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Table of Contents

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

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To give a diagnosis on the "demographic ageing" of a population, understood as the increase in the proportion of people considered 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 be to consider whether these various mechanisms are unavoidable or reversible, in other words whether or not they are within reach of public action. Finally, we need simply 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 1970's. 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 strongly proclaimed by Jim Vaupel, an increase of two to three months' 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.

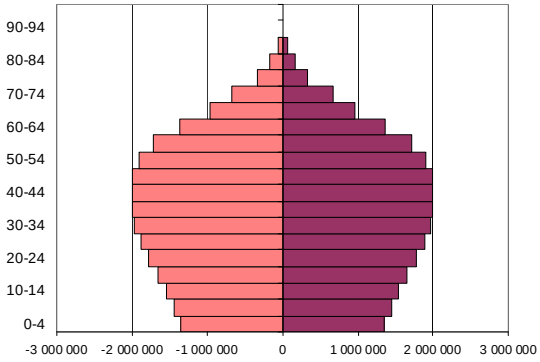


Fig. 1. Ageing at the bottom: narrowing of the age pyramid following a reduction in fertility

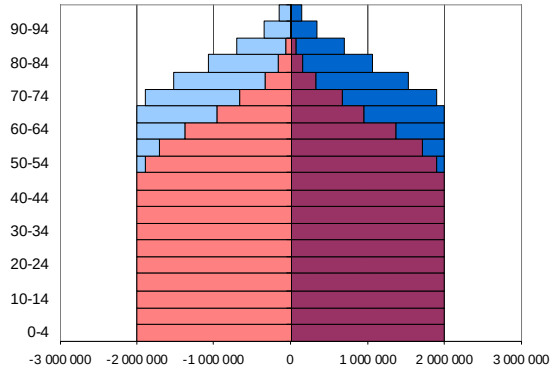


Fig. 2. Ageing high up the pyramid: addition of an "extra level" to the age pyramid, because of increased life expectancy

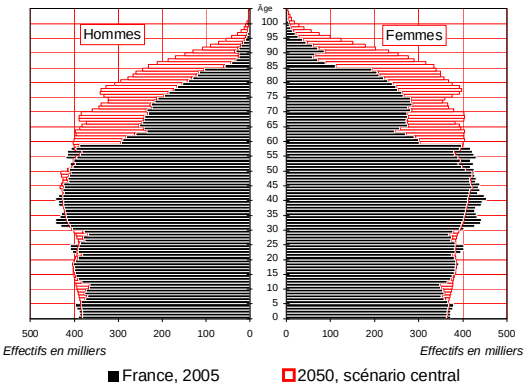


Fig. 3. Case of France: a country with sustained fertility but which will not escape 'ageing high up the pyramid' because of increased life expectancy (source: INSEE projections)

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 fertility rate, but not before the middle of the 1970s if the basis considered is the number of births) marks the return to a falling trend in fertility, which typifies the secular demographic transition in Europe.

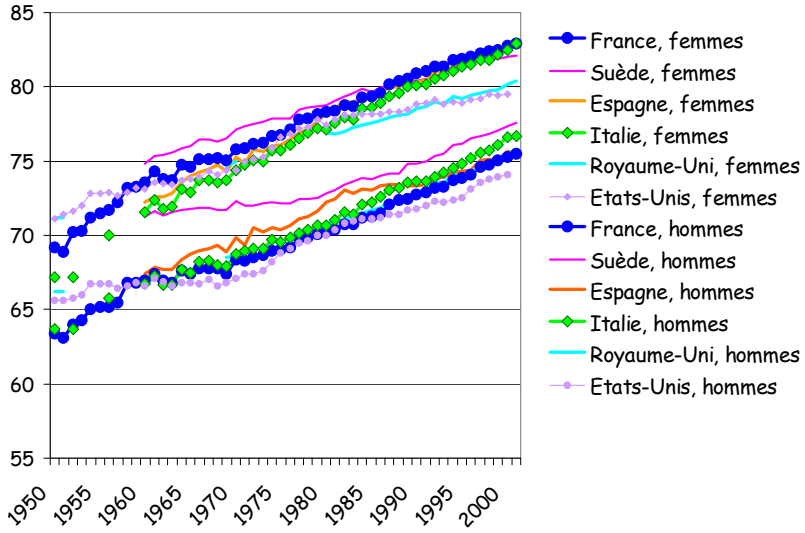


Fig. 4. Life expectancy trend in a selection of countries, 1950-2005. Source: Eurostat.

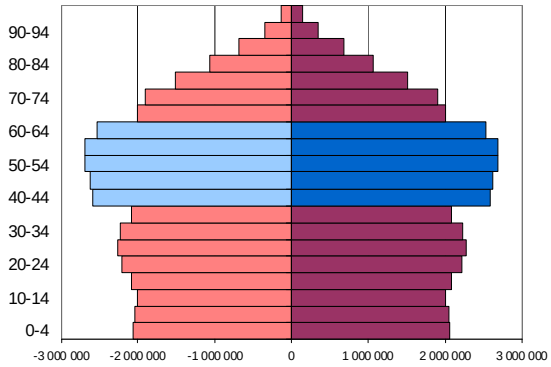


Fig. 5. Ageing by repercussion of previous high variations in fertility: example of a baby boom which at first decreased the average age of the population but then forty years later increased it.

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 slightly reduces the rate of increase of life expectancy and brings male and female life expectancies a little closer together; 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 decades[1], 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 as against 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 proves that better care of vulnerable elderly people leads to large margins of improvement in chances of survival, without high medical costs.

The basic phenomenon that may 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*. Nowhere does this gap decrease over the next three decades. The ageing of Europe as a whole is clearly an inexorable process, and 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 by 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.

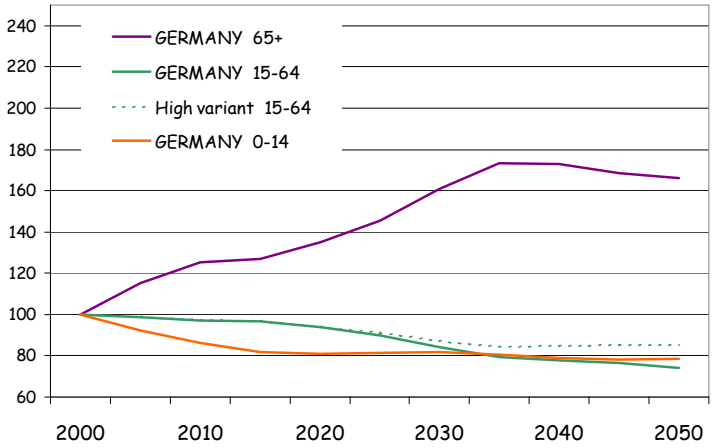


Fig. 6. Projected ageing of the population in GERMANY

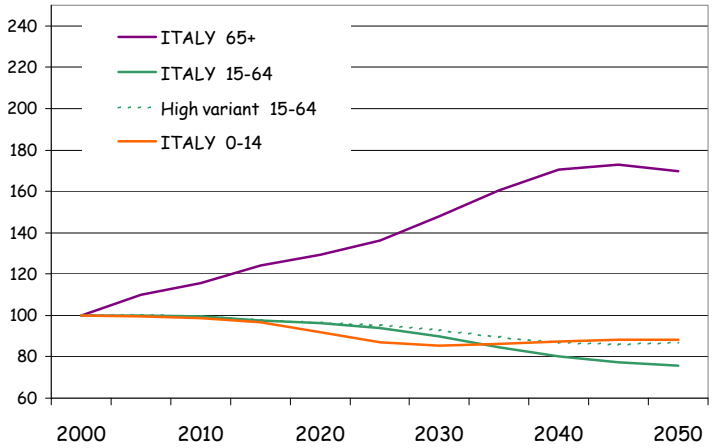


Fig. 7. Projected ageing of the population in ITALY

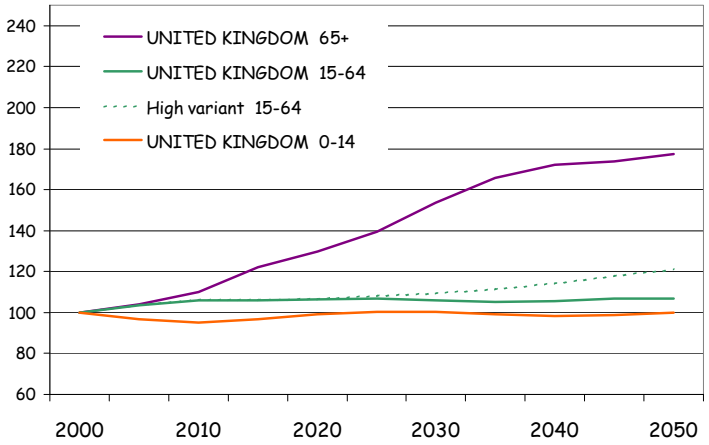


Fig. 8. Projected ageing of the population in the UNITED KINGDOM

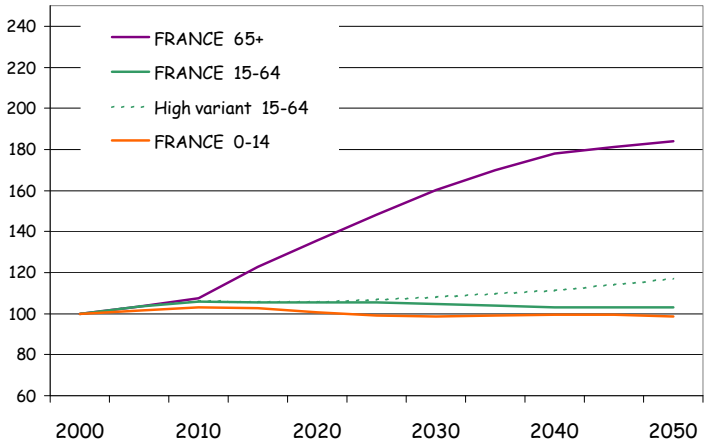


Fig. 9. Projected ageing of the population in FRANCE. 2006 revision of the United Nations projections

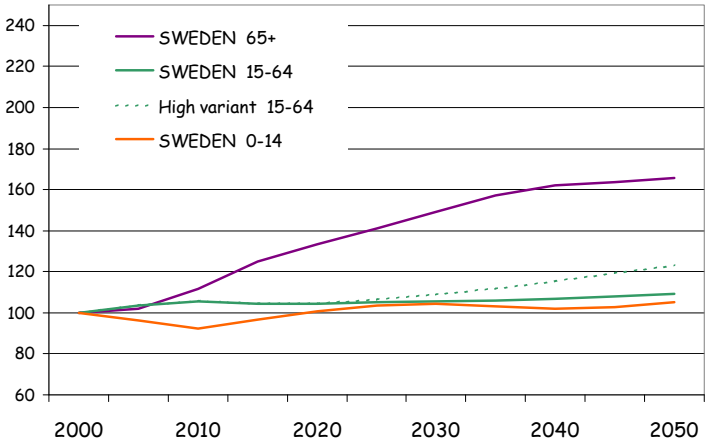


Fig. 10. Projected ageing of the population in SWEDEN

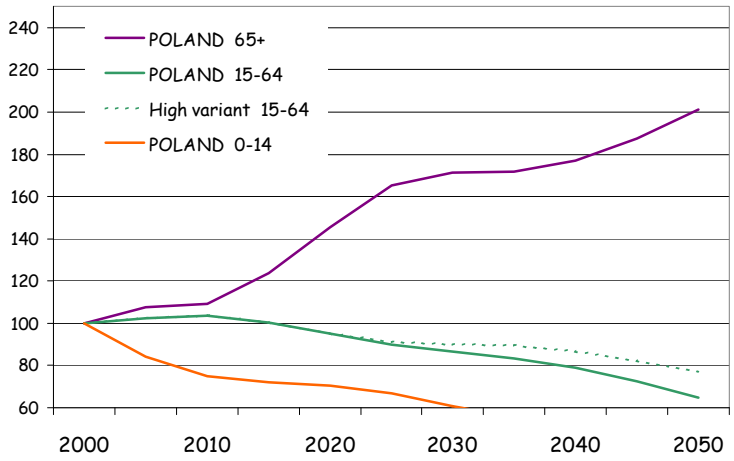


Fig. 11. Projected ageing of the population in POLAND

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 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 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 child 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 not planned, 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 insufficient for so long 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 preserved 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.

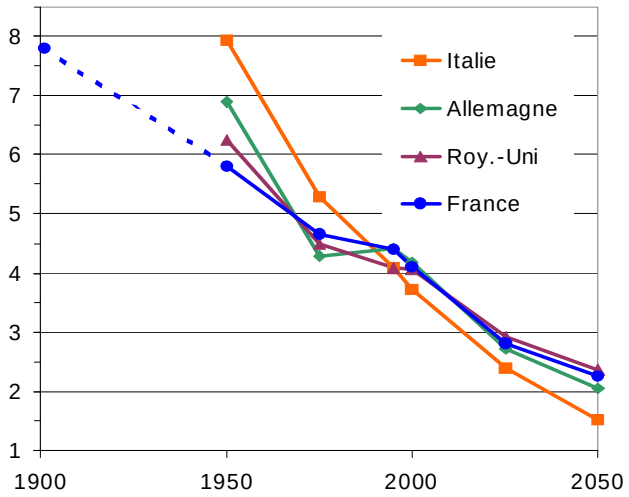


Fig. 12. How many 15-64 year olds per person aged 65 or over?
Trend of the support ratio according to the United Nations' medium scenario.

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 path 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 *durable 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.

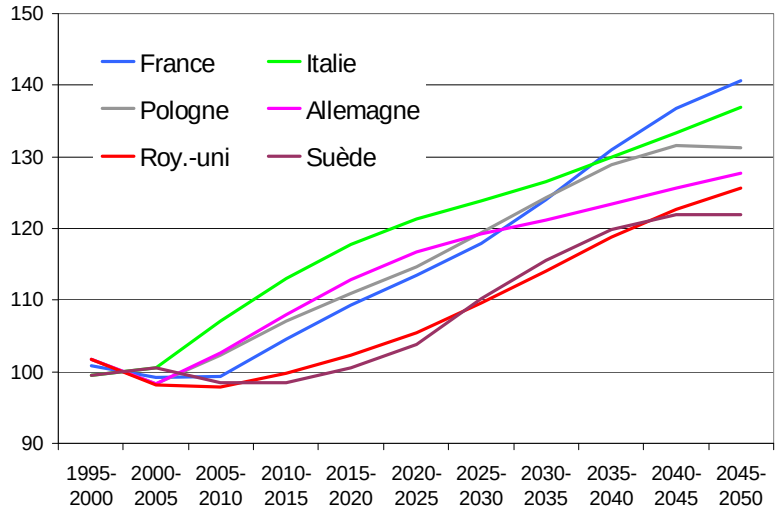


Fig. 13. Relative increase in number of deaths between 2000 and 2050 in Europe (for 100 deaths in 2000). United Nations projections, medium scenario

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 numbers.* 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 ensues 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 so 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 1.1.2008 (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 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?

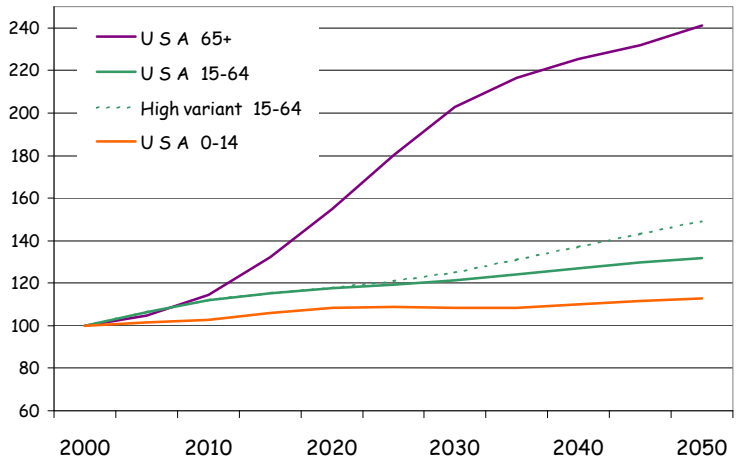


Fig. 14. Projected ageing of the population in the UNITED STATES

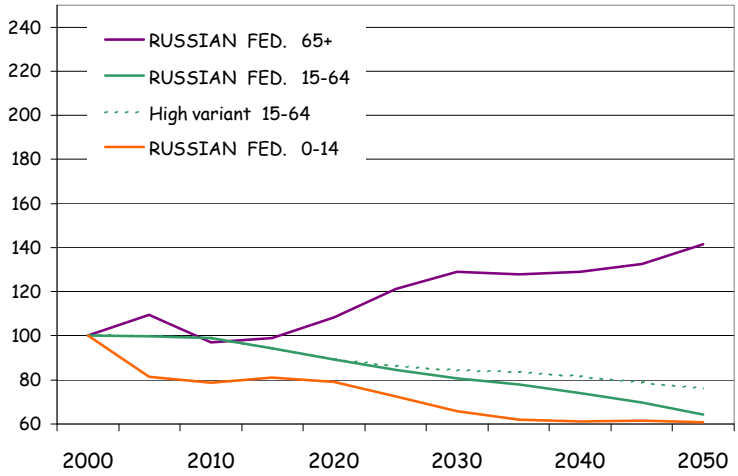


Fig. 15. Projected ageing of the population in RUSSIA

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 very 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 high 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.

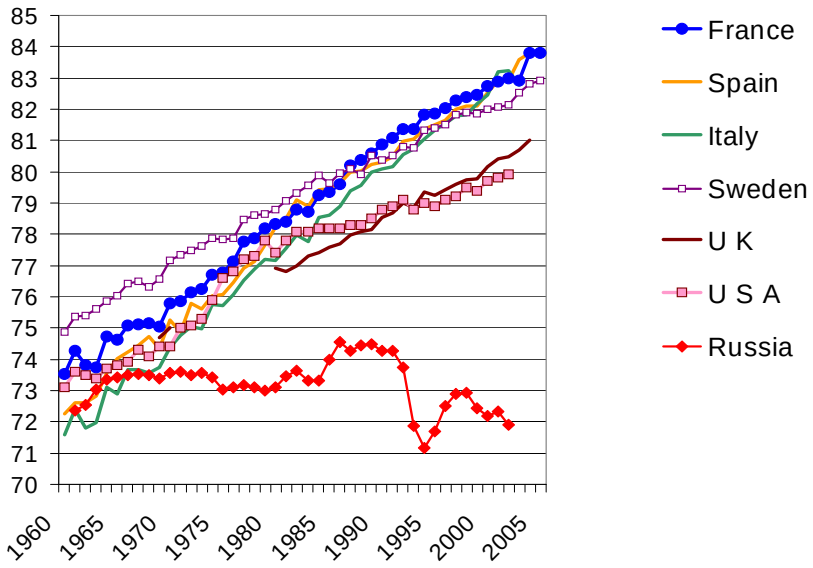


Fig. 16. Comparison of life expectancy of WOMEN, over the 1950-2005 period, in a selection of countries: France, Hungary, Russia, United States (source: Eurostat and European Demographic Observatory)

Russia's crisis, by comparison, is a 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/family, 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 of[2]. 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 excessive rigidity of family structures. The 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 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.

[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 "vieillissement" in the Latin languages.

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 where 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. As shown in the preceding pages, 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 considered 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, the inflexibility of excessively rigid family structures now constitutes 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 population 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, in France, foreign women have 1.5 children more than French women, but represent only 8% of the mothers of the year, which raises the fertility rate of the country by just 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, as shown above, 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? lf 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.

Example 1: no grey vote which would increase as society ages

The studies by Goerres (Figs. 17 and 18, and box) refute the existence of a high increase in the senior vote in the last fifty years, apparently attributable to the general ageing of the population. The age limit is mobile by definition; it is less constant in its effects than social divisions, income differences or regional differences.

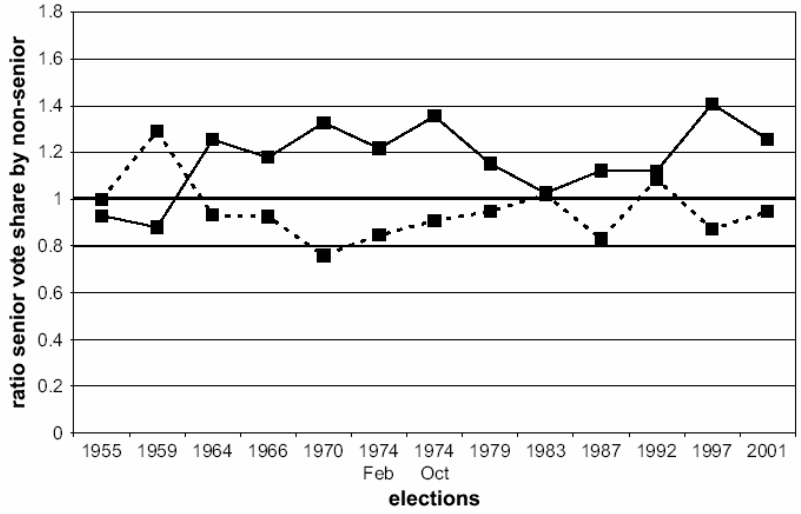


Fig. 17. UK elections: ratio of voters aged 60 and over / under 60, for Conservatives (solid line) and Labour (dotted line), since 1955. From A. Goerres, 2008.

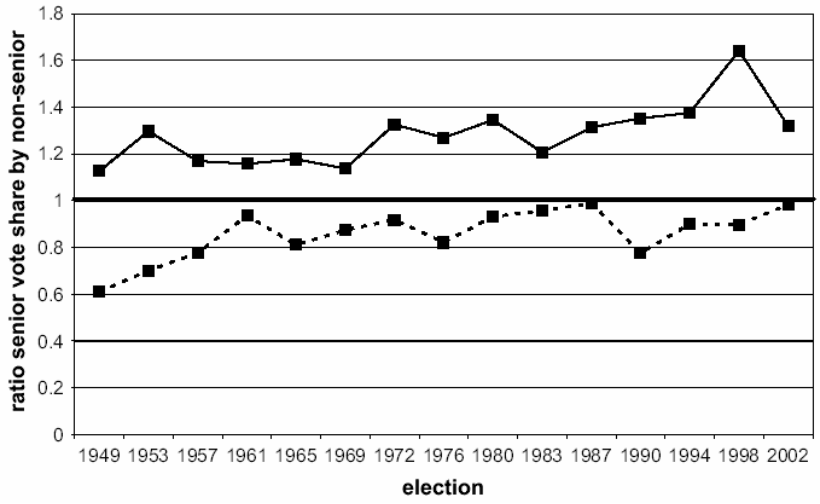


Fig. 18. Elections in the Federal Republic of Germany: ratio of voters aged 60 and over / under 60, for the CDU-CSU (solid line) and SPD (dotted line) since 1949.
From A. Goerres, 2008.

Extracts from the Achim Goerres site (2008)

a) The "Grey Vote": how do older voters differ from younger voters? (West Germany and Britain)

There is NO growing conservatism expressed in party choice associated with higher age.

As voters age in West Germany, they show an increasing tendency to favour the established parties over smaller ones.

Older voters belong to a different birth cohort that was influenced by different political circumstances at the time of early elections. For example, those who first went to the polls in the era of Brandt and Schmidt are much more pro-SPD than earlier generations because they were caught by the growing popularity of the SPD at the time of their first elections.

Differences between generations become less, because voting decision increasingly influenced by evaluation of the leading candidate and not early party identification. Soon, older and younger voters will become indistinguishable from each other.

b) Can we reform the Welfare state in times of 'grey' majorities?

YES. No evidence for electoral antagonism between younger and older voters.

Older voters' voting decision not primarily influenced by life cycle interests; rather other interests more important. And also intergenerational solidarity has an impact.

If there were referenda on life cycle issues (e.g. pension reforms), there would be some differences in voting behaviour going back to age.

Example 2: retirement homes and long hospital stays in 30 years: a very light demand if the age of entry is pushed forward a few years

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. [3].

The percentage of people aged 75 and over living in institutions (*residential care*) around the year 2000 (Eurostat data) varies considerably between one country and another: 2% in Poland, 4% in Spain or Italy, compared to about 12% in France, the Netherlands, Belgium, Ireland and Luxembourg (Fig. 19). Two factors – mutually related – contribute to lowering the rate: cultural models which favour cohabitation of generations (southern Europe) and the insufficient supply of places in institutions.

[3] Monnier 2007. French version: http://www.ined.fr/fichier/t_publication/1227/publi_pdf2_fr_431.pdf. English version: http://www.ined.fr/fichier/t_publication/1227/publi_pdf2_en_pesa431.pdf.

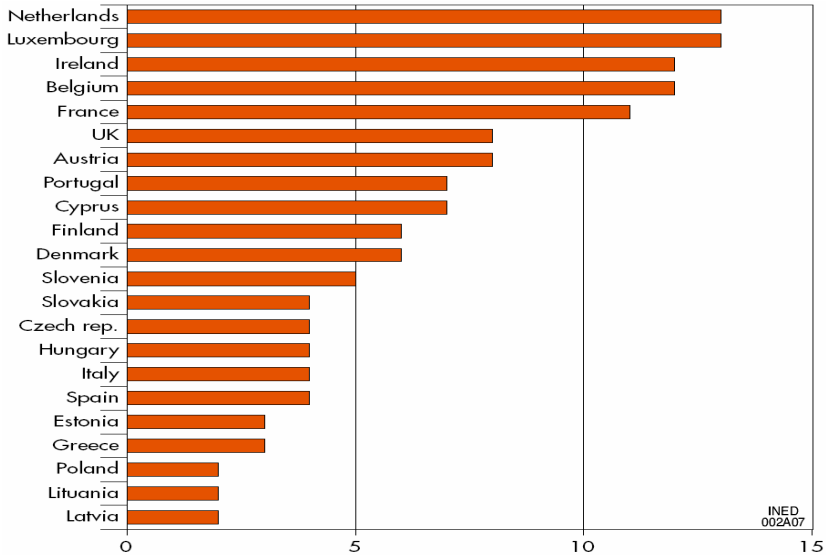


Fig. 19. Proportion of persons aged 75 and over living in institutions around the year 2000 (Eurostat)

If the current institutionalisation rate is to be maintained up until 2030, the number of places would have to be increased by 70% to mechanically compensate for the ageing of the population. But two unknowns remain: to what extent will the increase in disability-free life expectancy exceed that of total life expectancy? And, by the same token, for how many extra years will elderly people be able to stay at home?

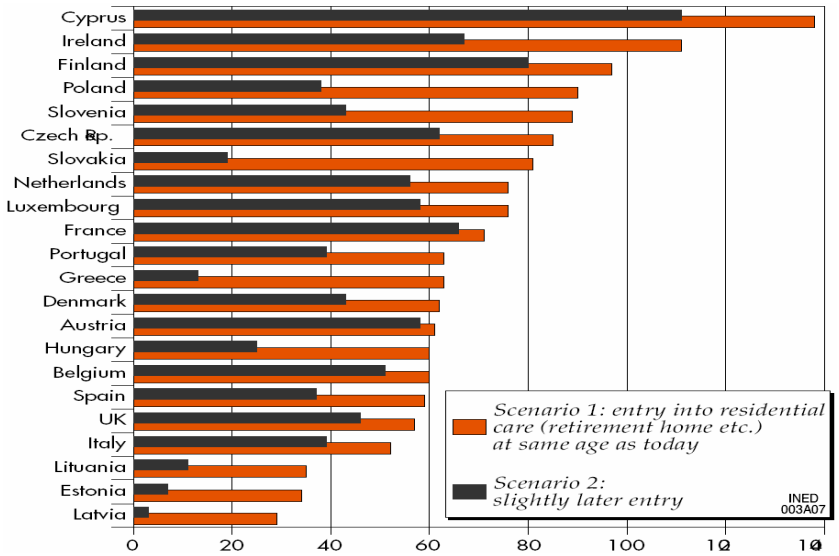


Fig. 20. Foreseeable increase (in %) of the number of people living in institutions in 2030, according to two scenarios: entry at the same age as today, and entry five years later.

These two factors together may contribute to delaying the entry into institutions by a few years. Assuming that entry is delayed by 5 years – i.e. around 80 years of age instead of 75 years – the demand for places in institutions would fall by 25% in the Union of 15 countries, and even more in the new Member States (Fig. 20). This assumption is realistic; it matches the wishes of elderly people, and already constitutes a priority in the health policies of many countries. It may even be considered that the delay of 5 years is a minimum assumption.

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, alongside 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 the 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.

The demographic future of Europe

By Hervé Le Bras (EHESS, INED)

The five questions raised cover and even extend beyond the whole field of the demographics of Europe, and there is therefore a vast array of literature on the subject. The aim of this summary is not to list or dissect it, or to attempt a typology, but to use its main results as a basis for drawing out a few salient points by linking it firmly with the existing data in order to produce evidence rather than opinions.

1st question:

Is the demographic situation in Europe as alarming as expected? Is it too late to act?

Answer:

First of all, this question seems to point towards a fatalistic response, but let us look at the matter more closely. In order to obtain a rough idea of the problem, we first need to consider the most immediate piece of data, the total population. The four subsequent questions, which are concerned with fertility, immigration, demographic ageing and activity, will look in more detail at each of these areas that are part of the demographic situation. Let us therefore start with the total population.

The total population of the Union has experienced vigorous growth since the Treaty of Rome in 1954. From 170 million inhabitants at the start, it has gradually increased to nearly 500 million, tripling in size. In figure 1-1 this development is compared with that of the American population during the same period (1955 à 2007). While the adjusted growth rate for this period was 1.1% per year in the United States, it was 2.1% for the population of the European Union. These two growth rates were not calculated by comparing the populations in 1954 and 2007 in the United States and the European Union but by adjusting annual growth using an exponential curve (constant annual growth) in order to show that it is not a trick of arithmetic but regular progression. The population of the Union grows in steps, with periods of sharp growth caused by the integration of new members, followed by latent periods due to the low growth rates of each of its members. The growth of the American population is much more regular, as it is based on natural movement and immigration, which are in themselves quite regular.

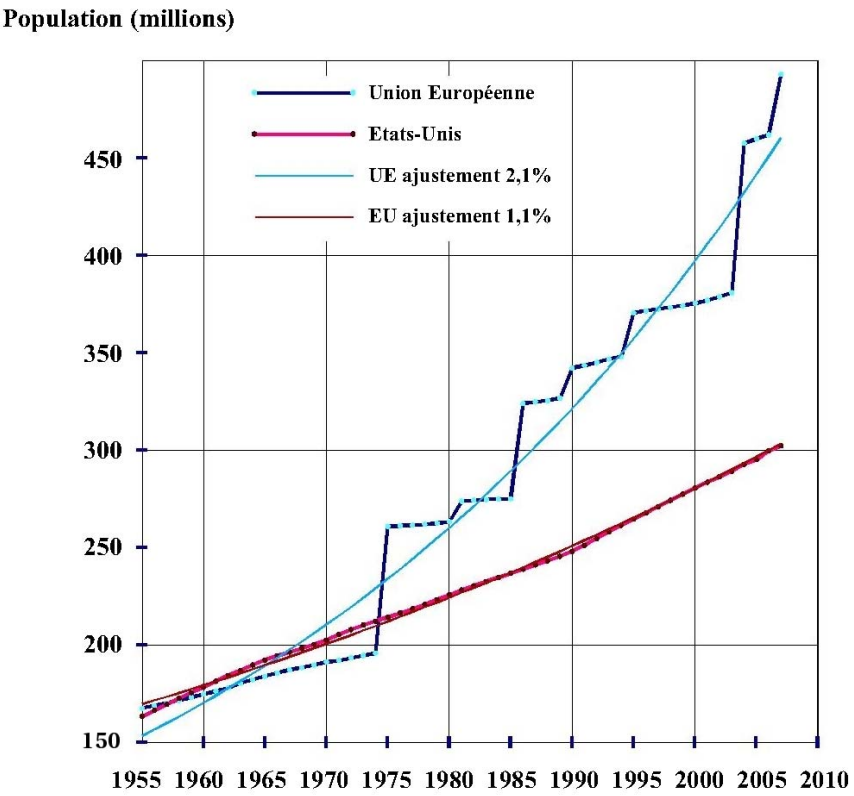


Figure 1-1

Comparison of the population growth of the European Union and the United States since 1955 (the adjustment by exponential growth is indicated by the fine line)

Of course the growth in the population of the Union is essentially caused by the entry of new members, but we should note the regularity with which this occurs, each time bringing the growth rate back up to 2.1%, as if a hidden mechanism were driving it. If the entry of new members had ceased to play a part, we can see in figure 1-2 that, whenever the addition of new members stopped, growth would have fallen to a low level. For example, if the Union had closed off after the United Kingdom, Denmark and Ireland joined in 1975, its population would now be slightly smaller than that of the United States. The immediate objection is that the territory that we are considering needs to remain constant, but what constant territory can we use? Figure 1-2 shows that there are six possibilities, which we cannot choose between (the slight rise in 1990 is due to the reunification of Germany). Population is not a natural, geographical or biological notion but a political notion, and has been since it entered the English and French languages (in the *Political discourses* of David Hume in 1752 and in *L'ami des hommes* by Mirabeau in 1754). The European Union is a political entity, so if it is interested in its population, it can only be the population that is under its authority at any given time.

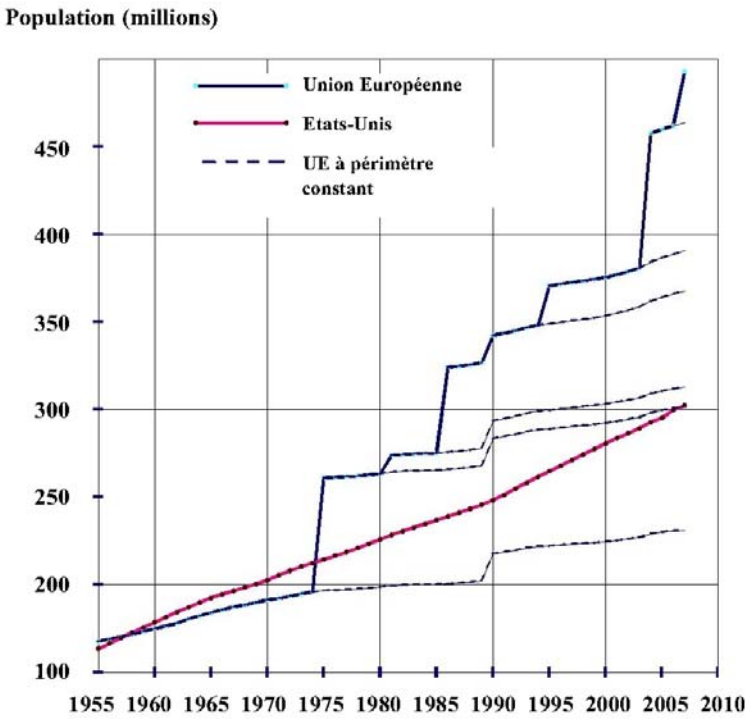


Figure 1-2

Comparison of the population growth of the European Union and the United States. The fine lines show what the population growth of the Union would have been if its borders had remained the same after each new addition.

We therefore need to consider that the population of the Union since it was founded is represented in figure 1-1 and that it has grown rapidly. Large nations and empires have always been built up in this way, as have large religions. If the Christian religion had not had Saint Paul and had remained confined to the Jewish people, it would undoubtedly no longer exist today, and nor would the Muslim religion if it had been limited to the Bedouins of the Arab peninsula and the farmers of Happy Arabia (the former name for Yemen). In the same way, if Rome had not incorporated the people of Latium and then of Italy to the South of the Po valley, to the Cisalpine and Transalpine Gauls, and finally to the whole of its vast empire, we would now only talk about the Sabines. The method of extension by political union and conversion is much more natural for political entities than extension through high fertility and migration.

What might the demographic future of Europe be? Based on the previous discussion, there are two opposing hypotheses. Either Europe closes off with its 27 members and its population reaches a ceiling at 500 million inhabitants in around 2020, subsequently slowly decreasing to 480 million in 2050 (the average United Nations hypothesis) as we see with the dotted line curve in figure 1-3. Or new members join the Union. Also in figure 1-3, we have, for example, assumed that Turkey would join the Union in 2025, but this could be one or several other Eastern European countries.

We can see in figure 1-3 that the second hypothesis is much more a continuation of the past than the sudden blockage caused by the first. Additional countries joining (North Africa?) after 2025 would be more in line with the past dynamic than stabilisation at that time. It is not our job to judge whether these new accessions will take place, as they may encounter major political obstacles, but from a strictly demographic point of view, they would bring about demographic development that would be most in line with an already long past of more than half a century.

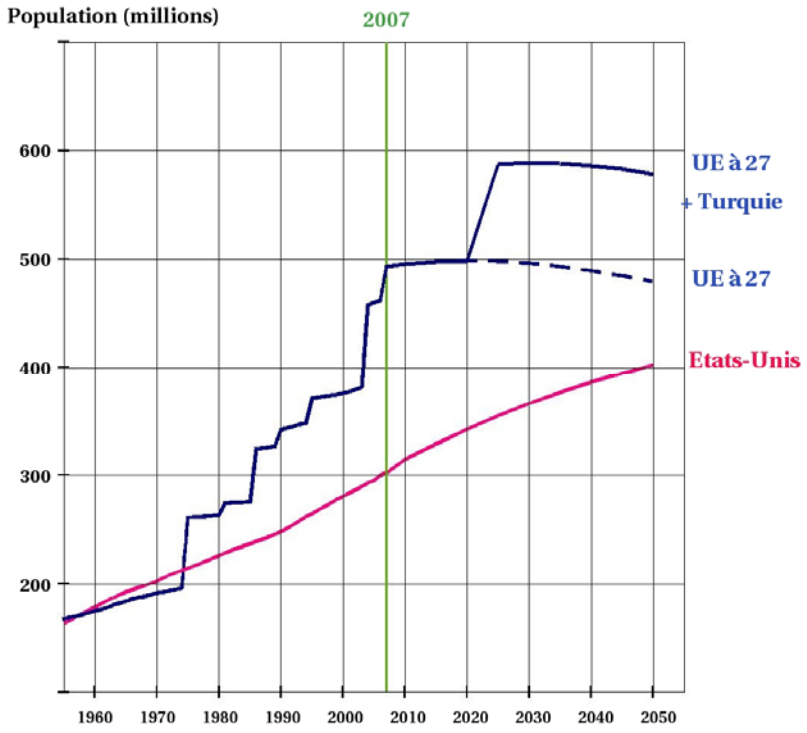


Figure 1-3

Projection of the population of the European Union from 2007 to 2050 (average United Nations hypothesis) in two cases: unchanged borders (dotted line) and accession of Turkey in 2025 (solid line)

To finish, we may wonder why the United States have not chosen the same method of growth as the Union, why they have remained within a fixed territory. There are two explanations for this: first of all the difference in population density, which is barely 30 inhabitants per km^2 on the other side of the Atlantic, while it is five times higher in the Union, with more than 150 inhabitants per km^2. Europe, and more specifically the European Union, remains a territory that is full, in which population growth raises problems in terms of overcrowding, traffic (the great valleys of the Rhone, the Rhine and the Po, the coastal routes) and finally the environment and sustainable development. The second explanation is a historical one. European countries have extended beyond their borders through colonisation, which has practically never tempted America (with the exception of the brief episodes of Cuba and the Philippines).

They have acquired or retained the ability to politically situate themselves in territories other than their nations. It is in any case remarkable that based on similar economic presuppositions, NAFTA followed a very different institutional path to the European Union, putting up a long wall while Europe was removing obstacles to mobility.

Question 2:

The average birth rate in Europe of 1.5 is very low. What are the differences behind this average? Can we learn from the differences between Member States?

Answer:

Fertility expresses one of the most complex attitudes of man and of society. It is both the tool by which families are established, which are the closest circle to the individual, and also the tool that determines the future of the population as a whole, which is therefore a very vast circle involving millions of people. Variations in fertility over time and between countries reflect this complexity. For example we can see in figure 2-1 that the underlying fertility rate increased up until 1965, dropped rapidly up until 1975, rose very slightly (the accession of Ireland, Great Britain and Denmark), then dropped very slowly. The blue-grey band indicates the variability of fertility rates each year (the average annual rate in the Union plus or minus the standard deviation). The variation in fertility within the Union has had a trend of slow decline, which is a sign of convergence, but the new members have challenged this trend, particularly Ireland, which had a very high fertility rate at the time. After 50 years of the Union, the standard deviation, which was 0.3 children in 1955 for an average fertility of 2.5 children per woman, was 0.25 in 2005 for an average fertility of 1.5, which means that the relative deviation has increased (differences in fertility as a percentage compared to the average).

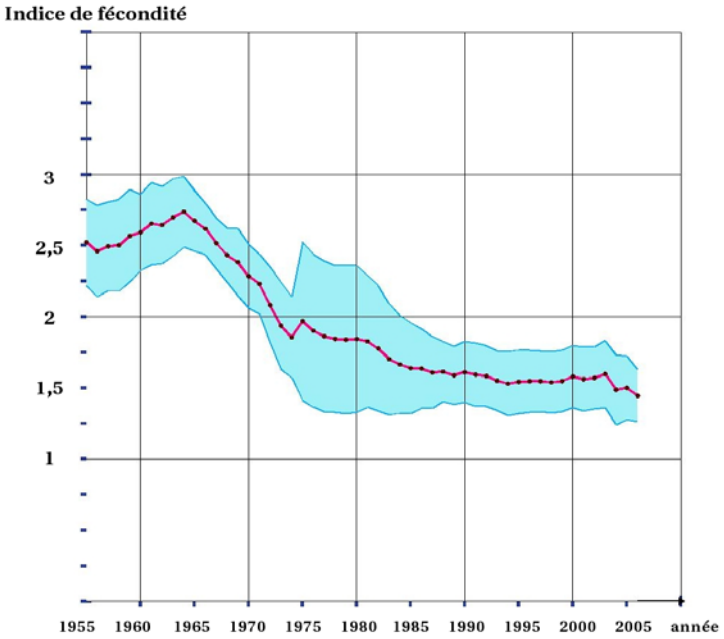


Figure 2-1 Development of fertility in the European Union (red line) and variation interval between the fertility of countries (+/- s)

Behind the fairly regular decline in average fertility since 1965 are significant discrepancies in development. This can be seen in figure 2-2, in which we have shown the development of fertility rates in France, Spain and Poland from 1950 to 2005. The drop in fertility in France took place between 1965 and 1975, in Spain between 1975 and 1994, and in Poland between 1985 and 2003. In all three cases there are two causes at work: access to modern methods of contraception, the pill and the intrauterine device, and a delay in the age of first-time motherhood. The former cause resulted in a decrease in the completed fertility rate, which is the average number of children born during a woman's life, while the latter cause does not change the completed fertility rate, but, by delaying births, decreases the birth rate (and the underlying rate). In France, the former cause had an effect from 1965 to 1975. The latter cause took over in 1974 and resulted in a drop of 20% in the underlying rate in terms of completed fertility rate while the age of first-time mothers increased.

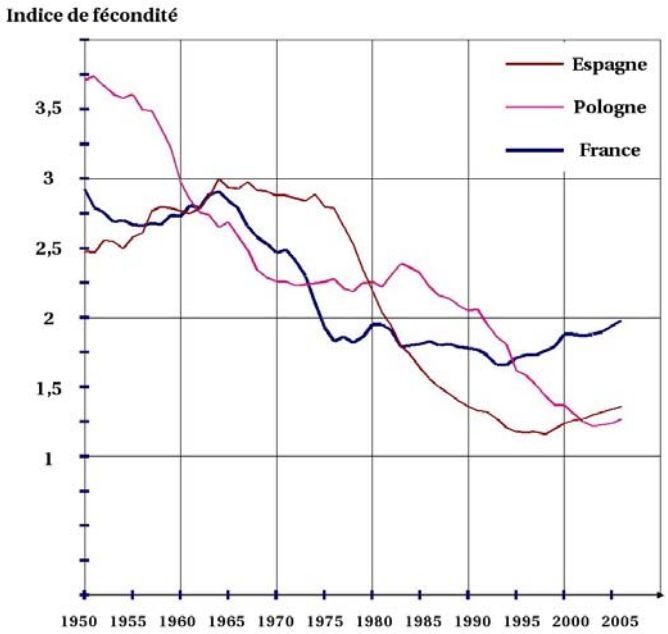
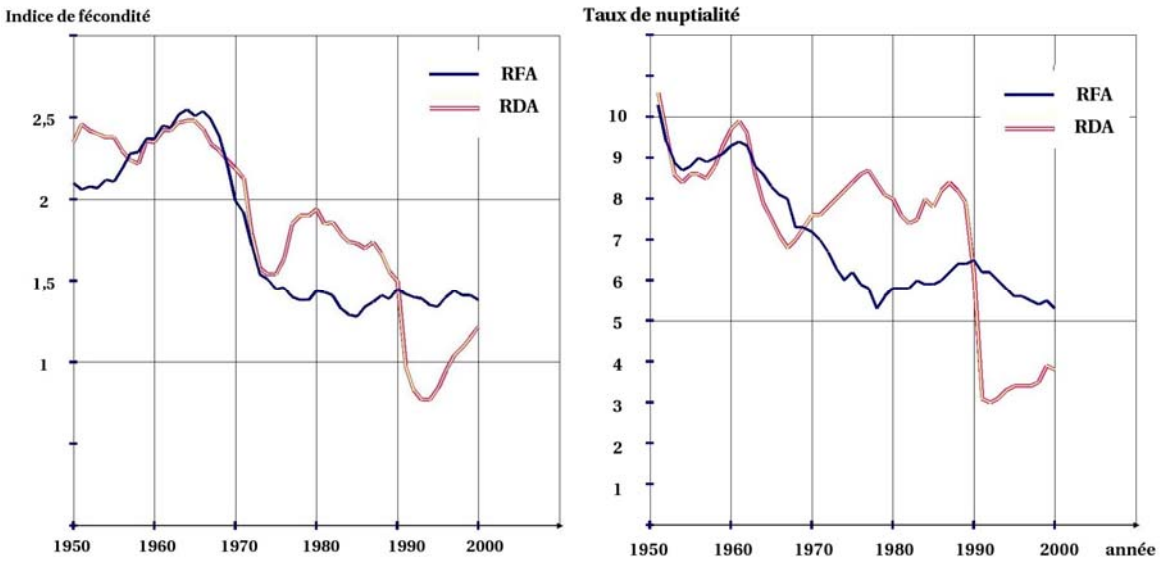


Figure 2-2

Development of underlying fertility rates in Spain, Poland and France

The decrease in this delay has automatically resulted in a rise in the underlying completed fertility rate in recent years. In Spain the two causes operated at the same time after the death of Franco. In Poland, birth control relied on abortion under the communist regime, but after perestroika, morals evolved towards later marriage and therefore later first-time motherhood, which caused the very significant decline that we can see in figure 2-2.

The delay in first-time motherhood is an important key to understanding the development of fertility in European countries. The reunification of Germany is a prime experience for grasping this mechanism. In figure 2-3 we have compared the development of fertility in East and West Germany from 1950 to 2000. Despite the difference in these two political regimes, the rate remains the same with unbelievably accuracy from 1957 to 1974. Measures to encourage birth (three years maternity leave on full pay) then suddenly separated the two curves, with the GDR rate increasing by 0.5 children per woman.



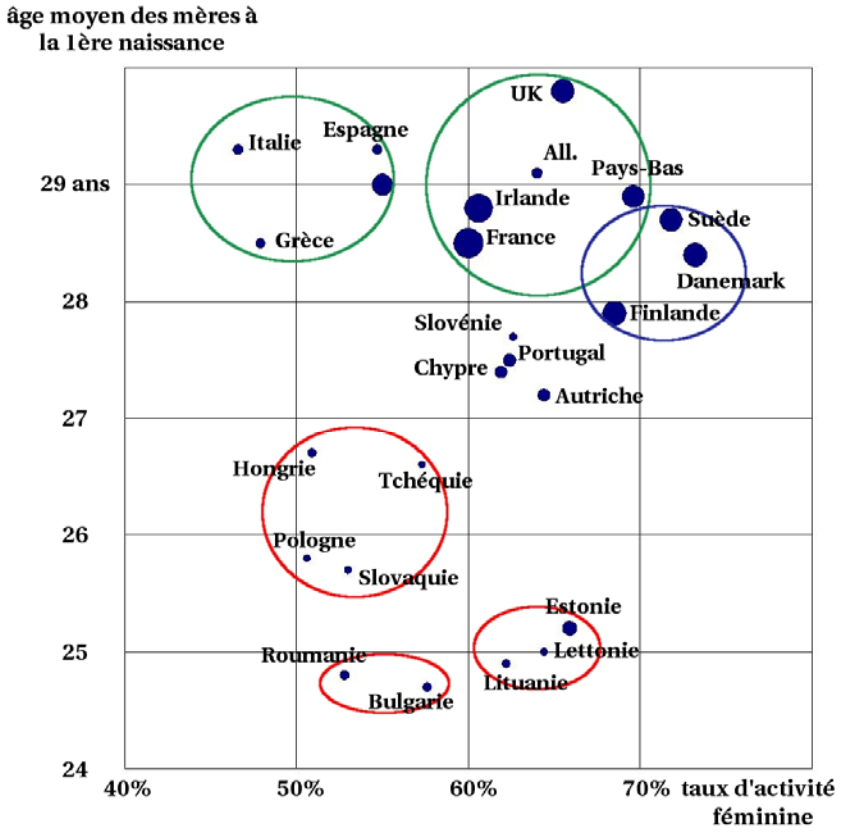
Figures 2-3 and 2-4

Development of fertility and marriage rates in East and West Germany (1950-2000)

The effect of these measures, which was partly a windfall, gradually faded, but then the Berlin wall fell. The drop in fertility was then immediate in the East, where the underlying rate reached extraordinarily low levels of around 0.8 children per woman. This decline is easily explained if we look at the development in the marriage rate (figure 2-4), which is practically identical. Reunification irresistibly encouraged inhabitants of the East to adopt the ways of life of the West, including late marriage. The drop in the number of marriages was therefore extremely sharp in the East, as couples that would have formed if the communist regime had endured, then waited to commit like their fellow citizens in the West. Morals yielded to harsh economic facts: under the communist regime, marriage gave access to housing, while in the market economy people had to set up home themselves and therefore needed to have a minimum amount of capital and security for the future, thus having to wait until their thirties. The delay in marrying age and even more so the delay in the age of first-time motherhood was the principal factor in the low birth rate that spread across Europe as political regimes modernised and the market economy expanded, but it was not the only cause.

This reasoning does not explain the discrepancy that remained between France and Spain and more generally between numerous countries once the delay in the age of first-time motherhood stabilised. Clearly different fertility situations coexist in Europe. The simplest explanation is once again economic. Fertility remains at a lower level when access to employment for women is difficult. Indeed, when faced with the dual objectives of building a family and getting a job, women divide up their efforts. If it is harder to find a job, the resources and energy required to build a family will be redirected towards finding a job. Births outside of marriage will therefore be avoided as they would be a handicap to getting a job, not because the employer takes it into account but because there is pressure from relations for the mother to take great care of the child, which reduces the amount of time and availability she has to look for a job.

The conflict between family and professional life that has just been described in terms of the economy and the family in line with the thinking of Gary Becker, has been demonstrated empirically: fertility is lower when the rate of employment of women is lower. Paradoxically, the attempt to keep women at home to strengthen the family results in a decrease in the size of the family. These are therefore two causes of low fertility: a delay in the age of first-time motherhood and a low rate of employment among women. We have figures for these causes calculated in 2005 in 25 of the 27 countries in the Union (only Malta and Belgium do not calculate the average age of first-time mothers). These are indicated in table 2-1 in the Annex. The correlations between the fertility rate and these two quantities, average age of first-time mothers and the rate of employment of women are high (respectively, r=0.57 and r=0.53). Moreover, these two quantities are practically distributed independently (r=0.13). If we do a linear regression of the fertility rate on both quantities, the square of the multiple correlation



is 0.576, which is particularly high (corresponding to an r of 0.76).

Figure 2-5:

Position of the European Union countries according to their employment rate among women, the average age of first-time mothers (the size of the points varies according to the level of fertility)

A graph definitely speaks better than the figures. We therefore laid out the 25 countries of the Union in figure 2-5 according to the rate of employment among women (on the horizontal axis) and the average age of first-time mothers. We also gave the point representing the country a radius corresponding to the level of fertility.

The result is clear in two respects: firstly, the higher fertility levels are grouped in the top right hand quarter of the scatter of points, therefore for the countries that have both a high age of first-time mothers and a high rate of female employment, two elements that should, on the contrary in principle reduce fertility.

The second notable aspect of the scatter is that we can distinguish groups of countries that belong to the same region of Europe. We have circled the Eastern countries, in which we can distinguish the Baltic countries, the latest members to join and the four countries of Central Europe, and the Western countries which include the Scandinavian countries, the North-Western countries and the Southern countries. This representation of the differences in fertility incites optimism as we could think that the Eastern countries are going to return to a higher birth rate when the age of first-time motherhood has reached the same level as in the West and will stabilise. Also, when women become massively present in the workplace, the Southern countries will return to a higher fertility rate, as starting work will no longer mobilise as many resources to the detriment of motherhood. In the long term, all the countries should therefore be in the vicinity of the countries of Western and Northern Europe with a completed fertility rate of between 1.7 and 2 children per woman.

Unfortunately there are two significant exceptions in figure 2-5 that mean that this outline must be tempered. We note that France has a markedly higher fertility rate than its position indicates, and that Germany has a much lower rate. These two countries alone account for 40% of the residual variance. We therefore need to ask ourselves about these two exceptions. For France, two explanations are usually given. Some think that France has the benefit of a hundred years of pro-birth policy, which has ended up moulding people's mindsets by imposing the model of the family with two children. Others think that the higher fertility rate in France should be linked to the pessimism expressed by the French people. Regularly in Eurobarometer surveys they are the ones that express the least confidence in the future. Family is therefore a refuge, as it was for the Polish after the declaration of a state of siege by Jaruleszwski or like in the Gaza Strip, where despite the lower infant mortality and higher level of education of women in the Arab world, fertility remains the highest. The explanations for the fertile behaviour of the Germans are psychological: tradition and psychology manuals on childhood stress the primordial link between the child and its mother. Women are therefore afraid to commit. In the most recent cohorts, they have the highest proportion of childless women in Europe. There is, however, a distinct divide between families with and without children, with the proportion of women without children increasing almost solely at the expense of the proportion of women with only one child, as if having the first child were a difficult threshold to cross.

While these explanations have a degree of relevance, we need to abandon the idea of seeing fertility take off again in Europe. As Jeanne Fagnani showed by comparing the fertility of France and Germany, these two countries have adopted opposing ideologies of childhood. The Germans mainly incorporate it into the family sphere, while the French are rapidly making it part of the social sphere (with crèches and nurseries). This opposition between the role of the family and of the State is taking over from a more longstanding opposition between the role of the family and that of the community. Numerous works by historians and anthropologists (Laslett, Goody, McFarlane, Burguière and Augustins among others) have demonstrated that in the British Isles and Scandinavia young people left their homes very early to become servants (‘*life-cycle servants’*) before taking over a farm.

Conversely, in the South, young people left home very late and sometimes not at all, with the son succeeding the father on his death without having left the farm. There are still many traces of this opposition between the two life cycles. For example, children currently leave home significantly later in Southern Europe than in the North West. In France, the large South-Western region to the South of the Loire and to the West of the Rhone is significantly less fertile than the other regions. It is in the South-West that the stem family has best survived (this is measured by the higher proportion of complex households and the higher proportion of elderly people living with their offspring). France and Germany were halfway between the Southern model and the North-Western model. France swung towards the latter with its pro-birth policy, and Germany towards the former with its emphasis on the role of the mother, which reinforced the spectre of the Nazi family policy.

Therefore, what appeared to be two exceptions in figure 2-5 could in fact betray a very general opposition. There are two models of fertility in Europe, one based on the central role of the family, and the other on that of the community and eventually of the State. Low levels of employment among women, family benefits, parental leave, crèches and nursery schools are not causes but consequences of these two models. It will therefore be difficult to achieve changes in fertility by acting on these consequences without weighing up their underlying cause, but such deep-rooted mentalities cannot be changed rapidly. France took a hundred years to benefit from its pro-birth legislation. Other countries in the South and East that would like to be inspired by this would have to change their attitude towards childhood. This would not take one hundred years, we might hope, but perhaps several decades, during which the short-lived results of windfall effects (the communists regimes provided several examples of this before the Berlin wall fell) could give the temporary impression of success.

Question 3:

According to many demographers, immigration appears to be a good solution to the demographic decline in the EU. Why is this so difficult to translate into our policies?

Answer:

It is difficult to say that immigration is an answer to Europe's problems if we do not specify the problems and the type of immigration. In fact we are firstly going to show that depending on the type of objective pursued, the volume of immigration can vary a great deal. It is also the ambiguous status of this migration between work and population that is behind the often negative reactions among national public opinion, and subsequently, of certain governments.

1/Three objectives of immigration. We can ask immigration to respond to three different requirements:

-to prevent the total population from declining

-to prevent the active population from declining

-to prevent the burden of the active population from increasing.

In addition, each of these three objectives can be targeted in the Union as a whole or in each country at the same time. There are therefore six possible responses. We have calculated the total volume of immigration required to achieve each of these six objectives between 2005 and 2050.

The results are shown in table 3-1 for each country, with their total in the Union and finally for the Union as a whole[1].

Pays	population	emploi	charge des actifs
France	0	142	63840
Allemagne	6735	14241	75180
Autriche	0	841	11169
Belgique	0	687	9135
Bulgarie	2538	3152	7305
Danemark	0	331	6641
Espagne	0	5781	67614
Estonie	172	278	902
Finlande	0	371	7098
Grèce	262	1555	11068
Hongrie	1308	2198	11620
Irlande	0	0	10743
Italie	3219	9453	53198
Lettonie	447	634	1944
Lituanie	666	845	3212
Luxembourg	0	0	323
Malte	0	33	1096
Pays-Bas	0	1174	28295
Pologne	7030	11175	80941
Portugal	488	1712	12448
Royaume-Uni	0	0	53621
Roumanie	5092	6922	25708
Rép.Tchéque	1121	2499	22564
Slovaquie	630	1268	14111
Slovénie	253	516	3551
Suède	0	0	7596
Chypre	0	0	1632
Total	29961	65808	592553
En bloc	10242	60206	560911

Table 3-1:

Volume of immigration necessary (in thousands) to achieve each of the six possible objectives (3 for each country, 3 for the whole Union: last 'as a whole')

[1]The projection method is described in the Annex along with the age profile of the immigrants.

The differences in volume according to the hypothesis used are absolutely huge. If the Union only wants the population of its 27 members not to decline between now and 2050 (therefore not to go back below its maximum of 490 million), only 10 million immigrants are necessary, which is less than 250 000 per year, which is very modest ('as a whole' figure in the first column). This presumes, however, that the countries that would have a surplus, such as France, Sweden and England, would direct them towards the countries in surplus, which is improbable. If, in the second case, we are aiming for no country to have a decrease in population before 2050 (first column up to 'total'), the volume of immigration required is tripled to a cumulative balance of 30 million people. This is considerable but feasible if we consider that according to the OECD SOPEMI annual report, around 25 million people born outside the Union currently live there (and 10 million people from the Union live in a country of the Union other than the one in which they were born). We can see that 13 countries will not need additional immigration (the United Nations projections assume a quite modest level of immigration that is not accounted for here).

The countries that need the most immigrants (19.5 million), especially given their current population, are the former Eastern countries, for which we have already indicated that the predictions underestimated the increase in fertility once the timescale is adjusted to that of the Western countries. Aside from Germany, these necessary demographic flows do not correspond to the current reality of population movement in Europe.

The second form of immigration concerns employment. Instead of compensating for any decline in population either in one country or in the Union as a whole, we have calculated the number of immigrants required to maintain the active population alone at least at the level that it has already reached over periods of 5 years. In this case, 60 million immigrants would be needed for the Union as a whole and 66 million for employment to be maintained in each country. This is much higher than the previous demographic objective. The explanation is the fact that not all immigrants are workers. Some are children or elderly people, or people of working age who are not working (women for example). In the projection, we adopted the hypothesis of identical employment rates for immigrants and residents in 2005, which corresponds to reality in the case of male but not female immigrants (in general 20 to 30% less active). The results therefore provide a minimum. We can see that unlike for the first objective, there is no longer a large difference between the total for the countries and the Union as a whole. This is because the majority of countries will be in deficit. The difference of 6 million between the two hypotheses therefore represents internal migration within the Union, which is a reasonable level.

The third objective gives an entirely different picture. In order to maintain the ratio between the population aged over 65 and the population aged between 15 and 65, which represents the 'burden on the active population', 560 million immigrants would need to be imported if the Union is considered as a whole, and 592.5 million if each country needs to prevent its burden from increasing. These migrant figures are greater than the current and predicted population of the Union. France, Spain, Italy, the United Kingdom and Germany would have to receive an annual average of between 1.2 and 1.7 million new immigrants. This is absolutely unrealistic. A United Nations study published in 2001 arrived at similar results by setting the same objective, but it had not considered the first two hypotheses, whose results are more reasonable. Conversely we see that the effect of immigration depends on its volume. Quite a low flow of migration (over and above that predicted by the United Nations) will prevent population decline.

If the aim is employment, the volume will have to be much greater, but will remain at the level of the flows observed over recent years. Finally, we need to entirely reject the idea that immigration could solve the problem of the ageing of the population.

2/ The unpopularity of immigration in the Union. In addition to the numerical limitations that have just been explored, there are the psychological limits. Public opinion is resistant to the arrival of new migrants. In surveys people justify their position by the fear of competition in the labour market, the existence of insurmountable cultural differences and the fear of terrorism. The objective data radically contradicts these impressions. Immigrants and longstanding residents occupy sectors of the labour market that rarely overlap, the vast majority of immigrants quickly adapt to local customs and a tiny minority may be susceptible to the lure of Al Quaeda. Moreover, we see that the more Europeans live in contact with immigrants, the more tolerant they are. An excellent survey by the CSA, discussed by Martin A. Schain, is an example of this. French people were asked whether they thought that there were 'too many Arabs' in France.

The results were categorised according to the proportion of North Africans and Turks living in the town in which the survey had been carried out. 80% of rightwing voters thought that there were too many 'Arabs', 70% of leftwing voters shared this view if they lived in a town with less than 1% North Africans, but if the percentage surpassed 10%, more than 25% gave a negative opinion. It is true that the effects of selection of the type studied by Thomas Schelling in his famous segregation model may have occurred, but the dominating impression is that the attitude of Europeans is based more on stereotypes than on realities. Why? Let us venture a hypothesis by comparing this with the situation of Canada, where immigration is at a significantly higher level than in France or Germany (250 000 permanent permits per year and 130 000 temporary ones) without causing generally negative reactions. With the 'reasonable accommodation' policy, the Canadian parties have sought to limit political exploitation of immigration, but in particular they have agreed on the objectives of immigration: population with permanent permits granted on the basis of a points system, and employment for temporary permits, on the basis of requests from firms[2]. In Europe, and particularly in the Union, the distinction has never been clearly made between the objective of population and the economic objective. The status of immigrants is uncertain in the eyes of the public, who often see cheats who have come for work and settle, but the problem is with the lack of clarity in the policies of the European States. The previous discussion on the differences in the volume of immigration according to the effect sought is evidence of this. This imprecision in migratory policies in Europe is detrimental to everyone: immigrants live in a state of insecurity and lack of recognition of their contribution to national economies, and the countries of the Union recruit fewer skilled workers than other developed countries, and therefore import less human capital.

Question 4.

We are in an ageing society. What effects could this have on European society from the point of view of mentalities? Is this situation going to create economic imbalances in health systems? What will happen to the principle of solidarity?

[2]Like with any immigration policy, the real situation is more complex, with special rights for provinces and a system of upgrading from temporary to permanent permits, but what we have written is true to the general outlines.

Answer:

The biggest fear raised by the ageing of the population concerns the rise in health costs. We will see that there is little basis for this. However, ageing will and already does have consequences for mentalities and therefore for solidarity between the generations, but equally in this case it is undoubtedly not the real cause, as we will now show.

1/ The health cost of ageing

Health expenditure has risen by 4.2% per year for more than 25 years in the countries of the Union (minus inflation). The ageing of the population is often accused of being the main cause. The situation should therefore get worse over the next forty years, as ageing will continue, fuelled by two causes: the rapid lengthening of life spans and the low birth rate, which increases the relative significance of the numbers of elderly people. If we believe the average United Nations hypothesis, the proportion of people aged over 60, which was 23.4% in the Union of 27 members in 2005, will increase to 26.7% in 2015, 29% in 2020 and reach 35% in 2050, which is a long-term increase of 50% in 45 years. However, for several reasons, the impact on health costs will be smaller than this figure would lead us to believe.

First of all, if we accept that a person aged over 60 will continue, as is the case now, to spend on average three times more on health than a person under 60, the average cost per person will increase by only 15%, using a reference cost of one unit per person aged under 60 (and therefore 3 for a person over 60), the current average cost per person is:

$$(23.4x3+76.6x1)/100 = 1.468.$$

Still on the same cost basis, in 2050 it will be:

$$(35x3+65x1)/100 = 1.7.$$

The progression will therefore be 0,232/1.7 = 15.4% over the next 45 years, which is an annual rate of 0.3%, which is 13 times less than the unit growth in health costs (4.2% - 0.25% for current demographic growth, which is 3.95%). The greater growth in the proportion of elderly people will take place over the next 10 years, as it will increase from 23.4% to 26.7%, which using the calculation that has just been done for the 2005-2050 period, is an increase in expenditure of 0.45% per year, which is still low compared to the 4.2%.

In reality, the increase in costs directly attributable to ageing will be even lower, because the above calculations are based on a hypothesis that the state of health of elderly people will remain the same despite the increase in life expectancy. Health problems recede at the same time as the age of death. Three hypotheses are currently in play internationally: the compression of morbidity risks, the expansion of morbidity risks and a dynamic equilibrium. The third case is the most likely in the light of the data available from the WHO. Schematically, the age at which people experience a deterioration in their health remains unchanged, but the age at which serious disorders appear that have lethal risks recedes at the same speed as life expectancy extends. In other words, the fraction of life in which we are seriously at risk, which causes the greatest health expenditure, remains constant. We can test these hypotheses for the European Union by comparing life expectancy in good health calculated by the WHO with overall life expectancy (the values for 2002 are listed in table 4-1).

Figure 4-1 represents the position of the 27 countries according to these two criteria. The result is not clear, but a trend is emerging towards a decrease in the period of life in bad health when life expectancy increases. The correlation is in fact -0.47 between the two values, and the slope of the best fit line is -0.1, which means that on average a year of life gained reduce the period of life in good health by a tenth of a year[3]. The hypothesis of compression or, if need be, of dynamic equilibrium must therefore be retained.

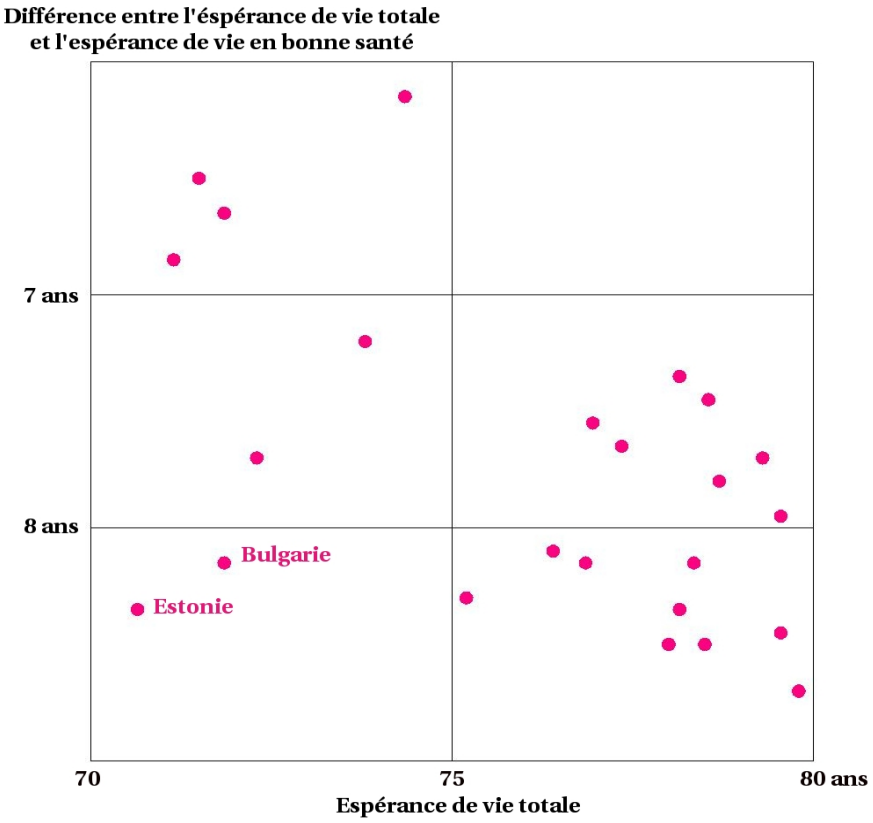


Figure 4-1:

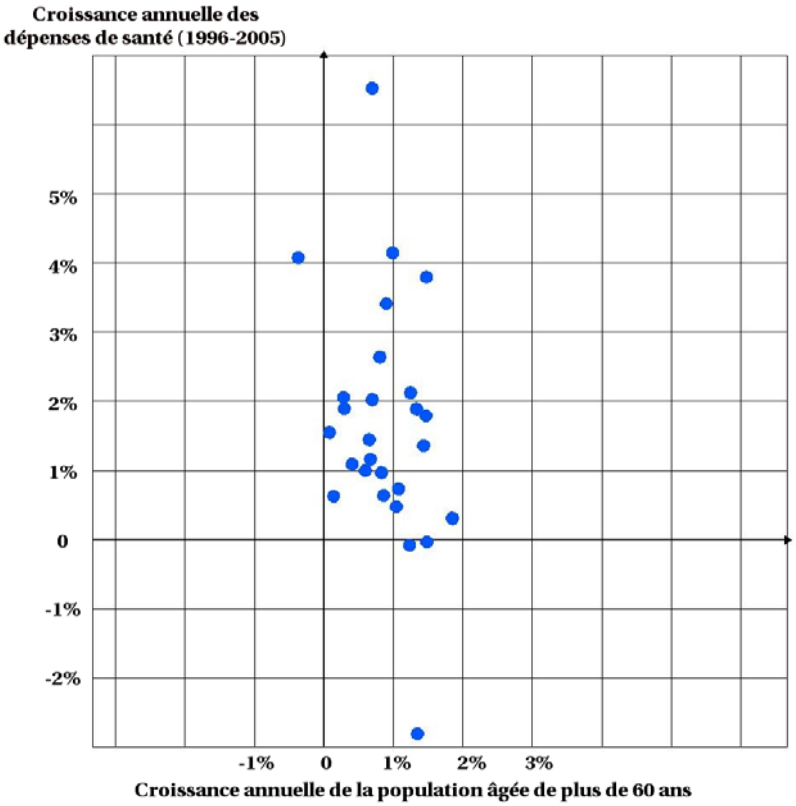
Position of the countries of the Union according to their life expectancy at birth (both sexes combined) and the period of life in poor health (difference between total life expectancy and life expectancy in good health)

If we use the dynamic equilibrium, the duration of life in poor health remains the same. This period of life can be assimilated into the terminal phase. Those who are in poor health will have an average of 7.3 years to live. We can calculate at each age how many people are in this

[3]If we exclude Estonia and Bulgaria, whose health statistics are not the most reliable, the correlation increases to -0.78 and the slope to 0.17, which is a decrease of two months in the period of life in poor health and one more year of life expectancy.

situation using the mortality tables for each country. From this we deduct the percentage of people in the total population whose health costs are in principle high.

The development of this percentage was calculated for every country in the Union from 2005 to 2050 according to the United Nations average projection. For the whole of the Union, the proportion of people at the end of their lives (according to the above definition) slightly increases from 6% to 6.6% between 2005 and 2045, which is a 10% increase, while the proportion of people over 60 increases by 50%, from 23.4 to 35%, as we saw above. Strictly speaking, if the population were stationary, the percentage of people with less than 7.3 years to live should decrease as life expectancy increases, but it is very sensitive to the shape of the age pyramid. In countries that have had relatively high fertility, the proportion of people in poor health decreases or stagnates (Nordic countries, United Kingdom, France). In those where the birth rate is low, it increases, but at a much slower rate than the proportion of elderly people (for example, it increases from 6% to 6.7% for elderly men between 2005 and 2045). The increase in health costs associated with the increase in the proportion of elderly people is even smaller when we take into account the whole of the population as above and



may be considered to be negligible (less than 0.1% per year).

Figure 4-2:

Position of the countries of the Union according to the rate of growth of their elderly population and the rate of growth of their health costs

As the subject is a little paradoxical, we are going to approach it from another angle, a statistical one: the angle of observed health costs. We now have a series giving the proportion of health expenditure in the GDP of each EU country from 1996 to 2005. We can therefore

determine the annual increase in this proportion per country and compare it with the increase in the proportion of people aged over 60 that was previously studied.

Figure 4-2 represents the position of each country for these two indicators, on the horizontal axis the annual increase in the proportion of elderly people between 1996 and 2005 and on the vertical axis, the annual increase (or in 3 cases, the decrease) in the share of health expenditure in the GDP. We can see that the latter is much more variable than ageing, especially as there is no relationship between the two (the correlation coefficient is -0.1). Where ageing is faster, we do not therefore observe a greater growth in health expenditure. The two phenomena must be considered to be independent.

So what is the reason for the high value of 4.2% of the annual rate of growth in health costs in the European Union? We first need to subtract from this 4.2%, economic growth at 2.5% and demographic growth at 0.25%. This leaves 1.45%, which is the relative annual growth in the share of health costs in the GDP that is obtained from the WHO figures[4].

In the almost unanimous opinion of health economists based on numerous data and statistical analyses, this growth has two main components, a generational change as the younger generations have health behaviour that is more developed and therefore more costly, and secondly, the democratisation of care as medical progress is replacing costly techniques reserved for a small number by techniques that are much cheaper, which means that they can be extended. Heart problems provide good examples of this, for example in the use of coils that are easy to implant instead of bypasses, which required major surgery.

The conclusion of this first analysis is that the ageing of the population is not a threat to the European health system.

2/ Ageing and mentality

At first glance, in this area the diagnosis appears to be even more obvious than in the area of health. As the ageing of the population progresses, the elderly population is gaining an advantage over the young population. In all developed countries, OECD data shows that the incomes of young people (under 25s) is decreasing in comparison with the average, while the incomes of older people are increasing. In several countries, including France and Germany, the average income[5] of a retired person has already overtaken that of a working person. The consequence is that young people are getting poorer and older people are getting richer. In France, 4% of young people and 27% of retired people were living on the poverty line in 1975. In 2001, there was a complete reversal, with 21% of young people below the poverty line, but only 4% of older people. In most areas, young people are at a disadvantage in comparison to older people, and this disadvantage is increasing: they are less likely to be homeowners and to become so later, they are less and less likely to have a long-term employment contract, their average salary is lower than that of their elders, and their unemployment rate is significantly higher. Based on some sort of animism, these facts are explained by the selfish behaviour of the older generations, who are said to have gained an advantage over young people due to their growing mass. As the ageing of the population began around 1920 in Europe, we cannot see why the effects would only be felt after 1975. We also cannot see why one generation would be more selfish than another.

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[4] This is the average weighted by the populations of the values on the horizontal axis of graph 4-2.

[5] Total income from work and capital, not taking into account home ownership.

Discrimination against young people has not been consciously sought, it has been caused by the rigidity of behaviour in response to the difficulties that began with the first oil crisis. From 1975, everyone was seeking to avoid unemployment and a decrease in income, but not everyone had the same means with which to fight. Those who already had a place in the productive machine developed a network of relationships and had easier access to information than newcomers, who were the young. In countries in which length of employment and networks play the greatest role in seeking employment and where there is less mobility in employment, young people are excluded for this reason. Their unemployment rate rockets. This is particularly the case in France, Italy and Germany. In countries in which the market is more open, Scandinavia and the British Isles, the situation of young people is better, and differences in salary according to age are smaller, as are unemployment rates.

We might think that the failure to carry out reforms in favour of young people to reverse the trend that has just been described is due to the ageing of the European body politic, as the governments and parliaments themselves are rapidly ageing and are elected by an ageing electorate. However, this reasoning does not explain why some countries have carried out reforms that have improved the lot of their young people, while others have been unable to do this. For the current 27 countries of the Union, there is no correlation between the proportion of older people or the increase in that proportion and the reforms made. In countries in which the obstacles were smaller due to their history and therefore their mentality, reforms have encountered less resistance.

It is easier to help young people to find a job in Denmark, where the market is already open and recruitment is done through advertising or placement by schools and universities (70% of first stable jobs) than in a country where employment depends on networks of acquaintances and family (70% of first stable jobs in Italy are obtained by these methods). The problems are doubled by a paradoxical protection mechanism. The countries where young people are at a greater disadvantage are also those where the institution of the family is more powerful. Families therefore help their young people, which increases inequality, as all young people do not come from families that are equally endowed, but this limits tensions between generations.

Question 5:

The active population is declining: will working life have to be extended beyond 70, or will the support system for the retired have to be called into question?

Answer:

The active population is not still declining in the European Union, but it is reaching a ceiling: 211.5 million in 2000 for the 27 countries, 216 million in 2005, 217.4 million forecast for 2010 and 214.8 million in 2015. The decline then accelerates, to reach 180 million working people in 2050. It is not evident that the current or next turning point will constitute a serious breaking point. Several studies have highlighted the ‘2006 shock’, when the first generations of the baby-boom would retire, but the economic indicators have ignored the importance of that year. The changes in the active population raise two different questions: are there reserves of active population other than the over fifties? How can we manage the growing imbalance between the number of working people and the number of non-workers that they are responsible for?

1/ Current reserves of active population: there are quite different levels of active population in the 27 countries of the Union. In 2007, the employment rate (proportion of working men and women in the age range between 15 and 65) varies from 57% in Poland to 77% in Denmark[6]. Two major reasons explain this discrepancy: the proportion of active women varies a great deal from country to country. There are only 46.6% in Italy, while there are 71.8% in Sweden. The second cause of variation is the age of retirement, which can be very early in France (58) and late in Sweden (63.5). While remaining within the range of possibility for a country of the Union, in the majority of countries of the Union there is therefore a large reserve of labour under the age of 65. We will describe it in several ways, asking how the number of active people can be maintained up until 2050 by:

a/ the rate of activity among women equalling the current rate of activity among men in each country.

b/ in addition, the rate of activity among men and women between 55 and 64 increasing to the current level in Sweden (76.5%).

c/ the levels of employment among men and women reaching their current respective levels in Denmark (81% and 73%).

d/ the level of employment among men and women reaching the current level for men in Denmark (81%).

For the whole of the Union, the total number of active people would increase from 216 million today to 180 million in 2050 if the rates of employment among men and women remained at their current level. 36 million jobs would therefore be lost. If women achieved parity by 2050, therefore the same rate of employment as there currently is among men, 18.6 million additional jobs would be created, which would reduce the total loss to 17.4 million jobs. If, in addition, the activity rate among people aged between 55 and 64 increased in all the countries to the maximum observed today (72.9% in Sweden) for men and women, 14.5 million additional jobs would be necessary. Using these two mechanisms alone, we can therefore compensate for the deficit by around 3 million jobs, which is a reduction of 1.5% in the active population instead of 16.7% if employment rates remained fixed at their current level. Is this type of transformation in the structure of employment by age and sex utopian? No, if Sweden has achieved this level of employment today among the over-fifties, it does not seem impossible for the other countries to achieve it by 2050, in 43 years' time. With regard to women, their employment rates have increased rapidly since the lows of the 1960s. Since then they have made up more than half of the difference between them and men and their rate of employment is increasing in all the countries. Over the last 15 years alone, it has increased from 36.2 to 49% in Greece (for men it is 75%), from 31.5 to 54.7% in Spain (76.2 for men), from 55.9 to 64% in Germany (74.7% for men), from 51.4 to 60% in France (69.3% for men) and so on.

The other method of calculating the labour reserves involves counting how many jobs would be required if all the countries in the Union had the same rate of employment as the highest current level (81% in Denmark for men and 73.2% for women). The calculation gives 30.1 million jobs, which is a little less than the predicted deficit of 36 million.

[6]Leaving aside Malta, where it is as low as 55.7%.

If there was parity between the sexes, the rate among women would increase from 73.9% to 81%, which would remove 10.5 million more positions. In this case, the predicted deficit would not be compensated for, but a surplus of 4.6 million jobs would appear in comparison with 2007. Like the previous hypotheses, these remain realistic. There is no reason why women will not achieve parity in 43 years and Denmark is not so different from the other countries that they could not imitate this.

The difficulties in realising all of these hypotheses appear when we look in detail at the reserves country by country (table 5-1 in Annex).

If we follow the United Nations average population projection, some countries will not have a labour deficit in 2050 even if they retain their current employment rate: Ireland, Luxembourg, the United Kingdom, Cyprus and Sweden. For others, employment among women achieving parity with the current rate among men will be sufficient to balance total labour: France, Belgium, Malta. For others, the rate of employment among people aged between 55 and 64 will also have to be increased: Austria, Denmark, Spain, Greece, Italy, the Netherlands. In some cases, an increase in the rate of employment to the level in Denmark for men and women (81%) will be necessary to prevent a decline in the number of jobs: Finland, Hungary. For all the others, therefore for Germany, Finland, Portugal and the new members from the East and the Balkans, none of the measures envisaged will be sufficient to compensate for the foreseen labour deficit. Taking into account the current flows of migration within the Union, this may compensate for deficits, as discussed above, but should not be relied upon too much, as the flows are determined by economics rather than demographics (following the example of the Polish and Baltic people who are currently migrating to England, where the population is growing faster than theirs but the economy is demanding labour).

In any case, the answer to the first part of the question is no: it will not be necessary to extend working life beyond 70 in order to maintain the number of jobs in Europe up until 2050. The only countries where this measure would become necessary are Germany and the former Eastern countries, but for those countries there is too much uncertainty regarding their fertility rates to say for sure. Let us add a final element: unemployment. The active population taken into account by employment rates includes the unemployed. The proportion varies considerably from one country to another, from 3.2% in the Netherlands to 13% in Poland. The average rate for the whole of the Union is 7.1% in 2007. The active population with a job is therefore 216 x 0.929 = 200.7 million. If full employment were achieved in 2050 (a legitimate hypothesis as we are talking about a shortage of labour), with frictional unemployment equal to the current rate in the Netherlands (3.2%), the active population with a job would be 180 x 0.968 = 174.2. The deficit compared with 2007 would therefore only be 26.5 million. On this basis, the Union would maintain its number of workers, without complete parity in employment and an increase in the rate of activity between 55 and 64 to the level in Sweden being necessary.

2/Dependent population: we have just seen that the number of active people can be maintained as there are large reserves of active population, However, the dependent elderly population is going to rapidly increased, which will raise the acute problem of pay-as-you-go pensions or the ‘cooperative pension system’. If we presume that the number of active people in the Union is maintained through the effect of parity in employment rates and those aged between 55 and 64 working, we can calculate the average number of adults who will be dependent on an active person. Currently, for the whole of the Union, there are 0.82 inactive adults per active adult and 0.61 young people under 20.

If current activity rates were maintained, we would reach 1.15 inactive adults per active adult in 2050, which is an increase of 40% in the burden on active adults, and 0.64 young people under 20, which corresponds to a continued low fertility rate. If parity were achieved between men and women and if people aged between 55 and 64 were as active as those in Sweden, the number would decrease to 0.81 dependent inactive adults per active adults and 0.60 young people. The situation is therefore more variable if we consider each country separately. Table 5-2 shows the burden on active people in three hypotheses: maintenance of current rates, an increase in the number of active people through parity and an increase in activity among those aged between 55 and 64, and finally an increase in the rate of employment to 0.81, which is the current rate in Denmark. There is quite a lot of variation in the last two hypotheses, even though common standards have been partly or fully adopted. In hypothesis 2 (parity), the former Eastern countries come out worst, as their rate of unemployment is generally low for both sexes. In hypothesis 3, with this disadvantage removed, it is Italy, Spain, Greece and Slovenia whose active populations carry the greatest burdens (0.85 to 0.91 inactive adults per active adult) due to the narrow base of their age pyramid, which is a result of their low current and forthcoming fertility. The countries that carry the smallest burden are, on the contrary, those who have had a higher birth rate or higher immigration (France, Denmark, Finland, the Netherlands, Luxembourg, Ireland, United Kingdom, Sweden and Cyprus, all below 0.67 dependent adults per active person).

If the problem of maintaining employment is resolved, the problem of the dependent population will therefore be resolved *ipso facto*. The financial balance of pay-as-you-go pension schemes is not necessarily guaranteed in the very long term, as only part of the inactive adult population will receive a pension as only part of that population has worked during its existence. Therefore, if no women had been active in previous generations but all women became active in 2050, and if men had always been active, the level of contribution required in order to pay pensions would be half what it would be if women had all always worked.

Admittedly, the problem of the balance is then deferred to the time when the women that entered the labour market reach retirement age, but this is beyond 2050, when the world will undoubtedly have changed considerably. If employment is not maintained at its present level, the balance of pay-as-you-go schemes will be more difficult to attain, but there are numerous margins for negotiation: the level of income of pensioners is currently higher than that of active people in many countries of the Union. By protecting the most disadvantaged, this level can be decreased. The level of contributions can also be adjusted according to the relationship between the number of years of contribution and life expectancy at the age reached when stopping work. It is clear that the levels of contribution are not inviolable. They depend on the number of people, admittedly, but also on the increase in life expectancy. The demographic concerns are therefore fairly unfounded. The real concern is an economic one: how to create new jobs and how to maintain the old ones when they are freed up by retirement. The debate on pensions is therefore moving from the issue of length of contribution to that of offering jobs to the over fifties.

In conclusion, on the five points, the salient elements are as follows:

-population: a continuation of progress since 1955 should result in growth with the accession of new members.

-fertility: differences in fertility between countries of the Union are the result of profound cultural differences, which will not be reduced by simple family policies.

-immigration: this cannot stop the burden on the active population from increasing. Strictly speaking, it can maintain the active population and, in all likelihood will ensure that the population of the Union is maintained (within its current boundaries).

-ageing: it will not be the cause of increases in health spending. It is not the cause of the disadvantaged situation of young people.

-activity and pensions: it is possible to maintain the ratio of active to inactive adults by achieving the employment and activity rates currently observed in some countries of the Union in the majority of countries, and by supporting parity between men and women in terms of activity.

Annex 1: statistics

Table 2-1

Fertility rate (2005), employment rates among men and women (2007), average age of first-time mothers (2003)

Pays	indice de fécondité	taux d'emploi		âge de la mère à la 1e naissance
		Hommes	Femmes	
France	1,98	69,3	60	28,5
Allemagne	1,34	74,7	64	29,1
Autriche	1,41	78,4	64,4	27,2
Belgique	1,62	68,7	55,3	
Bulgarie	1,29	66	57,6	24,7
Danemark	1,78	81	73,2	28,4
Espagne	1,32	76,2	54,7	29,3
Estonie	1,47	73,2	65,9	25,2
Finlande	1,80	72,1	68,5	27,9
Grèce	1,31	74,9	47,9	28,5
Hongrie	1,28	64	50,9	26,7
Irlande	1,94	77,4	60,6	28,8
Italie	1,33	70,7	46,6	29,3
Lettonie	1,24	72,5	64,4	25
Lituanie	1,26	67,9	62,2	24,9
luxembourg	1,70	71,9	55	29
Malte	1,37	74,2	36,9	
Pays-Bas	1,73	82,2	69,6	28,9
Pologne	1,23	63,6	50,6	25,8
Portugal	1,40	73,8	61,9	27,4
Royaume-Uni	1,77	77,3	65,5	29,8
Roumanie	1,30	64,8	52,8	24,8
Rep. Tchèque	1,23	74,8	57,3	26,6
Slovaquie	1,24	68,4	53	25,7
Slovénie	1,25	72,7	62,6	27,7
Suède	1,75	76,5	71,8	28,7
Chypre	1,42	80	62,4	27,5

Table 4-1

Life expectancy and difference between life expectancy and life expectancy 'in good health' (2002)

Pays	espérance de vie totale			différence entre l'espérance de vie en bonne santé et l'espérance de vie totale		
	Hommes	Femmes	les 2 sexes	Hommes	Femmes	les 2 sexes
Suède	77,7	81,9	79,8	6,9	5,7	6,3
Allemagne	75,7	81,3	78,5	7,3	5,7	6,5
luxembourg	75	81	78	7	6	6,5
Italie	76,6	82,5	79,55	7,5	5,6	6,55
Estonie	65,1	76,2	70,65	7,2	6,1	6,65
Finlande	74,8	81,5	78,15	7,5	5,8	6,65
Rep. Tchèque	72	78,4	75,2	7,4	6	6,7
Danemark	74,6	79,1	76,85	8,1	5,6	6,85
Malte	75,8	80,9	78,35	7,9	5,8	6,85
Bulgarie	68,5	75,2	71,85	8,2	5,5	6,85
Pays-Bas	76	80,7	78,35	7,7	6	6,85
Slovénie	72,3	80,5	76,4	8,5	5,3	6,9
Espagne	76,3	82,8	79,55	7,8	6,3	7,05
Autriche	75,8	81,6	78,7	7,6	6,8	7,2
France	75,7	82,9	79,3	7,9	6,7	7,3
Hongrie	68,2	76,4	72,3	8,4	6,2	7,3
Irlande	75	79,7	77,35	7,7	7	7,35
Portugal	73,6	80,3	76,95	8,3	6,6	7,45
Belgique	75,5	81,6	78,55	8,6	6,5	7,55
Grèce	76,2	80,9	78,55	7,9	7,2	7,55
Royaume-Uni	75,9	80,4	78,15	8,4	6,9	7,65
Slovaquie	69,9	77,7	73,8	8,7	6,9	7,8
Roumanie	67,4	74,9	71,15	9,9	6,4	8,15
Lituanie	66,2	77,5	71,85	9,5	7,2	8,35
Lettonie	65,4	77,6	71,5	9,6	7,4	8,5
Pologne	70,4	78,3	74,35	10,3	7,4	8,85

Table 4-2

Proportion of population 'in poor health' (less than 7.3 years to live)

2005 to 2050

Pays	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
France	5.34	5.37	5.37	5.36	5.37	5.46	5.58	5.65	5.64	5.56
Allemagne	6.21	6.47	6.69	6.84	6.92	6.98	7.08	7.22	7.33	7.29
Autriche	5.60	5.68	5.78	5.88	6.02	6.18	6.35	6.54	6.71	6.74
Belgique	6.21	6.31	6.35	6.33	6.34	6.43	6.56	6.68	6.69	6.57
Bulgarie	8.56	8.47	8.32	8.19	8.17	8.25	8.32	8.33	8.36	8.40
Danemark	6.15	6.09	6.12	6.21	6.34	6.40	6.36	6.26	6.10	5.92
Espagne	5.39	5.52	5.61	5.67	5.76	5.93	6.17	6.45	6.73	6.96
Estonie	7.81	7.71	7.51	7.23	7.01	6.96	6.87	6.78	6.65	6.50
Finlande	5.72	5.84	5.94	6.06	6.22	6.40	6.49	6.44	6.24	5.99
Grèce	5.70	6.00	6.22	6.31	6.33	6.38	6.52	6.67	6.85	6.97
Hongrie	7.97	7.85	7.74	7.68	7.66	7.66	7.61	7.50	7.35	7.24
Irlande	4.16	4.04	4.00	4.05	4.18	4.37	4.53	4.69	4.83	4.95
Italie	5.92	6.10	6.25	6.35	6.44	6.53	6.66	6.80	6.94	7.01
Lettonie	8.68	8.63	8.47	8.29	8.07	8.02	7.97	7.98	7.94	7.88
Lituanie	7.90	8.00	7.96	7.86	7.77	7.65	7.66	7.73	7.76	7.71
Luxembourg	4.92	4.80	4.77	4.62	4.68	4.63	4.58	4.56	4.53	4.45
Malte	4.74	5.01	5.29	5.96	6.12	6.33	6.54	6.63	6.58	6.69
Pays-Bas	5.27	5.42	5.61	5.82	6.03	6.26	6.40	6.45	6.39	6.22
Pologne	6.10	6.28	6.40	6.51	6.69	6.96	7.25	7.45	7.49	7.48
Portugal	5.96	5.99	6.01	6.07	6.15	6.27	6.42	6.58	6.70	6.79
Royaume-Uni	5.93	5.83	5.74	5.70	5.70	5.74	5.77	5.78	5.74	5.65
Roumanie	7.34	7.35	7.31	7.25	7.26	7.37	7.52	7.65	7.77	7.93
Rép.Tchéque	6.45	6.55	6.65	6.81	7.10	7.38	7.57	7.62	7.64	7.70
Slovaquie	6.11	6.15	6.20	6.36	6.61	6.91	7.21	7.44	7.57	7.66
Slovénie	5.92	6.24	6.50	6.64	6.88	7.15	7.43	7.65	7.78	7.79
Suède	5.79	5.63	5.54	5.55	5.62	5.71	5.70	5.61	5.48	5.34
Chypre	4.40	4.40	4.46	4.57	4.57	4.75	4.94	5.09	5.22	5.16
total	6.01	6.09	6.15	6.20	6.26	6.36	6.48	6.58	6.63	6.61

Table T4-3

Growth in % of health expenditure in GDP between 1996 and 2005 and growth in proportion of people aged over 60 over the same period

Pays	Dépenses de santé en % du PIB	taux de croissance du % de PIB	du % d'âgés
France	10,41	0,63	0,14
Allemagne	10,68	0,31	1,85
Autriche	10,23	0,48	1,04
Belgique	10,25	2,06	0,28
Bulgarie	8,30	6,53	0,69
Danemark	9,11	1,16	0,67
Espagne	8,23	1,09	0,41
Estonie	5,18	-2,8	1,35
Finlande	7,54	-0,08	1,23
Grèce	10,08	3,41	0,9
Hongrie	8,47	2,03	0,69
Irlande	7,50	1,55	0,08
Italie	8,91	2,12	1,25
Lettonie	7,14	1,79	1,47
Lituanie	5,96	-0,03	1,48
luxembourg	8,10	4,08	-0,37
Malte	9,56	3,8	1,47
Pays-Bas	8,96	0,97	0,83
Pologne	6,22	0,64	0,86
Portugal	10,15	2,64	0,8
Royaume-Uni	8,28	1,9	0,29
Roumanie	5,14	4,15	0,99
Rep, Tchèque	7,17	0,74	1,07
Slovaquie	7,25	1,45	0,65
Slovénie	8,68	1,89	1,33
Suède	9,09	1	0,6
Chypre	5,92	1,36	1,43

Table 5-1

Active population in 2007, in 2050 with employment rates of 2007, reserve of active population in 2050 if there is parity of employment between men and women (4th column), additional reserve with increase in activity among those aged 55 to 64 at Swedish level (5th column), reserve of active population if employment is equal to that in Denmark for men and women (6th column), idem but with parity of employment between men and women at the level for Danish men (7th column)

Pays	taux d'emploi 2007	actifs 2007	actifs 2050	+ parité hommes-femmes	+ 55-64 ans	+taux H et F	+taux H
France	64.71	25746.	25661.	1821.	2777.	4933.	6461.
Allemagne	69.38	38361.	28869.	2215.	1683.	3222.	4837.
Autriche	71.50	4034.	3443.	332.	298.	272.	458.
Belgique	62.05	4239.	3822.	410.	448.	929.	1167.
Bulgarie	61.88	3304.	1707.	114.	184.	422.	527.
Danemark	77.23	2763.	2564.	125.	73.	0.	125.
Espagne	65.65	19559.	15981.	2568.	1090.	2805.	3736.
Estonie	69.58	635.	465.	24.	27.	50.	76.
Finlande	70.33	2460.	2203.	55.	125.	214.	334.
Grèce	61.82	4605.	3672.	777.	324.	915.	1139.
Hongrie	57.54	3992.	2840.	319.	425.	968.	1158.
Irlande	69.19	1950.	2558.	303.	89.	296.	436.
Italie	58.84	22801.	17367.	3500.	2311.	5407.	6540.
Lettonie	68.47	1083.	706.	42.	34.	89.	129.
Lituanie	65.08	1511.	1027.	45.	65.	190.	251.
Luxembourg	63.58	195.	289.	38.	33.	62.	79.
Malte	55.77	156.	139.	46.	23.	53.	63.
Pays-Bas	76.03	8364.	7706.	625.	317.	117.	504.
Pologne	57.14	15345.	9777.	1105.	1696.	3419.	4082.
Portugal	67.96	4813.	3732.	321.	229.	506.	716.
Royaume-Uni	71.52	28361.	29346.	2370.	975.	2321.	3888.
Roumanie	58.91	8842.	5372.	537.	665.	1665.	2015.
Rép.Tchéque	66.32	4788.	3273.	419.	254.	538.	725.
Slovaquie	60.81	2336.	1638.	205.	190.	440.	544.
Slovénie	67.84	951.	628.	45.	71.	87.	122.
Suède	74.19	4384.	4620.	144.	30.	185.	424.
Chypre	71.32	403.	516.	63.	14.	42.	70.
Total		215985.	179922.	18566.	14450.	30149.	40607.

Table 5-2:

Burden of active population: number of inactive adults per active adult in 2007 and 2050 with 2007 employment rates (H1), with an increase in the active population through parity among the sexes and an increase in the rate of activity among those aged 55 to 64 at the current level for Swedish men (H2) and with an increase in the rate of employment for men and women to current rate of employment for Danish men (H3)

Pays	charge des actifs			
	2007	2050 H1	2050 H2	2050 H3
France	0.78	1.09	0.77	0.67
Allemagne	0.72	1.09	0.84	0.79
Autriche	0.61	0.99	0.69	0.76
Belgique	0.89	1.22	0.81	0.70
Bulgarie	0.87	1.41	1.05	0.84
Danemark	0.48	0.69	0.56	0.61
Espagne	0.78	1.36	0.92	0.91
Estonie	0.62	0.92	0.73	0.65
Finlande	0.63	0.91	0.77	0.66
Grèce	0.93	1.42	0.86	0.85
Hongrie	0.97	1.41	0.91	0.71
Irlande	0.53	0.88	0.63	0.60
Italie	1.09	1.58	0.94	0.88
Lettonie	0.64	1.06	0.86	0.74
Lituanie	0.71	1.14	0.93	0.72
Luxembourg	0.76	0.91	0.54	0.50
Malte	0.94	1.51	0.68	0.73
Pays-Bas	0.47	0.75	0.56	0.64
Pologne	0.89	1.59	1.01	0.83
Portugal	0.72	1.16	0.89	0.82
Royaume-Uni	0.60	0.83	0.65	0.62
Roumanie	0.87	1.46	1.01	0.79
Rép.Tchéque	0.68	1.24	0.86	0.83
Slovaquie	0.75	1.37	0.91	0.78
Slovénie	0.67	1.25	0.90	0.89
Suède	0.57	0.77	0.71	0.62
Chypre	0.51	0.81	0.58	0.59
Total	0,82	1.15	0.81	0.75

Annex 2: methods and sources

1st question: total population

The annual population data for 1950 to 2007 come from the website of the INED (National Institute of Demographic Studies) and the data for 1950 to 2050 by 5-year period from the United Nations Population Division website. The notion of population, its history and its political character are developed in: H. Le Bras: *L'invention des populations*, Paris, O. Jacob, 2000 and H. Le Bras: *Naissance de la mortalité: l'origine politique de la démographie et de la statistiqu*e, Paris, Gallimard, 2000, M. Foucault: *Sécurité, territoire, population*, Paris, Gallimard, 2004. These works include extensive bibliographies.

2nd question: fertility

The annual fertility rates per country from 1950 to 1995 come from the INED site, and the rates from 1996 to 2007 come from the Eurostat site. The average ages of first-time mothers and the rates of employment among women come from Eurostat. Volumes from the series *European Studies of Population* published by Kluwer in Dordrecht give the chronological series of many other fertility indicators as well as survey results, more specifically: T. Frejka, J.P.Sardon: *Childbearing Trends and Prospects in Low-Fertility Countries*, 2004; G. della Zuanna, G.A. Micheli (eds): Strong Family and Low Fertility: A Paradox, 2004. See also M. Gullestad, M. Segalen : *Family and Kinship in Europe*, London, Pinter, 1997 and the chapter by H. Le Bras: *Fertility: the Condiions of Self-perpetuation. Differing Trends in Europe*, pp.14-32. Numerous historical works have studied the differences in mentality with regard to family and fertility, including those by the Cambridge Group with P. Laslett, J. Hajnal, R. Wall, J. Goody, any by A. Burguière, M. Segalen, M. Barbagli, M. Mitterauer, D. Reher.

3rd question: immigration

The number of immigrants in the Union according to country of origin was recreated using the OECD SOPEMI 2007 data. The projection was made using the United Nations average projection and the profile by age of entries of migrants to France in 2005 (INED site). We calculated the longitudinal transition coefficients from age x to x+1 during the passage of time from t to t+1 in periods of 5 years from 2005 to 2050 for the 27 countries. At each period we calculated the necessary level of migration for the index considered (total population, active population or burden on active population) not to decrease or increase as applicable) and we added it to each age classification according to the age profile used, then the progression to the following date was done using the transition coefficients. This method enabled us to use the United Nations projection as a basis without recalculating the future mortality tables. Two recent collective works give an overview and contain a large up-to-date bibliography on migration in Europe: C.A. Parsons, T.M.Smeeding (eds): *Immigration and the Transformation of Europe*, Cambridge, Cambridge U.P., 2006 and K. F. Zimmermann: *European Migration*, Oxford, Oxford U.P., 2005. The Eurobarometer site provides a PDF version of the results all the surveys conducted over the past 10 years. On the gulf between opinion and facts, Jack Lang, H. Le Bras: *Immigration positive*, Paris, O. Jacob, 2006 and H. Le Bras: *Addio alle masse*, Milano, Eleuthera, 2008.

4th question: ageing, solidarity, health

The life expectancies in good health and national health budgets are available on the WHO website. The mortality tables for each country come from the database of the demography group at the University of Berkeley (K. Wachter) and from the WHO. The principle of the calculations is developed in Chapter 3 of H. Le Bras: *Les 4 mystères de la population française*, Paris, O. Jacob, 2007. There is a recent explanation of the results and methods of health economics in: B. Dormont: *Econométrie*, Paris, Montchrestien, 2007. The measurements and values of life expectancy in good health are discussed in Zeng Yi, E. M. Crimmins, Y. Carrière, J.M. Robine (eds.): *Longer Life and Healthy Aging*, Dordrecht, Springer, 2006 and J.M. Robine, C. Jagger, C.D. Mathers, E.M.Crimmins, R.M.Sulzman: *Determining Health Expectancies*, New-York, Wiley, 2003. The future development of mortality is the subject of contradictory diagnoses, for example by S.J.Olshansky, C. Jagger and C.D.Mathers.

5th question: the active population and pensions

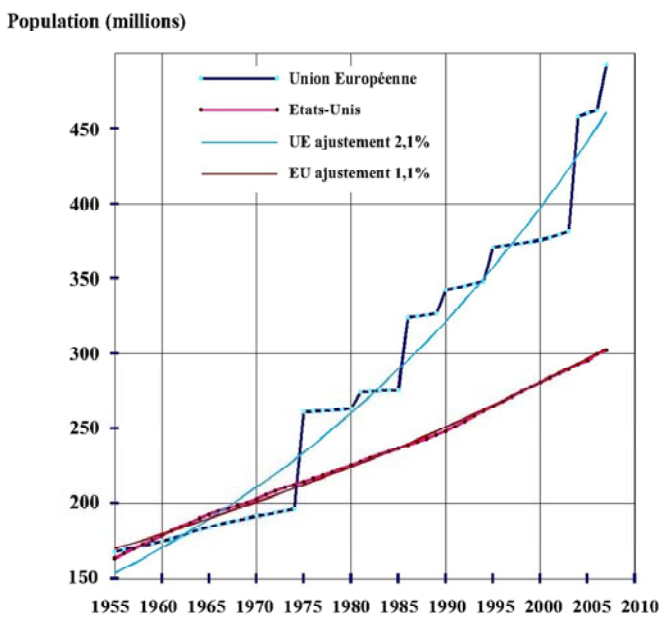
Employment rates and rates of activity at age 55-64 are available on the Eurostat website. The United Nations average hypothesis is used for the projections. For a good analysis and bibliography: A.M. Guillemard: *Aging and the Welfare State Crisis*, Newark, Un. of Delaware Pr., 2000, D.A.Wise (ed): *Perspectives on the Economy of Aging*, Chicago, Chicago U.P., 2004. H. Le Bras: *The Nature of Demography*, Princeton, Princeton U.P., 2008.

Annexe 3

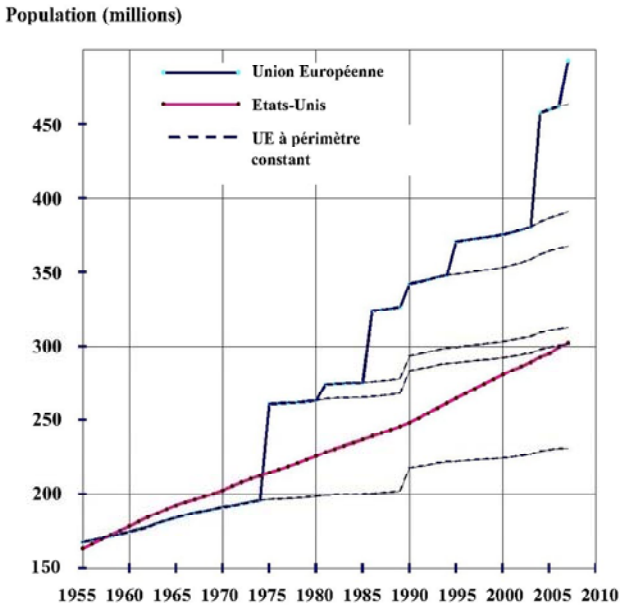
L'avenir démographique de l'Union européenne

Audition le 28 mai 2008
de Hervé Le Bras

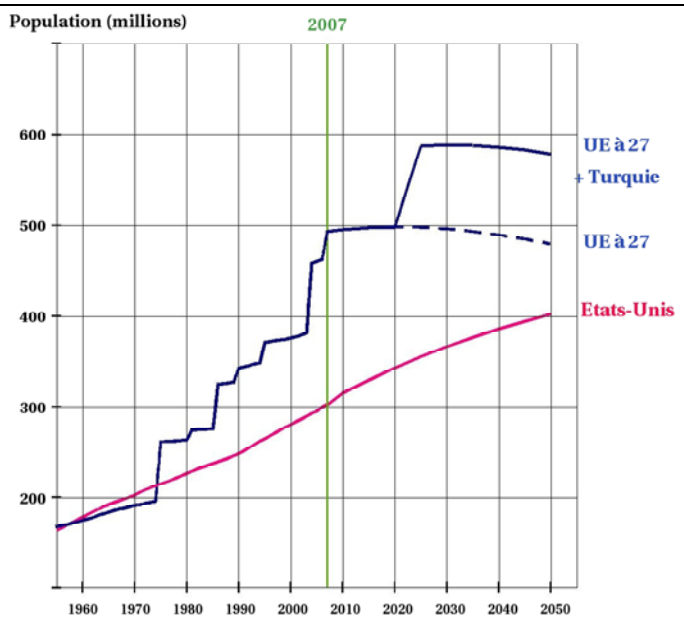
I
Population totale



Population totale de l'Union (1955-2007)



Population totale de l'Union (1955-2007)



2 projections jusqu'en 2050

II
Fécondité

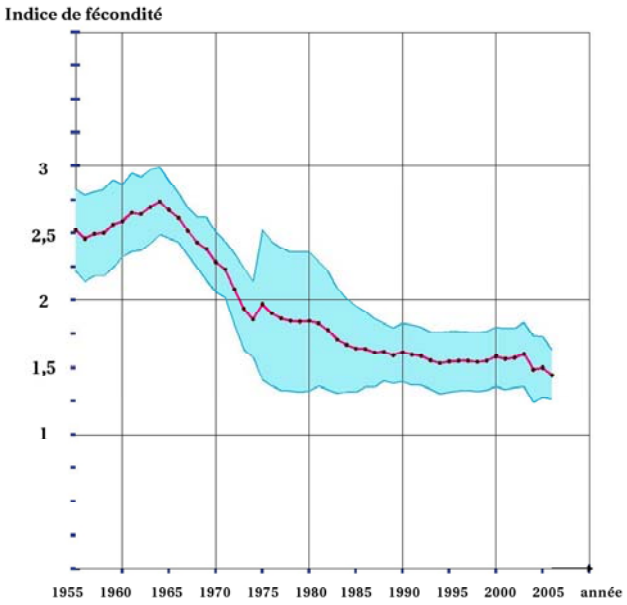


Figure 2-1
Évolution de la fécondité de l'Union européenne (trait rouge) et intervalle de variation des fécondités des pays (+/- σ)

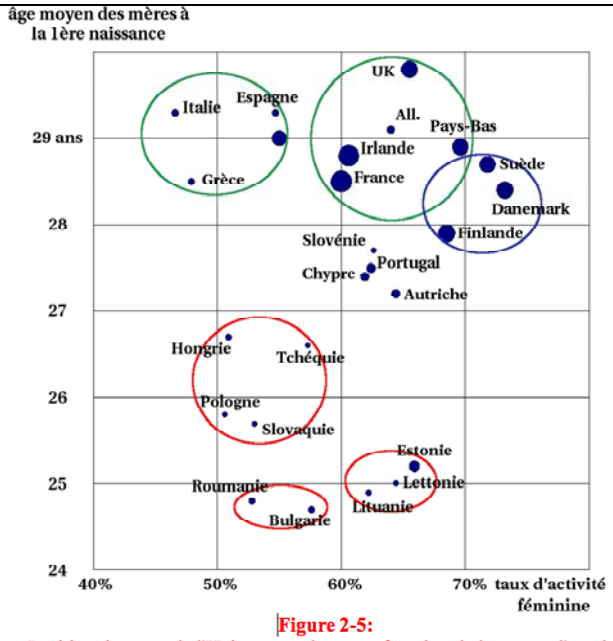
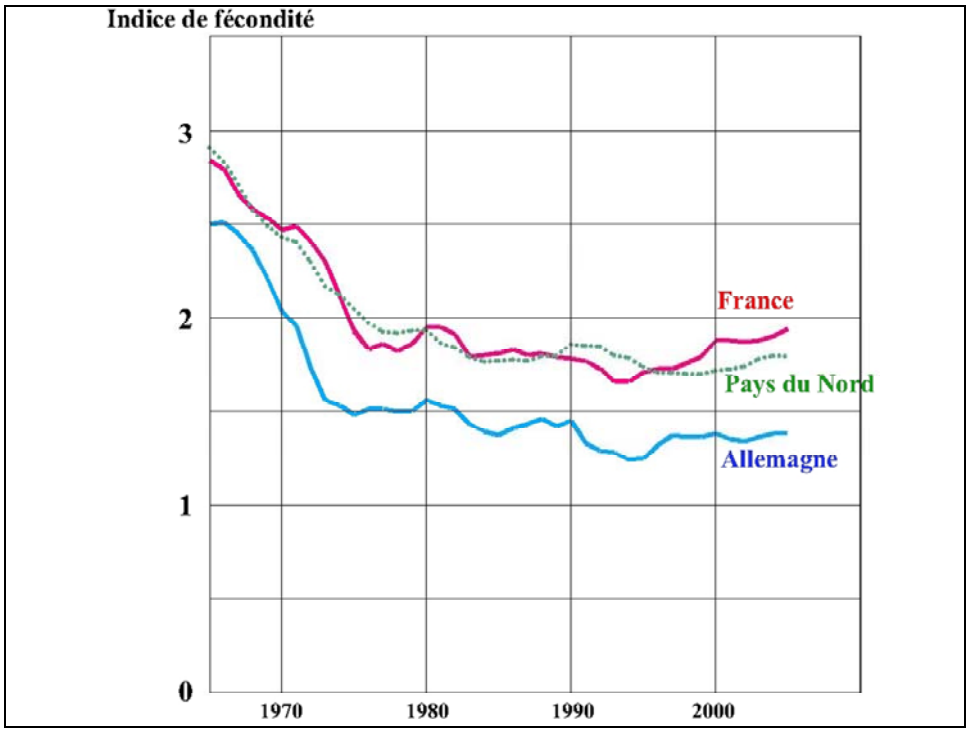


Figure 2-5:
Position des pays de l'Union européenne en fonction de leur taux d'emploi féminin, de l'âge moyen des mères à leur première maternité (la taille des points varie avec l'importance de leur fécondité).



III
Immigration

Pays	Population	Emploi	Charge des actifs
France	0	4518	67611
Allemagne	13318	20845	80868
Autriche	785	1703	11920
Belgique	767	1553	9892
Bulgarie	2098	2710	6926
Danemark	212	550	6875
Espagne	2838	10280	71571
Estonie	172	278	911
Finlande	0	371	7089
Grèce	1583	2867	12214
Hongrie	1747	2639	11996
Irlande	0	30	11475
Italie	9131	15400	58342
Lettonie	408	595	1898
Lituanie	588	767	3148
Luxembourg	13	47	475
Malte	29	76	1142
Pays-Bas	761	2203	29403
Pologne	5976	10130	80092
Portugal	932	2143	12825
Royaume-Uni	0	4298	58526
Roumanie	4020	5846	24932
Rép.Tchéque	1736	3116	23093
Slovaquie	718	1354	14193
Slovénie	340	604	3626
Suède	113	766	8542
Chypre	0	74	1816
Total	48284	95765	621402
En bloc	44070	93341	589560

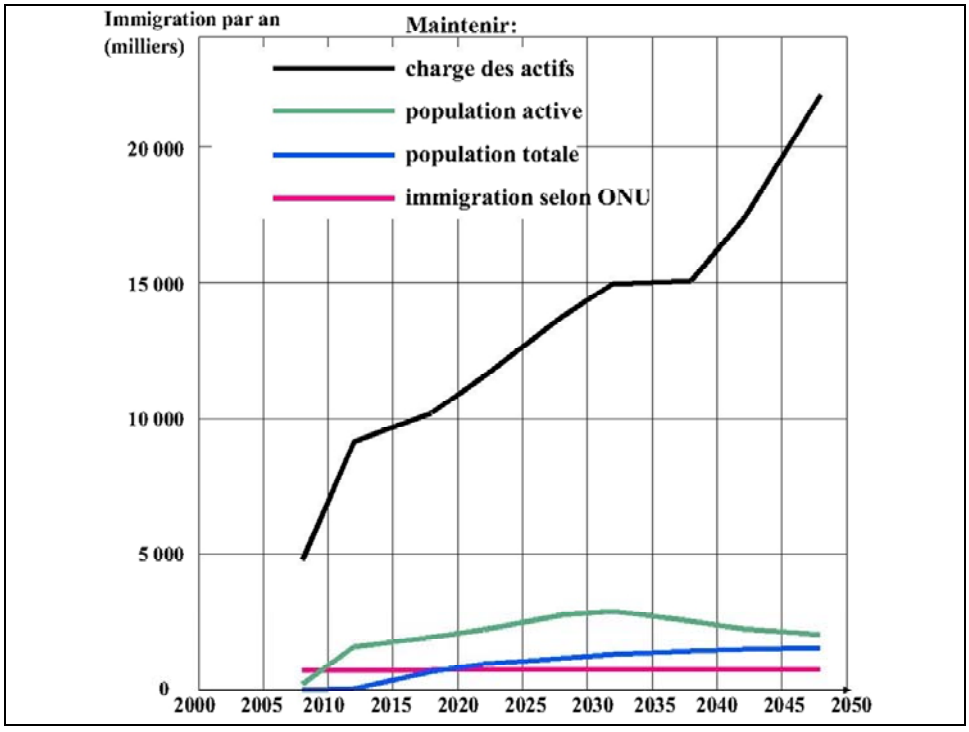
Immigration totale 2005-2050 pour maintenir

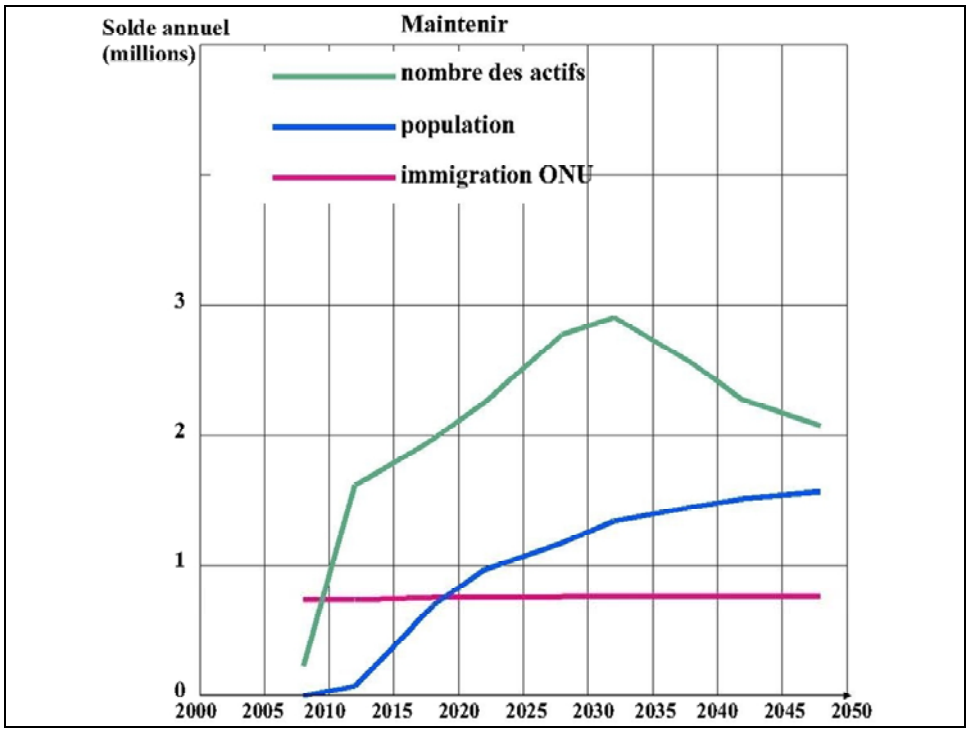
soit la population totale

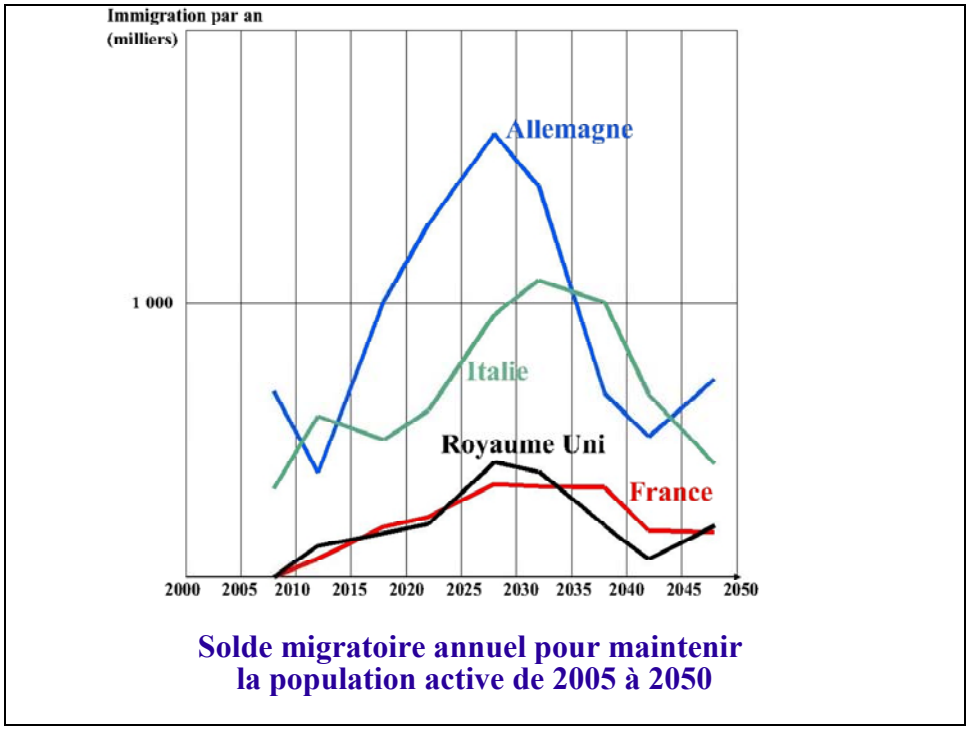
soit la population active

soit la charge des actifs

(en milliers)

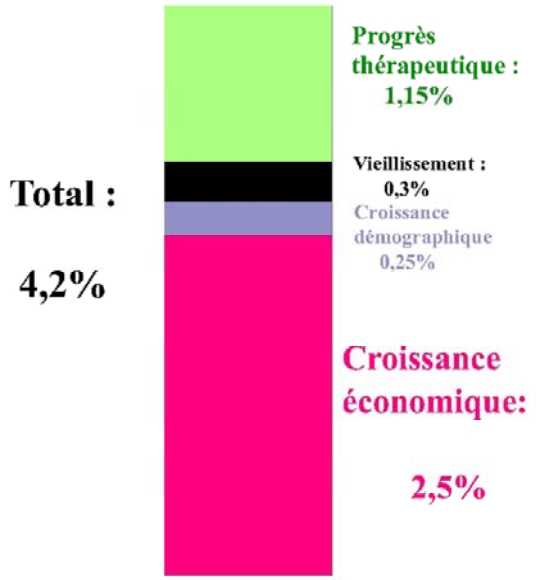




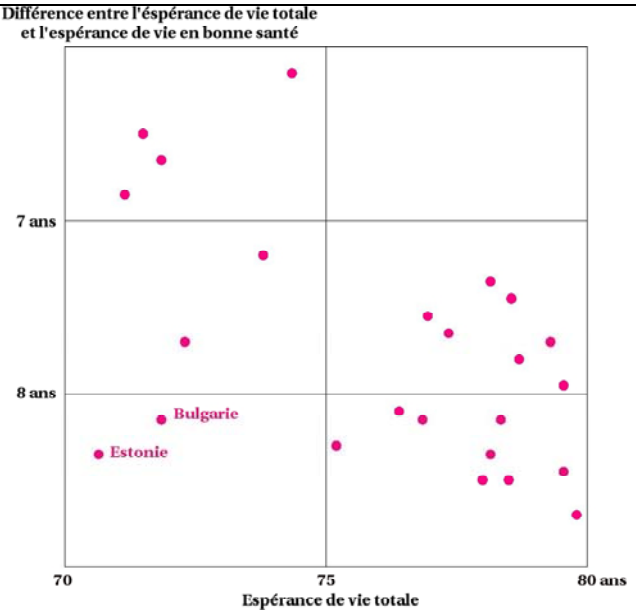


Solde migratoire annuel pour maintenir la population active de 2005 à 2050

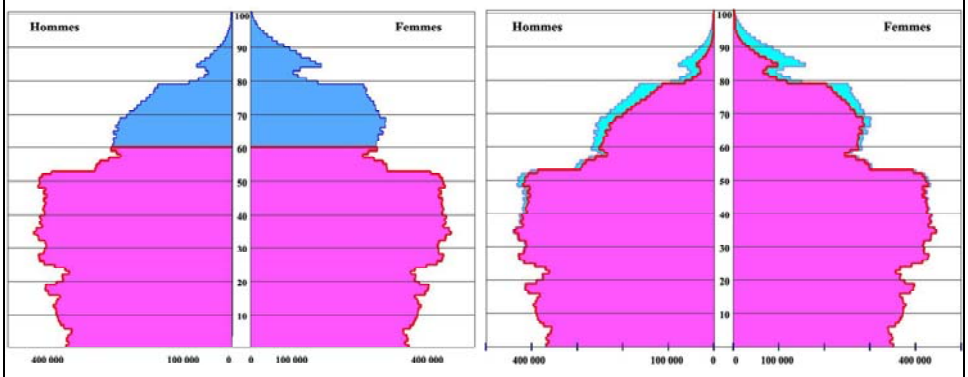
IV
Vieillissement



Croissance annuelle des dépenses de santé dans l'UE (moyenne sur 20 ans)



Position des pays de l'UE selon leur espérance de vie et leur durée moyenne de vie en mauvaise santé (OMS, 2002)

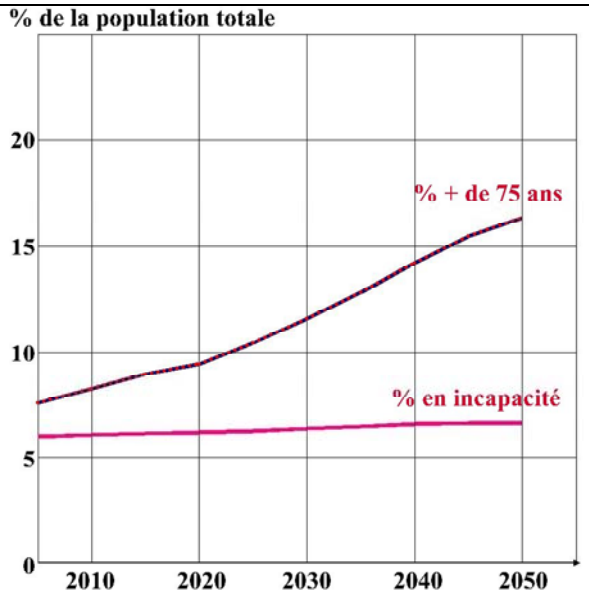


Pyramide des âges en 1999:
Rose = moins de 60 ans, bleu, plus de 60 ans

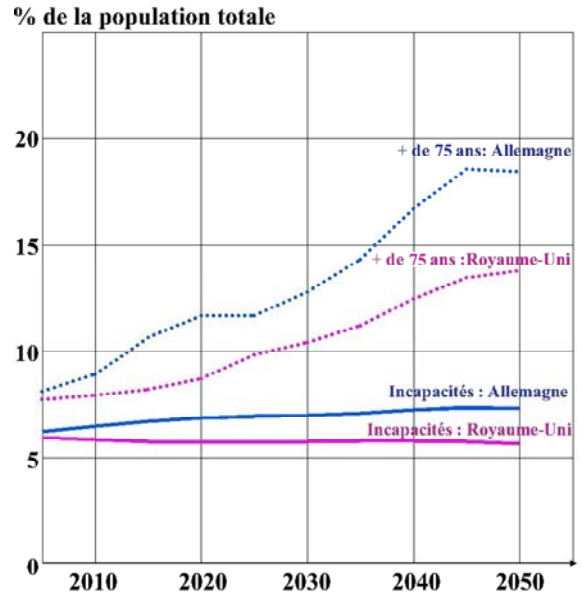
1999: en bleu ceux qui ont moins de 5 ans de vie

En rose:

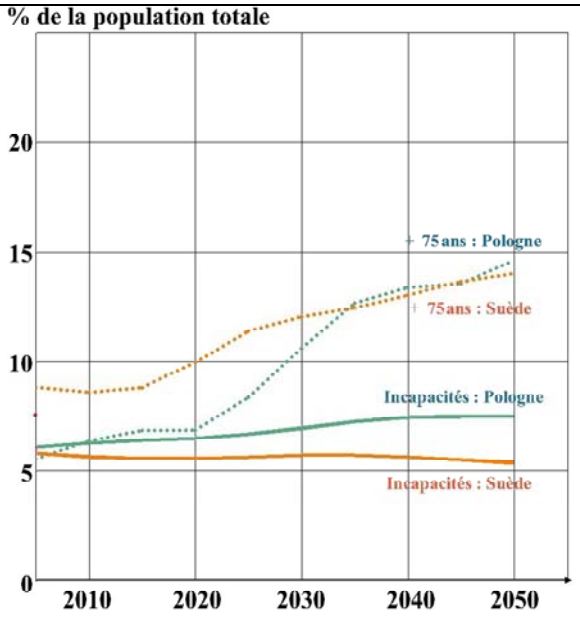
population non âgée (<60 ans) **population « en bonne santé »**



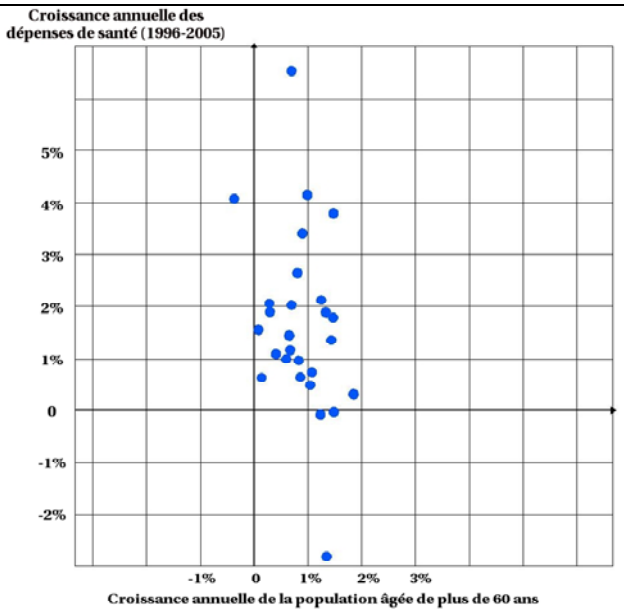
Union Européenne
% de population âgée de plus de 75 ans
et % population ayant moins de 7,3 ans à vivre



% de population âgée de plus de 75 ans
et % population ayant moins de 7,3 ans à vivre

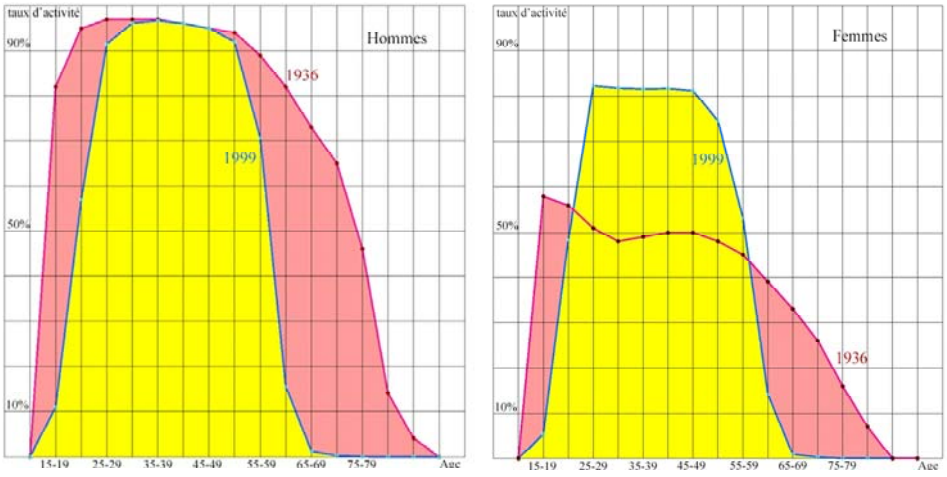


% de population âgée de plus de 75 ans et % population ayant moins de 7,3 ans à vivre

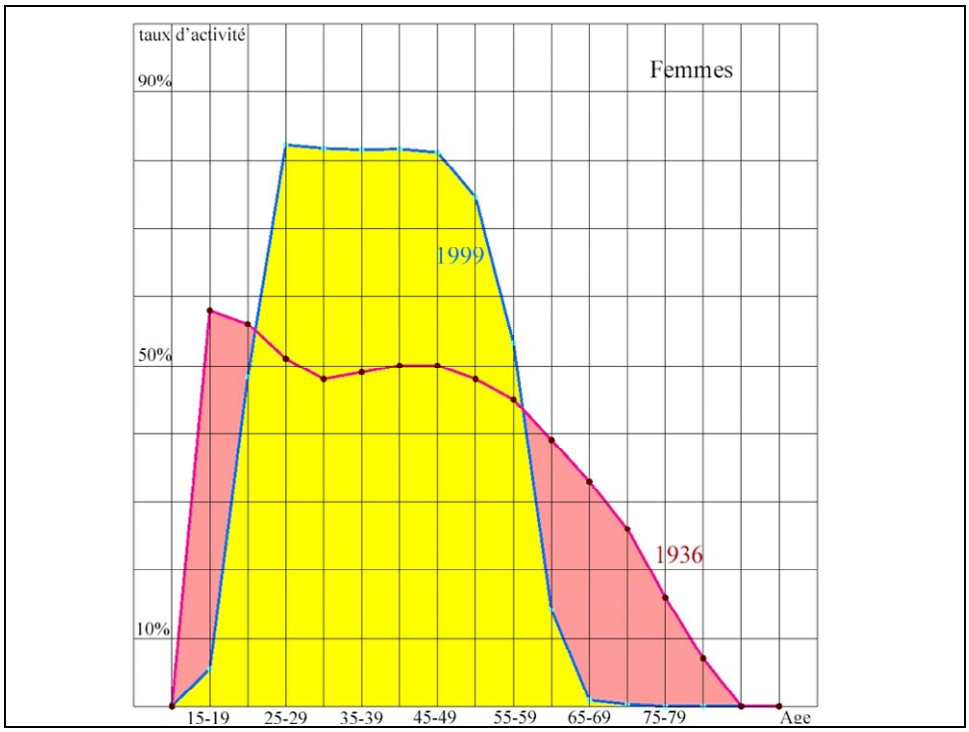


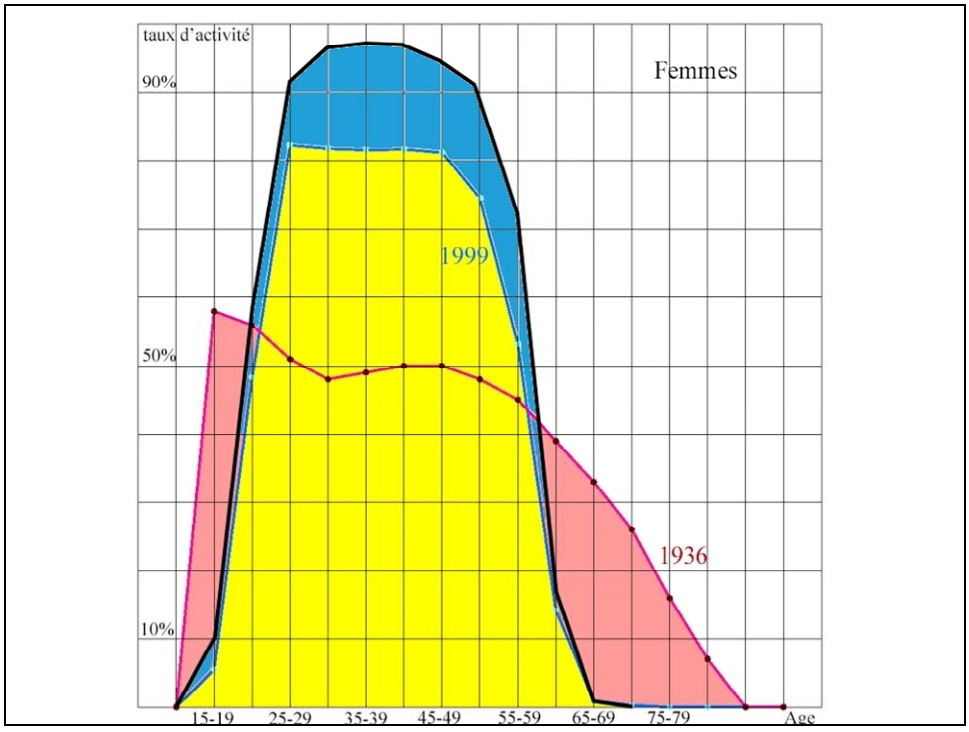
Position des pays de l'UE selon le taux de croissance annuel de leur % de population âgée et le taux de croissance de leur dépenses de santé en proportion du PIB (OMS, 1996-2005)

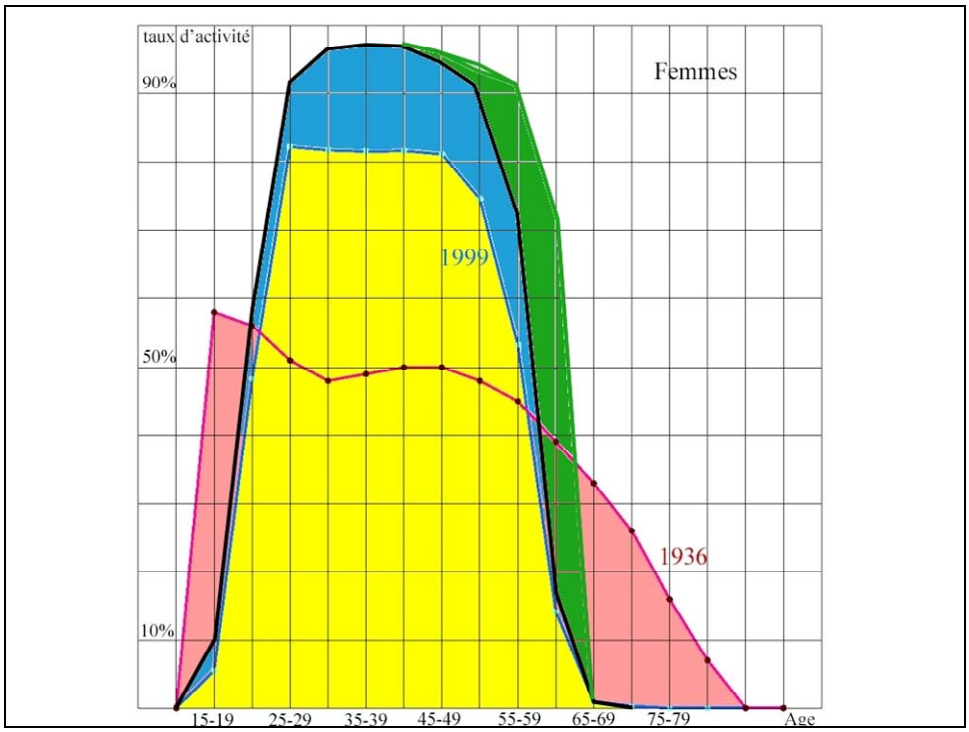
V
Activité

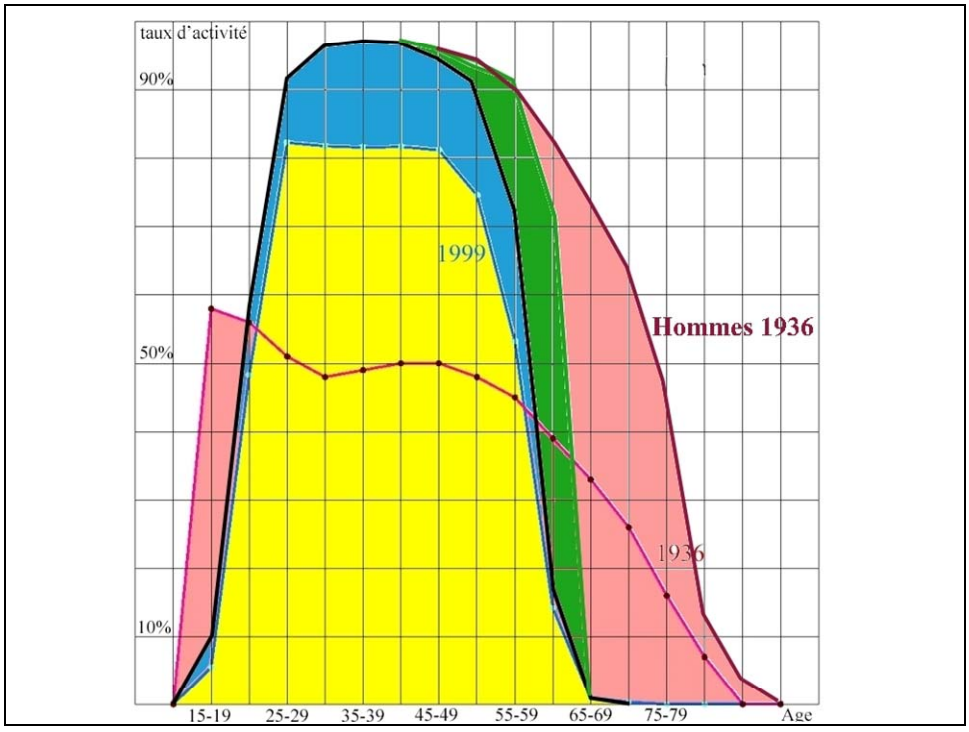


Taux d'activité hommes et femmes en France en 1936 (rose) et 1999 (jaune)


taux d'activité
90%
Femmes
1999
50%
1936
10%
15-19
25-29
35-39
45-49
55-59
65-69
75-79
Age


taux d'activité
90%
Femmes
1999
50%
1936
10%
15-19
25-29
35-39
45-49
55-59
65-69
75-79
Age


taux d'activité
90%
50%
10%
Femmes
1999
1936
15-19
25-29
35-39
45-49
55-59
65-69
75-79
Age


taux d'activité
90%
50%
10%
1999
Hommes 1936
1936
15-19
25-29
35-39
45-49
55-59
65-69
75-79
Age