



**Economic Policy Committee**

Brussels, 6 February 2006  
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**Impact of ageing populations on public spending**  
**on pensions, health and long-term care, education and unemployment benefits for**  
**the elderly**

**SUMMARY REPORT**

# **Report on the Impact of ageing populations on public spending**

## **The challenge in making comparable cross-country age-related expenditure projections**

In the coming decades, the size and age-structure of Europe's population will undergo dramatic changes due to low fertility rates, continuous increases in life expectancy and the retirement of baby-boom generation. There has been a growing recognition at national and European level of the profound economic, budgetary and social consequences of ageing populations. Prompted by the launch of the euro, the Economic Policy Committee (EPC) established the Working Group on Ageing Populations (AWG) to examine the economic and budgetary consequences of ageing, which led to the publication of age-related expenditure projections in 2001 and 2003. On the basis of this work, an assessment of the long-term sustainability of public finances was integrated into the surveillance of EU Member States' budgetary positions, and takes place annually on the basis of stability and convergence programmes.

In 2003, the ECOFIN Council gave the Economic Policy Committee (EPC) a mandate to produce a new set of age-related public expenditure projections for all twenty-five Member States covering pensions, health care, long-term care, education, unemployment transfers and, where possible, contributions to pensions/social security systems.<sup>1</sup> This report presents these new budgetary projections. It covers the EU10 Member States which has enriched the exercise, but also increased its complexity and the heterogeneity of the findings. The projections now provide a better scrutinized and more comparable set of information for in-depth analysis of risks to the sustainability of public finances.

The unique value-added of these age-related expenditure projections is that they are produced in a multilateral setting involving national authorities and international organisations. The projections are made on the basis of a common population projection and agreed common underlying economic assumptions that have been endorsed by the EPC.

The projections are generally - and for the reference scenario in particular - made on the basis of "no policy change", i.e. only reflecting enacted legislation but not possible future policy changes (although account is taken of provisions in enacted legislation that enter into force over time). The pension projections are made on the basis of legislation enacted by mid 2005. They are also made on the basis of the current behaviour of economic agents, without assuming any future changes in behaviour over time: for example, this is reflected in the assumptions on participation rates which are based on the most recently observed trends by age and gender. While the underlying assumptions have been made by applying a common methodology uniformly to all Member States, for several countries adjustments have been made to avoid an overly mechanical approach that leads to economically unsound outcomes and to take due account of significant country-specific circumstances.

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<sup>1</sup> The projections for the EPC were made by the Ageing Working Group of the EPC chaired by Henri Bogaert and the European Commission's Directorate General for Economic and Financial Affairs.

The pension projections were made using the models of national authorities, and thus reflect the current institutional features of national pension systems. In contrast, the projections for health care, long-term care, education and unemployment transfers were made using common models developed by the European Commission in close cooperation with the EPC and its Working Group on Ageing Populations. While these projections can point to key drivers of public spending, it needs to be noted that they can not completely model the specific institutional arrangements and policies which exist at national level. Caution must be exercised when interpreting the long-run budgetary projections and the degree of uncertainty increases the further into the future the projections go. The projections are not forecasts. Instead, they provide an indication on the potential timing and scale of budgetary challenges that could result from ageing population based on a “no policy change” scenario. The projection methodologies employed can not be completely comprehensive, and there are limitations with the data in several respects.

The age-related expenditure projections presented in this document only portray a partial picture of the economic and budgetary consequences of ageing populations. For example, the projected impact of ageing on the labour market and potential GDP growth rates is based on a partial analysis that does not take account all channels and feedback effects through which an ageing population could impact on real economic activity. Account should also be taken of the positive or negative impact of ageing on other public expenditure and revenue items not covered in this projection exercise. Moreover, and as recognised in the current framework at EU level for assessing the sustainability of public finances, account also needs to be taken of the starting underlying budget positions and outstanding debt levels. In line with the three-pronged strategy, running down public debt can contribute to the sustainability of public finances.

### **Improvements compared with the 2001 budgetary projection exercise**

The 2005 age-related expenditure projections contain many improvements compared with the 2001/2003 projection exercise. Many of the shortcomings listed in the EPC report of 2001 have been addressed, and the following improvements should be highlighted. With the assistance of Eurostat, a much better understanding of the factors driving demographic developments has been acquired and particular attention has been paid to trends in life expectancy. The underlying macroeconomic assumptions were established in a more coherent and transparent manner; they have been published by the EPC and European Commission (2005) with quantitative indications of key assumptions provided wherever possible.<sup>2</sup> A more coherent and relevant set of sensitivity tests have been devised and executed, so that the most important sources of risk to public finances are examined. Enhanced transparency has been achieved through a structured peer review process of the results and the national pension models.

The pension projection exercise is broader, now covering nearly all important public pension schemes, including the old-age provisions for civil servants. To complement their budgetary projections, countries with statutory private pension schemes have provided data for these schemes. Some countries have also provided projections for private occupational pension schemes (with the exception of Denmark and the United Kingdom).

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<sup>2</sup> Available under: [http://europa.eu.int/comm/economy\\_finance/publications/european\\_economy/2005/eespecialreport0405\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/european_economy/2005/eespecialreport0405_en.htm)

The inclusion of non-demographic drivers in the projection methodology for health care spending is a significant development. Most progress has been made as regards modelling the potential impact of changes in the health care status of elderly citizens on public spending, and on the role played by death-related costs. While data limitations have been severe, the methodology for projecting public spending on long-term care has also been significantly extended. *Inter alia*, it now looks at age-specific disability rates and enables simulations to be run on future policy changes, such as greater public sector involvement in the provision/financing of long-term care services and changes in the balance between the share of formal care provided in institutions and at home.

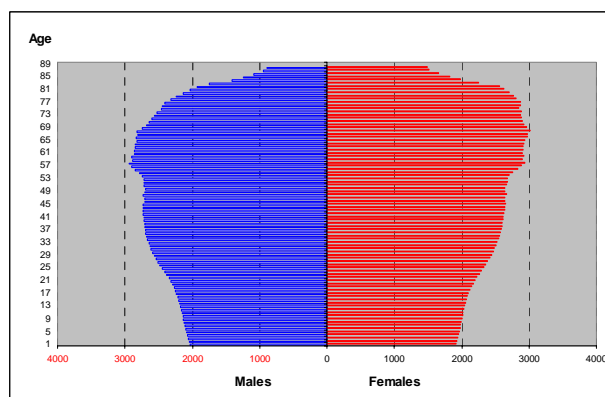
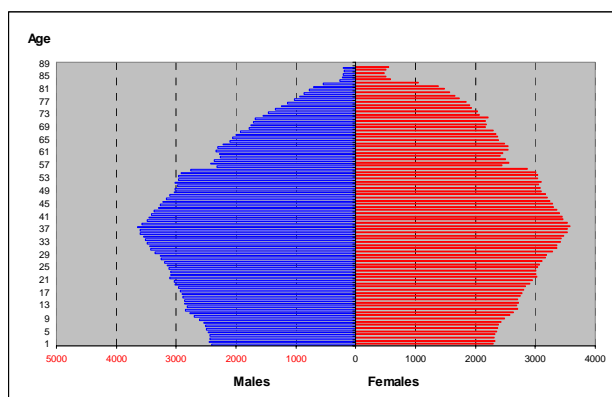
### Large demographic changes are underway

Europe's population will be slightly smaller, and significantly older, in 2050. Fertility rates in all countries are projected to remain well below the natural replacement rate. Life expectancy at birth, having risen by some 8 years since 1960, is projected to rise by a further 6 years in the next five decades. Inward migration flows will only partially offset these trends. The total population of the EU25 will register a small fall from 457 to 454 million between 2004 and 2050. Of greater economic significance are the dramatic changes in the age structure of the population. Starting already from 2010, the working-age population (15 to 64) is projected to fall by 48 million (or 16%) by 2050. In contrast, the elderly population aged 65+ will rise sharply, by 58 million (or 77%) by 2050. The old-age dependency ratio, that is the number of people aged 65 years and above relative to those between 15 and 64, is projected to double, reaching 51% in 2050. Europe will go from having four people of working age for every elderly citizen currently to a ratio of two to one by 2050.

#### Age pyramids for EU25 population in 2004 and 2050

2004

2050



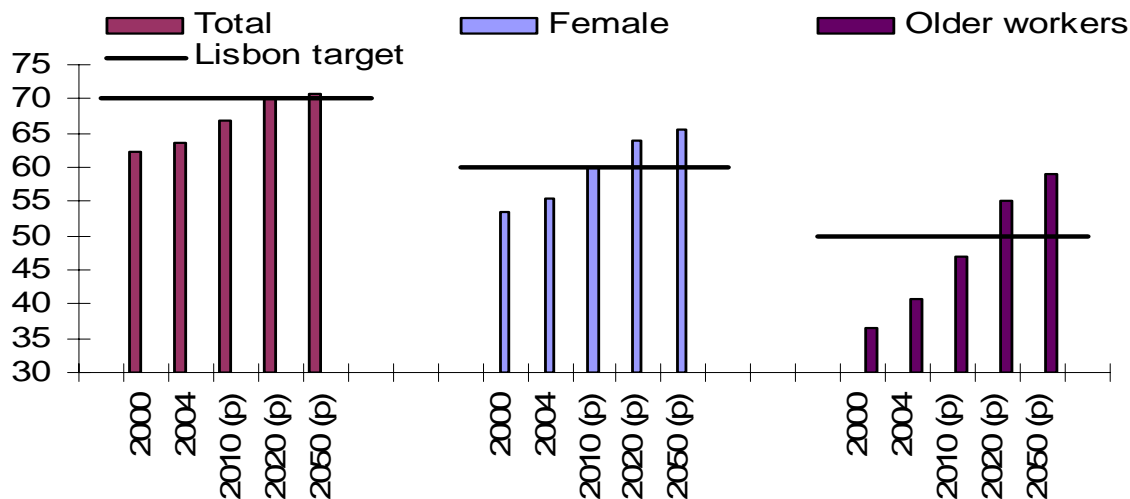
Source: EPC and European Commission (2005)

### The change will have major impact on labour market developments

The labour force projection used to make the age-related budgetary projections captures the impact of an ageing population. The overall employment rate is projected to rise from 63% in 2003 to 67% in 2010 and to reach the 70% Lisbon employment rate target in 2020. The projected increase is mainly due to higher female employment rates, which will rise from 55% in 2004 to almost 65% by 2025 as older women with low

employment rates retire and are gradually replaced by younger women: the 60% Lisbon employment rate target for females will be reached in 2010. Even sharper is the projected increase in the employment rate of older workers, by 19 percentage points from 40% in 2004 to 59% in 2025. This is well in excess of the 50% Lisbon employment target, which would be reached by 2013. Half of this increase is due to positive effects of already enacted pension reforms, which is a good illustration of the potential benefits of structural reform.

### Projected employment rates and Lisbon targets in the EU25



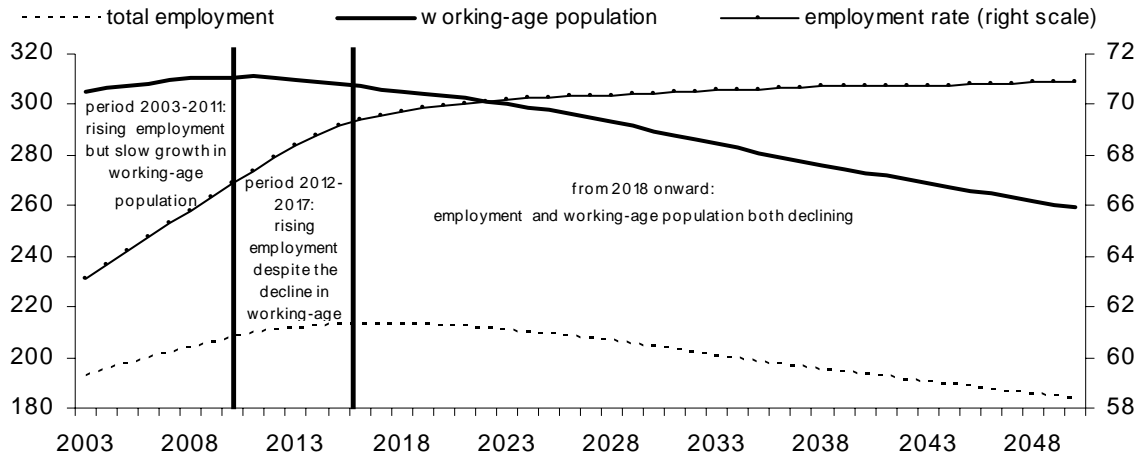
Note: (p) means projected figures; actual figures are given for 2000 and 2004.

Source: EPC and European Commission (2005)

### But demographic forces will dominate and the number of persons employed will eventually decline

Meeting the Lisbon employment target, even if not on time, will temporarily cushion the economic effects of ageing. The total number of persons employed is projected to increase up to 2017, but after 2017, the demographic effects of an ageing population outweigh this effect. After increasing by some 20 million between 2004 and 2017, employment will contract by almost 30 million by 2050, i.e. a fall of nearly 10 million over the entire projection period. Three distinct periods can be identified. Between 2004 and 2011, both demographic and employment developments will be supportive of growth: this period can be viewed as a window of opportunity for pursuing structural reforms. Between 2012 and 2017, rising employment rates will offset the decline in the working-age population: during this period, the working-age population will start to decline as the baby-boom generation enters retirement. The ageing effect will dominate as of 2018, and both the size of the working-age population and the number of persons employed will be on a downward trajectory.

## Projected working-age population and total employment, EU25



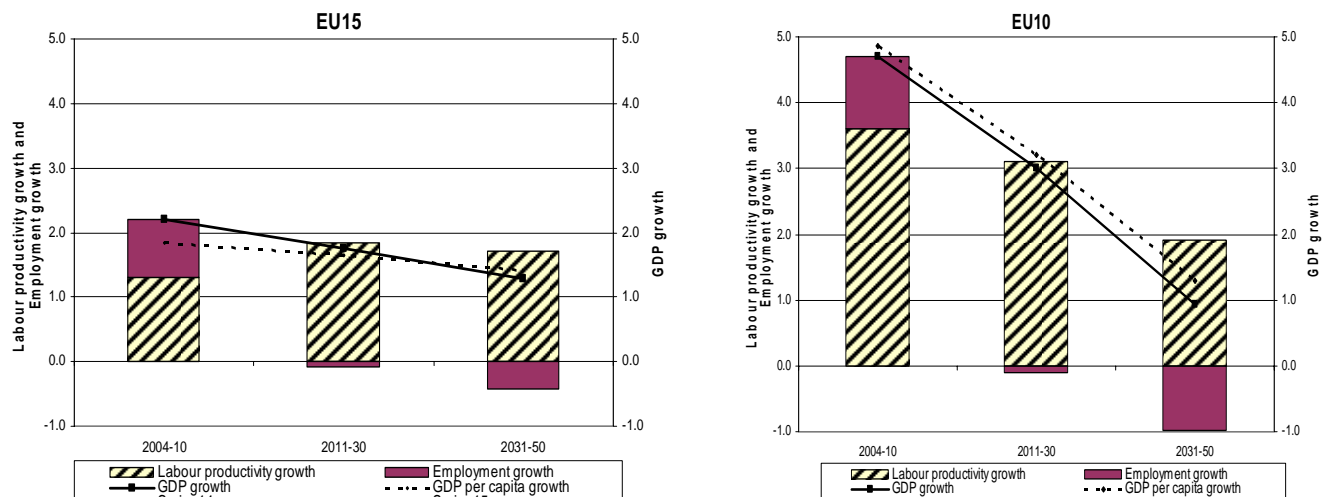
Source: DG ECFIN

### Potential GDP growth is projected to decline

As a result of these employment trends and the agreed assumptions on productivity, potential GDP growth is projected to decline in the decades to come. For the EU15, 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 EU10, from 4.3% in the period 2004-10 to 3% in the period 2011-30 and to 0.9% between 2031 and 2050. This is not only due to unfavourable demographic developments, but also to the underlying assumptions for these countries which assume productivity growth rates coming closer to those of EU15 countries as they complete the convergence process.

In addition, the sources of economic growth will alter dramatically. Employment will make a positive contribution to growth up to 2010, become neutral in the period 2011-2030, and turn significantly negative thereafter. Over time, labour productivity (due to the progress of technology) will become the dominant, and in some countries the only, source of growth. If the projected rise in productivity and in the employment rate will not materialise in the future, the potential growth may fall even more.

## Projected (annual average) potential growth rates in the EU15 and EU10 and their determinants (employment/productivity)



Source: EPC and European Commission (2005)

### Overview of the results of the age-related expenditure projections

The table below provides an overview of the projected change in public spending on all age-related expenditure items between 2004 and 2050. It combines the baseline pension projection, the 'AWG reference scenario' used for health care and long-term care, the baseline projected spending on education and the baseline projection for public spending on unemployment benefits.

Overall, ageing populations is projected to lead to increases in public spending in most Member States by 2050 on the basis of current policies, although there is a wide degree of diversity across countries. The following points should be highlighted:

- for the EU15 and the Euro area as a whole, public spending is projected to increase by about 4 percentage points between 2004 and 2050;
- for the EU10, the increase in the overall age-related spending is projected to rise by only about 1.5 percentage points. This apparently low budgetary impact of ageing is mainly due to the sharp drop in public pension spending in Poland, which (in common with several other EU10 countries) is partly the result of the switch from a public pension scheme into a private funded scheme. Excluding Poland, age-related spending in the other EU10 countries would increase by more than 5 percentage points of GDP;
- most of the projected increase in public spending will be on pensions, health care and long-term care. Potential offsetting savings in terms of public spending on education and unemployment benefits are likely to be limited;
- the budgetary impact of ageing in most Member States starts becoming apparent as of 2010. However, the largest increases in spending are projected to take place between 2020 and 2040;

## Projected changes in age-related public expenditure between 2004 and 2030/50 (% of GDP)

	Pensions			Health care			Long-term care			Unemployment benefits			Education			Total* (without long term care)		Total* (without education)		Total* of all available items*			
	Level	Change from 2004 to:		Level	Change from 2004 to:		Level	Change from 2004 to:		Level	Change from 2004 to:		Level	Change from 2004 to:		Change from 2004 to:		Change from 2004 to:		Change from 2004 to:			
	2004	2030	2050	2004	2030	2050	2004	2030	2050	2004	2030	2050	2004	2030	2050	2030	2050	2030	2050	2030	2050		
BE	10.4	4.3	5.1	6.2	0.9	1.4	0.9	0.4	1.0	2.3	-0.5	-0.5	5.6	-0.6	-0.7	4.1	5.3	5.1	7.0	4.5	6.3	BE	
DK	9.5	3.3	3.3	6.9	0.8	1.0	1.1	0.6	1.1	1.5	-0.3	-0.3	7.8	-0.4	-0.3	3.4	3.7	4.4	5.1	4.0	4.8	DK	
DE	11.4	0.9	1.7	6.0	0.9	1.2	1.0	0.4	1.0	1.3	-0.4	-0.4	4.0	-0.8	-0.9	0.6	1.7	1.8	3.6	1.0	2.7	DE	
GR				5.1	0.8	1.7				0.3	-0.1	-0.1	3.5	-0.5	-0.4								GR
ES	8.6	3.3	7.1	6.1	1.2	2.2	0.5	0.0	0.2	1.1	-0.4	-0.4	3.7	-0.7	-0.6	3.3	8.3	4.0	9.1	3.3	8.5	ES	
FR	12.8	1.5	2.0	7.7	1.2	1.8				1.2	-0.3	-0.3	5.0	-0.5	-0.5	1.9	2.9	2.4	3.4	1.9	2.9	FR	
IE	4.7	3.1	6.4	5.3	1.2	2.0	0.6	0.1	0.6	0.7	-0.2	-0.2	4.1	-0.9	-1.0	3.2	7.2	4.3	8.8	3.3	7.8	IE	
IT	14.2	0.8	0.4	5.8	0.9	1.3	1.5	0.2	0.7	0.4	-0.1	-0.1	4.3	-0.8	-0.6	0.9	1.1	1.8	2.4	1.0	1.7	IT	
LU	10.0	5.0	7.4	5.1	0.8	1.2	0.9	0.2	0.6	0.3	-0.0	-0.1	3.3	-0.5	-0.9	5.2	7.6	6.0	9.1	5.4	8.2	LU	
NL	7.7	2.9	3.5	6.1	1.0	1.3	0.5	0.3	0.6	1.8	-0.2	-0.2	4.8	-0.2	-0.2	3.5	4.4	4.0	5.2	3.8	5.0	NL	
AT	13.4	0.6	-1.2	5.3	1.0	1.6	0.6	0.3	0.9	0.8	-0.1	-0.1	5.1	-0.9	-1.0	0.5	-0.7	1.8	1.2	0.9	0.2	AT	
PT	11.1	4.9	9.7	6.7	-0.1	0.5				1.0	-0.1	-0.1	5.1	-0.6	-0.4	4.1	9.7	4.7	10.1	4.1	9.7	PT	
FI	10.7	3.3	3.1	5.6	1.1	1.4	1.7	1.2	1.8	1.5	-0.4	-0.4	6.0	-0.6	-0.7	3.5	3.4	5.3	5.9	4.7	5.2	FI	
SE	10.6	0.4	0.6	6.7	0.7	1.0	3.8	1.1	1.7	1.1	-0.2	-0.2	7.3	-0.7	-0.9	0.3	0.5	2.0	3.1	1.3	2.2	SE	
UK	6.6	1.3	2.0	7.0	1.1	1.9	1.0	0.3	0.8	0.4	-0.0	-0.0	4.6	-0.5	-0.6	1.9	3.2	2.7	4.6	2.2	4.0	UK	
CY	6.9	5.3	12.9	2.9	0.7	1.1				0.4	-0.0	-0.0	6.3	-1.9	-2.2	4.1	11.8	6.0	14.1	4.1	11.8	CY	
CZ	8.5	1.1	5.6	6.4	1.4	2.0	0.3	0.2	0.4	0.2	-0.0	-0.0	3.8	-0.9	-0.7	1.6	6.8	2.6	7.9	1.8	7.2	CZ	
EE	6.7	-1.9	-2.5	5.4	0.8	1.1				0.1	-0.0	-0.0	5.0	-1.1	-1.3	-2.3	-2.7	-1.2	-1.4	-2.3	-2.7	EE	
HU	10.4	3.1	6.7	5.5	0.8	1.0				0.2	-0.0	-0.0	4.5	-1.0	-0.7	2.8	7.0	3.8	7.7	2.8	7.0	HU	
LT	6.7	1.2	1.8	3.7	0.7	0.9	0.5	0.2	0.4	0.1	-0.1	-0.1	5.0	-1.6	-1.6	0.2	1.0	2.0	3.1	0.3	1.4	LT	
LV	6.8	-1.2	-1.2	5.1	0.8	1.1	0.4	0.1	0.3	0.3	-0.1	-0.1	4.9	-1.2	-1.4	-1.7	-1.6	-0.4	0.1	-1.5	-1.3	LV	
MT	7.4	1.7	-0.4	4.2	1.3	1.8	0.9	0.2	0.2	1.2	-0.2	-0.2	4.4	-1.2	-1.2	1.6	0.1	2.9	1.5	1.8	0.3	MT	
PL	13.9	-4.7	-5.9	4.1	1.0	1.4	0.1	0.0	0.1	0.5	-0.4	-0.4	5.0	-2.0	-1.9	-6.1	-6.8	-4.1	-4.8	-6.1	-6.7	PL	
SK	7.2	0.5	1.8	4.4	1.3	1.9	0.7	0.2	0.6	0.3	-0.2	-0.2	3.7	-1.5	-1.3	0.1	2.3	1.8	4.1	0.3	2.9	SK	
SI	11.0	3.4	7.3	6.4	1.2	1.6	0.9	0.5	1.2	0.5	-0.1	-0.1	5.3	-0.7	-0.4	3.9	8.4	5.1	10.1	4.4	9.7	SI	
EU25	10.6	1.3	2.2	6.4	1.0	1.6	0.9	0.2	0.6	0.9	-0.3	-0.3	4.6	-0.7	-0.6	1.3	2.8	2.2	4.0	1.6	3.4	EU25	
EU15	10.6	1.5	2.3	6.4	1.0	1.6	0.9	0.3	0.7	0.9	-0.2	-0.2	4.6	-0.6	-0.6	1.6	3.0	2.5	4.3	1.9	3.7	EU15	
EU12	11.5	1.6	2.6	6.3	1.0	1.5	0.7	0.2	0.5	1.0	-0.3	-0.3	4.4	-0.7	-0.6	1.7	3.2	2.5	4.4	1.9	3.7	EU12	
EU10	10.9	-1.0	0.3	4.9	0.9	1.3	0.2	0.1	0.2	0.4	-0.2	-0.2	4.7	-1.5	-1.3	-1.8	0.0	-0.3	1.6	-1.8	0.2	EU10	
EU9 (EU10-PL)	8.8	1.6	4.8	5.5	0.9	1.3	0.3	0.2	0.3	0.3	-0.1	-0.1	4.4	-1.1	-0.9	1.4	5.1	2.6	6.4	1.5	5.4	EU9 (EU10-PL)	

\*1) Total expenditure for GR does not include pension expenditure. The Greek authorities have agreed to provide the pension projections in 2006. In the context of the most recent assessment of the sustainability of public finances based on the Greek stability programme, public spending on pensions was projected to increase by 10.3% of GDP between 2004 and 2050.

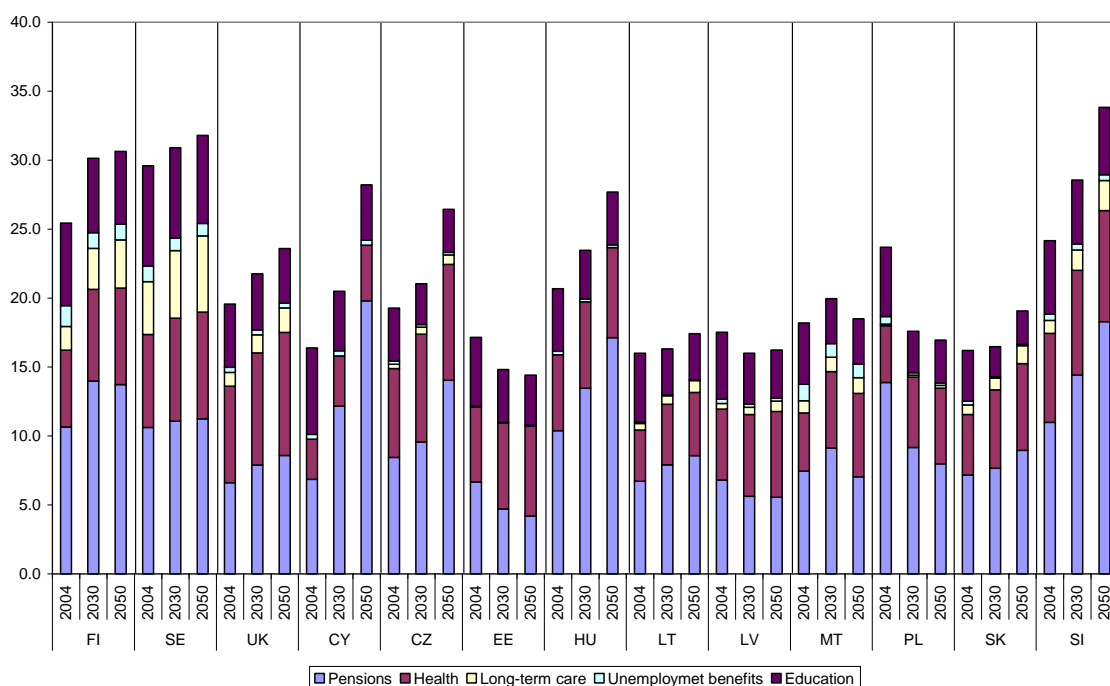
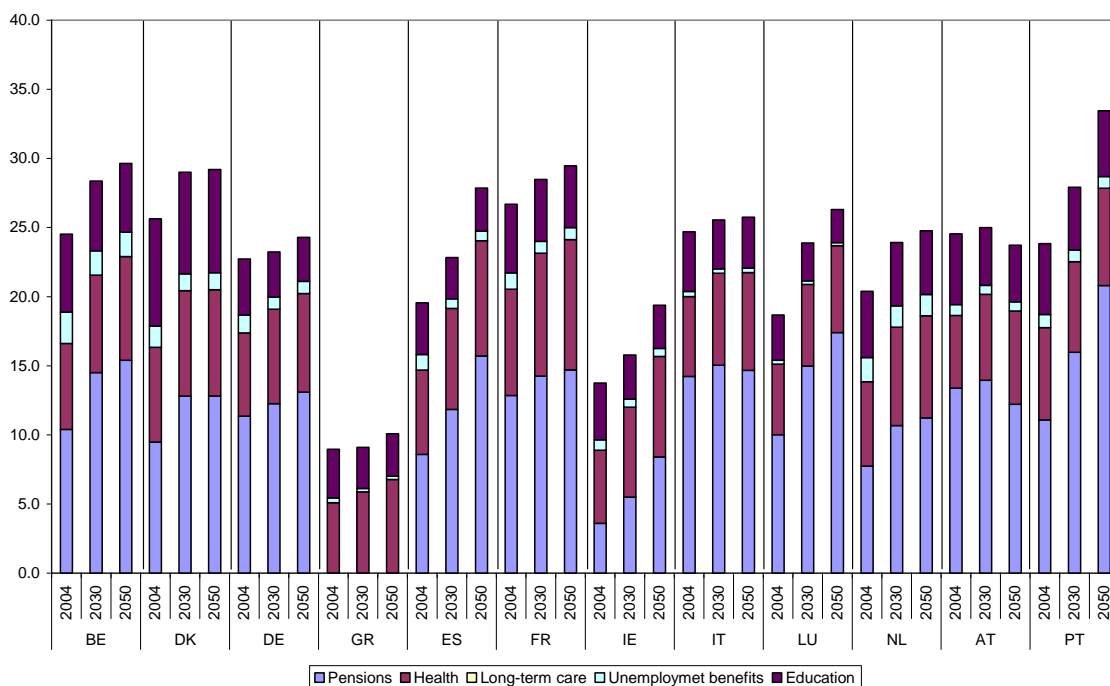
2) Total expenditure for: GR, FR, PT, CY, EE, HU does not include long-term care.

3) The projection results for public spending on long-term care for Germany does not reflect current legislation where benefit levels are fixed. A scenario which comes closer to the current setting of legislation projects that public spending would remain constant as a share of GDP over the projection period.

Note: these figures refer to the baseline projections for social security spending on pensions, education and unemployment transfers. For health care and long-term care, the projections refer to "AWG reference scenarios"



## Age-related spending as a % of GDP in EU Member States, 2004, 2030 and 2050



### The projection results regarding pensions

For EU15 Member States, public pension spending is projected to increase in all countries, except Austria, on account of its reforms since 2000. Very small increases in spending on pensions are projected in Italy and Sweden due to their notional contribution-defined schemes where pension benefits are based on effective working-life contributions. Relatively moderate increases (between 1.5 and 3.5 percentage points of GDP) are projected in most other EU countries, with the largest increases projected for Ireland (6.4 p.p.), Spain (7.1 p.p.), Luxembourg (7.4 p.p.) and Portugal (9.7 p.p.). Reforms enacted in several EU15 countries, since the last age-related expenditure

projection exercise of 2001, appear to have curtailed the projected increase in public spending on pensions significantly in half of all EU15 Member States<sup>3</sup>.

The inclusion of the EU10 Member States increases the diversity of the results. Between 2004 and 2030, public pension expenditure is projected to decrease by 1 p.p. of GDP and thereafter to increase by 1.3 p.p., resulting in an overall increase of 0.3 p.p. of GDP on average between 2004 and 2050. However, the trends are very diverse across countries, ranging from a decrease of 5.9 p.p. of GDP in Poland and to an increase of 6.7 p.p. in Hungary, 7.3 p.p. in Slovenia and 12.9 p.p. in Cyprus. The projected decreases in Poland, Estonia and Latvia, as well as small projected increases in Lithuania and Slovakia, stem partly from pension reforms enacted during the last 10 years which involve a partial switch of the public old-age pension scheme into private funded schemes. Thus, the public provision of pensions will decrease over time while the private part will increase. The challenges faced by Cyprus, Slovenia, Hungary and the Czech Republic are among the biggest in the EU. While Slovenia and the Czech Republic have undertaken parametric reforms in their pension system during the 1990s, the systems remain fully pay-as-you-go public pension schemes.

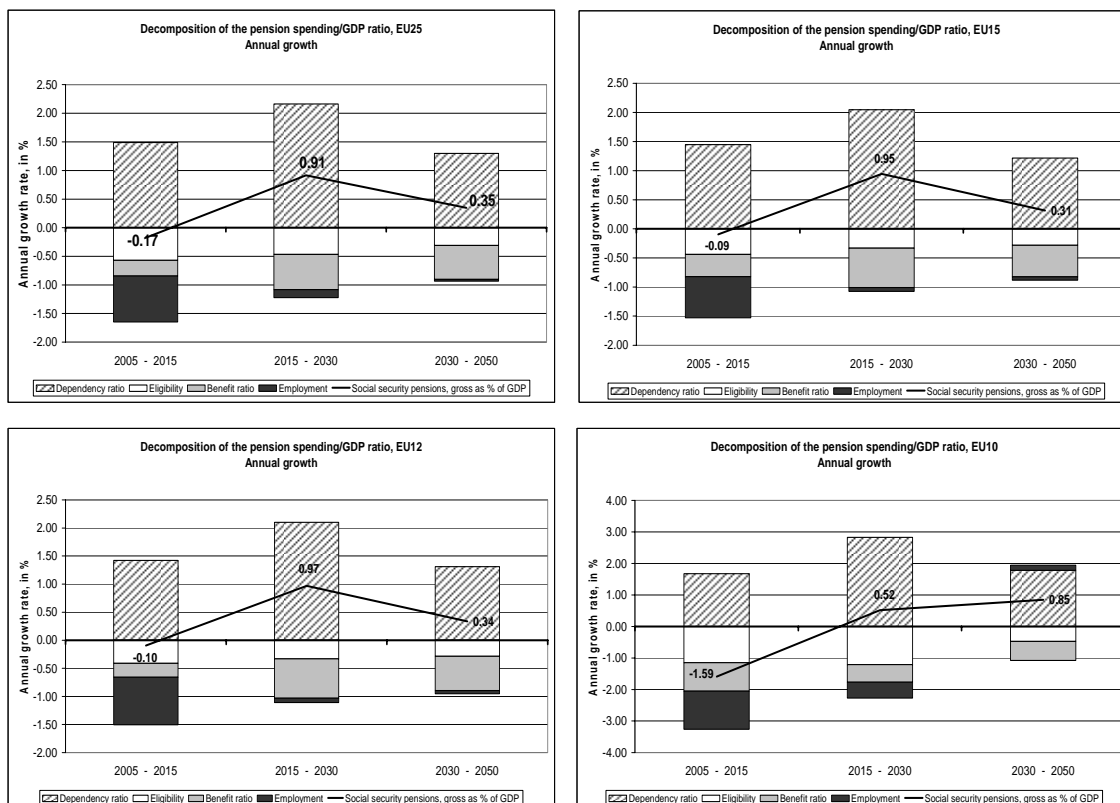
### **Decomposing the drivers of public pension spending**

A decomposition clearly shows that the rise in the old-age dependency ratio is the dominant factor pushing up public spending in the coming decades. However, other factors such as employment rate, eligibility rate and relative benefit level will offset part of the demographic pressure. In the EU15, these factors are projected to curtail some 70% of the pressure caused by demographic developments alone, and in the EU10 they would offset almost all the demographic pressure. The strongest effect will come from the benefit ratio, and in the EU10 countries also from the take-up ratio of pensions. An increase in the employment rate is projected to help in particular during the next decade, especially in countries with currently low employment rates.

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<sup>3</sup> More detailed information about the impacts of enacted reforms are provided in the 'country fiches' published on the web site of the Economic and Policy Committee:  
[http://europa.eu.int/comm/economy\\_finance/epc/epc\\_sustainability\\_ageing\\_en.htm](http://europa.eu.int/comm/economy_finance/epc/epc_sustainability_ageing_en.htm)

## Decomposition of the annual growth of pension spending (as % of GDP)



One of the most striking results is the projected decline in “benefit ratio” of public pensions relative to wages. It should be noted however, that the benefit ratio, measuring the evolution of average pensions relative to output per worker, only provides an approximate indication on the evolution of the generosity of pension systems and is not an equivalent to the usual replacement rate indicator. The projected fall in the “benefit ratio” is partly due to reforms, which index pension benefits to prices instead of wages thus reducing the generosity of public pensions over time. While resulting in budgetary savings, the adequacy of pensions, including for mixed funded systems, should be kept under review, as it may lead to future pressure for policy changes. The projected fall in the “benefit ratio” is also the result of the partial switch from statutory social security pension provision to private funded schemes. While reducing explicit public finance liabilities and improving the sustainability of public finances, moves towards more private sector pension provision create new challenges and forms of risks for policy makers, and in particular, underline the importance of appropriate regulation of private pension funds and of careful surveillance of their performance for securing adequate retirement income.

### Pension spending is especially sensitive to life expectancy, but less so to changes in the employment rate

Sensitivity tests show that public spending on pensions appears to be most sensitive to changes in life expectancy and in some countries to the labour productivity growth rate. However, the projected change in public spending on pensions are relatively robust regarding the changes in employment rates and the changes in interest rates affect only funded schemes. More specifically:

- higher life expectancy leads to increase public spending in countries with defined-benefit schemes, whereas defined-contribution schemes inherently takes into account

the length of retirement. As part of recent pension reforms, some Member States have introduced a link between life expectancy at retirement and pension benefits: the projection results indicate that these measures appear to achieve a better sharing of demographic risk.

- a change in the labour productivity assumption only has a significant impact on pension spending in countries where pension benefits are indexed to prices. In this case, pension spending as a percentage of GDP will be lower with a higher productivity growth rate assumption;
- higher employment rates, especially if due to higher employment rates of older workers, reduce the projected increase in pension spending as a share of GDP. However, the effect is limited as higher/longer employment results in the accumulation of greater pension entitlements. Notwithstanding the apparently small impact on public spending, raising the employment rate is welfare enhancing. It leads to an improved economic performance, and on the budgetary side it delays somewhat the onset of increased public spending on pensions. Moreover, higher employment generates increased contributions to pension schemes, and if it is the result of lower unemployment, additional budgetary savings may emerge. Finally, longer working lives enable workers to acquire greater pension entitlements offsetting some of the impact of less generous public pensions.
- interest rates affect the pension spending only in countries where funding is important. Moreover, it also affects the contribution rate and asset accumulation of funded schemes, albeit in opposite directions in defined-benefit and defined-contribution schemes. In defined-benefit schemes, with a higher interest rate, the contribution rate can be lowered to cover the targeted benefit, whereas in a defined-contribution scheme, the contribution rate remains unchanged but results in a higher accumulation of assets.

### **The projection results for health care**

To project public spending on health care over the long-run is an extremely complex exercise. There are uncertainties regarding future trends in key drivers of spending, the availability of comparable data is limited, and the projection methodology which is feasible in a cross-country exercise is somewhat mechanical and does not reflect the institutional settings for the provision of health care services in each Member State. A particular challenge has been to include other non-demographic drivers of spending on both the demand and supply side.

According to the “AWG reference scenario” (a prudent scenario which takes account of the combined effects of ageing, the health care status of elderly citizens and the income elasticity of demand), public expenditure on health care is projected to increase by between 1.5 and 2 percentage points of GDP in most Member States up to 2050. While age itself is not the causal factor of health care spending (but rather the health condition of a person), the projections illustrate that the pure effect of an ageing population would put pressure for increased public spending.

The projections, however, also illustrate that non-demographic factors are also relevant drivers of spending. In particular, the projections show that changes in the health care status of elderly citizens would have a large effect on health spending. If healthy life expectancy (falling morbidity rates) evolve broadly in line with change in age-specific

life expectancy (a development which would be equivalent to the so-called dynamic equilibrium hypothesis), then the projected increase in spending on health care due to ageing would be approximately halved. Caution should be exercised, however, as there is inconclusive evidence that these ‘positive’ trends will occur nor of the scale of their likely impact. Some additional evidence emerges from a scenario that incorporates death-related costs, i.e. taking account of the fact that a large share of total spending on health care during a persons lifetime occurs in the final phase of life.

Compared with the effects of the health care status of elderly citizens, less progress has been made in incorporating other important supply side drivers of spending into the projection model. Stylised scenarios indicate that the projected increase in public spending on health care is very sensitive to the assumption on the income elasticity of demand and on the evolution of unit costs. Spending on health as a share of GDP could increase at a fast pace if unit costs (wages, pharmaceutical prices) grow faster than their equivalents in the economy as a whole, on account of public policies to improve access to health or improve quality (reduce waiting lists, increase choice), or if rising per capita income levels and the impact of technology lead to increased demand for health care services. The effective management of technology is of utmost importance: otherwise the expenditure savings resulting from lower unit costs could easily be outstripped by the costs of meeting additional demand for new and better treatments.

### **The projection results for public spending on long-term care**

An ageing population will be a strong upward impact on public spending for long term care. This is because frailty and disability rises sharply at older ages, especially amongst the very old (aged 80+) which will be the fastest growing segment of the population in the decades to come. The projection methodology has been upgraded considerably since the 2001 exercise, and has enabled scenarios to run which examine non-demographic drivers of spending.

According to a “pure ageing” scenario based on current policy settings, public spending on long-term care spending is projected to increase by between 0.5 and 1p.p. of GDP between 2004 and 2050. The projected changes range from 0p.p. up to 1.7p.p. of GDP, reflecting very different approaches to the provision/financing of formal care. Countries with very low projected increases in public spending currently have very low levels of formal care. The projections show that with an ageing population, a growing gap may occur between the number of elderly citizens with disability who are in need of care (which will more than double by 2050) and the actual supply of formal care services. On top of an ageing population, this gap could further grow due to less informal care being available within households on account of trends in family size and projected increase in the participation of women in the labour market. In brief, for countries with less developed formal care systems today, the headline projected increase in public spending on long-term care may not fully capture the pressure on public finances, as future policy changes in favour of more formal care provision may be needed.

Public spending is very sensitive to trends in the disability rates of elderly citizens. Compared with a “pure ageing” scenario, projected change in spending would be between 40% and 60% lower if the disability status of elderly citizens improves broadly in line with the projected increase in life expectancy. Policy measures, which can either reduce disability, limit the need for formal care amongst elderly citizens with disabilities, or which favour formal care at home rather than in institutions can have a very large impact on public spending.

## **The projection results for public spending on education**

The ratio of children and young people to the working-age population is expected to fall over the coming decades, pointing to fewer students relative to the working population. The pure consequences of expected demographic changes indicate a potential for a decline in public expenditure on education in all Member States over the next 50 years, but significant savings are only projected for some countries. However, this result could be altered substantially, and public expenditure on education as a share of GDP could even increase if account is taken of potential rises in enrolment rates due to government efforts to raise skill levels. Overall, education expenditure cannot be expected to offset the projected increase in spending on pension and health care expenditures.

## **The projection results for public spending on unemployment transfers**

In order to get a more comprehensive assessment of the total impact of ageing on public finances, and to guarantee consistency with the macroeconomic scenario, projections on unemployment benefit spending were also carried out. Unemployment benefit spending in the EU25 is projected to fall from about 1% of GDP in 2002-2003 to 0.6% in 2025-2050. This primarily reflects the assumed lower proportions of unemployed people over the projection period. In terms of percentage points of GDP, the decrease is very modest (given the relatively low starting levels) and relatively small when compared to projected effects of ageing on pension and health care spending.

## **The results overall provide a sound basis for assessing risks to the sustainability of public finances at EU level...**

Overall, the 2005 age-related expenditure projections provide a much more comparable, transparent and sound basis for the assessment to take place at EU level on the risks to the sustainability of Member States' public finances. In the coming months, further analysis is needed to achieve a fuller understanding of the new projection results, and in particular to get clearer insights of the key driving factors for each Member States.

Consideration also needs to be given on the possibilities which these new projections offer in terms of assessing the sustainability of public finances – the annexes provide an overview on the existing framework. In addressing these issues, the following elements may need to be taken on board:

- a major effort has been made to run comparable sensitivity tests on the key drivers of age-related expenditures. Currently at EU level, a quantitative assessment of fiscal sustainability is only carried out with reference to a baseline/central projection for age-related spending (either based on the existing EPC projections or national projections reported in stability and convergence programmes). The new sensitivity tests offer the possibility of addressing this shortcoming;
- for each age-related expenditure item, the reference scenario is to be used for making a quantitative assessment of the sustainability of public finances. Moreover, national projections may also be taken into account in the assessment where differences with the reference scenario and underlying assumptions are clearly described and explained.

## **...but there is scope for further refinements and analysis**

While this new set of common ageing-related expenditure projections represent a substantial advance compared with earlier exercises, there is scope for further improvements in the following areas:

- there is a great deal of uncertainty as regards future trends in life expectancies, and how these should be handled in a population projection that is used as a basis for making budgetary projections. The population projection underlying these age-related expenditure projections embodies considerable differences in projected changes in life expectancies across countries, which invariably influences the results of the budgetary projection exercise;
- migration is also a topic where further analysis is required. Comparable data is very limited, and there appears to be scope to examine more systematically at EU level the economic determinants of migration;
- as regards the macroeconomic assumptions, there appears to be some scope for improving the approach used regarding productivity, in particular some specific assumptions and important feedback channels may usefully be further investigated on the basis of empirical analysis;
- consideration could be given to projecting an increase in the educational attainment levels and modelling not only ensuing budgetary effects but also its potential impact on overall labour productivity;
- for health care and long-term care, a key challenge is to get to grips with supply side factors, including the effects of technological changes in health care costs, as well as to get a better understanding on institutional settings and the incentive effects that they provide to medical professionals and patients to consume health care services in a rational manner. An additional element is that the projections only cover public sector spending, and the interaction with private sector spending on health care would be a useful extension.
- regarding the coverage of the exercise, an open question remains to whether additional age-related expenditure items should be covered, and also on the merits of projecting the impact of an ageing population on different tax bases and revenues.
- an area where transparency could be further improved concerns the models used by Member States to project public spending on pensions. National models are used given their capacity to capture important institutional characteristics of national pension systems. This is certainly an important element that is not present in the other expenditure projections, which can not capture important and specific institutional features of different national systems. The different approaches to modelling pension spending have been looked at in a series of peer review, even though the necessarily high complexity of national models presents some difficulty. Overall, transparency can be further enhanced by examining in more detail key features of pension models, not only their general design, but also assumptions regarding the evolution of thresholds over time, how the transition from work to retirement is modelled and assumptions on transitions from old to reformed pension schemes.

- Finally, the age-related expenditure projections provide valuable insights on the budgetary impact of structural reforms, and their use in the context of the Stability and Growth Pact will be explored further, in time for the assessment of next round of Stability and Convergence Programmes.

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