

Contents

1	Introductory observations	1
1.1	A growing older society	1
1.2	The pension burden	2
1.3	Societal issues	3
1.4	Budgetary issues	4
2	Demography	5
2.1	Introductory observations	5
2.1.1	Uncertainty of projections	6
2.2	Population projections	7
2.2.1	Population in the developed countries	7
2.2.2	Population in the developing countries	8
2.2.3	Towards an older population	8
2.2.4	Old-age dependency	15
2.2.5	Towards a shrinking (and older) working age population	16
2.3	Demographic transition	17
2.3.1	Different patterns of aging	17
2.3.2	Aging, a feminist issue	19
2.3.3	Falling fertility rates	19
2.3.4	Longevity	20
2.4	Final observations	21
3	The impact of an aging population on the economy	23
3.1	Aging and capital formation	23
3.1.1	Increasing capital intensity	26
3.2	Aging and labour supply	26
3.3	The impact of aging on the performance of the economy	29
3.3.1	Single-country general equilibrium models	29
3.3.2	Multi-country general equilibrium models	30
3.3.3	Concluding observations	31
3.3.4	Productivity growth the most important factor	35

3.3.5	Remaining research questions	36
3.4	Final observations	36
4	Can the world population grow older comfortably ?	39
4.1	Scenarios of the demographic transition in developed countries	39
4.1.1	Aging and the labour market	39
4.1.2	Aging and the capital market	41
4.1.3	Labour force participation	42
4.1.4	Labour force productivity	43
4.1.5	Alternative scenarios	44
4.1.6	Decomposition	46
4.2	Scenarios of the demographic transition in developing countries	46
4.2.1	Demographic dividend	46
4.2.2	Alternative scenarios	47
4.3	Can the world population grow older comfortably?	48
4.3.1	Basic economics	49
4.3.2	Aging and welfare in the 21st century	49
4.3.3	Strain on political, social and economic systems	53
4.3.4	Alternative productivity growth rates	54
4.3.5	Required productivity growth to maintain welfare	57
4.4	Spending on welfare and intergenerational ethics	61
4.4.1	Concluding observations	62
5	A paradox	65
5.1	The budgetary issue	65
5.1.1	The budgetary issue - public pensions	65
5.1.2	The budgetary issue - health and long-term care	67
5.1.3	Aging, longevity and health care expenditures	68
5.2	A paradox	69
5.2.1	The method of pension finance - on a micro or personal level	69
5.2.2	The method of pension finance - on a macro or national level	70
5.2.3	The ownership of pension capital	71
5.2.4	No controversy between workers and pensioners	72

5.2.5	(Partial) shift from pay-as-you-go to funding	73
5.2.6	Pitfalls: the public versus private issue	75
5.3	Concluding observations	76
6	Policies in the face of aging	77
6.1	Introductory observations	77
6.2	Policy measures to enlarge the contribution or resource base	78
6.2.1	Shifting factor scarcity	79
6.2.2	Provisos	80
6.3	The impact of reform policy measures	81
6.3.1	Feedback mechanisms	82
6.3.2	Required labour force participation to maintain welfare	83
6.3.3	Policy measures in respect of pensions	86
6.3.4	Different views of the European Commission	87
6.3.5	Choosing a pension plan, 'the third road'	88
6.3.6	Immigration	89
6.3.7	Required immigration to maintain welfare	90
6.3.8	Investing abroad	90
6.3.9	Towards active aging	93
6.4	Long-run trends	94
6.4.1	Social cohesion	95
6.4.2	A society for all ages	96
6.4.3	Concluding observations	97
7	Summarizing and concluding remarks	99
	Abstract	103
	References	105
	Appendix A. Methodology	115

XII Contents

Appendix B. Alternative scenarios	121
Appendix C. Relative merits of pay-as-you-go and funding systems	127
Appendix D. Neo-classical economics in a growing older environment	133
Appendix E. Aging in the Netherlands	138
Appendix F. An optimal and preferred EU-15 pension reform strategy	149
Appendix G. Demography in the EU-15 countries	154