CONTENTS

LIST OF TABLES	10
LIST OF GRAPHS	12
EXECUTIVE SUMMARY	13
PART I	
Underlying assumptions and projection methodologies	27
1. Population	29
1.1. BACKGROUND AND GENERAL APPROACH	29
1.2. PROJECTION OF FERTILITY RATES	29
1.2.1. Past trends	29
1.2.2. The EUROPOP2008 projection	31
1.3. PROJECTION OF LIFE EXPECTANCY	32
1.3.1. Past trends	32
1.3.2. The projection used in EUROPOP2008: methodology and results	32
1.4. PROJECTION OF NET MIGRATION FLOWS	35
1.4.1. Past trends and driving forces	35
1.4.2. The projection used in EUROPOP2008: methodology and results	37
1.5. OVERALL RESULTS OF POPULATION PROJECTION TO BE USED	39
1.6. POPULATION AGEING IN THE EU IN A GLOBAL CONTEXT	49
1.7. COMPARISON WITH THE DEMOGRAPHIC PROJECTION USED IN THE 2006 AGEING REPORT	51
Annex 1.1: The EUROPOP2008 projection: key assumptions	58
2. Labour force projections	59
2.1. LABOUR FORCE PROJECTIONS IN THE LONG-TERM PROJECTION EXERCISE	59
2.1.1. The approach used in the 2006 budgetary projections of the EPC	59
2.1.2. Past trends and main determinants of labour market performance	59
2.2. OVERVIEW OF THE PROJECTION METHODOLOGY AND MAIN ASSUMPTIONS IN THE 2009 EXERCISE	63
2.3. METHODOLOGY USED TO PROJECT PARTICIPATION RATES	65
2.3.1. Assumptions and adjustments for specific Member States	65
2.3.2. Impact of recently enacted pension reforms	65
2.3.2.1. Recent pension reforms in some EU Member States	65
2.3.2.2. Impact of pension reforms in the baseline labour force projection	70
2.3.2.3. Simulating the impact of the pension reforms on the participation rate of older workers	70
2.4. MAIN RESULTS OF THE PROJECTION OF LABOUR MARKET PARTICIPATION RATES	74
2.4.1. Projection of participation rates	74
2.4.2. Projection of labour supply	77
2.4.3. Decomposing the population composition effect and the participation effect on labour supply	78
2.5. ASSUMPTIONS ON STRUCTURAL UNEMPLOYMENT	82

	2.6. E	MPLOYMENT PROJECTION	82
	2.7. E	CONOMIC DEPENDENCY RATIOS EMERGING FROM THE LABOUR FORCE PROJECTION	90
	2.8. F	PROJECTION OF TOTAL HOURS WORKED	93
	2.9.	COMPARISON WITH THE PROJECTION IN THE 2006 AGEING REPORT	94
Ar	nnex 2	.1: Projecting labour force developments using the cohort simulation model	96
Ar	nnex 2	.2: Estimation of the average exit age from the labour market	98
3.	Labo	our productivity and GDP	99
	3.1. E	SACKGROUND AND GENERAL APPROACH	99
	3.2. N	METHODOLOGY USED TO PROJECT POTENTIAL OUTPUT	99
	3.2	2.1. Short description of the production function framework	99
	3.2	2.2. Specific assumptions on the components of the production function in the short term (2008-2009)	101
	3.2	 Specific assumptions on the components of the production function in the longer run (2010-2060) 	101
	3.3. N	MAIN RESULTS OF BASELINE PROJECTIONS	104
	3.4.	COMPARISON WITH THE PREVIOUS 2006 LONG-TERM BUDGETARY PROJECTION EXERCISE	107
4.	Inter	est rates	111
	4.1. E	BACKGROUND	111
		ASSUMPTIONS ON INTEREST RATES TO BE USED N THE 2009 EPC PROJECTION OF AGE- RELATED EXPENDITURE	111
5.	SENS	ITIVITY TESTS	113
	5.1. E	BACKGROUND	113
	5.2. F	PROJECTION RESULTS	113
P/	ART II		119
Αı	ae-re	lated expenditure items: coverage,	
	_	tion methodologies and data sources	119
6.	Pens	ions	121
	6.1. <i>N</i>	MAIN FEATURES OF THE PENSION PROJECTION	121
	6.2.	COVERAGE OF THE PENSION PROJECTION	121
	6.3. E	DEFINITIONS AND CLARIFICATIONS	122
	6.3	.1. Reporting norms	122
	6.3	2. Additional definitions and clarifications	122
	6.3	3.3. Breakdown of social security pensions	124
	6.3	.4. The level of pensions	125
	6.3	5.5. Additional information on numbers of pensioners, contributors and contributions to pension schemes and assets of pension funds	125
	6.4.	COUNTRY-SPECIFIC COVERAGE	126
Ar	nnex 6	.1: Pension projection reporting sheet	141
7.	Heal	th care	145
	7.1. E	BACKGROUND	145

7.2. CAPTURING THE VARIOUS DEMOGRAPHIC AND NON-DEMOGRAPHIC DRIVERS OF SPENDING; SIX DIFFERENT TYPES OF SCENARIOS	146
7.2.1. Pure demographic scenario	146
7.2.2. High life expectancy scenario	147
7.2.3. Constant health scenario considering	
improvements in the health status of elderly citizens	148
7.2.4. Death-related costs scenario	149
7.2.5. Income elasticity scenario	151
7.2.6. Labour intensity scenario	151
7.2.7. EU12 cost convergence scenario	152
7.3. DATA SOURCES	152
8. Long Term Care	155
8.1. SHORT OVERVIEW OF THE PROJECTION METHODOLOGY	155
8.2. SCENARIOS CARRIED OUT IN THE PROJECTION EXERCISE	157
8.2.1. Pure demographic scenario	157
8.2.2. High life expectancy scenario	158
8.2.3. Constant disability scenario	158
8.2.4. Demand-driven spending scenario	158
8.2.5. Scenario assessing the effect of a shift from informal to formal care	158
8.2.6. Labour market / family structure scenario	158
8.2.7. Scenario assessing the budgetary effect of a convergence in formal care coverage	159
8.3. DATA SOURCES	159
8.3.1. Public expenditure on long-term care	159
8.3.2. Spending on home vs. institutional care	160
8.3.3. Public spending on cash benefits	161
8.3.4. Disability rate	163
6.5.4. Disability rate	100
9. Education	165
9.1. PROJECTING EDUCATION EXPENDITURE	165
9.2. DELIMITATION OF THE PROJECTIONS	165
9.3. PROJECTION METHODOLOGY	166
9.3.1. The base year	167
9.3.2. Methodology used in education projections	169
9.4. DATA SOURCES	170
Annex 9.1: Organisational structure of secondary education	172
10. Unemployment benefits	175
10.1. BUILDING ON THE METHODOLOGY USED IN THE 2006 PROJECTION	175
10.2. PROJECTION METHODOLOGY FOR UNEMPLOYMENT BENEFITS	175
Annex 10.1: Methodology for projecting unemployment benefits	177
STATISTICAL ANNEX	179
	1//
REFERENCES	211

LIST OF TABLES

TABLE 0.1 – 2009 and 2006 projections compared, demographic assumptions	22
TABLE 0.2 – 2009 and 2006 projections compared, population projections	23
TABLE 0.3 – 2009 and 2006 projections compared, labour force projections	24
TABLE 0.4 – 2009 and 2006 projections compared, economic growth projections	25
TABLE 1.1 – Past trends in fertility rates, 1950-2006	30
TABLE 1.2 – Projection of fertility rates in EUROPOP2008	31
TABLE 1.3 – Past trends in life expectancy at birth, 1950-2006	33
TABLE 1.4 – Projection of life expectancy at birth in EUROPOP2008	34
TABLE 1.5 – Projection of life expectancy at 65 in EUROPOP2008	35
TABLE 1.6 – Past trends in net migration flows	38
TABLE 1.7 – Projection of net migration flows in EUROPOP2008	39
TABLE 1.8 – Projection of the total population (in millions)	40
TABLE 1.9 – Projection of young population aged 0-14 (in millions)	42
TABLE 1.10 – Projection of working age population aged 15-64 (in millions)	43
TABLE 1.11 – Projection of the elderly population aged 65 and over (in millions)	44
TABLE 1.12 – Projection of the very old population aged 80 and over (in millions)	45
TABLE 1.13 – Decomposition of the population by age-groups	46
TABLE 1.14 – Old age dependency ratio (65+/(15-64))	47
TABLE 1.15 – Very old age dependency ratio (80+/(15-64))	48
TABLE 1.16 – Total age dependency ratio (0-14 plus 65+/(15-64))	49
TABLE 1.17 – Population as a percentage of world population based on the 2006 UN revision	50
TABLE 1.18 – Old-age dependency ratio based on the 2006 UN revision (65 and over/15-64)	50
TABLE 1.19 – Very old-age dependency ratio based on the 2006 UN revision (80 and over/15-64)	51
TABLE 1.20 – Total population compared (EUROPOP2008 – 2006 Ageing Report) ('000)	52
TABLE 1.21 – Working-age (15-64) population compared (EUROPOP2008 – 2006 Ageing Report) ('000)	53
TABLE 1.22 – Population aged 0-14 compared (EUROPOP2008 – 2006 Ageing Report) ('000)	54
TABLE 1.23 – Population aged 65 and over compared (EUROPOP2008 – 2006 Ageing Report) ('000)	55
TABLE 1.24 – Old-age dependency ratio (persons aged 65 and over in relations to persons aged 15-64) compared (EUROPOP2008 – 2006 Ageing Report) (percentage points)	56
TABLE 1.25 – Net migration flows compared (EUROPOP2008 – 2006 Ageing Report) ('000)	57
TABLE 2.1 – Historical participation rates: workers aged 15 to 64	60
TABLE 2.2 – Historical participation rates: young workers ages 15 to 24	61
TABLE 2.3 – Historical participation rates: prime age workers aged 25 to 54	62
TABLE 2.4 – Historical participation rates: older workers aged 55 to 64	63
TABLE 2.5 – Estimated impact of pension reform on participation rates (2020, 2060), in percentage points (comparison of projections with and without incorporating recent pension reforms)	73
TABLE 2.6 – Projected changes in participation rates	75 75
INDEE 2.0 TOOLOG CHANACIN DANICIDANION TAID	/ -

TABLE 2.7 – Projected changes in participation rates by age-groups, 2007-2060	76
TABLE 2.8 – Labour supply projections, 2007-2060 (age group: 15 to 64)	79
TABLE 2.9 – Contribution to the overall change in participation rates, 2007-2060 (changes in %)*	80
TABLE 2.10 – Contribution to the overall change in labour force, 2007-2060 (changes in %)*	81
TABLE 2.11 – Unemployment rate assumptions (age 15-64, in percentage)	83
TABLE 2.12 – Employment rate projections 2007-2060 (15-64)	84
TABLE 2.13 – Employment projections, 2007-2060 (15-64)	85
TABLE 2.14 – Employment rate projections by age and sex, 2007-2060 (15-64)	86
TABLE 2.15 – Employment composition, 2007-2060	88
TABLE 2.16 – Share of older workers (labour force aged 55 to 64 as a percentage of the labour force aged 15 to 64)	90
TABLE 2.17 – Effective economic old-age dependency ratio (inactive population aged 65 and above as a percentage of employed population aged 15 to 64)	91
TABLE 2.18 – Total economic dependency ratio (total inactive population as a percentage of employed population aged 15 to 64 and 15 to 71)	92
TABLE 2.19 – Hours worked projections, 2007-2060 (15-71)	93
TABLE 2.20 – Labour force projections, 2009 projection, 2007-2050	94
TABLE 2.21 – Labour force projections, 2009 projection – 2006 projection, 2007-2050	95
TABLE 3.1 – Potential GDP per capita in 2007	102
TABLE 3.2 – Assumptions on speed of convergence and criteria for selection	103
TABLE 3.3 – Projected potential growth rates (based on the underlying assumptions used in the projection exercise (annual average growth rates)	104
TABLE 3.4 – Determinants of potential growth rates: labour productivity per hour (annual average growth rates)	105
TABLE 3.5 – Determinants of potential growth rates: labour input – total hours worked (annual average growth rates)	105
TABLE 3.6 – Determinants of labour productivity: Total Factor Productivity (annual average growth rates)	106
TABLE 3.7 – Determinants of labour productivity: capital deepening (contribution in p.p.)	106
TABLE 3.8 – Projected GDP per capita growth rates (period averages)	107
TABLE 3.9 – Decomposition of GDP growth, 2007-2060	108
TABLE 3.10 – 2009 and 2006 projections compared, 2004-2050 (2009 projection minus 2006 projection), % points	109
TABLE 4.1 – Average of real long-term interest rates (1961-2007) (%)	111
TABLE 5.1 – Overview of sensitivity tests: difference in assumptions compared with the baseline scenario	113
TABLE 5.2 – Sensitivity tests: higher employment rate of older workers	114
TABLE 5.3 – Sensitivity tests: higher employment rate	115
TABLE 5.4 – Sensitivity tests: higher productivity growth	116
TABLE 5.5 – Sensitivity tests: Higher life expectancy	117
TABLE 5.6 – Sensitivity tests: zero migration	118
TABLE 6.1 – Overview of the pension systems in Member States	127
TABLE 6.2 – Coverage and specification of pension schemes in the 2009 projections	135

TABLE 7.1 – Overview of different scenarios to project health care expenditure	146
TABLE 8.1 – Overview different scenarios to project long-term care expenditure	157
TABLE 8.2 – Suggested correspondence between ESSPROS and SHA items	162
TABLE 9.1 – Theoretical starting and ending age for level education	166
LIST OF GRAPHS	
GRAPH 0.1 – Overview of the 2009 projection of age-related expenditure	15
GRAPH 1.1 – Net migration flows, 1965-2007	36
GRAPH 1.2 – Population pyramids (in thousands), EU27/EA, in 2008 and 2060	41
GRAPH 2.1 – Impact of pension reforms on the average exit age from the labour force	72
GRAPH 2.2 – Participation rates and employment rates by age profile and by sex in 2007 and 2060 – EU27	74
GRAPH 2.3 – Participation rates and employment rates by age profile and by sex in 2007 and 2060 – EA	74
GRAPH 2.4 – Labour force projections, 2007-2060 (percentage change of total people aged 15 to 64)	78
GRAPH 3.1 – Overview of the production function	100
GRAPH 8.1 – Model structure	156
GRAPH 9.1 – Age of pupils at the end of full-time compulsory education, and the structure of lower secondary education, 2002/2003	173
GRAPH 9.2 – Implicit decomposition of expenditure per student	174
GRAPH 9.3 – Schematic presentation of the underlying methodology	174