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**LABOUR MARKET IMPLICATIONS OF AGEING POPULATION
IN OECD COUNTRIES**

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Introduction

The combination of the baby boom generation in the early post-war period, the subsequent fall in fertility rates and longer life expectancy is leading to a progressive ageing of population in almost all OECD countries. The current debate concerning the impact of demographic development has mainly been focused on the long-term sustainability of public finances. Spending on old-age pension schemes, health and long-term care systems will add substantial pressures on future social security spending.

Much less attention has been paid to the consequences of ageing for employment and for ageing workforces. The changing age structure of the population will lead to a sharp fall in growth rates of employment and a substantial rise in the number of older workers in the labour market during the next decades. This raises concerns about how labour markets will function in this new environment and whether the increased share of older workers will be able to adapt.

Background data for this study are drawn from the projection exercise carried out by the OECD Secretariat in collaboration with the EU. The fiscal projections trace possible developments over the next 50 years, using models for projecting government spending built by national administration or research institutes and the latest demographic projections (prepared by Eurostat and national administrations). Consistency and comparability across-countries have been improved by using common demographic, labour market and macroeconomic assumptions agreed between countries and the Secretariat². Within this context, the OECD and member countries set up aggregate labour market scenarios using common assumptions so as to estimate future trends in GDP. This forms the basis for the analysis of labour market developments. The results for employment growth are, thus, only indicative. But while many other scenarios can be

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² See Dang, Antolin and Oxley (2001) for further details on the projection framework and underlying assumptions.

constructed, sensitivity tests suggest the key features and trends that are presented are both possible and not implausible.

This note first looks at future demographic trends and its determinants. The second section looks at long-term scenarios for labour markets and public finances. The third section explores the possible implications of these developments for employment growth and labour markets. Finally, policy considerations are, briefly raised in the conclusions.

1. Ageing population: Demographics trends

1.1 The importance of older age groups

The assessment of the degree of ageing over the next 5 decades is based on long-term population projections prepared by EUROSTAT for EU countries and national projections for the others. Baseline demographic assumptions assume that trends in fertility rates will gradually reverse in almost all OECD countries and rise by about 8 per cent on average over the period. Life expectancy will increase, on average, of about 5 and 4 years respectively for men and women. Countries with higher levels of immigration at the beginning of the period tend to project falls in the assumed number of immigrants while those with low levels tend to project increases (see Annex Table 1).

Over the next 50 years all countries will face considerable increase in the share of the elderly. While currently ranging between 7 per cent in Korea to above 17 per cent in Italy, Japan and Sweden (Table 1), the average share of individuals aged 65 years and over will reach an average of 30 per cent of total population in 2050. Sharpest rises are projected to occur in Australia, Czech Republic, Italy, Japan, New Zealand, Poland, Spain. If individuals between 55 to 64 years old are included, this wider group of old people will nearly account for nearly 40 per cent of total population by the end of the projection period. For most countries, this increase is concentrated in the period from around 2020 to 2040. At the same time the working-age population will decline in almost all countries although to different degrees.

[Table 1. Change in the age structure of the population from 2000 and 2050]

1.2 Time profile and wave effect of the baby boom generation

When looking at the time profile behind these developments, the bulk of the baby boom generation leads to important wave effects to the working-age population. Figure 1 shows the number of individuals by 5 years age group in 2000 and at the end of each subsequent five decades, for three European countries. This indicates that, in the past, the baby boom generation contributed to rapid increases in employment growth as this they moved into the workforce 25-35 years ago. As this group approaches retirement, the number of persons aged 55 to 64 years old will rise although this increase will be mainly concentrated over the next two decades. As older-age individuals within these cohorts exit the labour force, the growth potential of the workforce may fall as they are replaced by progressively smaller cohorts.

[Figure 1. The age structure of the population by decade: Italy, France and the Netherlands.]

1.3 Age imbalances and fertility profiles

Age imbalances between the oldest and the younger parts of the population, as measured by the the old-age dependency ratio³, (Figure 2) rise sharply although there is wide variation across countries. While current ratios lie in the range of 20 per cent to 30 per cent they will represent between 38 and 67 per cent by the end of the half century. The old-age dependency ratio will increase until about 2035/45 (for most countries) and then stabilise or decline marginally. Nonetheless, the dependency ratio does continue to rise in a few countries even at the end of the period.

[Figure 2. Trends in old age dependency ratios from 2000 to 2050]

The forces driving these changes are explored in Table 2, which shows the development of the numerator (e.g the growth in number of elderly people) and the denominator (i.e. the growth of the working age population) of the old-age dependency ratio. This simple decomposition suggests that:

- Where the rise in the old-age dependency ratio is near to the group average or above it, the recovery in the working age population is projected to be small. This mainly reflects profiles of fertility rates that are below population replacement levels and, in a few countries, further declines in fertility (see Annex Table 1).
- In countries, where dependency ratios tend to flatten out after reaching a peak value between 2020/35, this is often a result of a recovery in the growth of the working-age population at broadly the same time as the baby boom generation begins to pass away. Thus, gradual increases in fertility rates, where they are concentrated at the beginning of the period, may help contribute to some reversal of ageing.

[Table 2. Decomposition of the change in the old-age dependency ratio]

2. Long term scenarios for labour markets and public finances

2.1 Labour market developments

Against this background, the OECD exercise included a labour market scenario that, in turn, was used to construct a GDP profile over the next half century. Drawing on recent labour market developments⁴, the scenario was based on the following key assumptions:

- Stability in male participation rates for the 20 to 54 age groups in line with past trends;
- Stability in male participation rates for the male 55 to 64 and the 65+ age groups. This is consistent with recent developments which show an end to the downward trend in the participation rates of this group. These patterns also implicitly assume that recent adjustments to pension and social security programmes will limit the scope for (or attractiveness of) early retirement;⁵
- A rise in female participation rate for 20 to 54 and 55 to 64 age groups towards those of men in 2050 with some (very *ad hoc*) adjustments to take into account cross-country differences with regard to the labour-market behaviour of women subsequent

³ The old-age dependency ratio is the ratio of the number of individuals aged 65 years old to the number of individuals aged from 20 to 64.

⁴ See Dang, Antolin and Oxley (2001) for further details on labour market assumptions.

⁵ Increases in participation rates were assumed by a few countries, reflecting recent policies. Austria, in particular, increased its participation rates by over 30 percentage points over the period, apparently under the (implausible) hypothesis that recent reforms had “resolved” their early retirement problem.

to household formation or the arrival of children, and the availability of publicly subsidised child-care facilities;

- A fall in the unemployment rate towards structural levels⁶ and in some cases below these levels where there have been significant labour market reforms.

On this basis, the key aggregate trends in labour markets are (Table 3):

- Very modest growth in total population leads to small but widespread declines in total labour force, by –0.1% point per year averaged over the next five decades and across countries. Where participation rates of women are low now, labour force growth is more rapid than in countries where women’s participation rates are already at a high level. Employment growth will also decline, although by slightly less than for the workforce, reflecting assumed falls in the unemployment rates. Sharper falls in unemployment rates “explain” the somewhat faster average growth in employment in several countries (Austria, France, Italy, Poland and Spain).
- Employment growth tends to be positive in the early part of the period in most countries but then slows sharply. By mid-century, growth rates are near zero or below it in most countries and sub-periods. Thus, the key changes to the labour market occur in the first 25 years. (Annex Figure 1);
- At the same time, workforces will age rapidly with the number of older workers aged 55 and over rising, on average, by 0.9% per year over the 50 years period. Looking at the age structure of future workforce (Figure 3), the share of older workers will rise from 10% to around 17% from 2000 and 2050. By the end of the period about one worker out of 4 aged will be above 55 years old in Japan, Korea and Poland. In addition, reforms seeking to lengthen working life (particularly for the 55 to 64 group) could lead to a further rise in the share of workers in this age group (but, of course, this would contribute to an increase in the total number of workers at the same time). Most of this increase will occur in the first two decades, after which these cohorts begin to move into retirement.⁷

Given the relatively modest movements in participation rates movements in the labour force are largely driven by changes in cohort size.

[Table 3. Projections in the growth of total population, labour force, employment and older workers from 2000 to 2050]

[Figure 3. Older workers as a share of total labour force in 2000 and 2050]

[Annex Figure 1. Growth rates of employment by period]

2.2 Fiscal developments

The pressure of ageing populations on public spending will have important effects on public spending and public finances. The OECD study (OECD, 2001 and Dang et al. 2001)

⁶ While there is considerable debate as to the appropriate long-run structural unemployment rate, simulations using different profiles (not shown) suggested that they had relatively small impact on overall outcomes.

⁷ This occurs later in a few countries, particularly in those with large assumed increases in participation rates of women (e.g. Spain and Italy). This raises employment among workers in the 20 to 54 age group who, then, only reach retirement age with some lag.

provides long-term fiscal projections based on demographic and labour market scenarios as described earlier. These are based on detailed national institutional arrangements embodied in national projection models. They are, therefore, likely to show more accurate results than those found in previous OECD work. These projections indicate that, on average, total spending will rise by 5 to 6 percentage points of GDP, driven in roughly equal proportion by old-age pensions and health/long-term care spending (Table 4). Although there are wide cross-country differences, the results suggest that there are little scope for reducing old-age-related spending in the absence of further reforms. Lower spending on education/child benefits might offset spending on the elderly by around 1 percentage point of GDP on average, reflecting falling shares of children in this total population. Tax revenues might increase by 1 to 2 percentage points in a few countries with large tax-sheltered private pension schemes (e.g. Canada and the Netherlands). However neither of these two factors appears large enough to make a significant dent in old-age related spending increases for most countries.

[Table 4. Changes in age-related spending from 2000 to 2050]

With the exception of the few countries that have succeeded in achieving significant underlying improvements in fiscal positions over recent decades, this will lead to a deterioration in primary deficits and unsustainable increases in debt. To avoid this, taxes will need to be increased or important spending cuts put in place and sustained over the projection period (Table 5). Over the past three decades, however, tax increases have been the main response rising social security spending and this has often occurred in countries that already have a high degree of tax pressure (Leibfritz and *al.*, 1997).

[Table 5. Changes in total spending and revenues and the primary balance from 2000 to 2050]

2.3 Sensitivity tests

For estimates over such a long time frame, it is particular important to have information on the degree of uncertainty surrounding these projections. To this end, the baseline projections were complemented by sensitivity tests for population projections (increased longevity, higher fertility and net migration flows) and for selected labour market assumptions over the period (participation rates for older and female workers, unemployment rates), each taken individually. Since fertility and longevity will appear to have only marginal effects on the labour market picture they are not considered here.

Table 6 indicates that the baseline scenario give a fairly even handed picture in future labour market developments. If profiles for either older age participation rates or female participation rates were to rise by 5 percentage points less than in the baseline assumptions, employment might grow, by ½ percentage point less per year (averaged across countries and over the full projection period). In contrast, if countries could improve labour market performance so as to achieve unemployment rates near to those achieved in the 1960s, employment growth could be ½ a percentage point higher. The results appear particularly sensitive to immigration. A doubling in the level of immigration could increase employment growth by over 1 percentage point but this would require a major policy shift in most countries.

[Table 6. Employment growth from 2000-2050: Sensitivity tests]

However, it is difficult to compare the various sensitivity tests. The degree of variation from the baseline for each test was chosen arbitrarily and we have little idea of the probability of their occurrence. Further, these results should be interpreted with caution as there can be feedback effects, which have not been taken into account – for example, lower growth in participation rates may not be fully reflected in employment as unemployment rates may adjust.

3. Some implications of ageing for employment and labour market performance.

This section looks at channels whereby ageing might affect the labour market.

3.1 Increased tax pressure and employment growth

It is difficult to judge the impact of any increase in taxes or contributions to finance higher age-related spending on employment and labour market developments. The net effect will depend – amongst other factors -- on the kind of tax and the degree to which it is shifted. With capital mobile, it would appear likely that most of the increased tax would be borne by labour. However, the extent can depend on whether the increased age-related transfers is paid for by employer and employer contributions or whether the tax base is extended to include the income of the retired (e.g. through the income tax or the CSG in France).

Where taxes on labour do increase, downward adjustments in net wage are unlikely to affect significantly labour supply over the long term. Empirical studies have generally found that labour supply elasticities are relatively small (Leibfritz and al., 1997). By contrast, where these taxes/contributions lead to increases in the overall cost of labour (e.g. from employer contributions), there may be a negative short-term impact on labour demand. But seen over the longer time horizon, increased the associated increase in labour costs is likely to be passed back onto labour, with the possible exception of low earners who may be protected by minimum wage rules. Thus, with the exception of low-wage earners (who may be affected by the minimum wage floors), long-term effects of taxes on employment are, at first view, unlikely to be large,

3.2 Ageing and changes in the labour force and in labour market entry and exit.

As noted above, the ageing of the baby boom generation will initially lead to a larger share of older workers and then to increased exit from the labour force into retirement. To illustrate the size of these effects Table 7 shows, for the same three countries as in Figure 1⁸, estimated changes in the labour force (by age group) and of the number of entrants and exits from the labour force into retirement between 2000 and 2010 and in each successive decade.⁹ The changes in the labour force by age take into account both the change in the population and in the the postulated changes in participation rates. The entrants and exits were calculated by following younger cohorts as they move into the labour force and older-worker cohorts as they reach retirement age, taking account of the changes in participation rates between periods.

⁸ Italy France and the Netherlands. These three countries were chosen because they belonged to groups of countries with more rapid average employment growth over the projection period (the Netherlands), average employment growth (France) and low employment growth (Italy) (Annex Figure 1). Time limitations prevented data being calculated for other countries.

⁹ The number of persons in the labour force by 5 year age group was estimated by applying male and female average participation rates for the 0 to 19, 20 to 54, 55 to 64 and 65 + age groups to the number of people in the appropriate five-year age group. In other words, the labour force for the 20 to 25 age group was calculated using the average participation rate for the 20 to 54 age group. This will tend to overestimate the labour force among younger age groups, because of those completing their education and underestimate workers in the 50 to 54 age group. Values and their changes were calculated for 2000 and each successive decade thereafter. The exits were estimated by following the cohorts entering the 55 + age group and the 65-74 age group in each 10 year period . The exits were calculated using the difference in the participation rates for the 20-54 age group and the 55-64 age group (for the cohort entering the 54-65 age group. The same procedure was followed for the 65-75 age group. Thus, for a given cohort, retirement takes place in two stages: first during the period when workers are 55 to 64 with the remaining workers assumed to exit in the following 10 year period.

These measures take into account the exits between both age 55 and 64 and 65 and over in each successive period.¹⁰

This Table suggests that:

- The overall labour force will increase and then begins to fall in the period 2010-2020 in France and Italy. For the Netherlands the increase slows and then begins to fall in the period 2020-2030.
- The number of workers continues to rise in the first two to three decades while the younger workers increase by less or decline.
- The number of exits into retirement increases sharply over the first three decades. At the same time, the number of entrants increases marginally at the beginning and then tends to fall towards the end of the period. There are net inflows into the labour market in the period 2000 to 2010 and then outflows in France and Italy. Net inflows decline over most of the period for the Netherlands. .
- Finally, the greater outflow of older higher skilled workers (and hence higher productivity workers) may also lead to a small productivity shock as they are only partly replaced by a smaller number younger workers who are less experienced (and, hence, likely to be less productive). This may put downward pressure on labour productivity and create more labour intensive growth.

[Table 7. Changes in the labour force by age, and entrants and exits by decade for three countries]

The labour market situation for older workers may initially worsen as their number increases over the next several decades. However, if the assumptions about older workers hold, this situation may then be reversed. The combined effect of a fall in the number of younger workers just at around the same time as an increase in exits and increasing number of exits, may put this group in a much stronger labour market position. The high-skilled members may benefit the most from this development. While many of the individuals at older ages will have been at the top of their career in management or in posts requiring higher skills. If they retire, this will lead to a large number of posts opened up to requiring experienced workers. This in turn, will probably result in pressures on (incentives for) higher-skilled workers to delay retirement, possibly in the form of higher remuneration.¹¹ It will also result in scope for rapid promotion of younger skilled workers, particularly as their supply will decline. Within this context, the situation for mid and low-skilled older workers is more difficult to judge.

Such problems of staffing are likely to occur even earlier in the public sector, reflecting its rapid expansion beginning in the mid-1960s. Workers that entered the public sector at this time are now approaching retirement in many countries. Simulations by Hoj and Toly at the OECD for a number of countries with large public sectors -- under a differing assumptions with regard to public sector hiring -- suggest that replacing government workers would absorb a large share of new entrants into the labour market over coming years. For example, they estimate that full replacement of retiring government employees in Denmark and Sweden would absorb as much as 2/3 of new labour-force entrants over the period 2005 to 2015. Further shortening of new entrants in the labour force may reinforce the above-mentioned effects.

¹⁰ Note that the two approaches do not give the same result. The entrants and exits and the net inflow into (out of) the labour force (right-hand panel). This does not take account of deaths in other cohorts within the working age population or to changes in participation rates. These are picked up in the change in the labour force over the decades.

¹¹ Since most countries still have incentives to retire early improved remuneration would be needed to offset these.

3.3 Specific problems for older workers

The increase in the number and share of older workers in the workforce raises the issue as to whether workers will face particular problems towards the end of their working lives, and whether policies need to adapt. Lengthening working lives of older workers is a key policy objective of the OECD. Reversing the trend towards early effective retirement is the most powerful policy option available to counter the fiscal impact of ageing populations. Such outcomes lead to both increased output and to a reduction in the total amount of retirement benefits over the retirees remaining lifetime (depending on the degree of actuarial adjustment of the pension system). But the fiscal dividend from such developments evidently depends on whether there is adequate demand for these workers in the labour market. Thus, a success in reducing the fiscal impact of ageing using this instrument depends critically on ensuring an appropriate functioning of the labour market for older workers, particularly in the light of their past employment difficulties.

Table 8 presents selected indicators of the labour market and poverty for older age workers from mid 80's to mid 90's: unemployment rates, proportions of older workers in long-term unemployment and poverty rates. The importance of older-age workers in long-term unemployment varies widely across countries from less than 25% to more than 50%. While there is a continuing debate over the precise reasons for these developments, labour market regulations and institutions put in place in the post-war period have played an important role. Differences in these systems (and in the incentives they create) can help explain why some countries have performed better than others (OECD, 1997, 2000). But broadly speaking, many European governments responded to these changes by encouraging labour-market exit in the form of early retirement schemes, long-term unemployment benefits and the use of alternative transfer programmes such as disability to absorb the excess labour. In addition, because older workers tend to have higher wage costs, at least relative to their productivity levels, and as little effort had been made to maintain skills in most cases, they faced greater risks of redundancy and face strong incentives to withdraw from the labour market entirely. Finally, employment protection legislation may have encouraged employers to set up early retirement schemes (OECD, 1995), permitting layoffs of older workers without exacerbating social tensions.¹² Thus, although unemployment rates appear to be lower for older-age workers as compared to all ages (column 3, Table 8), this indicator is misleading as these arrangements allowed older workers to withdraw directly from the labour market.

[Table 8. Indicators of unemployment, long-term unemployment and poverty for older workers]

Despite this exit, the risk of older workers becoming long-term unemployed is similar across all countries, around 1.5 times as high as those of all workers (column 2 and 3). The situation has tended to worsen over the period under consideration, but not everywhere. Skill obsolescence faced by older workers has been also important. Lengthening periods of unemployment has led to more rapid deterioration of work skills in unemployment and increased the chances of “scarring”. Conversely, less generous schemes for unemployment may have proven more efficient in getting workers back into employment. However, the declining employability of older workers has been reflected in a downward drift in their job careers and

¹² The participation of employers, unions and governments in setting up early retirement schemes took different forms depending on the country. These ranged from mainly publicly- to privately-run schemes. For example, in France and Germany, employers have encouraged older workers to take advantages of publicly-provided early-retirement schemes while occupational arrangements and private packages were more common in the United Kingdom and in the United States. In Sweden where employment protection is important older-age workers were strongly encouraged to work part-time.

their socio-economic position.¹³ Poverty rates of older-working-age individuals also indicate wide cross-country variations ranging from below 5% to more than 10% (column 6). But, in countries with a higher risk of poverty, the number of long-term unemployed among older workers appears to be lower and *vice versa*. This might suggest that there is some trade-off between getting older workers back into the labour market and increased poverty within this group.

At the same time, employers have proved hesitant to employ older workers, particularly in an environment of adequate inflows of young people into the labour market. Older workers account for a small share of new hires (OECD, 1998a), and employers tend to renew/expand their work-force at the entry level. In general, older workers tend to receive less training than their younger colleagues, possibly because the returns of training to the firm are seen to be lower (because of the shorter period to obtain a payback) than for younger workers (OECD, 1998a.). Partly because of this, there were concerns about the level older workers' skills (particularly the poorly educated) and their ability to adapt to the new working environment, especially after long periods of unemployment.

The key policy question is whether the specific problems of older workers experienced over the last quarter century can be expected to continue. Productivity shocks are likely to reoccur and rising competition from the integration of world markets will ensure that there are continuing pressures to improve productivity in goods producing industries and in wide segments to the service industries as well (e.g. telecommunications). This will require constant upgrading of skills and increased job flexibility. Within this context high skilled workers will continue to be in demand. Thus, as in the past, the low skilled will remain more at risk.

However a number of factors are likely to modify the picture. First, the average level of education of the labour force is progressive improving as older, less educated workers move into retirement and younger more educated workers enter. To the degree that education attainment and the ability to adapt and learn new skills are correlated, this should lead to a more flexible and adaptable labour force over time. Second, after an initial increase in the share of older workers in the first decades of the century, the combined effect of slower growth or declines in the number of younger workers and the increased exit of the baby boom cohorts, may place older workers in a much stronger labour-market position, leading employers to review their approach to hiring.

4. Conclusions: Some policy options

This paper has used data underlying long-term projections of age-related spending to provide some hints about the future labour market environment. The labour market scenario is arbitrary but not unreasonable by historical standards even though, in light of the extraordinary changes in OECD economies over the past 50 years, projections over such a long period are unlikely to be borne out.

¹³ Indeed, when ending their job careers before retirement age older workers have been mainly proposed lower paid jobs. For instance, in the United States in accepting new jobs older workers tend to move down the socio-economic ladder– e.g. from skilled to unskilled and from white-collar to blue-collar, and with a few exceptions many more suffered pay cuts (OECD, 1995). Employment difficulties are not identical across workers. Those who have continued to acquire new job skills through the course of their working life may have successfully reshape their careers. High level of competences valued along with long work experience are unlikely to be traded off with flexible younger age but shorter experienced workers. Senior professionals tend to work beyond official retirement age. However, this is unlikely to represent a majority of cases.

Nonetheless, these projections do point to a major shift in labour market conditions over the next 50 years. The most recent population projections suggest that slower growth in the population of working age is likely. Even after allowing for significant increases in female participation rates and declines in unemployment rates, employment growth will weaken considerably. Within this changed environment the average age of the workforce will increase.

The future labour market environment needs to be considered within the context of the fiscal impact of ageing and the impact of reforms. Projections of public spending suggest that, on average, spending might increase by 5 to 6 percentage points and there is a significant number of countries above this. Policies need to adjust to keep spending in line. An analysis of country projections and reforms indicates that many countries now expect a fall in average benefits. Such measures have clearly helped make the impact of ageing less daunting than they seemed in the mid-1990s. As has been stressed in the policy discussion based on the projections, the most effective way of reducing the burden of pension systems on younger generations is to encourage this group to work longer. While average benefits may still need to be adjusted downwards in some countries where they are particularly high, most countries now agree that this should be the main thrust of policies. But, if governments do achieve this objective, the share of older workers in the (enlarged) labour force will be increased.

There are three sets of policy issues in this context. First, what policies are needed to encourage older workers to work longer (or at least not discourage them from doing so)? Second, how can increased governments achieve a reduction in fiscal pressure without increasing poverty among the elderly. Third, in the face an eventual increase in supply of older workers, how can their employment prospects be better assured?

The measures needed to encourage increased the supply of older workers seem relatively clear (OECD, 1998b). There is ample evidence that current transfer systems encourage effective early retirement. There continues to be extensive (and often increasing) use of disability schemes in a number of countries, despite evidence that the average health of the population is increasing. In others, long periods of unemployment benefit also permit older workers effectively to drop out of the labour force. There have also been some early retirement schemes specifically aimed at draining off older workers from the labour force in a few countries. Most important, however, is the need to make earlier retirement under age-related pension schemes less attractive. As Blondal and Scarpetta (1998) and Gruber and Wise (1999) have shown most countries still have old-age pension systems which make it financially attractive to retire early. This is all the more the case when replacement rates are high. Some countries have already moved in this direction: for example by raising the retirement age of women to those of men; by increasing the adjustment factors on pension payments taken before the official retirement age or by making pension benefits dependent on earnings over the persons working lifetime.

However, much remains to be done. Because these different types of programmes often interact and reinforce each other, they will need to be reformed together (e.g. Finland -- see Antolin et al, 2001). A broad social consensus needs to be established as to the goal of these various programmes and adjustments made to balance the interests of both the elderly and future taxpayers/contributors. This may imply tightening up access to disability and long-term sickness benefits where these systems are being “abused” and reducing average benefits on these programmes as well as for old-age pension systems in countries where replacement rates are still very high. At the very least, it will require making the old-age retirement system, as neutral as possible with respect to the timing of the retirement -- i.e. set benefits for early retirement which are actuarially “fair”. Other labour market measures, such as increasing the flexibility of work time, can also encourage the labour supply of older workers. Many older workers wish to continue in employment, but wish to have more leisure time. Faced with the binary choice of no work or full-time work they often tend to choose the former.

A second set of policies aimed at encouraging longer working lives concerns public health. While changes to the incentives created by transfer systems can encourage people to work longer, improved health can make them able to work longer.. While prevention systems already exist in many countries (e.g. la médecine du travail in France) there may be positive benefits from intensifying these arrangements. However, as extensive screening can be expensive, a careful cost-benefit analysis needs to be made of possible net benefits. In addition since many health problems are linked to lifestyle problems (tobacco and alcohol consumption and poor diet), education levels and low incomes among certain groups, the results of such policies may be slow in coming.

The reduction of poverty among the elderly has been one of the main social achievements of the past quarter century. On the basis of data for the mid-1990s, elderly households now have average incomes which are broadly equal to or above the average incomes of the working-age population while poverty rates are also near to the population average (Burniaux et al., 1996, Oxley et al. 1997, Förster, 2000). One of the risks of policies to reduce average old-age retirement benefits is that poverty will increase. Seen from this angle, actuarially fair pension systems that lead people to work longer will permit individuals to raise their own pension benefit, even though the pension system as a whole has been made less generous. It will, however, probably still be necessary to encourage private saving for retirement to ensure that the retired still have adequate retirement income. Experience shows, however, that this will not have a large impact on poverty if lower income groups participate.¹⁴ This may require making minimum schemes mandatory and ensuring that any tax advantages are focused on households with lower earnings.

If such measures do lead to extending working lives, the supply of labour and of older workers would be higher than postulated here. Thus, ensuring that older workers are able to find jobs will remain a cornerstone for pension policy. It has been argued above that the overall labour market environment is likely to change over the next decades with a steady decline in labour force growth in the early decades and declines in the labour force in the second half of the projection period. At the same time, the data presented for three countries in the previous section suggests that the labour market situation for older workers might worsen in the current decade and possibly the next (assuming little change in participation rates) but then improve. Estimates suggest progressively smaller net inflows into the labour force through most of the period and the labour force will decline in two of them. The large and increasing number of exits will create vacant posts which older workers could fill. For example, outflows into retirement in France (again assuming no change in participation rates of older workers) would be in the range of 600-700 thousand persons per year for a total labour force in the range of 26 million and an older worker labour force of 2.7 million. Thus, unless there is a dramatic turnaround in the number of older workers, they should be in a much better labour force position than in the past, when there were larger inflows of young workers into the labour force. Of course, this picture may be less sanguine if there turns out to be a major increase in participation rates of older workers.

The full potential of improving employability will only be attained if older workers find employment. Their position is likely to be best promoted by reforms that encourage rapid overall growth of employment demand. A broad overview of the measures required to achieve this goal has been as laid out in *OECD Job strategy* (1999). Nonetheless, the skilled and experienced are likely to benefit the most from these developments, as they have in the recent past.

¹⁴ For example the bulk of households not having registered retirement savings plans (RRSPs) in Canada are below average earnings.

Even where labour demand is strong, the employment difficulties of low skilled older workers are unlikely to vanish entirely. They will continue to face higher risks of layoffs when firms downsize or sectors contract. Improving employability of low skilled older workers is therefore a key complement to pension reforms. Measures to ensure that the wage costs of these workers do not exceed their marginal product are likely to be key element in improving their employment possibilities. Training may help improve their skills. Because returns of such investments are more uncertain to the firm than for younger employees (where the pay-back period to the firm is potentially longer), there may be some cause for public support for training for this specific group. Taken over a longer time horizon, it might be better if such measures were set within broader policies of life-long learning and steady upgrading of skills. But, in this context, little is known about the effectiveness of existing policies. Finding better ways of ensuring older workers have adequate skills is an important subject for research.

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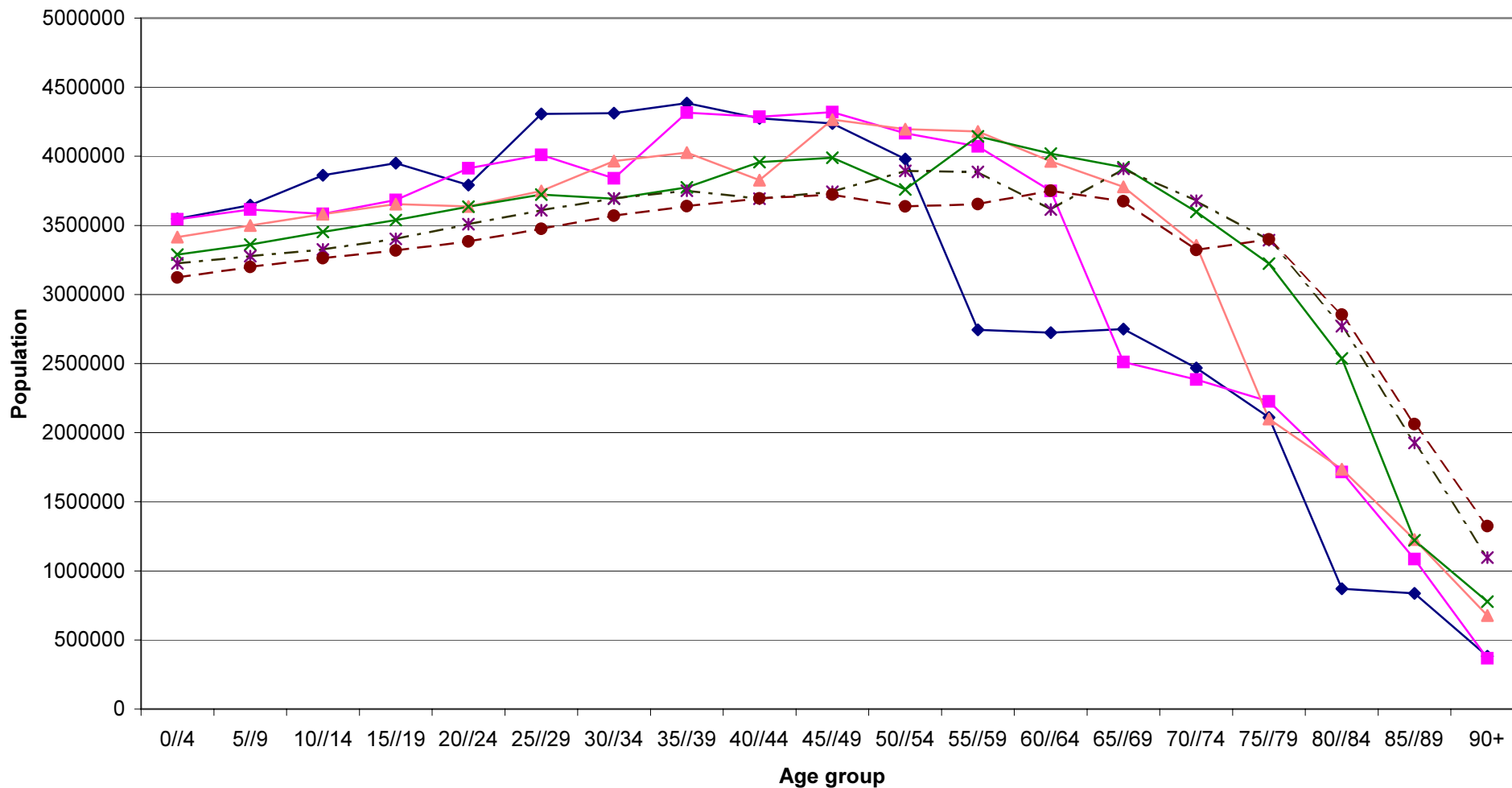
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Figure 1.A . Population by age group, 2000, 2010, 2020, 2030, 2040 and 2050, France



Source : OECD

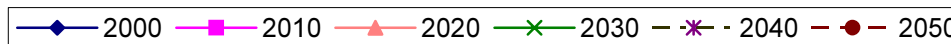
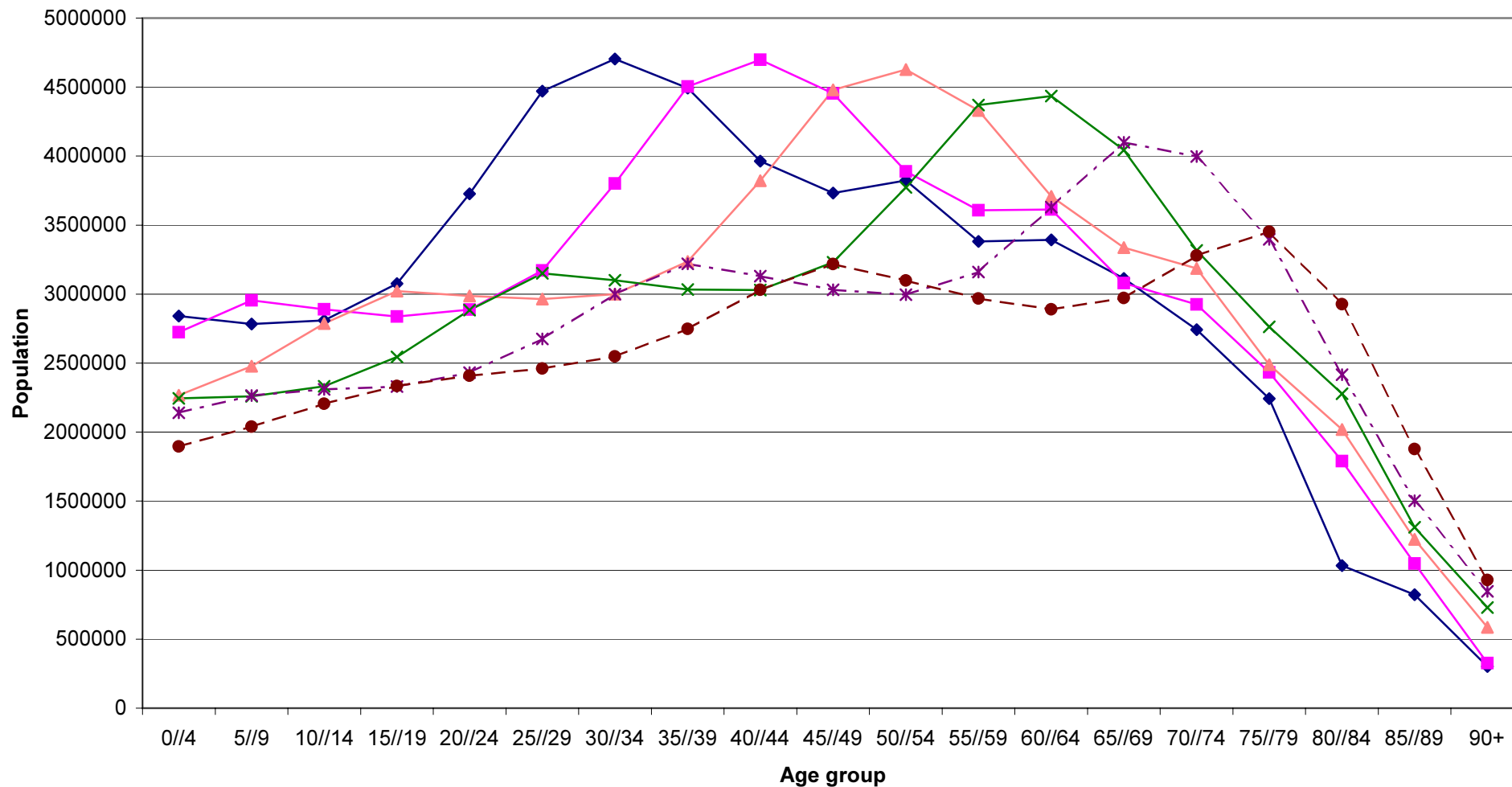


Figure 1.B. Population by age group, 2010, 2020, 2030, 2040 and 2050, Italy



Source: OECD

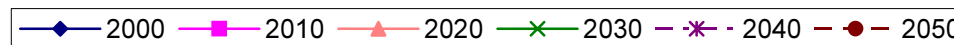
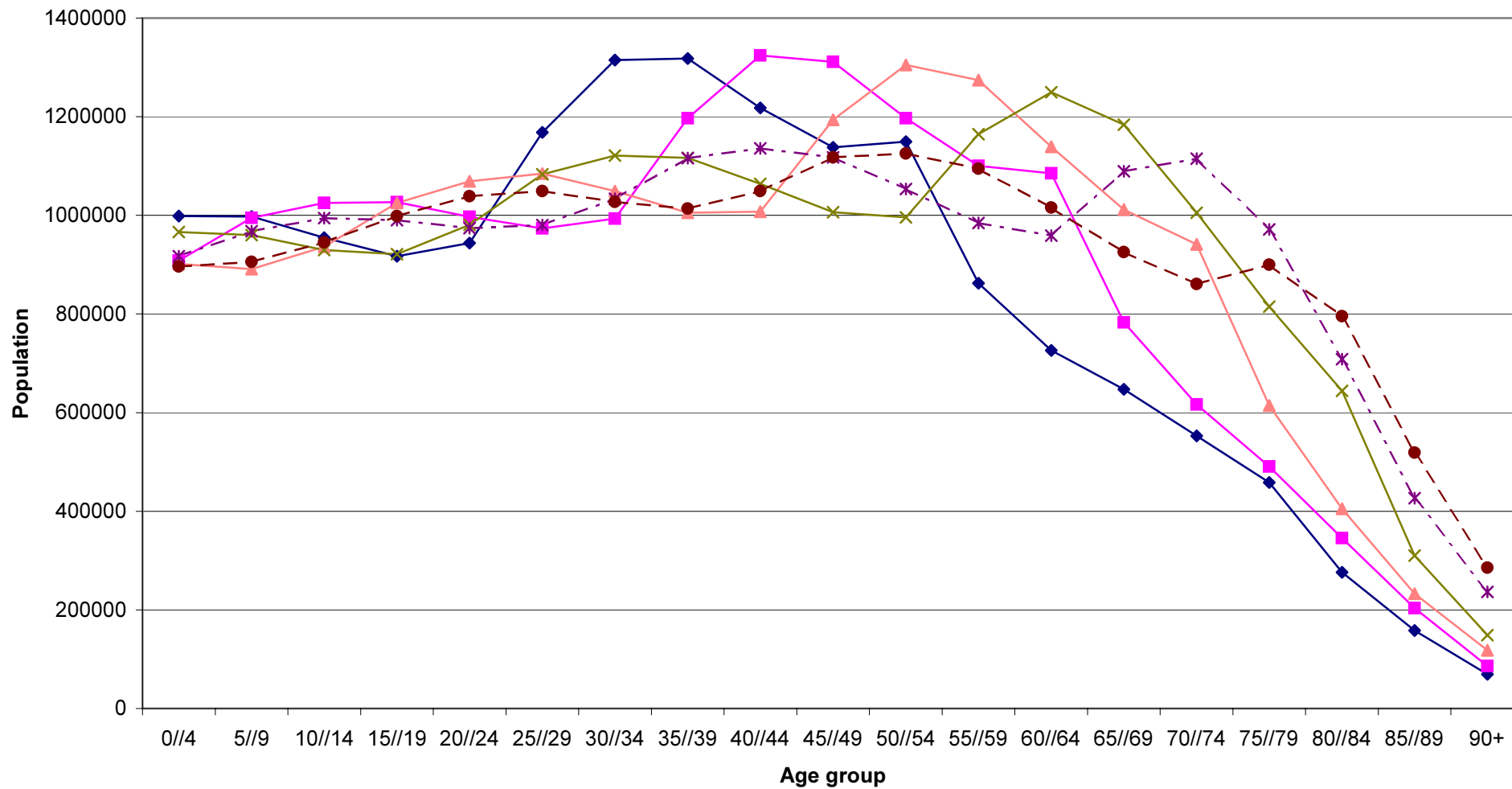


Figure 1.C Population by age group, 2000, 2010, 2020, 2030, 2040 and 2050, Netherlands



Source: OECD

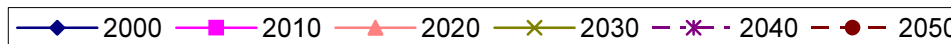
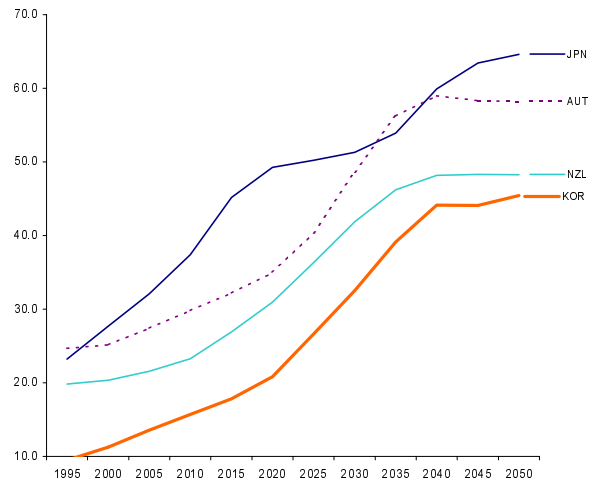
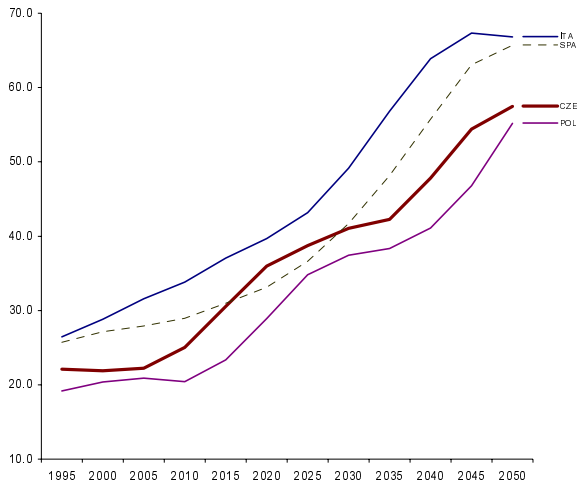
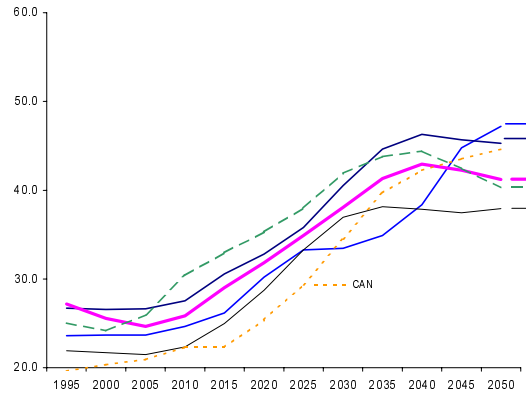
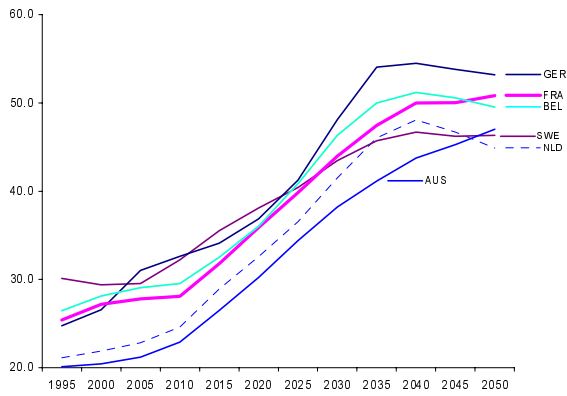


Figure 2. Trends in old-age¹ dependency ratios from 2000 and 2050

Panel A. Fast ageing countries



Panel B. Ageing countries

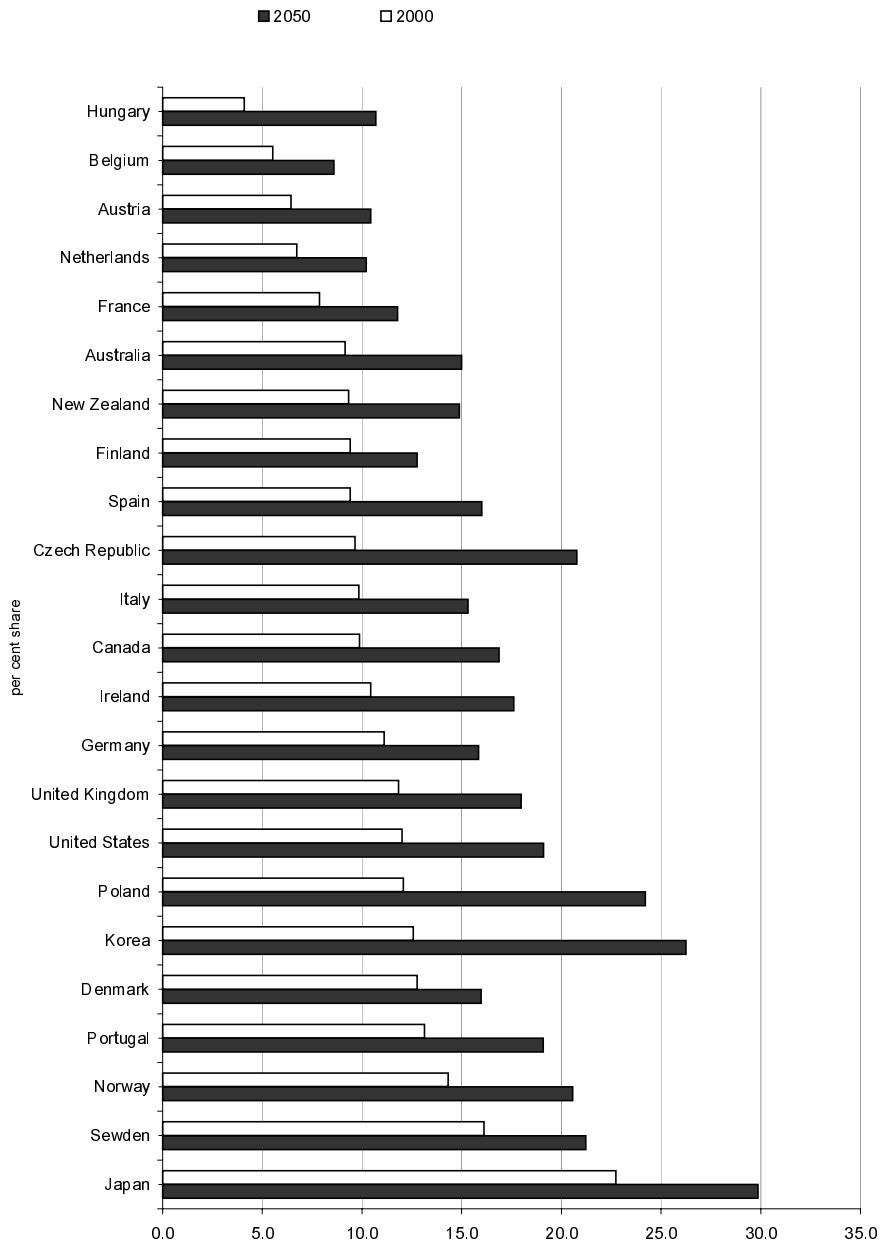


AUS (Australia) AUT (Austria) BEL (Belgium) CAN (Canada) CZE (Czech Republic) DEN (Denmark) FIN (Finland) FRA (France) GER (Germany) HUN (Hungary) ITA (Italy) JPN (Japan)
 KOR (Korea) NLD (Netherlands) NOR (Norway) NZL (New Zealand) POL (Poland) POR (Portugal) SPA (Spain) SWE (Sweden) UK (United Kingdom) USA (United States)

1. The old age dependency ratio is the elderly population (65+) as a share of the working age population (20-64).

Source: OECD.

Figure 3. Older workers¹ as a share of total labour force in 2000 and 2050



1. Older workers are aged 55 years old and over.

Source: OECD.

Table 1. Changes in the age structure of the population from 2000 to 2050
(per cent share of total population and changes in percentage point differences)

		[0-19]	[20-54]	[55+]	of which:	
					[55-64]	[65+]
Australia	level, 2000	8.8	64.1	27.1	11.6	15.5
	changes, 2000-50	-2.9	-15.1	18.0	3.4	14.6
Austria	level, 2000	22.5	50.5	27.0	11.4	15.6
	changes, 2000-50	-5.5	-11.2	16.8	1.8	15.0
Belgium	level, 2000	23.5	49.5	27.0	10.2	16.8
	changes, 2000-50	-2.9	-9.0	11.9	2.3	9.5
Canada	level, 2000	25.8	52.5	21.7	9.1	12.6
	changes, 2000-50	-7.4	-10.1	17.5	4.4	13.1
Czech Republic	level, 2000	22.9	52.5	24.6	10.8	13.8
	changes, 2000-50	-6.1	-13.9	19.9	3.4	16.5
Denmark	level, 2000	24.2	48.3	27.5	12.7	14.7
	changes, 2000-50	-2.7	-5.2	8.0	0.2	7.8
Finland	level, 2000	23.4	49.8	26.8	11.0	15.8
	changes, 2000-50	-4.6	-9.0	13.6	2.0	11.5
France	level, 2000	25.5	49.3	25.2	9.2	15.9
	changes, 2000-50	-4.7	-8.8	13.5	2.7	10.8
Germany	level, 2000	21.2	49.4	29.4	12.9	16.5
	changes, 2000-50	-3.6	-8.7	12.3	0.3	12.1
Hungary	level, 2000	23.6	50.8	25.6	11.0	14.6
	changes, 2000-50	-4.5	-9.5	14.0	2.7	11.3
Ireland	level, 2000	27.1	52.1	20.8	8.8	12.0
	changes, 2000-50	-7.3	-8.9	16.2	3.0	13.2
Italy	level, 2000	19.8	50.5	29.8	11.8	18.0
	changes, 2000-50	-3.4	-12.7	16.0	0.5	15.5
Japan	level, 2000	20.6	49.3	30.2	12.9	17.2
	changes, 2000-50	-2.8	-11.0	13.8	-1.3	15.1
Korea	level, 2000	29.7	55.1	15.2	8.1	7.1
	changes, 2000-50	-10.2	-12.2	22.3	4.3	18.0
Netherlands	level, 2000	24.4	52.0	23.6	10.0	13.6
	changes, 2000-50	-2.9	-9.8	12.7	2.0	10.7
New Zealand	level, 2000	29.8	49.4	20.8	9.0	11.9
	changes, 2000-50	-8.1	-9.3	17.4	3.7	13.6
Norway	level, 2000	25.9	49.3	24.8	9.7	15.1
	changes, 2000-50	-3.4	-6.6	10.0	2.5	7.5
Poland	level, 2000	27.8	51.3	20.8	8.6	12.2
	changes, 2000-50	-10.0	-12.6	22.6	5.6	17.0
Portugal	level, 2000	22.1	50.8	27.2	10.7	16.4
	changes, 2000-50	-2.6	-8.7	11.4	0.6	10.8
Spain	level, 2000	21.6	51.6	26.8	10.0	16.7
	changes, 2000-50	-4.8	-13.3	18.1	1.9	16.2
Sweden	level, 2000	24.0	47.1	28.9	11.7	17.3
	changes, 2000-50	-3.5	-6.5	10.0	2.1	7.9
United Kingdom	level, 2000	25.5	48.9	25.6	10.0	15.6
	changes, 2000-50	-4.8	-5.1	9.9	0.8	9.1
United States	level, 2000	28.6	49.9	21.5	8.7	12.7
	changes, 2000-50	-4.3	-6.8	11.1	3.0	8.1
Average of above countries						
	level, 2000	23.8	51.0	25.1	10.4	14.7
	changes, 2000-50	-4.9	-9.7	14.7	2.3	12.4

Source: OECD.

Table 2. Decomposition of the change in the old age dependency ratio

Annual average growth rate

		2000-50	2000-20	2020-35	2035-50
Austria	Δ Old-age DR	1.7	3.3	3.2	0.2
	Working-age population (20-64)	-0.5	-0.2	-1.0	-0.4
	Elderly population (65 and over)	1.2	3.1	2.2	-0.1
Belgium	Δ Old-age DR	1.1	1.2	2.2	-0.1
	Working-age population (20-64)	-0.3	0.0	-0.6	-0.2
	Elderly population (65 and over)	0.9	1.3	1.6	-0.3
Canada	Δ Old-age DR	1.6	3.8	2.5	0.6
	Working-age population (20-64)	0.2	1.3	-0.2	-0.1
	Elderly population (65 and over)	1.8	5.1	2.2	0.5
Czech Republic	Δ Old-age DR	1.9	5.1	1.1	2.0
	Working-age population (20-64)	-0.8	-0.7	-0.7	-1.4
	Elderly population (65 and over)	1.2	4.4	0.4	0.6
Denmark	Δ Old-age DR	1.0	3.9	1.4	-0.6
	Working-age population (20-64)	-0.1	-0.2	-0.4	0.1
	Elderly population (65 and over)	0.9	3.7	1.0	-0.4
France	Δ Old-age DR	1.3	2.8	1.9	0.5
	Working-age population (20-64)	-0.1	0.3	-0.3	-0.3
	Elderly population (65 and over)	1.1	3.2	1.5	0.2
Germany	Δ Old-age DR	1.4	3.3	2.6	-0.1
	Working-age population (20-64)	-0.5	-0.3	-0.9	-0.4
	Elderly population (65 and over)	0.9	3.0	1.6	-0.5
Hungary	Δ Old-age DR	1.4	2.5	1.0	2.0
	Working-age population (20-64)	-0.7	-0.8	-0.6	-1.1
	Elderly population (65 and over)	0.7	1.6	0.4	0.9
Ireland	Δ Old-age DR	1.7	2.7	1.9	2.0
	Working-age population (20-64)	0.3	1.6	0.2	-0.4
	Elderly population (65 and over)	2.0	4.3	2.1	1.6
Italy	Δ Old-age DR	1.7	3.2	2.4	1.1
	Working-age population (20-64)	-0.8	-0.8	-1.1	-1.1
	Elderly population (65 and over)	0.9	2.4	1.3	0.0
Japan	Δ Old-age DR	1.7	5.8	0.6	1.2
	Working-age population (20-64)	-0.9	-1.5	-0.7	-1.3
	Elderly population (65 and over)	0.8	4.3	-0.1	-0.1
Korea	Δ Old-age DR	2.8	6.4	4.3	1.0
	Working-age population (20-64)	-0.2	1.0	-0.7	-0.8
	Elderly population (65 and over)	2.6	7.4	3.6	0.2
Netherlands	Δ Old-age DR	1.4	4.1	2.3	-0.2
	Working-age population (20-64)	-0.1	0.3	-0.4	0.0
	Elderly population (65 and over)	1.4	4.4	1.9	-0.2
New Zealand	Δ Old-age DR	1.7	4.3	2.7	0.3
	Working-age population (20-64)	0.2	1.2	-0.3	0.0
	Elderly population (65 and over)	1.9	5.5	2.4	0.3
Norway	Δ Old-age DR	1.0	2.2	1.8	0.0
	Working-age population (20-64)	0.2	0.7	-0.1	0.1
	Elderly population (65 and over)	1.1	3.0	1.6	0.1
Portugal	Δ Old-age DR	1.3	1.9	1.6	1.5
	Working-age population (20-64)	-0.2	0.2	-0.1	-0.5
	Elderly population (65 and over)	1.1	2.1	1.5	1.0
Spain	Δ Old-age DR	1.8	2.0	2.5	2.1
	Working-age population (20-64)	-0.6	-0.1	-0.8	-1.3
	Elderly population (65 and over)	1.1	2.0	1.7	0.8
Sweden	Δ Old-age DR	0.9	2.6	1.2	0.1
	Working-age population (20-64)	-0.1	0.1	-0.3	0.0
	Elderly population (65 and over)	0.8	2.7	0.9	0.1
United Kingdom	Δ Old-age DR	1.1	2.1	2.1	0.1
	Working-age population (20-64)	0.0	0.3	-0.3	-0.1
	Elderly population (65 and over)	1.0	2.4	1.8	0.0
United States	Δ Old-age DR	1.1	2.9	1.9	0.0
	Working-age population (20-64)	0.4	1.3	0.1	0.4
	Elderly population (65 and over)	1.5	4.2	2.0	0.3

Source: OECD.

Table 3. Projections in the growth of total population, labour force, employment and older workers from 2000 to 2050

Annual average growth rate

	Total population	Total labour force	Total Employment	Older-age labour force¹
Australia	0.69	0.42	0.45	1.26
Austria	-0.13	-0.47	-0.16	0.66
Belgium	-0.03	-0.19	-0.11	0.66
Canada	0.37	0.16	0.17	1.32
Czech Republic	-0.41	-0.68	-0.62	0.56
Denmark	0.05	-0.08	-0.07	0.32
Finland	-0.09	-0.37	-0.31	-0.01
France	0.10	-0.11	-0.03	0.54
Germany	-0.17	-0.40	-0.35	0.65
Hungary	-0.44	-0.26	-0.26	0.94
Ireland	0.46	0.46	0.46	1.77
Italy	-0.36	-0.45	-0.37	0.63
Korea	0.02	0.15	0.17	1.99
Japan	-0.46	-0.63	-0.61	0.50
Netherlands	0.22	0.11	0.09	0.65
Norway	0.30	0.14	0.13	0.64
New Zealand	0.36	0.20	0.20	1.36
Poland	-0.20	-0.33	-0.18	1.66
Portugal	0.13	-0.01	-0.23	1.26
Spain	-0.23	-0.39	-0.17	0.74
Sweden	0.07	0.00	0.02	0.34
United Kingdom	0.07	-0.11	-0.12	0.77
United States	0.54	0.46	0.44	1.34
OECD Average	0.04	-0.10	-0.06	0.89

Notes: 1. Older age workers are defined as workers aged from 55 years old and over.

2. Changes in the share of older age workers are in percentage point differences.

Source: OECD

Table 4. Changes in age-related spending from 2000 to 2050
(Levels in per cent of GDP, changes in percentage points)

	Total age-related spending Panel A		Old-age pension Panel B		"Early retirement" programmes Panel C		Health care and long-term care Panel D		Child / Family benefits and education Panel E	
	level 2000	change 2000-50	level 2000	change 2000-50	level 2000	change 2000-50	level 2000	change 2000-50	level 2000	change 2000-50
Australia	16.7	5.6	3.0	1.6	0.9	0.2	6.8	6.2	6.1	-2.3
Austria ^a	10.4	2.3	9.5	2.2	..	..	..	..	..	..
Belgium	22.1	5.2	8.8	3.3	1.1	0.1	6.2	3.0	6.0	-1.3
Canada	17.9	8.7	5.1	5.8	..	..	6.3	4.2	6.4	-1.3
Czech Republic	23.1	6.9	7.8	6.8	1.8	-0.7	7.5	2.0	6.0	-1.2
Denmark ^b	29.3	5.7	6.1	2.7	4.0	0.2	6.6	2.7	6.3	0.0
Finland	19.4	8.5	8.1	4.8	3.1	-0.1	8.1	3.8	..	..
France ^c	..	..	12.1	3.9	..	..	..	..	..	..
Germany	..	..	11.8	5.0	..	..	..	..	..	..
Hungary ^d	7.1	1.6	6.0	1.2	1.2	0.3	..	..	..	..
Italy	..	..	14.2	-0.3	..	..	..	..	..	..
Japan	13.7	3.0	7.9	0.6	..	..	5.8	2.4	..	..
Korea	3.1	8.5	2.1	8.0	0.3	0.0	0.7	0.5	..	..
Netherlands ^e	19.1	9.9	5.2	4.8	1.2	0.4	7.2	4.8	5.4	0.0
New Zealand	18.7	8.4	4.8	5.7	..	..	6.7	4.0	7.2	-1.3
Norway	17.9	13.4	4.9	8.0	2.4	1.6	5.2	3.2	5.5	0.5
Poland ^d	12.2	-2.6	10.8	-2.5	1.4	-0.1	..	..	..	..
Spain	..	..	9.4	8.0	..	..	..	..	..	..
Sweden	29.0	3.2	9.2	1.6	1.9	-0.4	8.1	3.2	9.8	-1.2
United Kingdom	15.6	0.2	4.3	-0.7	..	..	5.6	1.7	5.7	-0.9
United States	11.2	5.5	4.4	1.8	0.2	0.3	2.6	4.4	3.9	-1.0
Average of countries above ^f	16.9	5.5	7.4	3.4	1.6	0.2	6.0	3.3	6.2	-0.9
Average of countries which provide all or nearly all spending components	18.7	6.9								
Portugal ^g	15.6	4.3	8.0	4.5	2.5	-0.4	..	..	..	..

a) Total pension spending includes other age-related spending which does not fall within the definition in Panels B to E. This represents 0.9 per cent of GDP in 2000 and rises by 0.1 percentage point in the period to 2050.

b) Total includes other age-related spending not classifiable under the other headings. This represents 6.3 per cent of GDP in 2000 and increases by 0.2 percentage points from 2000 to 2050.

c) For France, the latest available year is 2040.

d) Total includes old-age pension spending and "early retirement" programmes only.

e) "Early retirement" programmes only include spending on persons 55+.

f) OECD average excludes countries where information is not available and Portugal which is less comparable than other countries.

g) Portugal provided an estimate for total age-related spending but did not provide expenditure for all of the spending components.

Source: OECD.

Table 5. Changes in spending, revenues and the primary balance from 2000 to 2050

(Per cent of GDP and changes in percentage points of GDP)

	Total revenue	Total spending	Primary Deficit (-) / Surplus (+)	
			Primary balance Total	Old age pension spending only ^a
Panel A. Countries reporting age-related spending items in addition to old-age pensions				
Belgium				
2000, level	48.1	41.3	6.8	
Change 2000-2050	0.1	4.3	-4.2	-2.4
Canada				
2000, level	38.7	29.0	9.7	
Change 2000-2050	-1.2	8.2	-9.4	-6.6
Czech Republic				
2000, level	39.5	41.9	-2.4	
Change 2000-2050	0.0	6.8	-6.8	-6.7
Denmark				
2000, level	52.6	48.3	4.3	
Change 2000-2050	1.7	5.7	-4.0	-1.0
Finland				
2000, level	47.4	41.9	5.5	
Change 2000-2050	-1.7	8.5	-10.2	-6.4
Japan				
2000, level	29.4	32.3	-2.9	
Change 2000-2050	0.1	3.0	-2.9	-0.5
Korea				
2000, level	28.1	25.6	2.5	
Change 2000-2050	-1.8	8.4	-10.2	-9.7
Norway				
2000, level	49.8	43.2	6.6	
Change 2000-2050	-0.5	16.5	-17.0	-10.5
Netherlands				
2000, level	46.9	42.7	4.2	
Change 2000-2050	3.2	10.1	-6.9	-1.8
New Zealand				
2000, level	36.2	34.9	3.2	
Change 2000-2050	0.9	11.2	-10.3	-7.5
Poland^b				
2000, level	38.2	39.1	-0.9	
2000-2050	-1.2	-2.2	1.0	1.3
Sweden				
2000, level	56.5	52.2	4.3	
Change 2000-2050	-3.3	3.6	-7.0	-5.4
United Kingdom				
2000, level	40.1	36.1	4.0	
Change 2000-2050	-0.3	1.2	-1.5	-0.6
United States^c				
2000, level	29.7	25.5	4.2	
Change 2000-2050	-0.3	4.9	-5.2	-1.6
Average change for countries above	-0.3	6.4	-6.8	-4.2
Panel B. Countries reporting old-age pension spending only				
Germany				
2000, level	46.9	44.4	2.4	
2000-2050	2.8	5.0	..	-2.2
Italy				
2000, level	46.9	42.0	5.0	
2000-2050	0.0	-0.3	..	0.2
Spain				
2000, level	40.1	37.0	3.2	
2000-2050	0.0	8.0	..	-8.0
Average change for countries above	0.9	4.2	..	-3.3
Portugal				
2000, level	47.0	48.8	-1.8	
2000-2050	1.5	2.4	-0.9	..

.. Refers to unavailable data.

a) Changes in the primary balance holding age-related spending other than pensions constant.

b) For Poland, total includes old-age spending and "early retirement" spending only.

c) Projections for revenues do not include the recent tax reduction proposals of the United States Administration.

Source: OECD.

Table 6. Employment growth from 2000 to 2050: Sensitivity tests

Percentage point differences relative to the baseline in annual average growth rates

	Lower older age participation rates ¹	Lower female participation rates ²	Lower unemployment rates ³	Higher net migration flows ⁴	Memorandum item - Baseline scenario
Belgium	-0.03	-0.05	0.10	0.12	-0.11
Canada	-0.01	-0.05	0.05	..	0.17
Czech Republic	-0.03	-0.04	0.05	0.10	-0.62
Denmark	-0.02	-0.07	0.05	0.11	-0.07
France	-0.03	-0.08	0.06	0.07	-0.03
Germany	-0.03	-0.07	0.06	0.21	-0.35
Italy	-0.13	-0.07	0.04	0.13	-0.37
Japan	-0.02	-0.04	0.05	..	-0.61
Korea	-0.08	-0.10	..	..	0.17
Netherlands	-0.03	-0.05	..	..	0.09
Poland	-0.03	-0.05	0.11	..	-0.18
Spain	-0.14	..	..	0.13	-0.17
Sweden	..	..	..	0.17	0.02
United Kingdom	-0.03	-0.05	0.04	..	-0.12
United States	-0.02	-0.05	0.02	0.17	0.44
Average of above countries	-0.05	-0.06	0.06	0.13	-0.12

Notes: 1. Older age participation rates are assumed to be 5 percentage points lower by 2050 relative to the baseline.

2. Female participation rates are assumed to be 5% points lower by 2050 relative to the baseline.

3. Unemployment rates are assumed to decline to levels experienced in late 60's

4. Migration is assumed to increase by +50% relative to the baseline in 2050.

Source: OECD.

Table 7. Changes in labour force by age and entrants and exits by decade for three countries
(in Thousands)

	Change in labour force between periods ¹					Entrants into the labour force ²	Exits from the labour force ²	Net flows
	15-24	25-54	15-54	55-64	16-64			
France								
2000-2010	148	-71	77	705	782	6 681	5 654	1 027
2010-2020	-208	-596	-804	167	-637	6 303	6 589	- 286
2020-2030	22	-805	-783	76	-707	6 321	6 776	- 454
2030-2040	-87	-284	-371	-169	-540	6 164	6 524	- 359
2040-2050	-88	-408	-495	29	-467	5 991	6 306	- 315
2000-2020	-61	-666	-727	872	145	12 984	12 243	741
2020-2050	-153	-1497	-1649	-64	-1714	18 476	19 605	-1 129
2000-2050	-213	-2163	-2376	807	-1569	31 460	31 848	- 388
Italy								
	15-24	25-54	15-54	55-64	15-64	20-29	55+	
2000-2010	-495	458	-37	735	697	4 737	4 269	468
2010-2020	158	-1240	-1082	841	-241	4 837	5 039	- 202
2020-2030	-17	-1523	-1539	357	-1183	4 958	6 310	-1 352
2030-2040	-305	-471	-777	-857	-1633	4 388	6 190	-1 802
2040-2050	-1	-680	-680	-286	-966	4 249	5 022	- 773
2000-2020	-337	-782	-1119	1576	457	9 574	9 308	266
2020-2050	-323	-2674	-2996	-786	-3782	13 595	17 522	-3 927
200-2050	-660	-3456	-4115	790	-3326	23 169	26 830	-3 661
Netherlands								
	15-24	25-54	15-54	55-64	15-64	20-29	55+	
2000-2010	109	73	181	337	519	1 654	1 332	322
2010-2020	68	-101	-32	224	192	1 772	1 706	66
2020-2030	-98	-202	-300	-43	-343	1 743	2 034	- 291
2030-2040	10	41	51	-176	-126	1 705	1 776	- 71
2040-2050	56	-60	-4	81	77	1 775	1 684	91
2000-2020	177	-28	149	562	711	3 425	3 038	388
2020-2050	-31	-222	-253	-138	-391	5 224	5 495	- 271
2000-2050	145	-250	-104	424	319	8 649	8 532	117

Note: For explanation of method see footnotes in main text

1. Difference in the labour force between the two periods by age group. Levels for individual age groups should be treated with caution as they are calculated using participation rates for wider age groups.

2. The number of entrants into and exits out of the labour force. In any one period this includes individuals entering the labour force in the 10 to 19 age group and the 20 to 29 age group. Exits include those exiting from the 55-64 and 65-74 age groups. The same caveat as in footnote 1 applies.

Source: OECD

Table 8. Indicators of unemployment, long-term unemployment and poverty for older workers

Per cent and changes in percentage point differences

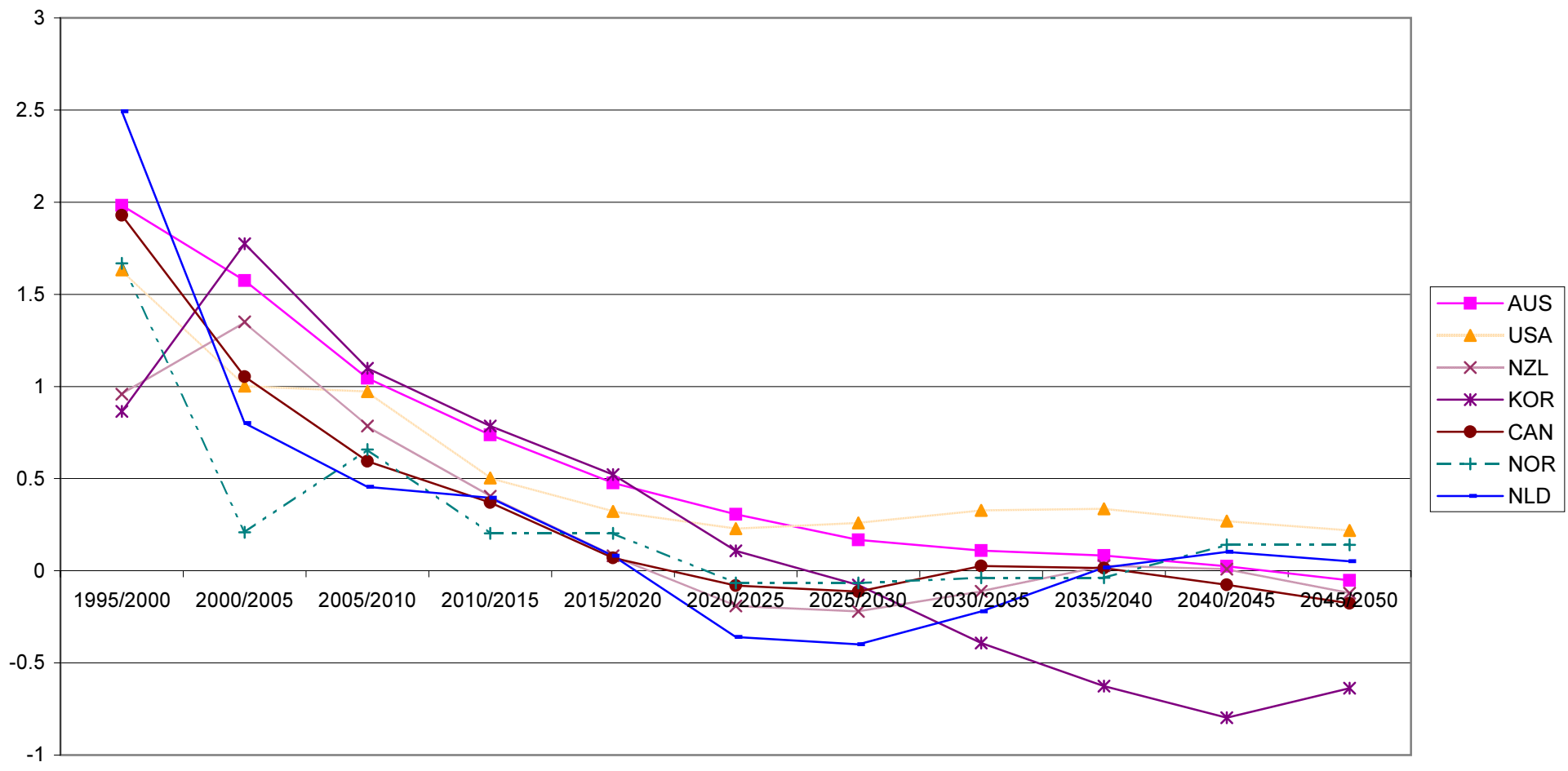
		Unemployment rate			Share of long-term unemployed			Poverty rates		
		[16-65] y [1]	[55-65] y [2]	Ratio [2]/[1]	[16-65] y [3]	[55-65] y [4]	Ratio [4]/[3]	16-65 [5]	[51-65] y [6]	Ratio [6]/[5]
Australia	1994	9.3	8.6	0.9	36.3	55.6	1.5	8.5	14.3	1.7
	<i>changes, 1984-1994</i>	0.7	3.1		5.1	0.6		-3.0	..	
Belgium	1995	9.4	4.0	0.4	62.4	85.4	1.4	6.6	5.1	0.8
	<i>changes, 1983-1995</i>	-2.3	-1.4		-1.8	10.7		..	..
Canada ¹	1995	9.5	8.3	0.9	16.2	24.3	1.5	11.4	10.9	1.0
	<i>changes, 1985-1995</i>	-1.3	-0.1		4.3	4.4		-0.4	-0.9	
Czech Republic	1995	4.0	2.9	0.7	28.0	33.1	1.2	..	..	..
	<i>changes, 1985-1995</i>	..	..		..	..		..	..
Denmark	1994	8.1	6.5	0.8	32.1	50.7	1.6	3.8	1.7	0.4
	<i>changes, 1983-1994</i>	-1.8	0.3		-11.3	0.1		-0.8	-3.4	
Finland	1995	15.6	20.3	1.3	32.3	55.6	1.7	4.4	4.6	1.0
	<i>changes, 1986-1995</i>	10.2	13.9		16.3	44.4		0.2	-0.3	
France ²	1994	12.5	7.0	0.6	36.5	66.9	1.8	6.9	7.8	1.1
	<i>changes, 1984-1994</i>	2.9	0.3		-2.5	-6.9		0.4	-2.7	
Germany	1994	8.4	11.5	1.4	43.9	58.8	1.3	9.4	7.9	0.8
	<i>changes, 1984-1994</i>	1.3	6.4		-0.5	6.2		3.8	2.6	
Ireland	1994	15.1	8.5	0.6	62.5	77.8	1.2	..	11.1	..
	<i>changes, 1987-1994</i>	-2.5	-0.5		-0.8	1.2		..	-0.2	
Italy	1993	10.1	..		57.2	47.1	0.8	14.1	12.7	0.9
	<i>changes, 1984-1993</i>	-0.1	..		-6.6	-8.8		4.7	1.4	
Japan	1995	3.3	3.7	1.1	17.8	24.3	1.4	..	..	..
	<i>changes, 1985-1995</i>	0.6	-0.1		5.1	8.2		..	..
Korea	1995	2.1	0.8	0.4	4.4	3.6	0.8	..	..	..
	<i>changes, 1985-1995</i>	..	..		..	..		..	..
Netherlands	1995	7.1	3.0	0.4	43.6	63.3	1.5	7.0	2.1	0.3
	<i>changes, 1984-1995</i>	-7.2	-8.9		-14.0	3.0		3.6	0.4	
New Zealand	1995	6.3	3.3	0.5	22.7	47.1	2.1	..	..	..
	<i>changes, 1985-1995</i>	..	..		..	..		..	..
Norway	1995	5.0	2.6	0.5	24.2	41.1	1.7	5.9	4.3	0.7
	<i>changes, 1986-1995</i>	3.0	1.5		12.3	-8.9		1.8	0.0	
Poland	1995	13.7	5.9	0.4	40.0	47.5	1.2	..	..	..
	<i>changes, 1985-1995</i>	..	..		..	..		..	..
Portugal	1995	7.6	4.1	0.5	48.7	57.1	1.2	..	..	..
	<i>changes, 1985-1995</i>	-1.3	2.0		-5.0	18.5		..	..
Spain	1995	22.9	12.2	0.5	55.6	64.5	1.2	..	..	..
	<i>changes, 1985-1995</i>	1.4	1.8		-0.7	9.9		..	..
Sweden	1995	9.3	7.8	0.8	24.1	49.9	2.1	7.2	2.3	0.3
	<i>changes, 1983-1995</i>	5.4	3.9		13.8	..		1.1	-0.8	
United Kingdom	1995	8.7	7.5	0.9	43.5	62.5	1.4	11.0	6.3	0.6
	<i>changes, 1985-1995</i>	-2.6	-1.0		-6.3	-1.3		4.2	1.3	
United States	1995	5.6	3.6	0.6	9.7	16.0	1.6	16.5	13.0	0.8
	<i>changes, 1985-1995</i>	-1.7	-0.7		0.3	-0.8		-1.2	-0.3	
Average of above countries		9.2	6.6	0.7	35.3	49.1	1.4	8.7	7.4	0.8

Notes: 1. Old age workers for Canada are aged 45 and over.

2. Old age workers for France are aged 50 and over.

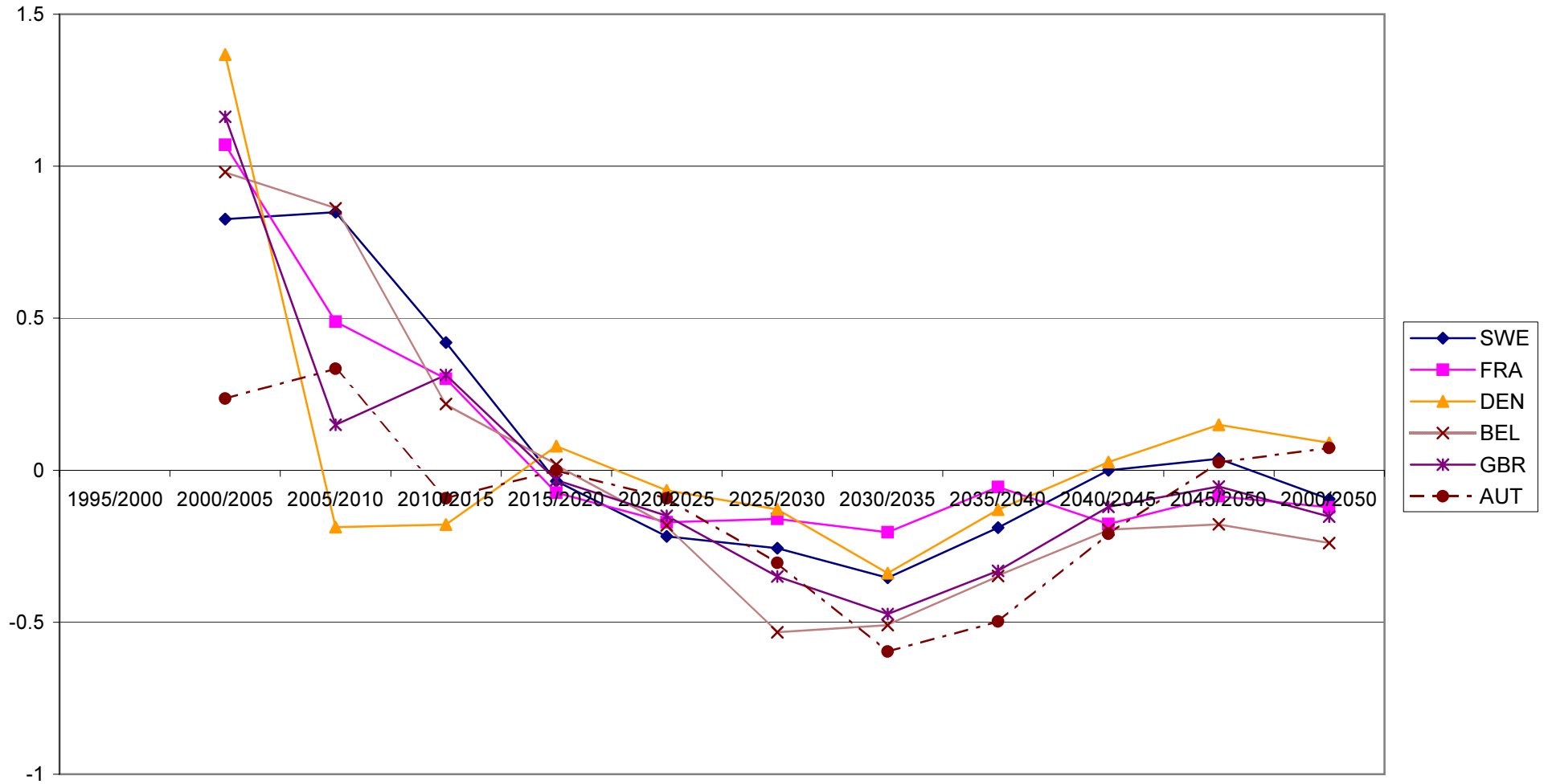
Source: OECD.

Annex figure 1.A. **Growth rate of employment by period**
 Panel A: High growth



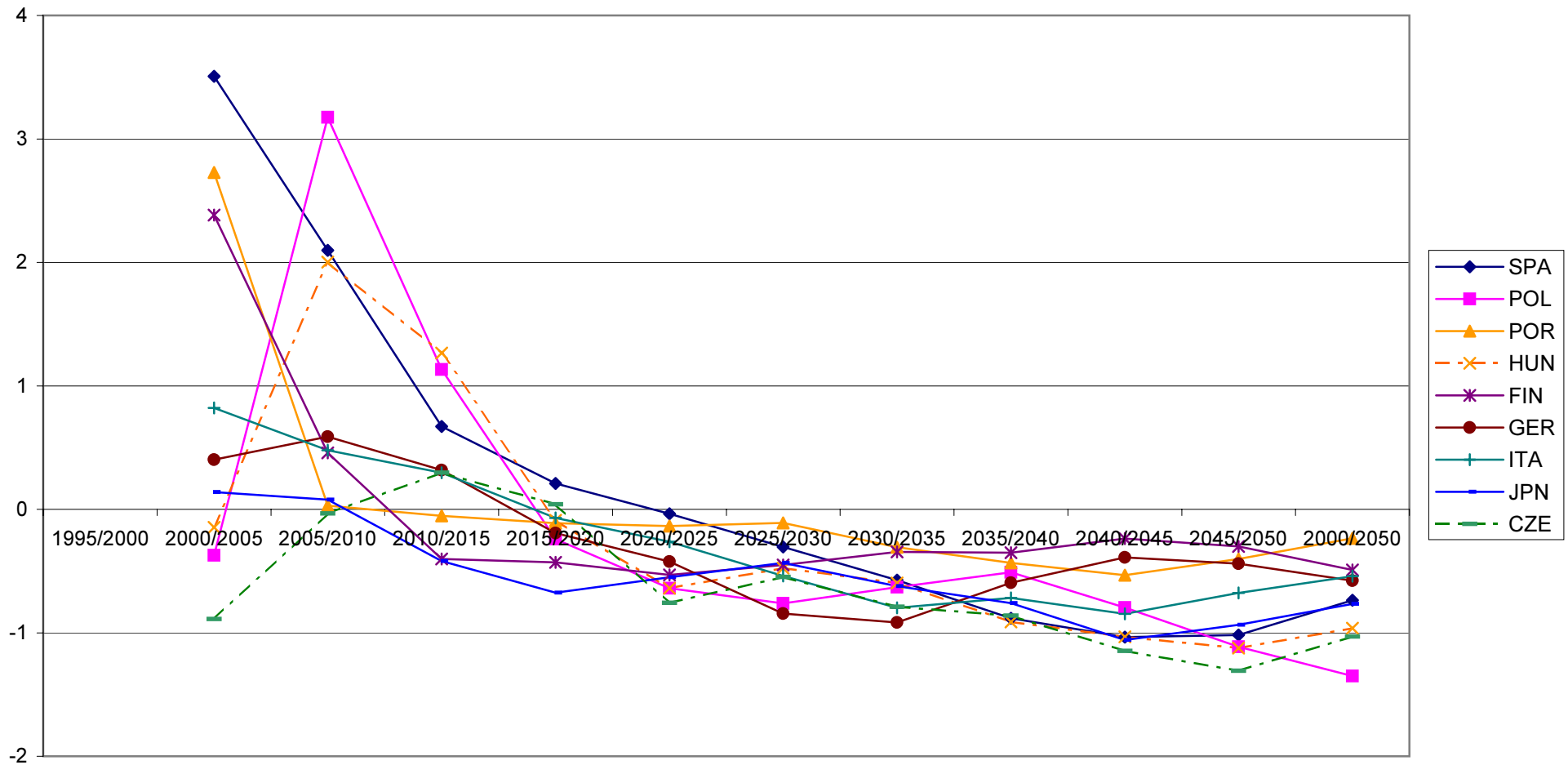
Source: OECD

Annex figure 1.B. Growth rate of employment by period
 Panel B: Average growth



Source: OECD

Annex figure 1.C. Growth rates of employment by period
 Panel C: Low growth



Source: OECD

Annex Table 1. Demographic assumptions: Higher variants in fertility rate, life expectancy and net migration

	Fertility rate				Life expectancy of male			
	Baseline scenario		Higher fertility rate scenario		Baseline scenario		Longer life expectancy of males	
	2000	2050	2000	2050	2000	2050	2000	2050
Austria	1.3	1.5	1.3	1.7	75.0	81.0	75.3	84.7
Belgium	1.5	1.8	1.6	2.1	74.8	80.0	75.2	83.6
Canada	1.6	1.5	..	..	75.5	80.0	..	..
Czech Republic	1.1	1.5	1.2	1.7	71.5	75.2	71.8	78.2
Denmark	1.8	1.8	1.8	2.1	74.2	79.0	74.5	82.7
Finland	1.7	1.7	1.8	2.0	73.9	80.0	74.3	84.0
France	1.7	1.8	1.8	2.1	74.8	80.0	75.2	84.0
Germany	1.4	1.5	1.4	1.7	74.7	80.0	75.1	83.8
Greece	1.3	1.6	1.4	1.8	75.9	81.0	76.3	85.1
Hungary	1.3	1.6	..	..	66.8	74.6	67.4	77.5
Ireland	1.9	1.8	1.9	2.1	74.0	79.0	74.3	82.6
Italy	1.2	1.5	1.2	1.7	75.5	81.0	75.8	84.8
Japan	1.4	1.6	1.4	1.9	77.4	79.4	77.7	83.3
Korea ¹	1.7	1.6	1.7	1.4	70.6	76.6	71.0	80.2
Luxembourg	1.7	1.8	1.8	2.1	74.4	80.0	74.7	83.7
Netherlands	1.7	1.8	1.7	2.1	75.5	80.0	75.8	83.7
New Zealand	..	..	..	..	..	..	..	..
Norway	1.8	1.8	..	..	75.7	80.0	..	..
Poland	1.3	1.6	1.4	1.8	69.9	78.5	70.2	82.4
Portugal	1.5	1.7	1.6	2.0	72.0	78.0	72.4	81.7
Spain	1.2	1.5	1.2	1.7	74.9	79.0	75.3	83.0
Sweden	1.5	1.8	1.5	2.1	77.3	82.0	77.6	85.4
United Kingdom	1.7	1.8	1.8	2.1	75.2	80.0	75.5	83.7
United States	2.1	2.0	2.1	2.2	73.9	79.1	74.0	82.9
Average of above countries	1.5	1.7	1.6	1.9	74.1	79.3	74.3	82.9
	Life expectancy of female				Net migration			
	Baseline scenario		Longer life expectancy of females		Baseline scenario		High net migration scenario	
	2000	2050	2000	2050	2000	2050	2000	2050
Austria	81.2	86.0	81.4	88.0	10,000	20,000	11,000	30,000
Belgium	80.9	85.0	81.1	87.0	10,204	15,000	11,224	22,500
Canada	81.3	84.0	..	..	21,670,000	5,604,000	..	..
Czech Republic	78.4	81.5	78.7	84.5	9,500	15,000	0	0
Denmark	79.0	83.0	79.2	85.2	11,000	10,000	12,100	15,000
Finland	81.1	85.0	81.3	87.0	5,604	5,000	6,164	7,500
France	82.8	87.0	83.0	89.1	50,094	50,000	55,103	75,000
Germany	80.8	85.0	81.0	87.1	300,000	200,000	330,000	300,000
Greece	81.0	85.0	81.2	87.1	21,670	25,000	23,837	37,500
Hungary	75.2	81.1	75.5	82.0	-8,879	-2,845	-9,309	-4,220
Ireland	79.4	84.0	79.6	86.1	17,477	5,000	20,900	7,500
Italy	82.0	86.0	82.1	88.1	50,000	80,000	55,000	120,000
Japan	84.1	86.5	84.3	88.4	..	..	..	..
Korea ¹	78.1	83.0	78.3	84.6	..	..	..	..
Luxembourg	80.8	85.0	81.0	87.0	3,072	2,000	3,379	3,000
Netherlands	80.9	85.0	81.1	87.1	33,390	35,000	36,729	52,500
New Zealand	..	..	..	..	..	..	..	..
Norway	81.4	84.5	..	..	13,500	10,000	..	..
Poland	78.2	84.7	78.4	86.9	..	..	..	..
Portugal	79.2	84.0	79.4	85.8	12,131	25,000	13,344	37,500
Spain	82.1	85.0	82.3	87.0	31,054	60,000	34,159	90,000
Sweden	82.0	86.0	82.2	88.0	15,165	20,000	16,682	30,000
United Kingdom	80.0	85.0	80.2	87.4	90,000	70,000	99,000	105,000
United States	79.6	83.5	79.9	86.9	900,000	900,000	900,000	1,350,000
Average of above countries	80.4	84.6	80.5	86.7				

Source: OECD.