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## **Sustainable Ageing Societies: Indicators for Effective Policy-Making**

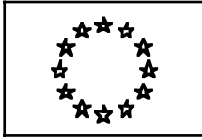
### **Thematic session 2**

Sustainability of social security schemes  
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## **Indicators of the Financial Sustainability of Pensions in the Contexts of the Open Method of Co-ordination of Pensions and the Sustainability of Public Finances in the European Union**

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**Indicators of the financial sustainability in the context of  
the open method of co-ordination on pensions and the  
sustainability of public finances in the European Union**

A background paper to

**IMSERSO workshop on**

**Sustainable Ageing Societies: Indicators for Effective Policy Making**

**Madrid 14-16, 2004**

\* The views expressed in this paper are entirely those of the author and should not be attributed to the European Commission

## 1. INTRODUCTION

The aim of this paper is to contribute to the debate on indicators on the financial sustainability of pension systems and public finances in the context of ageing populations. More specifically, the aim is to present the current co-ordination processes of the European Union and the indicators used to date in these processes with regard to the challenge of ageing population.

Several European Councils have highlighted the challenge of ageing populations, in particular its implications for pension systems. The Lisbon Council (2000) stressed the need to study *“the future evolution of social protection from a long-term point of view, giving particular attention to the sustainability of pension systems in different time frameworks”*. Further, the Gothenburg Council (2001) endorsed three broad principles for modernising pensions systems, namely *“safeguarding the capacity of systems to meet their social objectives, maintaining their financial sustainability and meeting changing societal needs”* and called for the application of the open method of co-ordination in the field of pensions. This Council also concluded that the Council should *“regularly review the long-term sustainability of public finances, including the expected strains caused by the demographic changes ahead”*. This was to be done under the guidelines of the Broad Economic Policy Guidelines (BEPGs) and in the context of the Stability and Growth Pact.

These conclusions led to the establishment of the open method of co-ordination on pensions in 2002 when the first round of the process was carried through. The results were reported to the Spring European Council in 2003 in a joint report by the Commission and the Council<sup>1</sup>. The mandate concerning the long-term sustainability of public finances led to such a review in the annual report on Public Finances in EMU<sup>2</sup>. In addition, long-term sustainability is also reviewed in the context of the assessment of stability/convergence programmes. Finally, these analyses result in recommendations in the BEPGs.

The need for assessing the long-term implications of ageing populations was recognised by the Economic Policy Committee with a decision to establish a specific working group - the Ageing Working Group – to examine the economic and budgetary implications of ageing populations. The group is made up of experts from national administrations of all EU Member States. Its first task was to produce projections for public spending on pensions, health and long-term care for the elderly between 2000 and 2050. This task was completed in October 2001<sup>3</sup>. Later,

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<sup>1</sup> Joint report by the Commission and the Council on adequate and sustainable pensions, Council of the European Union, 7165/03, 10 March 2003

<sup>2</sup> European Commission: Public Finances in EMU – 2003. COM(2003)283; Respective reports were published also in 2001 and 2002.

<sup>3</sup> Economic Policy Committee (2001) : Budgetary challenges posed by ageing populations : the impact on public spending on pensions, health and long-term care for the elderly and possible indicators of the long-term sustainability of public finances, EPC/ECFIN/655/01-EN; also published in the series of European Economy, Reports and Studies, 2001

also the impact of ageing populations on public spending on education and unemployment benefits has been studied<sup>4</sup>. Moreover, the group has also studied the impact of some parametric reforms on pension expenditure<sup>5</sup>.

This paper looks at indicators developed in the contexts of the abovementioned co-ordination processes and within the work of the Ageing Working group. As the projections for public age-related expenditure as well as the co-ordination process on pensions have been carried through only once, the work on indicators is inevitably still work in progress and far from complete. Nevertheless, it provides a basis to discuss where we are and what still should be there.

## 2. OPEN METHOD OF CO-ORDINATION ON PENSIONS

Under the broad goal of *financial sustainability of pension systems*, the open method of coordination on pensions<sup>6</sup> agreed on five more specific objectives, which should guide to a suitable combination of policies aimed at ensuring the financial sustainability of pension systems. These objectives are:

- achieve a high level of employment;
- offer effective incentives for the participation of older workers, in particular in pension systems;
- reform pension systems taking into account the overall objective of maintaining the sustainability of public finances;
- ensure that pension provisions and reforms maintain a fair balance between the active and the retired;
- ensure that private and public pension schemes can provide pensions with the required efficiency, affordability, portability and security.

These objectives are defined for the pension system as whole. However, the first round of the open method of co-ordination on pensions focused mainly on public pension schemes. The reasons to this are most likely due to the facts that public pension schemes are dominant in most EU Member States and that the problem of the financial sustainability of pension systems is largely perceived to be a problem of public finances. Moreover, it is also the fact that public pension schemes have been analysed more and, thus, more information was available on these schemes in national strategy reports on pensions.

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<sup>4</sup> Economic Policy Committee (2003) : The impact of ageing populations on public finances : overview of analysis carried out at EU level and proposals for a future work programme, EPC/ECFIN/435/03

<sup>5</sup> Economic Policy Committee (2002) : Reform challenges facing public pension systems : the impact of certain parametric reforms on pension expenditure, EPC/ECFIN/237/02

<sup>6</sup> Quality and viability of pensions: joint report on objectives and working methods in the area of pensions, Council of the European Union, 14098/01, 23 November 2001

The summary report of the co-ordination process on pensions was mainly based on national strategy reports that Member States submitted to the Commission but also official statistical sources were used for quantitative indicators. Basically, one could think that appropriate indicators should be defined for each objective. For the first round, however, this was neither possible nor the country reports provided adequately harmonised information.

## **2.1. Employment objectives**

Concerning employment, the policy objective is set with a view that raising employment rates is an important way to alleviate the problems arising from the shrinking labour force. Higher employment rates would offset the negative impact of demographic developments on employment and would spread the financing of pension systems across a greater number of people. On the other hand, more employment will generate additional pension rights, resulting in better adequacy at individual level but also in increased pension expenditure at society's level. Although the overall welfare effect of higher employment is no doubt positive, the impact on pension expenditure and the financial sustainability of pension systems was analysed only by a few Member States. As regards the employment objectives, only general statistical information on employment rates by sex and age groups as well as on the average exit age from the labour market was used in the Joint pensions report.

Within the work of the Ageing Working Group projections, a number of sensitivity analyses concerning higher employment were carried out. One of these analyses, the so-called Lisbon scenario, tried to answer to the question how much the projected pension expenditure would change if the Lisbon targets for the employment rates were achieved. In this scenario, it was additionally assumed, that the targeted employment rates of 2010 would continue to grow further beyond this year. The results indicated that such a continuous increase in the employment rates would absorb about one third of the pension expenditure growth according to the baseline (no policy change) scenario. In other words, it indicated that higher employment rates can alleviate the financial challenge of the ageing populations but not offset it.

Another sensitivity analysis by the Ageing Working Group on the impact of raising the effective retirement age revealed that the impact on pension expenditure is highly dependant on the design of the pension scheme and on how a rise would be achieved. More precisely, it depends on whether such a change in the effective retirement age is achieved without granting additional pension rights, for instance, by postponing the take-up of a disability or another non-actuarial early pension in a defined-benefit scheme. Such a one-year increase in the effective retirement age would correspond to absorbing, on average, about 20% of the expected increase in pension expenditure in 2050. If, however, the additional year in employment leads to higher pension rights, as it is the case in a defined-contribution scheme, the impact on pension expenditure would be negligible (see table 4).

## **2.2. Making pension system sustainable in a context of sound public finances**

This objective concerns the interaction between the sustainability of public pension system and the sustainability of public finances as a whole. On one hand, public pension expenditure constitutes such a large part of public expenditure that it inevitably influences the expenditure structure and the sustainability of public finances. Further, the financing of the public pension system is often partially dependant on general tax revenues and weighs on the total tax rate, even in the case of being based on ear-marked contributions. On the other hand, the strategies concerning the sustainability of public finances emphasise the balanced structure of public expenditure, inviting reforms in particular areas such as pensions, but also call for general preventive measures for the expected consequences of ageing population. In the context of the co-ordination of pension systems, the focus is on the sustainability of the pension system and how it can contribute to the overall sustainability of public finances.

The assessment of the financial sustainability of public pension systems in the open method of co-ordination was based mainly on three quantitative indicators: (i) projections of the impact of public pension systems on public expenditure, (ii) contribution rates of public pension schemes and estimates of the need for additional financing, (iii) assets in reserve funds for the expected increase in pension expenditure.

The projections of public pension systems were carried out by the Ageing Working Group in 2001. They were based on common population projections and co-ordinated macroeconomic assumptions, while the projections on pension expenditure themselves were made by national experts in each country. The impact, also the expected future impact, of pension reforms was introduced in the calculations if the legislation concerning the reform had come into force from the beginning of 2001, at the latest (table 1). Thus, these calculations did not include the estimated impact of the most recent reforms agreed and implemented in 2001 or 2002 in countries such as Germany, Portugal, Greece, Finland and the United Kingdom. In addition, France and Austria undertook reforms in 2003.

In addition to making changes in the projections to take reforms into account, some Member States have revised their projections regarding more recent information for instance on population, notably immigration, and employment developments. Revised national projections included in the 2002 updates of stability and convergence programmes showed lower impact on public pension expenditure for almost all countries (table 2).

The driving factors to projected changes in public spending on pensions were analysed by a decomposition of the results to four explanatory factors (table 3):

- a population ageing effect (dependency ratio) as changes in the ratio of persons aged 55+ to the population aged 15 to 54;
- an employment effect as changes in the inverse ratio of the working-age (15-64) population to persons employed;
- an eligibility effect as changes in the number of pension beneficiaries of the persons aged 55+;
- a benefit effect as changes in the average pension relative to output per worker.

The results indicate that the increase in the old-age dependency ratio is the dominant force putting upward pressure on spending on pensions. Increased employment rates will mitigate it as well as the declining benefit to output ratio, which reflects the lower increase in benefit levels than in output per worker due to the indexation of pensions to (close to) prices rather than wages. A separate sensitivity analysis gauged the impact of the increase in life expectancy at retirement. This showed that almost half the expected increase in pension spending is the result of the increased life expectancy (table 4).

With the aim of describing the future strategies of Member States to cope with increased pension expenditure, the financial arrangements and contribution rates of public pension schemes were described in the Joint pensions report. However, it was not possible to make a single quantitative indicator for this purpose because the financial arrangements vary largely from country to country. There are two main difficulties for a comparison of the contribution rates of public pension schemes: (i) the share of general tax funding varies across countries and (ii) the contribution to the public pension scheme is not always possible to separate from the general social security contribution. As far as the future contribution rates are concerned, only a few countries have strong commitments to current contribution rates or to certain ceilings with an indication that possible further adjustments would be made mainly on the benefit side. Information on the financing of public pension schemes could be summarised only in qualitative terms (table 5).

Regarding other general measures to ensure the financing of public pension schemes, most Member States consider the accumulation of pension reserve funds or a continuous reduction of public debt as important ways in which they can prepare for future requirements resulting from ageing. However, statutory requirements for partial funding of public pension schemes exist only in a few countries while many countries have recently established new funds. Yet, the accumulation of funds to date is considerable only in those countries where it already is statutory (table 6).

An overall assessment of the financial sustainability of public pension schemes could be made only in qualitative terms. On the basis of these assessments, countries were grouped in four groups regarding the challenge of the financial sustainability they still face in their public pension systems: (1) countries where the financial challenge is very small due to expected low increase in public spending on pensions (S, UK), (2) countries which have undertaken major reforms and the expected increase in spending seems to be possible to manage without further major reforms (B, DK, IRL, NL, L, P, FIN), (3) countries where further reforms seem to be needed due to expected high levels of spending (D, I), and (4) countries where significant reforms are needed due to expected large increases in spending (EL, E, F, A).

### **2.3 Objectives concerning the balance between the active and the retired and the private pension schemes**

The strategies of Member States regarding these objectives have been described only in qualitative terms. So far, no quantitative indicator has been developed for

describing the intergenerational fairness or the sustainability of private pension schemes or their contribution to the sustainability of public pension schemes. Only an indicator regarding the extent of private schemes could be given concerning the accumulation of assets in private (occupational) pension schemes (table 6).

### 3. LONG-TERM SUSTAINABILITY OF PUBLIC FINANCES

The Gothenburg European Council gave a mandate to assess the long-term sustainability of public finances due to the ageing of the populations and also outlined a three-pronged strategy to address economic and budgetary challenges of ageing populations. The latter should be done (i) by reducing public debt at a fast pace, (ii) by undertaking comprehensive labour market reforms in order to raise employment rates, and (iii) by reforming pension and health care systems in order to contain pressures on public finances, to place pension systems on a sound financial footing and ensure a fair intergenerational balance.

The long-term sustainability is assessed on the basis of updates to stability and convergence programmes. It takes into account the projections for all age-related expenditure: pensions, health care, long-term care, education and unemployment benefits, while it assumes that revenues and other categories of public expenditure remain unchanged as a share of GDP. The expenditure projections have been carried out by the Ageing Working Group (table 7).

In the absence of an agreed definition in the literature as to what constitutes a sustainable public finance position, a pragmatic approach has been adopted. Sustainability of public finances has been assessed against continued compliance with the budgetary requirements of EMU, and in particular, the Treaty requirement to keep debt levels below the 60% of GDP. In this context, two indicators have been developed: (i) *extrapolation of debt developments* up to 2050, and (ii) *tax gap* which provides a gauge of the scale of budgetary adjustment required for a Member State to reach a sustainable public finance position.

As the results for debt developments and tax gaps may largely differ depending on whether the base year is the actual year or the final year of the stability/convergence programme, two sets of these indicators are calculated. In the *SGP compliance* scenario, the starting positions for the current budget balance, level of debt, primary spending and tax revenues are the figures reported by Member States for the final year of their stability/convergence programme (i.e. 2005/6 in the 2002 programme), while a *2002 position* scenario assumes that the current starting positions will remain unchanged up to the final year of the programme. The purpose of this scenario is to demonstrate the long-term impact on debt developments of a failure to achieve the 'close to balance or in surplus' requirement of the Pact in accordance with the timetable set down in Member States' programmes.

### **3.1. Extrapolation of debt levels**

The debt level extrapolation is based on the following assumptions:

- age-related expenditure evolve in line with the projections of the Ageing Working Group or national updates of these;
- the tax burden and non-age related primary expenditure remain constant as a share of GDP over the whole projection period;
- the interest growth rate differential converges towards the EU average level of 2 percentage points by 2010.

In general, the concept used in the EU surveillance of budgetary positions is the general government gross debt. It has been argued that when assessing long-term sustainability, net debt figures should be looked at. However, due to practical measurement problems and the problems related to the question whether these assets could be used to redeem outstanding debt or substitute for other revenues, financial assets have not been taken into account. The only exemptions from this have been made for Finland and Sweden, in which cases the assets of designated pension funds have been taken on board. In these cases, the funds concerned are earmarked for financing future public pension expenditure and the sizeable amounts of their assets have a material impact on the assessment of the sustainability of public finances (table 8).

### **3.2. Tax gap indicators**

The tax gap measures the difference between the current tax ratio and the constant tax ratio which would produce an overall balance over the projection period. The methodology is based on the Present Value Budget Constraint approach, which states that the present value of government revenues must be equal to the present value of expenditure plus initial public debt. If the time horizon is finite, the present value of the difference between revenues and expenditure must be equal to the difference between the initial debt and the present value of the terminal debt.

The choice of both the targeted debt level and the length of the projection period is arbitrary. Therefore, the analytical report provides two types of tax gap indicators which differ from each other with regard to the abovementioned features.

- T-1 sets a length for the projection period, which covers the period up to 2050, the same period as the age-related expenditure projections. It measures the difference between the current tax ratio and the constant tax ratio which would result in a balanced budget position over the whole projection period. The terminal value for the debt level would be the result of the balanced budget position. By definition, the debt ratio would converge towards zero because the amount of debt would not grow but the GDP would.

- T-3<sup>7</sup> measures the tax gap over an infinite time horizon without setting any target for the terminal debt level. It indicates the change needed in tax revenues as a share of GDP that would guarantee the respect of inter-temporal budget constraint of the government, i.e., that equates the present value of revenues and expenditure over an infinite horizon. As there is no cut-off date in 2050, it requires that an assumption is made on the path of public expenditure from 2050 onwards. This is assumed to remain constant as a share of GDP at the projected level in 2050.

The tax gap indicators presented in table 9 can at best provide an indication of the magnitude of emerging budgetary challenges that could occur on the basis of ‘no policy change’ and, thus, they could facilitate policy debate. The indicators of tax gaps and debt evolution for two scenarios (the 2002 position and the SGP compliance) provide an indication of the importance of early action with respect to the ageing problem. The risk of unsustainable public finances increases considerably if Member States do not achieve their targets in the medium-term.

The overall assessment of the long-term sustainability of public finances relies partly on the sustainability indicators presented above and partly also takes into account qualitative factors. It has been agreed in the Economic Policy Committee that in the overall assessment the following qualitative factors should be taken on board: the initial level of public debt as a share of GDP, the significance of one-off measures and their impact on the initial budget balance, the current level of the tax ratio, and the robustness of long-term budgetary projections.

#### 4. SUMMARY AND FURTHER WORK

The work on indicators on the financial sustainability of pension systems and the long-term sustainability of public finances is still work on progress. This paper summarised the indicators that have been used in the Commission/Council reports to date. It has been generally recognised that the issues of data and indicators need to be addressed in further work.

As far as the long-term projections on age-related expenditure are concerned, the work for next projections has already started. In the preparative work, due attention will be drawn to the new demographic projections, based on the 2000 census data, and the assumptions concerning future labour force participation and their consistency with general macroeconomic assumptions. Further, the coverage of expenditure projections will be reviewed with a view to improve the comparability and transparency of the projections. An attempt will also be made to review whether also the provision of private occupational and mandatory pensions as well as contributions to pension schemes could be covered in the projections.

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<sup>7</sup> Public finances in EMU – 2003 presents also the T-2 indicator, which is a variant of the T-1 indicator, setting the target for the terminal debt level at 40% of GDP. It has been suggested that this indicator will be dropped out from next reports.

Concerning the next round of the open method of co-ordination on pensions in 2005, the experiences of the first round provided a clear message that more attention should be drawn to the submission of harmonized information by Member States. In many areas, also the quality of statistical data needs to be improved. Further, there are areas where new indicators need to be developed such as incentives for early retirement, intergenerational fairness and the sustainability of private pension schemes.

**Table 1: Projections for spending on public pensions as a share of GDP  
–current policy scenario**

	2000	2005	2010	2020	2030	2040	2050	change 2000-50
BE	10,0	9,5	9,9	11,4	13,3	13,7	13,3	3,3
DK	10,5	11,3	12,5	13,8	14,5	14,0	13,3	2,9
DE	11,8	11,4	11,2	12,6	15,5	16,6	16,9	5,0
EL	12,6	12,4	12,6	15,4	19,6	23,8	24,8	12,2
ES	9,4	8,8	8,9	9,9	12,6	16,0	17,3	7,9
FR	12,1	12,2	13,1	15,0	16,0	15,8	15,8	3,8
IE	4,6	4,5	5,0	6,7	7,6	8,3	9,0	4,4
IT	13,8	13,8	13,9	14,8	15,7	15,7	14,1	0,2
LU	7,4	7,4	7,5	8,2	9,2	9,5	9,3	1,9
NL	7,9	8,3	9,1	11,1	13,1	14,1	13,6	5,7
AT	14,5	14,5	14,9	16,0	18,1	18,3	17,0	2,5
PT	9,8	10,9	11,8	13,1	13,6	13,8	13,2	3,4
FI	11,3	10,9	11,6	12,9	14,9	16,0	15,9	4,7
SE	9,0	9,2	9,6	10,7	11,4	11,4	10,7	1,7
UK	5,5	5,3	5,1	4,9	5,2	5,0	4,4	-1,1

Source: EPC (2001)

**Table 2: Comparison of the EPC projections for public spending on pensions and revised national projections included in 2002 updates to stability and convergence programmes**

	EPC projections		Revised national projections		Difference	
	2005*	Change by 2050	2005*	Change by 2050	2005*	Change by 2050
BE	10,0	3,3	8,7	2,7	-1,3	-0,6
DK	11,3	2,9	4,7	2,5	-6,6	-0,4
DE	11,2	5,7	11,1	3,8	-0,1	-1,9
EL	12,4	12,4	12,4	10,2	0,0	-2,2
ES	8,8	7,9	7,9	5,1	-0,9	-2,8
IT	13,8	0,2	13,9	0,2	0,1	-0,0
NL	8,3	5,7	8,3	5,3	0,0	-0,4
AT	14,5	2,5	14,6	1,8	0,1	-0,7
PT	10,9	3,4	13,3	2,0	2,4	-1,4
FI	11,3	4,7	10,7	3,7	-0,6	-1,0
SE	9,2	1,7	9,1	1,8	-0,1	0,1
UK	5,3	-1,1	5,0	-0,2	-0,3	0,9

\* 2000 for BE and FI and 2010 for DE

Source: EPC and 2002 updates to stability and convergence programmes

**Table 3: Decomposing pension spending as a % of GDP between 2000 and 2050**

	Dependency	Employment	Eligibility	Benefit	Total	Residual
BE	5,2	-0,9	0,9	-2,0	3,3	0,0
DK	4,1	-0,2	0,5	-1,7	2,7	0,1
DE	6,2	-0,7	2,0	-2,7	4,8	0,2
EL	9,9	-3,6	1,4	4,0	11,7	0,5
ES	8,2	-2,4	2,0	-0,3	7,5	0,5
FR	7,7	-0,9	0,7	-3,6	3,9	-0,1
IE	4,5	-0,9	1,4	-0,7	4,3	0,1
IT	9,5	-3,1	-1,4	-4,9	0,2	0,0
LU	NA	NA	NA	NA	NA	NA
NL	5,4	-0,6	0,5	0,2	5,5	0,2
AT	10,5	-2,2	-3,0	-2,9	2,4	0,1
PT	6,7	-1,1	-2,4	0,1	3,3	0,1
FI	6,6	-0,1	-1,3	-0,1	5,0	-0,3
SE	3,9	-0,5	0,8	-2,6	1,7	0,0
UK	2,4	0,0	-0,1	-3,4	-1,0	-0,1
EU	6,4	-1,1	0,6	-2,8	3,1	-0,2

Notes: *Dependency ratio* is population aged 55+ as % of population aged 15 to 64  
*Employment (inverse) ratio* is population aged 15-64 as % of persons employed  
*Benefit ratio* is average pension as % of GDP per person employed  
*Eligibility ratio* is number of pension beneficiaries as % of persons aged 55+

Source: Economic Policy Committee (2001).

**Table 4: Illustrative simulations on the impact of certain parametric reforms**

	<i>Increase in pension expenditure as a share of GDP from 2000 to 2050 (baseline projection) (1)</i>	<i>Illustrative impact of certain parametric reforms as a share of GDP in 2050 (2)</i>		
		<i>Half a percentage point change in the indexation of pensions</i>	<i>Raising the effective retirement age by one year</i>	<i>Reducing benefits in line with increase in life expectancy</i>
<b>Flat-rate systems</b>				
DK	2.8%	2.7	-1.0	-1.7
IRL	4.4%	1.6	-0.4	-
NL	5.7%	2.7	-1.1	-
UK	0%	0.6	-0.2	-0.5
<b>Earnings-related systems</b>				
A	2.5%	1.0	-	-
B	3.3%	0.5	-	-
FIN	4.6%	0.9	-0.6	-1.5
F	3.7%	-	-0.9	-
D	5.0%	-	-0.7	-1.6
I	0.3%	1.2	-0.1	-0.4
P	3.4%	2.0	-0.34	-1.9
E	7.9%	1.9	-	-
S	1.7%	-	-0.3	+1.1

Source: EPC (2002)

**Table 5: Contribution rates in public pension schemes**

	<b>Contribution rate, % of wages in 2002<sup>1</sup></b>	<b>Observations<sup>2</sup></b>
<b>B</b>	37.94% (social security) Employer: 24.87% Employee: 13.07%	Means-tested minimum pensions are financed by taxes. The contribution rate covers all branches of social security. A subsidy of 2.6% of GDP from the state budget to the social security system was required in 2000. This will increase to 5.5% of GDP by 2050.
<b>DK</b>	223.25 DKK per month (about 2%) Employer: 2/3 Employee: 1/3	The contribution rate covers the statutory supplementary pension schemes (ATP and SP) for an average worker's wage. The flat-rate public old-age pension and civil servants' pensions are financed completely by taxes.
<b>D</b>	19.1% Employer: 9.55% Employee: 9.55%	Subsidies from the Federal budget account for 37% of pension expenditure in 2002; the share is expected to decrease to 31% in 2030 <sup>0</sup> . In addition, social assistance pensions are financed by taxes. A target has been set that the contribution rate should not exceed 22% in the future.
<b>GR</b>	20% (if insured before 31.12.92) Employer: 13.33% Employee: 6.67% 30% (if insured after that date) Employer: 13.33% Employee: 6.67% State: 10.00%	The contribution rate covers all branches of social security. Tax subsidies to the financing of contribution-based pensions would have to rise from the current 4.8% of GDP to 15.5% in 2050. In addition, pensions of uninsured persons over 65 and civil servants are financed by taxes.
<b>E</b>	28.3% (social security, except health care and unemployment benefits) Employer: 23.6% Employee: 4.7%	The contribution rate covers contributory benefits for old-age, disability and survivors' pensions and maternity benefits. The social security sector is expected to produce a surplus until 2015, thereafter a deficit. Means-tested minimum pensions are financed by taxes.
<b>F</b>	Basic scheme: Employer: 9.8% (below ceiling), 1.6% (above ceiling) Employee: 6.55% (below ceiling) Supplementary scheme: Rate varies between 7.5% and 20%, depending on wage level and employee status.	The contribution rate covers old-age and survivors' pensions; disability pensions are covered by health insurance contributions. The public pension scheme is currently in surplus (0.2% of GDP in 2000) but will fall into a deficit of 3.8% of GDP in 2040, which would imply raising the contribution rate by 10 percentage points.
<b>IRL</b>	12.5 – 16% (social security, except health) Employer: 8.5 – 12% Employee: 4%	Social insurance (flat-rate) pensions are financed by contributions. Means-tested social assistance pensions are financed by taxes.
<b>I</b>	32.7% Employer: 23.81% Employee: 8.89%	The deficit of the pension insurance system is currently 0.8% of GDP, rising to 3.0% of GDP when social assistance pensions are included.
<b>L</b>	24% Employer: 8% Employee: 8% State: 8%	One third of the contribution rate is financed by taxes. The guaranteed minimum incomes for older people and public sector employees' pensions are financed by taxes. The future development of the contribution rate depends on the growth rate. It is estimated that a rate of 26% can be maintained for the whole period up to 2050 with a growth rate of 4% p.a., but it would have to rise to 46% with a growth rate of 2%.
<b>NL</b>	17.9% (old-age pension) 1.25% (survivors' scheme) Employee: 19.15%	A target has been set to ensure that the old-age pension contribution rate will not be raised above 18.25%. The contribution rate of 17.9% is expected to produce a surplus until 2010. Thereafter, the deficit is covered from the reserve fund and taxes. In addition, a contribution rate of 1.25% is paid for the survivors' scheme and a rate of between 7.09-13.93% for disability benefit schemes.
<b>A</b>	22.8% Employer: 12.55% Employee: 10.25%	Tax subsidies accounted for 23% of pensions expenditure. In the absence of transfers from the budget the contribution rate would be 31% in 2001 and would have to rise to 38% by 2050 under current policies.
<b>P</b>	34.75% (contributory cash benefits) Employer: 23.75% Employee: 11%	The contribution rate covers all contributory benefits (pensions, sickness, unemployment, maternity, professional diseases, family benefits). Means-tested universal non-contributory social pension and other benefits are financed by taxes (3.3% of GDP in 2000). The social security sector currently produces a surplus of 1.7% of GDP, projected to turn into a deficit of 1.5% of GDP by 2050.
<b>FIN</b>	Earnings-related pensions: Employer: 16.7% (private sector) 19.1% (state sector) 22.6% (municipalities) Employee: 4.4% National basic pensions: Employer: 2 – 4.9% (private sector)	The earnings-related pension contribution for the private sector (21.1%) is estimated to rise by 5 percentage points (taking account of the 2002 reforms and of the use of funded reserves). Means-tested (against pension income) national basic pensions are partially financed by taxes.

	<b>Contribution rate, % of wages in 2002<sup>1</sup></b>	<b>Observations<sup>2</sup></b>
<b>S</b>	18.5% (old-age pension) 1.7% (survivors' scheme) Employer: 10.21% Employee: 7%	The earnings-related pension system is a notional defined-contribution system (16%) and a pre-funded defined-contribution system (2.5%); these rates are to be kept constant in the future. Income guarantee pensions (means-tested against public pensions), disability and survivors' pensions and contributions during career breaks are financed by taxes.
<b>UK</b>	21.9% (social security except health) Employer: 11.9% Employee: 10%	The contribution rate covers the basic state pension and the additional earnings-related pension (SERPS/State Second Pension). Means-tested Minimum Income Guarantee/Pension Credit benefits and civil servants' pensions are financed by taxes.
1	Source: European Commission, MISSOC 2002. The rates apply to the general, first-pillar social protection schemes. In many Member States, there are floors of ceilings for earnings which are subject to contributions. Rates may also be different for the self-employed. The observations are based on the information given in the national strategy reports.	

Source: Joint report by the Commission and the Council on adequate and sustainable pensions

**Table 6: Assets as a share of GDP in the I and II pillar pension schemes**

	<b>I pillar schemes<sup>1</sup></b>	<b>II pillar schemes<sup>2</sup></b>	<b>II and III pillar schemes<sup>1</sup></b>
<b>B</b>	0.5	6	15
<b>DK</b>	25	24	79
<b>DK</b>	None	16	n.a.
<b>EL</b>	None	4	n.a.
<b>E</b>	1	7	n.a.
<b>F</b>	0.8	7	n.a.
<b>IRL<sup>3</sup></b>	8	51	n.a.
<b>I</b>	None	3	n.a.
<b>LUX</b>	22	0.2	n.a.
<b>NL</b>	3	111	166
<b>A</b>	None	12	n.a.
<b>P</b>	3	12	n.a.
<b>FIN</b>	55	9	12
<b>S</b>	29	57	n.a.
<b>UK</b>	None	81	n.a.

1) Information provided by national authorities in national strategy reports

2) Information provided by the European Federation for Retirement Provision

3) As a share of GNP

Source: Joint report by the Commission and the Council on adequate and sustainable pensions

**Table 7: Projected budgetary impact of ageing populations on public expenditures – change between 2000 and 2050 as a % of GDP**

Projections made by the EPC

	Total age-related spending in 2000	Pensions	Health care	Long-term			Unemployment transfers	Total			
				care	Education			2000-50	2005-10	2010-20	2020-30
BE	23,9	3,3	1,3	0,8	-0,6	-1,1	3,7	0,5	1,2	2,8	
DK	28,5	2,9	0,7	2,1	-0,1	-0,0	5,4	1,9	1,8	1,6	
DE	24,0	5,0	1,4	0,0	0,0	-0,4	6,1	-0,3	1,6	3,5	
EL	21,8	12,2	1,7	0,0	-0,7	-0,2	13,0	0,0	2,9	4,7	
ES	21,3	7,9	1,7	0,0	-1,3	-1,0	7,4	-0,2	1,1	2,8	
FR	26,5	3,8	1,2	0,5	-0,9	-0,5	4,0	0,7	2,4	1,3	
IE	10,1	4,4	0,0	0,0	-1,5	0,2	3,1	0,1	1,5	0,7	
IT	24,2	0,3	1,5	0,4	-0,6	-0,1	1,5	0,1	1,0	1,1	
LU	7,6	1,9	NA	NA	0,0	0,0	1,9	0,5	0,7	1,0	
NL	21,4	5,7	1,0	2,2	-0,1	0,1	8,9	1,2	2,4	2,9	
AT	26,9	2,5	1,7	1,0	-1,0	-0,2	4,2	0,3	1,1	2,8	
PT	21,5	3,4	0,8		-0,6	-0,1	3,5	1,0	1,5	0,4	
FI	25,3	4,7	1,2	1,7	-0,7	-0,3	6,5	0,7	1,7	3,1	
SE	27,0	1,7	1,0	2,0	-0,8	-0,3	3,6	0,4	0,7	2,1	
UK	17,4	-1,1	1,0	0,8	-0,2	0,1	0,6	-0,2	-0,3	1,0	
<b>Updated national projections for pensions, including the effects of pension reforms</b>											
	2000	2005	2010	2020	2030	2050	change				
DE	10,8		11,1	12,1	13,8	14,9	4,1				
ES	8,4	7,9	8,0	8,5	9,9	13,0	4,6				
FR		12,3	13,1	14,3	15,0		2,4				
AT		14,7	14,9	15,8	17,2	16,5	1,8				
PT	13,3		14,7	15,5	15,7	15,3	2,0				

Note: Projections for pension in FR only cover the period up to 2040.

Source: Ageing Working Group and national authorities

**Table 8: Projected debt levels up to 2050 as % of GDP**

	SGP compliance scenario			2002 budget position scenario		
	2010	2030	2050	2010	2030	2050
BE	70	-21	-108	66	-41	-154
DK	26	-23	-51	9	-79	-172
DE	49	56	89	75	186	384
EL	70	48	160	70	64	201
ES	38	17	89	33	4	59
FR	54	107	248	62	144	335
IE	33	85	220	22	52	153
IT	77	17	-38	88	72	91
LU	2	16	51	4	18	52
NL	39	48	99	37	43	91
AT	59	88	123	61	39	19
PO	46	51	107	61	120	281
FI (1)	-25	-48	-39	-42	-135	-225
SE (1)	3	2	-35	3	2	-57
UK	38	43	78	39	49	90

Source: Public Finances in EMU - 2003

(1) As calculated assuming primary balance constant at the level of 2002.

(2) Government debt net of financial assets

**Table 9: Tax gap indicator**

	SGP compliance scenario			2002 budget position scenario		
	T1	T2	T3	T1	T2	T3
<b>BE</b>	-1,7	-2,0	0,1	-2,4	-2,7	-0,5
<b>DK</b>	-0,9	-1,3	0,1	-2,7	-3,1	-2,0
<b>DE</b>	1,0	0,6	3,2	4,8	4,5	6,9
<b>EL</b>	2,0	1,7	4,8	2,6	2,3	5,5
<b>ES</b>	1,1	0,7	2,4	1,0	0,6	2,4
<b>FR</b>	3,7	3,5	4,6	4,8	4,5	5,7
<b>IE</b>	3,4	2,9	5,1	2,4	1,8	4,0
<b>IT</b>	-0,8	-1,0	0,3	0,9	0,6	1,9
<b>LU</b>	1,2	0,2	2,5	1,0	0,3	2,6
<b>NL</b>	1,2	0,7	4,6	1,0	0,6	4,5
<b>AT</b>	2,6	2,1	3,4	1,0	0,6	1,9
<b>PO</b>	1,3	1,0	2,0	3,7	3,3	4,3
<b>FI</b>	-0,6	-1,1	-0,5	-3,2	-3,7	-0,8
<b>SE</b>	-0,6	-1,1	0,2	-0,9	-1,4	-0,1
<b>UK</b>	1,9	1,4	1,2	1,3	0,8	1,4

A positive value indicates that there is a financing gap and a negative value a surplus.

**Source:** Public Finances in EMU - 2003

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