

Contents

Summary and main conclusions	7
1. Introduction	19
2. Underlying assumptions	23
2.1. Demographic projections	23
2.1.1. The AWG population scenario	23
2.1.2. Fertility rates well below replacement levels	23
2.1.3. Continuous increases in life expectancy of more than one year per decade	24
2.1.4. Net inward migration to the EU projected to continue	27
2.1.5. The size and age structure of the population in the baseline scenario	29
2.2. Labour force projections	31
2.2.1. The cohort component methodology	31
2.2.2. Projection results for labour force participation and labour supply	33
2.2.3. Assumptions on unemployment	33
2.2.4. Employment rate projections	34
2.2.5. A closer look at the impact of ageing on labour supply and employment	36
2.3. Labour productivity and potential growth rates	38
2.4. Other macroeconomic assumptions	44
2.5. Some overall conclusions on economic impact of ageing	44
3. Pensions	50
3.1. Introduction	50
3.2. Pension schemes and their coverage in the projections	50
3.2.1. Overview of the pension systems	50
3.2.2. Coverage of the pension expenditure projections	51
3.2.3. The concepts of pensions, contributions and assets	63
3.3. Baseline projection results	65
3.3.1. Projected trend in public pension expenditure and a comparison with the 2001 projection	65
3.3.2. The change in public pension expenditure and its driving factors	68
3.3.3. Total pension expenditure	80
3.3.4. Pensioners and contributors	87
3.3.5. Pension contributions and assets of pension funds	91
3.4. Sensitivity analyses	97

4. Healthcare	105
4.1. Introduction	105
4.2. Short overview of the projection methodology	108
4.3. Data used in the projections	113
4.4. Results of the budgetary projection exercise	120
4.4.1. Pure ageing scenario	120
4.4.2. Scenario on the health status	121
4.4.3. Death-related costs	121
4.4.4. Income elasticity of demand	122
4.4.5. Unit costs evolve in line with GDP per worker	123
4.4.6. An AWG reference scenario	123
4.5. Overall results of the healthcare projections	124
4.5.1. A comparison of projection results for all approaches	124
4.5.2. Tentative conclusions	128
5. Long-term care	132
5.1. Introduction	132
5.2. The projection methodology and scenarios	133
5.2.1. Overview of the projection model	133
5.2.2. Scenarios carried out in the projection exercise	135
5.3. Data availability and quality	136
5.3.1. Age-related expenditure profiles	136
5.3.2. ADL-dependent population	138
5.3.3. Public spending on different types of formal care and unit costs	142
5.4. Projected size of the dependent population up to 2050 and projected number of persons receiving different types of care	143
5.5. Projected spending on long-term care	144
5.5.1. Pure ageing scenario	144
5.5.2. Unit costs evolve in line with GDP per capita	147
5.5.3. Constant disability scenario	147
5.5.4. Increase in formal care provision scenario	148
5.5.5. AWG reference scenario	150
5.6. Conclusion	153
6. Education	155
6.1. Introduction	155
6.2. Data collection and delimitation of the exercise	155
6.3. The number of students in public education	157
6.3.1. Demographic developments	157
6.3.2. Enrolment	158
6.4. Projections of expenditure on education up to 2050	160

6.5.	Decomposition of the changes in the expenditure shares	162
6.6.	A word of caution	165
7.	Unemployment benefits	170
7.1.	Description of the projection methodology	170
7.2.	Results of projections for public expenditure on unemployment benefit expenditure	171
8.	References	178
Annexes		185
Country annex		311
List of tables		
1-1	Overview of underlying assumptions and adjustments for certain Member States	22
2-1	Baseline assumptions on fertility rates in EU Member States	25
2-2	Baseline assumptions on life expectancy at birth for males and females	27
2-3	Baseline assumptions on net migration flows for EU Member States	29
2-4	Overview of the projected changes in the size and age structure of the population, in millions	30
2-5	Participation rates by gender and age group in 2003 in EU Member States	34
2-6	Projected changes in participation rates up to 2050 used in the baseline scenario	35
2-7	Assumptions on unemployment rates	37
2-8	Projected employment rates used in the 2005 EPC budgetary projection exercise	39
2-9	Projected changes in employment (aged 15-64)	40
2-10	Peaks and troughs for the size of the working-age population and the total number of persons employed (aged 15-64)	42
2-11	Projected potential growth rates and determinants	43
2-12	GDP growth and its sources, 2004-50	46
2-13	GDP per capita growth: growth rates and levels relative to EU-15 average	47
2-14	Projected changes in demographic and economic dependency ratios	49
3-1	Overview of the pension systems in Member States	52
3-2	Coverage of pension schemes in the 2004 projections	57
3-3	Gross public pension expenditure as a share of GDP between 2004 and 2050	65
3-4	Comparison of the 2005 projections of gross public pension expenditure as a share of GDP with the 2001 projections	67
3-5	Life expectancies in the 2004 and 2001 population projections	69
3-6	Dependency ratios in the 2004 and 2001 population projections	70
3-7	Peaks in public pension expenditure as a share of GDP	71
3-8	Old-age and early pensions, gross, as a share of all public pensions	73
3-9	Disability and survivors' pensions as a share of GDP between 2004 and 2050	74
3-10	The contribution of the decomposed factors to the change (in percentage points) in all public pensions relative to GDP	76
3-11	The projected benefit ratio: average public pension relative to output per worker	78

3-12	The contribution of the decomposed factors to the change (in percentage points) in the public old-age and early pensions relative to GDP	79
3-13	Decomposition of the increase (in %) in public pension expenditure between 2005 and 2050	80
3-14	Decomposition of the increase (in %) in public old-age and early pension expenditure between 2005 and 2050	81
3-15	Annual growth rates of public old-age and early pensions over selected time periods and decomposed by driving factors	81
3-16	Occupational and private statutory pensions as a share of GDP between 2004 and 2050	86
3-17	Total pension expenditure as a share of GDP between 2004 and 2050	87
3-18	Benefit ratio: average total pension relative to output per worker	88
3-19	Number of pensioners in public pension schemes	90
3-20	Number of pensioners receiving public pensions relative to the population aged 65 and over	91
3-21	Pension system dependency ratio: number of pensioners relative to the number of contributors in public pension schemes	92
3-22	Number of contributors to public pension schemes	93
3-23	Support ratio: Number of contributors relative to the number of pensioners in public pension schemes	94
3-24	Pension contributions to public pension schemes as a share of GDP	95
3-25	Social security pension contributions relative to public pensions	96
3-26	Assets in public pension schemes as a share of GDP	97
3-27	Assets in all pension schemes as a share of GDP	98
3-28	Summary of the changes in gross public pension expenditure increases as a share of GDP between 2004 and 2050	101
3-29	Summary of the changes in all pension expenditure increases as a share of GDP between 2004 and 2050	102
3-30	Summary of changes in total assets as a % of GDP between 2004 and 2050	103
3-31	Summary of changes in the ratio between contributions and pension expenditure in public schemes between 2004 and 2050	104
4-1	The drivers of healthcare spending: how they are incorporated in the projection exercise	110
4-2	Overview of different approaches used to make the projections on healthcare spending	113
4-3	A comparison of the age-related expenditure profiles – males	116
4-4	A comparison of the age-related expenditure profiles – females	117
4-5	Ratio between cost borne by a decedent and a survivor, by age cohort – males	119
4-6	Ratio between cost borne by a decedent and a survivor, by age cohort – females	120
4-7	Elasticity of healthcare spending per capita with respect to GDP per capita	121
4-8	Projection results for the pure ageing scenario (I): public spending on healthcare as % of GDP	122
4-9	Projection results for constant health scenario (II)	123
4-10	Projection results for the death-related costs scenario (III)	124
4-11	Projection results for scenario IV capturing a positive income elasticity of demand for healthcare spending	125
4-12	Projection results for scenario V where unit costs evolve in line with GDP per worker	126
4-13	Projection results for AWG reference scenario	127
4-14	Overview of projected changes in healthcare spending as a % of GDP between 2004 and 2050	128

4-15	Difference in the projected changes in healthcare spending 2004-2050 between Scenario I (pure ageing, costs evolve in line with GDP per capita, using national age-related expenditure profiles) and the other scenarios	129
5-1	Overview of scenarios	135
5-2	Overview of data availability	137
5-3	Age-related expenditure profiles for long-term care, in euros and GDP per capita – males	138
5-4	Age-related expenditure profiles for long-term care in euros and GDP per capita – females	139
5-5	Dependency rates among elderly population in households, by age group	141
5-6	Estimated elderly dependent population in 2004 for 8 EU Member States, in thousands (based on SHARE data and reported number of people in institutions)	141
5-7	Estimated size of dependent population in 2004 using ‘average’ dependency rates by age and gender from SHARE data, in thousands	142
5-8	Total dependent population estimated, EU-25, in thousands	142
5-9	Estimated ADL-dependent population aged 65 and above, 2004	143
5-10	Total public expenditure on long-term care, all ages, 2004, as a % of GDP	144
5-11	Projection of dependent population, pure ageing scenario	145
5-12	Projection of dependent population, in thousands – constant disability scenario	146
5-13	Projection results for the pure ageing scenario (I)	147
5-14	Projection results for the scenario where unit costs evolve in line with GDP per capita (II)	149
5-15	Projection results for the constant disability scenario (III)	150
5-16	Projection of dependent population, in thousands – increase in formal care provision	151
5-17	Projection results for the increase in formal care provision scenario (IV)	152
5-18	Projection results for the AWG reference scenario	153
6-1	Detailed assumptions made in performing the projections	156
6-2	Change in population aged 5-25 and young share of working-age population between 2002 and 2050 ...	159
6-3	Labour market participation rates for young people (2002-2050)	160
6-4	Enrolment rate across all level of education by age. 2002	161
6-5	Enrolment rate across all level of education by age. 2003	162
6-6	Enrolment rate across all level of education by age. 2050	163
6-7	Total number of students and student share of working-age population	164
6-8	Percentage share of education publicly funded (2002).	165
6-9	Total public expenditure on education as a share of GDP (2002-2050)	166
6-10	Education expenditure as a share of GDP compared to the young-age population (defined as aged 5-25), the total number of students and the share of students over population aged 15-64. Percentage changes 2002-50	167
6-11	Decomposition of the change in the education expenditure to GDP-ratio. Percentage point contribution from different factors. 2002-50	168
6-12	Expenditure on education as share of GDP. EU-15. 1990-2003	169
7-1	Social protection expenditure as % of GDP: Unemployment (2002)	172
7-2	Unemployment benefit spending, as % of GDP	173
7-3	Unemployment benefit spending per unemployed, as % of GDP per worker (yub _{pc})	174
7-4	Unemployment rates (AWG baseline scenario)	175

7-5	Unemployment/Employment ratio (U/L)	176
7-6	Projections of unemployment benefit spending, as % of GDP	177

List of graphs

1-1	Overview of the 2005 projection of age-related expenditure	21
2-1	Past and projected fertility rates for the EU-25	24
2-2	Baseline assumptions for life expectancy at birth, EU-15 and EU-10	26
2-3	Baseline assumptions on net migration flows, EU-15 and EU-10	28
2-4	Age pyramids for the EU-25 population in 2004 and 2050	31
2-5	Projected changes in the age structure of the EU-25 population	32
2-6	Baseline labour force projection (change in % of people aged 15-64 between 2003 and 2050)	36
2-7	Projected employment rates and Lisbon targets in the EU-25	38
2-8	Projected changes in employment (% change of employed people aged 15-64 between 2003 and 2050)	41
2-9	Projected working-age population and total employment, EU-25	41
2-10	Projected potential GDP growth (annual average) in the EU-25 Member States	44
2-11	Projected (annual average) potential growth rates in the EU-15 and EU-10 and their determinants (employment/productivity)	45
2-12	Projected demographic and economic dependency ratios for the EU-25	48
3-1	Gross and net public pension expenditure as a share of GDP in 2004	72
3-2	Public, occupational and private mandatory pensions as a share of GDP in 2004, 2030 and 2050 ...	89
4-1	Illustration of the different scenarios for future morbidity/disability and longevity using age profiles on healthcare costs	112
4-2	Age related expenditure profiles for EU Member States, males and females	115
4-3	Average age-related expenditure profiles for the EU-15 and EU-10 (males and females)	118
5-1	Model structure	134
5-2	Age-related expenditure profiles for long-term care, % of GDP per capita, males, 2004	140
5-3	Age-related expenditure profiles for long-term care in euros, males, 2004	140
5-4	Age-related expenditure profiles for long-term care, % of GDP per capita, females, 2004	140
5-5	Age-related expenditure profiles for long-term care in euros, females, 2004	140
5-6	Age-related expenditure profiles for long-term care, % of GDP per capita, males, 2004	140
5-7	Age-related expenditure profiles for long-term care in euros, males, 2004	140
5-8	Age-related expenditure profiles for long-term care, % of GDP per capita, females, 2004	140
5-9	Age-related expenditure profiles for long-term care in euros, females, 2004	140
6-1	Population aged 5-25 and over 65 in the EU-25 (2002-2050)	158
6-2	Rate of change of population aged 5-25 between 1990 and 2003	169