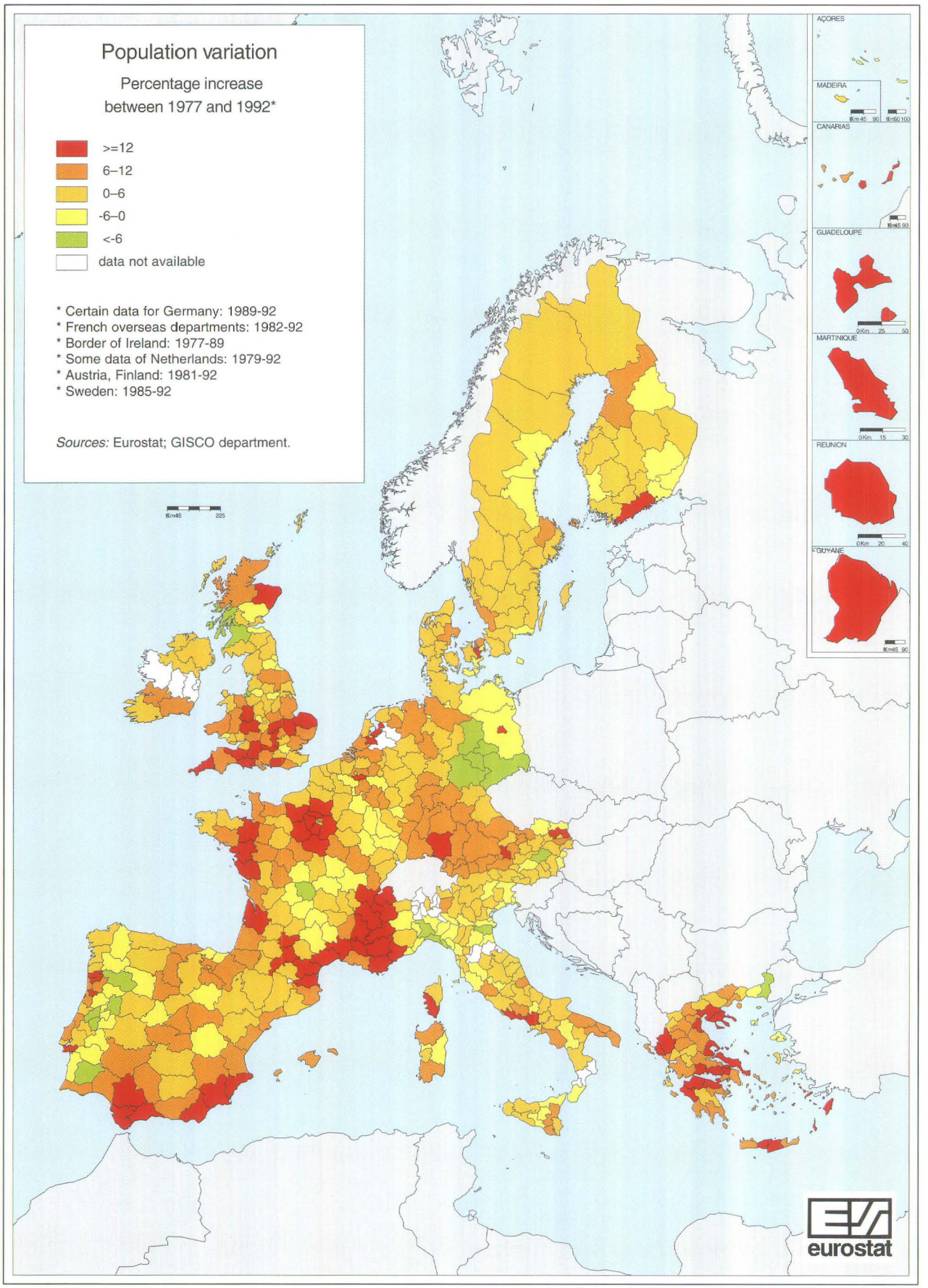
Over the next 30 years, the three groups broadly corresponding to the social and economic structure in terms of the role they play (children and students (i.e. those economically dependent), active adults, retired adults) will undergo considerable changes in numbers.

Between now and the year 2025:

(i) The number of young people aged under 20 will fall by 9.5 million, or 11%. This will have a direct impact on the organization of services targeted specifically at the young (educational infrastructure for example) and attention must be paid to ensuring that their quality of life and scope for fulfilment is preserved despite their decreasing number.

(ii) The 'adults of working age' group will also decline, but to a lesser extent (6.4%). Nevertheless, this age group will lose 13 million people, significantly altering human resource availability.

(iii) Retired adults will see their numbers increase by over 37 million, a rise of some 50%. This spectacular increase is the result of 'baby boomers' progressively reaching retirement age. Against this background, how can funding for pensions and health services be guaranteed?


Population variation
Percentage increase
between 1977 and 1992*
>=12
6–12
0–6
-6–0
<-6
data not available
* Certain data for Germany: 1989-92
* French overseas departments: 1982-92
* Border of Ireland: 1977-89
* Some data of Netherlands: 1979-92
* Austria, Finland: 1981-92
* Sweden: 1985-92
Sources: Eurostat; GISCO department.
AÇORES
MADEIRA
CANARIAS
GUADELOUPE
MARTINIQUE
REUNION
GUYANE
eurostat

Regional differences with drastic consequences

Regional disparities in such demographic characteristics are becoming a source of serious concern. Highly uneven distribution of ageing could completely derail the job-creation potential in the regions and increase the concentration of needs, and hence resources, relating to the infrastructure supplying specific services. This could give rise to major inequalities in the scope individual regions have to achieve economic and demographic growth. Against this background, the information shown on Map 1 (NUTS 3 level) calls for specific comment.

Towards spatial duality and bigger cities

In several Member States, the data show both limited and extensive areas of depopulation and other, smaller, zones of demographic growth. A number of factors are common to these population growth zones:

(i) the attraction of the southern coastal regions, as a result of their better climate and the associated industrial development;

(ii) the increasing density of metropolis populations, associated with depopulation of the city centres (examples include the Paris region);

(iii) population concentration in corridors more or less linking the major cities.

Depopulation equals disruption of the regional demographic structure

A population decline in certain regions, such as in the former East Germany, may result from emigration and a decline in natural growth. It generally gives rise to significant imbalances in the population structure.

These two factors – the former particularly affecting adults and the second, by its very nature, more often young people – have an extensive stimulatory effect on the ageing of populations, with all the consequences that this can have for the development of the regions concerned.

THE IMPACT OF REGIONAL DIFFERENCES ON OVERALL POLICIES

Issues such as employment or social protection are often examined in terms of an entire country. This is also true of demographic aspects. However, it is not unlikely that increasing disparities at a regional level might be responsible for the trends observed at a national level. After all, the management of health care, education or housing resources, or of the transport or labour-market infrastructure, depends largely on the age structure of the population at a local level.

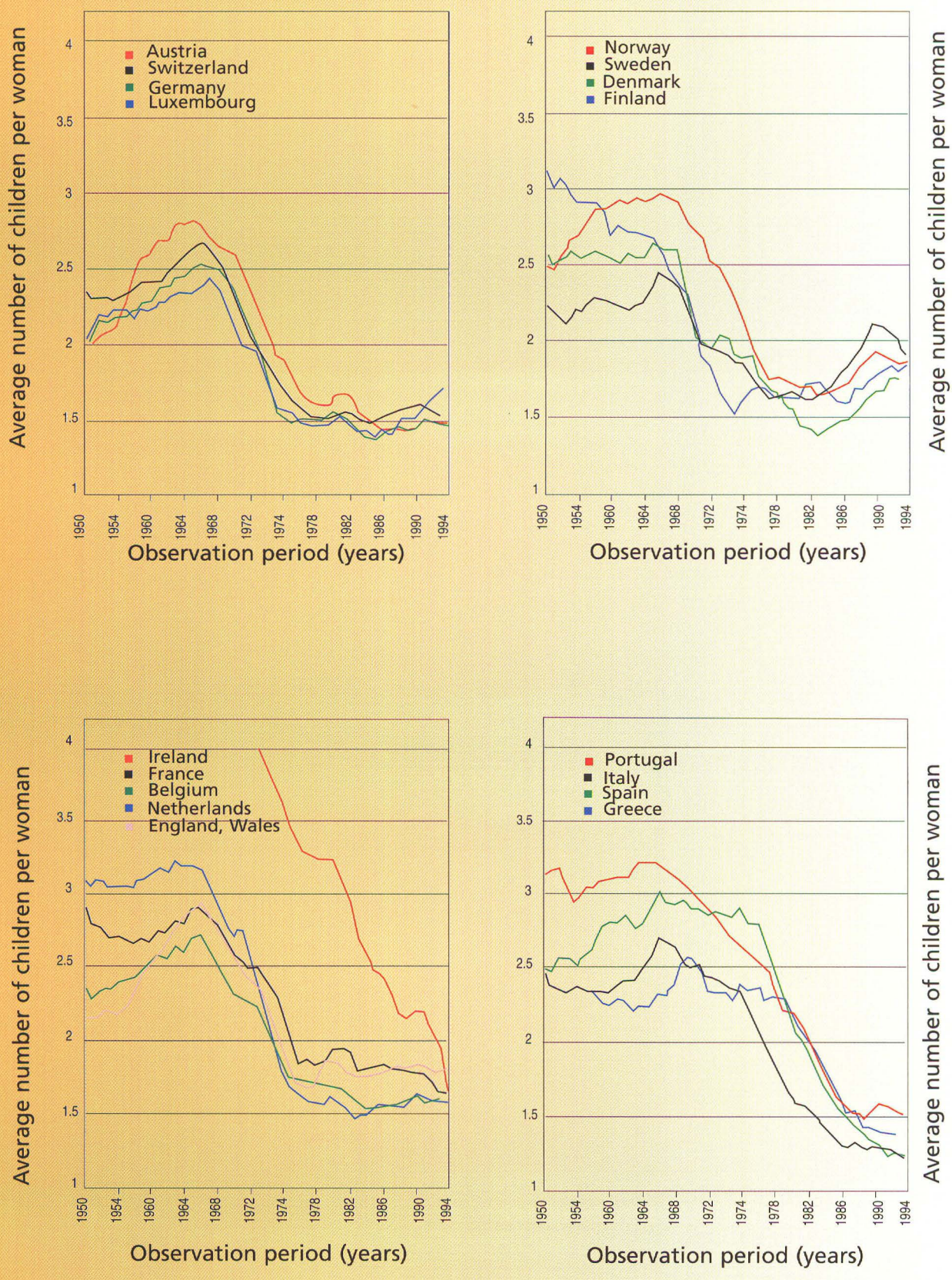
Moreover, regional disparities in demographic changes are also a potential source of specific social problems which are more difficult to resolve. Certain sociodemographic situations may make populations dependent on their place of residence, for example, and thus reduce the scope for minimizing regional disparities through geographic mobility. This is true of great age, which makes people physically less mobile, the shortage of personal resources and the cost of housing.

It would be useful to analyse the process and future trends of regional demographic changes in order to study their links with regional development and, above all, with employment trends.

Figure 4

Trends in the economic indicator of fertility over the past 40 years

Data for Switzerland and Norway have been added to illustrate the geographical dimension of homogeneous demographic behaviour.



The two driving forces behind ageing

1. The fall in fertility

By reducing year after year the numbers of newborn children, the fall in fertility which began about 1965 has now produced an age pyramid steadily narrowing towards the base.

Past long-term fertility trends do seem to provide some evidence for the spread of a model which would see the countries of the Union converging at much more uniform levels than 40 years ago. However, variations in the rate of decrease, and the considerable differences in the point of departure (see Figure 4) mean that Member States are experiencing the ageing process in very different ways.

Four different fertility patterns can be identified:

(i) the northern countries (Sweden, Finland and Denmark) are notable for the upturn in fertility towards the end of the 1980s: current levels are the highest in the Union (between 1.7 and 2.1) despite a recent downward turn;

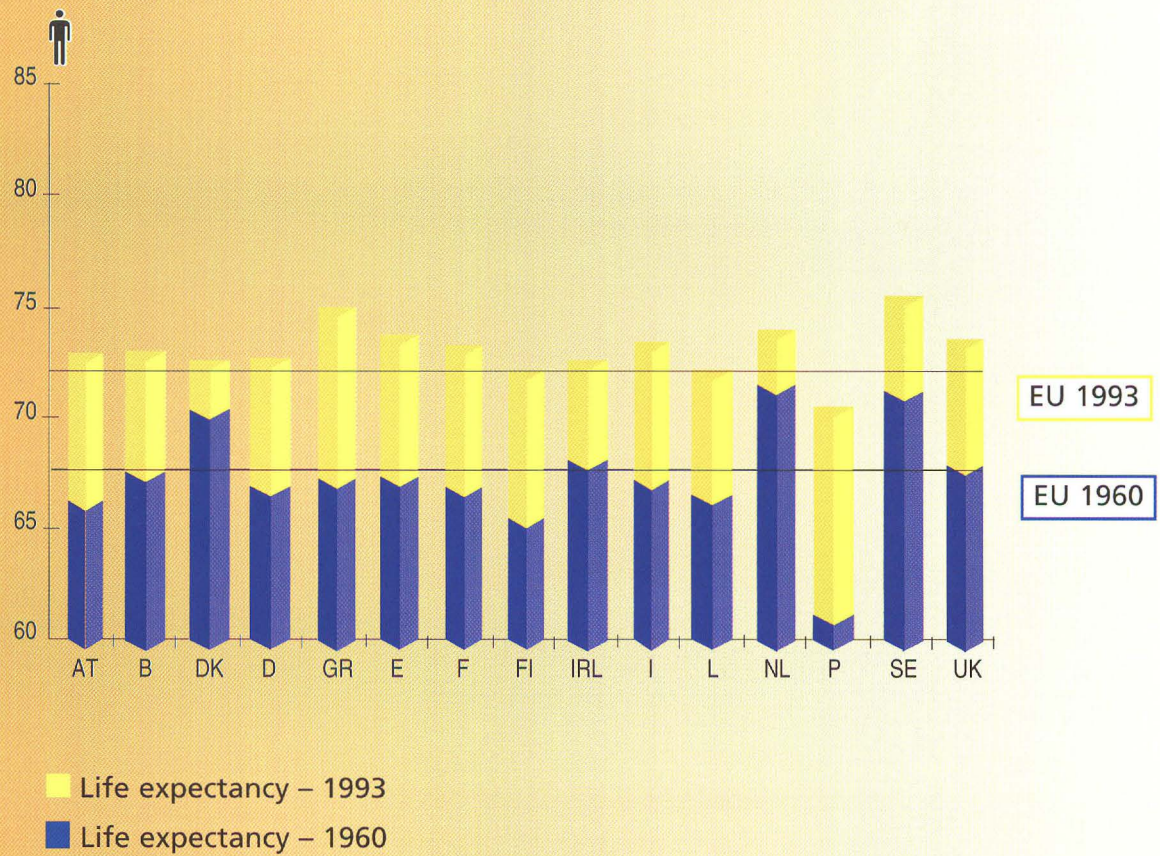
(ii) the central countries (United Kingdom, the Netherlands, Belgium, France and Luxembourg), where since about 1975 fertility has fluctuated at levels lower than the 2.1 threshold which would maintain the population (1.5 to 1.8);

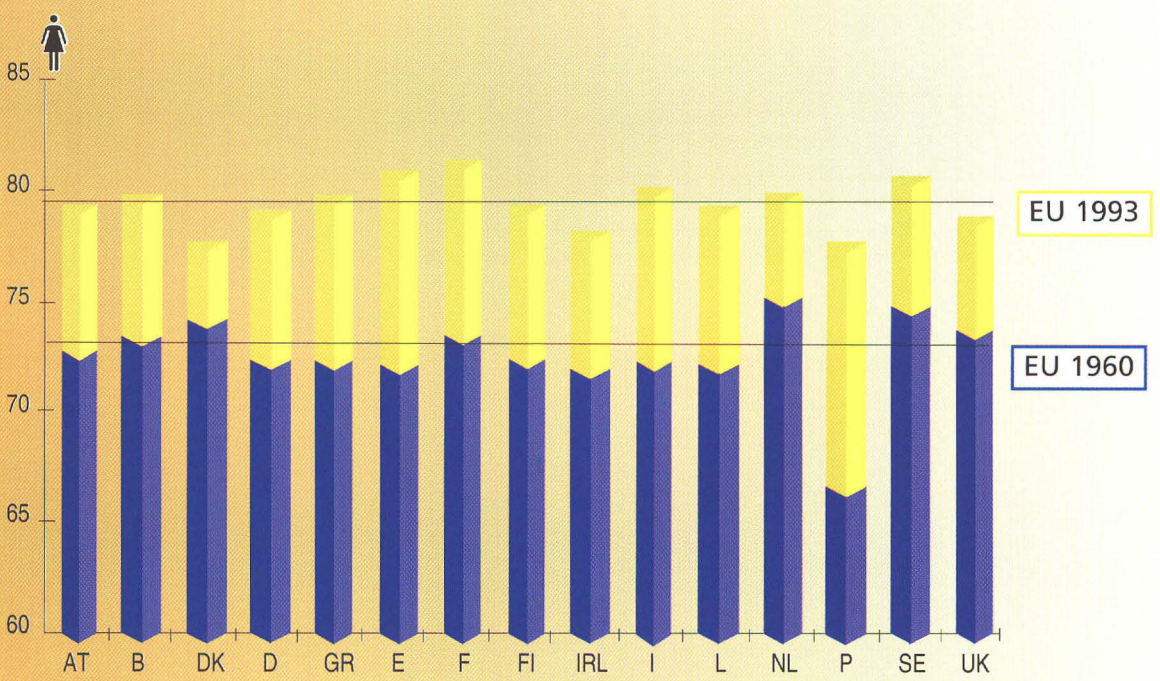
(iii) Germany and Austria, with a similar demographic history, where the 'baby boom' took place earlier and fertility levels have remained very low (1.4 to 1.6) for almost 20 years;

(iv) the southern countries and Ireland where the fall in fertility came much later, but was sudden and has not yet stabilized (1.1 to 1.4). Accordingly, a significant disproportion between the < 45 and 45 + age-groups can be expected around the year 2025 in these countries.

Figure 5

Longer life: progress and convergence within the Union





2. The fall in mortality

Since 1960, life expectancy has increased in all countries, but it is interesting to note that the greatest progress has been in those countries where, initially, life expectancy was the shortest. In the past, this rapid progress was primarily due to reducing infant mortality. Nowadays, it involves particularly those aged over 60, thanks to the progress achieved in the prevention and treatment of cardiovascular diseases and cancer. Another major contributor has been a shift towards a better lifestyle – balanced diets, cessation of smoking, participation in sport and regular medical checks.

When it comes to death, men and women are not always equal. On average, women still live approximately six years longer than men, which means that the elderly population is predominantly female. However, advances in life expectancy run parallel for both sexes.

GREAT SOCIAL AND REGIONAL DISPARITIES IN LIFE EXPECTANCY

Longer life is not a self-evident fact, it results from a combination of behavioural factors (diet, smoking, sport, medical supervision) which are themselves strongly influenced by socioeconomic status (education, type of work, income, unemployment), together with technical progress and advances in medical knowledge, the quality of the environment (exposure to harmful agents) and social progress (access to appropriate care, prevention of disease and accidents, information).

These parameters reveal significant regional and social differences, creating major health disparities. It would be worthwhile taking a detailed look at them at regional level.

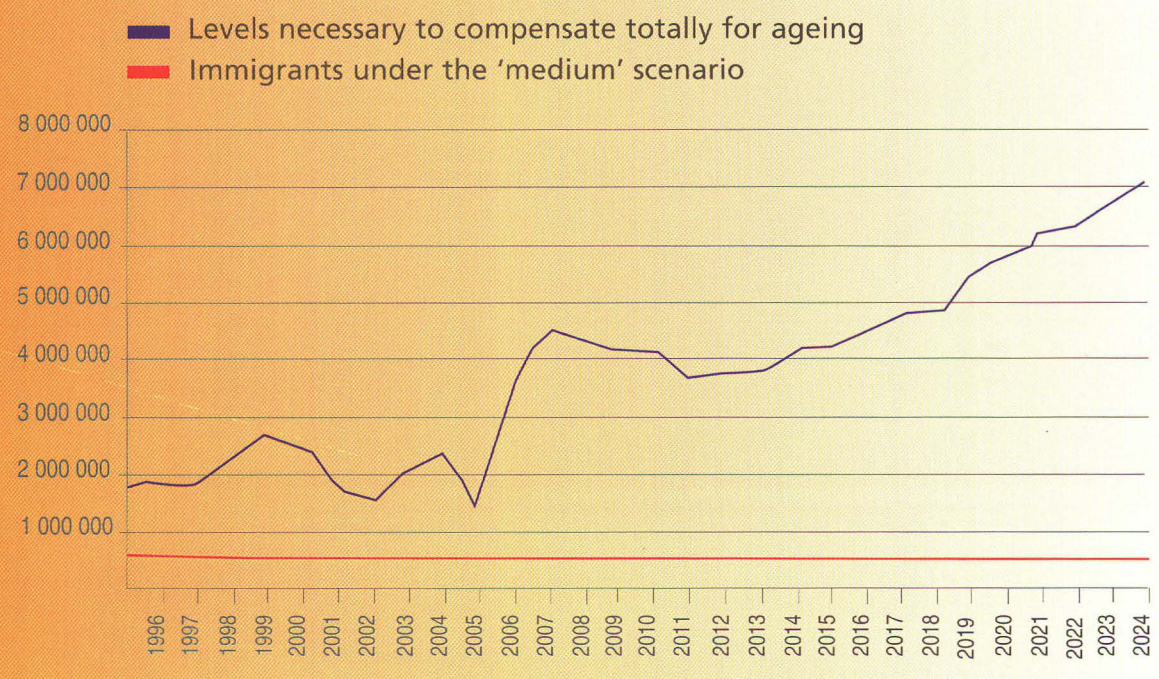
COULD IMMIGRATION BE USED TO COMPENSATE FOR DEMORAPHIC AGEING?

The question is often asked, and it is useful to have the facts to answer it. As noted above, ageing involves an increase in the proportion of the older generations in relation to the younger ones. The following graph shows two curves: the lower one comprises the migration balance (immigrants minus emigrants) estimated in accordance with a 'medium' scenario; in other words, a net immigration of 525 000 per year. The upper curve represents the net immigration to the Union which would be necessary to maintain the 60+: 20-59 years ratio at its 1995 level.

In comparison to current levels, net immigration to the Union would have to rise from half a million to 5 to 7 million for the 'baby boom' effect to disappear completely – even though the basic method used for calculations is the least favourable towards ageing in that it ignores ageing among migrants themselves and instead regards them all as being in the active age category. The results of this simulation show just how inevitable demographic ageing in the Union really is.

Figure 6

To compensate for the effects of the baby boom would require 8 to 14 times as many immigrants as is the case today.



Migration: a major role in growth, but inadequate compensation for ageing

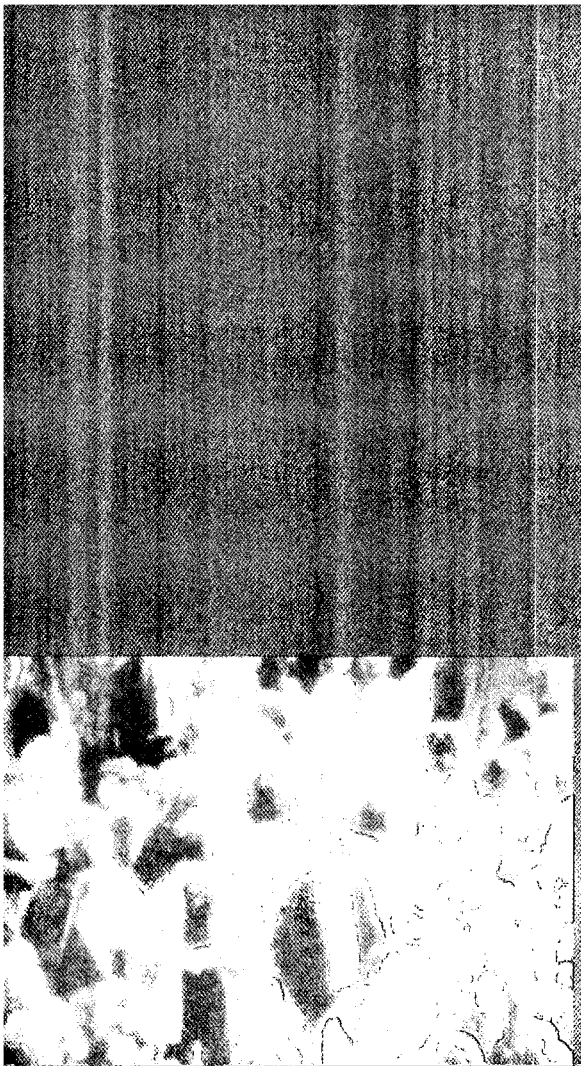
Statistics available for the analysis of migration flows are unfortunately incomplete and often not comparable between the Member States. For example, some countries classify asylum seekers as immigrants, whereas others do not. Nevertheless, the information we do have on flows into the European Union is sufficient to identify a number of background trends.

(i) Migration flows into the Union have, particularly in recent years, been very closely associated with particular historical events (German unification, the break-up of the Communist Bloc and the conflict in the former Yugoslavia). It is unlikely that the high levels of immigration observed between 1990 and 1994 (over 1 million per year) will continue. It should be noted that during the 1970s, the annual average was approximately 300 000, turning by the beginning of the 1980s into net emigration.

(ii) In recent decades, controlled immigration of workers has progressively given way to the immigration of migrants' families, and to asylum seekers. This is shown by the fact that the number of foreigners as a proportion of the entire workforce has remained steady.

(iii) While migration between the Union and third countries is highly cyclical, mobility between Member States shows a fundamental trend: a decrease in migration flows or, at least, stabilization at relatively low levels. Unfortunately, data in this field are patchy and of varying quality. More detailed investigation would help to understand migratory movements at different geographical levels and thus to situate them in their own particular context.

(iv) Given the fall in fertility and the ageing of the population, the migration balance will become an increasingly important factor in demographic growth in the Union.



2. The demographic future

2. The demographic future

The demographic future of the Union is therefore determined by four major trends: a general, more or less imminent, fall in population, a decline in the number of children and young people, a significant drop in the number of people of working age and, finally, an explosion in the number of people approaching retirement and old age. These factors, which as we have seen are structural and not curable by migration (given the latter's present scale relative to the magnitude of these changes), necessitate an in-depth study of their consequences on employment, education and social interaction in its entirety.

The demographic trends just described, and whose 'timebomb' effects will have a varying – but always powerful – impact in the Member States, will be felt in a great many fields.

1. The economy in its wider sense

Hitherto centred around a certain type of goods and services, the labour market will have to adapt to a different kind of demand, principally in the fields of education, housing, health, transport and leisure. This will have to be done precisely at a time when those producing the resources needed by the economy are steadily decreasing in numbers and when the future generations (who will have to be highly educated and trained if growth is to be achieved) will also be fewer and fewer in number.

2. Social protection and solidarity between generations

Around the turn of the century, the demographic inflation of the baby boom will gradually begin to affect the 'retired' category. This will generate new problems for the funding and organization of social protection, affecting pension systems as well as employment, for example through the need to create new services as the number of very old persons increases. All aspects of social and family life will be thus dominated by the needs of older people. What concessions will the elderly be prepared to make to the younger generations, and how will the latter finance pensions? There can be no doubt that the principle of solidarity between generations will emerge as a key factor in the adjustments which will have to be made.

3. The conditions for dialogue between the social partners

With ageing, and if present rates of economic growth are maintained, the average incomes of citizens are likely to be affected. Collective agreements will have to take account of new redistribution models, in a situation in which the reorganization of work in terms of both structure and working hours may constitute a necessary response to demographic change.

How can our systems be adapted to demographic change? This is the key question, but one that cannot be answered in isolation. The phenomena involved are interlinked and strategies must ally purely economic imperatives with the social dimension of the proposed change. It is mainly by ensuring respect for and full use of its human resources that the Union will succeed in converting what is currently seen as a problem into an advantage.

As an aid to analysing the situation, the role of demographic change is assessed below from two points of view: employment and social protection. An attempt is made to provide preliminary figures to assist evaluation of the impact on these two areas of shifts in population structure in the medium and long term.

2.1. The demographic future and employment

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Activity: room for growth

Among all the possible solutions for re-launching economic growth, the most popular is a general increase in the level of employment. In theory, and from the point of view of the population of working age, the preconditions for doing this are clearly in place.

(i) The proportion of active women over the age of 15 is significantly lower than the equivalent figure for men, especially among the older age groups. In all cases there is still considerable scope for increasing activity and employment rates.

(ii) The young are particularly affected by unemployment, especially when we consider the proportion of the young active population who are unemployed. Integration of young people into the labour market represents a priority objective.

(iii) The impact of early retirement means that there are only half as many workers in the 60 to 65 age group as in the 55 to 59 group, although the difference in the sizes of these two age groups is smaller. The management of retirement has contributed to the fall in the population in employment.

The present demographic situation thus offers considerable scope for raising levels of employment. In this context, one might consider how medium-term demographic changes could perhaps affect this situation.

Figure 7

Present demographic structure and structure of the active population

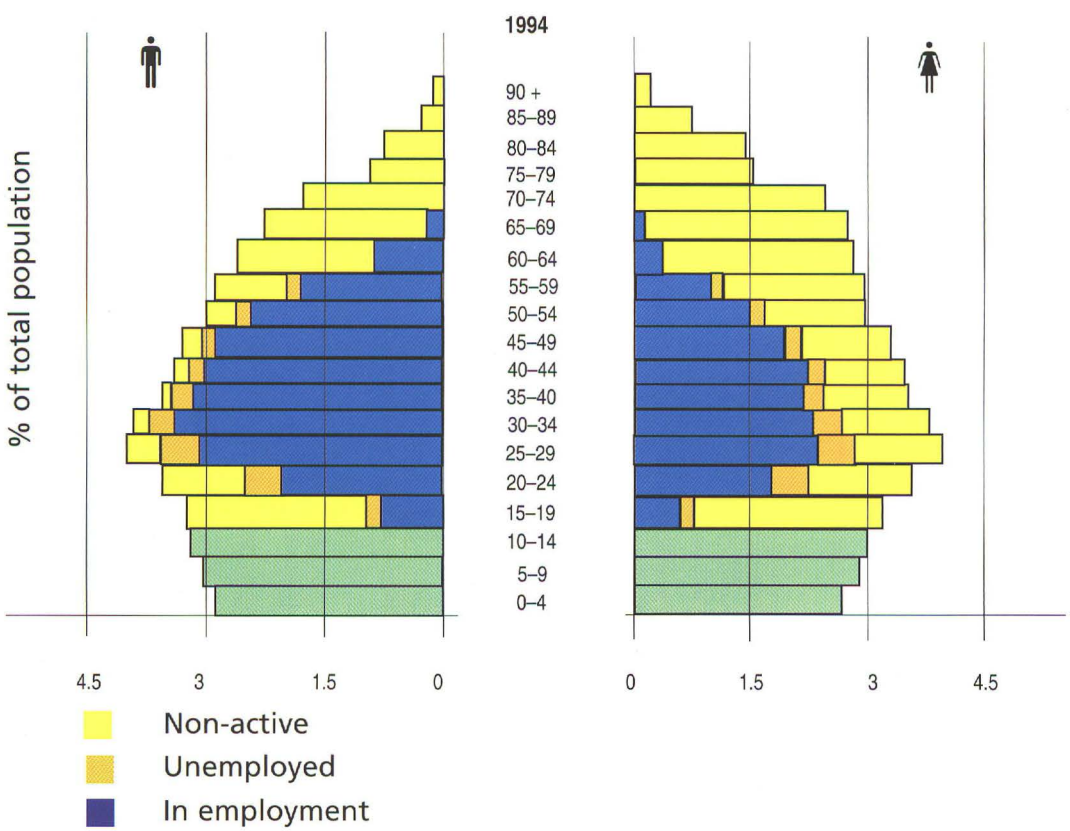
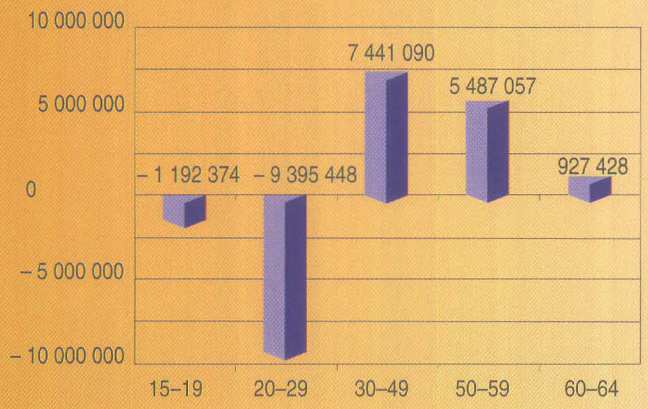


Figure 8

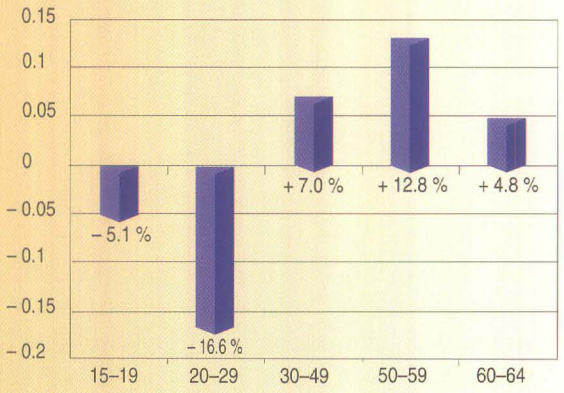
Ageing of the population of working age

Growth 1995-2005

Absolute variation



Relative variation



EFFECTS OF DEMOGRAPHY ON EMPLOYMENT AND SOCIAL PROTECTION: METHODOLOGICAL ASPECTS OF THE SELECTION OF AGE GROUPS

The normal convention is to consider people aged between 15 and 64 as the population of working age. Of course, this is not entirely correct as, on the one hand, it does not cover all active persons (some persons over the age of 65 continue to work), while, on the other hand, it includes a group (people aged 15) which in some Member States is excluded from the labour market by law. However, the advantage of this convention is that it allows comparisons to be made.

From the point of view of activity, it is known that the activity rates for the age groups at either end of the scale (15 to 19 years and 60 to 64 years) are well below that for the 20 to 59 age group and, above all, that the activity of these groups is much less stable, in as far as the rates per year of age are distributed in a non-uniform manner and vary considerably in time (longer periods of study for young people, early retirement for older people). Furthermore, for methodological reasons, the model used in this report to measure the impact of ageing on social protection (see below) necessitates the selection of a more stable group, as demographic changes within the group must be correlated with changes in its active population. This is why, in this report, the 20 to 59 age group is treated separately within the population of working age. In other words, analysis does not relate to the population of working age in the stricter sense, but only to the group within this population which presents the optimum conditions from the point of view of measuring the impact of ageing.

It should also be noted that the assessments presented below merely constitute the initial phase of modelling and assume a constant activity rate in the future. Furthermore, analyses of trends and variations in activity and employment rates and of their economic and social consequences are presented each year in the Commission's report 'Employment in Europe'.

Within 10 years, significant changes in the population of working age

At the present time, the population of working age consists of 249.1 million persons, of whom 210.4 million are aged between 20 and 59. Within a decade it is likely to grow by between 1.5 and 5.5 million (Eurostat's 'low' and 'high' scenarios), which might encourage the growth of employment. However, the internal structure of this group will be transformed significantly in both cases.

(i) The number of young people aged 15 to 19 will decline by just over one million (– 5%).

(ii) The number of persons aged 20 to 29 will fall on average by 9 million (– 17%). These are the very groups which are currently worst affected by unemployment. This gives rise to the question as to whether demographic changes might reabsorb some of the employment in this category.

(iii) The 30 to 49 age group will increase by 7.5 million (+ 7%). In numerical terms, it is this group which is likely to see the most favourable increase in activity rates.

(iv) The number of persons aged 50 to 59 will grow by 5.5 million (+ 12%), and keeping them in work takes on a particular significance in the context of achieving a high rate of employment.

(v) The 60 to 64 age group, i.e. persons approaching the upper working age limit, will grow by around 1 million, compensating for the fall in the number of people joining the 15 to 19 category.

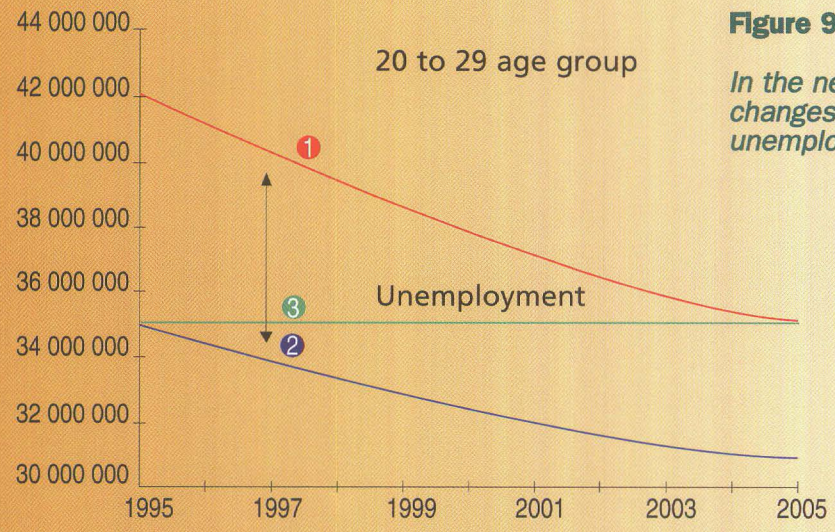
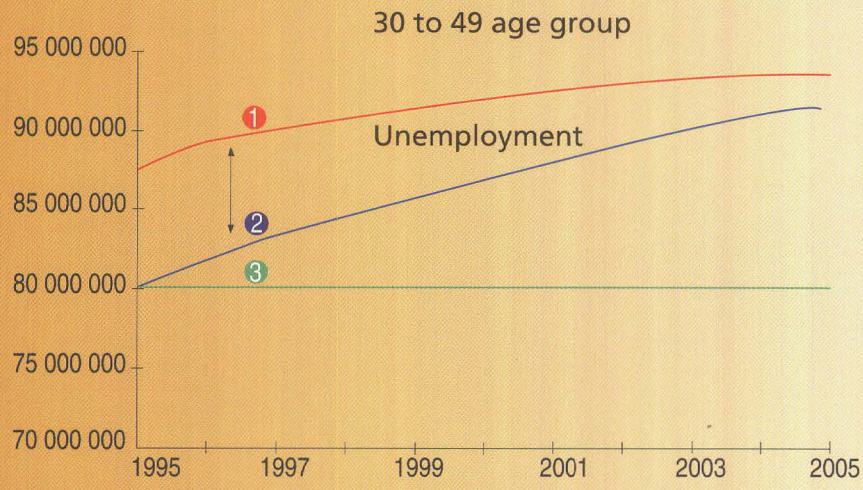


Figure 9

In the next 10 years, demographic changes alone will not solve unemployment problems



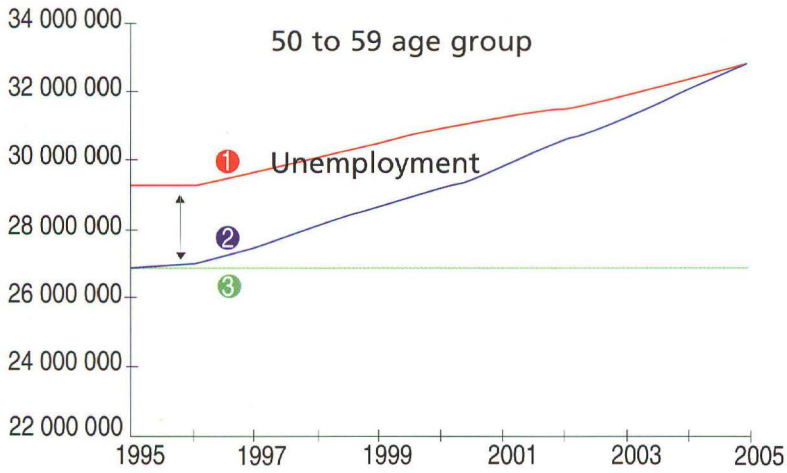
QUESTIONS RAISED BY THE AGEING OF THE POPULATION OF WORKING AGE

Like the total population, the population of working age is also ageing, i.e. the number of older workers among the active population is increasing in comparison with the number of younger workers. Furthermore, in the overall context of the Union, it might in future be necessary to increase the presence of older workers on the labour market to meet production requirements. Even if these questions do not enter directly into the framework of this report, three of them should be mentioned and will necessitate more detailed analysis in the future.

- What is the link between the average age of workers and productivity?

- Since average wages rise with age, what will be the effect of working-age demographic ageing on company finances?

- As young workers trained in the most recent developments in their fields help to improve the average skill level of the workforce, how can this level be maintained or even increased given the drop in the number of young people coming in?



Decline in population of working age equals decline in unemployment?
An equation which is far from being confirmed

In order to assess how demographic changes within the labour market could themselves reduce unemployment, a very cursory simulation exercise for each of the three age groups has been carried out. This exercise is of course limited to analysis, the specific aim being to give an idea of the sensitivity of unemployment to demographic changes and possibly to changes in employment rates.

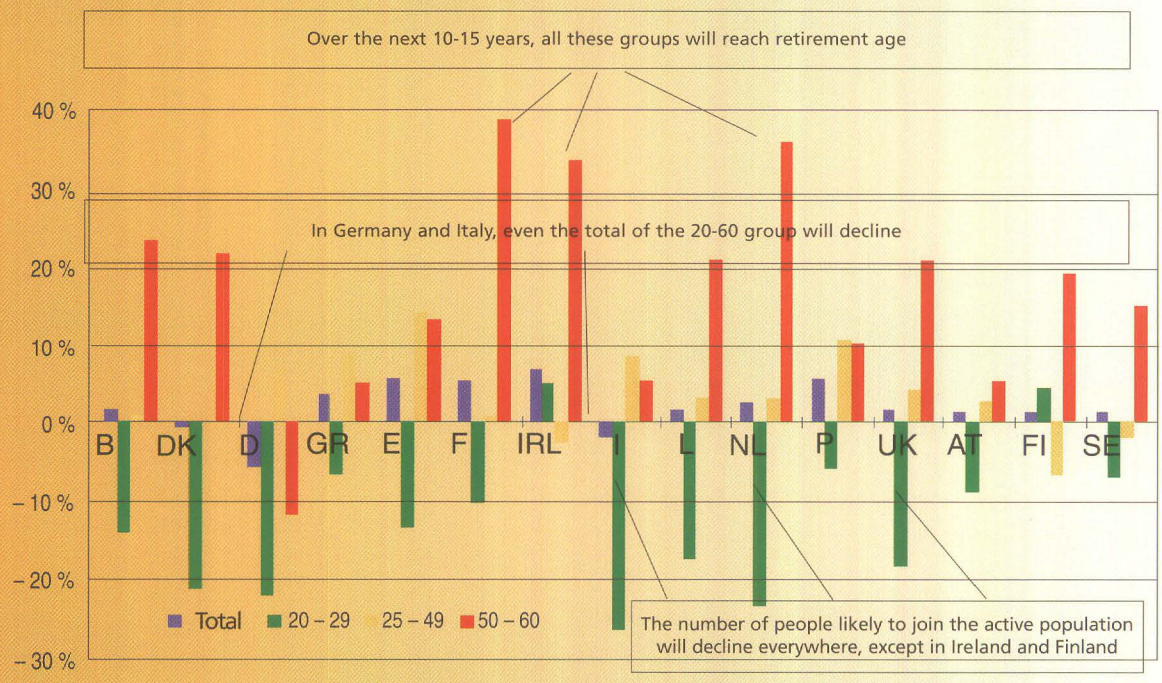
In Figure 9:

- line 3 indicates the number of persons in employment in 1995;
- the top curve (1) shows the trend in the number of active persons if the 1995 activity rate for this group is maintained;
- the middle curve (2) shows the trend in the number of employees if there is to be an annual rise in the employment rate of 0.5% since 1995.

The fall in unemployment resulting from a rise in the employment rate of 0.5% per year since 1995 varies between 6.1 and 7.8% over the last 11 years. However, owing to different initial unemployment levels, unemployment among the youngest group would still be nearly 9.9% (originally 16.6%), whilst unemployment among the 30 to 49 age group would be significantly lower (2.33%). As for people at the end of their working lives, the demographic effect would completely cancel out unemployment.

Figure 10

National differences in the impact of demography on employment between 1995 and 2005



SPOTLIGHT ON THE REGIONAL DIMENSION

The map of Europe today is a mosaic of areas of relative prosperity and others which are in decline. The cause is a disturbance in the balance between supply and demand at regional level, formerly largely ensured by internal mobility. The active population is becoming less and less mobile.

Regional disparities between population mobility and the geographical distribution of jobs may lead to disruptions which are accentuated by differences in population structure. But if a low level of development encourages emigration by potential workers, as was the case in certain regions of Europe in the past, the inevitable consequence is the intensification of demographic structure imbalances between regions, with attractive ones becoming younger while those suffering an exodus experience even faster ageing.

National disparities in variations in the population of working age

The fact that population structures in the Member States differ owing to the timing and scale of the demographic changes experienced has a direct effect on any comparison of labour market trends over the next 10 years.

With the exception of Italy, in all Member States where the decline in fertility has been more recent (Ireland, southern Member States), the effect of the split between the numbers of young and old people is not expected to be felt until later. In these countries, the 20 to 29 age group would therefore decline only slightly in the short and medium term.

However, in most Member States, the numbers likely to join the active population are likely to fall sharply, by between 10% and, in some cases, nearly 30%.

Among the oldest groups, the opposite trend is expected: in Member States with the oldest population structures, increases in the number of older workers would vary between 10 and 40%.

These important changes, even over such a short period, would lead to a fall in the total 20 to 59 age group population in Italy and especially in Germany, thus requiring the labour market to adjust rapidly.

These few very cursory elements illustrate the demographic dimension of employment trends. Eventually, additional in-depth analyses will supplement this approach, as there are still many outstanding questions relating to demography, such as the role of unemployment in dependency relationships, the impact of shifts in demographic structure on the process of labour force renewal, the economic significance of the increase in the number of single persons based on the effect of differential mortality, or the association between labour force flexibility and age, by sector of activity. A draft monograph on the effects of demographic ageing in the Union is being prepared and within a few months should provide more extensive analyses as a basis for a reply to these questions.

2.2. The demographic future and social protection

2.2. The demographic future and social protection

Social protection is generally defined as the set of transfer mechanisms designed to protect citizens against social risks, such as sickness, maternity, work incapacity, unemployment, old age and the death of one's partner, dependence and family responsibilities. In these connections, the role of demographic changes needs to be looked at from different angles, given that:

— since the establishing of social protection systems, demographic changes have had fundamental effects on the very nature of the various social risks, thus altering the conditions for the functioning of transfer mechanisms;
— among these mechanisms, demographic changes have a bearing on financial aspects, affecting both the balance of systems and, indirectly, economic growth, through the incomes and behaviour of different categories of persons in society (consumption, saving);
— demographic changes have implications for certain societal aspects, through the social implications of the first two aspects (solidarity between generations, social cohesion).

Over the next 25 years, the sustained increase in ageing which will be produced as 'baby-boomers' gradually reach retirement age above all raises the question of financing. This aspect will be all the more crucial in that, in contrast with the increase in the number of retired people, the population of working age will be declining (–13 million for the 20 to 59 age group). Among the older age groups, demographic changes will lead to a significant increase in the number of very old persons,[1] whose health service consumption is well above the average. If per capita spending remains the same, health expenditure is thus likely to rise. In these two major sectors of social protection, funding needs will, without any doubt, go up sharply. But before attempting an evaluation of these needs, let us recall a number of fundamental demographic changes which have affected the context in which social protection has existed since its creation.

The changing context

Since the establishment of most social protection systems, a whole range of demographic, economic and social aspects have undergone radical and lasting changes, thus altering the framework for the provision of social protection. These new elements include:

— different conditions for subsequent generations;
— changes in family structures;
— changes in the employment situation;
— changes in the relationships between family life and working life.

Future demographic ageing could further accentuate these economic and social changes.

The changing profiles of successive generations

There are major differences in terms of numbers, and also in the social and economic characteristics of successive generations. The incomes and living standards of today's retired people are largely founded on employment and social security models which will no longer fully apply to the next generations of retired people.

Solidarity between generations, from the point of view of the financial responsibility for retired people and old people in general, will probably have to face up to the implications of this new variable.

[1] See Figure 18.

Figure 11

Families past and present

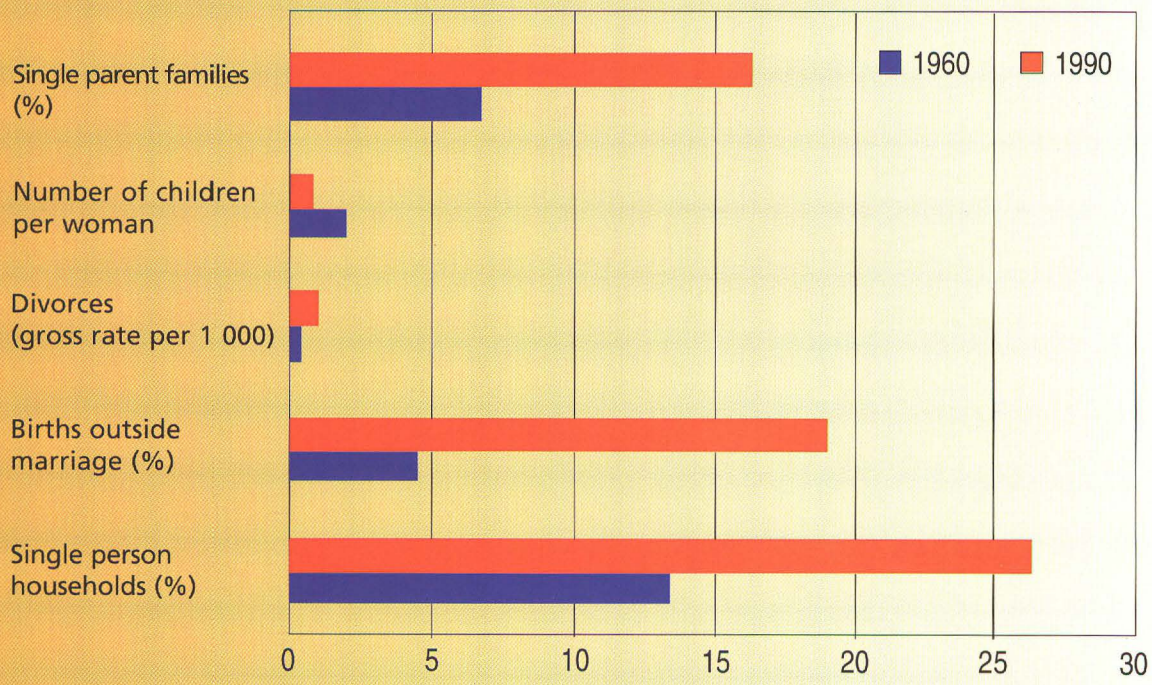
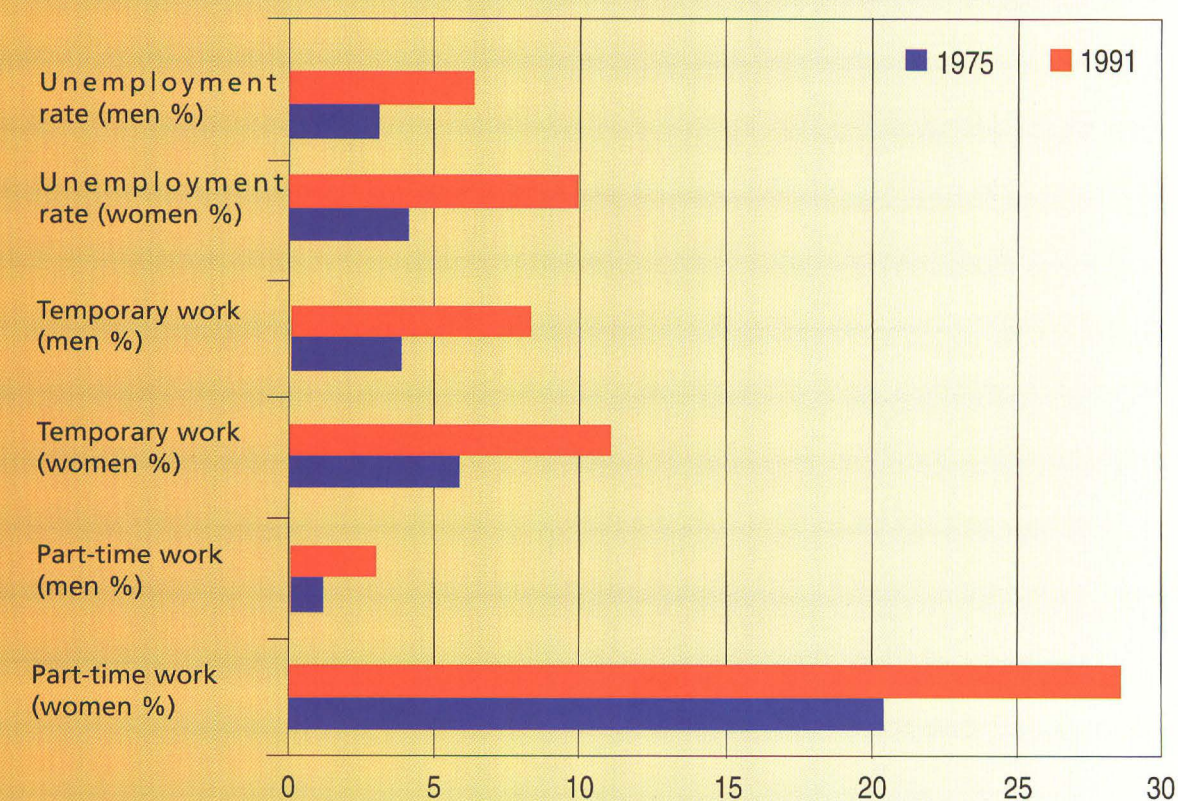


Figure 12

Changes in employment



Changes within the family

The social status of women has changed, but at the same time the family model has disintegrated, to be replaced by individual patterns of great complexity. Not only are certain social protection systems based on the traditional concept of the family model (families mainly dependent on the husband's income alone, with marriages ending only on the death of one of the partners), but some of them also presume the provision of family support for the very old.

Given the context of family changes, the possibility for families to assume such support could necessitate certain adjustments to the labour market and the organization of social protection:

In this context, it would be interesting to look at the new possibilities offered by the development and spread of information technologies.

Changes in the employment situation

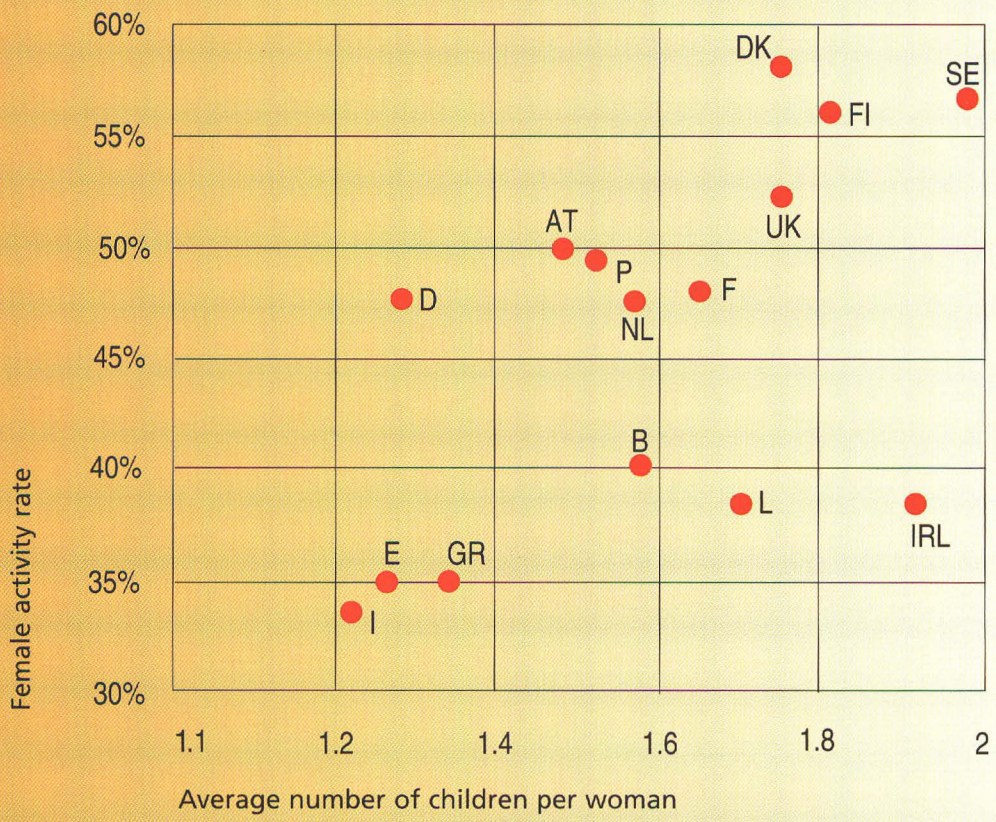
The employment scene has undergone fundamental changes, from three important angles, imposing a new order on social protection.

— the population of working age is becoming more vulnerable to unemployment. The social protection implications of this are an increase in unemployment expenditure and a fall in contributions levied on wages;
— as a result of the combined effect of the prolongation of education (which means that people start working later) and early retirement, the number of years of contributions to social protection per employee has fallen in the course of time;
— wage security has been adversely affected by an increase in temporary and part-time work, thus affecting the conditions for retirement pension insurance and increasing the risks of exclusion.

In the face of these trends, it is possible to evaluate the benefits to the Union of regenerating employment. For example, if an employment rate of 70% could be achieved throughout the Union (the level in the Member States in which it is highest, and also in the United States), 30 million additional jobs would be created. This would have a favourable effect on the basic scenarios for the funding of certain aspects of social protection.

Figure 13

There is no absolutely clear link between female activity and fertility in the Union.



DOES THE DECLINE IN FERTILITY REDUCE 'FAMILY/MATERNITY' EXPENDITURE?

The decline in fertility which is behind the ageing phenomenon might at first sight be expected eventually to result in a fall in social protection costs under the heading 'family/maternity'. However, several factors restrict the scope for savings:

- family and maternity benefits account for only a small proportion of social protection expenditure (less than 8%, as against 45% for pensions/survivors' benefits and 34% for health);
- changes in lifestyles (partnerships and families breaking up and reforming) could result in new costs;
- the shift in fertility towards the older age groups increases the costs associated with childbirth, as older mothers are considered to be more at risk and require more prenatal care;
- the fall in the number of children in the past has not automatically produced an equivalent fall in per capita expenditure on childcare and education.

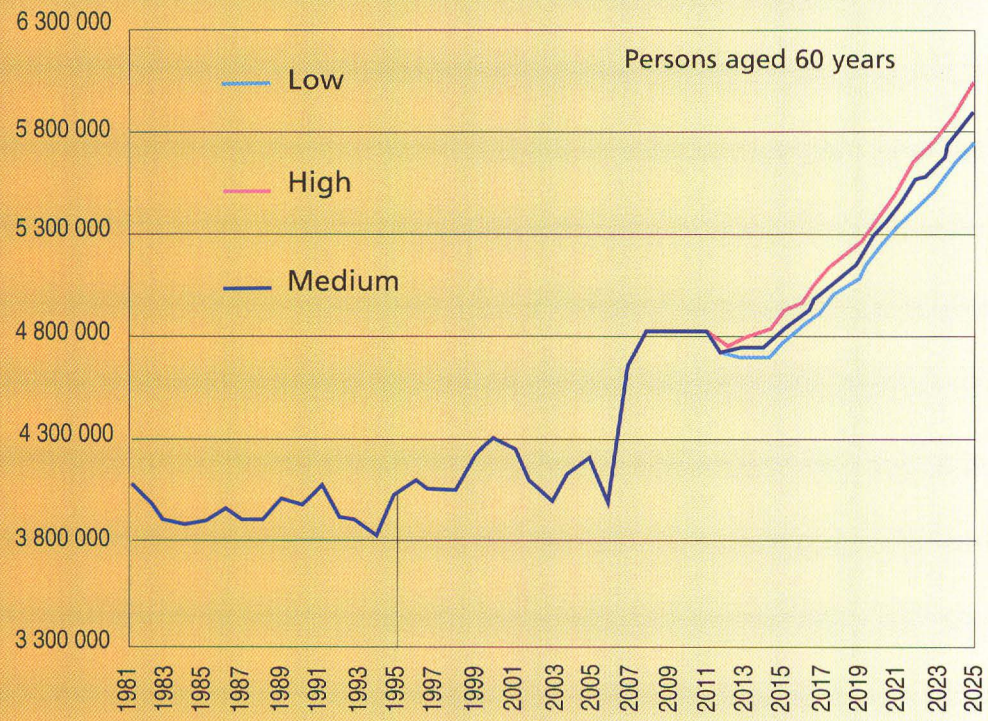
The increase in female activity

One of the most marked social developments of this century has been the large-scale investment of women in the labour force. However, this trend still poses various problems in that:

— the organization of work and services in general (childcare facilities, timetables), still lacks flexibility and has not yet taken sufficient account of the increased need to reconcile work and private life;
— within couples, women still tend to bear primary responsibility for 'family matters' (housework, looking after children), which places a dual load on most working women;
— access for women to the employment market on an equal footing with men has not yet been achieved, and general problems constituting *de facto* discrimination still remain;
— reconciliation between work and family life more generally poses the problem of the respective development of male and female roles. In this context, attention is drawn to the agreement between the European social partners (UNICE, CEEP and ETUC) on parental leave, which constitutes an important contribution to the promotion of equal opportunities and reconciliation between work and family life.

Figure 14

Explosion in the number of sexagenarians



THE BASIC MODEL USED TO ACCESS THE IMPACT OF AGEING

The model set out below constitutes a useful starting point for measuring the demographic impact of ageing on the cost of retirement pensions. From an initial assessment of the inevitable costs (phase 1), various parametric simulations will be carried out to measure the effect and estimate the limits of each variable introduced. The model is based on a distribution scheme; the following parameters and hypotheses are involved. This initial model will subsequently be fine-tuned to take account of additional aspects which exist in practice and to give a more balanced reflection of the situation.

For the moment, this model gives only a partial representation of reality, but is still very useful as, in addition to quantifying the inevitable effect of ageing on growth, it also allows us to measure, through the results which it has given for each Member State (see Annex), at which point the demographic differential plays an important role in the nature, extent and timing of the effects of ageing.

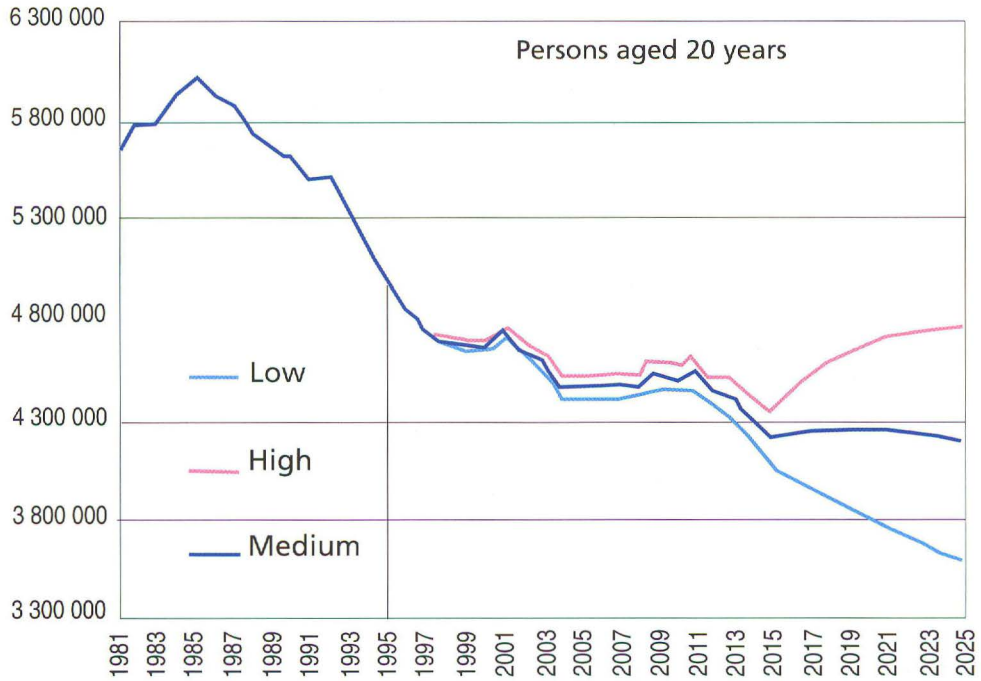
PARAMETERS

- Number of active persons
- Number of retired persons
- Average wage
- Average per capita production
- Average rate of pension contributions
- Rate of transfer (ratio between average pension and average wage)

ASSUMPTIONS

- Persons aged 20 to 59 have the characteristics of the active population
- Persons aged 60 and over have the characteristics of the retired population (retirement at 60 for everyone)
- All active persons are wage/salary earners
- Production is entirely used for paying wages and pensions
- Variable dependent on wage and production
- Fixed at 0.75% (it is assumed that average pension is constant and equivalent to three-quarters of the average wage)

The active population is not expected to be able to compensate for this



The population of working age – difference in the numbers joining and leaving

Figure 3 provided a first indication of the net variations up to the year 2025 in the various population age groups. It is interesting to note, again on the basis of the various scenarios, how the replacement of the working-age population will progress, year after year, thus allowing us to assess and date the differences between the numbers of people joining and leaving this category. This will constitute a useful piece of information for assessing the role of demographic ageing in the pensions sector.

Demographic ageing as found in the European Union is resulting in a substantial increase in the number of old people. This increase will be particularly marked soon after the turn of the century, and each year there will be an increase in the number of persons reaching the age of 60. Under the 'medium' scenario, their number will rise from 4.0 million in 1995 to 5.9 million in 2025. Growth will be particularly marked after 2006, with annual numbers of new pensioners never before encountered.

This represents a sharp contrast with the future trend in the number of persons reaching the age of 20. The number of young people reaching the age of 20, 5.1 million in 1995, will fall to 4.2 million in 2025.

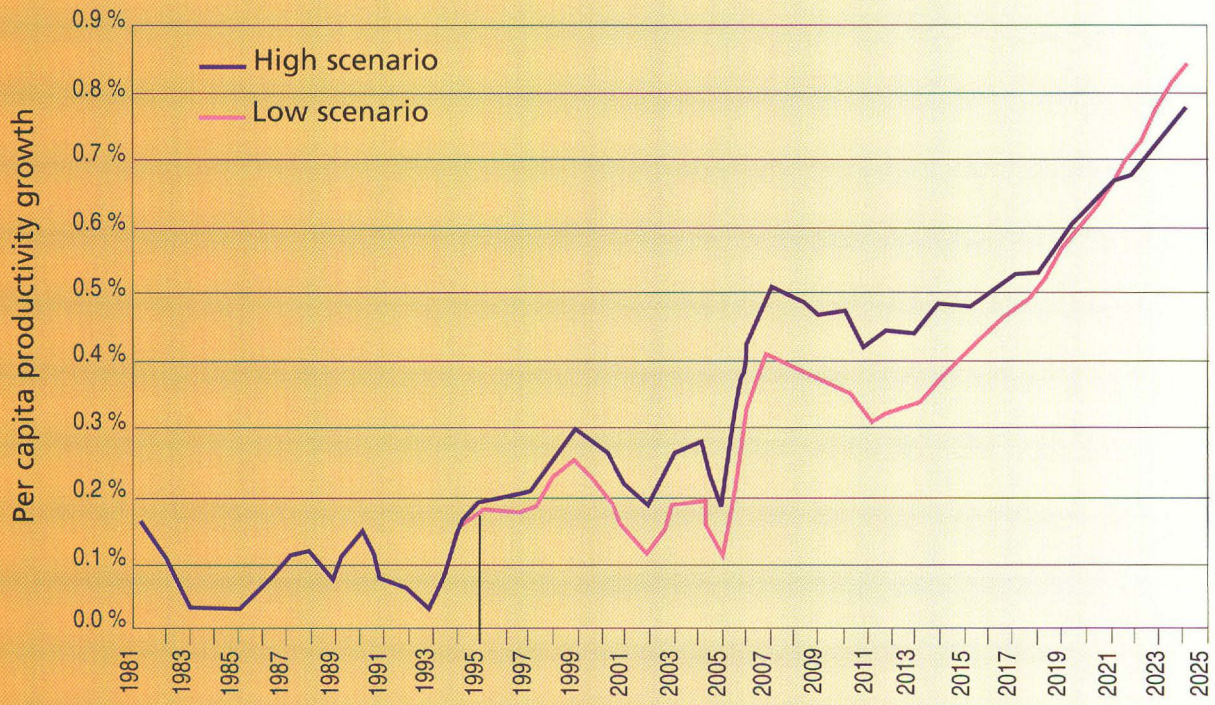
Initial spotlight on the analysis to be undertaken

In order to assess the effect of demographic ageing on a per capita production basis, a first model has been designed, on which various parametric tests will subsequently be performed. Of course, we are in no way talking about a model which would take account of the complexity of economic interactions, which have yet to be introduced. On the other hand, this much simplified model offers the advantage of isolating the purely demographic impact of population ageing in that it measures the effect of variations in the numbers entering and leaving specific age groups.

The first results of this model are shown in Figure 15. They indicate, on an annual basis and as an average for the EU as a whole, how much of annual per capita productivity growth will be cancelled out by the purely demographic effect on pensions. Over the next 10 years, this will remain at a similar level to the past: between 0.1 and 0.3%. However, after 2005 the demographic effect

Figure 15

The need to improve productivity merely to meet the need of resources because of ageing



will be more pronounced, probably giving a figure of more than 0.5% per year. For a better appreciation of this, it can be considered in relation to three GDP growth hypotheses.

Let us take three hypotheses of constant annual growth of 1, 2 and 3% up to 2025. Deducting the 'cost' of the demographic burden, the model gives reduced real growth of 0.5, 1.5 and 2.5% respectively, an effect which is far from negligible.

Of course, these initial results are dependent on the hypotheses adopted. The fact that these are conservative clearly illustrates the order of magnitude of the problem. The work in progress in connection with the monograph on the effects of demographic ageing will make it possible to establish the sensitivity of the final response to the various parameters.

Clearly, it is constantly becoming more of a priority to identify the best way of adapting our economic and social organization to these new situations. Appropriate data for quantity analysis and the development of models to test the effects of the various variables on the different systems will be extremely useful in evaluating the different options and understanding exactly how the differences in the previous demographic situations in the Member States are at the root of their specific features today, especially with reference to social protection.

Procedure for parametric analysis based on the model

Through its variables, the model in question develops options which are nevertheless linked to real circumstances. Clearly, if average per capita production is fixed, output under the model will be related to productivity with employment parity. It is precisely by subsequently varying this parameter that it will be possible, on the basis of a given demographic scenario and in a comparative perspective, to test how productivity should increase in order to compensate for demographic changes.

The model presented here makes it possible to vary the four independent parameters which it contains. To clarify its use, it will be useful to explain precisely how these different parameters could be used to estimate how the inevitable effects of ageing, as previously measured and presented, can be limited.

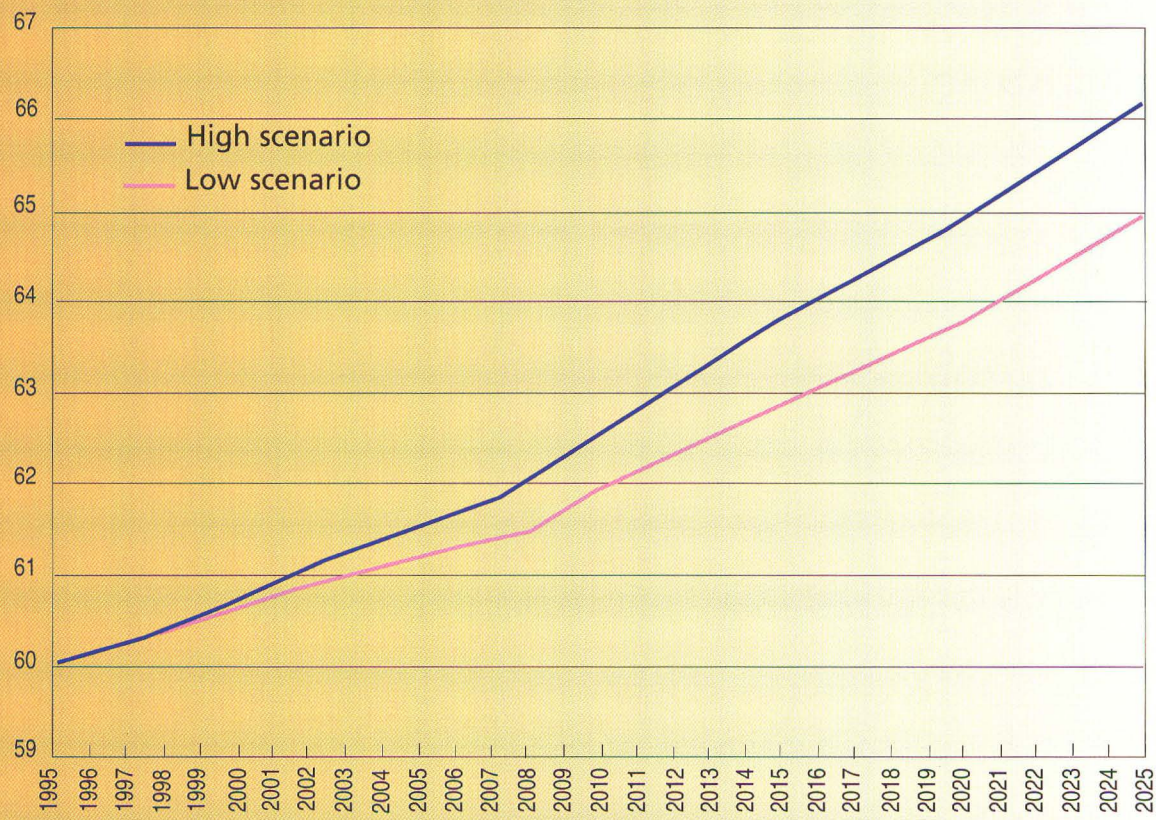
Variation of activity rates

Under the first hypothesis, the model maintains parity between demographic changes and changes in the active population. By acting upon the parameter determining the active population under the model, it will be possible to measure the benefit to be gained from an increase in activity rates. The model should then be completed in order to distinguish, within the active population, between unemployed persons and those in employment.

At the moment, there are major discrepancies between the Member States as regards activity rates. Some have high levels approaching 70%, whereas others barely reach 58%. This differential implies that the margin for manoeuvre under this solution will have different implications depending on the starting point, and this is why the solution consisting of increasing activity will have to be studied at national level, where it will take on special significance. Moreover, the model needs to be finely-tuned to take account of the significant discrepancies which exist between men and women.

Figure 16

Test on the variation of retirement age to compensate for demographic ageing



Variation of retirement rates

Officially, retirement age in most Member States is 65 years. The actual pension age is about 60 years. A first question is how an increase in the actual pension age will affect the economy and public finances, even if there will be jobs enough for such an improvement of employment. The first tests suggest that this solution would be very profitable in the short term, producing savings on two fronts (reduction in the number of pensioners and rise in the number of active persons). The repercussions of such a shift thus go well beyond a mere increase in activity rates.

Variation in productivity

At first sight, it might be thought that future demographic changes could be balanced out by increased productivity resulting from the development of new technologies and new forms of work organization. The model shows that in the medium and long term, the rise in productivity would have to be much greater than in the past, particularly from the year 2005 (Figure 15). Without such an increase in productivity, room for improvement of the economic conditions for the active generation will be much more limited than ever before.

Variation of transfer rates

This solution, consisting in changing the sources of financing of the burden of non-active persons, is drawing an increasing amount of attention, often in view of the advantages of reducing non-wage labour costs to ensure competitiveness and growth and increase employment.

The formulae discussed under this option may be summarized under two points:

— an increase in the number of contributors (in terms of the model, this can be represented by variations in the ratio between active and non-active persons);
— changes the level of transfer rate between pensions and salaries.

These two aspects can therefore be assessed by the model. At the moment, the model assumes a transfer rate of 75% and the hypothesis that all active persons are employees with wages and pensions sharing their production.

It will be possible to act upon the two hypotheses in order to measure the links between variations of the transfer rate and (a) the number of contributors and (b) demographic effects.

By definition, the present model takes account only of the 'distribution' formula and therefore does not permit assessment of the effect of demographic ageing in a mixed system or capitalization system. However, it does have the advantage of providing a clear idea, even if a simplistic one, of the impact of ageing on the economic cost of pensions and on the limits to the different solutions which could be envisaged to reduce this impact. It is also necessary to emphasize the fact that this approach is supplementary to detailed analyses of social protection contained in the Commission's report on 'Social protection in Europe'.

Figure 17

More people at the end of their life ...

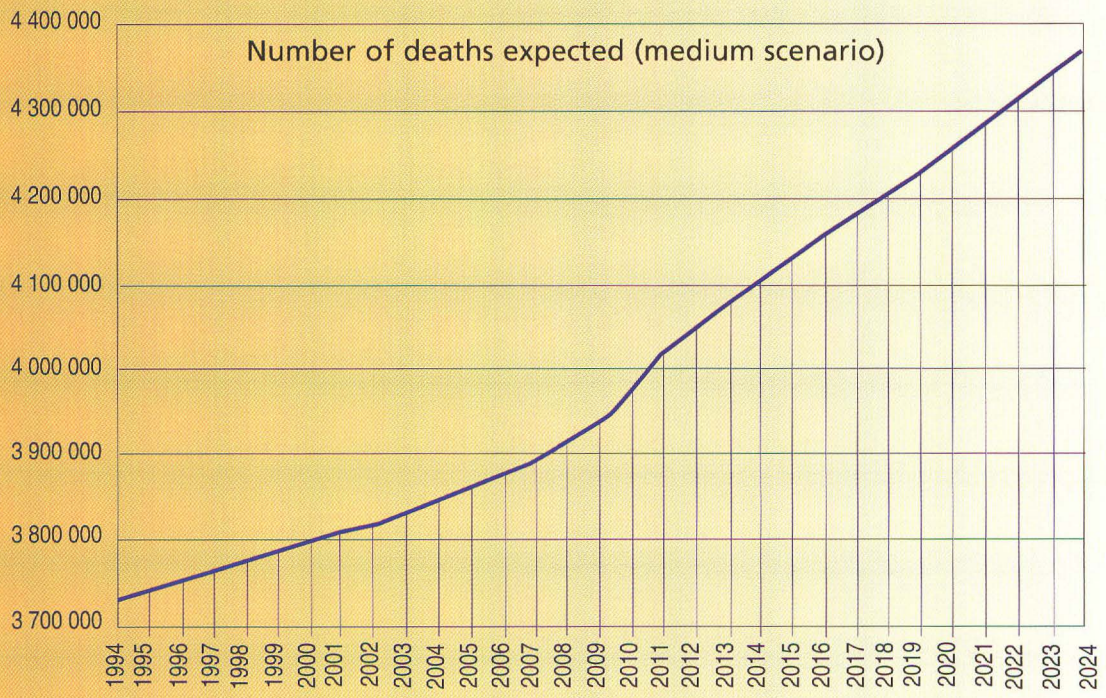
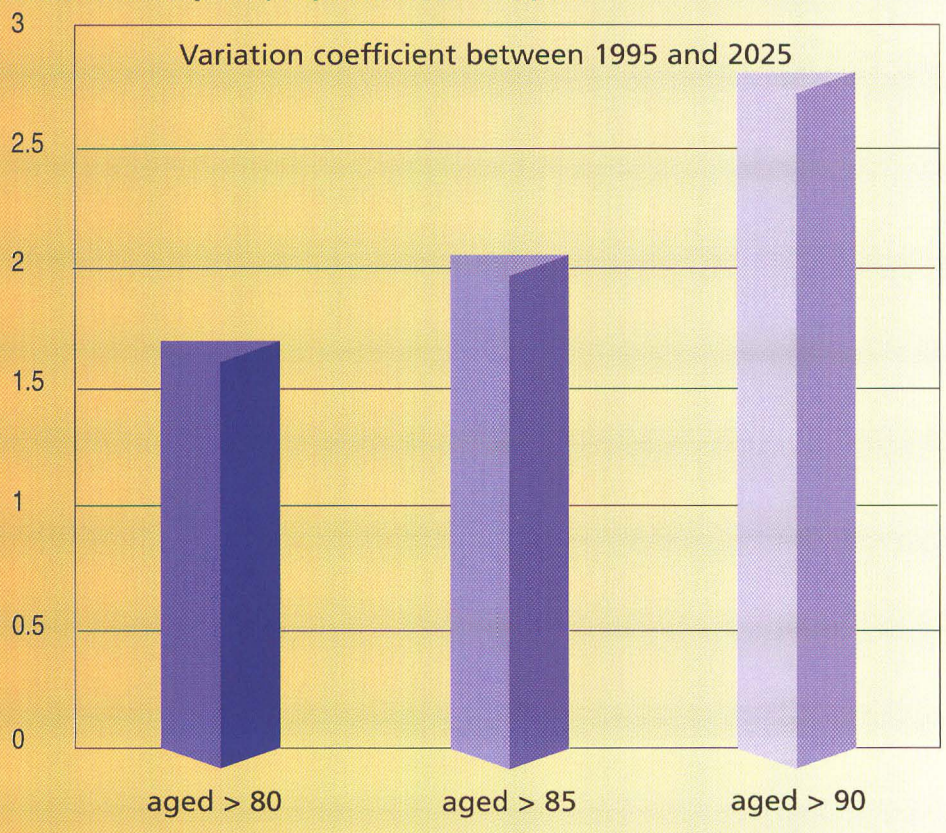


Figure 18

The numbers of very old people doubled or tripled



Health costs

Experience has shown how difficult it is to control the increase in health expenditure. In the past, this increase has come mainly from two non-demographic factors: the use of more sophisticated techniques, and a rise in the consumption of health care at all ages (where a link with longer life expectancy should perhaps be seen).

Some studies on this subject have also estimated that 60% of health expenditure on an individual is concentrated in the year preceding death, whatever the person's age. It is therefore interesting to consider trends in future numbers of deaths, in order to estimate health cost fluctuations.

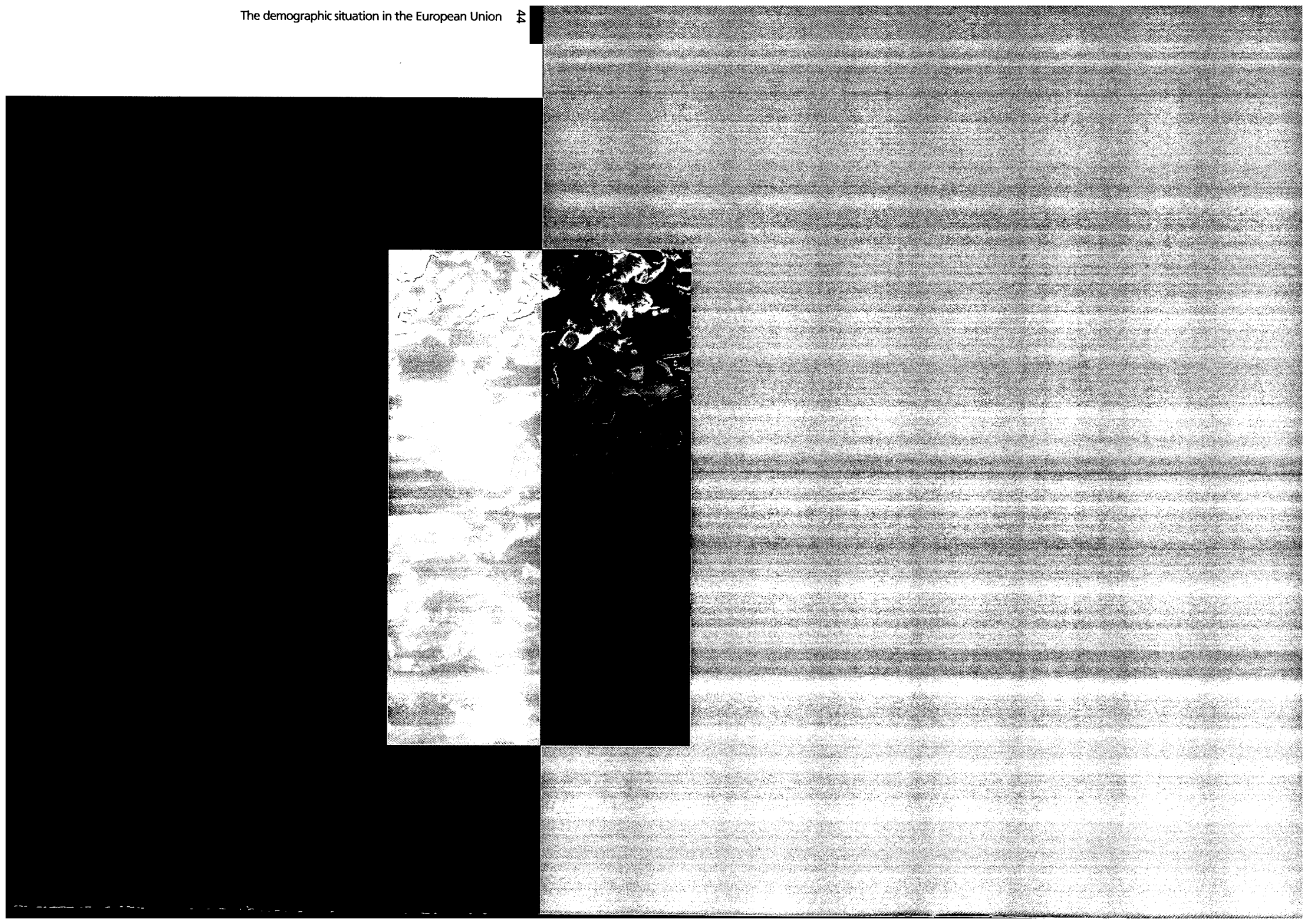
According to the medium population development hypothesis, demographic ageing will cause the annual number of deaths to increase from 3 725 000 in 1994 to 4 375 000 towards 2025. This represents a relative increase of 17.5%, the amount by which 60% of health costs will be multiplied over the next 30 years solely as a result of the demographic effect.

A second factor must be taken into account with regard to ageing, namely the potential increase in the number of dependent persons.

This subject calls for more careful investigation. Nevertheless, one way to approach it is to measure the rise, between now and 2025, in the number of very old people, who are known to constitute a higher risk of functional dependence.

As becomes absolutely clear when such an indicator is represented in graphic form, it is above all the number of very old people which is set to go up (to nearly three times today's figure).

If it emerged that health costs for old people were correlated with age, future demographic trends would thus increase health costs even further.



Societal aspects

The quantitative approach to the effects of demographic ageing on social protection does of course necessitate the construction of multivariate models for economic and demographic forecasting. However, under no circumstances should it exclude the social dimension or a qualitative approach. One potential basis for the latter is the work done by the European Observatory of the Elderly, which in some cases reveals major inequalities within the elderly population. Such inequalities are increasing and are closely related to differences between individual countries' social policies. For example, differences between pensioners' and workers' incomes, and between pension incomes for men and women, are increasing. Given that a rise in the number of inequalities constitutes a threat to social cohesion, this represents a major challenge to modern societies.

At the same time as demographic ageing, the present precariousness of employment and the often high rate of unemployment affect many people's pension entitlement conditions and could lead to major discrepancies among future pensioners. It might even cause some of them to suffer social exclusion. Under such circumstances, what will become of the contract of solidarity between generations?

At an individual level, it has been shown that networks of interpersonal relations grow more fragile with age, with the loss of work-related contacts and the gradual disappearance of friends of the same age, not to mention the death of one's partner, which affects women more owing to the difference in mortality. Apart from the difficulties relating to social integration or autonomy which these changes in relations can give rise to, many older people's needs in terms of housing or psychological/physical assistance also change significantly.

It is therefore by no means superfluous to reiterate the fact that solidarity between generations is still an active force in European society. This solidarity is expressed not only in the mechanism of transfers between incomes, but also in much more subtle ways, which are difficult to quantify: the time spent looking after dependent persons, for example. Even in societies in which family ties seem the weakest, the importance and intimate quality of interpersonal relations 'at a distance' has been observed in relations between generations. This represents capital built up over many years, and it will be essential to ensure that the phenomenon is preserved.

Conclusion

Conclusion

These modest attempts to quantify the effects of demographic changes represent a follow-up to the conclusions adopted by the Commission in its White Paper 'Growth, competitiveness and employment', in that they emphasize how, in the medium and long term, the pressure of demographic ageing will require sustained efforts in respect of employment and economic growth.

In this context, the aim of the report is to give an input both to the debate initiated by the Commission on the future of social protection and to the development of the European employment strategy.

One of the key aspects of coping with the financial burden imposed by demography is better adaptation of the labour market and training to the needs resulting from these changes. The market requires significantly higher-level skills and, rather than seeking to reduce spending, it would be more beneficial to think along the lines of investment: investment in human capital, economic investment to create jobs, and social investment to encourage occupational activity, etc.

The European social model must also evolve if its fundamental objectives are to be preserved. It has developed in a context of mass production and stability in terms of employment and skills, commercial models, family structures and working-age population, a situation which no longer exists today. Very significant changes have taken place in the course of the century, in terms of technological change, specialization, and equal opportunities for men and women and for different social categories.

Since demographic forecasting helps to place all these matters in a medium- and long-term perspective, the European Commission intends to pursue its efforts in this field. One of its wishes is to intensify scientific cooperation with the national authorities. Such cooperation, which must be developed in line with available resources, should cover a whole range of clearly-defined objectives, such as comparison of methods, improvement of models and enhancement of the statistical database.

This cooperation would produce significant results and should make it possible to:

(i) increase knowledge of the impact of demographic trends on employment policies, social policy and various other policy areas;

(ii) stimulate discussion within the Union with all the parties concerned by the consequences of demographic changes.

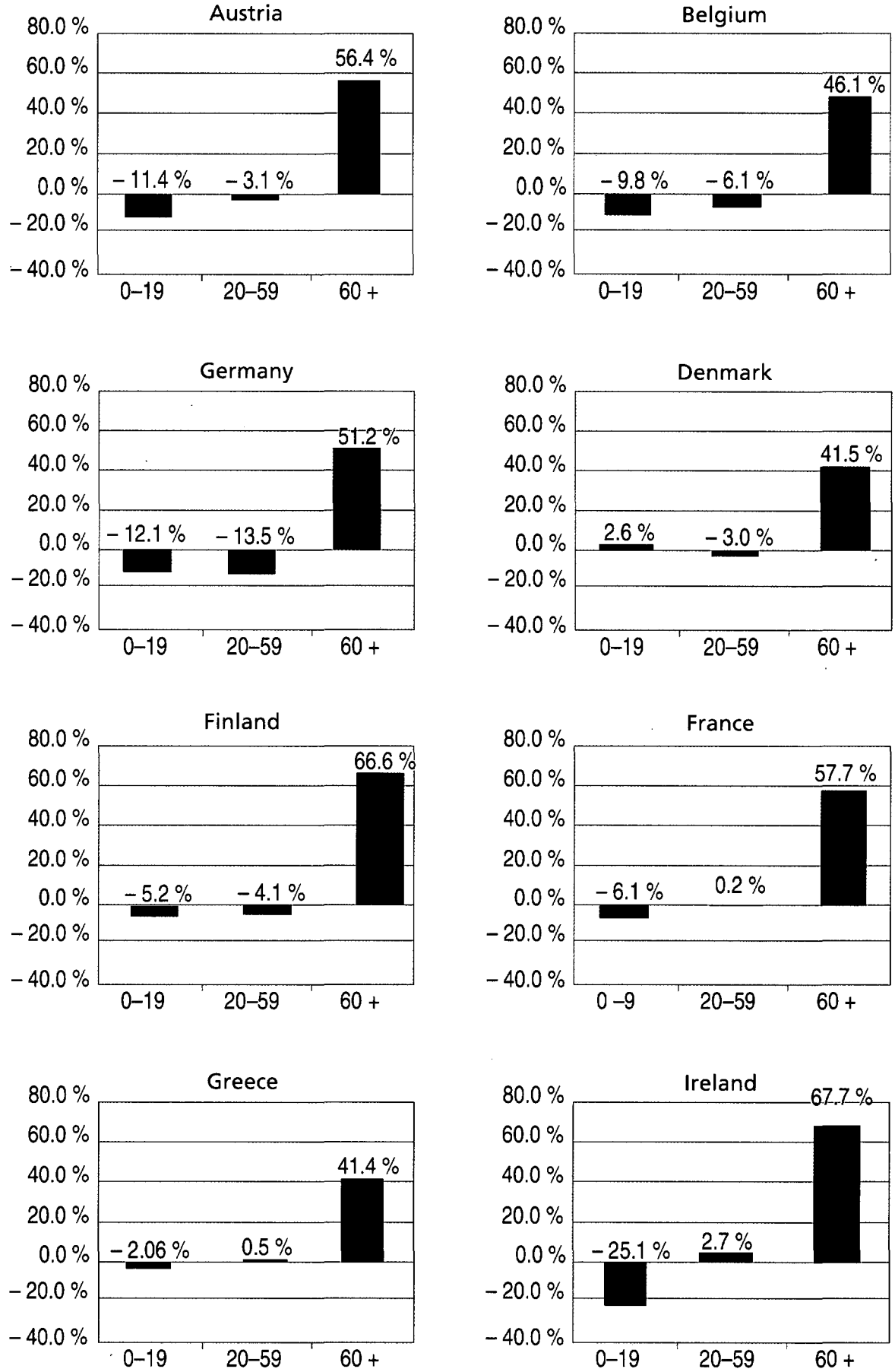
The main objective of this procedure is to provide the Member States with a reference framework for more efficient comparisons, together with the necessary material for increased scientific cooperation.

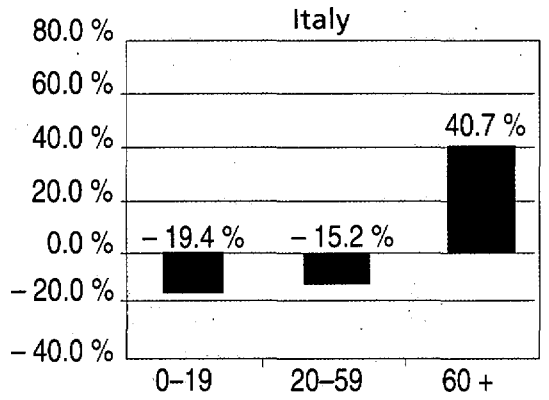
Annex

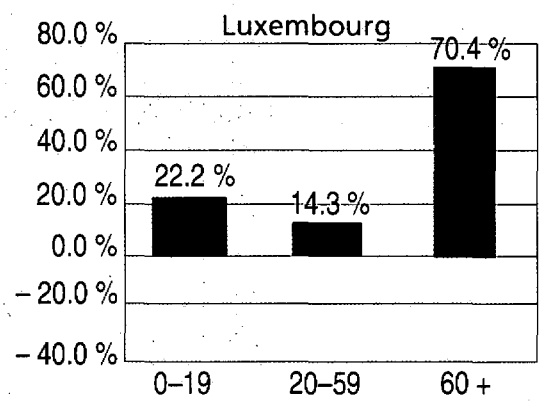
Comparative indicators of the effects of demographic ageing at national level

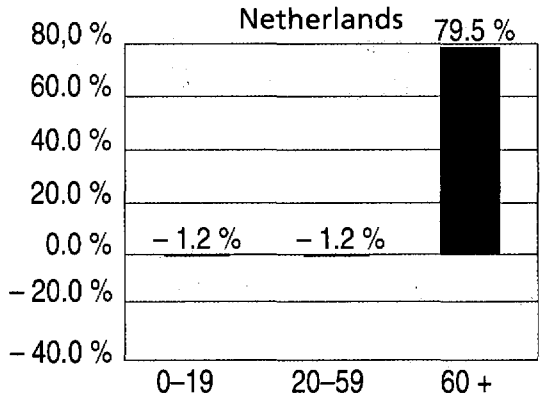
Figure A

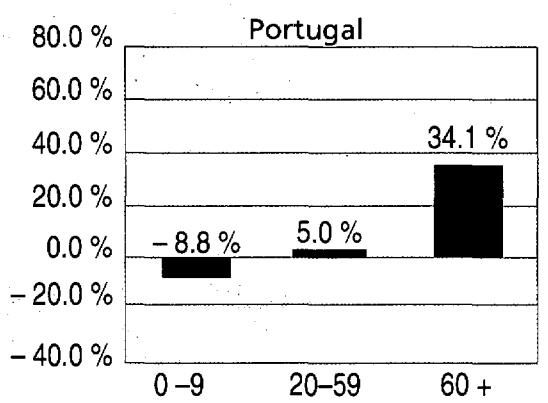
Population growth (%) between 1995 and 2025 for three age groups – Medium scenario

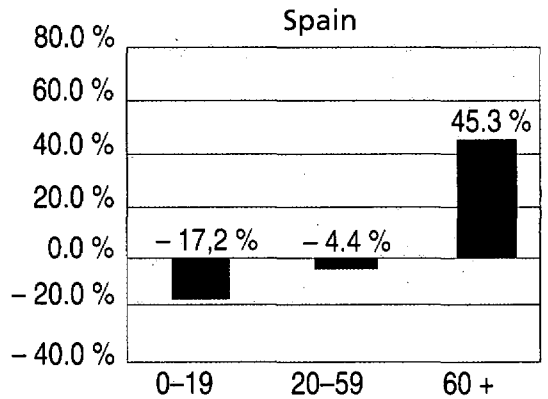


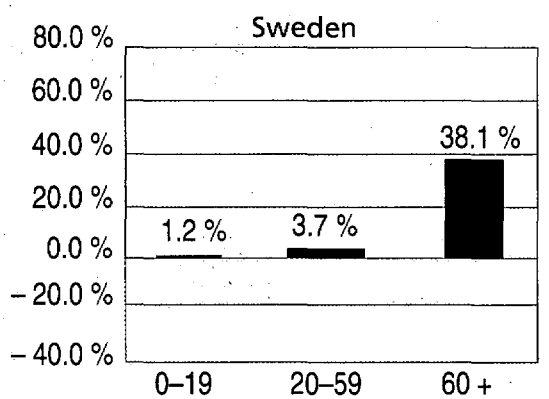

Italy
80.0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
– 19.4 %
– 15.2 %
40.7 %
0–19
20–59
60 +


Luxembourg
80.0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
22.2 %
14.3 %
70.4 %
0–19
20–59
60 +


Netherlands
80,0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
– 1.2 %
– 1.2 %
79.5 %
0–19
20–59
60 +


Portugal
80.0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
– 8.8 %
5.0 %
34.1 %
0 –9
20–59
60 +


Spain
80.0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
– 17,2 %
– 4.4 %
45.3 %
0–19
20–59
60 +


Sweden
80.0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
1.2 %
3.7 %
38.1 %
0–19
20–59
60 +

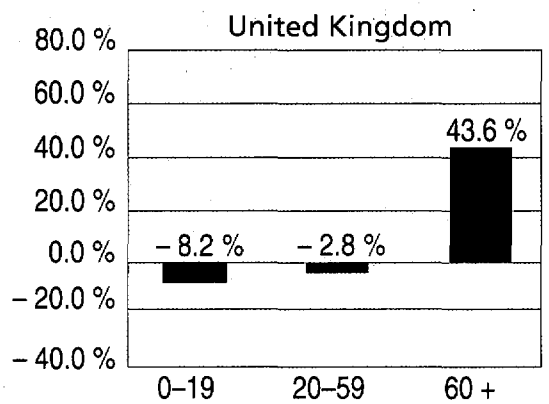
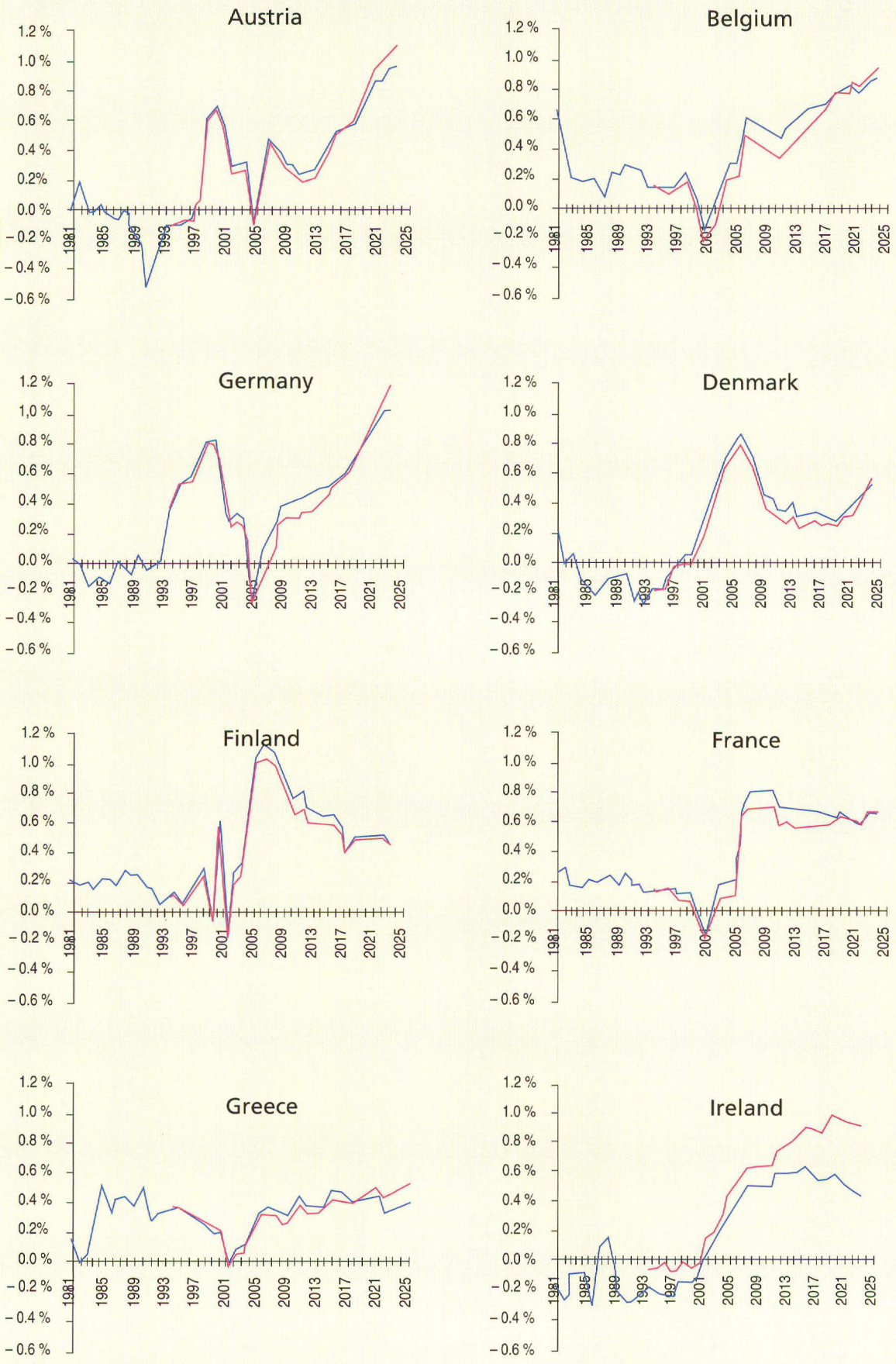
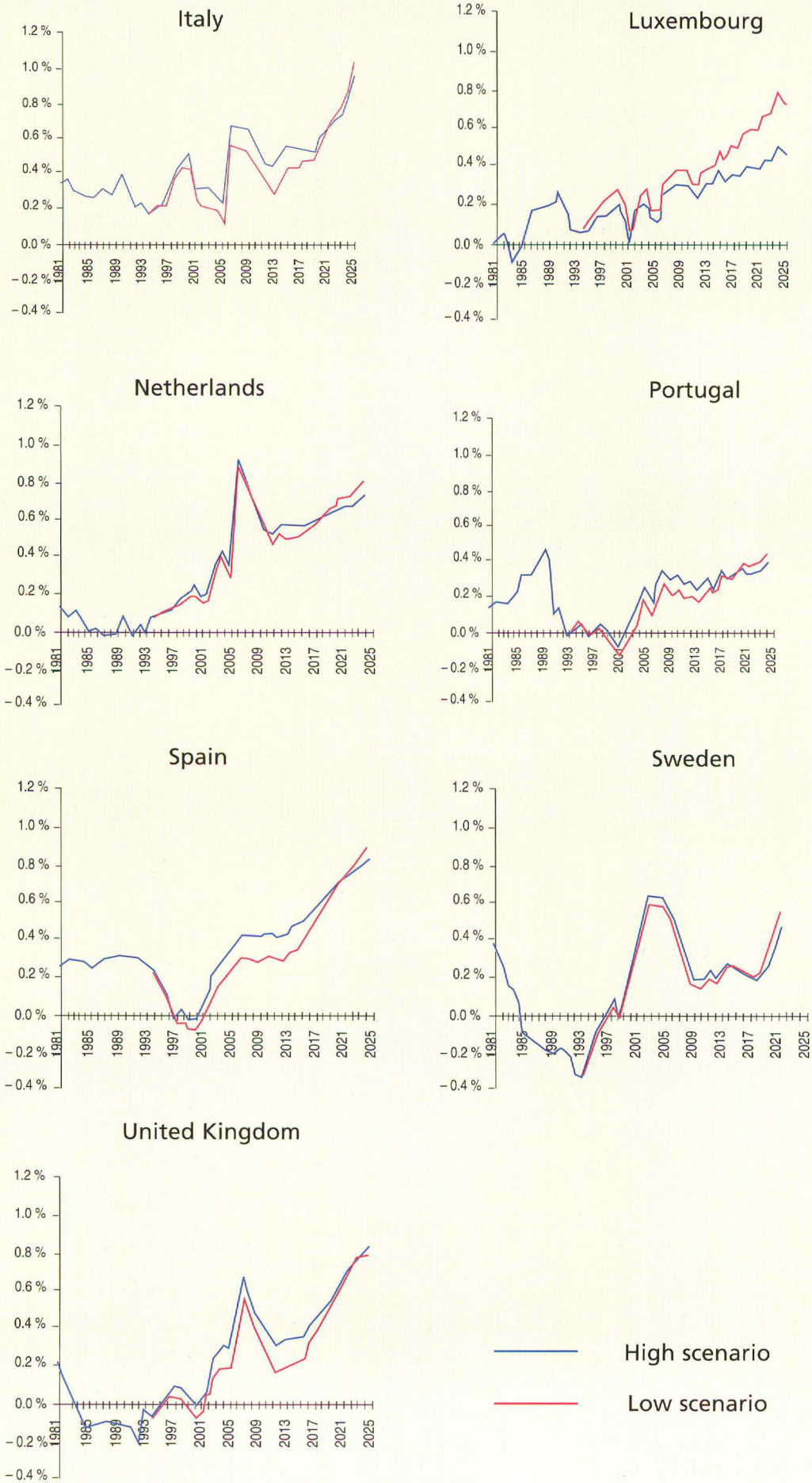

United Kingdom
80.0 %
60.0 %
40.0 %
20.0 %
0.0 %
– 20.0 %
– 40.0 %
– 8.2 %
– 2.8 %
43.6 %
0–19
20–59
60 +

Figure B

Annual increase in work productivity needed to compensate for the effect of demographic ageing, 1981 - 2025




Italy
Luxembourg
Netherlands
Portugal
Spain
Sweden
United Kingdom
1.2 %
1.0 %
0.8 %
0.6 %
0.4 %
0.2 %
0.0 %
– 0.2 %
– 0.4 %
1981
1985
1989
1993
1997
2001
2005
2009
2013
2017
2021
2025
High scenario
Low scenario

European Commission

The demographic situation in the European Union – 1995

Luxembourg: Office for Official Publications of the European Communities

1996 – 51 pp. – 21.0 x 29.7 cm

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