



PARLAMENTO EUROPEO EVROPSKÝ PARLAMENT EUROPA-PARLAMENTET
EUROPÄISCHES PARLAMENT EUROOPA PARLAMENT ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΟΒΟΥΛΙΟ EUROPEAN PARLIAMENT
PARLEMENT EUROPÉEN PARLAMENTO EUROPEO EIROPAS PARLaments
EUROPOS PARLAMENTAS EURÓPAI PARLAMENT IL-PARLAMENT EWROPEW EUROPEES PARLEMENT
PARLAMENT EUROPEJSKI PARLAMENTO EUROPEU EURÓPSKY PARLAMENT
EVROPSKI PARLAMENT EUROOPAN PARLAMENTTI EUROPAPARLAMENTET

DG FOR INTERNAL POLICIES OF THE UNION
- Directorate A -
Economic and Scientific Policy
Thematic Department

The demographic future of Europe

Background information

IP/A/EMPL/IC/2008-33

This background information was requested by the European Parliament's Employment and Social Affairs Committee.

It is published only in French, English and German.

Author: INED - Institut national d'études démographiques
[National Institute for Demographic Studies]
Mr François Héran
Director
133, Boulevard Davout
F-75980 Paris Cedex 20
France

Administrator: Christa Kammerhofer-Schlegel
Directorate for Economic and Scientific Policy
DG for Internal Policies
European Parliament
B-1047 Bruxelles
E-mail: christa.kammerhofer@europarl.europa.eu

Manuscript completed in April 2008.

The opinions expressed in this document do not necessarily represent the official position of the European Parliament.

Reproduction and translation of this document for non-commercial purposes are authorised, provided the source is acknowledged, and the publisher is given prior notice and sent a copy.

E-mail: poldep-esc@europarl.europa.eu.

The demographic future of Europe: basic principles of diagnosis for 2050

**Employment and Social Affairs Committee of the European Parliament
Public hearing of 28 May 2008**

*François Héran,
Institut national d'études démographiques [National Institute for Demographic Studies]
(Paris)*

In order to give a diagnosis of the 'demographic ageing' of a population, understood as the increase in the proportion of people considered to be old, we will proceed in three stages. The first stage will consist of clearly distinguishing between the different mechanisms of demographic ageing. The second will consider whether these various mechanisms are unavoidable or reversible, in other words whether or not they are within reach of public action. Finally, we simply need to try to measure, in the demographic trend of future decades, what proportion of ageing is avoidable and what is unavoidable. To do this, we will use a presentation method which is as simple as possible.

On the basis of the results thus obtained, we will conclude by answering the Committee's questions.

The four factors of demographic ageing

First of all, let us remember the four possible ageing mechanisms of an age pyramid, which are sometimes confused.

The first mechanism (Fig. 1) is '**ageing at the bottom**'. The age pyramid is narrower at the base, due to **fertility which for a long time remains below the replacement threshold** (currently 2.07 children per woman, in the knowledge that this rate should have been higher in the past, as mortality prevented girls from reaching child-bearing age). Because of this fall, the proportion of old people is increasing.

The second mechanism (Fig. 2) is '**ageing high up the pyramid**', due to **longer life expectancy**. The effect is considerable: longer life expectancy adds an additional level to the age pyramid irrespective of what happens at the bottom of the pyramid, as is clearly shown by the demographic projections of the French pyramid (Fig. 3). It should be remembered that the constant increase in life expectancy in Europe (with the notable exception of Central and Eastern Europe) has exceeded all expectations (Fig. 4). Sweden led the way but appeared difficult to catch up with, bearing in mind the fluctuations in the index at the beginning of the 1970s. Up until then increased life expectancy had been obtained by fighting infectious diseases, in relation to infant mortality; at the time, it was not suspected that life expectancy would increase so much for elderly people. Today, as stressed by Jim Vaupel, an increase of two to three months in life expectancy each year means that the end of the year from mid-

October is free (*'we have October, November, December for free!'*): this is the number of months given back to us at the end of life.

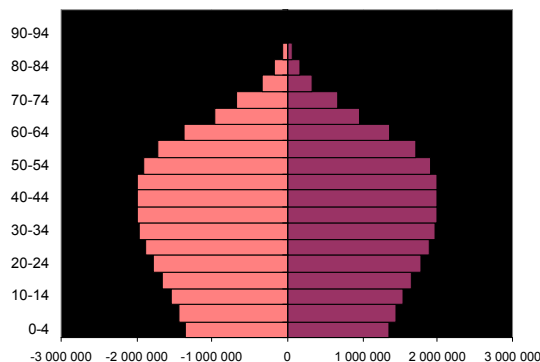


Fig. 1. Ageing at the bottom: narrowing of the age pyramid following a reduction in fertility

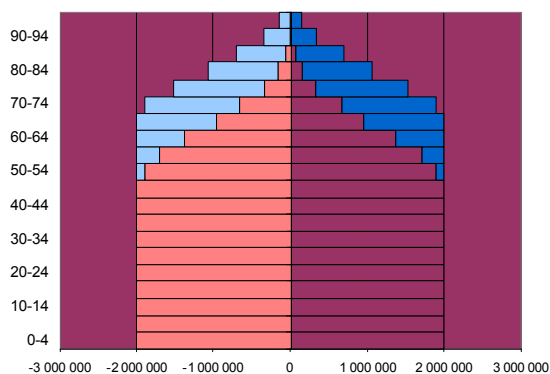


Fig. 2. Ageing high up the pyramid: addition of an 'extra level' to the age pyramid, because of increased life expectancy

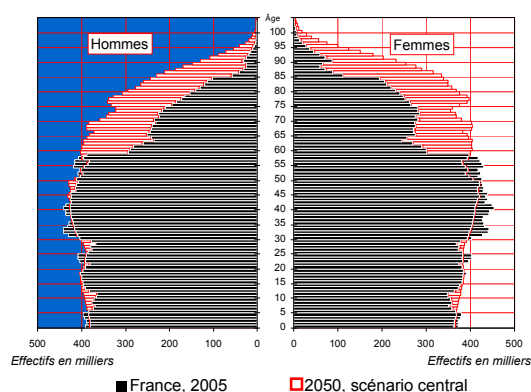


Fig. 3. France: a country with sustained fertility but which will not escape 'ageing high up the pyramid' because of increased life expectancy (source: INSEE projections)

The third mechanism (Fig. 5) is the **current repercussion of high variations in fertility in the past**, i.e. an exceptional growth in fertility which lasted two or three decades before falling again. The **baby boom** was a phenomenon of this type in several European countries (for example the Nordic countries, UK, France and the Netherlands, far less in Germany because of the post-war crisis, and hardly at all in Southern European countries, which continued their demographic transition). It is a known fact that it was also particularly marked and influential in the United States.

The end of the baby boom (occurring in the middle of the 1960s on the basis of the fertility rate, but not before the middle of the 1970s if the number of births is used as the basis for consideration) marked the return to a falling trend in fertility, which typifies the secular demographic transition in Europe.

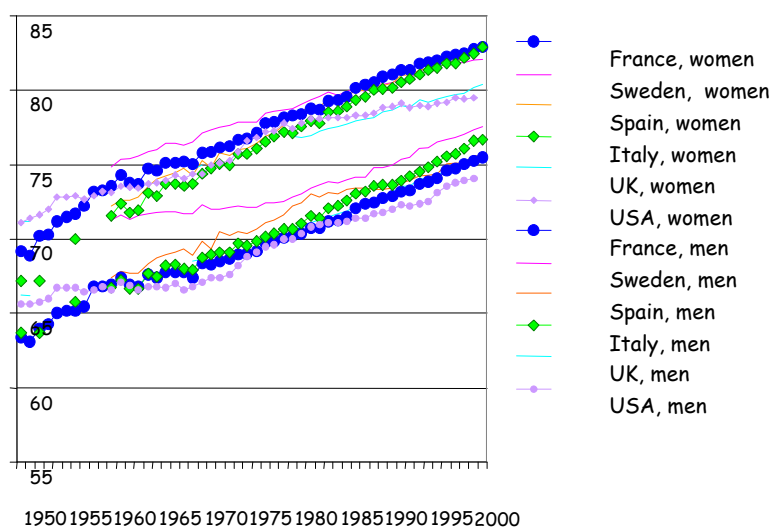


Fig. 4. Life expectancy trend in a selection of countries, 1950-2005. Source: Eurostat.

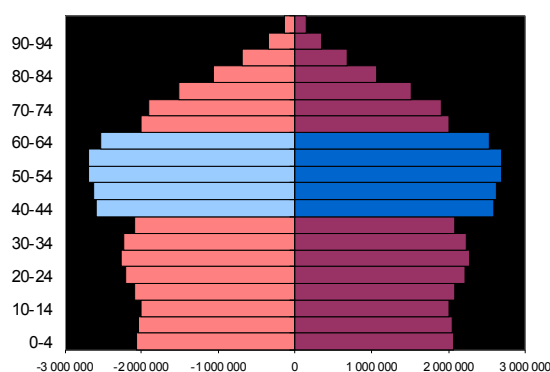


Fig. 5. Ageing by repercussion of previous high variations in fertility: example of a baby boom which at first decreased the average age of the population but then forty years later increased it.

This is why, although some authors confuse the two phenomena, it is preferable to consider the ageing of the baby boomers to be a demographic ageing factor which is very different from the long-term reduction in fertility responsible for 'ageing at the bottom'. Like a wave spreading up the age pyramid to the older ages, the extra births occurring from 1946 onwards initially had the great advantage of decreasing the average age of the population and for decades swelling the central part of the age pyramid, to the great good of the retirement systems, but, forty years later, a baby boom ages the population instead of rejuvenating it. In thirty or forty years it will account for the majority of deaths, which will inevitably lead to a large increase in the total number of deaths in Northern and Western Europe.

For the record, a fourth factor of demographic ageing is the **selective emigration of young people**, particularly appreciable in countries such as Albania.

This classification of the various mechanisms of demographic ageing has direct repercussions on demographic policy. It makes it possible to separate, more clearly than usual, the *avoidable* proportion from the *unavoidable* proportion of ageing. Consequently one can assess more realistically the chances of success of a policy which aims to thwart the population ageing process by using the lever of supporting desired fertility on the one hand, and introducing young migrants on the other hand.

***Unavoidable* ageing in Europe: greater than the *avoidable* proportion**

We need to measure the respective proportions of 'avoidable' ageing and 'unavoidable' ageing in Europe. To do so, we will draw the demographic trends projected by the United Nations for 2050 for a selection of European countries, using a form of graph which enables the two components to be visually separated (Fig. 6 to 11). The technique is simple: you compare the trend of numbers for three large age bands: the population of 65 years and over, the intermediate active-age population (15-64 years) and the under 15 year-olds. The United Nations established very wide thresholds for the intermediate group. Other thresholds are obviously possible, but do not affect the essence of the demonstration. To compare the relative trends of the numbers of each group, all three are indexed at 100 in the year 2000. The trend scenario considered here is the medium scenario, which the United Nations demographers considered the most reasonable after thorough consultation with government statisticians and experts. It consists of fixing, as the target, a total fertility rate which would gradually converge to 1.8 children per woman in 2050.

The life expectancy trend hypothesised by the United Nations in the calculation of the projections is rather conservative: it includes a slight reduction in the rate of increase of life expectancy and a slight closure of the gap between male and female life expectancies, two options which do not greatly affect our argument. The idea should not be dismissed that life expectancy may increase even more over the next few decades¹, in which case the conclusions put forward here would be even more strongly founded.

¹ As suggested by the fact that in France, the comparatively high death rate caused by the heat wave of 2003 was more than offset from the following year onwards: 35 000 lives gained compared to 15 000 lost, with all in all a life expectancy which continues to rise at the same rate as before, but shifted by two months upwards. This

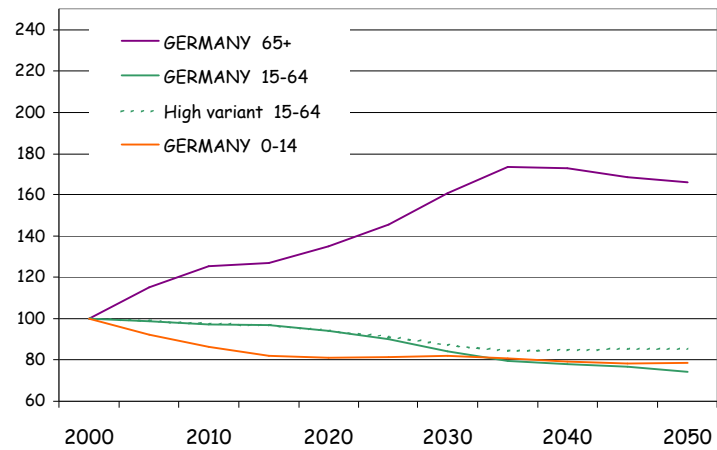


Fig. 6. Projected ageing of the population in GERMANY

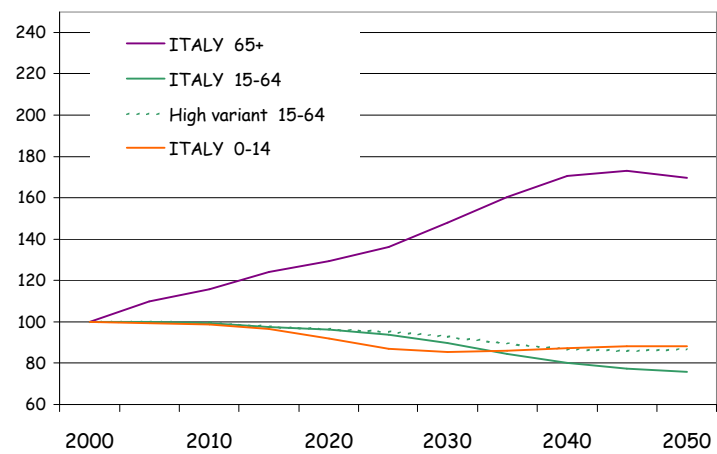


Fig. 7. Projected ageing of the population in ITALY

proves that better care of vulnerable elderly people leads to large margins of improvement in chances of survival, without high medical costs.

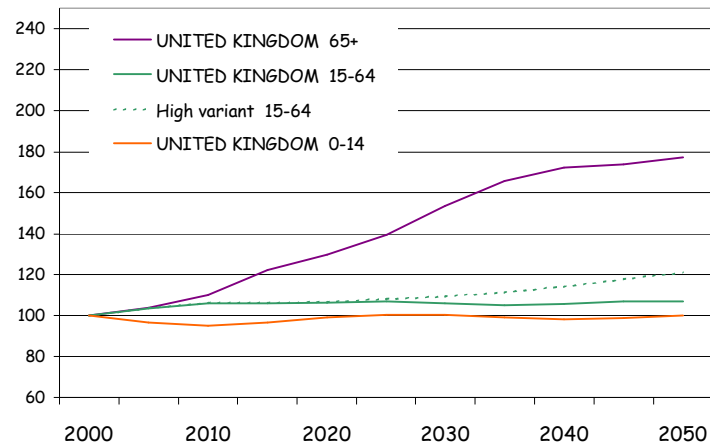


Fig. 8. Projected ageing of the population in the UNITED KINGDOM

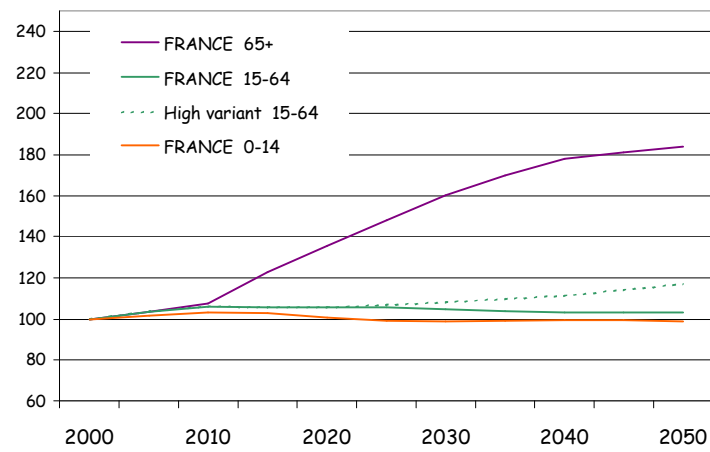


Fig. 9. Projected ageing of the population in FRANCE.
2006 revision of the United Nations projections.

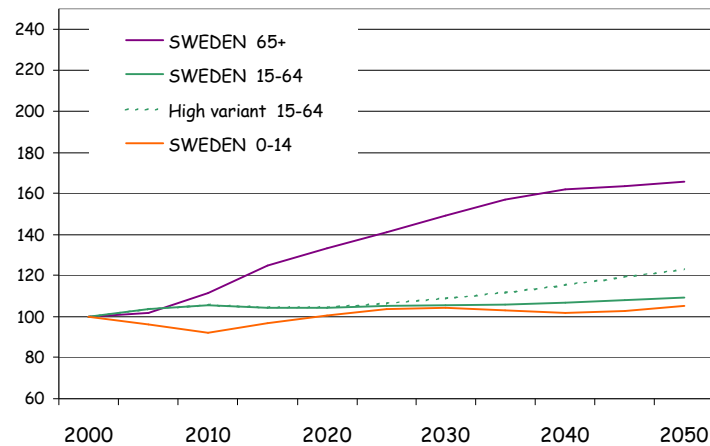


Fig. 10. Projected ageing of the population in SWEDEN

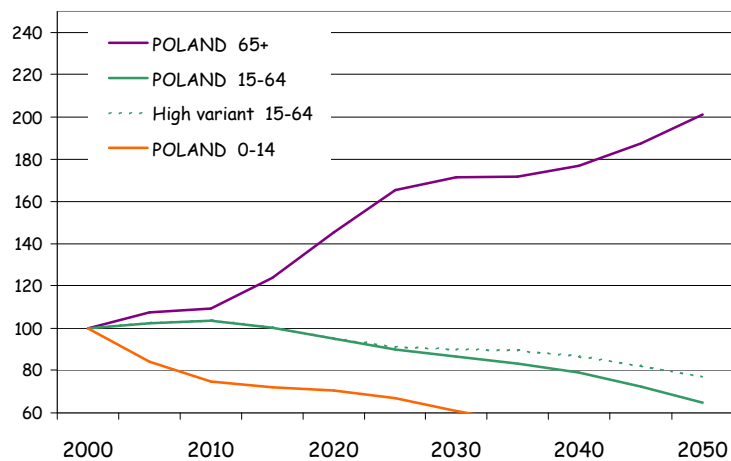


Fig. 11. Projected ageing of the population in POLAND

The basic phenomenon that can be observed on all these curves is the *progressive increase in the gap between the curve for old people and the curves for active-age people and children*. At no point does this gap decrease over the next three decades. The ageing of Europe as a whole is clearly an inexorable process, and one that is impossible to halt.

The second lesson is that within this widening gap, the increase relating to old people always counts much more than the decrease relating to the other two groups. Contrary to a commonly-held idea, this means that increased longevity, together with the repercussion of the baby boom, is a factor of ageing which far outweighs the decrease in fertility.

It should be remembered that the increase in number of old people is the most reliable part of the demographic projections: the people who will be over 65 years old in 2050 have already all been born. The path of this curve is totally unaffected by fertility level, and so by any action aiming to alter this level.

Implications for action

It may be considered that the gap which separates this rising curve from the horizontal reference line at level 100 corresponds to the inexorable part of demographic ageing, the 'ageing high up the pyramid' due to the increase in life expectancy and reinforced by the late effect of the baby boom. No demographic policy can control this component of ageing, for the simple reason that all this component does is to mechanically unfold the consequences of past demographic phenomena: nothing can go back on the baby boom of the thirty years after the war, and no policy can be devised to slow down the increase in life expectancy. With the addition of a new level to its age pyramid, Europe has to accommodate a huge extra population, largely unforeseen thirty years ago. It will not be able to do so by hiding behind the argument of insufficient reception capacity.

In most European countries, under the horizontal line of maintained numbers, there is a narrower area delimited at the bottom by the curve showing the trend of the active-age population. This time, this second area corresponds to the 'avoidable' proportion of demographic ageing, the 'ageing at the bottom' caused by low fertility. Here, demographic projections depend more on uncertainties of the future than on accumulated inertia in the age pyramid. There is nevertheless some inertia, as women who will be of child-bearing age in the next three decades have already been born. What remains uncertain, however, is their mean fertility behaviour, and similarly uncertain is the number of children, also fertile, who will be born a generation later.

This uncertainty does not, however, hinder our argument. It can be dealt with by having an intervention window which is as large as possible, so as to be able to reason *a fortiori*. In this respect, the graphs include an additional curve corresponding to the high variant of the trend in the fertility rate proposed by the UN demographers. This variant gradually adds half a child to the current fertility level, in other words the equivalent of a new baby boom. It should be remembered that in countries where the baby boom was particularly lengthy and sustained, such as France, it in effect added an average of 0.5 children to the fertility of the cohorts of women concerned. In demographic terms, an additional half child is a lot if it lasts for decades. By way of example, this same difference in fertility separates Germany from France since the war.

Drawn as a dotted line, *the curve tracing the high variant of fertility thus represents a very strong hypothesis, i.e. the effect of a policy supporting fertility which would gradually reproduce the equivalent of the baby boom*. This is a maximalist hypothesis, as it should not be overlooked that about a quarter of the baby boom births were unplanned, according to retrospective questioning of women in demographic surveys.

This same curve can also represent the effect of a migratory policy whose aim – or at least a desired side effect – is to decrease the average age of the population. In actual fact, in countries which have recently become immigration countries, the average age of the migrants is still relatively low (it tends to increase in countries with long-standing immigration, as and when more families of immigrant workers are authorized to join their families in France). Under these conditions, the repeated introduction of young migrants retrospectively corrects the increase in the national fertility rate of 20 or 30 years ago. The dotted curve thus also represents *the possible effect of a policy of constant decrease in average age caused by migration*. Such a policy assumes (to be honest, against all likelihood) that the new migrants

admitted over the decades will always be young and that a large proportion of ageing migrants will return to their country of origin. As with the policy of supporting the birth rate, the hypothesis considered here is strong, but because it is extreme, it enables an even more convincing argument to be established.

We will comment on the results by grouping together countries with the same profile.

While *ageing at the bottom* varies greatly from one country to another, *ageing high up the pyramid* is widespread

The extent of ‘ageing at the bottom’ is well known in Italy and Germany, and should lead to a 25% fall in the active-age population. A policy of supporting the birth rate or encouraging immigration, in the strong hypotheses of the ‘high variant’, would enable this effect to be reduced by only half, as fertility has been permanently insufficient in these countries. Only a combination of the two policies would be able to ensure long-term maintenance of the active-age population. As for the idea of countering the effects of ageing high up the pyramid, it should not be contemplated, neither here nor elsewhere. A pro-birth or pro-immigration policy will have no effect on the inexorable increase in old people.

Poland – in this respect similar to other Central European countries – represents the extreme situation of a country which suffers not only low fertility but also a low migration level, which has become very negative, and it thus cumulates the effects of various forms of ageing.

France, the United Kingdom and Sweden have all maintained the stability of their active-age population, thanks to having limited ‘ageing at the bottom’ as much as possible. An active migration policy, and also a prolonged growth in fertility, could increase the active-age numbers by 20%, again according to very maximalist hypotheses. At all events, these policies will not abolish the unavoidable part of ageing, involving increased life expectancy reinforced by the baby boom effect: it represents at least four fifths of all ageing.

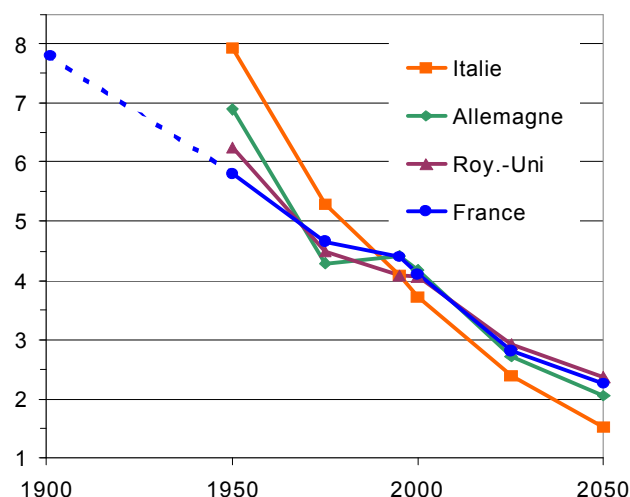


Fig. 12. How many 15-64 year olds per person aged 65 or over?
Trend of the support ratio according to the United Nations' medium scenario.

This explains why the trend of the ratio of dependence of old people on active-age people, or the trend of the reverse, i.e. the support ratio, will roughly follow the same pattern between one country and another in Europe, despite their different histories and wide disparity in fertility levels. The support ratio (Fig. 12) will evolve as quickly in the next fifty years as it did in the last one hundred years: the ageing rate will double. While in 2000 there were about four people aged between 15 and 64 years to support one person aged 65 or over, in 2050 there will be half as many. A difference will persist between medium fertility countries, such as the United Kingdom and France, and low-fertility countries such as Italy and Germany, but it will be smaller, and much smaller than the disparities of the 1950s. The general trend will be no exception.

Migration will not make it possible to thwart *ageing high up the pyramid*, but, together with support for the desired fertility, it will partially offset *ageing at the bottom*

Here we are following the same lines as the frequently misunderstood conclusions of the UN's famous report on 'replacement migration' published in 2000. The UN showed that scenarios of maintenance of the population or maintenance of absolute numbers of active-age population could easily be achieved in Western European countries with migratory flows similar to those observed at the end of the 1990s (cases of Germany, France, Italy or the United Kingdom). However, it would be totally unrealistic to try to stop the trend of the numerical ratio between the population aged 65 and over and that aged 15-64 years, as this abolition of ageing would only be possible if myriads and myriads of young migrants arrived, and repeating this scenario on a worldwide scale would mean migrants would have to come from goodness knows what hinterlands or would have to be prevented from ageing.

These comments are in no way intended to mean that a migration policy would be superfluous from a demographic or economic point of view. Instead, they help understand the exact location of the problems and solutions.

Immigration already plays a major role in stabilising the natural surplus of European countries. Without it, several countries would lose population, because they have more deaths than births. *There is no need to wonder whether Europe will need migrants in the future to offset the drop in fertility: it is already happening, and there is no reason to believe that it will not continue.* France does not escape this phenomenon: one birth out of about eight (100 000 out of 800 000) is from a foreign mother, in other words a fairly recent immigrant, settled in the previous years. This is very much a minority, and it has been clearly demonstrated that it does not explain France's position in Europe with regard to fertility. However, this phenomenon suffices to diversify the composition of the population if, as is the case, it is maintained for some decades. It is not necessary to have a *massive intrusion* of migrants to profoundly diversify a population; a *long-term infusion* is sufficient.

The most recent demographic projections published by statistical institutions in European countries which are experiencing relatively sustained fertility, whether they be British, French, Dutch or Swedish, already show that the most positive natural numbers (starting with France, the first in Europe) can only fall in Europe, or even cancel out, over the next three decades. The reason is that the number of deaths will have risen greatly (Fig. 13) while the number of women of child-bearing age, born after the end of the baby boom, will fall. Even if these women maintain their average fertility for a long time, they will not be sufficiently numerous to stabilise the total number of births.

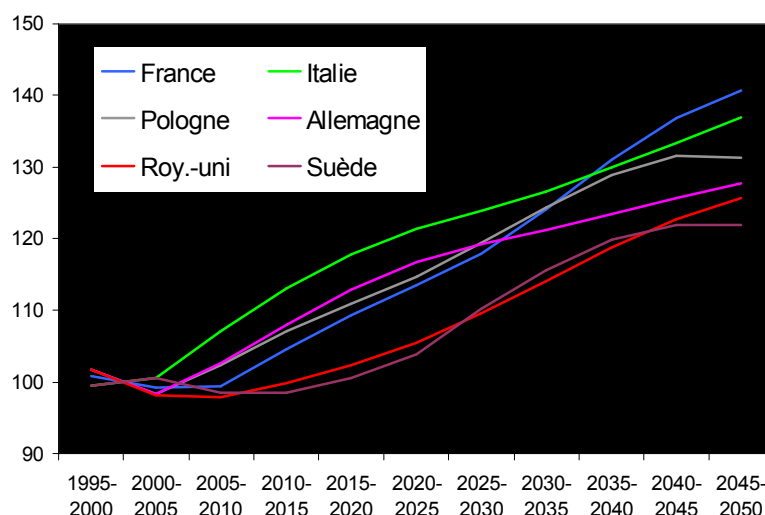


Fig. 13. Relative increase in number of deaths between 2000 and 2050 in Europe (for 100 deaths in 2000). United Nations projections, medium scenario.

Europe: the immigration continent, whether it likes it or not

In this context, *the migration balance can only strengthen its position as the main driving force of demographic growth in Europe, well ahead of the natural balance.* France itself will follow the common destiny: its natural numbers will disappear and, even if it manages to halve its annual migration numbers for a considerable time and maintain it below a ceiling of

50 000, it will not be able to halt the process which will make migration the main driving force of population growth.

In France as in the rest of Europe, the idea that in the long term immigration would be relegated as a secondary factor in demographic dynamics is unrealistic and contrary to the basic demographic data that have already accumulated in our age pyramids.

It should be emphasised that these observations are unrelated to any value judgement. They are not based on the presupposition that diversity is a good thing, and even less so that immigration is necessarily positive in all its aspects. Diversity exists and will only increase, without migration pressure itself affecting it that much. The cause of the change is related to the demographic behaviour adopted long ago by Europeans, such as efforts to prolong life, and limiting fertility, the undesired repercussions of the baby boom.

It follows then, that Europe, in the same way and more or less in the same proportions as the United States, whether it likes it or not will continue to be a major immigration continent at the same time as an 'ageing' continent. But let us correct this observation straight away by taking care over our choice of words, which is not accidental. The word 'ageing' has the connotations of wear and tear, lack of dynamism and the end of a world. With the term 'increased life expectancy', everything shifts towards a positive vision. It transpires that in Europe, for future decades, increased life expectancy is by far the primary cause of demographic ageing.

The limit example of Russia, compared to that of the United States, offers an interesting lesson in this respect.

The America-Russia contradiction: why the most dynamic demography will also be the most ageing

One would have thought that a power as demographically dynamic as the United States, whether because of the vitality of its natural growth or because of the volume of its migration numbers (Table 1), would have a better chance of escaping ageing of the population than a 'worn out' country such as Russia. If this question is put to the public or to the political world, one might easily bet that the most frequent answer would be to associate the idea of ageing with Russia and the idea of youth with the United States, with 'old Europe' coming somewhere in between.

Indicator	Union of 27	Euro zone of 15	United States	Russian Federation
Estimated population on 1 Jan 2008 (millions)	497	468	308	142
Natural growth rate (per thousand)	0.9	1.1	6.0	- 5.0
Rate of growth from migration (per thousand)	3.3	4.8	4.0	0.6
Total fertility rate	1.5	1.3	2.1	1.3
Proportion aged 65 or over	17%	16%	12%	14%
Life expectancy for women	79	79	80	72
Life expectancy for men	71	71	75	59

Table 1. Some elements of comparison between Europe, the United States and Russia.

Paradoxically, this is the opposite of what the United Nations projections have observed (Fig. 14 and 15): although it is true that Europe is in an intermediate position, demographic ageing will be very limited in Russia, while it will reach considerable proportions in the United States - much higher than in Europe. How can this be explained?

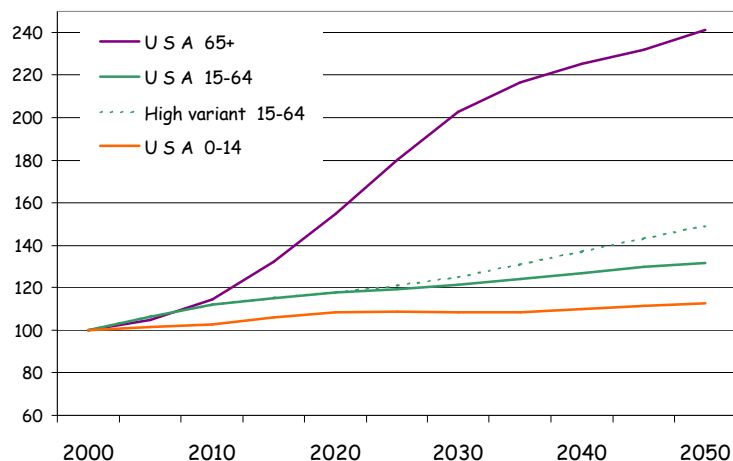


Fig. 14. Projected ageing of the population in the UNITED STATES

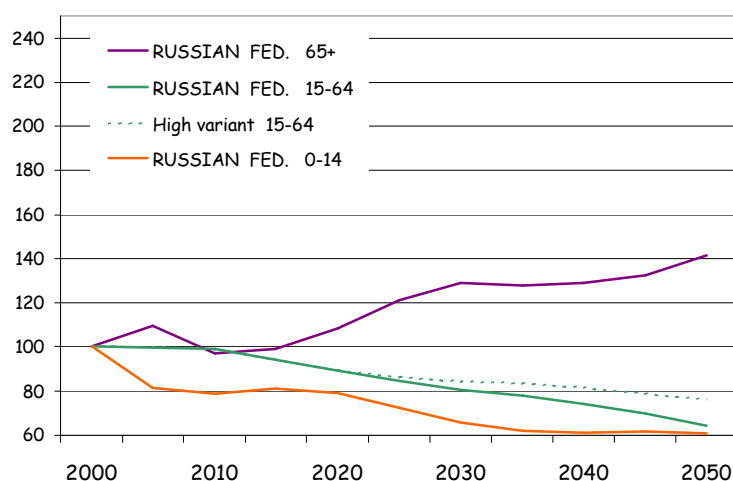


Fig. 15. Projected ageing of the population in RUSSIA

The United States, starting from the basis of a younger population, lived through a powerful and long-lasting baby boom, far more so than in Europe. Their extremely sustained fertility, together with high immigration, has enabled them to escape 'ageing at the bottom'. But the Americans have been no more able than the Europeans to avoid 'ageing high up the pyramid'. The country has also experienced a large increase in life expectancy despite the difference in performance of women observed in Northern Europe and Southern Europe. The baby boomers, who greatly decreased the average age of the country for thirty years, are now preparing to age in the same proportions, reinforcing the effects of the battle against mortality.

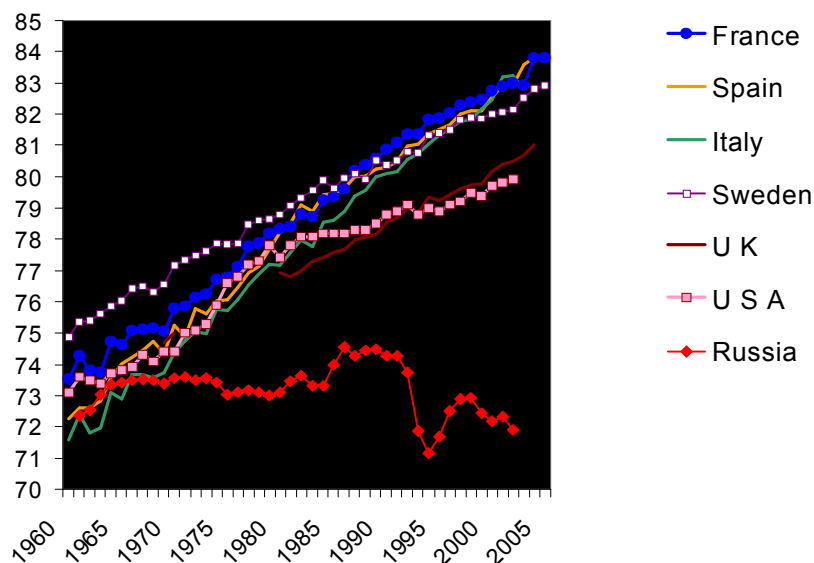


Fig. 16. Comparison of life expectancy of WOMEN, over the 1950-2005 period, in a selection of countries: France, Hungary, Russia, United States (source: Eurostat and European Demographic Observatory).

Russia's crisis, by comparison, is stagnation or even a decline in life expectancy so great that *the population has not been able to age high up the pyramid* (Fig. 16). From another aspect, the country is remarkable because of accelerated ageing at the bottom, the drop in fertility having been precipitated by the dissolution of the Soviet system. Of all the countries we examined, it is the only one where the two forms of ageing – at the bottom and high up the pyramid, unavoidable and avoidable – are more or less equal.

This example is interesting for the rest of Europe, as it shows to the contrary that ageing of populations, when linked to increased life expectancy, is a privilege and a good fortune rather than a curse. In the light of the Russian example that goes against the rule, one may even wonder whether, apart from issues concerning access to housing or reconciling work and family life, the common sight of worn-out and truncated old age contributes to discouraging young people from starting a family and giving life. This is but a hypothesis that needs to be verified. The comparison between demographic ageing and ageing of mentalities is a stereotype which is hard to get rid of². May we suggest rather a reverse link, in other words that 'ageing badly', understood as the impossibility of ageing high up the pyramid, could easily be due to the despondency which propagates ageing at the bottom.

Of course, there are several countries in Europe and the Far East which ensure high longevity for their citizens while beating records for low fertility. So other factors are implicated, which limit fertility, in other words the excessive rigidity of family structures. Those countries which promote strong family values with regard to children, in other words where it is still considered necessary to be married to have children and to stay at home to

² The comparison is less easy in English, because of the standard neutrality of the word *ageing*, compared with the whingeing connotations of the word 'vieillesse' in the Latin languages.

look after them, are the very countries which have very low fertility, as may be observed in both Japan and Southern Europe, and widely in Germany. For a long time, the birth rate was partly linked to family values. Now, de facto, family values are anti-birth.

Women, in particular, do not renounce marriage because they do not want to have children; they oppose the conditions placed on them by men in marriage and in their professional lives. This is the area in which action should be taken to fight against avoidable ageing, in the knowledge that this action can only have effects in the long term.

With regard to the inexorable part of ageing, linked to the continuous increase in our life expectancy, it was part of the destiny of Europe which is simply living it more intensively than other continents. One of the main issues is to ensure that this increased life expectancy comes about more in good health than in a situation of dependence.

Answers to the Committee's questions

1. Is the situation in Europe as alarming as it is forecast? Is it too late to act?

The essence of future ageing in Europe is the ageing associated with the increase in life expectancy and reinforced by the repercussion of the baby boom. It is a mechanism which is both irreversible and unavoidable, and in itself it is a good thing. It is futile to hope to halt it by a fertility support policy or a migration policy, which have other justifications. However, increased life expectancy requires massive assistance to ensure that it is basically achieved with good health. A fundamental aim is to bring life expectancy in the new Member States in line with that of the rest of Europe.

Concerning ageing at the bottom, linked to reduced fertility below the replacement threshold, it is not too late to act by developing a policy to support the desired fertility, but the effects will only be felt on the general dynamics of the population in the long term, and to the benefit of future generations.

2. The mean fertility rate is very low, at 1.5 children per woman. What are the differences hidden by this mean? Can lessons be drawn from the differences between Member States?

A European project of the 7th PCRD is currently aiming to answer these questions, by trying to combine micro-economic explanations of fertility decisions and the impact of policies and the social environment.

Several research studies have already shown that the Member States which currently have the highest fertility rates are those which have been able to develop policies concerning child support and reconciling family and professional life, and which have done so by meeting several conditions: overcoming changeover of political power (such a policy must be consensual), establishing long-term support measures to maintain the confidence of couples, favouring financial assistance throughout childhood rather than injecting lump-sum benefits at birth, encouraging free access for three-year old children to nursery school, facilitating access for young couples to rented accommodation and independence, and dissociating fertility from the marital status of the parents by making the legal status of all children equal. The countries with the strongest family values (where it is taken for granted that you have to be married to

have children and you have to stay at home to look after them) are the countries which have the lowest fertility rates. In other words, excessively rigid family structures now constitute a major obstacle to the desired fertility. These structures must be flexible and adapt to the plans of couples.

3. According to several demographers, immigration appears to be a good solution for the demographic decline in the Union. Why is it so difficult to transfer it into our policies?

Without immigration, many European countries would already be seeing their populations decrease, because the foreign component is not only formed by migration, but also by the natural numbers of foreigners established in previous years. Foreigners (or recent immigrants) can provide a considerable contribution to the *birth rate* (in France, one birth out of eight), without making a very high contribution to the national *fertility rate* (the mean number of children per woman). In fact, the additional fertility of a minority only affects the national rate in relation to the proportion of this minority in the total population (for example, foreigners have 1.5 children more than French women, but represent only 8% of the mothers of that year, which raises the fertility rate of the country by only one tenth: from 1.8 to 1.9 children per woman).

The contribution of immigration to demographic dynamics does not need to take the form of a massive influx to rapidly change the composition of the population and increase its diversity. Even if it contributes by only one quarter or one third to the annual growth of the population, this contribution need only continue for some decades for the proportion of residents with foreign ascendants to rise. A long-term infusion is as effective from this point of view as a massive intrusion.

Immigration provides a significant contribution to the renewal and strengthening of the active-age population, at very varied levels of qualification. This contribution, which it is up to economists to measure, allows the proportion of ageing resulting from a long-term reduction in fertility to be limited. However, migration cannot play any role in the battle against 'ageing high up the pyramid', which is an irreversible process that migrants and their families will not escape either.

4. We live in an ageing society. What effects can this have on European society from the point of view of mentalities? Will this situation create economic imbalances in health systems? What will happen to the principle of solidarity?

A society which has devoted considerable means to fighting disease and death, whether in terms of scientific research, spreading knowledge or care coverage: is this a declining or a dynamic society? If the years gained are more years in good health than in bad health, the addition of an extra level to our age pyramid is an advantage which should be put to good use. The real age of a population becomes a relative age which develops favourably over time if it is indexed on an expectancy of life in good health. With regard to stereotypes on mentalities, consumer studies struggle to substantiate them: it does not appear that 'old people' systematically consume old, vote old and think old.

The pressure exerted on the health system by demographic ageing is becoming accentuated, but it can also be alleviated if the average age at hospitalisation and entry into an institution (retirement home) is simply pushed forward a few years.

5. The active population is decreasing: should the duration of active life be extended beyond 70 years of age, or should the joint retirement system be called into question?

No director of a national demography institute will deny the fact that with the unprecedented extension of life expectancy, the entire schedule for the end of professional activity must be urgently postponed, even if reforms will necessarily be spread over a period of time and will have to involve several parameters at a time: the duration of payment of contributions is only one, along with the amount of contributions, their base in the social system, the intended replacement rate (via the indexing system), and also the involvement of companies and administrations in the construction of the second pillar of retirement insurance. Brought about by a new numerical ratio between generations, these problems are largely of demographic origin, but their solutions are far from being demographic.

At the same time, the researcher pays attention to biographical and retrospective approaches, which enable more reliable balances to be made between categories on the one hand, and social environments on the other. The pursuit of fairness must take into account the years of professional life marked by their onerousness and the number of years left to live in good health in different social environments. In passing, one may note that collecting data on this type of issue is fraught with major legal difficulties in many European countries, and that the European Parliament or Eurostat could, in this respect, help remove obstacles to obtaining knowledge.