

AGEING AND PUBLIC FINANCES IN THE EU CONDITIONS AND FUTURE PROPHECIES

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*I*N 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 the baby-boom generation. Ageing populations will pose major economic, budgetary and social challenges. It is expected to have a significant impact on growth and lead to significant pressures to increase public spending. This will make it difficult for Member States to maintain sound and sustainable public finances in the long-term. Therefore in this paper we analyzed the ageing conditions and influential, changing factors the economical and social consequences. As an expressive result should be characterize the budgetarial and public spending conditions.

Key Words: Sustainability, Ageing, Public Finance, European Union.

Sustainability of Public Finance

The assessment of long-term sustainability of public finances is part of the regular European Union (EU) budgetary surveillance. It is based on the long-term age-related government expenditure projections and on the budgetary strategies presented in the Stability and Convergence Programmes (SCP).

The issue of long-term sustainability is a multi-faceted one. It involves avoiding imposing an excessive burden on future generations and ensuring the country's capacity to appropriately adjust budgetary policy in the medium and long run. In order to analyse whether, based on current policies and in view of the significant budgetary challenge posed by ageing populations, the government finances are on a sustainable path or not, a long-term perspective of government commitments is necessary. For this purpose, the results of the common long-term age-related expenditure projections under current policies and the current budgetary position are the key inputs to the analysis of the sustainability of public finances.

The new projections provide a comparable, transparent and robust basis for assessing the budgetary implications of demographic change and the sustainability of public finances across Member States. Overall, the projections show that the EU faces a significant budgetary challenge posed by population ageing. Most of the projected increase in public spending will be on pensions and, to a lesser degree, in health care and long-term care. The potential offsetting savings in terms of projected public spending on education and unemployment benefits are likely to be limited. In the EU age-related expenditure is projected to increase by about 4% of GDP up to 2050, although this hides very different developments

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in the Member States; ranging from an increase of 7% of GDP or more in Estonia, Ireland, Luxembourg, Portugal, Cyprus, Czech Republic, Hungary and Slovenia to a decrease as a share of GDP in Estonia, Latvia and Poland.

Based on the projected expenditure trends, deficit and debt levels are projected over the long-term. Debt sustainability is derived from the intertemporal budget constraint. It imposes that current total liabilities of the government, i.e., the current public debt and the discounted value of future expenditure including the budgetary impact of ageing populations, should be covered by the discounted value of future government revenue. If current policies ensure that the intertemporal budget constraint is respected, current policies are sustainable.

The assessment of long-term sustainability of public finances goes beyond answering the question whether current policies are sustainable or not. An estimation of the size of the budgetary imbalances is also needed to understand the challenge that policy-makers face. This is provided by sustainability gap indicators that measure the size of a required permanent budgetary adjustment (e.g., a constant reduction of non age-related public expenditure as a share of GDP or a constant increase in public revenue as a share of GDP) that enables respect of the government's inter-temporal budget constraint, thus ensuring sustainable public finances. The sustainability indicators are decomposed into:

- the impact of the initial budgetary position; and
- the long-term budgetary impact of ageing.

The sustainability indicators provide a firm basis to identify the size and the main source of risks to public finance sustainability in the EU Member States. To reach an overall assessment of the sustainability of public finances, other factors are taken into account, which allow a better qualification of the assessment with regard to where the main risks are likely to stem from.

In this paper sustainability is assessed using current levels of gross government debt, the primary balance in structural terms (i.e. the cyclically-adjusted primary balance and removing one-off transactions) and expected additional costs arising from ageing to see whether an infinite and a finite version of the intertemporal budget constraint are met. Corresponding to each version of the budget constraint – over an finite or infinite horizon – two sustainability gap indicators are derived, showing the size of the permanent budget adjustment required to ensure that the constraints are met.

The S1 indicator shows the durable adjustment to the **structural primary balance** required to reach a target debt of 60% of GDP in 2060, including paying for any additional expenditure from now to the target date, arising from an ageing population. The choice of the debt target for the S1 indicator is in line with the debt threshold in the Treaty. The timescale has been chosen to be long enough to allow the impact of ageing to be analysed in a meaningful way, while still remaining within the sights of current taxpayers and policy makers.

The S2 indicator shows the adjustment to the structural primary balance required to fulfill the infinite horizon intertemporal budget constraint, including paying for any additional expenditure arising from an ageing population.

According to the budget condition, before estimation of cost of ageing, it is necessary to characterize the economical and social nature of the ageing in the EU. Beside these analyses it is important to make some observation to the future¹.

Ageing and the Real Economy

The literature on ageing is very abundant. The survey in this section focuses on both the direct impact of an ageing population on GDP growth and GDP per capita, as well as indirect “feedback” effects that

¹ We used by the observation and the prophecies the economical analyses of the European Commission.

can occur arising from the budgetary impact of ageing. Figure 1 sketches the main channels identified by the economic literature through which ageing influences overall economic performance.

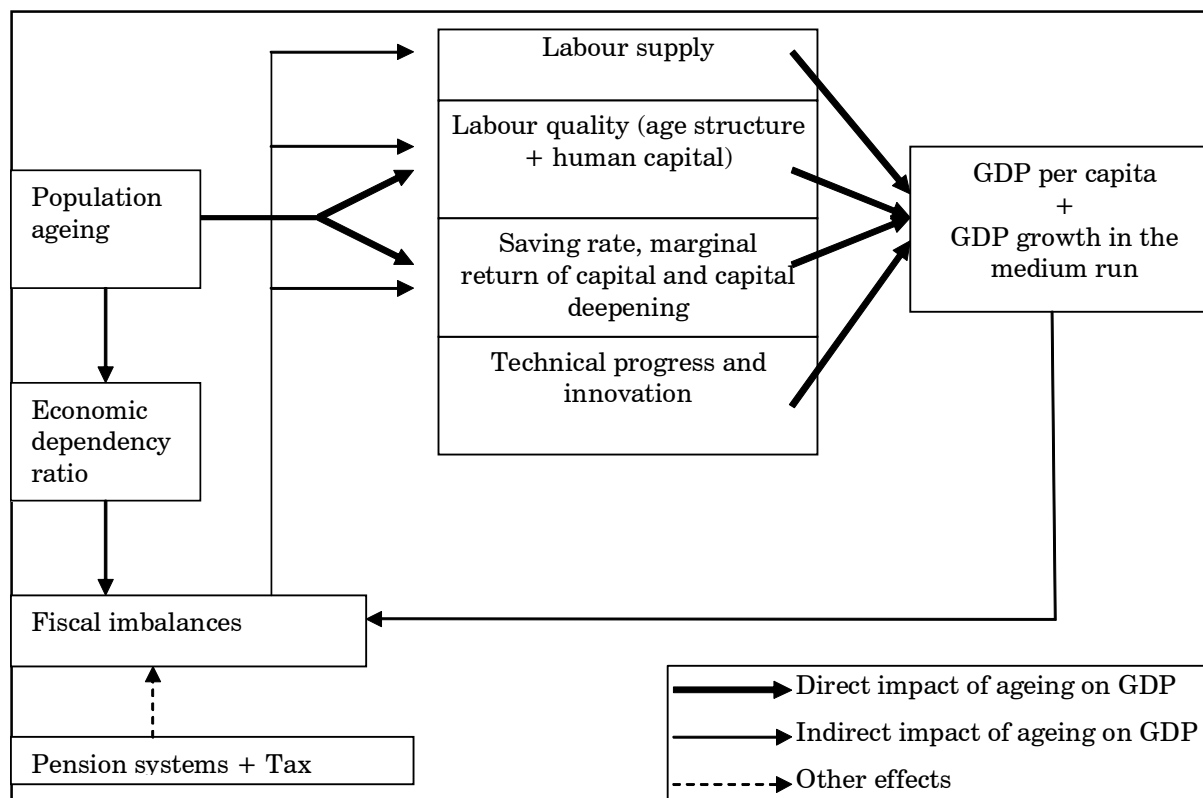


Figure 1: Main Transmission Channels of Ageing to Overall Economic Performances

Source: European Commission, 2005.

Direct Economic Effects

Ageing will have a direct impact on the real economy via both labour input and productivity. The latter encompasses three separate channels, namely;

- the quality of labour inputs (influenced by the age structure and the human capital accumulated by the workforce),
- the capital/labour ratio and
- labour-augmenting technical progress, in other words Total Factor Productivity (TFP) embedded in labour inputs.

Some Social Impact of Ageing

Ageing not only leads to an enhance of the average age of the population, but also leads to a **decline in the size of the working-age population** as older generations are replaced by less numerous younger workers. As a result, it has an adverse impact on potential labour inputs.

Ageing might stimulate **migration**, which would increase labour supply and stimulate growth provided the skills of the migrants broadly match the economic needs of the host country. European countries already rely on migrants to fill shortages for some skilled and unskilled jobs. Immigration therefore could be a positive factor in labour market adjustment². The change in the age structure of the **workforce** could change the composition of consumption and domestic demand and it could

be imply expressive reallocations between sectors, which require a rise in job mobility. But in the other side the ageing of EU population could lead to increasing labour market distortions with even lower employment than that projected. Beside these conditions the rise in labour participation needed to enlarge labour supply might cause a gap in productivity growth in the short term, if a significant proportion of the immigrants to the labour market have relatively low skills

Economic Impacts

An individual's productivity declines with age. Therefore a rising share of older workers would **reduce** overall **labour productivity** even though age-specific productivity remains constant over time. Whether productivity is affected by age is a complex issue, since the identification of the age effect is blurred by cohort and selection effects. An additional measurement problem comes from the fact that the age-profile of productivity is calculated on the basis of hourly earnings, and there may be a divergence between wages and productivity in the older age brackets due to the payment of seniority wages

Ageing has three effects on capital intensity:

- **The Increasing Marginal Product of Capital**, (a decline in the labour resource will raise wages, leading to a substitution of capital for labour. The capital/labour ratio will rise and so will the level of labour productivity and GDP per capita)
- **The Decline in the Savings Rate** (an ageing population can affect capital intensity is via saving behaviors, especially in a relatively closed economy where private domestic savings represent the main resource for financing investment) and
- **The International Allocation of Capital** (international mobility of capital combined with financial integration will help achieve a better allocation of saving to investment needs worldwide).

In addition to lower "labour quality", some economists claim that an ageing population could hamper innovation and weigh down **Total Factor Productivity** (TFP)³ growth in the medium and long run. Older workers (in spite of their greater enthusiasm at work, longer experience and better skills) are considered by a panel of employers to be less flexible in accepting new assignments and less receptive to training: this may hamper innovation and the full exploitation of technical progress.

Budgetary Effects of Ageing

Financing future age-related expenditures is an economic as well as budgetary challenge. There are also indirect channels through which an ageing population can affect economic growth. The sharp projected increase in pension spending and other age-related expenditure may require considerable rises in taxes and social security contributions, which to some extent will distort economic decisions and thus impact on GDP growth.

Adverse effects of rising age-related levies on employment The rise in labour taxes to finance age-related spending may cause unemployment and inactivity traps that affect the labour supply. An increase in employees' social security contributions could indeed bring net wages below the reservation wage for some categories of workers, such as young people. The impact on the participation rates of older workers might be stronger as their decision to withdraw from the labour force through retirement is directly affected by the parameters of the tax and old-age pension systems, e.g. parameters which determine the implicit rate of taxation of pensions, the statutory exit age and the existence of early retirement schemes.

² It has been argued that migration could reinforce the financial sustainability of public pension schemes. For these benefits to materialise wholly, migrants must be employed in the official economy, pension schemes must be broadly in actuarial balance, and the skill structure of migrants must match labour market needs.

³ Total-factor productivity is a variable which accounts for effects in total output not caused by inputs. Total Factor Productivity is often seen as the real driver of growth within an economy and studies reveal that whilst labour and investment are important contributors, Total Factor Productivity may account for up to 60% of growth within economies.

While budgetary sustainability problems may show the way governments to take measures to raise effective retirement ages and to phase out early retirement schemes, their benefits could be offset if a rise in pension contributions leads to an increase in the implicit marginal taxes on continued work.

Negative effect of age-related budgetary burden on capital accumulation. Raising taxes/levies on workers to finance pensions reduces the total amount of physical capital that can be accumulated. This will cut the level of income reached by the economy in the steady state. The hikes in payroll and income tax rates necessary to finance the pensions and health care benefits of an ever-older population bring about a sharp fall in capital per unit of human capital, with a negative impact on productivity and wage levels. The privatisation of public pension schemes would more than double the long-run ratio of physical capital to labour, raising long-run real wages by around a quarter.

Overall, the impact of ageing on productivity is uncertain, although the effect is suspected to be negative. Conversely, the effect on potential labour supply is less controversial, unambiguously negative and it is expected to be of a greater magnitude.

Affects of Ageing by Employment and Growth in the EU

Fertility Rate below Replacement Levels

One of the main reasons for ageing in the EU is the low fertility rate. Fertility rates were 1.5 for the EU25 in 2004, and in all Member States were well below the natural replacement rate of 2.1 children per woman needed to stabilise population size.[EC, 2006] There are structural reasons for the decline in fertility rates,

- notably birth control,
- higher female educational attainment and participation in the labour force,
- changes in family formation patterns and attitudes with respect to the role of women and men in society.

EUROSTAT projects a limited recovery to 1.6 for the EU25 by 2030, with the largest rebound in the EU10 countries where fertility slumped during the economic transition of the 1990s.

These projected increases are modest compared with fertility rates in other developed countries such as the US, and point to the prospect of a sustained fall in the size of the European population. There is substantial divergence in fertility rates between neighbouring EU countries with similar levels of economic development, e.g. 1.9 children per woman in France compared with 1.3 in Germany and Italy. If sustained over the very long run, these gaps will lead to different population forecast. While many countries have public policies to support families, the majority have not considered explicit strategies to increase fertility. However, the interaction of a variety of public policies (labour market, education, and housing) may inadvertently constrain choices on childbearing, and there is an emerging interest at EU level as to whether public interventions (e.g. childcare availability, flexible working time and leave arrangements) can affect fertility patterns.

Increases in Life Expectancy: More than One Year per Decade

Life expectancy at birth increased by some 8 years in EU countries between 1960 and 2000, equivalent to a gain of close to 3 months per annum. Eurostat projects these increases to continue in the decades to come, albeit at a somewhat slower pace. Life expectancy at birth is projected to rise by 7 years for men to 80.5 years in 2050, and by more than 5 years for women, to 85.6. Despite some convergence, female life expectancy in 2050 is projected to remain 5 years higher than that of males. From an economic policy perspective, the following findings are particularly important:

- much of the projected gain in life expectancy will result from lower mortality rates in older agegroup. Life expectancy at 65 for the EU 25 is projected to increase by about 4 years between

now and 2050. This is especially relevant when considering pension policy as it influences the duration of retirement relative to work;

- although life expectancy at birth is expected to increase, what is not so clear is whether the extra years of life will be spent in broadly good health and free of disability, and whether the share of life spent in good health will alter. This matters, not only for the general wellbeing of older persons, but also because of its repercussions for health care policy and the debate on extending working lives (see Figure 2.);

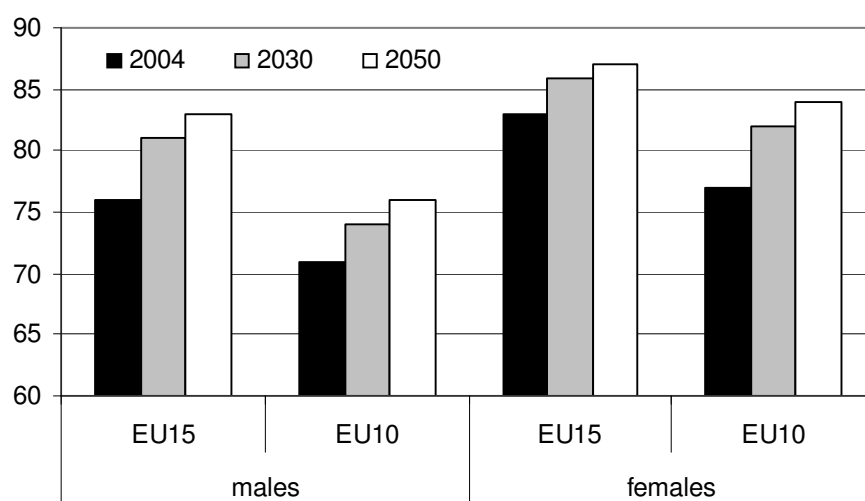


Figure 2: Life Expectancy at Birth

Source: Own Construction, based on EUROSTAT, 2008.

- life expectancy projections are subject to considerable uncertainty. Past projections from official sources have regularly underestimated the gains in life expectancy, and a look at current literature suggests that this could also be a risk for current population projections. Until recently, ‘demographic risk’ of larger-than-expected gains in life expectancy has mostly been borne by governments, and higher-than-expected gains in life expectancy have translated into additional costs for pension systems. The uncertainty over life expectancy has led to a number of interesting technical and policy responses. To begin with, demographers are trying to improve understanding of trend developments and to develop stochastic population projections attaching probabilities to future possible outcomes. In addition, some Member States have, through different instruments, linked pension benefits to changes in life expectancy at retirement age, thus sharing the demographic risk between the government and pension beneficiary.

Net Migration to the EU is Continuous

Annual net migration inflows to the EU25 currently amount to 1.3 million people, that is 0.35% of the population. The bulk of these inflows go to EU15 countries, while some EU10 countries, by contrast, are actually experiencing outward migration. EUROSTAT projects a reduction in inflows to some 800 000 people by 2015 (0.2% of the population) and a stabilisation around that level up to 2050. These net inflows cumulate to close to 40 million people by 2050.

Migration flows are also uncertain due to the influence of a variety of push and pull factors in both host and home countries, over which the EU may have little or no influence. Natural disasters, war and political instability play a role, but they are too uncertain to project. However, over the long run, the major determining factors of migration are relative income disparities and public policy towards migrants, and they can be analyzed more systematically. Therefore data on migration flows are sketchy, making projections extremely difficult.

According to the Eurostat projections, in 2050 the population in the EU25 will be both smaller and older as a result of the above mentioned projected trends in the main demographic drivers. It is projected to rise from 457 million in 2004 to a peak of 471 million in 2027, and thereafter to decline to 454 million in 2050. This aggregate picture hides sharp divergences between individual countries. Whereas the total population is projected to increase in some Member States (e.g. Belgium:+4%, France:+9%, Sweden:+13%, UK:+8%), significant falls are projected in others (Germany:-6%, Italy:-7%, Poland:-12%) (see Figure 3).

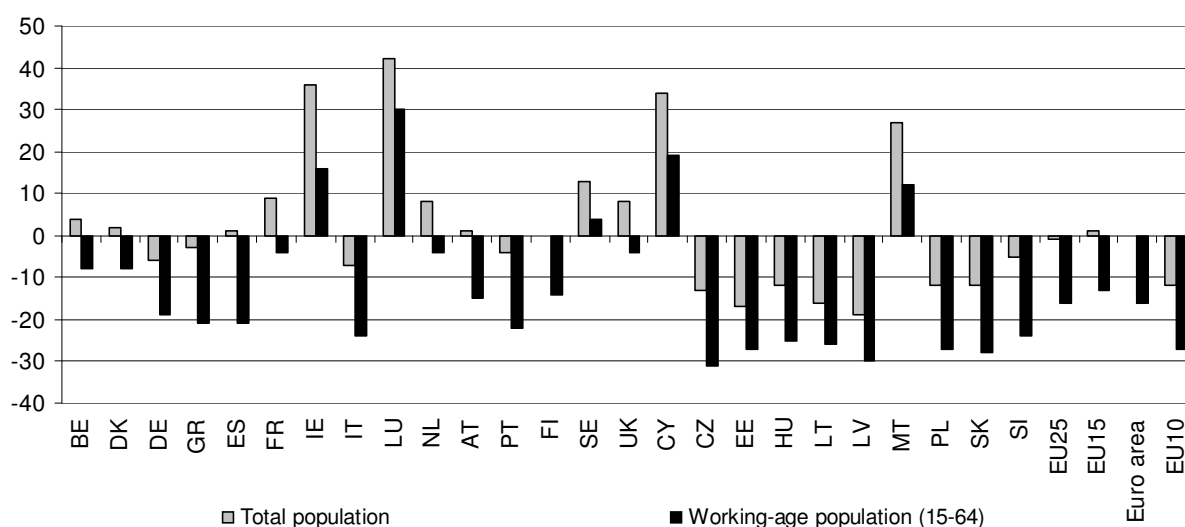


Figure 3: Projected Changes in the Size of the Populations of EU Member States, % Changing between 2004 and 2050.

Source: Own Construction, based on EC, 2006.

The Impact of Ageing on the Labour Market

On the basis of the population projection described in the earlier section, a labour force projection has been made where developments are explicitly modelled by gender and age group: this approach is justified as past trends and future prospects differ for each group. The main results of the cohort approach used (which extrapolated forward the trends observed in the past 5 years), can be summarised as follows (see Table 1).

- Young People (15-24):** Whilst in some EU countries the youth employment rate has risen, in many others it has been falling, especially in the EU10. This is a result of more people completing secondary education and enrolling in tertiary studies – a positive trend which enhances human capital formation and future potential labour productivity. Some EU15 countries, meanwhile, are actually considering measures to reduce the length of time spent in third-level education so as to facilitate earlier entry into the labour market while at the same time improving the efficiency of education systems;
- Women:** The projections show female employment rates rising from just over 55% in 2004 to almost 65% by 2025 and remaining stable thereafter. This increase, which would enable the 60% Lisbon employment target to be reached in 2010, can be attributed to the gradual replacement of older women with low participation rates by younger women who have a much stronger attachment to the labour force. A trend of rising employment rates among women has been observed for several decades, and is largely explained by rising educational attainment and changing socio-cultural factors. Whether the projected increases in female employment rates materialise in practice, or are even exceeded, may in part depend on supportive public

Table 1: Projected Employment Rates in EU Member States, 2004 to 2050

	Total (15-64)				Females (15-64)				Older workers (55-64)			
	2003	2010	2025	2050	2003	2010	2025	2050	2003	2010	2025	2050
BE	59.6	62.1	64.7	65.5	51.8	56.0	60.3	61.0	28.1	33.2	42.8	44.4
DK	74.9	76.4	77.3	77.9	70.2	72.0	72.7	73.3	59.8	61.5	65.6	66.7
DE	65.4	70.9	73.2	73.5	59.3	65.8	67.8	68.3	39.5	56.4	65.8	65.7
GR	58.9	62.7	64.9	65.1	44.6	50.0	54.6	55.6	42.1	44.4	51.9	52.9
ES	59.7	66.4	70.3	71.4	46.2	55.6	62.5	64.2	40.6	45.6	59.6	62.5
FR	63.1	64.4	66.7	68.0	57.0	58.9	61.8	63.4	36.3	42.3	49.4	52.9
IE	65.5	70.9	73.6	74.6	55.7	62.7	67.7	69.1	48.8	55.5	66.8	68.9
IT	57.2	61.0	63.6	65.7	44.9	50.0	53.9	56.1	29.4	35.9	49.4	54.6
LU	62.6	64.4	64.9	65.4	51.7	55.6	58.1	58.7	30.3	35.3	40.2	41.8
NL	73.6	75.3	76.5	77.9	66.0	70.1	73.4	75.2	44.4	48.1	53.5	55.2
AT	69.1	73.5	75.1	76.4	61.7	67.8	70.5	71.8	30.1	40.1	54.2	58.0
PT	67.8	71.9	72.9	73.4	61.2	66.4	68.7	69.5	51.4	56.5	63.0	64.7
FI	67.7	70.2	73.8	74.4	65.8	67.9	71.9	72.7	49.4	54.1	62.3	64.9
SE	73.1	74.9	77.4	77.6	71.6	73.5	76.1	76.4	68.8	70.9	75.1	76.6
UK	71.5	72.9	74.2	74.7	65.3	67.3	70.0	71.1	55.4	56.9	62.5	63.9
CY	67.7	73.6	78.2	77.3	59.3	67.0	72.8	72.0	50.2	60.7	65.2	69.1
CZ	64.8	66.8	72.1	69.7	56.6	59.8	66.5	63.8	42.5	48.1	59.8	58.9
EE	62.9	68.4	71.9	70.8	59.3	64.7	68.9	67.4	52.7	55.3	61.7	61.7
HU	56.9	60.8	65.3	63.2	50.7	54.2	60.3	58.6	28.7	39.6	49.8	49.5
LT	61.2	67.3	73.4	71.7	58.4	64.6	71.3	69.0	45.3	53.1	65.1	66.2
LV	61.9	69.9	73.1	71.4	57.8	65.3	69.1	66.7	44.1	53.4	59.2	58.7
MT	54.1	56.7	62.4	61.3	33.7	39.6	49.0	48.6	32.0	29.3	30.3	33.1
PL	51.0	57.0	68.4	66.1	45.8	51.8	64.3	60.9	26.7	35.2	42.7	48.7
SK	57.8	62.1	72.7	68.7	52.2	56.9	68.9	64.3	25.2	38.5	51.7	51.2
SI	62.8	67.7	69.9	69.3	58.0	62.5	65.9	66.4	23.5	40.4	50.0	52.6
EU 25	63.1	66.9	70.3	70.9	55.4	60.2	64.7	65.5	39.9	47.1	56.8	58.9
EU 15	64.6	68.1	70.5	71.5	56.5	61.2	64.6	66.1	41.4	48.6	58.0	60.2
Euro area	62.9	66.9	69.4	70.5	54.1	59.4	63.1	64.6	37.4	46.0	56.5	58.8
EU10	55.7	60.7	69.4	67.1	50.0	55.2	65.0	62.1	31.7	39.8	49.2	51.9

Source: EC, 2005.

policies or collective agreements being put in place, such as policies to promote access to affordable childcare, to reconcile professional and private lives and to achieve gender equality.

- **Older Workers:** The employment rate of older workers aged 55 to 64 is projected to increase sharply, by 19 p.p., from 40% in 2004 for the EU25 to 47% by 2010 and 59% in 2050: this is well in excess of the 50% Lisbon target, which is projected to be reached by 2013. The projection reflects the observed increase in employment rates of older workers in recent years (up by 4.4 p.p. since 2000). It also incorporates the expected (albeit uncertain) positive effects of enacted pension reforms. These reforms have, *inter alia*, curtailed access to early retirement schemes,

raised statutory retirement ages (including minimum ages when pension income can be drawn) and strengthened financial incentives to remain in the labour force.

The Impact of Ageing on Labour Supply and Employment

The projected increases in the employment rates of women and older workers would, as illustrated in Figure 4 below, temporarily cushion the effects of ageing on the labour force.

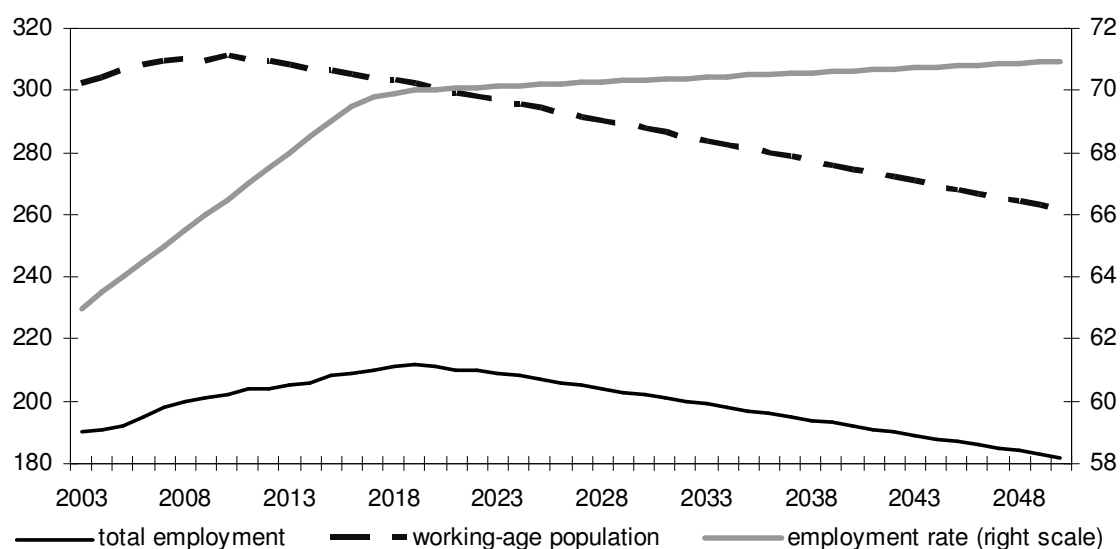


Figure 4: Projected Working-age Population and Total Employment, EU27.

Source: EC, 2009a.

At the aggregate EU25 level, three distinct time periods can be observed:

- **Phase I:** 2004-2011 – window of opportunity when both demographic and employment developments are supportive of growth: both the working-age population and the number of persons employed increase during this period. However, the rate of increase slow down, indicating that the effect of an ageing population is starting to take hold even if it is not yet visible in aggregate terms. This period can be viewed as a window of opportunity, since both demographics and labour force trends are supportive of growth. Conditions for pursuing structural reforms may consequently be relatively more favourable than in subsequent years;
- **Phase II:** 2012-2017 – rising employment rates offset the decline in the working-age population: during this period, the working-age population will start to decline as the baby-boom generation enter retirement. However, the continued projected increase in the employment rates of women and older workers will cushion the demographic factors and the overall number of people employed will continue to increase, albeit at a slower pace. From 2012 onwards, the tightening labour market conditions (lower labour force growth together with unemployment down to NAIRU) may increase the risk of labour market mismatch;
- **Phase III:** The ageing effect dominates from 2018: the trend increase in female employment rates will broadly have worked itself through by 2017, with only a very slow additional increase projected in the period 2018-2050. In the absence of further pension reforms, the employment rate of older workers is also projected to reach a steady state. Consequently, there is no counterbalancing factor to ageing, and thus both the size of the working-age population and the number of people employed are on a downward trajectory. Having increased by some 20 million between 2004 and 2017, employment during this last phase is projected to contract by almost 30 million, i.e. a fall of nearly 10 million over the entire projection period of 2004 to 2050.

The broad trends described above are common to many countries, but they are not uniform. As shown also in Figure 2, five, mostly smaller, Member States (Cyprus, Ireland, Luxembourg, Sweden, Malta) are projected to experience a pronounced rise in employment between 2003 and 2050, while the change in employment in four EU15 Member States (France, Netherlands, Belgium and UK) is projected to be slightly positive or stable. Eleven Member States are projected to see falls in employment that are well above the EU25 average of -4.6% (DE, GR, IT, PT, CZ, EE, HU, LT, LV, SK, SI). These can be grouped into the EU15 Mediterranean countries and the EU10 Member States that have undergone the transition to a market economy, plus Germany.

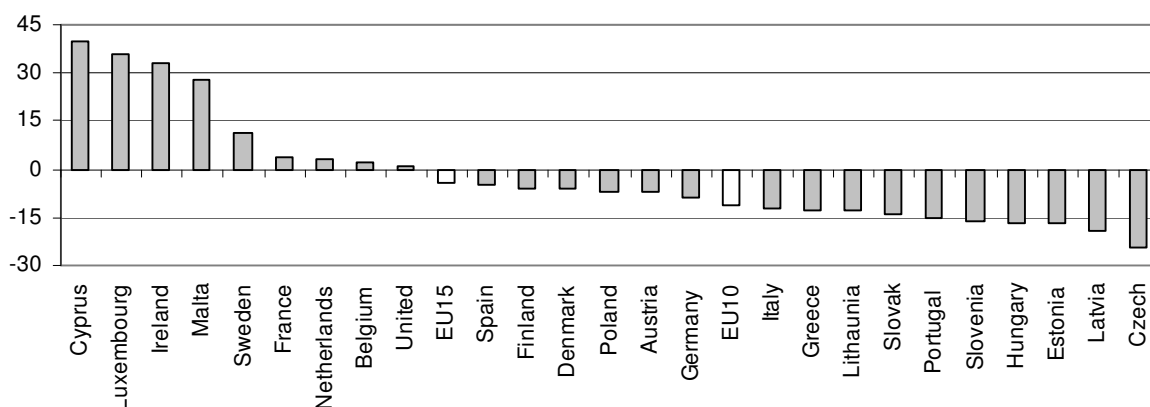


Figure 5: Employment Projections (Change in % of People Employed Aged 15-64 between 2003 and 2050) for the EU25 Member States

Source: Own Construction based on EC, 2009d.

The population increase at EU-27 level is now mostly due to migration. Only 20% of the total population change in the EU-27 in 2007 was attributable to natural change (live births minus deaths). The contribution of migration to EU-27 population growth has become more significant than natural change since 1992.

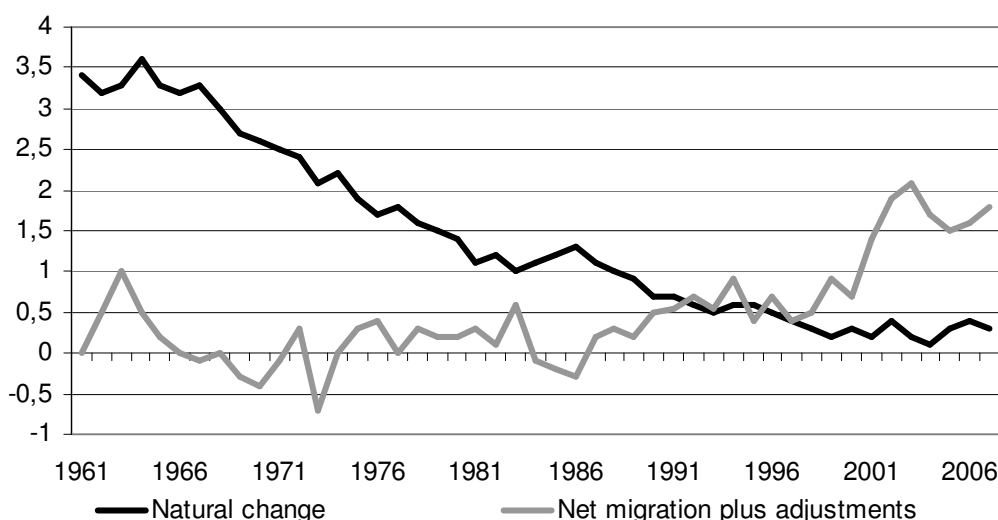


Figure 6: Natural Change and Net Migration Plus Adjustments in the EU-27.

Source: Eurostat 2008.

Productivity and the long-term consequences

As labour supply is expected to shrink over the next fifty years, labour productivity will have to play a main role in maintaining passable aggregate economic growth. In developing the macroeconomic assumptions to be used to make age-related expenditure projections, the EPC and European Commission (2005) used a production function approach for projecting labour productivity, a conservative approach that is consistent with the long-run historical trends.

The productivity projections are very likely the most uncertain of all the projections presented here, since they are based on assumptions. Some may claim that they are over-optimistic.

Indeed two caveats apply:

- The productivity projections do not take into account the negative effect of changing demographic structure on productivity and TFP, the magnitude of which is still being debated. On the other hand, they also do not take account of the potentially strong positive effect of the European economies' catch-up in ICT towards the US economy.⁴
- The assumptions *de facto* lead to projections with some real convergence for EU10 countries. However, the experience of the so-called "cohesion countries" (Greece, Ireland, Spain and Portugal) illustrates that the growth path of lagging countries covers the full range between success stories and stagnation. Real convergence is not an automatic outcome of EU10 membership, and can be affected by the policy-setting or other structural dimensions, which can accelerate, slow down or even block the catching-up process. More generally, the projections are based on the assumption that real convergence is achieved in growth rate rather than in level, except for the "convergence club", i.e. the countries characterised by a very low productivity level. This is consistent with the literature on "conditional convergence" – though the debate about how it is achieved is still going on in the academic community.

Budgetary Projections

Aside from the effect on economic growth, an ageing population also entails additional government expenditure in terms of public provision of age-related transfers and services. The fiscal impact of ageing is therefore projected to be substantial in almost all Member States; these costs will accelerate significantly over the course of the next decade. In the absence of changes to policy, public pension expenditure is projected to increase significantly in most Member States due to the demographic trends with more people retiring and spending more years in retirement thanks to the increase in longevity. However, pension reforms enacted in a number of Member States are bringing positive results in terms of expenditure containment and sustainability of public finances. Almost all Member States have tightened the eligibility requirements for receiving a public pension, mainly by raising the retirement age and restricting access to early retirement schemes. Reforms are also leading to a gradually smaller share of public pension benefits in overall pension provision. Alongside reforming public pensions systems, many countries have introduced, and/or are planning to expand, supplementary funded pension schemes. Overall, public pension spending is set to increase by 2.3 percentage points GDP by 2060, from a base of 10.2% of GDP. This is shown in Table 2 along with the change to other age related expenditure items and their projected levels from 2010 on.

As Table 2 shows, public expenditure on health care is projected to grow by 1.4 percentage points of GDP in the EU by 2060 from a base of just under 7% of GDP. The increase in living standard conditions is an important driver of healthcare costs, affecting the demand for healthcare mainly through higher expectations on quantity and quality of care to be provided or financed by government.

Analysis of past trends in healthcare expenditure suggests that technological developments – new and better treatments – are responsible for a significant part of overall costs growth, which could result in

⁴ However, the use of these long-term trends which smooth out the recent ICT-driven productivity rise seen in the US since the second half of the 1990s means that a potential parallel ICT boom in Europe does not appear in the projections.

Table 2.: Increase in Age-related Expenditure, 2010-2060, % of GDP

	Pension spending		Healthcare		Long-term care		Unemployment benefits and education		Total	
	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060
BE	10.3	4.5	7.7	1.1	1.5	1.3	7.3	-0.3	26.8	6.6
BG	9.1	2.2	4.8	0.6	0.2	0.2	3.0	0.2	17.1	3.2
CZ	7.1	4.0	6.4	2.0	0.2	0.4	3.3	0.0	17.0	6.3
DK	9.4	-0.2	6.0	0.9	1.8	1.5	8.0	0.1	25.2	2.2
DE	10.2	2.5	7.6	1.6	1.0	1.4	4.6	-0.4	23.3	5.1
EE	6.4	-1.6	5.1	1.1	0.1	0.1	3.2	0.3	14.8	-0.1
IE	5.5	5.9	5.9	1.7	0.9	1.3	5.3	-0.2	17.5	8.7
EL	11.6	12.5	5.1	1.3	1.5	2.1	3.8	0.1	21.9	16.0
ES	8.9	6.2	5.6	1.6	0.7	0.7	4.8	-0.2	20.0	8.3
FR	13.5	0.6	8.2	1.1	1.5	0.7	5.8	-0.2	29.0	2.2
IT	14.0	-0.4	5.9	1.0	1.7	1.2	4.3	-0.2	26.0	1.6
CY	6.9	10.8	2.8	0.6	0.0	0.0	5.8	-0.6	15.5	10.7
LV	5.1	0.0	3.5	0.5	0.4	0.5	3.3	0.3	12.3	1.3
LT	6.5	4.9	4.6	1.0	0.5	0.6	3.5	-0.4	15.1	6.0
LU	8.6	15.3	5.9	1.1	1.4	2.0	4.0	-0.3	19.9	18.2
HU	11.3	2.6	5.8	1.3	0.3	0.4	4.5	-0.3	21.8	4.0
MT	8.3	5.1	4.9	3.1	1.0	1.6	5.0	-0.7	19.2	9.2
NL	6.5	4.0	4.9	0.9	3.5	4.6	5.6	-0.2	20.5	9.4
AT	12.7	1.0	6.6	1.4	1.3	1.2	5.2	-0.2	25.7	3.3
PL	10.8	-2.1	4.1	0.8	0.4	0.7	3.8	-0.6	19.1	-1.1
PT	11.9	1.5	7.3	1.8	0.1	0.1	5.6	-0.4	24.9	2.9
RO	8.4	7.4	3.6	1.3	0.0	0.0	2.7	-0.2	14.7	8.5
SI	10.1	8.5	6.8	1.7	1.2	1.7	5.1	0.7	23.1	12.7
SK	6.6	3.6	5.2	2.1	0.2	0.4	2.9	-0.6	14.9	5.5
FI	10.7	2.6	5.6	0.8	1.9	2.5	6.4	0.0	24.7	5.9
SE	9.6	-0.2	7.3	0.7	3.5	2.2	6.6	0.0	27.1	2.7
UK	6.7	2.5	7.6	1.8	0.8	0.5	4.0	0.0	19.2	4.8
EU-27	10.2	2.3	6.8	1.4	1.3	1.1	4.9	-0.2	23.2	4.6
EA	11.2	2.7	6.8	1.3	1.4	1.3	5.0	-0.2	24.5	5.1

Source: EC, 2008.

a significant increase in spending which is not fully captured in the projection. However, technological advancement may also have positive effects on reducing costs of medical treatments through efficiency gains. There is large uncertainty as to which factor will dominate in the future.

Based on current policies, public spending on long-term care is projected to increase by 1.1 percentage points of GDP by 2060 due to the fact that the very old (aged 80+) will be the fastest growing age class of the population in the future. But there are upside risks to these costs due to changes in family structures, higher labour force participation of women and increased geographical mobility.

Public expenditure on education is also in part determined by demographics. The baseline scenario suggests a small decrease in the public education expenditure ratio over the projection period results solely from changes in the demographic composition (fewer children in the future). However, aside from demographic factors, other factors also affect education spending and it may be that ambitions to increase attainment dominate the savings that demographics can offer.

The projections on unemployment benefit expenditure are based solely on the evolution of the unemployment rates, which stem from the macroeconomic and labour market assumptions. In the EU, expenditure on unemployment benefits is projected to fall from 0.8% of GDP in 2007 to 0.6% of GDP in 2060, though large fluctuations may be expected over such a long period. This reduction is mainly driven by the assumption that unemployment rates in all countries with unemployment rates above the EU15 average would converge to the EU15 average by 2020. Indeed, after 2020, only small changes are projected. Overall, on the basis of current policies, age-related public expenditure is projected to increase on average by 4.3 percentage points of GDP by 2060 in the EU – especially through pension, healthcare and long-term care spending. There are however marked differences in the impact of ageing across Member States:

- The increase in government spending in ageing-related categories is likely to be very significant (7 percentage points of GDP or more) in nine EU Member States (Luxembourg, Greece, Slovenia, Cyprus, Malta, the Netherlands, Romania, Spain, and Ireland), although for some countries the large increase will be from a fairly low level.
- For a second group of countries – Belgium, Finland, Czech Republic, Lithuania, Slovakia, the United Kingdom, Germany and Hungary – the cost of ageing is more limited, but still very high (between 4 and 7 percentage points of GDP).
- Finally, the increase is more moderate, 4 percentage points of GDP or less, in Bulgaria, Sweden, Portugal, Austria, France, Denmark, Italy, Latvia, Estonia and Poland. Most of these countries have implemented substantial pension reforms, in several cases also involving a partial switch to private funded pension schemes (Bulgaria, Estonia, Latvia, Poland, and Sweden).

At Member State level, large downward revisions in the budgetary impact of ageing have occurred since the 2006 Sustainability Report in Portugal, Hungary, Denmark and the Czech Republic (reflecting the impact of pension reforms). By contrast, large upward revisions are reported in Greece, Luxembourg, Malta, Estonia, Austria, Poland and Lithuania (reflecting primarily revised projected changes in pension expenditure stemming from reform reversals and improved modelling techniques)

The Long term Budgetary Cost of Ageing

The long-term change (LTC) component shows significant differences between Member States in terms of the budgetary impact of ageing until 2060 and indefinitely. As worked out for the infinite horizon, its impact ranges from a margin of 1.2% of GDP in Poland because of the long-term reduction in expenditure, to a required adjustment of 12.9% in Luxembourg because of the increase in ageing-related spending. Overall, the LTC components of the sustainability gap lies under 2% of GDP for ten Member States (Poland, Estonia, Latvia, Denmark, Italy, Bulgaria, Hungary, Sweden, France and Portugal). Nine Member States face a budgetary impact of between 2% and 5% of GDP (Slovakia, Austria, Lithuania, Germany, the United Kingdom, the Czech Republic, Finland, Belgium and Romania). The remaining

eight countries (the Netherlands Malta, Spain, Ireland, Cyprus, Slovenia, Greece and Luxembourg) have a LTC of 5% of GDP or above, with the costs incumbent on Greece and Luxembourg representing 11.5 and 12.9% of GDP, respectively.

The above decomposed the contribution of pension spending, healthcare, long-term care, education and unemployment benefits on the projected increase in spending. Overall, however, the Member States facing high expected costs do so primarily on the basis of the high costs of their pension systems – with the exception of the Netherlands, where the projected change in pension spending contribute 4% of GDP to the increase in spending, while long term care is expected to increase by 5.8% of GDP. The countries with the largest projected increases in pension-related expenditure are those have so far introduced at best modest reforms to their pension systems.

In all Member States (except Denmark), the LTC has a larger impact on the S2 than the S1 indicator. As this is due to the time profile of the costs of ageing, it indicates that the budgetary impact of ageing is back loaded and may likely continue increasing for some time after 2060. In Denmark's case, the time profile leads to age-related government expenditure reaching its maximum in 2025 and starting to decline after 2045. For other countries, the structure of ageing and the social protection arrangements in Member States drive the higher contribution to S2 than S1 of the LTC component. Other things being equal, countries that are due to undergo most of their ageing in the near future do not show as large a disparity between the contribution of ageing on the two indicators. Equally, the institutional setup in place plays a crucial role as to how the ageing translates into costs, with a flatter profile for countries whose pension arrangements limit costs to the government sector.

Conclusions

To reach an overall assessment of the sustainability of public finances, other factors are taken into account, which allow a better qualification of the assessment with regard to where the main risks are likely to stem from.

The analysis reveals that coping with the budgetary impact of ageing is a key policy challenge in the EU. It confirms that the three-pronged strategy to cope with the economic and budgetary challenge posed by ageing populations is appropriate and needs to be pursued, i.e. reducing debt at a fast pace, raising employment rates and productivity, and reforming pension, health care and long-term care systems.

First, Member States need to achieve more rapidly and sustain sound underlying budgetary positions so as to run down public debt at a fast pace before the full impact of ageing unfolds. Indeed, the sustainability analysis shows that consolidating the public finances towards the medium-term objectives and sustaining such a position will significantly contribute to alleviating part of the long-term budgetary costs of ageing in the EU and will prevent a rapid and strong rise of the debt/GDP ratio. Moreover, sound public finances are a prerequisite for low interest rates and high and stable economic growth which would in turn contribute to improve the sustainability of public finances.

Second, there is a need to raise employment rates, especially amongst women and older workers, and appropriate steps should be envisaged to raise labour supply and labour utilisation. If employment rates increased more than projected it would considerably contribute to fiscal sustainability. Indeed, in many countries, substantial benefits could be reaped by reducing structural unemployment further. Successfully implementing such policy measures and enhance productivity, in line with the goals of the Lisbon strategy, would furthermore raise potential GDP growth rates, improve future living standards, provide more room for budgetary reallocation in the future. However, in view of the need to enhance productivity in the future, Member States could consider using those savings for modernising their education systems, including the development of life long learning, investing to raise educational attainment levels and improving the functioning of the educational systems, in line with the Lisbon commitments to build a knowledge-based economy and society.

Third, Member States need to consider appropriate reforms of pension, health-care and long-term care systems to ensure that they are financially viable in the face of ageing while at the same time securing core policy goals of adequacy and access. Moreover, raising employment is unequivocally welfare enhancing; it strengthens the financial sustainability of pension systems, delays the start of expenditure rises, increases contributions to pension schemes, and can generate additional budgetary savings. Moreover, raising employment rates, notably of older workers, is of prime importance for countries where a significant decrease in the benefit ratio, i.e. average pensions over GDP per worker, is projected, as it reduces the risk of possibly inadequate pensions in the future. The sustainability analysis has shown that considerable budgetary savings on health-care expenditure may be realised if the projected increase in life expectancy over the long-term is accompanied by an increase in healthy life years and an improvement in the health status. Putting in place measures that improve the health status of the populations can thus contribute to easing the cost of ageing and improve the sustainability of public finances.

The policies behind this three-pronged strategy are an integral part of the Lisbon strategy insofar as raising employment rates and running sound macro- and micro-economic policies are conducive to economic growth and prosperity. The appropriate combination of policies in these three areas will depend on the main reasons behind the sustainability challenge and the policy priorities that the Member States have set for themselves.

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