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Agenda item 3: Key-note lectures

**LONG TERM POPULATION PROJECTIONS IN EUROPE: HOW THEY  
INFLUENCE POLICIES AND ACCELERATE REFORMS.**

Submitted by Federal planning bureau, Belgium<sup>1</sup>

Abstract – The long-term demographic projections have progressively raised concerns about the consequences of ageing population. To better understand those changes and measure their size, projections of social expenditure have been built and progressively refined. Confronted with a large budgetary cost of ageing in the long run, the Government's alternative is: solve the problem when it comes up or try to anticipate the negative results and prevent them. Three ways are to be considered that are not mutually incompatible: reforming the social system in order to reduce the cost for the present and future generations, increasing the tax or contribution receipts by pushing up employment rates and the trend growth of GDP and saving now in the public sector to cover the increase of the future expenditure. The paper shows that, since the end of the nineties, a broad movement of reforms has taken place in the EU which involves this three-pronged strategy.

Jel Classification – H55, J18, J26

Keywords – Pension reforms, pension expenditure, pension projections, sustainability, demographic projections

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## Executive Summary

1. During the eighties and the nineties, the long-term demographic projections have demonstrated progressively the important changes that are observed and will continue to be observed in the future population structure: life expectancy is persistently increasing, low fertility rates weigh on the growth of the young population and the baby boom generation is progressively reaching the age of retirement: three characteristics which have been associated with the ageing of population.

2. The long-term demographic projections have progressively raised concerns feed into debates in various policy domains. The first domain is the long-term financial sustainability of branches of the social protection, where expenditure is age-related to the age of the population. The ageing of population essentially changes the dynamics of receipts and expenditure of the pension system, which is in most of the EU countries based on pay-as-you-go systems. Health care and long-term care are two other types of expenditure that are influenced by the increasing average age of the population. To better understand those changes and measure their size, projections of social expenditure have been built and progressively refined. This had a first consequence: the reform process that was characterized by successive steps of relative increase of welfare of elderly people from the fifties to the eighties has been stopped or managed cautiously and in some cases even reversed during the nineties. Other types of social expenditure that have a close relationship with the ageing of population have been considered: unemployment, family allowances, education, etc. Systematic projection exercises have been developed by international organizations, especially the EU. Those projections, while still very imperfect, have had a very powerful impact on policies. One of the reasons is the following: the projections were conducted not only by academic researchers but also by international organizations. Among the latter, the projections conducted by the EU, which have been very influential because they were conducted on a multi-country basis with the same methodologies and consistent demographic and macroeconomic assumptions. Accordingly, the results were comparable. In most of countries, the long-term increase in age-related expenditure was contained in a relatively narrow range. In the few countries where the increase was much higher or lower than the average, the reasons were easily identifiable. The second domain of concern is social policy itself. How to achieve a successful social security system when it is considered as unfinished and requiring more resources in order to reduce the risk of poverty and to warrant an acceptable level of protection of the population in general and which is at the same time considered as financially unsustainable in the long run? This has induced a large production of studies and academic literature about the reform of the social security systems. The third domain of concern is economic growth itself. During the last decade, the European growth performance has been generally very disappointing: growth in productivity has especially been very low and has stopped the catching up process of the European standard of living compared to the US. If this is to carry on and is combined with a declining population of working age, growth in the next decades will be very low and converge towards a halving of what it has been during the last

two centuries. The consequences of such a change in the dynamism of a society are still to be investigated and have not yet received sufficient attention from economists and sociologists. This is one of the reasons why at the EU level such a great emphasis is being put on enhancing potential growth through the Lisbon agenda.

3. Confronted with a large budgetary cost of ageing in the long run, the government's alternative is: solve the problem when it comes up or try to anticipate the negative results and prevent them. The first solution would imply, in a pay-as-you-go system, that the cost of ageing would be covered by a progressive proportional increase of the tax pressure. There are two major drawbacks to this solution: first, in a globalized world, tax competition is a major constraint which limits the possibilities of increasing the cost of labour or of capital, this first solution is considered to be against an intergenerational equity principle since the cost is raised by one generation and paid by the next one. The alternative is to try to solve the problem now or in the medium term. Three ways are to be considered that are not mutually incompatible: reform the social system in order to reduce the costs for the present and future generations, increase the tax or contribution receipts by pushing up the trend growth of GDP and saving now in the public sector to cover the increase of the future expenditure. Those different ways of reducing the problem of ageing for the government can be combined. The weight associated to each of them will depend on the room for manoeuvre in the long run peculiar to each country. Four variables are of particular interest to figure out the dimensions of the general problem: the general tax pressure, the generosity of the social security system, the employment rate and the public debt. Moderating the increase of pension and health care systems is always difficult when it implies a reduction of the benefit ratio in the future. It is even more difficult when the benefit ratio is relatively low and the system less generous. In countries where the social system is less generous, one should see that the effort would be put on the other dimensions: employment or S2. Accordingly, the variety of situations among the EU countries has led the Commission and the Council to recommend a three-pronged strategy to be tailored for each country.

4. Social reforms have been directed towards increasing the employment rate and reducing the benefit ratio. A number of countries have reformed their legal pension systems. Few of them have undertaken a radical reform. Most of them have changed the system by increasing the age eligibility conditions, changing the indexation of pension from wage indexation to price indexation and changing the replacement ratio for future pensioners by increasing the number of contribution years. In the recent past, from 2000 to 2007, many countries have introduced some changes in their pension system. This is clearly seen in the progress made by the employment rates of older workers. This shows up very clearly in the projection of the benefit ratios. In many countries, those reforms substantially improved the view that we can have on the risk of long-term unsustainability of their public finance.

5. Some countries have also increased the sustainability of their public finance by accumulating savings. That has been explicitly the case when a reserve fund was created and funded by the government. Implicitly, the same process has been put in place by pursuing a fiscal policy

aiming at reaching and maintaining a surplus conducting to a rapid decrease in public debt. A generalization of such a policy is now under consideration for every EU country in the framework of the Stability and Growth Pact (SGP). Sustainability is now at the centre of the debate at the “Medium Term Objective” (MTO) of the budget balance.

6. Since 2005, when the Council revised the SGP, sustainability has become a major issue. A monitoring process is now being followed involving the long-term projection and the assessment of sustainability. The long term projection is based on a commonly agreed methodology conducted every three or four years by the member states and the Commission and the assessment of sustainability based on commonly agreed quantitative and qualitative indicators but conducted exclusively by the Commission. One can say that this process, actually launched in 2000, has been a success among the many other processes decided by the Council.



## 1. Introduction

I would like to thank Eurostat for inviting me to this conference on long-term demographic projections. Those projections have now become an essential starting point of the work done by the European Ageing Working Group attached to the Economic Policy Committee that I have the honour to chair since 2000. As this work is already to be well known, I shall not present it systematically. Rather, the question that I would like to ask today is the following: Let us assume that there is no available demographic projection or that we are completely myopic about the demographic future of our countries, what would this change to our daily life. Put in another way: what did the long-term demographic projections change in the social, economic and financial policies?

Since the last decade, when long-term demographic projections have started to highlight the future ageing of population, a large number of reforms have been undertaken. I would like to show you that these important reforms depend on figures derived from the very long-term, and that if we only had at our disposal the figures of today, the present policies would have been very different in many cases. In the meanwhile, it does not mean that policies have fully responded to the challenges posed by the demographic projections. Many countries are still far from an ideal and sustainable position in terms of social, financial and economic goals in a long-term perspective.

I would like to develop the discussion along the following way: first, I shall present the main public policy challenges that have emerged from the demographic projections; secondly, I shall show what is until now the response in terms of general strategy; thirdly, I would like to show you what has changed in social policies and, fourthly, how the long-term is influencing present fiscal policy.

## 2. Raising concerns emanating from population projections

Demographic developments have always been central to economic growth and welfare. In the sixties and the seventies, the international conferences on demography were motivated primarily by the strong population growth in the developing countries. The first UN Conference on Population was held in 1974 in Bucharest, it was followed by those held in Mexico in 1984 and Cairo in 1994. A UN Division on Population has been created in order to work out statistics, studies and forecasts.

During the eighties and the nineties, the long-term demographic projections have demonstrated progressively the important changes that are observed and will continue to be observed in the future population structure: life expectancy is persistently increasing, low fertility rates weigh on the growth of the young population and the baby boom generation is progressively reaching the age of retirement: three characteristics which have been associated with the ageing of population.

UN conference was already devoted to ageing in Vienna in 1969 and replicated in Madrid in 1999.

Beside the UN and national statistical institutes, Eurostat has been one of the leading international organizations which have very early<sup>1</sup> provided, almost every five years, long-term demographic projections alarming about the potential impacts of ageing (see table 1 to have the main demographic indicators from the last Eurostat projection).

**Table 1 – Main demographic indicators from the last Eurostat projection**

	EU15		EU10	
	2004	2050	2004	2050
Fertility rate	1,5	1,6	1,2	1,6
Life expectancy at birth - men	76,4	82,1	70,1	78,7
Life expectancy at birth - women	82,2	87	78,2	84,1
Net migration flows (thousands)	1347	778	-3	101
Net migration flows (as % of population)	0,4	0,2	0	0,1

Source: European Economy (2006).

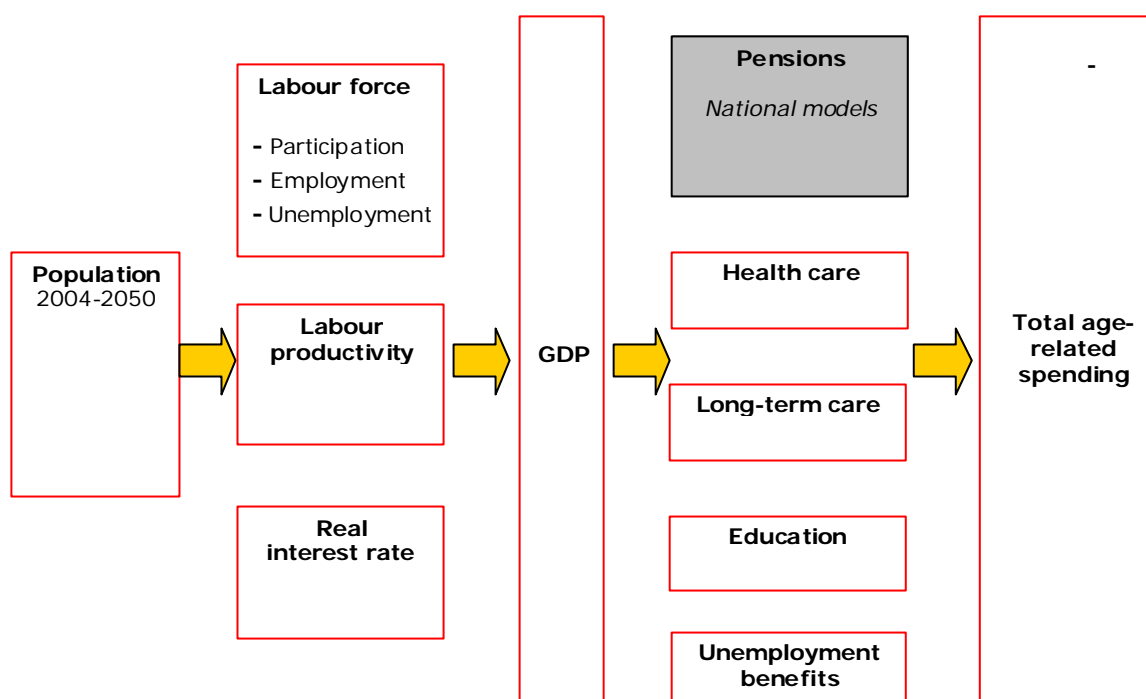
Concerns were raised in various domains of policy. The first domain is the long-term financial sustainability of the branches of social protection, where the expenditure is age-related to the age of the population. The ageing of population essentially changes the dynamics of receipts and expenditure of the pension system, which is in most of our countries based on pay-as-you-go systems. Health care and long-term care are two other types of expenditure that are influ-

<sup>1</sup> 6 sets of projections have been provided (projections beginning with the years: 80, 85, 90, 95, 2004).

enced by the increasing average age of the population. To better understand those changes and measure their size, projections of social expenditure have been built and progressively refined. Those projections have first been developed in academic research projects. One of the first attempts to build such a projection at the international level was made by the IMF in the early nineties. Systematic projection exercises have been developed by academic research projects and by international organizations, especially in the EU. Other types of social expenditure that have a close relationship with the ageing of population have been considered: unemployment, family allowances, education, etc. In 1999, at the EU level, the EPC established the Working Group on Ageing Population with a mandate to project age-related public expenditures until 2050 on the basis of a Eurostat demographic projection. They were published in 2001 for 15 EU member states. In 2003, an attempt was made to update the projections and taking on board the new acceding countries. In 2006, a complete redrafting of the methodology and the use of more accurate and comparable data has led to a new set of projections for the 25 EU countries.

The methodology that has been developed by the AWG proceeds in several steps. The first step is the demographic projection achieved by Eurostat. Starting from the population, the labour force has been projected following the so-called cohort approach. An assumption of a slight decline in the structural unemployment contributes to the projection of employment by age and gender. We then have followed a “production function” approach to project productivity and wage development as well as GDP.

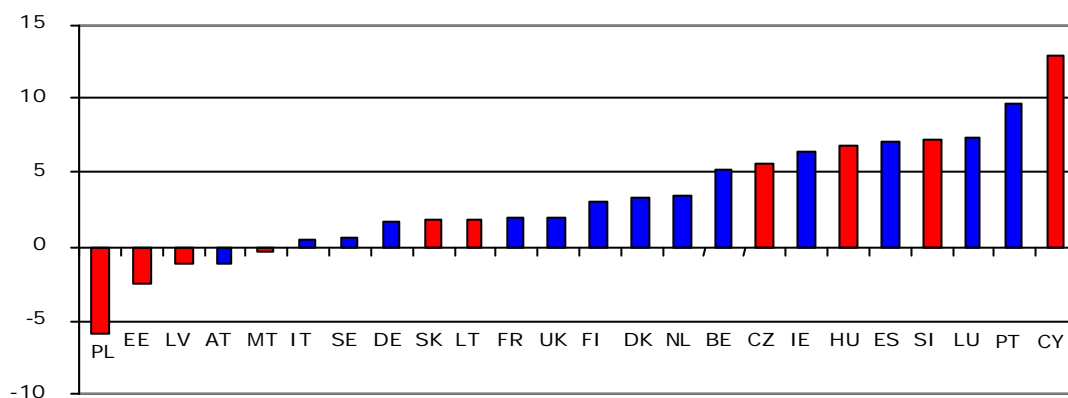
**Figure 1 - Overview of the 2005/2006 projection exercise**



On the basis of these common assumptions, national models have been run to provide the pension projections, whilst the other age-related expenditure was computed by the Commission services with a methodology commonly discussed and agreed by the Commission and the member states.

The results of the pension projection are given in the following chart. The blue bars identify the EU 15 countries and the red ones the 10 new EU member states. The results show large differences between countries. Seven of them, mainly Eastern European countries, but also Italy and Sweden, having introduced radical reforms, and particularly having introduced either a switch to private pensions or a notional defined contribution system (NDC), have a negative or small increase of pension expenditure in percent of GDP. Eight countries show an increase which is smaller than 5 percent and 9 countries higher than 5 percent of GDP.

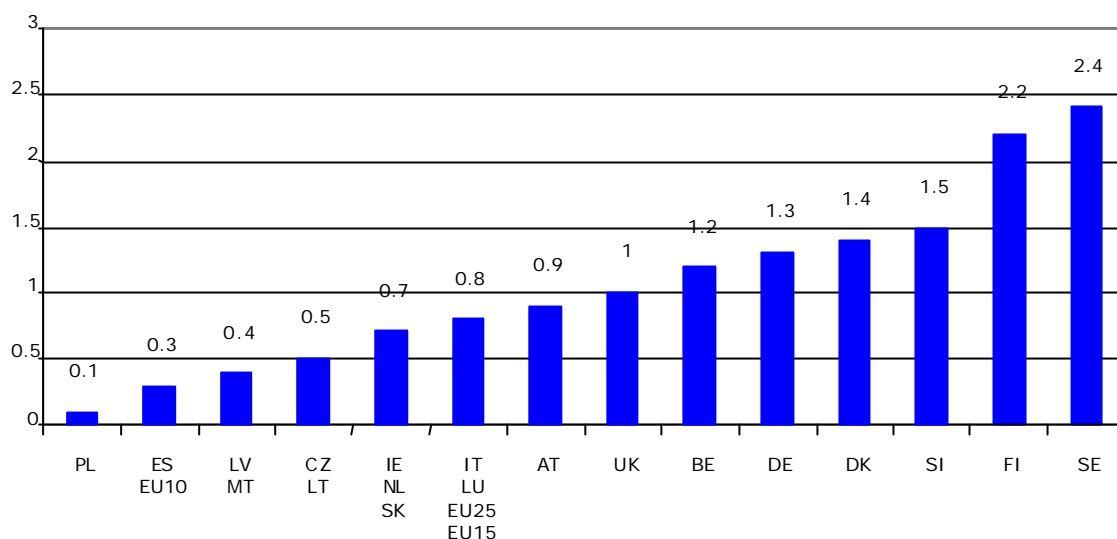
**Figure 2 - Projected changes in public pension expenditure between 2004 and 2050**  
(in percent of GDP)



Source: European Economy (2006).

The other important increase in age-related expenditure is health care. Health care spending is mainly driven by the average health status of the population, economic development, technologies and medical progress, etc. The ageing of population tends to decrease the average health status since a large share of the population requires more care. There is a debate in literature on the extent to which, as life expectancy increases, the health status or morbidity of the population may change. That is the reason why different hypotheses on the evolution of healthy life expectancy have been envisaged. Several scenarios have been constructed. The figures presented in the chart below attempt to isolate the pure effects of an ageing population on health care spending assuming that the age-related spending per capita on health care in the base year (2004) remains constant over time. It assumes de facto that the gains in life expectancy up to 2050 are assumed to be spent in bad health.

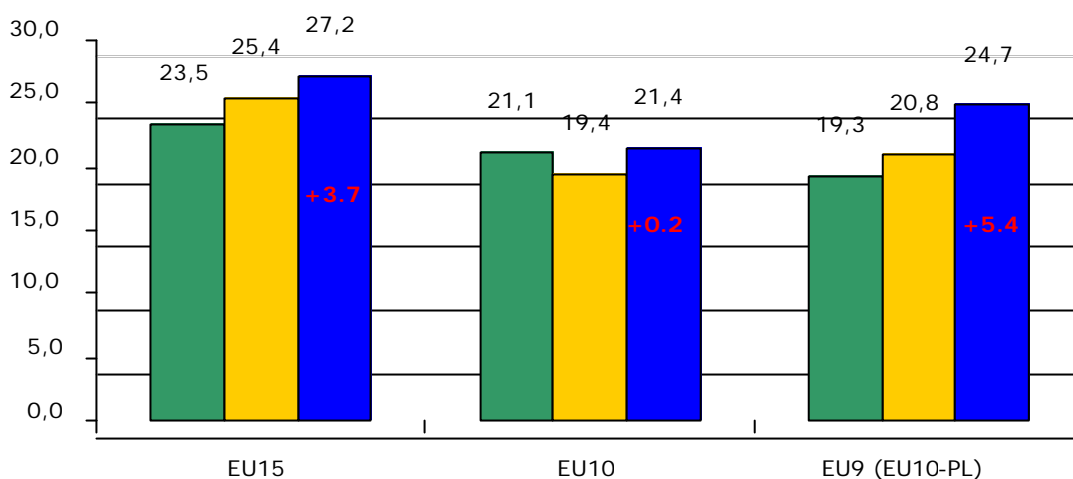
**Figure 3 - Change in health expenditure 2004-2050**  
(In percent of GDP)



Source: European Economy (2006).

The changes in the overall age-related expenditure that was considered by the AWG, i.e.: pensions, health and long term care, unemployment and education, are then added and expressed in terms of GDP. The following figure illustrates their evolution from 2004 to 2030 and 2050.

**Figure 4 - Projected age-related expenditure between 2004 and 2050**  
(in percent of GDP)



Source: European Economy (2006).

Source

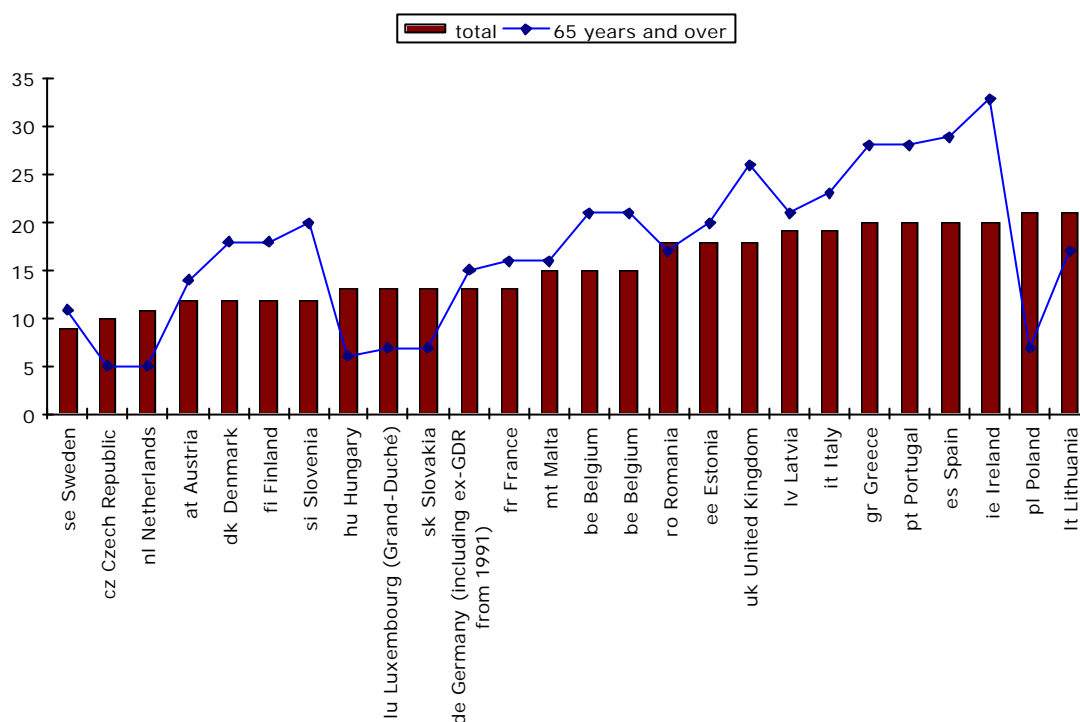
In general, the reduction in of the cost of unemployment and education is unable to compensate the projected changes in pension and health care spending. For the EU 15, the total increase

would represent 3.7 percent of GDP, while, in the new member states, it would represent only 0.2 percent. Excluding Poland, where a broad and radical reform of the pension system was introduced, this increase climbs to 5.4 percent of GDP.

From the beginning, the publication of long-term age-related expenditure projections had a first consequence: the reform process, which was characterized by successive steps of relative increase of welfare for elderly people from the fifties to the eighties, has been managed more cautiously and even, in some cases, reversed during the nineties. The projections, while still very imperfect, have had a very powerful impact on policies. One of the reasons is the following: the projections were conducted not only by academic researchers but also by international organizations. Among the latter, the projections conducted by the EU, which have been very influential because they were conducted on a multi-country basis with the same methodologies and consistent general demographic and macroeconomic assumptions. Accordingly, the results were comparable. In most of the countries, the long-term increase in age-related expenditure was contained in a relatively narrow range. In the few countries where the increase was much higher or lower than the average, the reasons were easily identifiable.

The second domain of concern is social policy itself. How to achieve a successful social security system when it is considered as unfinished and requiring more resources in order to reduce the risk of poverty and to warrant an acceptable level of protection for the population in general and whilst it is considered at the same time as financially unsustainable in the long run? This has induced a large production of studies and academic literature about the reform of the social security systems. The risk of poverty is still high, and sometimes very high, especially among the oldest people. It mainly reflects past accruals and ongoing indexation of pensions. If unsustainable pension systems put the public finance at risk, equally inadequate pensions generate a demand for social policies to prevent situations of poverty. In this respect, the Social Protection Committee of the EU underlines that minimum income provision schemes for older people have an essential role in alleviating or reducing the risk of poverty amongst the elderly. Whether those systems contribute to this objective depends on the initial level of these provisions and the indexation rules applied to them. As it can be seen on the following graph, these minimum provisions are still inadequate in many countries.

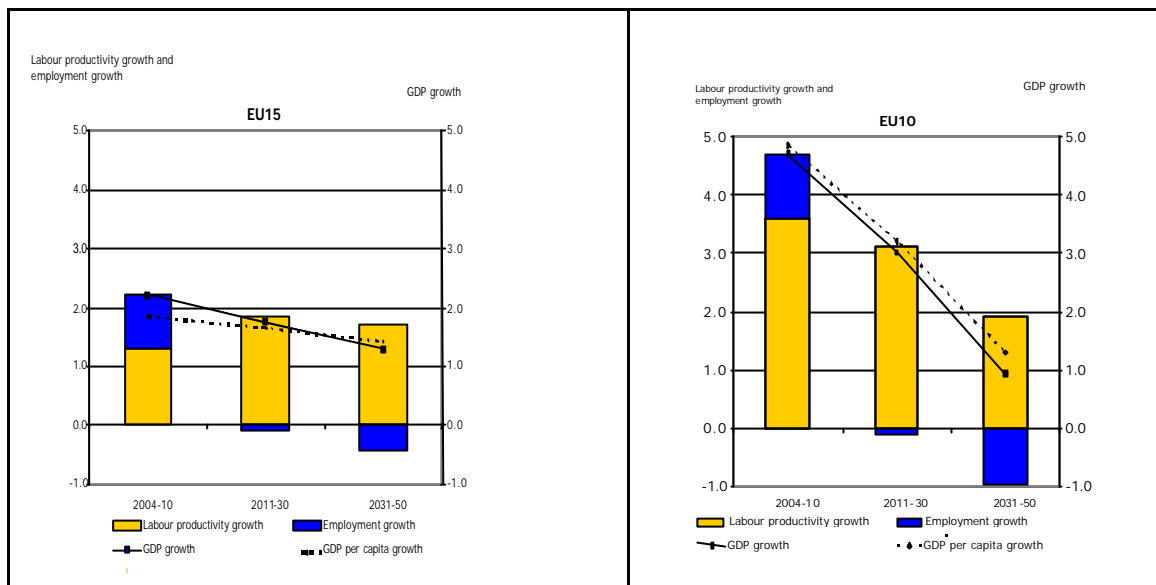
**Figure 5 - At risk of poverty rate in 2005 for the whole population and for the population 65 and over**  
(poverty threshold: 60% of median income after social transfers)



Source: Eurostat.

The third domain of concern is economic growth itself. During the last decade, in European growth performance has been generally very disappointing: growth in productivity has especially been very low and has stopped the catching up process of the European standard of living compared to the US. If this is to carry on and is combined with a declining population of working age, growth will be very low in the next decades and converge towards a halving of what it has been during the last two centuries. The consequences of such a change in the dynamism of a society are still to be investigated and have not yet received sufficient attention from economists and sociologists. This is one of the reasons why at the EU level such a great emphasis is being put on enhancing potential growth through the Lisbon agenda.

**Figure 6 - Projected potential growth rates and their determinants**  
(in percent)

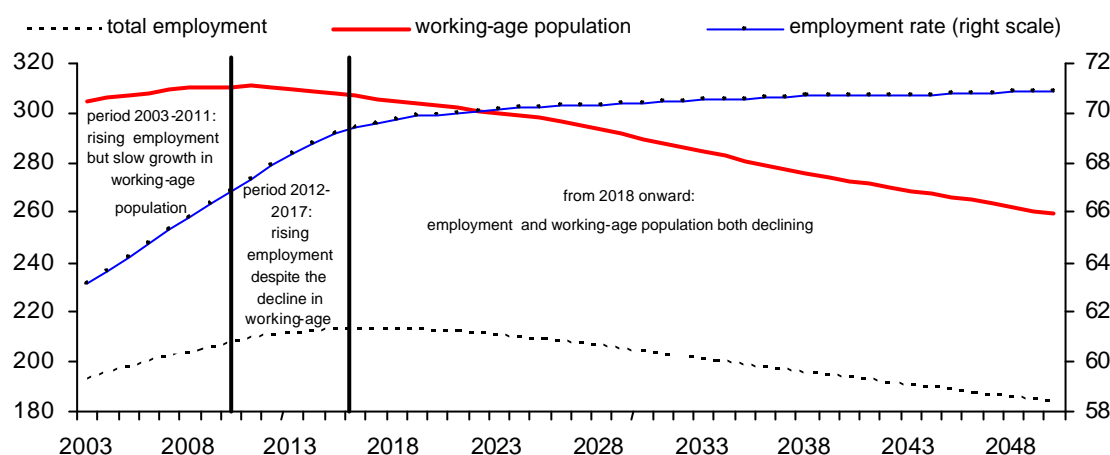


Source: European Economy (2006).

In a no policy change scenario, for the EU-15, the annual average potential GDP growth rate will fall from 2.2% in the period 2004-2010 to 1.8% in the period 2011-2030 and to 1.3% between 2031 and 2050. An even steeper decline is foreseen in the EU-10, from 4.3% in the period 2004-2010 to 3% in the period 2011-2030 and to 0.9% between 2031 and 2050.

These impressive reductions are mainly the result of the decline in the projected employment, which is itself driven by the decline of the working age population despite the rise of the overall employment rate. The employment rate is projected to rise from 63% in 2003 to 70% in 2020, the Lisbon employment rate target, mainly due to higher female employment rates and the increase of the older workers' participation rate. The following graph is particularly illustrative.

**Figure 7 - Projected working-age population and total employment**  
(EU25; in millions)



Source: European Economy (2006).

In the latest and coming years, we do not see any impact of ageing on the labour market, on the contrary. Employment is growing substantially, while unemployment does not decline. This is due to a huge increase in participation rate and a still growing working-age population. Between 2011 and 2017, despite the decline in working-age population employment continues to rise because the participation is still growing rapidly among females and older workers. During this period, we nevertheless expect some shortages on the labour market that can result in increasing wage pressures. These pressures on the labour market will be permanent after 2017 when working-age population declines and participation rates are at maturity. Accordingly employment declines continuously and weighs on output growth.

Concerns are, in consequence, put on macroeconomic policies. The tightness of the labour market after 2011 can potentially produce inflation pressures which would lead to a restrictive monetary policy, rising interest rates and decreases in investment and in potential growth<sup>2</sup>. Moreover, low economic growth means small margins of manoeuvre for future governments which has always proven to be a very difficult situation for a government, especially if it has to maintain a strictly balanced budget or even a surplus.

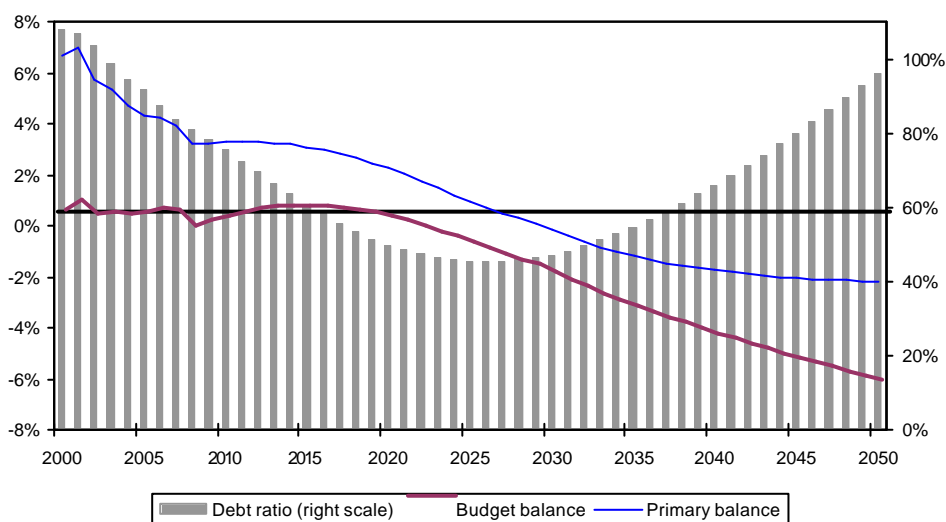
<sup>2</sup> Such a scenario is described for the euro area in the last world medium term projection issued by the Belgian Federal Planning Bureau: "The NIME Outlook for the World Economy 2007-2013".

### 3. From diagnosis to prevention

Confronted with a large budgetary cost of ageing in the long run, the Government's alternative is: solve the problem when it comes up or try to anticipate the negative results and prevent them. The first solution would imply, in a pay-as-you-go system, that the cost of ageing would be covered by a proportional increase of the tax pressure. There are two major drawbacks: first, in a global and open environment, tax competition is a major constraint which limits the possibilities of increasing the cost of labour or capital; then, this first solution is considered to be against an intergenerational equity principle since the cost is raised by one generation and paid by the next one.

This choice can be illustrated by a "no policy change scenario" projection for any European country. I have chosen to show, on the Belgian case, that the political problem is far from being clear cut.

**Figure 8 - Long-term fiscal framework in Belgium in a "no policy change scenario"**  
(in percent of GDP)



Source: FPB Perspectives économiques 2007-2012.

The Belgian government has succeeded to reduce substantially the deficit during the last decade and to maintain a balanced budget during the present decade. A "no policy change" scenario would imply that the reduction of the debt ratio, driven by the increase of the denominator - GDP - would entail a reduction of the interest burden in percent of GDP, which will compensate for the increase of the age-related expenditure during several years. The consequence will be that a balanced budget can easily be maintained until 2020. Later, this compensation will no longer happen. Age-related expenditure will grow faster and the reduction of the interest burden will be small since the debt itself would reach very low levels. The result is that the deficit

increases and is fuelled by the snowball effect of the debt and interests payments. Politically, with regards to the short and medium term, this scenario is such that it will be very difficult for a government to change anything in its policy. The only reason to reform the social system or to build up a structural surplus in order to frontload the long-term shock is: intergenerational equity and tax competition.

The alternative is to try to solve the problem now or in the medium term. Three ways are to be considered that are not mutually incompatible: (i) reforming the social system in order to reduce the cost for the present and future generation, (ii) increasing the tax or contribution receipts not by increasing rates but by pushing up the trend growth of the tax base, i.e. GDP, and (iii) saving now in the public sector to cover the increase of the future expenditure. These different ways of reducing the problem of ageing for the government can be combined. The weight associated to each of them will depend on the room for manoeuvre in the long run that are peculiar to each country. Four variables are of particular interest to figure out the dimensions of the general problem: the general tax pressure, the generosity of the social security system, the employment rate and the public debt (the so-called S2 indicator). First, if the tax pressure is already high, tax competition will make that in the future a government will not be able to use this instrument to finance the age-related expenditure. On the contrary, competitiveness and wage wedge induced structural unemployment will push policies to reduce tax rates. Secondly, moderating the increase of pension and health care systems can be part of a solution. But, this is always difficult as it implies a reduction of the benefit ratio in the future. It is even more difficult when the benefit ratio is relatively low and the system less generous. Thirdly, in countries where the social system is less generous, one should see that the effort is being put on other strategies: reforming the system in order to increase employment of older worker and postpone the take-up of pension. This strategy will at the same time increase GDP and reduce pension spending<sup>3</sup>. Fourthly, a government confronted with a situation where tax pressure is high, pensions are not generous, and employment rate is also high can decide to somehow accumulate savings now by building up budget surplus and accelerate the reduction of public debt. Accordingly, the variety of situations among the EU countries has led the Commission and the Council to recommend a three-pronged strategy being tailored for each country, i.e. reducing debt at a fast pace, raising employment and productivity, and reforming pension and health and long-term care systems.

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<sup>3</sup> Especially if the reforms aim at rising the age eligibility conditions for benefiting from a pension instead of introducing financial incentives (bonus) for those who take up their pension lateron.

## **4. Inducing social reforms**

Pension reforms have primarily aimed at increasing the employment rate of older workers and reducing the benefit ratio, i.e. the average pension divided by the average wage. A number of countries have reformed their public pension systems. Few of them have undertaken a radical reform. Most of them have changed the system by increasing the age eligibility conditions, changing the indexation of pension from wage indexation to price indexation and changing the replacement ratio for future pensioners by increasing the number of contribution years. In the recent past, from the end of the nineties to 2007, many countries have introduced some changes in their pension system. In its last report, the AWG has recorded the pension reforms that were introduced among the EU-25. A summary can be found in the following table.

**Table 2 - Recent pension reforms in EU25 (as recorded by the AWG in 20051)**

Country	Year	Retirement age or length of contribution period	Pension indexation	Attractiveness of early retirement	Disability	Development of funded schemes	Pension formula	Reserve fund
BE	2003	Y				Y		Y
DK	2003,2004			Y	Y			
DE	1992-2001,2002,2004	Y	Y (sustainability factor)	Y	Y	Y		
EL								
ES	2002-2005			Y			Y	
FR	2004	Y	Y (to prices)	Y				
IE	1999,2000,2003					Y		Y
IT	2004	Y					NDC	
LU								
NL	2006			Y				
AT	2003,2004	Y	Y (to prices)	Y				
PT	2002,2005	Y		Y			Y	
FI	2003-2005			Y	Y		Y (life time)	
SE	1998			Y		Y	NDC	
UK	2002-2003	Y						
CY								
CZ	2003							
EE	2001	Y				Switch to private schemes		
HU	1997	Y				Y		
LT	1995,2004	Y				Switch to private schemes		
LV	1996	Y				Switch to private schemes	NDC	
MT								
PL	1999					Switch to private schemes	NDC	
SK	2004	Y				Switch to private schemes		
SL	2000	Y				Y	Y	
Number of countries	21	13	3	9	3	11	8 of which 4 NDC	2
Number of reforms from 2000 to 2005	+/- 26							
Number of reforms recorded	+/- 32							

1 in: European Economy (2006).

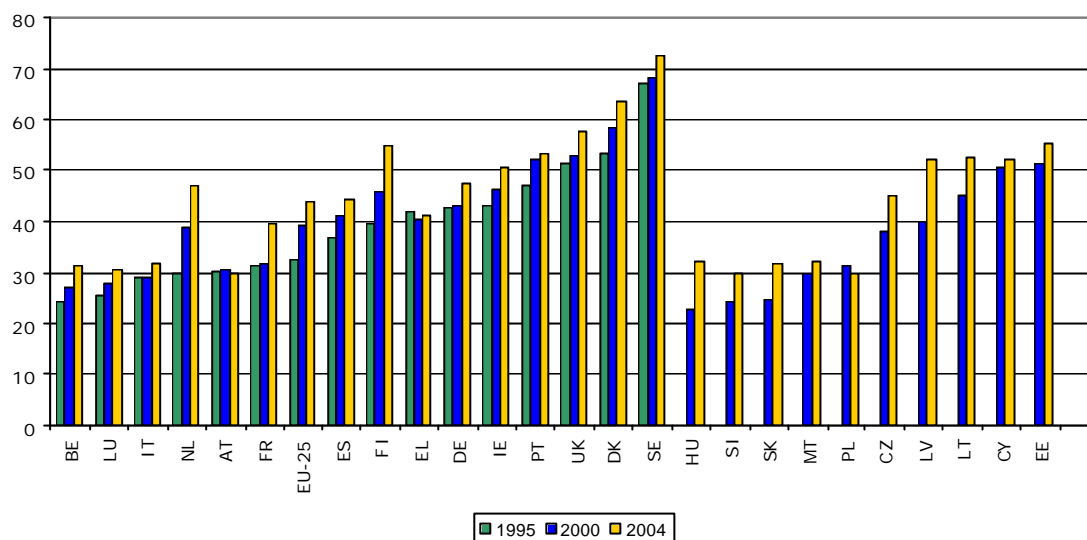
According to the table, the reform process has been impressive! The number of reforms recorded is more or less 32. Among the EU-25, 21 countries have introduced one or more reforms. Several countries have even introduced radical reforms: four have implemented notional defined contribution (NDC) systems: Italy, Latvia, Poland and Sweden, according to which the actuarial accumulation of contributions is converted in an annuity at the time of retirement. The system remains, nevertheless, a pay-as-you-go system: no funding in individual accounts are implemented in the NDC system. One of the salient features of the NDC system is the progressive change of the generosity of the pension in function of the increases in life expectancy. In order to safeguard the actuarial rationale of the system a pensioner in an older age group has either to work longer or to benefit from a lower pension than someone in the former age group. Other countries have introduced this kind of mechanism as well, without the actuarial philosophy (e.g. FR). A radical shift towards private pensions has been made by EE and LV, while a part of the social pension scheme has been switched to private schemes in Lithuania, Hungary, Poland, Slovakia and Sweden.

Apart from these, the majority of the countries have not radically changed their system, but parametric changes have been introduced. The table shows that in most of the countries, a particular emphasis has been put on increasing the employment rate of older worker. This has been introduced by rising the eligibility age condition to early retirement (notably by progressively aligning the retirement age of females to that of males) or by diminishing the advantages given to early retirement or by abolishing the unemployment pathway to early retirement. The EPC/AWG report<sup>4</sup> records recently enacted reforms having potential effects on older worker participation in 17 countries: BE, DE, SP, FR, IT, AU, FI, SW, UK, CZ, EE, HU, LI, LV, PL, SK, SL. The following graphs show the evolution of the participation of older workers since 1990 and the estimated impact of pension reforms on average exit age from the labour force which will continue to influence the participation in the future.

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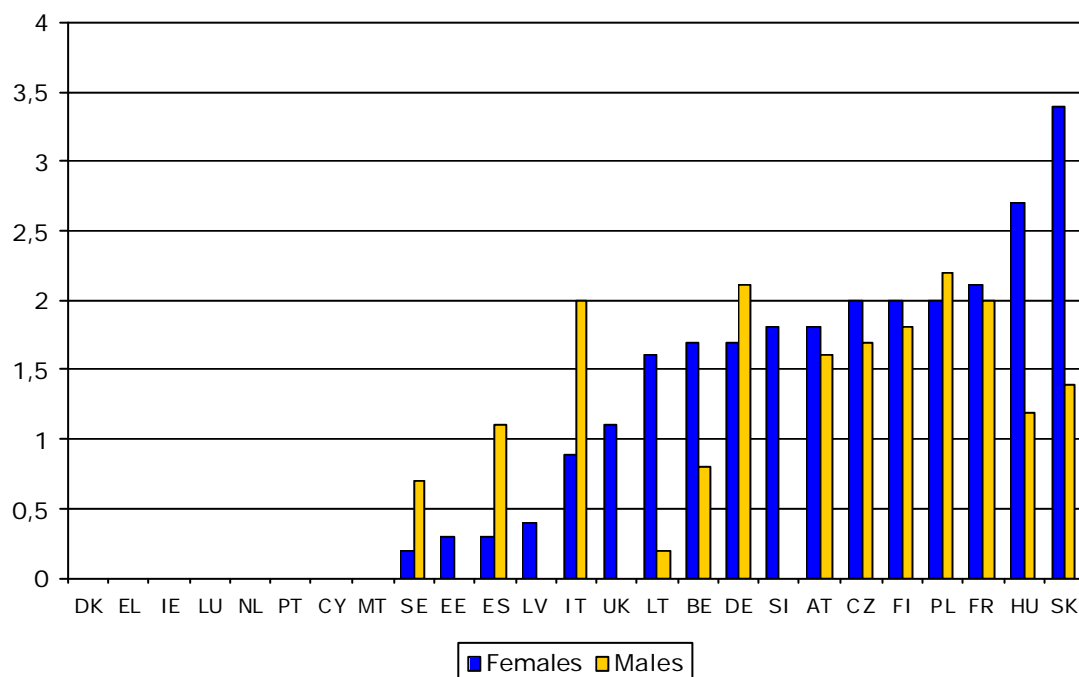
<sup>4</sup> See European Economy, Special Report 4/2005, pp. 51-56.

**Figure 9 - Historical participation rates: older workers aged 55 to 64**  
(in percent)



Source: European Economy (2005).

**Figure 10 - Impact of pension reforms on average exit age from the labour force**  
(number of years)



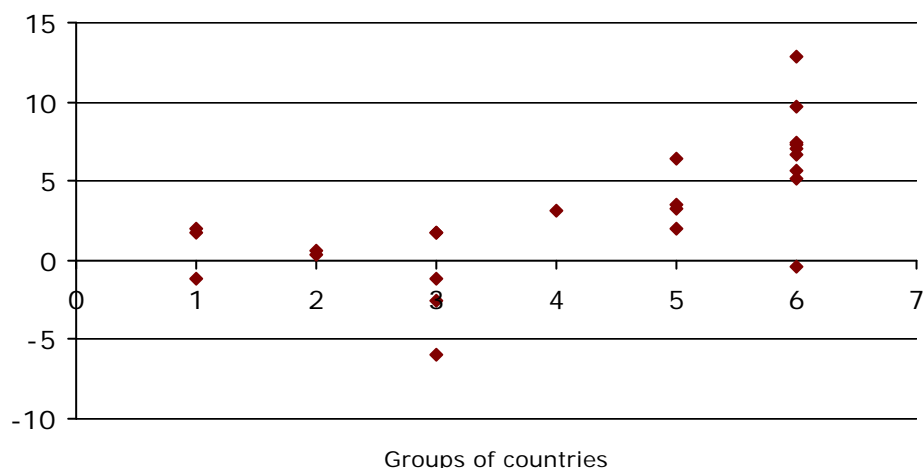
Source: European Economy (2005).

In a number of countries, the indexation formula of pensions has been changed when indexation was related to the average wage. Now, in most of the countries, pensions are indexed to

prices plus a factor, this factor being, anyway, less than indexation to wages. There are two exceptions: countries where pensions are simply a flat rate (DK and NL) where pensions are legally indexed to wages, and countries where pensions are determined as a notional defined contribution system. After the last reform, Germany is a country which applies consistently the philosophy behind the pay-as-you-go system: pensions are primarily indexed to wages but the index is adjusted by the change in the contribution rate and the change in the pensioners/employees ratio (called the sustainability factor)

The first consequence of these reforms is the lower (than previously foreseen in the 2001 report) change of the pension to GDP ratio between 2004 and 2050. As it can be seen on the following graph, countries which have implemented reforms that switch the indexation of pensions to prices, switch to private pensions or introduced in the pension formulation a life expectancy factor like in NDC systems show up a lower future increase in the costs of pensions.

**Figure 11 - Projected changes in pension expenditures 2004-2050 by group of reforming countries**  
(in percent of GDP)

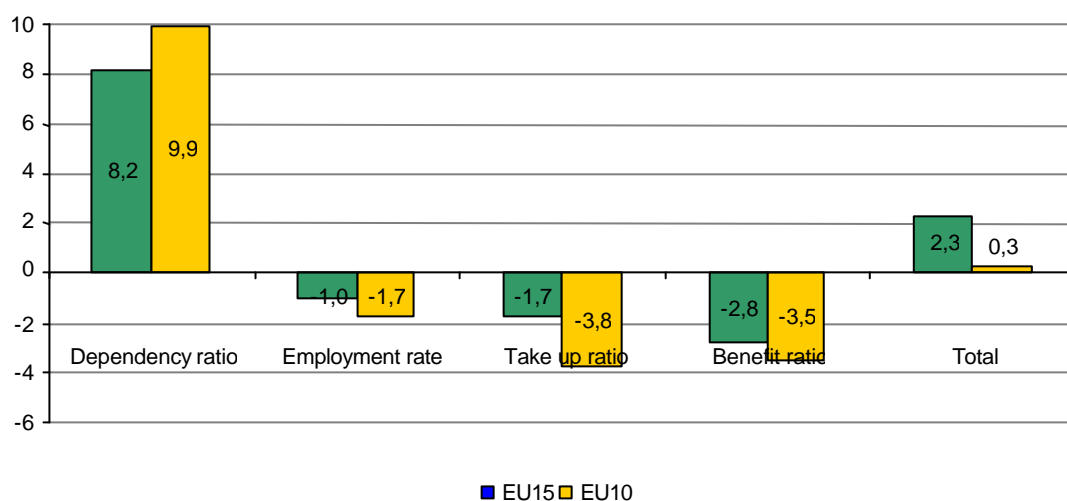


Figures on horizontal axis represent groups of countries: 1) countries having introduced large reforms: 1=shift in indexation and broad reform of defined benefit systems (DE, FR, AT), 2=shift towards NDC system (SW, LT), 3=shift to private pensions or NDC + private; 2) (LT, LV, EE, PL) other countries: 4=important change in the pension formula (FI), 5=flat rate system (DK, IE, NL, IK), 6= defined benefit systems.

Another consequence of these reforms will be a substantial decrease in the benefit ratio over time in many countries. In its 2005 report the AWG has tried to disentangle the increase in the costs of pensions until 2050. The pension to GDP ratio can be expressed as the product of the dependency ratio, the employment ratio, the take up of pension ratio and the benefit ratio. In the following graph, this decomposition clearly shows that the rise in the old age dependency ratio is the dominant factor pushing up public spending, while employment rate, eligibility rate and relative benefit level will offset part of the demographic pressure (70% in EU-15). The benefit ratio, which is not the replacement ratio, but the ratio of the average pension relative to out-

put per worker, is so impressive in some countries (DE, FR, IT, AT, PT, SW, EE, LV, MT, PL, SK) that it will inevitably lead, if it is not accompanied by private complements, to future pressure to policy changes and reforms in the reversed direction. This is especially true, in my view, for the indexation mechanism where, if there is only an indexation to prices (SP, FR, IT, AU, PL), someone who stays in the pension system during several decades, and who has no complementary private pension, will suffer a huge loss in its relative standard of living.

**Figure 12 - Decomposition of the change between 2005 and 2050 in all public pensions relative to GDP<sup>5</sup>**  
(in percent of GDP)

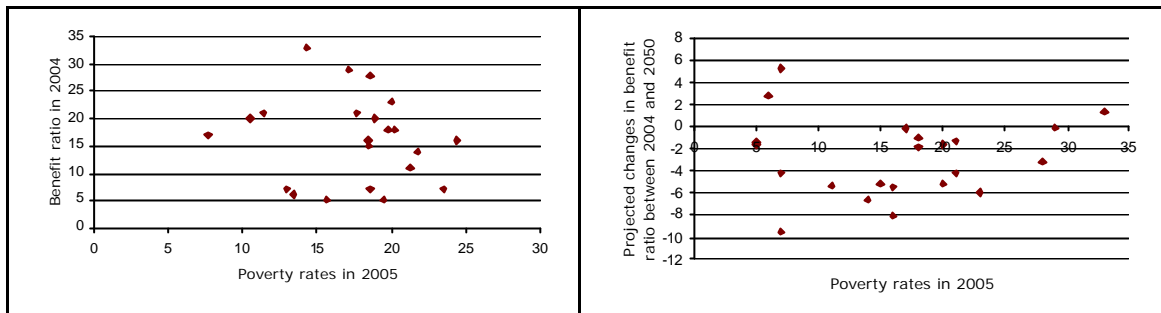


Source: European Economy (2006).

Despite the fact, as it can be seen on the following chart, that there is no correlation between the level of the benefit ratio and the poverty rate, large reductions in the benefit ratio can finally have an important impact on poverty in the future. A warning about the social sustainability of the projected change in the benefit ratio is all the more important as there is no correlation either between the projected change of the benefit ratio and the poverty rate.

<sup>5</sup> Pension to GDP ratio can be expressed as the product of four factors: the dependency ratio (population over 65/population 15-64), the inverse of the employment ratio (employment/population 15-64), the take-up ratio (number of pensioners/population over 65), and the benefit ratio (average pension/GDP per worker or average wage rate).

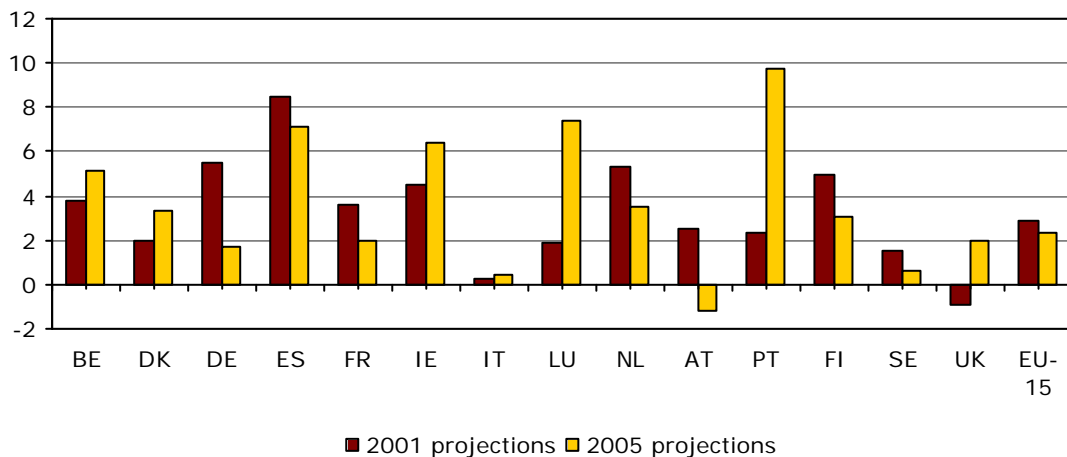
**Figure 13 - Poverty rates and benefit ratios**  
(in percent)



Source: European Economy (2006) and Eurostat.

In many countries, the pension reforms have changed radically the view that we can have on the risk of long-term unsustainability of their public finance. The comparison between the results of the 2005 and 2001 projections is presented in the following graph. The differences are not only due to the introduction of reforms since 2000, but are also the result of changes in the data used, in the demographic projections and, in some cases, in the modelling techniques. Anyway, the AWG report suggest that the smaller projected increase in public pension spending can be largely attributed to major pension reforms undertaken since 2001, in particular in DE, FR, AT and FI. Reforms undertaken in other countries have probably affected the projected evolution of pension expenditure, but their effects are more difficult to disentangle.

**Figure 14. Projected change between 2004/2005 and 2005 of gross public pension expenditure as a hare of GDP**

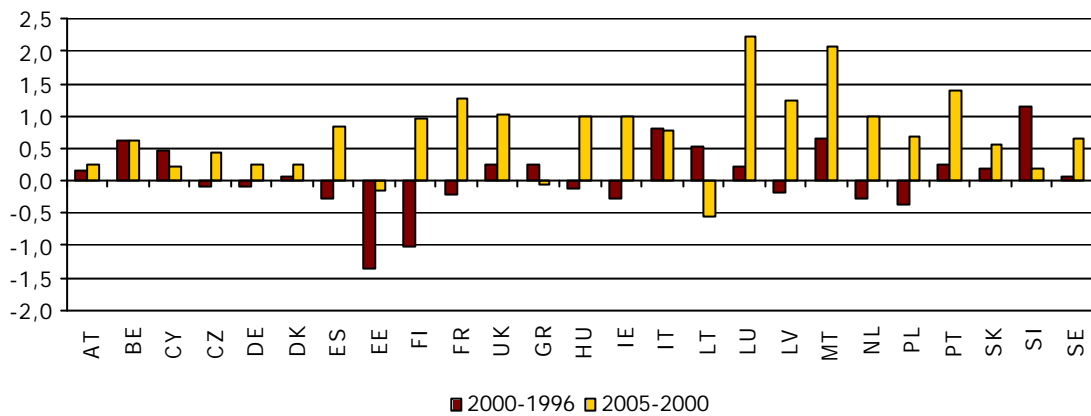


Source: European Economy (2006).

If pension reforms have been introduced successfully in most of the EU countries in order to moderate their increase, this is not the case when we consider health expenditure. The next figure shows the large increase in total health expenditure that was observed between 1996 and 2000 and between 2000 and 2005. In general, we can see that the increase is general and impor-

tant. But we can also see that financial sustainability warnings, far from having induced more moderate changes, were not able to curb the trends. This is quite understandable in the new member states where the health care systems have to catch-up the western standards, but important increases have also accelerated in countries like SP, FR, FIN, UK, LUX, PT while in the countries like BE, IT or SW the increase continues to be significant.

**Figure 15 - Total health expenditure in percent of GDP: change between 1995 and 2000 and between 2000 and 2005**

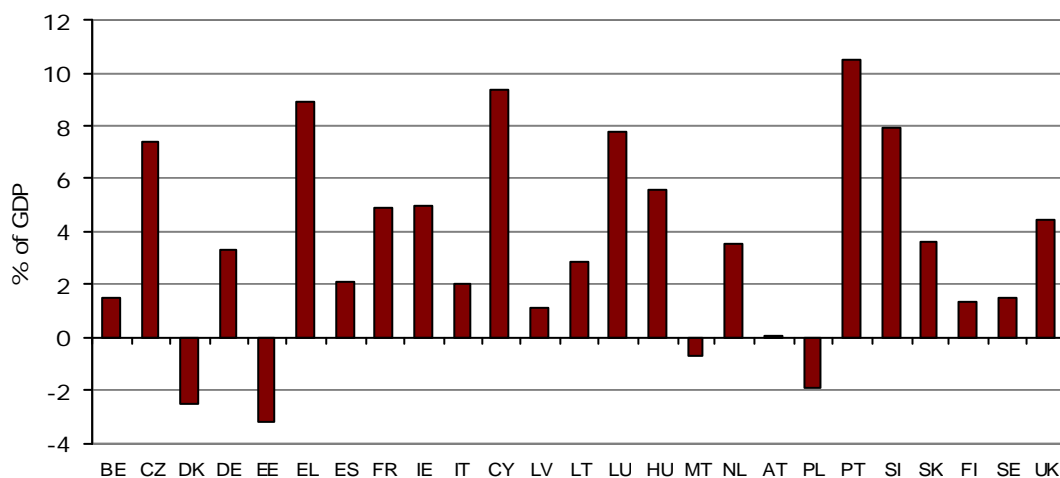


Source: WHO Website – National health accounts.

## 5. Influencing fiscal policy

Some countries have also increased the sustainability of their public finance by accumulating savings. This has been explicitly the case when a reserve fund was created and funded by the government. Implicitly, the same process has been followed by countries that pursue a fiscal policy aiming at reaching and maintaining a budget surplus leading to a rapid decrease of public debt. A generalization of such a policy is now under consideration for every EU country within the framework of the Stability and Growth Pact (SGP). Sustainability is now at the centre of the discussion about the level of the MTO: the Medium Term Objective is the level of the budget balance that should be maintained on average during the business cycle. According to the revised SGP, the MTO should be established at -1% of GDP. This allows the budget balance to fluctuate around this value without going beyond the 3% deficit ceiling fixed in the Maastricht Treaty. For countries where the debt ratio is higher than the 60% ceiling, a lower deficit or a small surplus has been recommended by the Council. Now, the long-term impact of ageing on social expenditure represents also an implicit liability which requires a more restrictive fiscal policy. This is the reason why an indicator has been constructed in order to know the permanent improvement of the budget balance should be if the sum of discounted future deficits remeting from the impact of ageing is to be financed. This was called the S2 indicator or the sustainability gap and is shown in the following graph. It shows that for most of the countries, the required improvement of the structural budget balance is rather large.

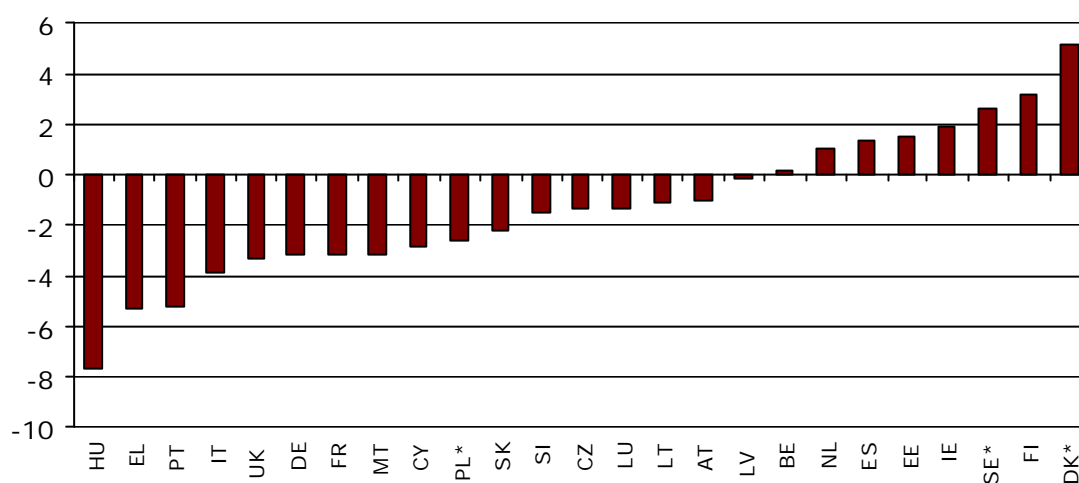
**Figure 16 - The S2 indicator in the Sustainability Report**  
(In percent of GDP)



Source: Commission services.

The sustainability gap has been internalized in fiscal policy in several countries. The following graph shows the structural balance reported for 2006 in the Stability and Growth Programmes of the member states. In most of the countries the deficit is still large and beyond the -1% recommended as the MTO structural balance. This is the case for 15 out of 25 countries: CZ, DE, EL, FR, IT, CY, LT, LU, HU, MT, PL, PT, SL, SK and UK. Eight countries: (BE, NL, DK, EE, ES, IE, FI and SE) are close to balance or have a surplus the purpose of which is directly linked to the long-term sustainability objective and, indeed, these countries have no sustainability gap.

**Figure 17 - Government structural balances in 2006**  
(in percent of GDP)



(\*) For countries (DK, PL, SE), the balances are given including revenue to the funded part of the mandatory pension scheme.

Source: Commission services.

The risk of unsustainability remains significant in many countries. When the Council revised the SGP in 2005, this has been a major concern and long-term financial sustainability has been a central issue of the revised pact. A monitoring process is now followed involving: (1) the long-term projection (based on a commonly agreed methodology) conducted every three or four years by the MS and the Commission (The Projection Report by the AWG), (2) the assessment of sustainability based on the projection and on commonly agreed quantitative and qualitative indicators and conducted exclusively by the Commission (The Sustainability Report), (3) a yearly updated sustainability assessment taking into account new reforms and new developments in a country fiscal policy. Specific country recommendations of reforms or changes of fiscal policy will be then issued by the Council.

**Figure 18 - European Sustainability Assessment Process**

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As shown in this paper, among the many processes decided by the Council, one can say that this process, actually launched in 2000, has been a success. There is, however, a large variation in the degree of risks to the sustainability of public finance that the EU countries are still facing. Five countries are assessed to be at high risk, ten at medium risk and eight at low risk in the Commission's assessment and the Council's opinion. For several countries, particularly the large ones, the risk is no more linked to the long-term cost of ageing but to the short term disequilibrium in the budget. Taking this into account, and mainly due to the reforms, the assessment has largely improved over time.

**Figure 19 - Overall classification of risks to the sustainability of public finance in the 2006/2007 updates of stability and convergence programmes**

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Risk category	Country
Low	DK, EE, LV, LT, NL, PL, FI, SE
Medium	BE, DE, ES, FR, IE, IT, LU, MT, SK, UK
High	EL, CY, HU, PT, SI

## 6. Conclusions

We have seen that the long-term demographic projections have very important negative consequences on the sustainability of public finance, on employment and growth. Since the end of the nineties, many countries reacted to that prospective situation. The EU also launched several processes in order to encourage member states to take preventive action against the negative consequences of prospected demographic developments. The general strategy was to reform the social system, to promote employment especially among the elderly and to fund the cost of the demographic chock through a rapid reduction of the public debt ratio. Those three kinds of policies could be clearly observed during the last 10 years among the EU member states.

The reform process of the pension system is particularly impressive in several countries, notably those who have switched towards a private system or a system which relates the pension to the life expectancy of the cohort, like the NDC systems, and those who have switched the indexation system towards prices instead of wages. Generally, the earnings-related systems where this kind of reform was not introduced, show a rather large increase in the pension to GDP ratio over time. At present, there is no significant relation between the benefit ratio and the poverty rate of the elderly, but the projected decrease of the benefit ratio questions social sustainability of some of the reforms. Particular attention should be given the minimum pension and the indexation of this minimum, which must be compatible with the evolution of the average wage. Most of the countries have introduced reforms to increase the effective age of retirement from the labour force. The impact on the evolution of the pension to GDP ratio is smaller than the reforms of the pensions mentioned above, often because the increases are obtained by higher pension at a later age, but the impact on employment and economic growth is substantial. As for the other expenditure, especially health care, the same reform process has not been observed yet.

The employment rate of the elderly is already improving very fast, which proves that the reform process is again showing up again. Nevertheless, the AWG projections show that the average employment rate can improve more and more rapidly over the next 50 years. Reforming the systems and the labour market in order to retire later is still a challenge in many countries. This challenge is the key to a sustainable and high economic growth in the coming decades.

Last but not least, we see that in some countries fiscal policy is heavily influenced by the consequences of the long-term demographic projections. The intention is to frontload a share of the impact by raising funds for a reserve fund or by reducing the debt ratio. This is clearly the case for eight countries where the structural budget balance is positive or larger than the deficit of one percent which would be required if there were no demographic chock. More should be done in the future, as recommended by the Commission. Nevertheless, a trade off exists between reforms having a possible negative and unsustainable social impact and the restrictive

fiscal policy that can be suffered in the short run from the adjustment of the structural balance. Though, we have seen that almost eight countries have radically changed their fiscal policy, merely to cope with the information given by the demographic projections.

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