COUNCIL OF THE EUROPEAN UNION

Brussels, 5 June 2012

10488/12
ADD 1

SOC 426
ECOFIN 445

COVER NOTE

from:	The Social Protection Committee
to:	Permanent Representatives Committee (Part I)
Subject:	Social Protection Committee's Pension Adequacy Report 2012: Report on pension adequacy 2010-2050 - Full Report

Delegations will find attached the Report under reference as jointly prepared by the European Commission and the Social protection Committee and from which the main messages as set out in doc. 10488/12 are drawn.

Pension Adequacy in the European Union 2010-2050

Report prepared jointly by the Directorate-General for Employment, Social Affairs and Inclusion of the European Commission and the Social Protection Committee

23 May 2012

ACKNOWLEDGEMENTS

This report has been drafted by the European Commission services of Directorate General for Employment, Social Affairs and Inclusion (Directorate D. Europe 2020: Social Policies, Unit D3: Active Ageing, Pensions, Healthcare, Social Services) in collaboration with the Member States delegates in the Indicators Subgroup[1] (ISG, chaired by Carin Lindqvist-Vitranen) and the Working Group on Ageing issues (SPC-WG-AGE, chaired by Niclas Jacobson) of the Social Protection Committee (SPC, chaired by Lauris Beets).

In Unit D3, Ana Agundez-Garcia and Jakub Wtorek have been responsible for the original development and drafting of the report under the supervision of Ralf Jacob and Fritz von Nordheim Nielsen. In the final phase of revision and editing Audronė Balkytė has been responsible for all the data work, while Noémi Ballun has handled the many suggestions for changes from Member States.

The report uses projections of the budgetary impact of ageing population in the 27 Member States of the European Union (EU) over the period 2010-2060 from The 2012 Ageing Report. Other data used in the report are provided by Eurostat and Member States. This report is presented after an active discussion with the Member States.

[1] The full list of the members can be found in Annex 6.

TABLE OF CONTENTS

MAIN MESSAGES ON PENSION ADEQUACY 2010–2050 9

SUMMARY OF THE REPORT ON PENSION ADEQUACY IN THE EUROPEAN UNION 2010-2050 12

1. INTRODUCTION: CONTEXT OF THE REPORT 22

2. DEFINING PENSIONS ADEQUACY AND ITS CHALLENGES 27

2.1. Pensions Adequacy 27

2.2. Obtaining adequacy: objectives and challenges 28

3. CURRENT ADEQUACY OF PENSION SYSTEMS 34

3.1. Pensions and maintaining living standards in old age 35

3.1.1. The current relative income situation of the elderly 42

3.1.2. The current role of pensions in income replacement 44

3.2. Pensions and poverty alleviation 59

3.2.1. Population 65+ at risk of poverty or social exclusion 61

3.2.2. The role of income guarantees in addressing poverty at old age 76

3.2.3. Europe 2020: Contribution of pension systems to the poverty reduction target 79

3.3. Valorisation and indexation of pensions 82

3.4. Other available economic resources 85

3.5. The gender gap in pensions 88

3.5.1. Gender implications of trends in pension reforms 90

3.5.2. Strategies for addressing Gender differences in pensions 92

3.5.3. Measuring gender specific pension inadequacies 93

4. FUTURE ADEQUACY OF PENSION SYSTEMS 95

4.1. Longer-term adequacy of pension systems 96

4.1.1. Trends in theoretical replacement rates 96

4.1.2. Trends in sustainability and other projected adequacy indicators 107

4.2. Labour market: working more and longer 111

4.2.1. How pension systems support longer working *111*

4.2.2. Recent performance of the labour markets *115*

4.2.3. Impact of longer working on future replacement rates *124*

4.3. Adequacy risks inherent to different pension systems 128

4.4. Providing information to future pension beneficiaries 132

5. KNOWLEDGE GAPS IN MEASURING ADEQUACY: POSSIBLE FUTURE DEVELOPMENTS 134

5.1. Gender differences in pension adequacy 134

5.1.2. Risk profiling: identifying threats to adequacy in gender gaps *135*

5.1.3. The Gender Pension Gap as potential common indicator *135*

5.2. Wider measures of adequacy 136

5.3. Single / households trends 137

5.4. Modelling tools to project future adequacy: the example of micro-simulation models 137

5.5. Joint assessment of current adequacy and sustainability 138

ANNEXES 140

ANNEX 1. METHODOLOGICAL EXPLANATION OF INDICATORS **141**

ANNEX 2. METHODOLOGICAL AND BACKGROUND INFORMATION ON THEORETICAL REPLACEMENT RATES **145**

ANNEX 3. THE 2011 OECD STUDY ON INDICATORS OF COVERAGE, CONTRIBUTIONS AND BENEFITS IN PRIVATE PENSIONS IN SELECTED OECD COUNTRIES **150**

ANNEX 4. GLOSSARY **152**

ANNEX 5. ISG THEORETICAL REPLACEMENT RATES AND AWG BENEFIT RATIO AND GROSS AVERAGE REPLACEMENT RATES ... **155**

ANNEX 6. MEMBERS OF THE WORKING GROUPS **185**

ANNEX 7. COUNTRY PROFILES **190**

LIST OF TABLES

Table 1. Old-age dependency ratio, economic old-age dependency ratio and their projected evolution for Member States (2010 – 2020 – 2040 – 2060) 29

Table 2. Actual legislated pensionable age, actual retirement age and seniority 38

Table 3. Membership and Coverage information 39

Table 4. Contribution rates used in TRR calculations 40

Table 5. Valorisation of pensionable earnings in Member States 82

Table 6. Indexation of income-related pensions in Member States 82

Table 7. Changes between 2010 – 2050 in public pension expenditure (as % of GDP) and pension adequacy indicators: TRR and benefit ratios 110

LIST OF FIGURES

Figure 1. Changes in median relative income ratio of elderly people over time: 2005 – 2010 .43

Figure 2. Relative median income ratio for individuals aged 65+, by gender, 2010 44

Figure 3. Changes in aggregate replacement ratio over time: 2005 – 2010 46

Figure 4. Aggregate replacement ratio for individuals aged 65+, by gender, 2010 47

Figure 5. Percentage points (p.p.) changes in net and gross TRR for women compared with men average earners retiring at the respective legislated retirement age (where different) in 2010 48

Figure 6. Percentage points (p.p.) change in net theoretical replacement rates for variant cases of earning profiles compared to the average earner (base case), theoretical workers retiring in 2010 49

Figure 7. Different carrers for different earning profiles 50

Figure 8. Percentage points change in current net theoretical replacement rates for a female average earner who makes a career break during 1, 2 or 3 years for childcare compared to one with no children 52

Figure 9. Percentage change in current net theoretical replacement rates for an average earner with 1, 2 or 3 years of unemployment compared to one with no unemployment 53

Figure 10. Percentage points change in current net and gross theoretical replacement rates for an average worker retiring with 10 years break in his career, compared to the same individual with a full career (DK and MT: not applicable) 55

Figure 11. Shares of different pension schemes in gross theoretical replacement rates, 2010 ..56

Figure 12. At-risk-of-poverty thresholds for a single person in thousands of EUR in purchasing power standard, 2010 61

Figure 13. At-risk-of-poverty rates, aged less than 65 vs. 65+, 2010 63

Figure 14. At-risk-of-poverty rates 65+, males vs. females, 2010 64

Figure 15. At-risk-of-poverty rates, 60+ vs. 75+, 2010 65

Figure 16. Level of at-risk-of-poverty rate (65+) in 2005, 2008 and 2010 67

Figure 17. At-risk-of-poverty rate of older people (65+) at 60% median income threshold vs. poverty gap, 2010 68

Figure 18. Proportion of people aged 65+ measured with income below 50%, 60% or 70% of median equivalised income, 2010 69

Figure 19. Severe material deprivation rates 65+ vs. 65-, 2010 70

Figure 20. Severe material deprivation rates 65+, Males vs. Females, 2010 71

Figure 21. Level of severe material deprivation rates of people aged 65+, 2005, 2008 and 2010 73

Figure 22. Severe material deprivation rates of people aged 65+ vs. at risk of poverty rates of people 65+ (60% cut-off point), 2010 74

Figure 23. People aged 65+ at risk of poverty or social exclusion, %, 2010 75

Figure 24. Inequality of income distribution (S80/S20), 65+ versus 65-, 2010 76

Figure 25. Population 65+ at risk of poverty or social exclusion in relation to total population at risk of poverty or social exclusion, 2010 80

Figure 26. The effect of indexation on replacement rates 10 years after retirement 84

Figure 27. Spending on selected in-kind benefits, % of GDP, 2009 87

Figure 28. Unmet healthcare needs: % of the poorest and the richest income quintile, people aged 65-74, 2009 88

Figure 29. Average duration of working life 90

Figure 30. Trends in net and gross TRR 2010-2050, the "base-case" scenario (sorted according to ascending percentage point changes in net TRR) 97

Figure 31. Trends in the different components of gross replacement rates between 2010 – 2050 (sorted ascending according to percentage point changes in total gross TRR) 100

Figure 32. Trends in net TRR for different earning profiles (all retiring at 65) (sorted ascending according to trend for average earner) 100

Figure 33. Effects on prospective net TRR of career breaks for childcare years (female worker) 103

Figure 34. Effects on prospective net TRR of career breaks due to unemployment 103

Figure 35. Effects on prospective net and gross TRR of long-term career break (10 years out of the labour market) (ES and MT: non applicable) 104

Figure 36. Shares of different pension schemes in gross theoretical replacement rates, 2050 106

Figure 37. Benefit ratio (Public pensions) in 2010, 2030 and 2060, % of GDP 108

Figure 38. Projected gross public pension expenditure, % of GDP, in 20010, 2030 and 2060 108

Figure 39. Projected gross old-age and early pension expenditure, % of GDP, in 2010, 2030 and 2060 109

Figure 40. Changes in replacement rates for women compared with men retiring at the respective legislated retirement age in 2050 (where different) 112

Figure 41. Employment rate of people aged 15-19, 20-24, and 25-29 in EU Member States in 2010 116

Figure 42. Employment rate of people aged 50-54, 55-59, and 60-64 in EU Member States in 2010 118

Figure 43. Employment rates of men aged 55-64 in the current EU-27 Member States in 2001 and 2010 119

Figure 44. Employment rates of women aged 55-64 in the current EU-27 Member States in 2001 and 2010 119

Figure 45. Pensionable age and average effective exit age from the labour market, 2009 122

Figure 46. Exit age from the labour market (years before the age of 65) and remaining life expectancy at 65, EU Member States, 2009 123

Figure 47. Effects on prospective net TRR of different career lengths (shorter / longer careers compared to retirement at 65 in 2050) 125

Figure 48. Projected impact on net replacement rates of working longer in the future 126

Figure 49. Effects on prospective net TRR of longer / shorter careers for different earning profiles 126

Figure 50. Effects on net TRR of higher/lower rates of return (compared to the baseline assumption) (CZ, CY, ES, LU, MT, NL, AT, SI, PT, FI no change) 130

Figure 51. Effects on net TRR of higher/lower wage growth rates (compared to the baseline assumption) (CZ, CY, LU, NL, SI: no change) 131

Main Messages on Pension Adequacy 2010–2050

1. As people live longer and have fewer children retirement practices and pension systems have to be adapted periodically to continue to be sustainable and adequate. The challenges Member States face depend on the timing and intensity of population ageing and the character of pension provision. As both vary significantly among countries there is no single set of responses that fits all.

2. When trying to reconcile and optimise sustainability and adequacy concerns Member States face trade-offs and difficult choices. Achieving the goal of a cost-effective and safe delivery of adequate benefits that are also sustainable is quite challenging, as the time people spend in retirement and out of the labour market increases. Moreover, challenges have increased significantly as an effect of the economic crisis.

3. Through more than a decade of reforms most Member States have sought to bring about the adaptations that from a long-term perspective can ensure that adequate pensions will continue as an important part of social protection for their citizens. Great advances in the sustainability of public pensions have been achieved as a result (cf. The 2012 Ageing Report). Adequacy outcomes, however, are less impressive and largely contingent on changes in people's retirement and long-term savings behaviour.

4. Analysis of the change in replacement rates for a given career length demonstrates that the greater sustainability of public pensions in most Member States has, to a significant extent, been achieved through reductions in future adequacy. The challenge is therefore to devise means by which people can recoup the decline in replacement rates.

5. Member States are opening routes for people to improve their pension entitlements by working longer and retiring later. If pension systems sufficiently and sensibly reward working longer and discourage early retirement they can help ensure that longer working careers with fewer career breaks become the key avenue to better adequacy. This is the case in many Member States.

6. The success of pension reforms that raise the pensionable age and possibly link this or the benefit level to longevity gains depends crucially on their underpinning through work place and labour market measures that enable and encourage women and men to work longer. There are clear limits to how much age management practices at work can be influenced by incentive structures in pensions. Tackling the pension adequacy challenge will require determined efforts to promote longer and healthier working lives through employment and industrial relations policies.

7. Adequacy may also be successfully strengthened with additional contributions to pension schemes. In some Member States this may involve higher contributions for public schemes including possible pre-funded elements. In many other Member States, this entails a larger role for supplementary retirement savings via occupational and/or individual, pre-funded private pension schemes. Whatever the option chosen, there are considerable differences across countries in terms of coverage, cost-effectiveness and safety and hence major potentials for improvements.

8. In all Member States public pension schemes are used to help secure social goals such as protection against poverty. In the majority of European Union (EU) countries public schemes also play a core role in securing pension benefit levels that to a reasonable degree allow people to maintain their living standard from active years into retirement.

9. Analysis of the composition of projected pension income in 2050 demonstrates that Member States will continue to use public pension schemes as the main element in adequate retirement income provision, even though complementary occupational pension schemes and individual retirement plans are set to acquire an increasing share in earnings- and contribution-related provision in a growing number of Member States.

10. About a fifth of people aged 65 or older have pension incomes just below or just above the poverty risk threshold, consequently relatively small increases or decreases in their pensions can lead to important variations in the poverty rates of the elderly. The ability of the EU to achieve its goal of reducing the number of people at risk of poverty or social exclusion by 20 million by 2020 will therefore also very much depend on the extent to which pension systems will continue to help prevent poverty for older people.

11. An important part of the adequacy challenge is gender specific. As women live longer than men they constitute close to two thirds of pensioners. Yet, pension outcomes for women are currently significantly lower than for men. This may also be a function of pension design, but generally it results from gender differences in employment, pay and the duration of working life, which again is related to gender differences in care and housework.

12. Credits for labour market absence due to maternity and child care, derived pension rights and survivors' pensions mitigate a part of the current lower pension outcomes for women. The present trend in pension reforms towards defined-contribution in both pay-as-you-go and pre-funded schemes and a greater role for occupational and personal pensions tend to be unfavourable for many women unless much greater gender equality is achieved in labour markets and in private pension coverage.

13. Economic well-being is to a large extent determined by the disposable cash income of households, but free or subsidised services and in-kind benefits provided by governments can influence the consumption possibilities of households in major ways. A full assessment of the adequacy of pensions will therefore require taking into account the access to free or subsidized resources of economic value, including subsidized owner-occupier housing.

14. Detailed reporting on pension adequacy should be continued through a further deepening of the conceptual and methodological work of the Social Protection Committee including work with a particular emphasis on gender, the household dimension and access to non-pension economic resources. Building better tools such as through greater capacity for micro-simulation could help in the assessment of adequacy challenges. But the adequacy and sustainability dimensions of pensions need to be analysed together. Collaboration between the SPC and the EPC on developing better aligned indicators and methodologies should therefore intensify. In the next EU assessment of pensions this should allow for a better comparative analysis of how Member States manage to tackle both the sustainability and the adequacy challenges.

Summary of the Report on Pension Adequacy in the European Union 2010-2050

This report focussed on the adequacy dimensions of pensions has been developed by the Social Protection Committee (SPC) as a complement to the Ageing Report by the Economic Policy Committee (EPC) which primarily deals with sustainability aspects of pensions from a public budget perspective. For the purpose of this analysis the SPC has mobilised and applied the instruments and knowledge it has developed through more than a decade of investments in indicators and analysis thanks to the work of its Indicator Subgroup. The initial scoping and elaboration of the report has been handled by a Working Group on Ageing Issues under the SPC.

Context

Over the last decade most Member States have reformed their pension systems to improve their medium and longer term sustainability as a precondition for delivering on adequacy objectives. But in the context of accelerating population ageing and the current economic crisis achieving pension policy objectives are becoming more challenging. When trying to reconcile and optimise sustainability and adequacy concerns Member States face trade-offs and difficult choices. Achieving the goal of cost-effective and safe delivery of adequate benefits that are sustainable is quite challenging.

Public pension expenditures make up a big part of public expenditure (EU-27: 11.3% of GDP in 2010[2], variance 6% - 15%) and are a major factor in the present and medium to longer term public budget position. Sustainability relates to the fiscal and financial balance between revenues and liabilities (and ratio of workers/contributors to pensioners/beneficiaries) in pension schemes. Pension reforms are needed to ensure that a balance can be maintained even as the population ages. They may also be necessary to improve possibilities for short to medium term budget consolidation.

Importantly, pension systems affect economic growth through their impact on labour supply. In particular they influence the participation of older workers for whom employment rates especially need to improve. Moreover, pension levels largely determine the proportion of people 65+ that are exposed to poverty and social exclusion. The adequacy and sustainability of pensions will therefore also affect the ability of Member States to achieve the employment and poverty targets of Europe 2020, i.e. those of raising the employment rate to 75% for people aged 20-64 and of reducing the number of people exposed to poverty or social exclusions by 20 million by 2020.

Consequently, considerable attention has been devoted to pensions in the Europe 2020 process and it's European Semester, which starts with the Annual Growth Survey, where both in 2011 and 2012 there were major points on pensions and ends with the adoption of Country Specific Recommendations, where in 2011 16 Member States received recommendations pertaining to

[2] The 2012 Ageing Report, Public pensions, gross as % of GDP

pension issues. In support of European concerns about pensions the Commission recently issued a White Paper outlining "An Agenda for Adequate, Safe and Sustainable Pensions" in which among 20 initiatives it commits to deepen the analysis of adequacy issues in collaboration with Member States. This report is the first result of this commitment.

Defining adequacy

The purpose of pensions is to provide an adequate income stream in retirement. Pension adequacy is defined and measured along the two dimensions of income replacement and poverty protection. To achieve adequacy pensions also need to be sustainable, safe and adapted to changing circumstances as reflected in the three European pension objectives of adequacy, sustainability and modernisation (or adaptability). In the framework of the Social OMC these policy objectives have formed the basis for development of the indicators that are used for the analysis of current and future pension adequacy in this report.

The combination of rising longevity and lower fertility will lead to a steep increase in the *demographic* old age dependency ratio. But to fully grasp the ageing challenge it is necessary to look also to the potential the *economic* old-age dependency ratio, which depends both on the changing age structure and on the employment situation. Thus the impact of population ageing can be substantially mitigated by raising the employment rate of all people of working-age. A well-functioning labour market is necessary to sustain pension promises.

As demonstrated by consecutive Ageing Reports including the 2012 edition pension reforms have substantially improved the medium to long-term sustainability of public pension expenditure. Thus public pension schemes have become much more able to withstand the pressures of population ageing and their future contribution to pension incomes is better assured. Yet, the consequences for the adequacy of the overall systems of pension provision emerging from reform efforts are less positive and more uncertain.

After a decade of reforms pension systems have become rather more complex than they used to be – even though single schemes may have been simplified and made far more transparent. Pension provision is now based on contributions from more pillars and new incentive structures have been introduced. Pension reforms have also meant a transfer of risk from pension scheme sponsors to beneficiaries. As maturing of the reformed pension systems takes time, the results will be visible primarily in the future pension benefits of the current working age population. Reformed pension systems fit better to ageing societies, but new challenges and risks are emerging from reforms and changing economic circumstances.

Generally, adequacy outcomes measured as replacement rates have become more contingent on longer and less interrupted working lives and on supplementary pension schemes that depend on returns and volatilities in financial markets. In that sense the higher sustainability of public pension expenditure in view of population ageing has been achieved in a partial trade off with the level and security of adequacy. Individuals will have to shoulder a larger share of the particular and systemic risks of their future pensions. If they are to acquire pension entitlements at levels of adequacy similar to those pensioners experience now they will have to change their working and savings behaviour.

Measured at the floor as poverty prevention the impact of reforms on adequacy is more mixed since several Member States as part of reforms also have improved the coverage and quality of

minimum income provisions for older people (incl. basic, guarantee an minimum pensions). Much will depend on the changes to the indexation of benefits in payment and on budget cuts restricting the access to subsidised or free services and in-kind benefits.

Comparison of time spent in retirement with life expectancy at birth and at the time of retirement is an important aspect of pension adequacy and inter-generational solidarity. In some countries people who left the labour market in 2009 can expect around 25 years or more in retirement. It is only in a few countries retirement periods amount to less than 20 years. In the majority of Member States people can presently expect to be able to spend between 20 and 24 in retirement.

Current adequacy

Pensions constitute by far the main source of income of older Europeans, who represent a large and growing share of the EU population. Over 120 million[3] or around 24% of Europeans are pensioners. Almost 2/3 of these are women. The number of pensioners in Europe exceeds the number of people aged 65+ by more than 30 million since many people start receiving a pension before they reach the age of 65.

Maintaining living standards

Currently, pensions allow retired Europeans to enjoy living standards that are close to those of the rest of the population and in some countries generally higher than for other groups on transfer incomes.

Pension incomes presently derive primarily from public schemes financed on a pay-as-you-go basis. So far it is only in a handful of Member States that privately managed funded pension schemes have a significant complementary role in the current adequacy of pension provision – and then mostly as an element that raises the aggregate replacement rate of the pension package.

In 2010 the pensionable age was lower for women than men in 13 Member States. Often women can retire five years before men. As a result the gross and net replacement rate are significantly lower for women than for men in almost all these Member States.

In almost all Member States postponing pension take up by working longer and retiring later results in higher net replacement rates while shorter careers result in lower replacement rates. Yet, the bonus/malus incentives embedded in pension systems currently are not symmetric: in all but a few Member States the increments in rates for prolonging working lives by two years are bigger than the falls in replacement rates owing to two years shorter careers and early retirement. Still the incentives to work longer and disincentives to early retirement are broadly preserved across the different income groups for many Member States.

In a few Member States, a career break due to child-caring duties is so well protected through care-crediting that calculations show no drop in current replacement rates as effect of absences

[3] 2010, The 2012 Ageing Report

of up to three years. In other Member States, childcare years result in a drop in replacement rates from the first year of absence, and the drop becomes sharper the longer the absence from the labour market.

In most Member States unemployment result in a loss of pension entitlements and lead to drops in replacement rates that increase in line with the break. But results show a decrease of less than 3 p.p. in most Member States for three years of unemployment. This implies a considerable protection of pension entitlements during unemployment in most Member States.

The effect on replacement rates of long-term career breaks (or ¾ careers) is quite sharp, reaching more than 10 p.p. in most countries.

Preventing and reducing poverty

The EU-27 at-risk of-poverty-rate for people 65+ (15.9%) is currently slightly below the rate for those below age 65 (16.5%), and older people (6.4%) are less affected by material deprivation than the rest of the population (8.5%). Inequality among people 65+ is also lower than for the general population.

This masks wide divergences between Member States, as in some countries older people have benefited less from economic growth than the working-age population and are still exposed to higher poverty risk or are more likely to face material deprivation. Moreover, in many countries women living alone, notably those 75+, tend to have rather high risks of poverty.

At-risk-of poverty-rates and severe material deprivation of people aged 65+ have for some time been on a downward trend in many Member States. This suggests that the absolute living standards of older people were being improved prior to the crisis. It may reflect that more people have earned entitlements in maturing earnings-related schemes. It may also be an effect of the growing attention in recent reforms of minimum pensions respectively minimum income guarantees to providing adequate incomes in retirement and reducing poverty amongst older people.

It seems that in the first years of the economic crisis the incomes of older people have been relatively better protected than those of the working age population. In most present pension systems dominant public pay-as-you-go schemes with elements of solidarity and redistribution and with indexation of benefits in payments offer good protection against poverty risks and economic volatility. Yet, this is not the case everywhere as in some of countries pensioners are exposed to particularly high AROP rates or to considerable levels of material deprivation.

Furthermore, is to be expected that the crisis temporarily will stop the gradual improvement in the material living standards of the 65+, especially in Member States where these standards are lower. The observed trend towards reduction in poverty risks may also come to a halt in other countries as crisis generated changes to indexation of benefits in payment take effect - even if pensioners with the lowest pensions so far mostly have been spared. Older people may also be more vulnerable to cutbacks in other areas, such as health or care services.

Contribution to the poverty reduction target of Europe2020

Pensions represent by far the largest element in social protection systems, affecting the primary incomes of more people than any other part. The total number of pensioners in EU Member States presently comes to about 120 million or a quarter of the population.

Poverty rates of people 65+ are to a great extent a function of the poverty avoidance and poverty mitigating capacities of pension systems including instruments of minimum income provision for older people. The benefit level of minimum income provisions for older people is a determinant of the extent to which people 65+ are exposed to poverty.

In 2010 there were 16.9 million people 65+ who were at risk of poverty or social exclusion, as compared with the 99 million people in that situation aged 0-64. Without pensions, poverty rates among the 65+ would by construction be very high.

Many people over 65 have incomes just below or above the poverty threshold; hence relatively small changes in their pension incomes could lead to important variations in the poverty rates of older people.

Increasing the relative equivalised income of older people who are at-risk-of-poverty by 20% could help to lift around 7 million persons (those between 50% and 60% of median income), out of poverty (as defined within the EU2020 strategy). Similarly, a relative drop in incomes of elderly people by $1/7^{th}$ could add another 8.7 million people to the group at-risk-of-poverty, as those with the income currently between 60% and 70% of median would fall under the 60% at-risk-of-poverty threshold.

Pension systems could achieve large scale contributions to the poverty reduction goal, but if relative benefit levels drop by a fairly small margin they could also quickly augment the number of people at risk of poverty.

Thus, the ability of the EU to achieve its goal of reducing the number of people affected by poverty or social exclusion by 20 million by 2020 will also very much depend on the extent to which reformed pension systems will continue to contribute preventing poverty and social exclusion for older people.

Valorisation and indexation

Member States reform their rules on valorisation and indexation, and this can have an also impact on current replacement rates and the value of benefits in payment.

In all but a few Member States net replacement rates are significantly lower (at least 5pp and in some cases more than 10 p.p.) ten years after retirement. This shows how the living standards of a pensioner will drop over time relative to the rest of the population as the indexation of pensions in payment most often lag behind the evolution of wages.

However, Member States tend to prioritize the full indexing of basic, guarantee and minimum income provisions, so as to mitigate the risk of poverty and material deprivation for low income and vulnerable older people. Thus to avoid increasing precariousness as part of austerity measures, Member States consider it important to concentrate pension benefits where they are most needed and seek savings where they can be more easily absorbed without causing a significant detrimental effect.

Other economic resources available for 65+

Economic well-being is to a large extent determined by the disposable cash income of households, but free or subsidised services in-kind provided by governments can influence the consumption possibilities of households in major ways.

Thus the question may arise as to the need for high pensions if all necessary services are available for free for pensioners or what the real value of a high pension is if no age-related services are available.

There is a wide range of other specific benefits that are afforded to older people to help with a variety of expenses, such as health care, assistance with housing costs, transport and home care assistance and payments to help with things like heating costs in the winter or with general utility bills, such as gas, electricity and telephone costs. These benefits are alternative or complementary ways of ensuring adequate standards of living in old age.

Depending on the mix of services provided in a given country, the well-being of different age groups (or household types) is affected in distinct ways. This is studied through a so-called *imputation* method where public spending on in-kind benefits is allocated to actual or potential users. The principal assumptions relate to monetary value of the in-kind benefit in question and determining beneficiaries.

Tenure status is another non-monetary factor which influences living standards. Thanks to housing policies subsidising savings in owner-occupier dwellings older people may be more likely to own their homes, mortgage free, or in social housing have rents below market prices, so that their relative disposable income is in fact better than it seems from the cash measures on the indicators for poverty and average income used in previous sections. The imputed rent method takes into account housing tenure, and the results are significant in certain countries.

Gender differences in current adequacy

Pension incomes are usually higher for men than for women, who represent the majority of older people. Women also more exposed to poverty risks but they may experience better replacement rates and better returns on their pension contributions since so far they are the main beneficiaries of minimum, guarantee and survivors pensions. Women and men come to very different results at the end of their working lives. The gender pension gap is originated from differences in the employment rates and employment conditions of women and men during their working lives (e.g. the gender pay gap) and an unequal distribution of roles between the genders, but it can also result from the design of pension schemes and trends in pension reforms.

Some Member States display strong differences between men and women in the aggregate replacement ratio. Though the increasing labour market participation of women will result in better pensions for women in the future, Member States will need to pay attention to the gender implications of different dimensions of pension policies, including in relation to minimum income provisions, plans for a bigger role of prefunded pension schemes in the future (given the much lower current coverage for women) and credits for periods spent out of the labour market.

Future adequacy

Pension reforms aimed at improving the sustainable base for adequate pension will in several Member States result in lower future replacement rates for a given retirement age. This is due to a mix of changes such as higher pensionable ages, longer required contributory periods, the introduction of life expectancy factors and the transition into multi-tier pension arrangements.

To achieve replacement rates similar to those of the present more people will have to work longer and/or take advantage of improved opportunities to build supplementary entitlements through safe complementary retirement savings in public or private pension schemes.

Calculations of replacement rates show that the distributional effects of the pension reforms in Member States might differ and that Member States face at the same time difficult choices to balance the conflicting objectives of, on the one hand, protecting people in different life situations, whilst at the same time providing the financial incentives for individuals to return to the labour market. The design of pension systems has a strong impact on the effective retirement ages and adequacy of pensions.

To properly interpret the TRR results, it is very important to take all the background and context information into account to fully understand how representative the calculations are for the different Member States.

It seems that in the short to medium term the pension challenge is more about reducing early retirement and making people work until pensionable age rather than deferring retirement after the pensionable age.

Employment of older workers has been one of the most dynamic components of the EU labour market in recent years, but despite of these improvements, they are still low in many Member States. Younger workers have been particularly hard hit by the crisis and this might have a negative effect on future level of their pension benefits.

In order to meet the demographic challenge recent reforms of public pensions have concentrated on increasing effective retirement ages by raising the pensionable age, increasing flexibility and strengthening eligibility requirements. This, however, entails a higher decision burden on beneficiaries and knowledge that achieving comparable standards of living in retirement in the future will require a longer working life.

Longer term adequacy

Analysis of the Theoretical Replacement Ratio scenarios demonstrate that as an effect of pension reforms net replacement rates are projected to decrease by at least 5 percentage points (p.p.) in 17 Member States between 2010 and 2050 and in 11 of them drops are projected to exceed more than 15 p.p., for a worker with average earnings retiring at 65 after a 40 years career. This may indicate that many countries in efforts to provide a reliable and sustainable pension promise in the future have felt compelled to reduce the benefit levels that can be obtained for a given contributory period.

Part of the decline in replacement rates may be an effect of shifts from benefit calculations based on a limited number of years to full career averages. The introduction of life expectancy adjustment factors in benefit calculations may play a significant role. While such changes reduce costs they may also add incentives to prolong workings lives and thus help to raise more revenue for their pension schemes.

In those countries that have shifted significant shares of their pension provision towards occupational or mandatory funded schemes decreasing replacement rates have to be seen in the context of the transition to multi-tier pension arrangements.

Apart from a couple of exceptions pension benefits at a given retirement age from statutory DB and NDC systems will be reduced in all countries. A number of Member States are expecting that these reductions in the replacement rates at a given retirement age from public schemes will be partially or more than fully compensated by increases in pension benefits from mandatory funded systems or occupational and third pillar schemes.

While in some countries replacement rates will be dropping care-crediting will improve and crediting for up till three years of unemployment will be similar to what it is today.

Reinforcement of the link between contributions and benefits may translate into relatively larger declines of replacement rates for low income earners and increased inequality in old age.

Effect of working more and longer on future adequacy

A crucial question is if pension systems in the future sufficiently and sensibly will reward working longer and discourage early retirement.

Calculations show that in all Member States delaying retirement by two years (retirement at 67 after a 42-year career instead of 65 after a 40-year career) will result in higher future net replacement rates (increases of 10 p.p. or more are projected in several countries), while earlier retirement (at 63 after a 38-year career) results in lower replacement rates. Also incentives to work longer are broadly preserved across the different income groups. Two years longer working will in most Member States provide higher pension entitlements in the future. But only in some will it allow people to fully make up for the large drops in total net replacement rates at careers of 40 years. In a number of countries pension systems will not respond sufficiently to people extending the duration of their working careers.

Again, as is the case with *current* replacement rates (which reflect past pension rules) the incentives embedded in current rules of pension systems (which are reflected in future theoretical replacement rates) are not symmetric. In all but a few Member States the bonus increments in rates for prolonged working lives by two years are larger than the malus falls in replacement rates owing to early retirement and two years shorter careers.

Since early retirement is far more popular than postponement of pension take up this situation is hardly ideal. In fact unless they are quite substantial and at least at actuarial level reductions for early retirement may not necessarily discourage people from using early retirement possibilities. In a number of countries 25% to 50% of workers de facto retire through early exit pathways. This can certainly have an impact on future at-risk-of-poverty rates. Moreover, flexible access to early pensions reduced with actuarial principles is likely to create a group of old-age pensioners with unacceptably low income, especially if indexation is below the evolution of median income.

The labour market exit age is usually lower than the pensionable age as early retirement, unemployment, sickness and disability benefits often are used as early exit pathways by those aged 55-64. In some Member States in the statutory pension systems people with full contributory periods are entitled to retire before the standard pensionable age. This underlines

the fact that pension reforms cannot be focussed on increases in pensionable ages only. Minimum and full contributory periods need to reflect increasing overall life expectancy.

However, situation of people who started their careers early (usually unskilled workers and people with lower life expectancy) needs special attention. People in hard or damaging occupations are sometimes granted special treatment and can retire earlier, as well as the long-term involuntarily unemployed or those who retired due to economic reasons. Some countries also offer early retirement, where people can draw a pension with an applied malus (e.g. an actuarially reduced pension) which acts as a financial disincentive. In others some occupational groups are eligible to retire earlier and on more generous basis compared to standard old-age pensioners.

A majority of policy measures to promote longer working is rightly focussed on the elimination of disincentives to work. Such negative incentives also include a default retirement age, regulations with regard to employment after the pensionable age and how employment income is taxed or deducted from pension income and whether it is considered in the future calculation of pensions.

Most Member States encourage workers to stay longer in employment, so that they earn additional pension rights. Longer working (and reducing early retirement) is thus one of the ways of improving pension replacement rates. Nevertheless, even if the pension incentives are in place, the challenge is to a large extent with the labour market to provide enough job opportunities for the older workers.

The design of pension systems has a strong impact on effective retirement ages. Rules on deferred and (especially) early retirement influence people's decisions on when to retire. In recent years Member States have seen progress in tackling early retirement schemes, but more efforts are usually needed. With increases in pensionable ages and required contribution periods, the challenge of supporting adequacy of pensions is to a larger extent shifted to the ability of labour markets to create jobs and to keep people in the labour market. This calls for comprehensive active ageing strategies, including investments in the employability and life-long learning of older workers, and efforts to take their health and safety needs into account.

Currently, deferred retirement is usually possible and unlimited, but in some Member States the consent of the employer or a minimum number of hours worked is required, and deferred retirement can be limited by collective agreements. One year of additional work can lead to a 2-7% pension bonus. In some countries the bonus is higher for people with longer contribution periods. If economic incentives to retire later are not actuarially neutral and are too low, they may not have the desired effect. But if they are too high, the cost to the public purse may be significant. There is also a risk of subsidising those who would in any case have postponed retirement. Deferred retirement in a majority of Member States has much lower appeal than early retirement. Some countries report there is no clear evidence to indicate that deferral had an impact on the labour market exit age of individuals.

Knowledge gaps

It will be important to continue work on profiling the adequacy, sustainability and safety risks inherent in different pension designs. It generally holds that as one chooses scheme designs and public/private mixes one will be choosing the type of risks to which the pension system will be

exposed. Cost-effective delivery of adequate benefits will require pension planners to identify these risks and develop methods for their handling under different circumstances.

Particular attention will need to be devoted to work on the profiling of barriers and risks to gender aspects of adequacy. There may also be a need for devising indicators that can help capture progress towards greater gender equality in pension outcomes such as for example and indicator of the Gender Pension Gap.

Theoretical Replacement Rates (TRR) are calculations based on individuals while poverty and incomes are household based indicators. Providing some trends of TRR at household level and some indication of the trends in the structure of households can clarify the gap between these indicators.

There will also be a need to look to wider measures of economic resources in terms of wealth and in terms of access to subsidised or free services and other in-kind benefits.

Capacity building for the use of micro-simulation models in Member States could allow comparative monitoring of adequacy aspects to undergo a qualitative transformation towards a much higher level of accuracy.

But the crucial medium term goal in EU level reflections on the quality of pensions systems will be to develop concepts and measurements that will allow for the combined assessment of the adequacy and sustainability aspects of pensions. This objective should guide the future pension work of both the Economic Policy Committee and the Social Protection Committee.

1. Introduction: Context of the Report

Pension reforms in Europe over the last decade have been triggered by the expected increases in expenditure caused by demographic pressures. Most recently the financial and economic crisis have forced further reforms or caused countries to move the implementation of already adopted reforms forward. As noted in the Joint EPC-SPC Report on Pensions of November 2010, several Member States have improved the long term sustainability of their public pension schemes, and more sustainability enhancing reforms have followed in the last two years – including some major ones (e.g. EL, FR, ES, IT) – or are in preparation (e.g. LU, PL). The challenge for many countries now is to ensure that adequate pensions are available to people now and in the long term. Consequently, many Member States are now looking for ways to improve the overall future adequacy of income provisions for old age while preserving sustainability gains.

Member States face trade-offs and difficult choices. Generally, they are more likely to achieve adequate pensions by reforming not just pension systems, but also labour markets and other social policies to support a better balance between the time women and men spend in employment or self-employment and the time they spend in retirement or out of the labour market for other reasons. Meanwhile they will also need to provide minimum income provisions or other social protection provisions as poverty protection in old age to those who are unable to earn adequate pension entitlements. Offering, in a cost-effective and safe way, better opportunities for complementary retirement savings is another option to enhance the adequacy of pension provision, especially seen from the angle of income replacement.

It is essential to monitor whether pension systems actually can afford to pay out the benefits that they promise. However, in order to ensure that pension reforms do not improve financial sustainability simply by lowering benefits beneath acceptable standards, it is equally important to also monitor the adequacy of pension benefits.

Sustainability and adequacy challenges for all types of pension schemes have been aggravated by the crisis. Lower growth prospects and increasing deficit and debt affect sustainability, and in consequence the adequacy of pensions. Under pressure, some Member States have cut benefits or frozen their indexation. Moreover, as pension reforms make future benefits more dependent on performance of labour markets, the crisis forces us to improve our understanding of how pension entitlements are accrued under changing economic conditions.

Pension cost makes up a big part of public expenditure (EU-27: 11.3% of GDP in 2010[4], variance 6%-15%) and is a major factor in the present and medium to longer term public budget position. Sustainability relates to the fiscal and financial balance between revenues and liabilities (and ratio of workers/contributors to pensioners/beneficiaries) in pension schemes. Pension reforms are needed to correct for the negative impact of population ageing on this balance. They may also be necessary to improve possibilities for short to medium term budget consolidation. Thanks to reforms already enacted in most Member States ultimately only a handful of countries have sustainability problems due to a high risk to public finance sustainability from pensions and other ageing cost both in the medium and in the long-term.

[4] The 2012 Ageing Report, Public pensions, gross as % of GDP

Importantly, pension systems affect economic growth through their impact on labour supply. In particular they influence the participation of older workers for whom employment rates especially need to improve. Moreover, pension levels largely determine the proportion of people 65+ that are exposed to poverty and social exclusion. The adequacy and sustainability of pensions will therefore also affect our ability to achieve the employment and poverty targets of Europe 2020 strategy, i.e. those of raising the employment rate to 75% for people aged 20-64 and of reducing the number of people exposed to poverty or social exclusions by 20 million by 2020.

Every year the cycle of implementation in Europe 2020, the EU's growth strategy for the coming decade, starts with publication by the Commission of the Annual Growth Survey, which sets the priority policy objectives to be pursued in the year. The **2011 Annual Growth Survey**[5] and the **Euro Plus Pact**[6] made recommendations relating to a better balance between time in work and time in retirement. The Pact emphasised the need to raise *effective* retirement ages and noted the importance of adequacy of pensions. The 2011 **European Semester** process culminated in the Country-Specific Recommendations[7] which are based on the Commission services' analysis[8] of the National Reform Programmes and the specific budget, growth and employment situation of each Member State. Recommendations on pensions, based on employment guidelines, were addressed to a majority of Member States and focused on[9]:

- increasing the pensionable age and linking it to longevity growth (9)
- increasing the effective retirement age and older workers employment (12)
- reducing early retirement (5)
- developing supplementary private savings (2)
- balancing sustainability and adequacy concerns (3)
- addressing adequacy problems (1)

The **2012 Annual Growth Survey**[10] continues to put emphasis on reforming pension systems. In the part on fiscal consolidation, the document suggests that " *Member States should give particular attention to (...) pursuing the reform and modernisation of pension systems, respecting national traditions of social dialogue to ensure the financial sustainability and adequacy of pensions, by aligning the retirement age with increasing life expectancy, restricting access to early retirement schemes, supporting longer working lives, equalising the pensionable age between men and women and supporting the development of complementary private savings to enhance retirement incomes*".

In the part on tackling unemployment and the social consequences of the crisis, the document considers that "*to create jobs and ensure a job-rich recovery, (...) Member States should give particular priority to (...) restricting access to early retirement schemes and other early exit pathways while supporting longer working lives by providing better access to life-long learning, adapting work places to a more diverse workforce and developing employment opportunities for older workers, including through incentives*".

---

[5] http://ec.europa.eu/europe2020/tools/monitoring/annual_growth_survey_2011/index_en.htm

[6] EUROPEAN COUNCIL CONCLUSIONS 24/25 MARCH 2011, Annex I, EUCO 10/1/11 REV 1[6] Reference as agreed/adopted at 11March extraordinary European Council.

[7] As adopted by European Council 24-25 June 2011: http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/ecofin/123611.pdf

[8] http://ec.europa.eu/europe2020/tools/monitoring/recommendations_2011/index_en.htm

[9] Figures in brackets relate to how many Member States had such a recommendation; Member States may have received recommendations relating to more than one of the above topics.

[10] http://ec.europa.eu/europe2020/pdf/ags2012_en.pdf

There is also a short reference about protecting the vulnerable, as "*people with no or limited links to the labour market – such as pensioners or vulnerable people dependent on social benefits, for instance single parents – are also exposed to changes affecting the calculation and eligibility of their source of income*".

These developments have **raised the profile of pension reforms still further**, albeit so far primarily from a public finance perspective. Meanwhile, Member States have agreed that reducing the number of people affected by risk of poverty by 20 million should be one of the major ***Europe 2020 targets***. Thus the contribution of pensions to the reduction of poverty in old age over the next decade is emphasised as central issue in the monitoring of pension adequacy. This is also reflected in the **European Platform against Poverty and Social Exclusion**[11].

With this Pensions Adequacy Report (PAR) the **Social Protection Committee (SPC) will strengthen the capacity of the EU to assess the current and future adequacy of pension systems** and to identify policy strategies that can lead to the most cost-effective delivery of adequate pensions and social benefits in ageing societies.

This Pensions Adequacy Report has been developed as complement to the analysis of pension sustainability in the **2012 Ageing Report** produced by Economic Policy Committee (EPC) with input from the Ageing Working Group (AWG). The Ageing Report primarily deals with the long-term development of public pension expenditure in Member States. It aims to understand the relative financial impact of each of the main drivers of public pension expenditure, including demographic factors, labour market related factors, eligibility conditions and contribution/benefit formulas in public schemes. The latter covers dimensions of pension adequacy by analysing the long-term developments in such indicators as the "benefit ratio", the "gross average replacement rate" and - in 2012 for the first time - the level of earnings-related public pension at retirement for new old-age pensioners with an average contributory career.

This Pensions Adequacy Report widens the pension adequacy analysis by looking at it from a broader and more multi-dimensional perspective. Thus it focuses on the current and future capacity of pension systems to provide a decent standard of living for the elderly and to reduce poverty in old age (i.e. income replacement and poverty avoidance as the two key objectives of pension systems). Furthermore, the report pays special attention to the gender dimension of pension policies (i.e. the distinctive outcomes for women and men from the same cohorts). Also, whilst in the Ageing Report adequacy is mainly analysed in the context of public pension benefits, this PAR looks at wider areas that influence old-age income adequacy, such as private pensions and other benefits and subsidies. It also takes a first look at how pension policy interacts with other policy domains in the generation of living conditions for people after retirement. Here it has to be acknowledged from the outset that the comparison of wider concepts of adequacy across Member States is difficult. Given the broad range of pensions, health, long-term care and general welfare provisions for the elderly that exist as well as differences in the cost of living, tax systems, etc. this PAR will often have to restrict itself to tentative and incomplete excursions into these newer territories marked by data and conceptual difficulties.

As adequacy and sustainability are two sides of the same coin, in the sense that you cannot have one without a certain modicum of the other, the discussion in this Report about current and future adequacy measurements also seeks to analyse how adequate pensions can be provided in a sustainable manner and without over-burdening the working population. The

[11] http://ec.europa.eu/social/main.jsp?langId=en&catId=961&newsId=959&furtherNews=yes

report looks at options to provide adequate pensions in a cost-effective way as the population ages, such as by increasing incentives for work longer and for supplementary pension saving.

The PAR also starts the dialogue towards more similar methodological approaches to the measurement of sustainability and adequacy. Thus it seeks to better align the respective EPC and SPC pension indicators by using common assumptions in its pension projections. However, in the future it is envisaged that closer co-operation between the EPC and the SPC (and their respective subgroups) should contribute to real alignments in the measurement of the sustainability and adequacy dimensions.

The Pensions Adequacy Report is highlighted as one of the initiatives to deepen the monitoring of adequacy aspects in the Commission's White Paper on pensions.[12] Coinciding with the European Year 2012 for Active Ageing and Solidarity between Generations, the White Paper builds on the results of a wide consultation, launched in July 2010. It cuts across different policy areas and is fully in line with the Commission's 2012 Annual Growth Survey. While respecting national competences in the domain of pensions, the White Paper proposes, in particular, to adapt work places and labour market practices to bring older workers into work, to develop complementary private retirement schemes, to enhance the safety of supplementary pension schemes, to make supplementary pensions compatible with mobility, to encourage Member States to promote longer working lives, and to monitor the adequacy, sustainability and safety of pensions and support pension reforms in the Member States. The White Paper foresees that in cooperation with the Social Protection Committee the Commission will prepare the Pensions Adequacy Report to help Member States assessing the adequacy of their pension systems for women and men.

Structure of the Report

The Pensions Adequacy Report is structured as follows: it assesses challenges for pension adequacy in the short and the long-term following a chronological approach. Chapter 2 provides a more detailed definition of pension adequacy and its two main dimensions: income replacement and poverty reduction. It also presents the pension objectives agreed within the context of the open method of coordination (OMC).

Chapter 3 looks at current adequacy of pension systems in the EU. As the adequacy of pensions has to do both with providing life-cycle income smoothing and with avoiding poverty, the chapter develops the analysis of these two dimensions in 3.1 and 3.2 respectively.

The section on income smoothing (3.1) starts with a look at the current relative income situation of the population 65+ and then considers the role of pension systems in income maintenance of the elderly. The available OMC indicators of relative income are primarily used for this purpose (i.e. the aggregate replacement ratio, current theoretical replacement rates).

In contrast, the section on poverty avoidance (3.2) develops its analysis on the basis of indicators used within the EU2020 process, namely the at-risk-of-poverty rate (which measures relative income poverty), severe material deprivation and the composite EU2020 indicator of risk of poverty or social exclusion. A section on the income guarantees for older people intends to give a qualitative presentation of mechanisms in Member States to tackle old age poverty.

[12] The White Paper can be downloaded at: http://ec.europa.eu/social/pension

The remaining sections of Chapter 3 are intended to broaden the picture with brief considerations of how pensionable earnings are valorised and pensions in payments indexed (3.3), of adequate standards of living in old-age (the role of other economic resources available for the elderly – 3.4) and of the gender gap in pension entitlements (3.5).

Chapter 4 considers future challenges for the provision of adequate pensions. Section 4.1 looks at the longer-term adequacy of future pensions (for people who start working today) and with the help of the theoretical replacement rates tries to answer the questions: (a) what are the long-term adequacy risks for people with different career profiles given recent pension reforms, and (b) what kind of pension schemes will be the main sources of future income of pensioners (4.1.1). The section also presents indicators of future adequacy calculated for the Ageing Report (4.1.2). Due to lack of available tools, no assessment of income replacement in the medium term (2020) and poverty in the long-term is provided.

Section 4.2 considers the link between pensions and labour market, and in particular how pension rules encourage longer working. It tries to see to what extent improvements in future adequacy can be obtained by working longer. Section 4.3 discusses adequacy risks inherent in different pension schemes, and concludes with a call to provide people with better information about the reformed pension systems (4.4).

Chapter 5 presents knowledge gaps in measuring adequacy and suggests areas for further research, for the attention of policy-makers.

The report focuses on the adequacy of pensions for older people. The majority of indicators used in the report reflect the situation of the population aged 65 and over and this is not equivalent to the situation of retired population. The terms "older people" or "the elderly" should be understood as referring to the population 65+.

2. Defining Pensions Adequacy and its Challenges

This chapter presents income replacement and poverty reduction as the two dimensions of pension adequacy. In this context the three European pension objectives of adequacy, sustainability and modernisation are sketched. These policy objectives have served for development of indicators, which are used for analysis in the chapters 3 and 4 of the report. The chapter also highlights how achieving pension policy objectives becomes even more challenging in the context of changing demographics and labour market patterns. Finally, some trends in recent pension reforms are presented.

The chapter finds that the combination of rising longevity and lower fertility will lead to a steep increase in the old age dependency ratio. However, the ageing challenge is even better illustrated with the economic old-age dependency ratio, which depends both on the changing age structure and on the employment situation. A well-functioning labour market is necessary to sustain pension promises. As a consequence of the reforms, pension systems have become far more complex than they used to be. Reformed pension systems should better suit ageing societies, but often reforms introduce new challenges and risks. These can have an impact on pension adequacy now and in the future.

2.1. Pensions Adequacy

For the purposes of this report the notion of pension adequacy is directly linked to the main public policy objectives of pension systems, which are:

1. Income replacement – Public pension systems in the EU Member States include social security schemes which aim at providing adequate pensions that would secure, to the greatest possible extent, the maintenance of standards of living at retirement. In some Member States supplementary pension schemes play an important role in achieving this goal.

2. Poverty reduction – Most public pension systems in the EU Member States provide minimum income provisions which mainly aim at preventing old-age poverty by securing a minimum, basic level of standard of living at retirement. Such minimum income provisions can come from earnings-related schemes, means-tested benefits, universal flat-rate pension or contributory flat-rate pension, or combinations of these.

Furthermore, the notion of adequacy needs to be assessed both today and in the future as most pension reforms have long transitional periods and often do not affect current pensioners or those cohorts soon to become pensioners. The inherent long-term generational nature of the pension promise is why this dimension is important in the analysis.

The report also pays attention to the gender dimension in pension policy, other benefits affecting the overall adequacy and poverty situation and the employment incentives of pension schemes.

2.2. Obtaining adequacy: objectives and challenges

The commonly agreed objectives in the pensions strand of the Open Method of Coordination

In order to encompass a multi-faceted analysis, this report looks at adequacy in the context of the three **commonly agreed objectives in the pensions strand of the Open Method of Coordination** (OMC)[13] (the common objectives for pensions are listed in the *Box: Common objectives for pensions*, using the form in which they were confirmed in 2006). It will be key to address the question of how adequate pensions can be made sustainable and safe as demography and economic dependency ratios change.

Box: Common objectives for pensions

Member States are committed to providing adequate and sustainable pensions by ensuring:

(1) adequate retirement incomes for all and access to pensions which allow people to maintain, to a reasonable degree, their living standard after retirement, in the spirit of solidarity and fairness between and within generations;

(2) the financial sustainability of public and private pension schemes, bearing in mind pressures on public finances and the ageing of populations, and in the context of the three-pronged strategy for tackling the budgetary implications of ageing, notably by: supporting longer working lives and active ageing; by balancing contributions and benefits in an appropriate and socially fair manner; and by promoting the affordability and the security of funded and private schemes;

(3) that pension systems are transparent, well adapted to the needs and aspirations of women and men and the requirements of modern societies, demographic ageing and structural change; that people receive the information they need to plan their retirement and that reforms are conducted on the basis of the broadest possible consensus.

The OMC framework allows an analysis of pension outcomes in Member States on the basis of some commonly agreed indicators linked to the commonly agreed objectives of adequacy, sustainability and modernisation of pension systems. The analysis draws mainly on indicators of current and prospective pension that have been developed for the pension strand of the Social OMC. Detailed presentations of these indicators are given in the Methodological Annexes.

In the corresponding chapters the analysis tries to clarify to what extent the indicators reflect reality, and to assess their strengths and limitations - including their usefulness for drawing policy conclusions.

Challenges that countries are facing in achieving pension objectives

Changing demographics and labour market patterns add to the need to closely monitor both the current and future adequacy and sustainability of pensions. The demographic perspectives

[13] In 2001 Member States agreed a set of objectives for their pension systems which since have guided reform efforts and their assessment at EU level. Member States and the Commission assess progress towards the common objectives within the Open Method of Coordination (OMC) on social protection and social inclusion which has the Social Protection Committee as its pivot. The Social OMC works through common setting of objectives by the Commission and the Council, developing common indicators that measure progress towards objectives, reporting by the Member States on the basis of those objectives, and summarising of the findings by the Commission in reports subsequently endorsed by the Council.

challenge the attainment of pension objectives and difficulties have been aggravated by the economic and financial crisis. The following outlines such challenges by looking at the demographic context as well as recent labour market trends (in particular, employment rates of older workers).

Over the last decades, life expectancy has steadily been rising, with an increase of up to two and a half years per decade. If the reduction in mortality continues at this pace, most people in the EU will live substantially longer lives than their predecessors. This could mean life expectancy at 65 would increase by 5.2 years for men and by 4.9 years for women over the next fifty years[14]. In 2060, it is expected that life expectancy at age 65 will reach 22.4 years for males and 25.6 for females. Fertility rates have decreased in almost all Member States and in some they have remained very low.

Table 1. Old-age dependency ratio, economic old-age dependency ratio and their projected evolution for Member States (2010 – 2020 – 2040 – 2060)

a) Demographic (old age) and economic dependency ratios and their projected evolution for EU Member States (2010 – 2020 – 2040 – 2060) (age group: 15-64 years)

Old-age dependency ratio					Economic old-age dependency ratio				
	Old-age dependency ratio: 2010	Projected change in old-age dependency ratio between 2010 and 2020	Projected change in old-age dependency ratio between 2020 and 2040	Projected change in old-age dependency ratio between 2040 and 2060		Economic old-age dependency ratio: 2010	Projected change in economic dependency ratio between 2010 and 2020	Projected change in economic dependency ratio between 2020 and 2040	Projected change in economic dependency ratio between 2040 and 2060
EU-27	25.92	5.45	14.15	7.03	EU-27	39	6	18	9
BE	26.03	4.22	10.70	2.88	BE	41	6	16	5
BG	25.44	7.02	13.50	14.36	BG	42	6	20	20
CZ	21.57	8.80	9.70	14.93	CZ	32	10	13	19
DK	24.87	6.55	10.49	1.61	DK	32	8	11	1
DE	31.26	4.52	20.66	3.45	DE	42	4	25	4
EE	25.18	4.89	10.41	15.06	EE	38	4	11	20
IE	16.82	5.97	10.28	3.58	IE	26	8	13	7
EL	28.41	4.16	15.26	8.82	EL	46	4	21	11
ES	24.69	4.25	17.76	9.67	ES	42	2	16	14
FR	25.66	7.05	11.66	2.21	FR	40	8	14	3
IT	30.78	3.98	16.97	4.92	IT	53	4	25	7
CY	18.64	6.24	8.44	14.25	CY	25	6	10	18
LV	25.19	3.65	14.43	24.72	LV	40	2	14	32
LT	23.28	3.30	15.21	14.86	LT	39	3	17	21
LU	20.43	2.69	13.96	7.97	LU	31	4	22	12
HU	24.20	5.78	9.54	18.29	HU	43	7	12	28
MT	21.26	10.49	8.45	15.36	MT	37	14	9	23
NL	22.82	7.97	16.50	0.18	NL	29	8	20	1
AT	26.10	3.68	17.05	3.90	AT	35	4	20	5
PL	18.96	7.98	12.95	24.70	PL	31	10	21	37
PT	26.70	4.62	15.40	10.48	PT	36	6	16	14
RO	21.37	4.31	14.97	24.12	RO	31	9	27	41
SI	23.8	6.61	15.73	11.47	SI	34	9	19	15
SK	16.93	6.66	14.40	23.81	SK	28	10	23	36
FI	25.63	10.55	7.28	3.97	FI	37	11	10	5
SE	27.72	5.75	6.98	5.76	SE	36	5	8	7
UK	24.86	4.77	9.23	3.21	UK	33	6	10	4

[14] *The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies*

Old-age dependency ratio: Number of persons aged 65 and over as % of the number of persons aged between 15 and 64.

Economic old-age dependency ratio (15-64): inactive population 65+ as % of employed 15-64.

Sources: Old-age dependency ratio: EUROPOP 2010 population projections; Economic old-age dependency ratio: *The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies*.

Note: The impact of the very latest pension reforms in Member States is not included in the calculations (see Box 2, The 2012 Ageing Report).

b) Demographic (old age) and economic dependency ratios and their projected evolution for EU Member States (2010 – 2020 – 2040 – 2060) (age group: 20-64 years)[15]

	Old-age dependency ratio (20-64)					Economic old-age dependency ratio (20-64)			
	Old-age dependency ratio: 2010	Projected change in old-age dependency ratio between 2010 and 2020	Projected change in old-age dependency ratio between 2020 and 2040	Projected change in old-age dependency ratio between 2040 and 2060		Economic old-age dependency ratio: 2010	Projected change in economic dependency ratio between 2010 and 2020	Projected change in economic dependency ratio between 2020 and 2040	Projected change in economic dependency ratio between 2040 and 2060
EU-27	**28.4**	**6.0**	**15.6**	**7.7**	**EU-27**	**39.8**	**5.7**	**17.9**	**9.6**
BE	28.7	4.7	11.9	3.2	BE	41.8	5.1	16.8	4.5
BG	27.8	7.6	15.0	15.5	BG	41.7	6.6	20.2	20.2
CZ	23.8	9.3	11.1	16.0	CZ	32.3	10.2	13.1	18.4
DK	28,0	6.9	11.7	1.6	DK	34.6	7.7	12.2	1.4
DE	33.9	5.0	22.4	3.8	DE	43.7	3.1	25.8	4.7
EE	27.5	5.4	11.6	16.6	EE	37.7	4.6	11.1	20.3
IE	18.8	7.0	11.0	4.1	IE	26.9	8.3	12.5	8.4
EL	31.0	4.5	17.0	9.5	EL	46.7	4.0	21.1	11.3
ES	26.8	4.8	19.5	10.3	ES	42.1	2.2	16.6	13.9
FR	28.5	8.1	12.7	2.4	FR	40.5	8.6	14.1	3.3
IT	33.3	4.5	18.7	5.1	IT	53.1	2.5	21.9	6.2
CY	21.0	6.2	9.3	15.9	CY	25.3	5.6	10.5	18.1
LV	27.6	3.7	15.8	27.0	LV	40.0	1.9	14.7	32.0
LT	26.1	2.8	17.0	16.5	LT	38.7	3.0	17.9	20.9
LU	22.3	3.1	15.5	8.6	LU	31.0	4.7	22.0	12.3
HU	26.6	6.3	10.6	19.6	HU	43.2	6.5	12.6	28.4
MT	24.1	10.8	9.1	16.9	MT	38.6	13.7	9.4	23.6
NL	25.3	9.0	18.0	0.0	NL	31.2	8.9	21.1	0.7
AT	28.6	3.9	18.6	4.3	AT	36.6	4.0	21.0	5.5
PL	20.9	8.7	14.0	27.1	PL	31.0	10.4	21.0	37.4
PT	29.3	5.1	16.7	11.0	PT	36.7	5.7	15.8	14.8
RO	23.2	5.0	16.3	26.0	RO	31.9	8.3	27.2	41.4
SI	25.6	7.6	17.3	12.7	SI	34.3	9.1	19.8	15.5
SK	18.7	7.2	15.8	25.9	SK	28.5	9.7	22.7	36.4
FI	28.8	11.3	8.0	4.5	FI	37.8	11.6	10.7	5.1
SE	31.3	5.6	8.1	6.3	SE	37.2	4.6	9.0	6.8
UK	27.7	4.9	10.5	3.6	UK	34.8	5.5	11.1	3.8

Old-age dependency ratio: Number of persons aged 65 and over as % of the number of persons aged between 20 and 64.

Economic old-age dependency ratio (20-64): inactive population 65+ as % of employed 20-64.

Note: The impact of the very latest pension reforms in Member States is not included in the calculations (see Box 2, The 2012 Ageing Report).

[15] Data source: The 2012 Ageing Report

The combination of rising longevity and lower fertility will lead to a steep increase in the **old age dependency ratios** of Member States (Table 1a). According to projections[16], the EU-27 will face a substantial increase in its demographic old-age dependency ratio, which is set to increase from around 26% in 2010 to around 32% in 2020 (by 5.5 percentage points between 2010 and 2020), to around 46% in 2040 and around 53% in 2060. There are different dynamics across Member States both in the intensity of old-age dependency and the pace at which population ageing is taking place. In 2010 the demographic dependency ratio varied from around 17% in IE and SE to more than 30% in IT and DE and in 2060 it will range from 37% in IE to more than 60% in LV, RO, PL, SK and BG. The ageing of the population takes place sooner in some countries than in others, as illustrated by Table 1a, which shows how the ratio is projected to change for each country between the years 2010-20, 2020-2040 and 2040-2060. FI and MT are the countries where the old-age dependency ratio is set to increase already in the coming decade from 2010-2020 at a faster pace than in the years beyond 2020.

In some countries, e.g. BE, DK, DE, IE, FR, NL, AT, FI and UK the old age dependency ratio is projected to reach its peak in 2040 and remain somewhat stable thereafter. By contrast, BG, CZ, CY, LV, HU, PL, RO and SK are expected to experience further increases in the old age dependency ratio after 2040, higher than those expected to incur before 2040.

The ageing challenge is even better illustrated with the **economic old-age dependency ratio**, which can be defined in various ways, but in general it measures how the old-age/ inactive population is supported by those who, in principle, are active/employed and are contributing to the system financially. According to the 2012 Ageing Report, the economic old-age dependency ratio of the EU-27 (defined as inactive population 65+ as percentage of employed 15-64) will, similarly to the old age dependency ratios, almost double between 2010 and 2060, going up from 39% in 2010 to 45% in 2020, 63% in 2040 and 72% in 2060. Again attention should be paid to the fact that the situation in single Member States may differ significantly from the EU-27 average. We have both widely differing current economic dependency ratios and widely differing predictions of the evolution in the coming decades. In 2010 the ratio varied from around 25% in CY to 53% in IT and in 2060 it will range from 52% in DK to more than 90% in RO, PL, SK and HU, with different changes over the decades (Table 1a). The size of the working-age population is projected to shrink and this will reduce potential labour supply and have far-reaching consequences for economic, budgetary and social developments.

The Table 1b) provides the changes of the old age dependency ratio (as population aged 65 and over as a percentage of the population aged 20-64) and economic old-age dependency ratio (20-64) (as inactive population aged 65+ as percentage of employed population 20-64).

The old-age dependency ratio[17] (population aged 65 and over as a percentage of the population aged 20-64) in the EU-27 is projected to increase from 28.4% in 2010 to 55.0% in 2050 and 57.7% in 2060.

There are several factors which determine the evolution of the economic dependency ratio. The changing of the age structure is one of these factors. Another key factor is the **employment rates**: the higher the employment rates the smaller the economic dependency ratio. A less pronounced increase in the economic dependency ratio is therefore possible if Member States tap the potential of labour markets and increase the employment rates of the working age

[16] Europop 2010 population projections; The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies

[17] The 2012 Ageing Report

population (this is discussed in more detail in Chapter 4.2). Recent studies[18] show how different labour market scenarios impact on the evolution of economic dependency ratios in the context of given demographic change. If higher rates of employment for the working age population are reached the increase in economic dependency ratios can be substantially limited despite the enormous change in the age structure.

Meeting the pension promise is a long-term undertaking. For those in or close to retirement pension entitlements will tend to reflect labour market situations of the past, where conditions may have been very different from the situation today which only will be reflected in future adequacy attainments. **To sustain pension promises** and ensure a fair distribution of risks and burdens within the population, it is essential to have both a **well-functioning labour market and a high activity rate among the population**. One vital challenge will therefore be to increase employment among all groups that are under-represented in the labour market, such as women, immigrants and **older workers** (further analysis in section 4.2).

During the present economic crisis the employment rates for older workers have so far held up much better than in earlier downturns. Generally Member States have not encouraged early withdrawal from the labour market, as was often the case in previous recessions. While the employment rate in the 20-24 age group declined from 54.9% in 2008 to 50.3% in 2010, the employment rate of workers aged 55-64 withstood the test of the crisis and even saw a slight increase in the EU-27 average from 45.6% in 2008 to 46.3% in 2010. Since older worker employment rates in most Member States still are far too low it remains to be seen if the increase can be continued despite the adverse economic conditions.

Yet, avoiding a steep rise in the economic old-age dependency ratio will not just depend on the extent to which we manage to employ people after age 55. It will very much require **all people of working age** to **work more and longer**. The **labour market entry age and the total number of contributory years** (seniority) **are as important** for the economic dependency ratio **as the exit age.** The average duration of working life (Figure 29 in section 3.5) is determined by any periods of non-employment due to inactivity, incapacity or unemployment as well as by the entry and the exit age, whereas data on entry ages are scarce. LFS data document that between 2001 and 2009 the average exit age from the labour market in the EU-27 increased by 1.5 years to reach 61.4 years[19]. According to the 2012 Ageing Report, the average effective exit age from the labour force in the EU-27 in 2010 was 62.1 (62.5 – for men, 61.7 – for women). On average men exit 1 year later than women and this difference has been rather stable over the time period. Later exit ages clearly lead to more pension contributions and limit the growth in retirement periods. Thus they improve both the adequacy and sustainability of pensions systems.

Table 2 in section 3.1.2 provides some information on (contributory/work) seniority at retirement of new flows of retirees. While on average men work longer years than women and in many Member States the average number of contributory years is below what is needed to receive a full pension.

Pension reforms that countries have carried out in view of these challenges

In response to the demographic and labour market challenges outlined above as well as in response to the financial crisis many countries are adapting their pension systems. Reforms are

[18] AK-Wien Dependency Ratio calculator.
[19] Eurostat data.

aimed at achieving financial sustainability by better balancing revenues and liabilities while ensuring the adequacy of pension entitlements including through longer working lives and supplementary pension schemes. The 2010 EPC-SPC Joint Report on Pensions[20] took stock of the **major trends in pension reforms** in the EU over the last decade, and provided assessments of the adequacy and sustainability outcomes of the reforms. These are briefly recalled here.

Tightening the link between contributions paid into the system and benefits paid out has been a key feature of reform efforts. This often took form of moving from final pay or best years to lifetime earnings as the basis for benefit calculation, thus requesting a number of contribution years instead of solely on reaching a pensionable age and increasing the number of years required to receive a full pension.

Many reforms have also aimed at increasing the pensionable age and/or equalising it where there were gender differences. In most countries, the higher eligibility ages for a statutory pension are phased in over long periods, as this approach allows individuals to adjust their retirement planning. Reforms have aimed to close or reduce access to early retirement schemes and other early exit pathways in unemployment, sickness and disability schemes.

A number of countries have introduced mechanisms for automatic adjustment or periodic review of pension schemes as demographic and economic conditions change. To a varying degree such mechanisms adjust: (1) pension eligibility ages and/or pension benefits in line with gains in life expectancy, (2) the valorisation of entitlements and/or the indexation of benefits in line with the economic performance in terms of GDP growth and/or labour market performance, (3) contribution rates in line with the indexation of benefits (4) the valorisation of entitlements and indexation of benefits to ensure the financial balance of the pension system after external shocks.

Greater pre-funding, in one form or another, has been a widespread policy response to the demographic challenge (Chapters 4.1 and 4.3 describe in more detail the greater weight of funded schemes and its consequences). In macro-economic terms, pre-funding means bringing forward some of the costs of the demographic shift to distribute them over a longer period and over different generations. Pre-funding has been enhanced in four ways: (1) introduction of new defined-contribution (DC) schemes (either mandatory, with automatic enrolment or voluntary with tax incentives); (2) expansion of existing occupational schemes; (3) setting up of pension reserve funds; or (4) paying down of national debt.

Many Member States have also reformed their minimum income provision for older people in significant ways. Improvements to benefits levels and access, and changes to up-rating and indexing mechanisms or ad-hoc increases were particularly frequent.

As a consequence of the reforms pension systems have become far more complex than they used to be. Pension provision is now based on contributions from more pillars and new incentive structures have been introduced. Pension reforms have also meant a transfer of risk from pension scheme sponsors to the beneficiaries. As maturing of the reformed pension systems takes time, the results will be visible primarily in the future pension benefits of the current working age population.

The financial and economic crisis has aggravated sustainability and adequacy concerns for all types of pension schemes by lower growth prospects and increasing public deficits and

[20] http://ec.europa.eu/economy_finance/publications/occasional_paper/2010/pdf/ocp71_en.pdf

public debt levels have affected sustainability. Regarding adequacy, today's pensioners have generally been well-protected against the crisis, but future pensioners, as described in the chapter 4, may be further affected by prolonged unemployment periods, lower contributions, poorer returns in financial markets (in case of funded schemes), and pension reforms introducing more demanding qualifying conditions.

As demonstrated by consecutive Ageing Reports including th**e 2012 edition pension reforms have substantially improved the medium and long-term sustainability of public pension expenditure.** Thus public pension schemes have become much more able to withstand the pressures of population ageing and their future contribution to pension incomes is better assured. **The consequences for the adequacy of the overall systems of pension provision emerging from reform efforts are less certain.** Generally, adequacy outcomes have become more conditional on longer and less interrupted working lives and on supplementary pension schemes that depend on returns in financial markets. **In that sense the higher sustainability of public pension expenditure in view of population ageing has been achieved in a partial trade off with the security of adequacy.** Individuals will have to shoulder a larger share of the particular and systemic risks of their future pensions. This report takes a closer look at how the adequacy of public pensions has been affected and at the extent to which people can recoup the decline in adequacy by working longer and by building additional entitlements in complementary retirement saving schemes.

3. Current Adequacy of Pension Systems

This chapter looks at the current adequacy of pension systems in the EU. As the adequacy of pensions has to do both with providing *life-cycle income smoothing* and with *avoiding poverty*, the chapter develops an analysis of these two dimensions in sections 3.1 and 3.2 respectively, together with reflections on how pension policies currently address them. To this end quantitative (based on available indicators) and qualitative assessment is provided, taking into account also to which extent reducing risk of poverty and social exclusion rates of older people could contribute to *achievement of the EU2020 poverty reduction* target.

Where pensions are earnings-related valorisation of past salaries or contributions influence how pensions replace income from work at the moment of retirement, while *indexation* of pensions is crucial for maintaining living standards after retirement. Both are discussed under section 3.3. Adequate standards of living in old-age are not only about pensions, so chapter 3.4 tries to assess the impact of *in-kind benefits* on living standards of older people. *Gender* dimension is discussed all over the chapter 3, but closer focus is presented in section 3.5.

The findings presented in the chapter demonstrate that pensions allow retired Europeans to enjoy living standards which are, on average, close to those of the rest of the population and in some countries higher than for other groups in society. Pension incomes presently derive primarily from public schemes financed mainly on a pay-as-you-go basis. Presently it is only in a few Member States (e.g. IE, NL, DK, SE, UK) that privately managed funded pension schemes have a significant complementary role in adequate pension provision – and then mostly as an element that raises the aggregate replacement rate of the pension package.

Thanks to pension systems, older people in most countries are currently less exposed to the risk of poverty and severe material deprivation than the rest of the population. Yet some pensioners,

in particular women 75+ living alone, tend to be exposed to rather high risks of poverty. Inequality among people 65+ is also lower than for the general population.

The downward trend in severe material deprivation for people 65+ suggests that the absolute living standards of older people were being improved prior to the crisis, even if in some countries the development in living standards of the elderly lagged behind those of working age population. Moreover, during the crisis the bulk of pensioners have so far been better protected than the working age population. In most present pension systems dominant public pay-as-you-go schemes with elements of solidarity, and redistribution and with indexation of benefits in payments offer good protection against poverty risks and economic volatility.

Therefore, the ability of the EU to achieve its goal of reducing the number of people affected by poverty or social exclusion by 20 million by 2020 will also depend on the extent to which reformed pension systems will continue contributing to prevent poverty and social exclusion for older people.

Member States are reforming their rules on valorisation and indexation, and these can have an important redistributive effect and impact on the balance between the adequacy and sustainability of pensions. Economic well-being is to a large extent determined by the disposable cash income of households, but free or subsidised services in-kind provided by governments can influence the consumption possibilities of households in major ways.

The chapter also finds that pension incomes are usually higher for men than for women, who represent the majority of older people. The gender pension gap originates from differences in the employment rates and employment conditions of women and men during their working lives (e.g. the gender pay gap) and an unequal distribution of roles between the genders, but it can also result from the design of pension schemes and trends in pension reforms.

3.1. Pensions and maintaining living standards in old age

Pension systems play a fundamental role in allowing retirees to maintain living standards comparable to those achieved during their working lives. This section first looks at the current income situation of the elderly and then looks at the role of pension systems in income maintenance of the elderly. The OMC indicators of the median relative income ratio of elderly people (65+), the aggregate replacement ratio (excluding other social benefits) and the current theoretical replacement rates are used as the first basis for quantitative assessment. The role of supplementary pensions in current adequacy is also examined.

Careful interpretation of the median relative income ratio and the aggregate replacement ratio is needed, as these indicators are based on the EU Survey on Income and Living Conditions which is reported with a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t).[21]

[21] In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

The *relative median income ratio* is relevant to measure the overall income situation of older people (those aged 65 and more) relative to the younger age group (population aged 0-64). It is important to note that the standard of living of elderly people as measured by the current level of income at a large extent depends on the performance of national pension system in the past. The indicator covers income from pensions and other sources. Being a relative indicator, it is important to understand that this indicator is reactive to changes in the earnings of the working age population and that a change in the relative income of older people can result from increase or decrease in the incomes of workers. The wealth of pensioners, particularly house ownership and private savings, which could potentially have a positive effect on the relative standard of living of elderly people, is not included in this measure.

The *aggregate replacement ratio* is a measure of the median individual gross pension (including old-age and other pension benefits of people aged 65-74) relative to the median individual gross earnings (of people aged 50-59). It should be noted that the aggregate replacement ratio indicator is based on individual gross income figures and that several factors besides aggregate replacement rates (such as differences in household composition and size and the overall design of social protection and taxation systems) can have a strong influence on the overall living standards of individuals.

Theoretical Replacement Rates (TRR) are defined as the level of pension income the first year after retirement as a percentage of individual earnings at the moment of retirement. Thus they provide a proxy for the standard of living that people can achieve in retirement compared to their situation when working. Current[22] TRRs describe the situation of people who retire today (in the most recent exercise carried out by the Indicators Subgroup, people who retired in 2010 in the base case), following certain hypothesis. It is therefore important to understand that these individuals primarily have earned their pensions in pre-reformed systems and thus the calculations often reflect old and transitional legislation rather than the current legislation.

TRRs are calculated for an assumed hypothetical worker, who in the base-case has a given earnings and career profile (male, earnings of average wage constant over his fulltime 40 years career and retiring at 65). The TRR calculations include for each country only the schemes that are mandatory, typical or have a wide reaching coverage (Annex 5). In the variant cases the key assumptions of the base-case are changed, one at a time (for example assumptions about earnings profiles, the sex of the worker or the length of contributory periods, etc.). The *gross* TRR is defined in relation to the pre-taxed income (excluding employer contributions, but including employee contributions). The *net* TRR is calculated as net of income taxes and employee contributions.

The choice of specific common assumptions about the hypothetical worker inevitably implies that only a share of individuals is actually represented by a career scenario and that comparability between Member States of replacement rate levels depends on the degree to which the commonly defined individual case is representative in different Member States. For instance, the levels of theoretical replacement rates may be overstated for countries where the coverage of systems or the pensionable age is lower than the one assumed in the calculations (for information on pension ages and on coverage of the different pension systems see Table 2 and Table 3) and understated for countries where the contributory conditions for full pension rights exceed the simulated career length. Information on contribution rates assumed in the calculations is also important to interpret the representativeness of the TRR calculations (**Table**

[22] Future and trends in theoretical replacement rates are analysed in Section 5.2.1.

4 and Annex 5 provide information on contribution rates for current and prospective calculations).

Table 2. Actual legislated pensionable age, actual retirement age and seniority

	Type of Statutory Scheme (DB, NDC or DC)	Actual legislated pension eligibility age				Average age at retirement of new flows of retirees retrieving a statutory pension	Seniority (including non contributory periods) at retirement of new flows of retirees total (men/women)
		Males		Females (where different from males)		Total (men/women)	Total (men/women)
	2050	2010	2050	2010	2050	2010	2010
BE	DB	65	65	65	65	63,7	40
BG	DB and DC	63	65	60	63	60.5 (60.5 / 60.4)	35.1 (35.2 / 34.9)
CZ	DB	62y 2m	67y 10m	58y 8m*	67y 10m	60,2 (61,7/58,6)	42,6 (44,3/40,8)
DK	DB	65	67*			65,1	30
DE	DB	65	67			63,5 (63,9/63,6)	
EE	DB and DC	63	65	61,5	65	61,0	44 *
EL	DB						
ES	DB	65	67			63,43 (63,41/63,49) *	37,61 (39,89/31,25) *
FR	DB	60	62	60	62	60,6 / 61,4 *	39,6 / 37,7 **
IE	DB	66	68	66	68	63.5/64.7	
IT	DB and NDC	65	70	60	65	60(60,1/59,9)	30,7(33,9/27,1)
CY	DB	65	65			63,4	42.8
LV	NDC and DC	62	62	62	62	60,93(61,07/60,83)	
LT	DB and DC	63	65	60	65	60.5(59.6/61.7)	35.9(35/37.3)
LU	DB	65	65			60 (61/59) *	40 (42/36) *
HU	DB and DC	62	65	62	65	62,0	65
MT	DB	61	65	60	65	59.70 (59.89/58.93)*	40 (40/40)
NL	DB	65	65	65	65	65,0	50 *
AT	DB	65	65	60	65	58,1 (59,1 / 57,1)	*
PL	NDC and DC						
PT	DB	65	65			63,4	30,8
RO	DB and DC	64	65	59	65	60,7/58,3	39,1/31,7
SI	DB	63	63	61	61	60(62/58)	35(38/33)
SK	DB and DC	62	62	60*	62	59.26 (61.74/57.94)	37.91 (41.22/36.13)
FI	DB	65	65			63,5 (63,4/63,6)	35,4 (36,6/34)*
SE	NDC and DC	61/65	61/65			64,7	
UK	DB	65	68	60		65 (M) / 60 (W)	42 (M) / 26 (W)

* CZ: with 2 children

* FI: 2009. Earnings-related pension without actuarial reductions or increments can be taken between ages 63 and 68.

* SK: For women without children

* ES: Only employees

* MT: Source: LFS, NSO

* LU: old age pensions / general scheme / residents

* FR: Retirees of the 1942's generation; Source: DREES, Les retraités et les retraites en 2010.

** FR: Duration of activity; all schemes, except disability and incapacity pensions. Source: CNAV (2010)

* AT: 15 years: qualifying condition for a pension entitlement of someone's own; 37,5 years: for corridor-pension (kind of early retirement pension with deductions); 45 (m) / 40 (f) years: for early retirement due to long insurance period without deductions

* NL: public pensions are build up by residency between age 15 and 65

* EE: It includes some favourable pension years for some groups of people, where one service year is counted as three (also parents used to get additional service years per child in the past)

Source: Indicators Subgroup of the SPC, 2010 – 2050 Theoretical Replacement Rates exercise

Table 3. Membership and Coverage information

	Membership and Coverage information, 2010				
	Number of workers contributing to statutory pensions (% of persons enrolled in the labour force)	Active membership of occupational (or private in general) pension schemes (as % of the labour force)	Number of pensioners retrieving statutory pensions (as % of population in employment and of population above retirement age)	Number of pensioners retrieving occupational pensions (as % of population in employment and of population above retirement age)	Means-tested benefits (such as housing) (number of beneficiaries as % of population 65+)
BE	100	70	100	35	
BG	100		68 and 126		
CZ	100	-			
DK	100	75,1	32/100	73	46,8
DE	84				
EE	100 (1)	62 (2)	98 (3)	3 (4)	
EL	100	na	56.6 / 128.3	na	
ES	88,02 (1)	9,4 (2)	43,23 / 103,34 (3)		20
FR	100	ND			5,5
IE	47	38	28/99		
IT	100		61/116		6,7
CY	106,0	*			
LV	79,6 *	...	50,7/104,3**	0	...
LT	76	61	70 and 119	0 and 0	
LU	100%	na	16% *	na	3%
HU	88	72,7	77,7; 146,3		
MT	92.19%*	n. appl.	32.52%**	n.appl.	53,96% ***
NL	100%	90%	100%	?	82%
AT	100				
PL					
PT	84%		42% of population in employment 90% of population above 65		
RO	5.696.136		5.479.817		
SI	54,9	-	39,3	-	13,8*
SK	79,2	53,3	40,8/90,0	0	3,2
FI	100	7,8 %	37,9 % / 98,6 %	6,5 % / 17 %	10,2 %
SE	1	0,9	(1) 41% and (2) 108%	(3) 35% of population in employment and 87% men 80% women % of population above retirement age	(4) 14.65%
UK	100	51	27.2/100	19/61	26%

ES:
(1) Social Security System
(2) Participants in employment programmes (it does not include individual pension plans)
(3) All beneficiaires of contributory pensions of the Social Security system, regardless of age
Civil servants have different coverage; in total 100% of employed contribute to pensions

MT:
* Based on the number of all persons with NI contributions.
** The figure obtained as a ratio between total number of contributory and non-contributory pensioners in 2011 and total labour force plus population 60/61+. Data LFS 2010 and Demographic Review 2010, mid-year population.
*** Sum of all energy benefit, sickness assistance, supplementary allowance and rent subsidy beneficiaries.

LU:
*: resident population

SI:
* Estimation - the number of beneficiaries contains only data on minimum pension support beneficiaries

EE:
(1) State pensions: I pillar
(2) II pillar: statutory DC
(3): I pillar
(4): II pillar

HU:
Membership of private pension fund (31 Dec. 2010) : 3093786
Average number of pensioners in 2010: 2937100
(LFS) number of economically active people: 4256000
(LFS) number of people in empl.: 3781200
Population above 62 (mid-year): 2007083

LV:
* Number of contributors (employees and selfself-employed persons) % of employment (average)
** Total number of old age pensioners as % of population employment (2010 average) and as % of population above retirement age (end of 2010)

SE:

(1) Source: Pensionsmyndigheten 2010, Eurostat =1882329/4545800
(2) Source: Swedish Pensions Agency and Statistics Sweden (65+)=1882329/1737246
(3) Percentage of persons 66+ retrieving occupational pensions
(4) Source: Pensions Agency, Statistics Sweden

CY:
*: 45%, but the cell is empty because only statutory pensions are included in the calculations.

Source: Indicators Subgroup of the SPC, 2010 – 2050 Theoretical Replacement Rates exercise

Table 4. Contribution rates used in TRR calculations

	2010		2050			
	Statutory pensions (or in some cases Social Security): Estimate of current	**Occupational and voluntary pensions: Estimate of current**	**Statutory pensions (or in some cases Social Security)**	**Legislated or ad-hoc assumption?**	**Occupational and voluntary pensions**	**Legislated or ad-hoc assumption?**
BE	*[23]	4,25	*[24]	Legislated	4,25	Ad-hoc
BG	16,00[25]		19,80[26]			
CZ	28,00[27]	Approximately 1.4% of average wage (private contributions), 0.3% of average wage (state subsidy)	28,00	Legislated	Approximately 1.4% of average wage (private contributions), 0.3% of average wage (state subsidy)	Ad-hoc
DK		10,80			10,80	Ad hoc
DE	19,90		18,00		4,00	
EE	20,00 and 16,00[28]	4,00 and 2,00[29]	20,00 and 16,00	Legislated	4,00 and 2,00	Legislated
EL	*[30]	Legislated	23,00	Legislated		
ES	26,60					
FR	* [31]		6 or 16	Ad hoc		
IE	40,00				10,00	Ad hoc
IT			33,00		6,91	
CY	17,90		25,70	Legislated		
LV	18,00	2,00	14,00		6,00	
LT	24,30[32]	2,00	24,30	Legislated	2,00[33]	Legislated
LU	24,00[34]	Legislated	24,00	Legislated		

[23] The contribution rate for pensions in BE does not influence the amount of the pension entitlement. However, a global social contribution is levied on wages for the financing of social security. In this global rate, the pension contribution is of 16.36% of the gross wages (8.86% employers contribution – 7.5% personal contribution)

[24] Idem to the footnote 17.

[25] Earnings related PAYG, DB, administrated by National Social Security Institute: 17,8 % for persons born before 01.01.1960 (EE - 7,9%; ER - 9,9%); 12,8% for persons born after 31.12.1959 (EE - 5,7%; ER - 7,1%); 12% State. Universal Pension Funds (UPF): 5% for persons born after 31.12.1959 (EE - 2,2%, ER - 2,8%). Professional Pension Funds (PPF): 12%/7% for first/second labour category, paid by ER.

[26] The contribution rate of the Statutory pensions (PAYG + Statutory funded DC) will be 19,8% in 2050, respectively 12,8% for PAYG and 7% for DC.

[27] 28% total (21.5% employers, 6.5% employees).

[28] 20%, who has not joined II pillar; 16%-has joined II pillar – employer.

[29] 4% employer + 2% employee.

[30] Public pensions: IKA: employers– 13,33%, employees– 6,67%; ETEAM: employers – 3%, employees – 3%.

[31] *Private pensions scheme (CNAV):* Employer: 8.30% up to the SSC (3), plus 1.60% on the full wage; Employee: 8.30% up to the SSC (3), plus 1.60% on the full wage. *Complementary Pension Scheme (AGIRC)*: Employer: (2) 5.70% up to the SSC (3), plus 13.90% between one and four SSC, plus 12.60% between four and eight SSC, plus 0.22% up to eight SSC; Employee: (2) 3.80% up to the SSC (3), plus 8.60% between one and four SSC, plus 7.70% between four and eight SSC, plus 0.13% up to eight SSC. *Complementary pension scheme (ARRCO)*: Employer: (2) 5.70% up to the SSC (3), plus 13.30% between one and three SSC; Employee: (2) 3.80% up to the SSC (3), plus 8.90% between one and three SSC.

[32] Employers: 23.3%; Employees: 3% (1% for participant in the second pillar).

[33] Employees - 2% (Quasi-mandatory private scheme). Legislated for 2010 and 2011. In 2012 contribution rate has been reduced to 1.5%. This reduction will be compensated by raising the rate to 2.5% in 2013.

[34] 8% - employee, 8% - employer and 8% - state budget.

	2010		2050			
	Statutory pensions (or in some cases Social Security): Estimate of current	**Occupational and voluntary pensions: Estimate of current**	**Statutory pensions (or in some cases Social Security)**	**Legislated or ad-hoc assumption?**	**Occupational and voluntary pensions**	**Legislated or ad-hoc assumption?**
HU	*[35]		18,50		8,00	
MT	30,00[36]		30,00	Legislated		
NL	17,90	13,30 and 6,70[37]	17,90	Legislated	13,30 and 6,70	Ad hoc
AT	22,80[38]		22,80	Legislated		
PL			12,22		7,30	
PT	34,75[39]	50,00; 11,00; 4.87[40]	34.75	Legislated	25.48; 10.20; 5.37	Ad hoc
RO	31,30[41]		31,30	Legislated	6,00	
SI	8,85 and 15.50[42]		8,85 and 15.50	Legislated		
SK	28,75		19,75[43]	Legislated		
FI	21,60[44]		28,00			
SE	16,00	2,50 - 30,00	16,00	Legislated	2,50 - 30,00	Collective agreement
UK	23,80[45]	8,00	23,80	Legislated	8,00	Ad hoc

Source: Indicators Subgroup of the Social Protection Committee (the assumptions used are those set by the OECD which is responsible for the calculations pertaining to 2050)

Annex 2 and Annex 5 give all the background and context information to fully understand how representative these calculations are for different Member States.

Since the representativeness of the TRR cases varies considerably among Member States **the direct comparability of the results is limited of**. However, when the variant cases are compared to the base-case, TRRs can be very useful tools to show how changes in career length, earning profiles and career breaks (e.g. due to childcare or unemployment) can affect pension levels within each country. Table 2 presents some information about the pensionable age, the retirement age and the seniority that are used in the calculations for the different countries.

[35] PAYG DB: mandatory social insurance pension scheme: Employers: 24%; Employees: 1,5%; (in 2010 total: 9,5% - 8% to private pension system, 1,5% to Pension Insurance Fund; in 2011 and 2012: 10%). Mandatory DC private pension system: 8% (of total 9,5%).
[36] 10% employee; 10% employer; 10% the state Subject to ceiling.
[37] Employers: 13,3%; Employees: 6,7%
[38] Employers: 12,55%; Employees: 10,25%
[39] Employers: 23.75%; Employees: 11%
[40] First pillar DB plans; Other DB plans; DC plans.
[41] a) 31,3% for normal working conditions, of which 10,5% for the employee and 20,8% for the employer;
b) 36,3% for difficult working conditions, of which 10,5% for the employee and 25,8% for the employer;
c) 41,3% for special working conditions, of which 10,5% for the employee and 30,8% for the employer.
[42] 8,85% employer; 15,50% employee.
[43] SK belongs to Member States with statutory funded DC pillar.
[44] Employers: 16.9%; Employees: 4.5(18-52) /5.7 (53-68).
[45] The contribution to the statutory scheme stands at 23.8 (12.8% from employers and 11% from employees) in 2010/11. However income below the primary/secondary threshold is exempt and different rates would apply to any income above the Upper Earnings Limit. The contribution covers some social benefits other than pensions such as the National Health Service.

3.1.1. The current relative income situation of the elderly

The relative income of older people has been rather stable at the EU-27 level over the period 2005-2010. The relative median income ratio reached **88% for the EU-27** in 2010. There are however substantial differences across countries, both in the levels and in the trends.

In CY the relative median income ratio is 64% (in 2010), while in DK, EE, BE and BG it lies between 70% and 75% (in 2010). This can be due to low pension entitlements relative to the disposable income of the active age group or high disposable income (perhaps due to low tax) relative to pension entitlements. At the other end of the spectrum, FR, LU and HU in 2010 recorded a relative median equivalised income for people over 65 that was greater than that for younger cohorts.

Between 2005 and 2007 the ratio for EU-27 dropped slightly from 86% to 84%[46]. In 2008 the trend was reversed as the ratio increased back to 86% and reached 88% in 2010. These overall developments at EU level hide more dynamic situation between Member States (see Figure 1).

In eight countries (BG, CZ, DE, NL, AT, PL, SK and SE) the ratio was lower in 2010 than in 2005. The decline was particularly visible in PL and BG before 2009, as the incomes of older people did not follow the rapid increase in the incomes of the working age population. In PL the decline might also reflect the fact that the newly granted pensions have been relatively reduced after the 1999 reform. In SE the drop in relative living standards of the elderly is due to the in-work tax credit that was introduced in order to encourage labour market participation of the working age population.

In twelve Member States (IE, EL, ES, FR, IT, LT, LU, PT, RO, CY, MT and UK) the ratio increased by at least 5 p.p. between 2005 and 2010, reflecting that the median income of the elderly has been relatively improved. In seven countries (BE, DK, EE, LV, HU, SI and FI) the ratio was stable or increased by less than 5 p.p. This hides the fact that EE, LV, and LT witnessed considerable fluctuations: a relative worsening of the median income situation of the elderly in the boom years followed by improvements as the crisis struck and wages were lowered.

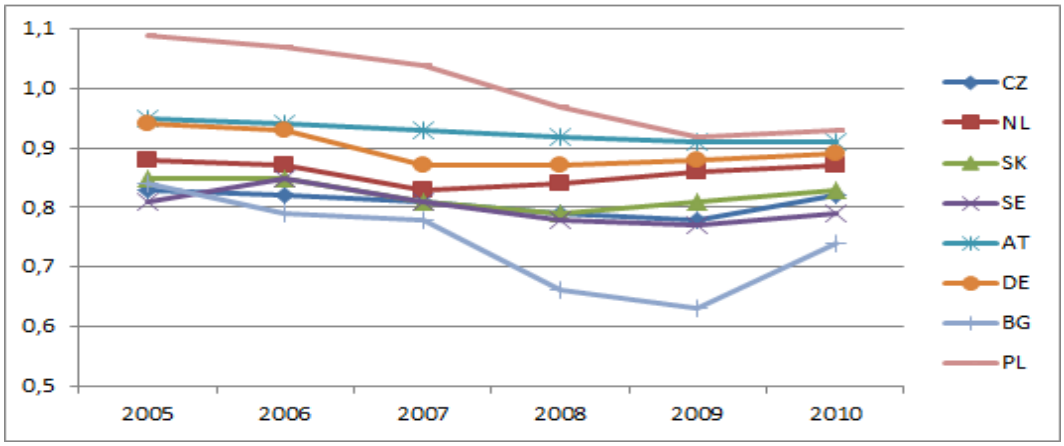
When analysing fluctuations of the indicator, one has to take account of the fact that it is a relative measure and its value is influenced by changes in the income of both the elderly (numerator) and the working age population (denominator). A decrease in the income of the working age population when the income position of people age 65+ remains stable might give the impression that the position of the older cohort had improved. The indicator thus needs to be assessed together with some absolute variables, e.g. the evolution in the per capita incomes.

[46] The data are based on surveys and refer to the previous year (e.g. the 2010 data reflect income situation in 2009).

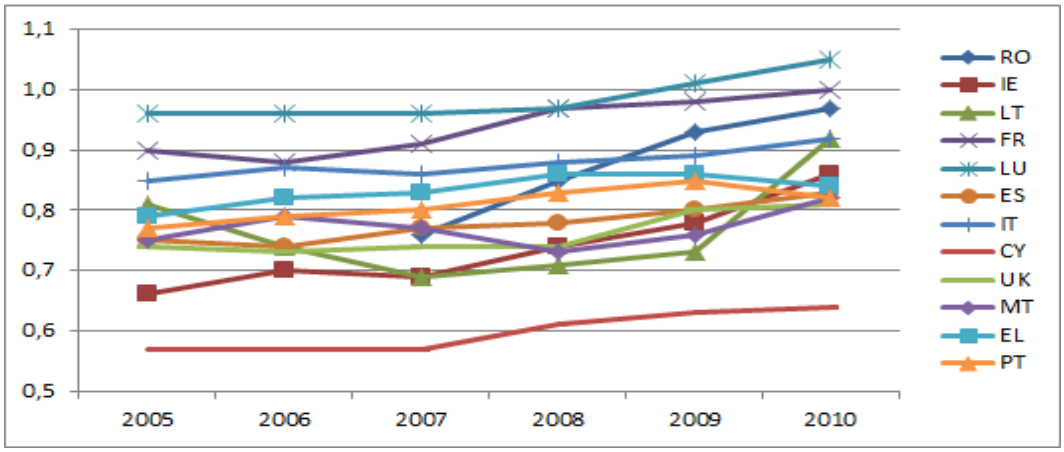
Figure 1. Changes in median relative income ratio of elderly people over time: 2005 – 2010

Definition: The relative median income ratio is the ratio of median equivalised disposable income of persons aged 65 and above to the median equivalised disposable income of persons in the complementary age group (0-64).

a) Countries where the ratio dropped between 2005 and 2010

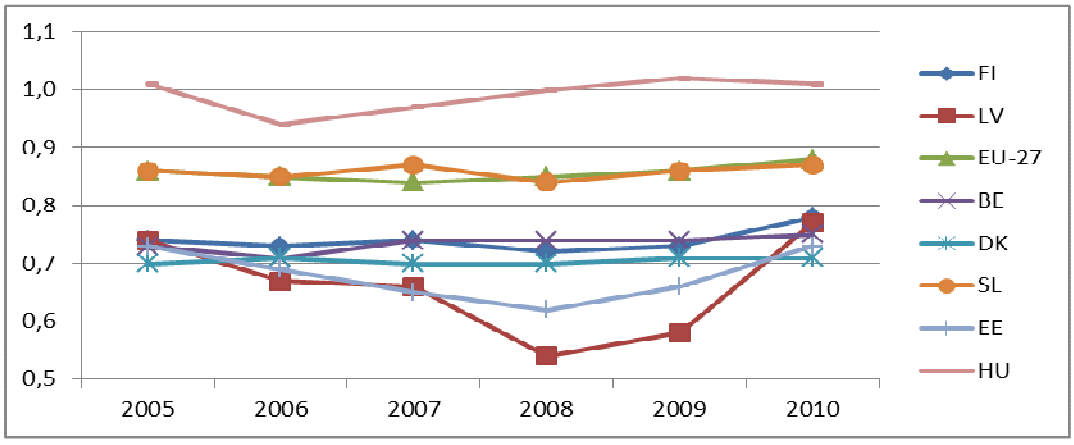


b) Countries where the ratio increased by at least 5 p.p. between 2005 and 2010



Note: RO: data available for 2007-2010, Source: Eurostat, EU-SILC, [ilc_pnp2]

c) Countries where the ratio was stable or recorded a small increase of less than 5 p.p. between 2005 and 2010

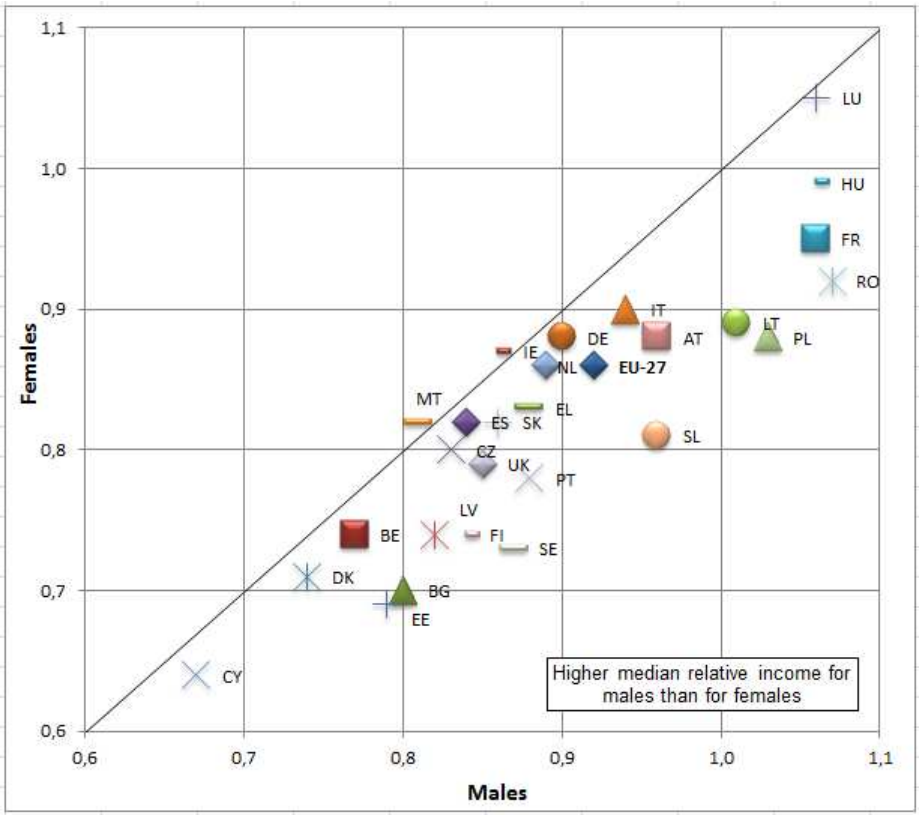


Source: Eurostat, EU-SILC, [ilc_pnp2]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

As the median relative income ratio is based on equivalised household income[47], differences between men and women fundamentally reflect income differences between people living in single households. The overall tendency is for **men to have a higher relative median income ratio than women** have (Figure 2).

Figure 2. Relative median income ratio for individuals aged 65+, by gender, 2010



Source: Eurostat, EU-SILC, [ilc_pnp2]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

3.1.2. The current role of pensions in income replacement

According to ESSPROS data, pension expenditure in the EU-27 was 13.1% of GDP in 2009.[48] Public pension expenditures make up a big part of public expenditure (EU-27: 11.3% of GDP

[47] See **Annex 1** for explanations on indicators.
[48] Categories of pension benefits in ESSPROS: old-age, anticipated old-age, partial retirement, early retirement due to labour market reasons, early retirement due to reduced capacity to work, disability, survivors'.

in 2010[49], variance 6%-15%) and are a major factor in the present and medium to longer term public budget position. According to the 2012 Ageing Report, public pension expenditure in the EU-27 is projected to increase by 1.5 p.p. of GDP over the period 2010-2060 to a level of 12.9% of GDP. Pensions constitute by far the main source of income of older Europeans[50], who represent a large and growing share of the EU population. Over 120 million or around 24% of Europeans are pensioners[51]. Almost 2/3 of these are women. **The number of pensioners in Europe exceeds the number of people aged 65+ by more than 30 million since many people start receiving a pension before they reach the age of 65**.

Aggregate replacement ratio

To assess how pensions play their role of replacing income, it is important to understand how many people are covered by pension systems and how large proportion of their income is derived from pensions. The aggregate replacement ratio measures the median individual gross pension (including old-age and other pension benefits of people aged 65-74) relative to median individual gross earnings (of people aged 50-59).

The ratio reached **53% for the EU-27** in 2010, although there are substantial variations across countries, both in the levels and in the trends. In general, the aggregate replacement ratios show that current median pension levels are very low compared to current median earnings in CY (36% in 2010) and to some extent in EL, BG and DK (less than 45% in 2010). This can be due to low income replacement from statutory pension schemes (e.g. BG), but it can also reflect the immaturity of supplementary pension schemes (e.g. CY), low past labour force participation rates and incomplete careers or under-declaration of earnings in the past.

As for its **evolution** (see Figure 3), the value of the ratio for the EU-27 decreased from 51% in 2005 and 2006 to 49% in 2007. Then it bounced back slightly in 2008, and the increasing trend was amplified during the crisis years reaching up to 53% at EU-27 level in 2010. This is primarily the result of the crisis-related decline in the wage incomes of people aged 50-59.

In 2010 compared to 2005, the ratio was more than 5 p.p. lower in five Member States (BG, EL, IT, LV and PT). The initial 2005 value of the ratio for all these countries was higher than the EU-27 average and the largest drops took place during the years 2006-07. The decrease may still be fully recovered as the crisis continues.

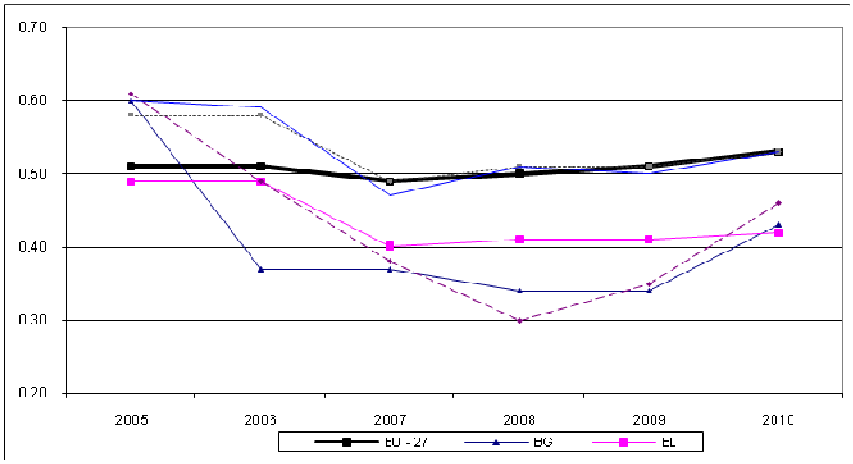
In the same period the ratio increased by more than 5 p.p. in eight countries (DK, EE, FR, CY, LT, RO, SK and UK). Changes in 2010 were the result of crisis-related decline in wage incomes. Increases in the ratio in IE in 2007 or LV in 2008 (extension of supplementary payments for pensioners) were probably the result of deliberate policy leading to increases in pensions in payment. For CY continued increases in the ratio reflect at a large extent the maturing pension system.

[49] The 2012 Ageing Report, Public pensions, gross as % of GDP
[50] Especially those over the age of 65, but also people aged 55-64, and sometimes younger.
[51] The 2012 Ageing Report

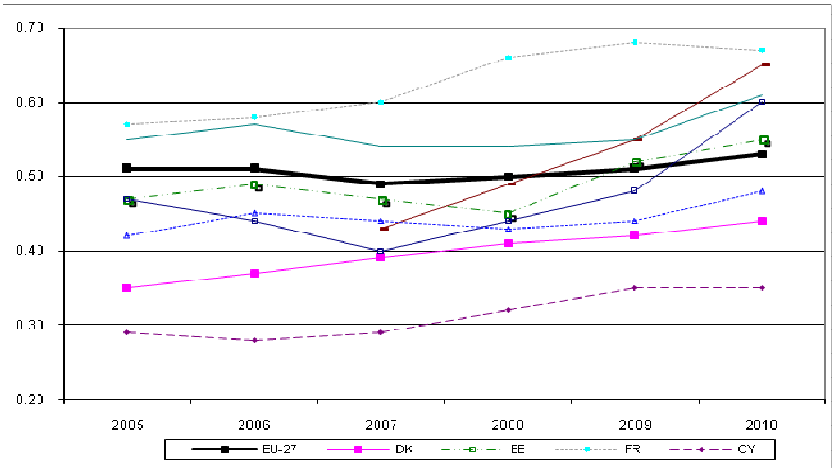
Figure 3. Changes in aggregate replacement ratio over time: 2005 – 2010

Definition: the aggregate replacement ratio is the ratio of median personal (non-equivalised) income from pensions of persons aged 65-74 relative to median personal (non-equivalised) income from earnings of persons aged 50-59.

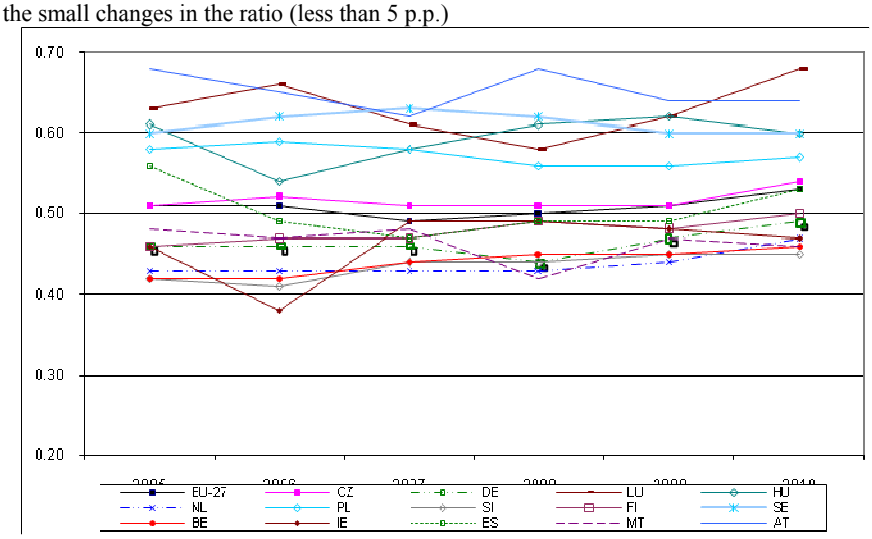
a) Countries where the ratio dropped by at least 5 pp.



b) Countries where the ratio increased by at least 5 p.p.



c) Countries with the small changes in the ratio (less than 5 p.p.)

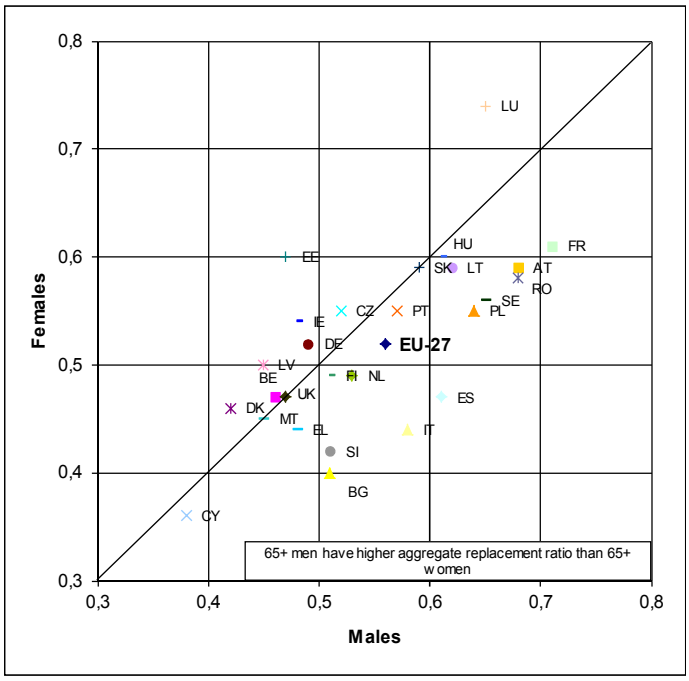


Source: Eurostat, EU-SILC

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

Some Member States display strong differences between men and women in the aggregate replacement ratio (Figure 4)[52]. Unlike the relative median income ratio, these results are based on personal (non-equivalised) income and reflect actual gender differences in relative levels of pensions and earnings with some of gender differences having to due with the higher proportion of older women that live alone[53].

Figure 4. Aggregate replacement ratio for individuals aged 65+, by gender, 2010



Source: Eurostat, EU-SILC

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

On average in the EU-27, the median gross pension income of women aged 65-74 relative to gross earnings of women aged 50-59 is lower than that of men (52% for female *versus* 56% for male). Lower relative pension entitlements might reflect shorter formal working careers of women in the past and higher incomes of women of working age today. In ES, IT, BG, FR, RO and to a lesser extent AT, PL, SI and SE, aggregate replacement ratios for men are significantly higher than for women (with a 14 p.p. difference for ES and IT). By contrast aggregate replacement rates appear to be higher for women in EE, LU and to a lesser extent IE. This

[52] In principle - as we are dealing with a relative measure - aggregate replacement ratios could be better for women even though the absolute values of women's pensions were much below those for men.

[53] *Social protection and social inclusion 2008: EU indicators*, European Commission.

might be due to lower relative increments in survivor pensions, but also to a historical gender pay gap. It is important to note that the increasing labour market participation of women will result in better pensions for women in the future.

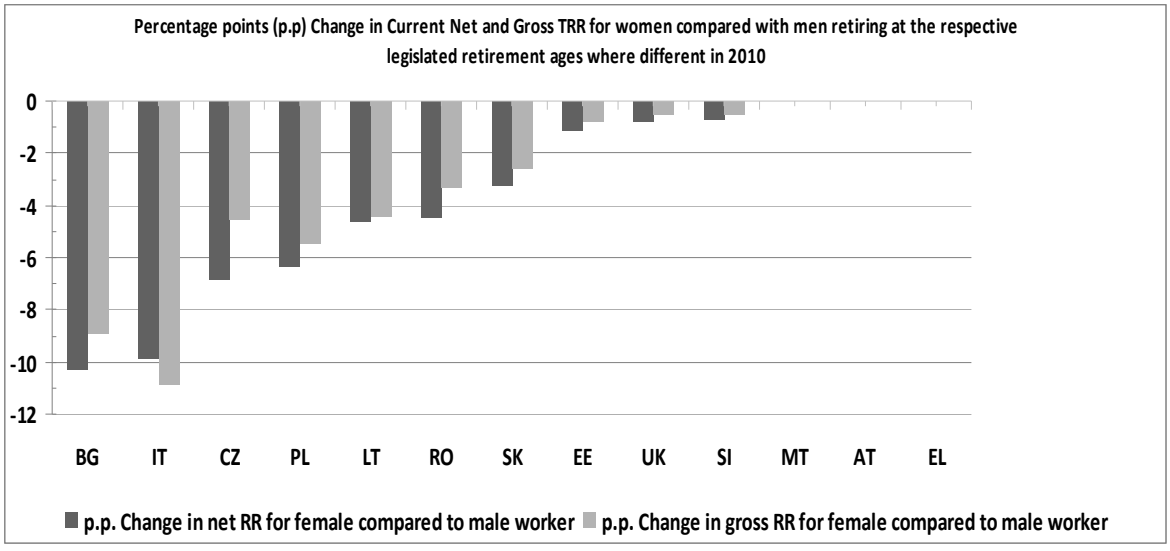
Current theoretical replacement rates

- *Current differences in replacement rates for men and women*

In 2010 the pensionable age was different for men and women in 13 Member States (BG, CZ, EE, EL, IT, LT, MT, AT, PL, RO, SI, SK, UK). This means that women have shorter periods in which to build pension entitlements than men. In the TRR calculations that look at gender differences retirement is therefore assumed to take place at the gender specific pensionable age and not the assumed retirement age used in the base case calculations. While gender differences in the duration of working lives as defined by the pensionable age thus are taken into consideration this is not the case for the differences in average earnings that may exist between men and women.

Figure 5 shows that the gross and net replacement rate are lower for women than for men in almost all these Member States as a result of women retiring earlier than men. This is particularly pronounced in BG, IT, CZ and PL where net rates for women are as much as 5 percentage points (p.p.) lower than for men. With pension benefits increasingly linked to the length of contributory periods **lower pensionable ages is no longer an advantage for women**. CZ, EE, EL, LT, MT, AT, SK and UK have recently legislated equalisation of pensionable ages for women and men.

Figure 5. Percentage points (p.p.) changes in net and gross TRR for women compared with men average earners retiring at the respective legislated retirement age (where different) in 2010



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise. In these calculations retirement is assumed at the legislated retirement age for both men and women and not the assumed retirement age of 65 used in the base case calculations. Probable differences in average earnings that may exist between men and women are not considered. The schemes covered are as in the base case.

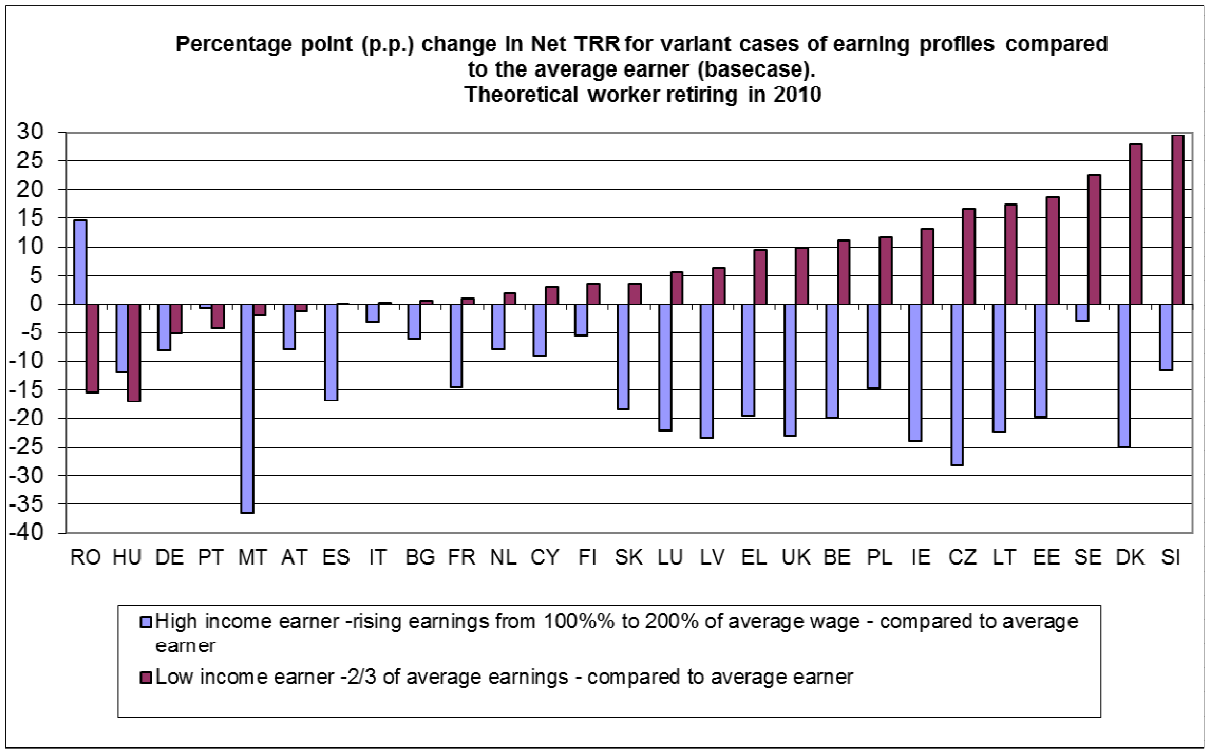
- Differences in replacement rates between individuals with different earning profiles (average / low / high income earners) retiring today

Figure 6 shows the **effects on the current net TRR of different earning profiles**: a low income earner (2/3 average wage) and a high wage earner (with a linearly increasing earnings profile beginning at 100% of the average, ending at 200% of the average) compared with an average earner (all retiring in 2010).

For workers with low earnings, statutory public schemes tend to have a more significant role in the replacement of income. Net replacement rates are significantly higher (at least 10 p.p.) for low income workers than for average earners in many Member States (EL, UK, BE, PL, IE, CZ, LT, EE, SE, DK and SI). This reflects the fact that many countries attempt to protect low income workers in the statutory pension schemes.

For the remaining Member States the difference is smaller. A few Member States even have lower net replacement rates for low earners than for average earners (RO, HU, DE, PT, MT and AT). The reason may be that taxes and social security contributions have a higher effect on the net replacement rates for low earners than for workers with average or high incomes. Low-income workers typically pay less in taxes and contributions than those on average earnings. However, in many cases, retirement incomes for those with lower earnings are at a level that does not allow them to benefit from income-tax reliefs (allowances, credits, etc.). This means that in some cases low income earners may pay a larger portion of their gross pension in taxes as compared with an average earner.

Figure 6. Percentage points (p.p.) change in net theoretical replacement rates for variant cases of earning profiles compared to the average earner (base case), theoretical workers retiring in 2010



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

At the other extreme, the case of a higher than average wage earner demonstrates how the earnings ceilings that often exist in statutory pension schemes restrict replacement rates. High wage earners, however, often receive a higher proportion of their pension income from supplementary schemes.

In Member States those with a higher earnings profile display significantly lower future replacement rates than average earners, with 20 p.p. or lower TRRs in MT, LU, LV, UK, BE, IE, CZ, LT and DK. This less favourable situation for high wage earners in Member States reflects the progressive redistribution often embedded in the contribution/benefit formulas of pre-reform public pension schemes. Other reasons for this result are the linear growth of the high earner variant (from 100% to 200% of the average wage) and the methodology of the Theoretical replacement rates calculations[54].

- *How do longer / shorter careers affect replacement rates currently?*

In these variant cases the incentives to longer careers and disincentives to shorter careers embedded in the pension systems in place over the last 4 decades, are studied by comparing a worker who retires at 65 with one that retires at 67 or at 63[55], i.e. by comparing the effect on pension benefits of increasing and decreasing the seniority or number of contributory years of the worker. Figure 7a) and Figure 7b) illustrate the economic consequences on *current* net replacement rates of longer and shorter careers for workers at different wage levels. It is important to note that some of the effects shown are a result of the assumptions used in the calculations: for example, in reality, a DB system with a fixed retirement age lower than age 65 may not include the work incentives or the options for prolonging the member's career which are assumed in the calculations.

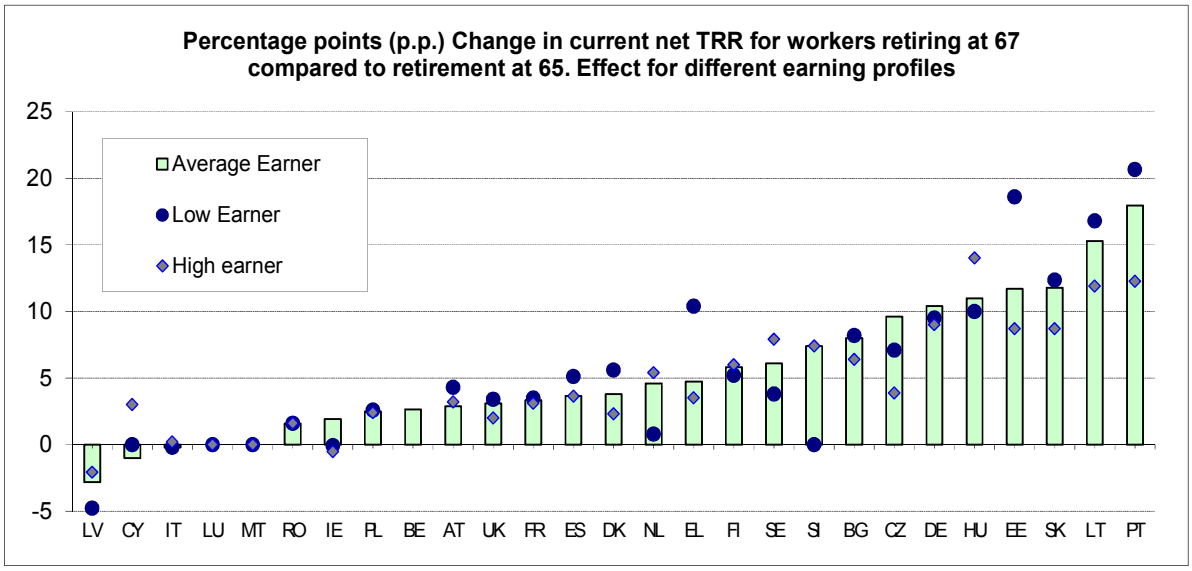
Calculations show that in almost all Member States **delaying retirement results in higher net TRRs (increases of more than 10 p.p.** for the average earner with respect to retirement at 65 occur in DE, EE, SK, LT, PL and HU), while shorter careers result in lower replacement rates (drops of more than 10 p.p. for the average earner occur only in LV, ES, FR, SK and CZ). It is interesting to note that the bonus/malus **incentives embedded in pension systems are not symmetrical**: in all but a few Member States the increments in rates for prolonging working lives (and postponing pension take up) by two years are bigger than the falls in replacement rates for shortening careers by two years.

Figure 7. Different carrers for different earning profiles

Figure 7a. Longer careers for different earning profiles (42 contributory years and retirement at 67 compared to 40 contributory years and retirement at 65)

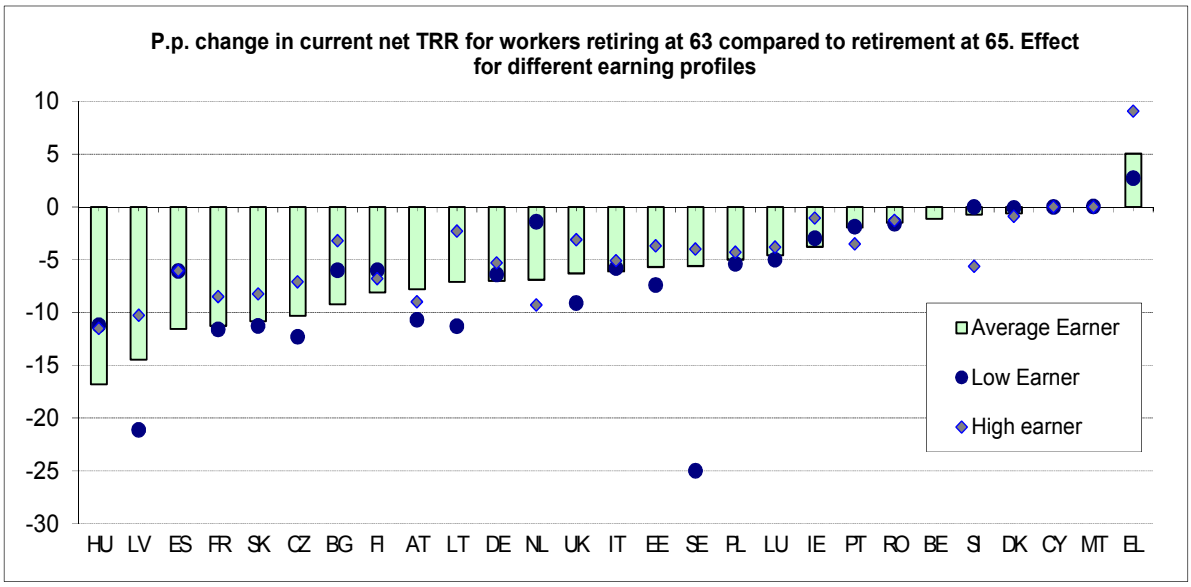
[54] The resulting pension calculated from career earnings at 1.5 times average wage are compared to the final salary at 2 times the average wage.

[55] In CY working longer does not refer to retirement at 67, but retirement at 65 with 42 years of work. In BE the results reflect retirement at 65 after a career of 38 or 42 years (full career condition: 45 years).



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Figure 7b Shorter careers for different earning profiles (38 contributory years and retirement at 63 compared to 40 contributory years and retirement at 65)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Figure 7a) and Figure 7b also demonstrate that the **incentives to work longer and disincentives to early retirement are broadly preserved across the different income groups** for many Member States[56]: thus, the percentage point change in current net TRR after 38 / 42 years career compared to 40 years career is similar for all income groups (low / average / high income earners). In a few Member States the incentives for longer working are stronger for high income earners (CY, NL, SE) while in EL, EE, LT and PT low income earners have better incentives to work longer than average or high earners. On the other hand, disincentives to shorter careers are stronger for high income earners in SI and NL. Low income earners have

[56] For example, in MT working longer does not affect the Theoretical Replacement Rares (TRRs).

stronger disincentives to shorter careers than their counterparts with average or high incomes in LV, CZ, LT, UK and especially in SE, this raises the question as to whether there is sufficient balance between work incentives and poverty protections in minimum income benefits for older people. In SE the results can have different explanations. Firstly, minimum income pensions have an eligibility age which is higher than in the calculations of the case retiring at 63 (a person is not eligible to receive the guarantee pension before age 65).

- *Effect on current replacement rates of career breaks (due to childcare or unemployment)*

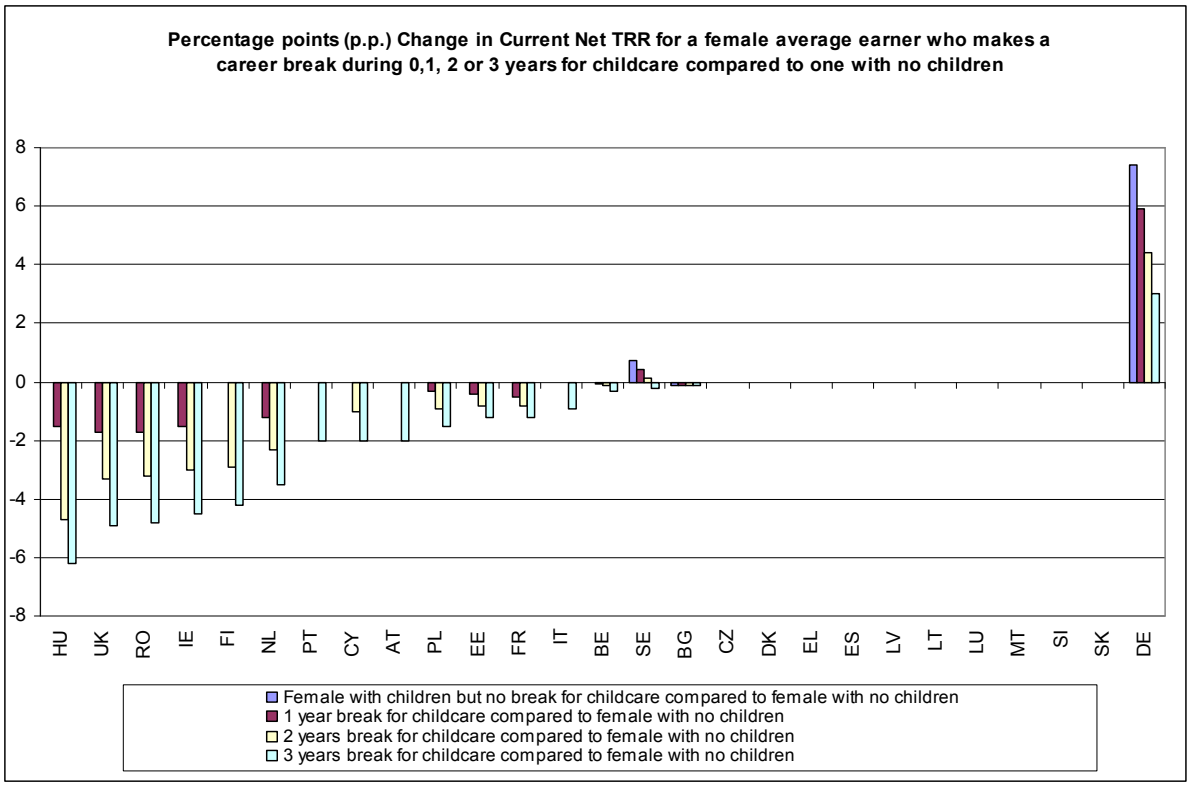
To what extent are the build-up of pension entitlements in contributory systems protected in the case of career breaks due to care responsibilities or unemployment? TRRs that simulate the effects on final pension benefits of variant cases with career breaks due to childcare or unemployment can help answer the question.

In many Member States, absences from the labour market due to parental duties linked to childbirths and childcare are typically protected to a certain extent for the first years of absence. In the variant cases simulating absences from the labour market due to childcare years, replacement rates are calculated for women. Figure 8 shows the effects on current net TRR for a female average earner with career breaks for childcare of 0, 1, 2 or 3 years (compared to a woman with no children).

In most Member States, maternity and childcare do not give or reduce pension credits if there are no years of absence from the labour market. But DE and SE have systems which provide **extra pension entitlements following the birth of a child**, which means that even if no actual period of childcare leave is taken the pension is still greater than for women with no children. Furthermore, in SE these entitlements are gender neutral and go automatically to the parent with the lowest income until the child is aged four.

In a few Member States, pension rights **are** so **well protected** that calculations show no drop in current replacement rates as effect of a career break of up to three years (e.g. CZ, ES, LV, LT, LU, MT, SI, SK). In other Member States, **childcare years result in a drop in replacement rates compared with a woman with no children from the first year of absence**, and the drop is often sharper the longer the absence from the labour market. This can be due to the features of the pension system linking the contributory periods to the pension benefits, where non-contributory years for childcare are not taken up entirely.

Figure 8. Percentage points change in current net theoretical replacement rates for a female average earner who makes a career break during 1, 2 or 3 years for childcare compared to one with no children

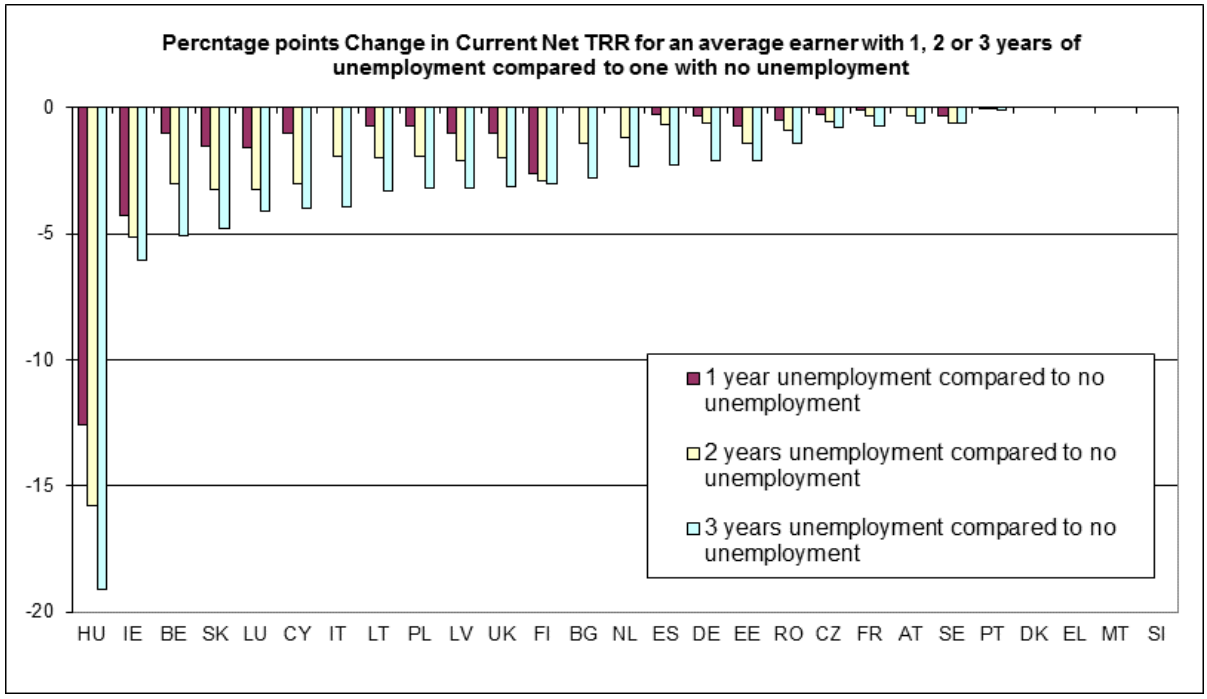


Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Regarding the effects on current replacement rates of career breaks due to **unemployment**, Figure 9 shows the percentage points differences for a man who enters the labour market at 25 and leaves at the pensionable age for men and a man with the same profile but with career breaks of 1, 2, 3 years due to unemployment. In most Member States unemployment breaks result in a loss of pension entitlements and lead to drops in replacement rates, showing bigger drops the longer the break. In most Member States, the duration of entitlement for unemployment breaks is less than three years, resulting in a bigger drop in replacement rates during the second or third year of unemployment. In extreme cases these become non-income and non-contributory years.

The results show a **decrease of less than 3 p.p. in most Member States for three years of unemployment**. This implies a **considerable protection of pension entitlements in the unemployment benefit system in most Member States**. Given that these are current replacement rates, it is important to note that this can be due to the fact that pre-reformed systems did not have as strong a link between contributions and benefits. In some Member States the drop in replacement rates can amount to more than 3 p.p. (e.g. IE, BE, SE, LU, CY, IT, LT, PL, LV, UK) and in HU there is 19.1 p.p. drop. This brings the adequacy of protection of pension entitlements during unemployment into question. On the other hand, the protection of pension entitlements during unemployment spans has **to be balanced with the financial incentives for individuals to return to the labour market**.

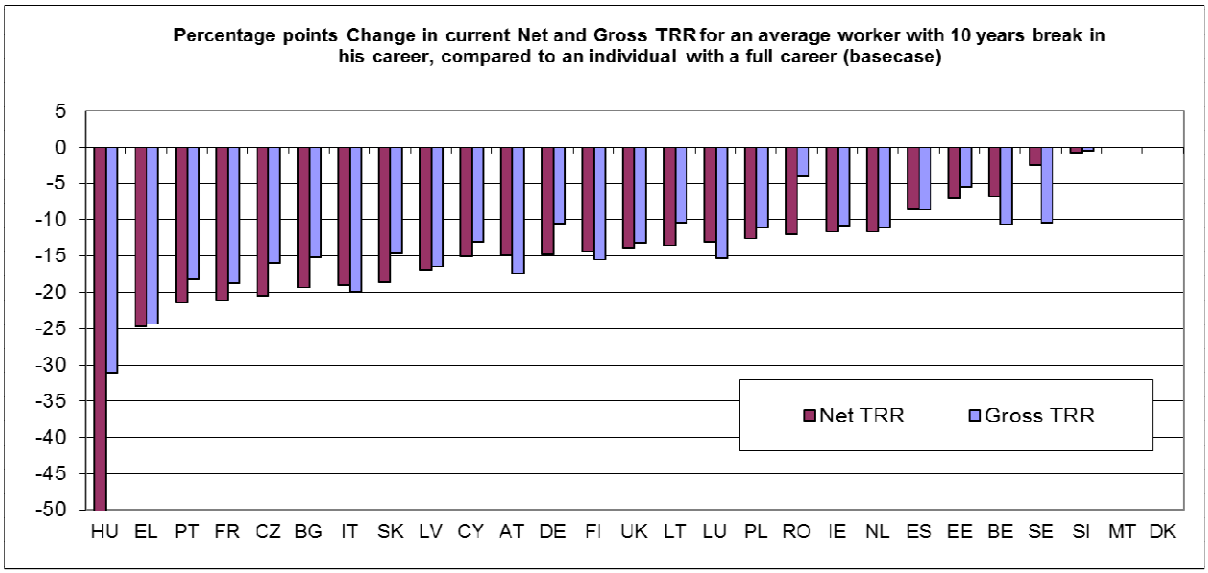
Figure 9. Percentage change in current net theoretical replacement rates for an average earner with 1, 2 or 3 years of unemployment compared to one with no unemployment



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Further to this, it is useful to study the effect on replacement rates of **long-term career breaks (10 years)**. In this variant case the worker is assumed to not contribute to the pension system at all and not receive any social benefit during the 10 year break. Figure 10 shows that in this case the **fall in replacement rates are quite sharp, reaching more than 10 p.p.** in most Member States compared to a full career and cutting replacement rates by half in HU.

Figure 10. Percentage points change in current net and gross theoretical replacement rates for an average worker retiring with 10 years break in his career, compared to the same individual with a full career (DK and MT: not applicable)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

The role of private pensions in current pension adequacy

For a full picture of the composition of pension income of today's pensioners, it is also necessary to look at the role of private pensions (i.e. occupational and individual pensions) in the adequacy of current income replacement.

Occupational pension schemes based either on collective agreements or on the employer sponsorship have gained wide coverage in a number of countries and as they are maturing they are gaining an increasingly important role in providing supplementary retirement income. Individual third pillar pension schemes are less widespread and income from these is currently primarily important for the self-employed and high income groups.

The composition of the pension package today[57] can be illustrated with the use of current **Theoretical Replacement Rates** (i.e. by the base case replacement rate of a male who started working in 1970 and retired in 2010 at the age of 65 after a 40 years contributory career[58]). Figure 11 presents the percentage share in gross TRRs in 2010 of three main types of pension schemes[59]: 1) Statutory pay-as-you-go (whether of defined-benefit (DB) or notionally defined-contribution (NDC) character), 2) Statutory funded (usually defined-contribution (DC)

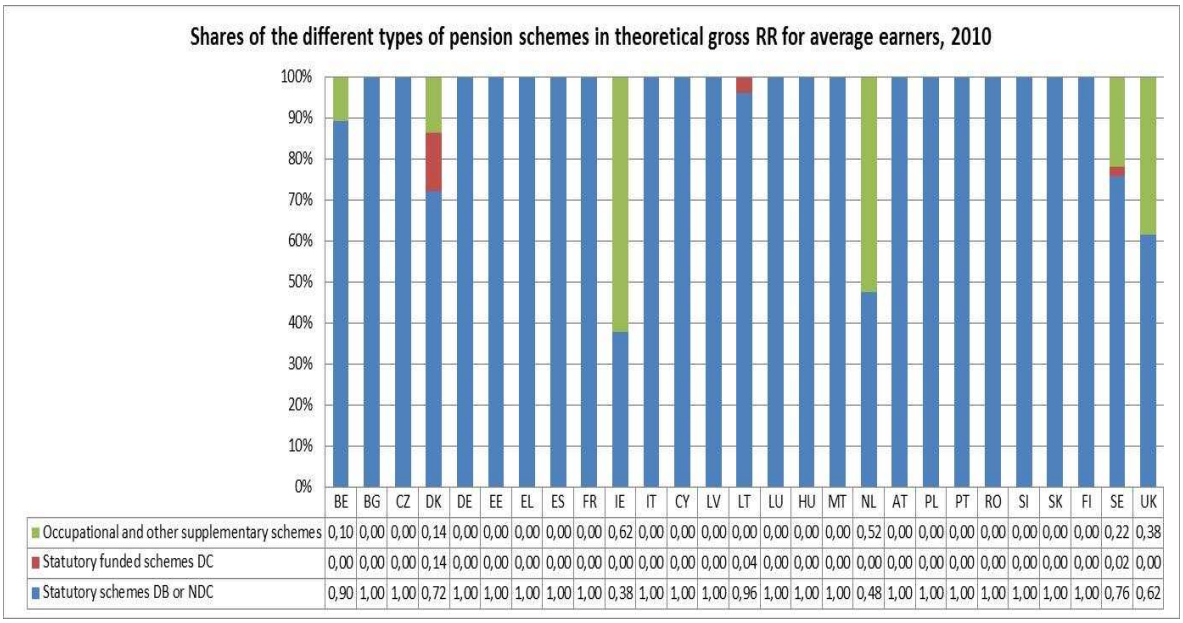
[57] For the same split of gross replacement rates in the future see Section 5.2.1.

[58] As always the representativeness of the reference individuals and the detailed assumptions used in the calculations need to be considered when theoretical replacement rates are analysed (see Annex *2*).

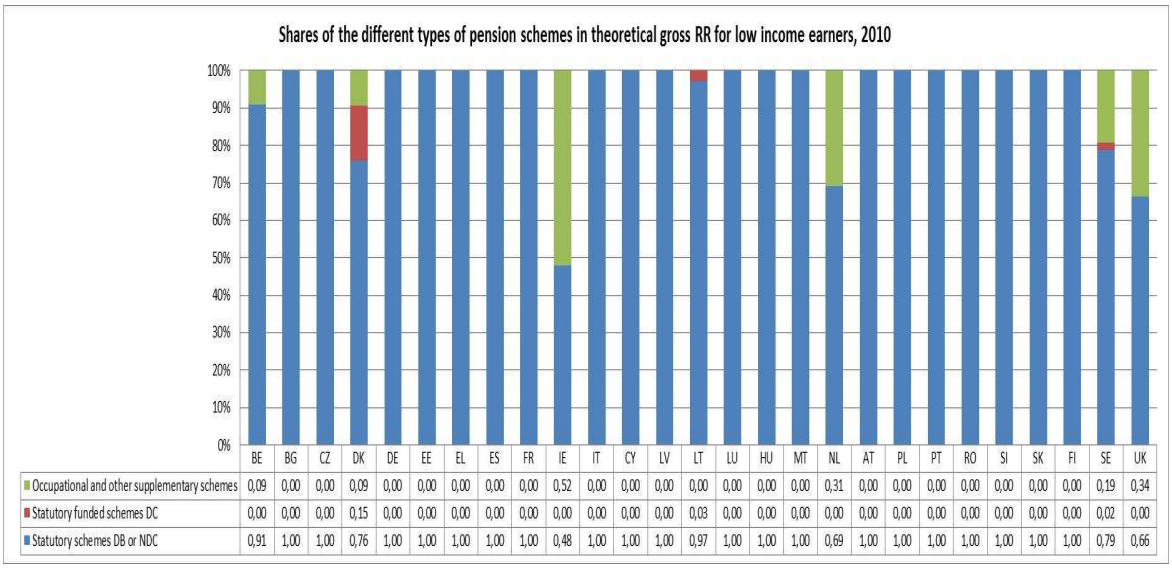
[59] Note that this is not a decomposition between the traditional "three pillars" typology (meaning: 1) statutory schemes; 2) occupational schemes and 3) individual schemes). Theoretical replacement rates in general do not include individual schemes such as individual pension savings' contracts (unless they are part of official pension provisions and of substantial significance (e.g. Riester in DE)). TRR calculations include only the mandatory, typical or wide-reaching pension schemes in each country.

schemes) and 3) Occupational and other supplementary schemes. This breakdown of the gross replacement rates is presented for workers at different wage levels (low, average and high income earners[60]). It gives an indication of the composition of current pension income for a hypothetical pensioner at different income levels.

Figure 11. Shares of different pension schemes in gross theoretical replacement rates, 2010

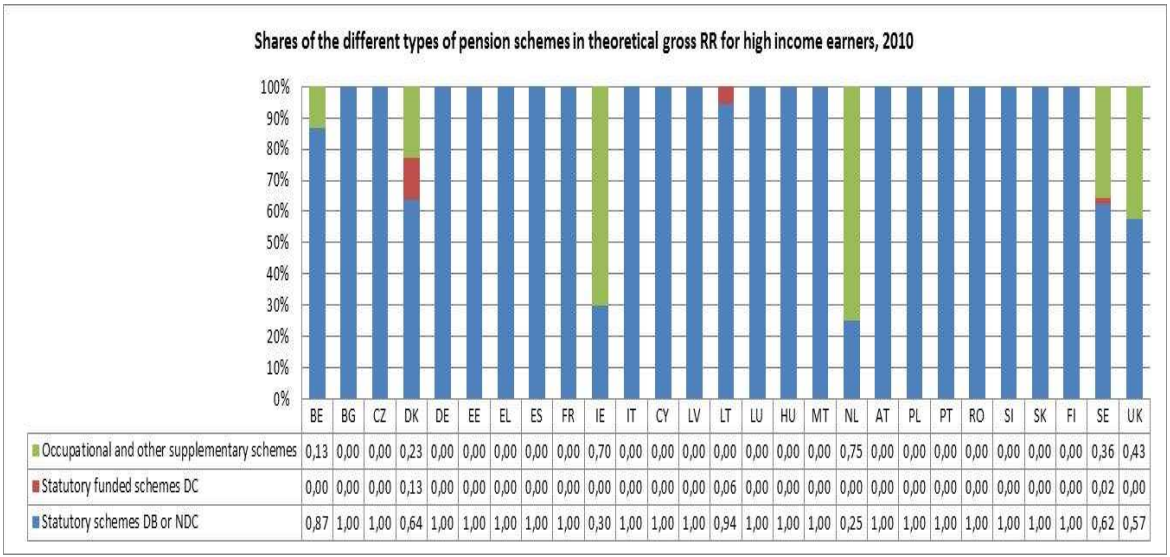


	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Occupational and other supplementary schemes	0,10	0,00	0,00	0,14	0,00	0,00	0,00	0,00	0,00	0,62	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,52	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,22	0,38
Statutory funded schemes DC	0,00	0,00	0,00	0,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,04	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,00
Statutory schemes DB or NDC	0,90	1,00	1,00	0,72	1,00	1,00	1,00	1,00	1,00	0,38	1,00	1,00	1,00	0,96	1,00	1,00	1,00	0,48	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,76	0,62



	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Occupational and other supplementary schemes	0,09	0,00	0,00	0,09	0,00	0,00	0,00	0,00	0,00	0,52	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,31	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,19	0,34
Statutory funded schemes DC	0,00	0,00	0,00	0,15	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,00
Statutory schemes DB or NDC	0,91	1,00	1,00	0,76	1,00	1,00	1,00	1,00	1,00	0,48	1,00	1,00	1,00	0,97	1,00	1,00	1,00	0,69	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,79	0,66

[60] Low income earner is assumed to earn 66% of the average wage in the economy over his whole career. The average income earner earns the average over the whole career. The high income earner starts with average earnings which grow constantly to reach a double of the economy average at the end of his career.



	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Occupational and other supplementary schemes	0,13	0,00	0,00	0,23	0,00	0,00	0,00	0,00	0,00	0,70	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,75	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,36	0,43
Statutory funded schemes DC	0,00	0,00	0,00	0,13	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,06	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,00
Statutory schemes DB or NDC	0,87	1,00	1,00	0,64	1,00	1,00	1,00	1,00	1,00	0,30	1,00	1,00	1,00	0,94	1,00	1,00	1,00	0,25	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,62	0,57

Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

The public **PAYG pension system (DB or NDC) is the main provider of pensions** everywhere in Europe. But in some countries occupational funded schemes and newly introduced statutory funded schemes already contribute substantially to the incomes of current pensioners' incomes[61].

Statutory funded DC pensions are in the payout phase only in DK, LT and SE. Occupational pensions contribute more than 20% of the theoretical individual's income in IE, NL, SE and UK. In the countries where the role of these types of pension schemes are significant, **the proportion of income coming from occupational or statutory funded pensions is lower for low-wage earners and higher for high-wage earners**. This is because benefits usually are earnings-related and statutory PAYG schemes with their redistributive features play a more significant role for people with lower earnings.

- *Coverage, contributions and benefits of private pensions in selected countries*

More information on the role currently played by private pension schemes in some EU Member States can be found in a recent study by the OECD commissioned by the European Commission[62]. The study assesses the coverage of privately managed funded pensions[63], as well as the contributions to and the benefits from these plans based on available data sources in six EU Member States (IT, ES, IE, UK, DE and NL – the study also covers two non EU countries, US and Australia). It should be considered, however, that in general it is difficult to gather reliable individual information from surveys in the field of private pension systems, therefore the validity of results based on surveys can only be limited.

The Annex 3 shows that, **the current role of private pension schemes differs widely across Member States**, not only regarding their contribution to the total income of retired people but

[61] The role of funded pensions in future pensioner incomes is analysed in Section 4.2.1

[62] OECD report on indicators of coverage, contributions and benefits in private pensions in selected OECD countries, 2011.

[63] For the purposes of the report, "privately managed funded pensions" refer to pension plans for both public and private sector workers that are funded or run on a book reserve basis. Thus they typically cover occupational and personal/individual plans, whilst pension plans that are financed on a PAYG basis are excluded.

also in terms of levels of coverage of active members, maturity of schemes and size of accumulated funds.

Regarding **coverage**, in NL occupational pensions are quasi-mandatory given the pervasiveness of collective agreements that include such schemes and they cover more than 90% of the labour force. By contrast, work place based private pension plans cover just above 20% of the labour force in IT and ES. In between, there are countries with longstanding private pension systems, covering a relatively large part of the labour force. Between 41% and 53% of the labour force is enrolled in a private work place pension plan in IE, DE or UK.

With the exception of the CZ occupational pension plans cover a larger share of the labour force than (third pillar) personal pension plans in all countries. Though in DE the so-called Riester pensions – a type of voluntary personal pension plan which was established in 2002 to allow people to compensate for declining replacement rates in the public scheme through complementary retirement savings - have been rapidly growing.

The share of the labour force enrolled in the privately managed funded schemes (both occupational and personal) increases with age, reaching generally a peak at prime working ages (i.e. ages from 35 to 44 or 45 to 54), and falling afterwards (DE, IE, IT, UK). In contrast, the fall in coverage rates at old ages does not occur in NL and ES, where the coverage rate continues to increase for older workers (those aged 55-64).

Similarly, coverage increases with income, especially in voluntary systems, reaching a plateau after the 7th or 8th deciles. In NL, where the system covers the bulk of the work force, the plateau is reached already, after the 3rd decile and the coverage among the poorest income groups is above 65%. In systems less supported by encompassing industrial relations, however, the coverage among the poorest income groups is quite low, at around 15% (e.g. ES and UK). But these groups may already have a relatively high level of income replacement from public pensions.

In IE, IT, NL and ES coverage rates are higher for men than for women. The difference between the two genders is negligible in DE and UK (with a slightly larger coverage of women in the latter). It is also noteworthy that full-time workers are more often enrolled in private pension plans than part-time workers.

The average amount of annual **contributions** of people enrolled in the privately managed schemes (both occupational and personal) represents a larger share of the average national earnings in UK (around 16%), IT and ES (around 12%) than in IE (8%) and DE (3%). The average level of contributions of people enrolled in private pension plans is always higher in occupational pension plans than in personal pension plans. This maybe because employers contribute to occupational pension plans, but not to personal pension plans. Moreover, for all countries considered except NL, the average contribution levels increase with the income of the individual or of the household (with an important gap between relative high income individuals and medium to low income individuals). Finally, for all countries considered, the analysis shows that average contribution levels increase with age and are higher for men and full-time workers than for women and part-time workers.

Regarding the numbers of **individuals receiving private pension benefits and amount of benefits** paid to them, the analysis shows substantial differences across countries in the role of private pensions. The percentage of old age individuals (65 and older) receiving pension benefits from private pension plans ranges from less than 2% in ES and IT to more than 60% in

NL and UK. For countries for which this information is available, occupational pension plans cover more pensioners than personal pension plans. At the same time ES and IT are the countries where the average level of benefits paid by private pension plans to pensioners is the highest, as a share of average national earnings, at more than 71%. In these countries indeed, individuals currently receiving benefits from private pension plans are more likely to be high income individuals, rather than mid to low income individuals, who rely more on the PAYG-financed public pension systems. In the other EU countries, average benefits paid by private plans range from 26.4% in DE to 57.7% in IE of the average national earnings.

3.2. Pensions and poverty alleviation

Besides allowing people to maintain, to a reasonable degree, the living standard they achieved during their working lives, another fundamental objective of European pension systems, and social protection systems in general, is ensuring that older people are not placed at risk of poverty. This chapter looks at how Member States are tackling the risk of poverty in old age, including *via* their pension systems. It first describes what part of the old-age population is at risk of poverty, severe material deprivation or social exclusion. Then it analyses the intensity of the poverty gap and income distribution of the elderly. Finally it looks at the specific role of minimum income guarantees in addressing poverty in old-age.

The quantitative assessment of the risk of poverty or social exclusion for the old-age population can be based on an appraisal of the key EU2020 indicator - people at risk of poverty or exclusion (AROPE) and its two sub-indicators: the at-risk-of-poverty rate of older people and severe material deprivation of older people. For people under the age of 65 the AROPE indicator also takes into account households with very low work intensity, but this is not the case for population 65+.

It must to be stressed that the measures of income poverty used in this chapter are based on different sources of income. The indicator of at-risk-of-poverty of older people does not reflect only income from pensions but also income from other sources. Careful interpretation of the at-risk-of-poverty rate and the income distribution is needed, as these indicators are based on the EU Survey on Income and Living Conditions, and the EU-SILC, which has a significant time lag. Thus 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). Moreover the reference may differ between countries: In IE the reference period is the 12 months prior to the interview, while in the UK it is centred on the interview date.

The definition and measurement of poverty has been hotly debated, but there is now agreement that poverty - including among the elderly - is a multidimensional phenomenon and that the use of a multidimensional indicator helps to reflect the multiple facets of poverty and exclusion[64].

The **at-risk-of-poverty rate for people aged 65+** measures the percentage of the population aged 65+ with income after social transfers below the at-risk-of-poverty threshold.[65] The

[64] *Employment and Social Developments in Europe 2011*, European Commission.
[65] There might be some methodological differences between the national relative income measures and the at-risk-of-poverty rate indicator (e.g. in UK).

threshold is set at 60% of the median equivalised income in a given country. Thus the indicator treats poverty as a relative and not absolute concept. While this approach has many advantages it is important to spell out what it implies about the character of the indicator and its limitations.

In the first instance it means that the value of the at-risk-of-poverty threshold evolves with the development of incomes in a society, which need not necessarily always rise but can be subject to shocks that cause them to drop, as has happened during the current crisis. Observed increases/decreases in the AROP rate for people 65+ may therefore simply reflect that the incomes of the working population are rising at a higher/lower pace than the incomes of the 65+. The relative character of the indicator which allows for international comparisons implies that it focuses more on poverty as social and economic exclusion than on poverty as a state of not having a given standard of living.

The indicator measures **(monetary) income inequalities at the bottom of the income scale**. Thus a low risk of poverty rate for the elderly is primarily a reflection of a rather egalitarian income distribution between people above and below 65. It does not necessarily indicate that people 65+ have a decent standard of living.

Furthermore, while the indicator reflects monetary poverty (i.e. monetary income inequalities in a society), it should be kept in mind that this measure does not take the wealth of pensioners into account. This implies some risk distortion since particularly house ownership and private savings may have a strong effect on the income distribution. Nor does the indicator cover the value of non-monetary benefits (free health care, transport, etc.) for the actual living standards experienced by people 65+. Finally, the at-risk-of-poverty rate is measured at household level, thus it may not represent the income distribution for individuals in old age (i.e. the equivalent income concept underlying the indicator relies on the premise of full sharing of resources amongst all household members, which may not be always the case)[66]. For all these reasons, this indicator of the poverty risk of people 65+ while valued for its advantages should be interpreted with some caution and be supplemented by other indicators.

The indicator of **severe material deprivation is an absolute measure of poverty** which provides an important complement to the AROP.[67] This indicator measures the inability to afford some items considered desirable or necessary by most people in order to attain a basic standard of living. Individuals who cannot afford four out of nine items[68] on the list are considered to fall under the scope of the indicator. As a direct measure of poverty (related to consumption or access to resources) the indicator of severe material deprivation complements the indirect and relative approach based on income measures.

The income quintile ratio measures the distribution of income across society. It compares the income of the individuals at the top of the distribution to the income of those at the bottom (the total income received by the 20% of the population with the highest income – top quintile – to the total income received by the 20% with the lowest income – lowest quintile). Income is understood as equivalised disposable income.

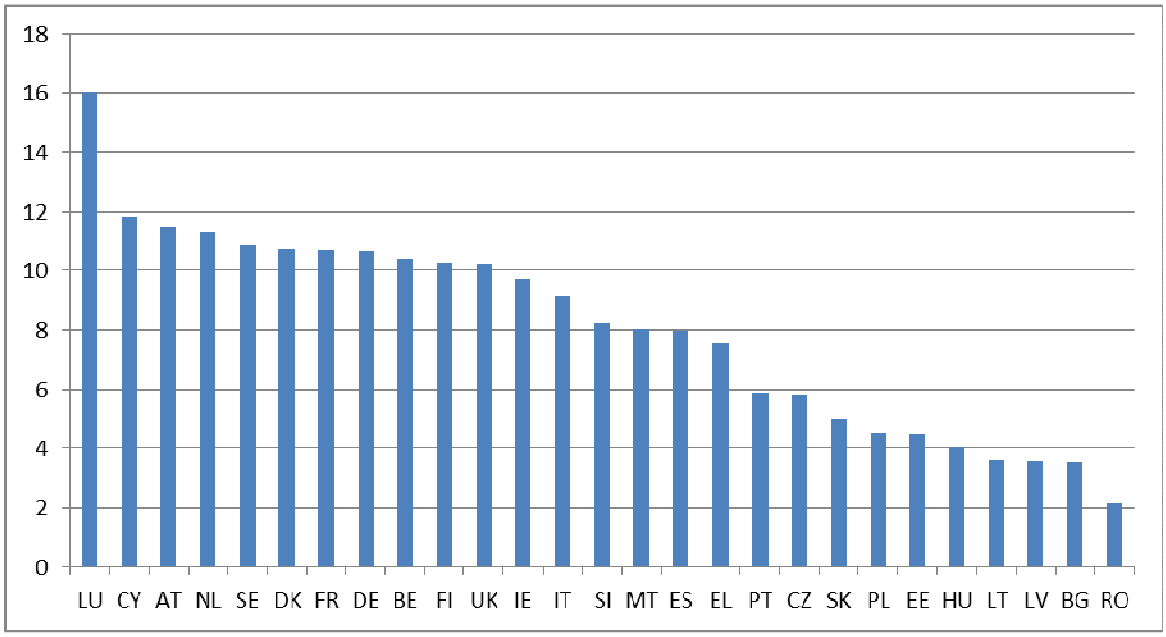
[66] See Annex 1 for further explanations on this indicator.
[67] The severe material deprivation rate should not be confused with the absolute measure of income poverty. The EU definition of material deprivation might be different from national definitions.
[68] The list of nine items covers the ability/inability to (1) pay the rent, mortgage or utility bills; (2) keep the home adequately warm; (3) face unexpected expenses; (4) eat meat or protein regularly; (5) go on holiday; (6) afford to buy a television; (7) afford to buy a washing machine; (8) afford to buy a car; (9) afford to buy a telephone.

3.2.1. Population 65+ at risk of poverty or social exclusion

Risk of monetary poverty and poverty gap for the elderly

As the at-risk-of-poverty rate needs to be contextualised in relation to the poverty thresholds which vary greatly across Member States – from €2122 pps[69] in RO in 2010 to €16 048 in purchasing power standard (PPS) in LU. In fact, the lowest thresholds (RO, BG, LT, LV) are three to four times lower than the highest ones (LU, CY, AT, NL) highlighting the very different income and living conditions in Member States and contextualising the analysis of the at-risk-of-poverty rates (Figure 12). [70]

Figure 12. At-risk-of-poverty thresholds for a single person in thousands of EUR in purchasing power standard, 2010



Source: EU-SILC

Looking in more detail at the current levels of poverty risk for older people, substantial differences exist between Member States (Figure 13). In 2010 in the EU-27 on average and in 13 Member States (CZ, DE, EE, FR, IT, LV, LT, LU, HU, NL, PL, RO and SK), **the at-risk-of poverty rate for people above 65 has been lower than that for the population aged 0-64**. This reflects the fact that monetary incomes of older people have been better protected than those of working age population in the times of crisis, even if some Member States managed to reduce risk of poverty prior to the crisis. In several Member States (e.g. BE, BG, DK, CY[71],

[69] Purchasing power standard (pps) is a weighted average of the purchasing power of the national currencies of EU Member States. As such it reflects the average price level in the EU 27 or, more precisely, the weighted average of the price levels of Member States.

[70] *Third Report on the Social Impact of the Economic Crisis and On-going Fiscal Consolidation*, Social Protection Committee, 2012.

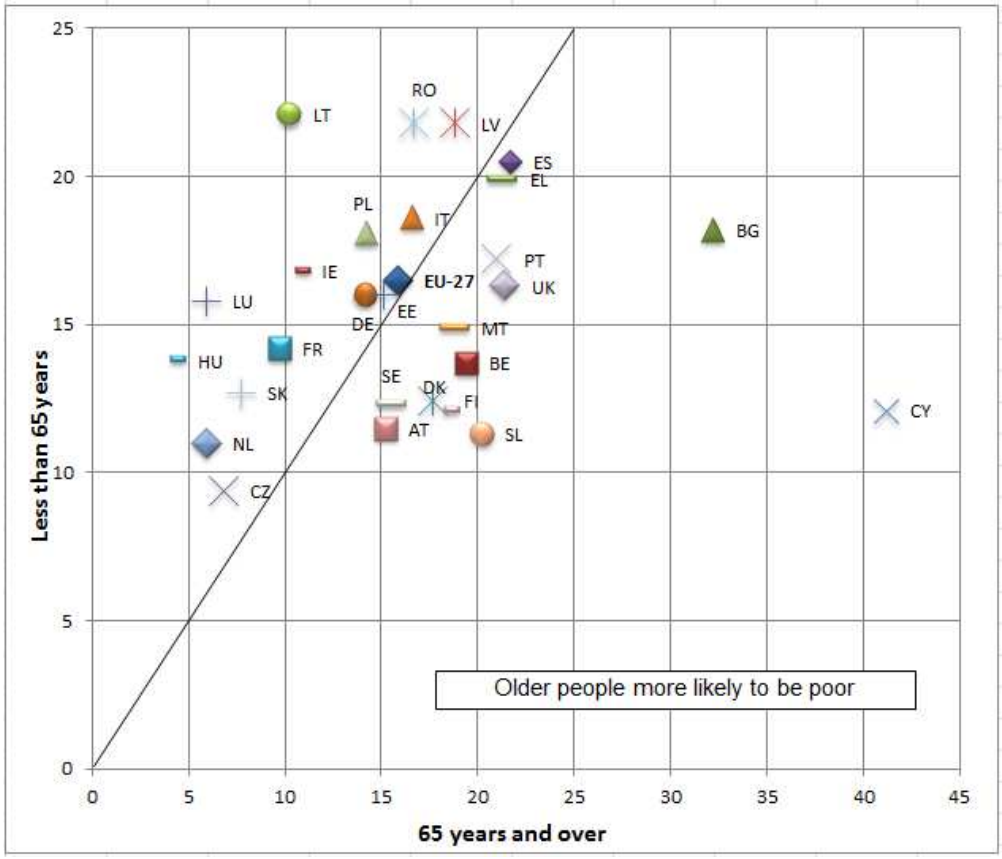
[71] CY in particular, displays an extremely high at-risk-of-poverty rate for older people (45.2%), which is more than four times greater than the corresponding rate for people aged 0-64 (11.6%). The main reason seems to be the fact

MT, AT, FI, SI and UK[72]) the risk of poverty for older people compared with the poverty risk for the population aged 0-64 is higher and the difference in many instances is significant.

that the level of social insurance pensions is still influenced by the insurance record under the basic flat scheme which was in force before 1980. Relatively high poverty threshold, which is influenced by the structure of tax system, is another important driver of high poverty rates for older people. Furthermore, informal solidarity between generations, which is a common cultural feature in CY, is not reflected in the statistical data, and should be also taken into account when assessing the situation of the country.

[72] According to the national measure of poverty, older people in the UK are exposed to a lower risk of relative poverty than the working-age population when incomes are measured After Housing Costs.

Figure 13. At-risk-of-poverty rates, aged less than 65 vs. 65+, 2010



Source: Eurostat, EU-SILC, [ilc_li02]

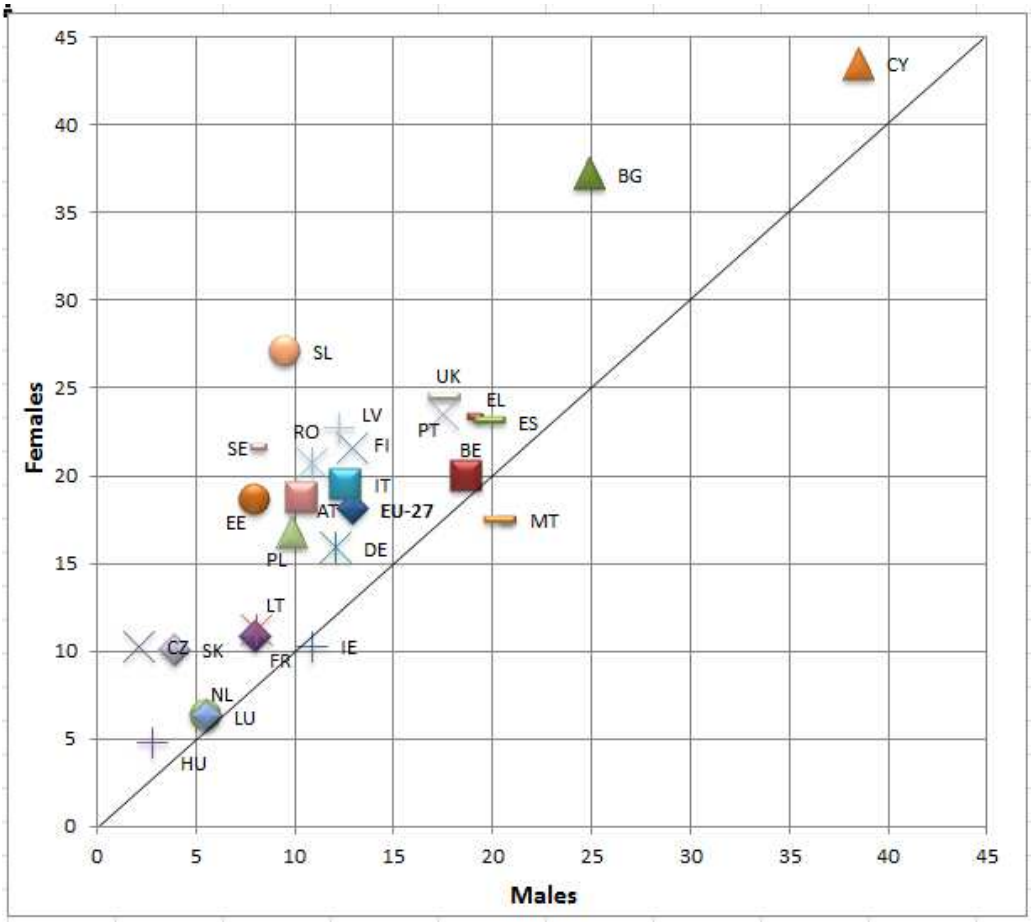
Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

When investigating the gender dimension of the risk of poverty in old age, substantial differences emerge between men and women. As the at-risk-of-poverty rates are based on equivalised household income, differences between men and women fundamentally reflect income differences between people living in single person households. In almost all Member States **single old women in general have a much higher risk of poverty compared to single old men.** This result is even more striking when these figures are compared with the corresponding poverty risk for younger cohorts: for the population aged 0-64, the poverty risk for women is in many cases comparable to or even lower than that for men.

However, this may also reflect changes in the labour market for younger women. Current poverty rates among the 65+ group mirror past accrual of pensions, but future developments are difficult to evaluate as conflicting trends will come into play in the coming decades: the maturation of pension schemes and the increase in female workforce participation will continue, but the effects of past unemployment levels and increasing partial employment and the impact of recent reforms (which often translate into decreased benefit levels or less

redistribution) will begin to emerge. It is important to develop tools to monitor these potential future developments.[73]

Figure 14. At-risk-of-poverty rates 65+, males vs. females, 2010

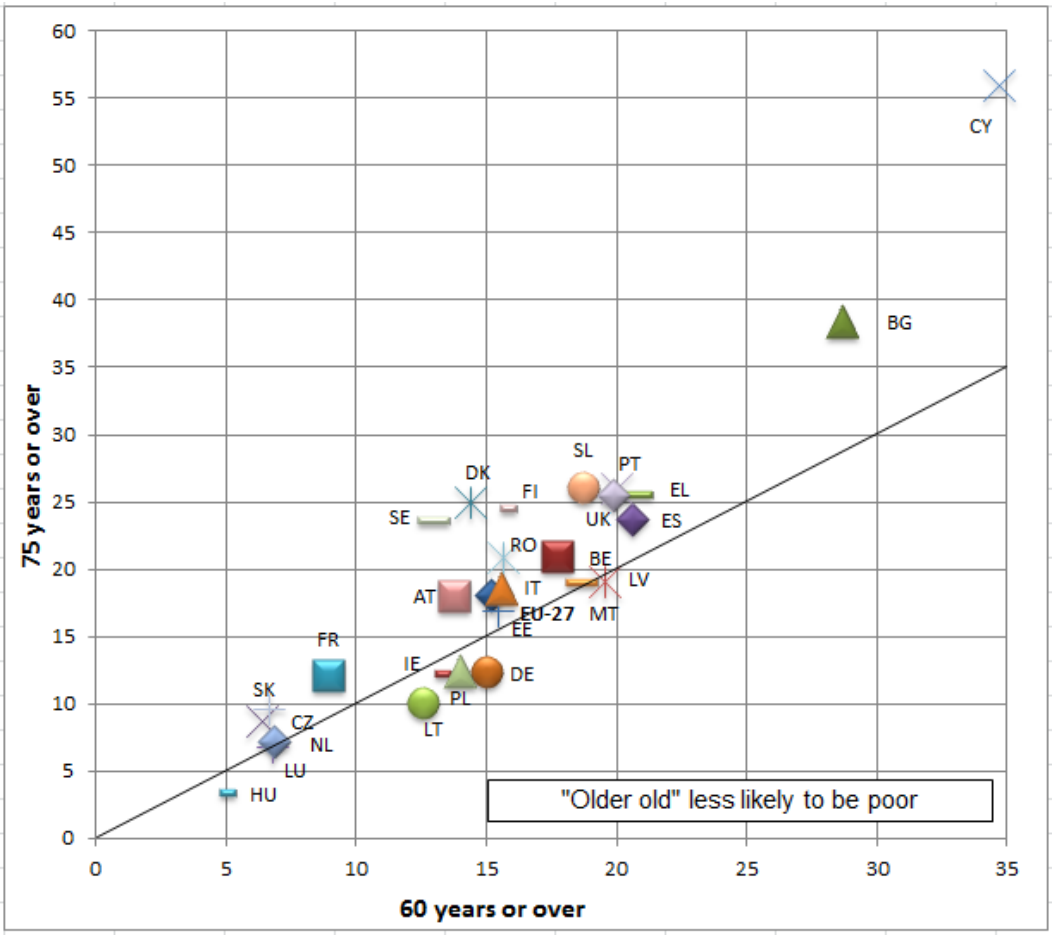


Source: Eurostat, EU-SILC, [ilc_pnp1]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

[73] For more details please refer to chapter 5.1 on the gender pension gap.

Figure 15. At-risk-of-poverty rates, 60+ vs. 75+, 2010



Source: Eurostat, EU-SILC, [ilc_pns1]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

In the majority of Member States (with the exception of DE, LV, LT, LU, HU and PL) **the oldest cohorts, aged 75 and over, tend to have a higher risk of poverty than those over 60** (Figure 15), reflecting in particular the lower coverage of pension systems in the 1950s and 1960s, the compound effect of inflation indexation of benefits, or the fact that more people aged 75+ live alone compared to other age groups. In other cases, the high poverty risk among the very elderly can be attributed to lower accrued pension entitlements due to incomplete careers (especially among women, who dominate the older age groups) and to social security systems which may have been less generous in the past. However, it is worth mentioning that in many Member States survivors' pensions do give a certain protection from poverty for widows or widowers. A higher risk of poverty for older pensioners in some countries might reflect entry into force of pension reforms which made pension benefits less generous or the price indexation of minimum pensions which leads to lower relative incomes compared with the working age population the longer a person is in retirement.

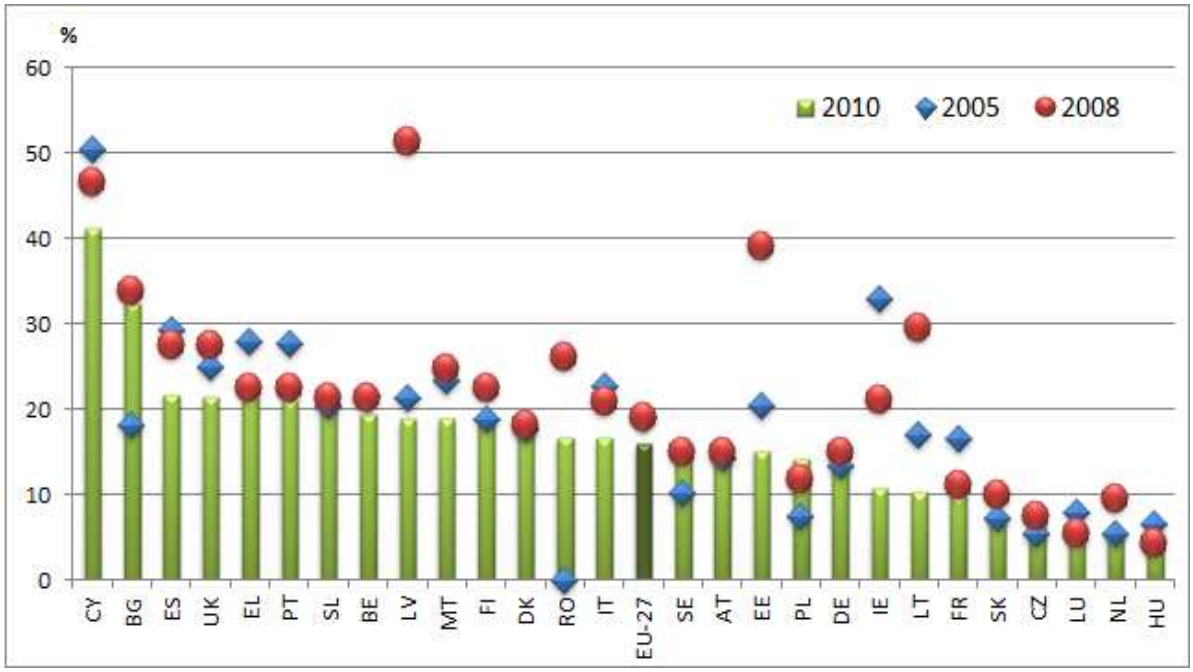
Regarding the **evolution of the ratio over the last years**, the at-risk of poverty rate of older people (65+) in the EU-27 has been reduced from 18.9% in 2005 and 2008 to 15.9% in 2010. Figure 16 presents levels of at-risk-of-poverty registered in Member States in 2005, 2008, and 2010. Countries are ranked from the one where the at-risk-of-poverty decreased the most (in terms of pp.) between 2005 and 2010 to the one where it increased the most[74].

IE, ES, FR, EL, PT, CY and IT recorded a downward trend in the poverty risk between 2005 and 2010 which resulted in a drop in the value of the indicator of at least 5 p.p. In LT, EE, and LV the at-risk-of-poverty in 2010 was lower than in 2005, but in the meantime it reached higher levels (e.g. 51.2% in LV in 2008), as pensioners did not benefit from the pre-crisis economic boom to the same extent as the working age population[75]. The poverty rates also dropped by around 2 p.p. in HU and LU, but here the drops were observed before 2008. In MT, FI, NL and SK the initial increases in the risk of poverty between 2005 and 2008 were followed by a decrease so that levels in 2010 were similar to the ones in 2005. The at-risk-of-poverty did not change much over the period in SI, DK, DE and AT. In BG, PL and SE it increased, especially between 2005 and 2008. In SE this is due to the in-work tax credit that was introduced to encourage labour market participation.

It needs to be underlined that as the economic crisis hits the working population first, this has two immediate effects: rising unemployment and lowering of wages. As a result, the median income may drop, and as pensions tend to remain stable, this **shifts the relative position of beneficiaries**. Between 2009 and 2010, the median income has fallen in all but six Member States - BG, AT, PL, PT, RO and SK. The largest decreases were observed in LT and LV. In the countries where the median income declined, this has also lowered the poverty threshold[76]. But the full effect is not yet clear in the data. In fact as the 2010 SILC data are based on 2009 income levels these results show only the first effects of the crisis on the income levels of the working age population. Moreover, in some Member States the consumption basket of older people might have been more affected by inflation than for the general population (e.g. fuel, medicines).

[74] No data for Romania in 2005.
[75] Still a significant number of pensioners may over the period have been lifted out of poverty by ad hoc increases such as the 5% rise in pension levels in Estonia in 2009.
[76] *Third Report on the Social Impact of the Economic Crisis,* SPC

Figure 16. Level of at-risk-of-poverty rate (65+) in 2005, 2008 and 2010



Source: Eurostat, EU-SILC, [ilc_li02]

Note: At risk of poverty rate (cut-off point: 60% of median equivalised income after social transfers)

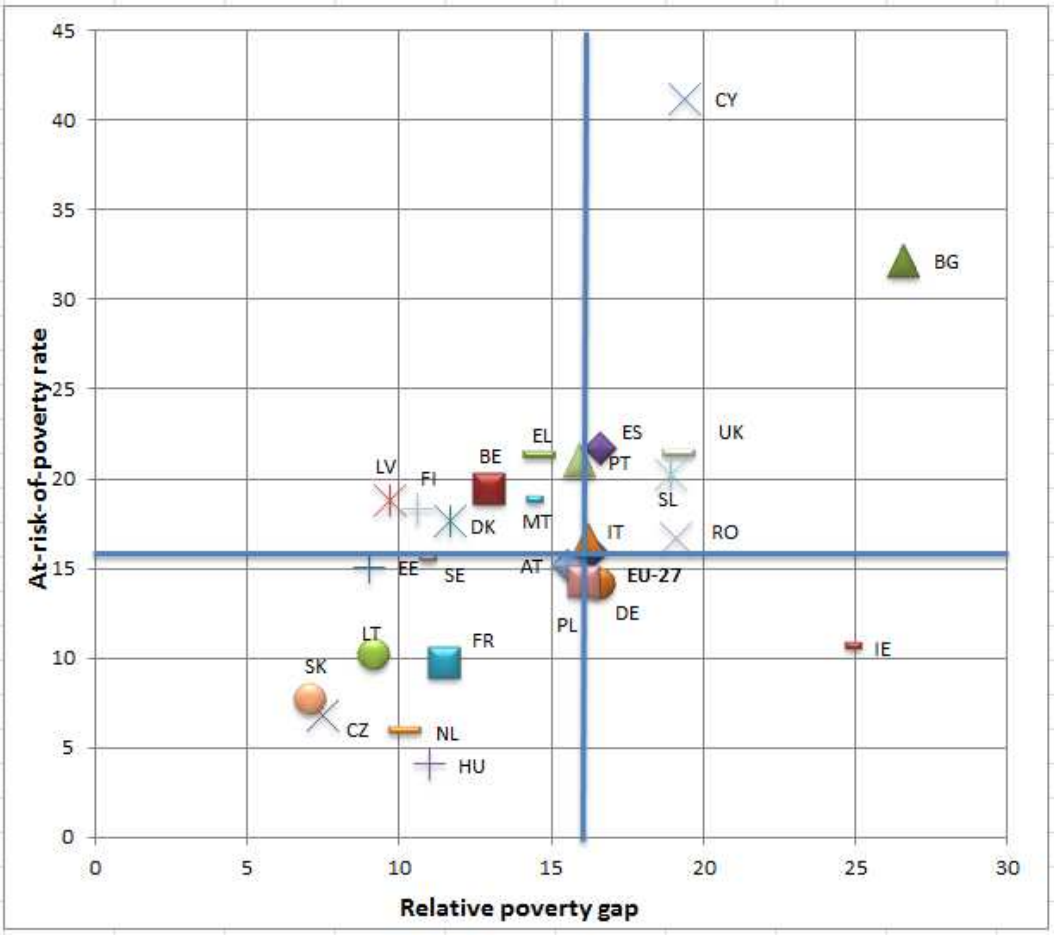
Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

According to the FR national data (Insee-DGFiP-Cnaf-Cnav-CCMSA, enquêtes Revenus fiscaux et sociaux 2006 à 2009) there was an increase in poverty rate between 2006 and 2010. At-risk-of-poverty rate at 60% of the median threshold: 13.1% (2006) 13.4% (2007) 13% (2008) 13.5% (2009). At-risk-of-poverty rate at 50% of the median threshold: 7% (2006), 7.2% (2007), 7.1% (2008) 7.5% (2009).

- *Intensity of poverty: poverty gap of the elderly*

How far below the poverty threshold is the income of older people at risk of poverty? The intensity of poverty measured with the **poverty gap of the elderly** helps to answer this question. The indicator is calculated as the difference between the median equivalised disposable income of persons below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold, expressed as a percentage of the at-risk-of-poverty threshold. An analysis that combines the at-risk-of-poverty rate together with the poverty gap gives a more complete picture of the situation, and shows the scale of the challenge of lifting older people out of monetary poverty in a given country (Figure 17).

Figure 17. At-risk-of-poverty rate of older people (65+) at 60% median income threshold vs. relative poverty gap, 2010



Source: Eurostat, EU-SILC, [ilc_li02], [ilc_pns5]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

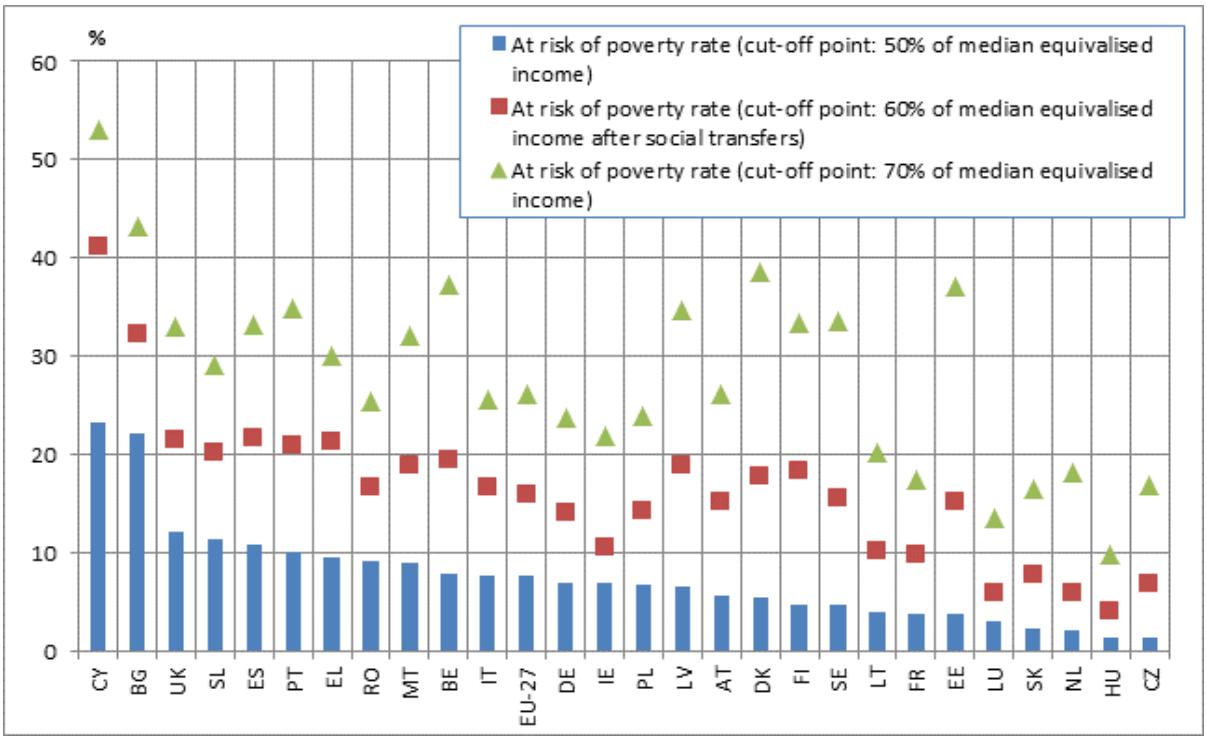
The poverty gap for the elderly reached 16.2% at EU-27 average in 2010, but there are large differences across countries. The biggest poverty gap for older people was observed in BG (26.6%). UK, RO, CY and SI recorded poverty gaps of around 19%. The shallowest gaps have been observed in SK, CZ, EE, LT and LV, meaning that most of the individuals recorded as being at risk of poverty have an **income that is actually just below the threshold**.

In 2010 six Member States (BG, ES, CY, RO, SI and UK) had both at-risk-of-poverty rates of older people and the poverty gaps higher than the EU-27 average. In ten countries (CZ, EE, FR, LT, HU, NL, AT, PL, SK and SE) both indicators registered values lower than the EU-27 average. In DE and LU the at-risk-of-poverty rates were lower than the average but the poverty gap higher. In the remaining nine Member States (BE, DK, IE, EL, IT, LV, MT, PT and FI) the poverty rates were higher than the EU-27 average, but with a shallower poverty gap.

To analyse the intensity of poverty it is also interesting to look at the proportion of people with incomes below **different thresholds**: this provides a more accurate picture of the dispersion of the poor around or below the poverty line used in previous paragraphs. Small gaps between different cut-off points mean that more people are in the lowest part of the income distribution.

In the EU-27, 3.2% of people aged 65 and over live on an income below 40% of the median income in their country, 7.6% below 50%, 15,9% below 60% and *contribution to adequacy in retirement*" (Figure 18). This shows that half of the elderly population at-risk-of-poverty (measured at the 60% cut-off point) would need an increase of at least 20% of their equivalised income to lift them up the poverty threshold set at 60% of the median income (as they are now between 50% and 60% of median income), and for a fifth an increase of at least 50% of their income would be necessary (as they are below 40% of median income).

Figure 18. Proportion of people aged 65+ measured with income below 50%, 60% or 70% of median equivalised income, 2010



Source: Eurostat, EU-SILC, [ilc_li02]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

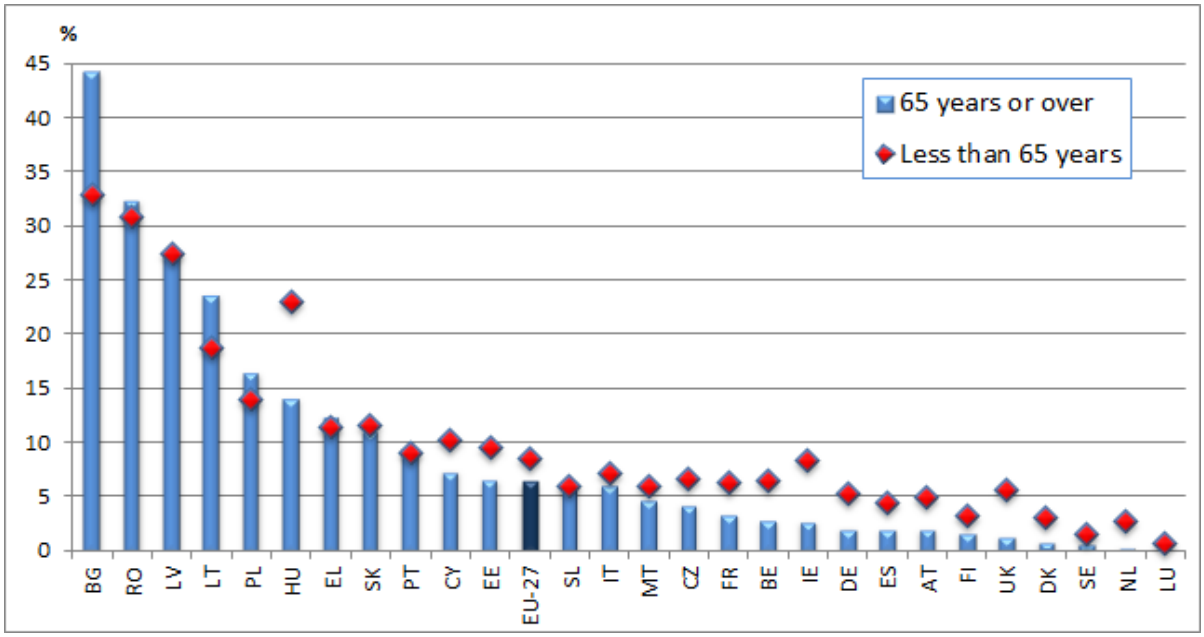
The situation varies across Member States. Countries with similar at-risk-of-poverty rates calculated in relation to the 60% thresholds show significant variations in the number of people who are poor when more severe criteria (lower thresholds) are used. Among the countries with poverty rates above the EU average at 60% cut-off, FI and DK have poverty rates below the EU average at 50%, meaning that there are less "very poor" people. On the other hand, DE and PL

have poverty rates of the elderly lower than the EU average at a 60% cut-off, but similar rates of very poor people (below the 50% threshold) to the EU-27.

Severe material deprivation for the elderly[77]

In contrast to the at-risk-of-poverty rates, the severe material deprivations rates reflect the level of the overall living standards in a given country. The severe material deprivation rates are higher in countries with lower GDP per capita while at-risk-of-poverty rates are higher in countries with more unequal income distribution. In 2010, the severe material deprivation rate for population older than 65 exceeded 15% in BG, RO, LV, LT and PL. In HU, EL, SK, PT, CY and EE it was higher than the **EU-27 average at 6.4%** (Figure 19). Interestingly, the **older population is more severely materially deprived than the working age population** in BG, RO, LT, PL, EL, PT and SI. In some of these countries the rapid improvement in living standards due to economic growth before the crisis mainly benefited the younger age groups, while elderly people faced serious material deprivation.

Figure 19. Severe material deprivation rates 65+ vs. 65-, 2010

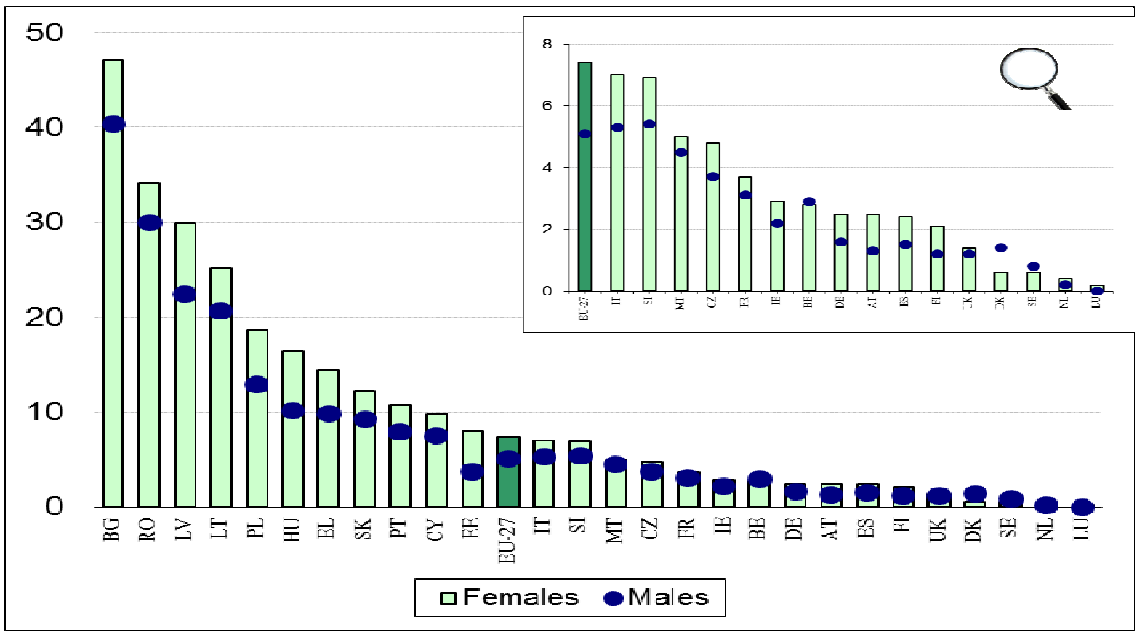


Source: Eurostat, EU-SILC, [ilc_mddd11]

Furthermore **women over age 65 were more likely to be severely materially deprived than men of that age** in 2010 in all Member States except SE, DK and BE (Figure 20). The differences in the rates for men and women are however not very large in general, although BG, LV and HU have more than 6 p.p. difference in favour of men.

[77] Note that this is not one of the commonly agreed indicators of the pension strand. However it is an agreed indicator for measuring poverty.

Figure 20. Severe material deprivation rates 65+, Males vs. Females, 2010



Source: Eurostat, EU-SILC

Regarding the evolution of the ratio since 2005, the **severe material deprivation rate of older people (65+) in the EU-27 has been reduced** from 10% in 2005 to 7.4% in 2008 and 6.4% in 2010.

Figure 21 illustrates the levels of severe material deprivation registered in Member States in 2005, 2008 and 2010. Countries are ranked from the one where the rate decreased the most (in terms of p.p.) between 2005 and 2010 to the one where it increased the most and results are presented in two scales (rates up to 70% and up to 10% through the period).

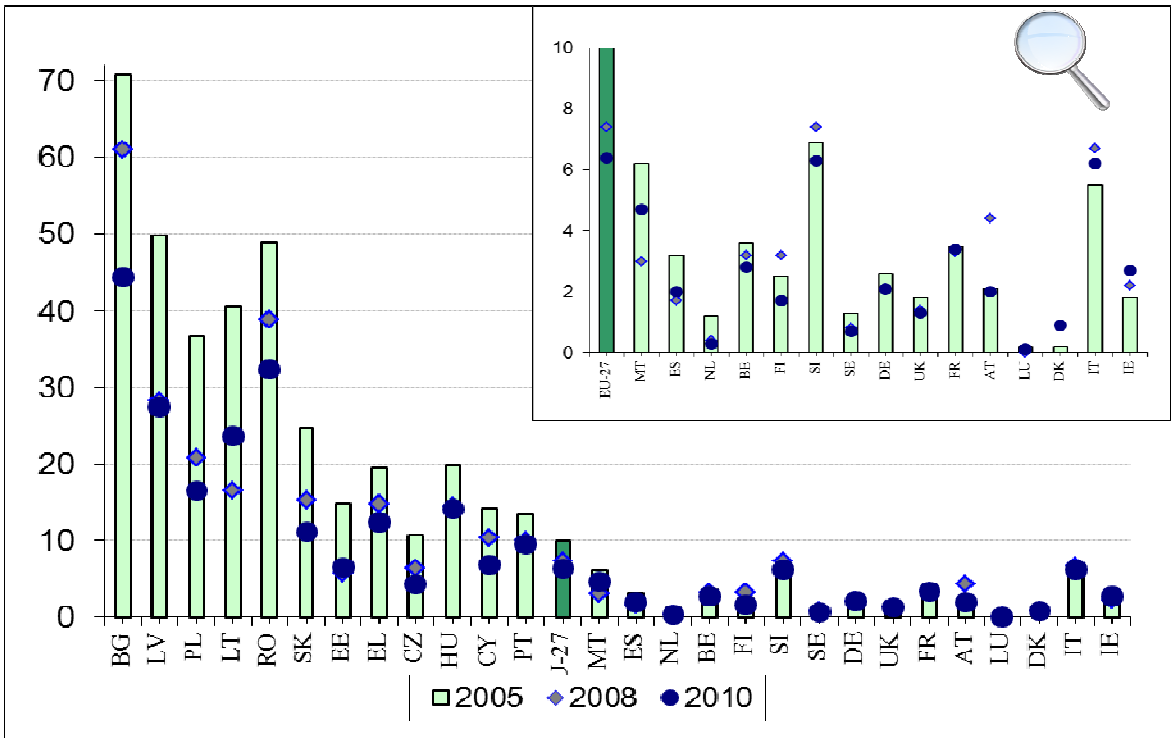
Interestingly, all Member States where the severe material deprivation rate for older people (65+) in 2010 was higher than the EU-27 average, managed to reduce the rate between 2005 and 2010 at a faster pace than the EU average. The most remarkable decreases have been recorded in BG (-26 p.p. between 2006 and 2010), LV (-22 p.p. between 2005 and 2010) and PL (-20 p.p. between 2005 and 2010). LT, RO and SK also managed to reduce the rate by more than 10 p.p., whereas CY and EE managed to reduce it by more than 7 p. p.

In a number of countries the pace of reduction was higher before 2008 and then stalled (e.g. in LV, PL, HU, PT, DE, UK) or the trend was even reversed to higher severe material deprivation levels in 2010 after hitting the lowest levels during the period in 2008 (e.g. in LT, MT, ES). This stands in contrast to changes in the at-risk-of-poverty rates, which are a relative concept, and whose improvement during the crisis has reflected to a great extent declining incomes in the working age population.

Countries with low levels of severe material deprivation have less scope to decrease the rates, but even here progress has been observed. For example between 2005 and 2010 in BE, NL, SE

and UK and between 2008 and 2010 in FI, SI and AT. By contrast, severe material deprivation among the elderly increased between 2005 and 2010 in IE, IT and DK.

Figure 21. Level of severe material deprivation rates of people aged 65+, 2005, 2008 and 2010

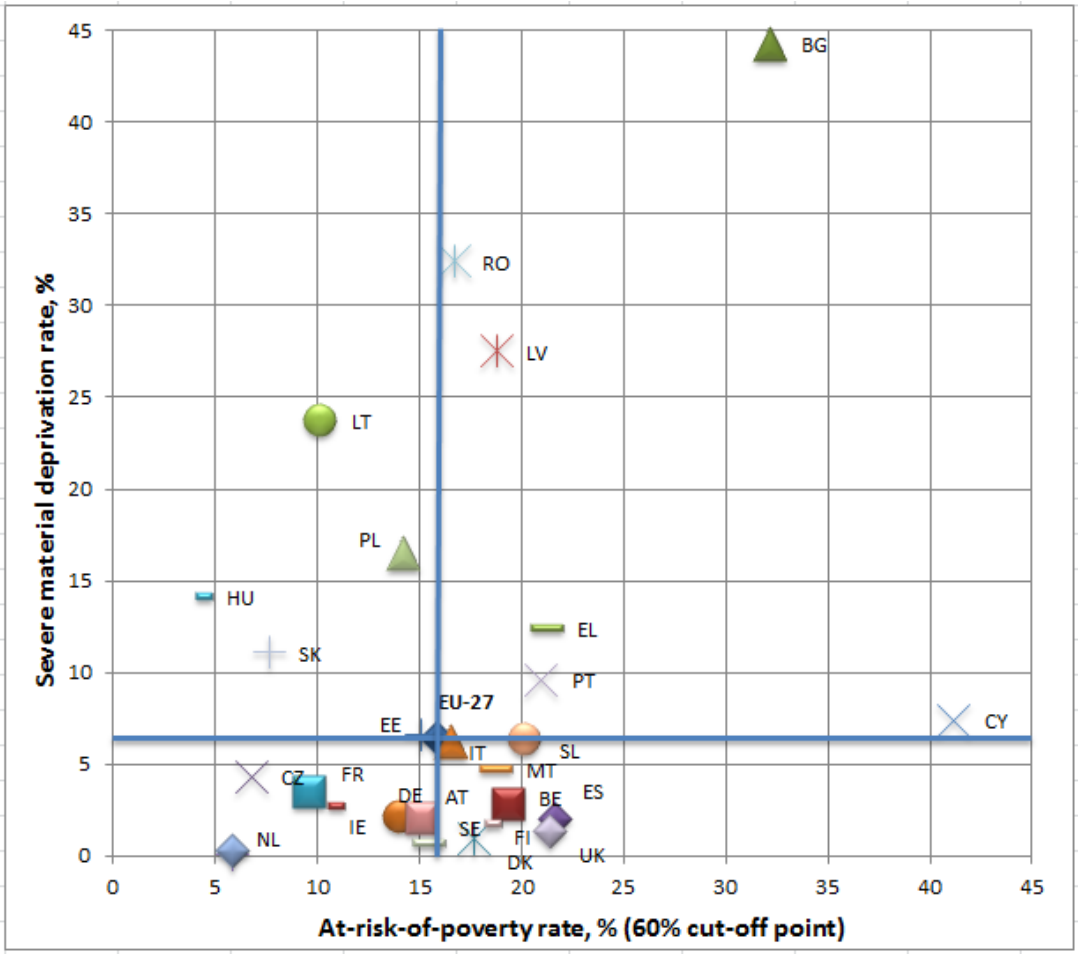


Source: Eurostat, EU-SILC

Monetary poverty and severe material deprivation: risk of poverty or social exclusion for the elderly

It is also important to monitor whether there are divergences between the various indicators for some countries and how these can be explained. **The combination of the relative measure of income poverty of older people and the absolute measure of severe material deprivation brings an interesting pattern**. In 2010 both the at-risk-of-poverty rates and the severe material deprivation rates were higher in BG, EL, LV, PT and RO than in the EU-27 on average. In EE, LT, HU, PL and SK only the severe material deprivation rates were higher, whereas the at-risk-of-poverty rates lower than the EU-27-average (Figure 22). The reverse was the case in BE, DK, IE, ES, IT, MT, SI, FI and UK, which had lower rates of severe material deprivation, but higher at-risk-of-poverty rates. In the remaining Member States (CZ, DE, FR, LU, NL, AT and SE) both indicators were lower than the averages for the EU-27.

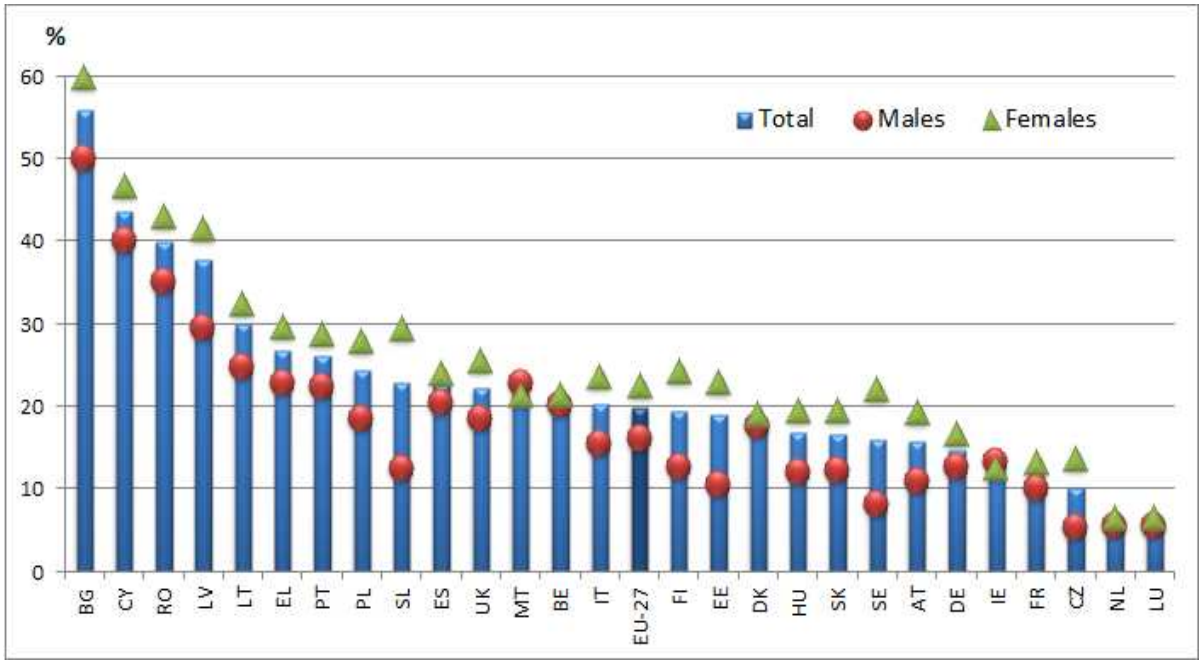
Figure 22. Severe material deprivation rates of people aged 65+ vs. at risk of poverty rates of people 65+ (60% cut-off point), 2010



Source: Eurostat, EU-SILC, [ilc_mddd11], [ilc_li02]

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

Figure 23. People aged 65+ at risk of poverty or social exclusion, %, 2010



Source: Eurostat, EU-SILC, [ilc_peps01]

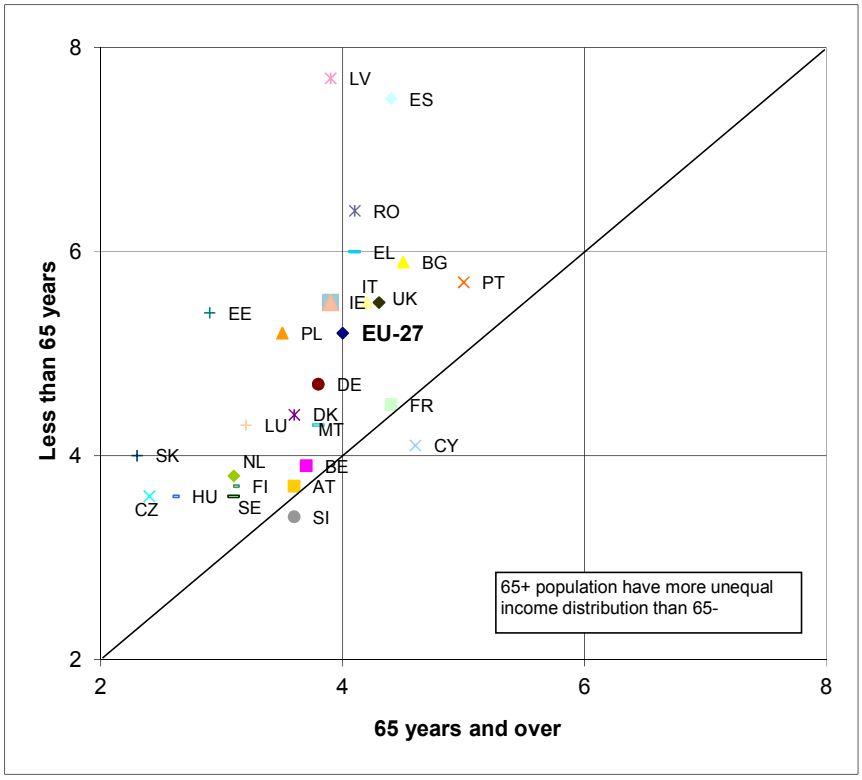
Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

The overall risk of poverty or social exclusion (the EU 2020 indicator which in case of people aged 65+ combines at-risk-of-poverty rate with the severe material deprivation rate) reached 19.8% in the EU-27 in 2010 (16.2% for men and 22.6% for women: see Figure 23)**.**

Income distribution for the elderly

The concept of income inequality/distribution is different from that of monetary poverty or the deprivation rate. Income inequalities depend on a number of factors, such as labour market status, the type of welfare state, or sources of income. On average, **income of the old age population is more equally distributed than that of the rest of the population** (Figure 24). In 2010 on average in the EU-27, the 20% of the older population with the highest income had 4 times more income than the 20% with the lowest income. For those under 65, the equivalent figure was 5.2 times. This is certainly an effect of the redistributive role of pension systems, but as benefits in payment are based on past pension contributions, this can be also a reflection of lower inequalities observed for the working age population in the past, especially in the former centrally planned economies. Only two Member States have higher income inequalities for older people than for the younger population. Between 2005 and 2010 income inequality for older people in the EU-27 was quite stable and the value of the indicator fluctuated around 4. On average in the EU-27 income distribution is more unequal between older men than older women.

Figure 24. Inequality of income distribution (S80/S20), 65+ versus 65-, 2010



Source: Eurostat, EU-SILC

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

3.2.2. The role of income guarantees in addressing poverty at old age

The former section has given a detailed picture of the poverty or social exclusion situation of the elderly. This section will answer questions relative to the specific contribution of pension schemes in addressing poverty at old age. In the majority of cases, pensions are an important poverty reduction tool, as they are the main income for most of the older people. Depending on how pension systems influence consumption smoothing in old age and what their coverage is, minimum income provisions can be one of the crucial elements of poverty alleviation.

Mechanisms in Member States that aim to tackle poverty in old age

Recent reforms of minimum income guarantee benefits reflect the growing attention given to providing adequate incomes in retirement and reducing poverty amongst older people.[78]

Member States report **a variety of** different elements in their pension systems, which play the role of **minimum income guarantees** for older people. One can identify four main types of such guarantees, three of social protection nature: (1) universal flat rate pensions usually based on residency and age, (2) contributory flat-rate pensions granted on the basis of the number of contributory years, (3) minimum benefits within earnings-related pensions and (4) separate social assistance resource-tested benefits.

While age and period of residence are the usual **eligibility criteria** in case of universal flat-rate pensions, age and period of insurance are applied for contributory flat-rate and minimum pensions. A few Member States offer universal flat-rate pensions (e.g. FI). Usually the benefit is calculated pro-rata for each year of residency, with a minimum set at three years and the full amount at 40 years. In IE, under the contributory system, the benefits are granted on the basis of the average number of contributory years over the person's working life[79].

Minimum benefits within earnings-related pensions are the most popular minimum income provision among the Member States. Publicly provided earnings-related pensions generally include strong redistribution mechanisms. To become eligible for the minimum benefit, one usually needs to reach the pensionable age and to complete a certain period of years of contribution or residence. These vary from 10 to more than 40 years, and sometimes are shorter for people who retire at the pensionable age.

On top of the pension benefits described above, most Member States provide a safety net for those who were unable to fulfil the contributory requirements or unable to meet the residency test. In some Member States this is a regular allowance granted to any individual or household unable to meet basic needs. In others the allowance is directed to people over the pensionable age or older recipients receive higher benefits than younger ones.

The social assistance allowances are usually **means-tested**. The nature of the means-test varies among Member States. Income tests are more broadly used than asset tests and (potential) income from capital is usually taken into account. Furthermore, in several Member States a fraction of assets or income (e.g. some social benefits) are disregarded in the test (e.g. DE, IE, FR or HU). Means-tests are also applied to some universal flat-rate pensions (e.g. in FI and SE), or earnings-related pensions.[80]

[78] A description of such income guarantees has been undertaken by the SPC in 2011 by means of a **questionnaire** that collected up to date information from Member States. The 2011 questionnaire updates the 2006 SPC Special Pensions Study on "*Minimum income provision for older people and their contribution to adequacy in retirement*".

[79] At the moment the level of contributory pension paid in IE (once the minimum paid contribution requirement has been satisfied) is linked to the average number of contributions a person has paid or been credited with over their working life.

[80] For instance in Finland, the income-tested national pension is granted to everyone whose pension income is below a certain threshold. Every EUR from earnings-related pension income, that exceeds the threshold, reduces the value of national pension by 50 eurocents, so that even recipients of small earnings-related pensions receive benefits over the level of minimum pension. National pension is not granted to individuals whose earnings-related pension reaches +/- 1,200 EUR/month (the limit varying according to the marital status of the pensioner). Moreover, from 2011 an additional guarantee pension has been granted to those whose other pension income is below 714 EUR/month.

Coverage of minimum income provisions (expressed as number of recipients as a share of population over certain age threshold) varies greatly among Member States and reflects the different nature of these provisions. For instance, the universal flat-rate pensions have nearly 100% coverage in UK and NL. Also in FI the coverage is around 100%, but only 50% of population aged 65 and more are beneficiaries. This is because they are subject to means-test, so for instance only around 8% of beneficiaries in FI receive the full amount of the universal national pension. In contrast, the contributory flat-rate pensions in IE reflect career histories and 62% of those aged 65 and more are in receipt, with men representing a bit less than 2/3 of recipients.

Earnings-related minimum pensions can also have significant coverage rates up to 50%, but usually only 15-25% of population 65+ is in receipt of earnings-related minimum pensions (e.g. in BG, ES, CY, LV, LU, AT).[81] Low numbers of recipients in some countries probably reflect the low value of the minimum earnings-related pension compared to the average or median pension and to some extent low historical employment rates, especially for women (reflecting historical predominance of male breadwinner households). A higher number of recipients might be an effect of high income inequalities of the working age population in the past, so that many low income earners are entitled to minimum earnings-related pensions today.

Minimum income provisions for older people are very often complemented with **specific benefits** that are to help older people with a variety of expenses. Most of these benefits provide assistance for specific needs which are relevant for older people or because older people are less able to respond to large one-off costs. We can especially distinguish here housing, medical and fuel allowances, or reductions in public transportation fares. Their coverage is usually limited to less than 10% of pensioners or people over the age of 65. There are a few exceptions, where the coverage is higher, e.g. lower transportation fares, free public transportation in CY, housing allowances in DK, IE, FI and SE, fuel allowance in IE, or medical allowance in DK cover around 25% of old-age pensioners. Similarly health care is the area where Member States usually provide some assistance, usually in the form of universal coverage, assistance with co-payments or free access.

Additional benefits and services provided at national level and with wide coverage can play an important role in reducing poverty among older people. The very differing situations and lack of comparable data makes it difficult to draw a comprehensive assessment. Also in some cases coverage is low and the additional benefits are subject to means-testing.

It is important to look not only at the coverage of minimum income provisions and whether they are complemented by additional benefits, but also how they evolve in time. **Indexation** rules in the minimum income provisions for elderly vary between Member States, but also between different schemes within countries.

Social protection minimum income provisions are sometimes indexed on wages (e.g. DK, CY), but more often on prices (e.g. FR, LV, MT, AT, FI, SE). Some Member States apply price indexation with additional increases in times of higher economic growth (e.g. PT), improved budgetary situation (e.g. BE, LU) or on the basis of discretionary decisions (e.g. FI, ES). Other Member States apply a mix of price and wage indexation (e.g. PL), or do not have formal indexing rules (e.g. IE, HU). Social assistance benefits are more often indexed on *ad hoc* basis (e.g. BG, PL, SK).

[81] This means that while all pensioners who meet the criteria are covered by the earnings-related minimum pensions, only certain proportion of them is in receipt of minimum pensions.

Future **evolution of numbers of beneficiaries** of minimum income provisions will be shaped by two contradictory forces. On one hand, the steady increase of female participation in the labour market will translate in the future in higher accrued personal pension rights. This will lead to both a decrease in their coverage by minimum income benefits in old age and an average increase in their income situation.

On the other hand, one should also take into account that recent increases in employment rates include an increase of part time work which generally translates into lower accrual of pension rights. Furthermore, low levels of employment result in lower levels of accrued pensions. This relates also to the question of the treatment of non-contributory periods for people who do not have long enough contribution records (in particular as an effect of low employment levels and long-term unemployment) or of undeclared employment.

Most Member States do not consider that minimum income benefits would provide negative **incentives towards longer working lives or higher savings**, as those benefits generally play a significant role only for people aged 65 or more. In that respect, potential disincentives associated with benefits available for people aged less than 65 should be considered further.

However, in a situation where the link between contributions and benefits has been strengthened in the wake of the pension reforms, it is vital to promote active labour market participation for all groups so that individuals have the possibility to accrue adequate rights to pension benefits which would exceed the level of minimum income provisions.

Member States limit the potential disincentives of minimum income provisions to save more and work longer. Some countries do not provide a pension before pensionable age, if a potential pensioner has not accrued pension rights over certain threshold (e.g. the level of minimum pension provision). Other Member States disregard pensioners' earnings from work or give possibilities to de-retire as potential ways to increase incentives to work longer and savings levels. The disincentives depend on the pension scheme structure in a given country. In Finland, for example, every additional EUR from earnings-related pension reduces the amount of the national pension by 50 eurocents only. Moreover, to maintain incentives for low-wage earners to work longer, the higher pension accrual rate of 4.5 % earned after the age of 63 is added in full on the top of the national pension.

3.2.3. Europe 2020: Contribution of pension systems to the poverty reduction target

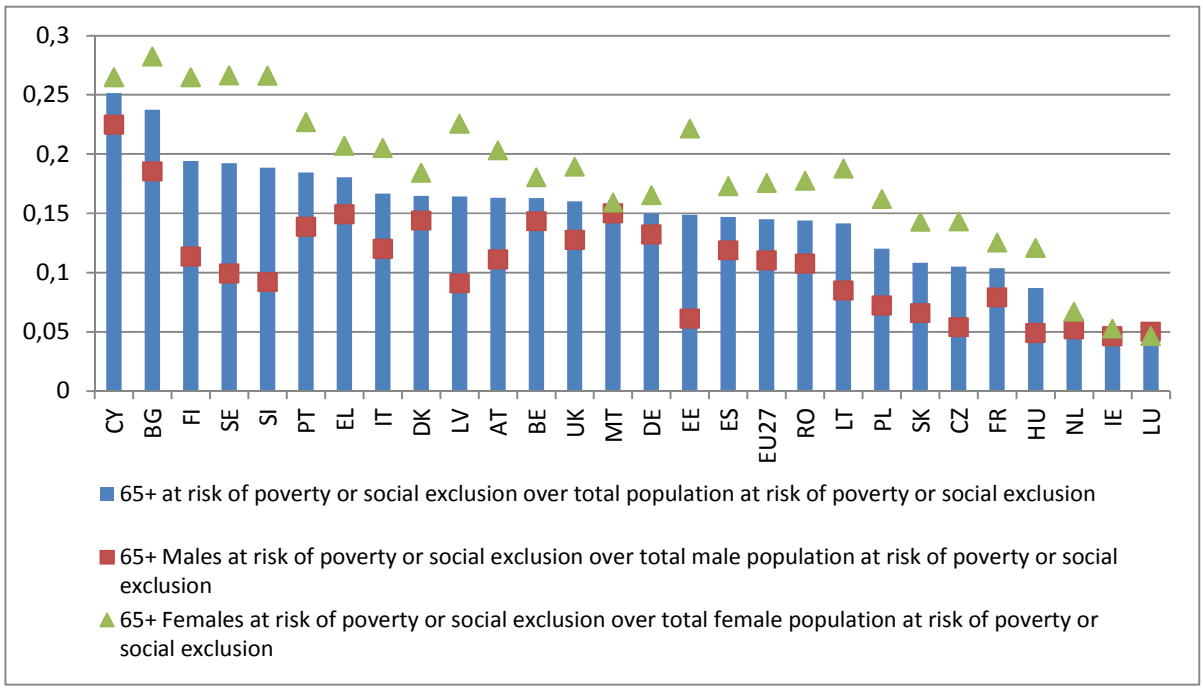
Europe 2020 is the EU's growth strategy for the coming decade. The Union has set five targets to be reached by 2020, including one on reducing the number of people in or at risk of poverty and social exclusion by 20 million[82]. Achieving the Europe 2020 poverty reduction target depends crucially on the continued contribution of pension systems to preventing and mitigating poverty in old age and the poverty threshold, which is determined by the evolution of the general level of income in the society.

[82] In the case of older people the risk of poverty or social exclusion of the people over 65 is used to measure a progress towards the EU2020 target (see Annex 1 for details).

Poverty rates of people 65+ are to a great extent a function of the poverty avoidance and poverty mitigating capacities of pension systems including instruments of minimum income provision for older people. Pensions represent by far the largest element in social protection systems, affecting the primary incomes of more people than any other part.

In 2010 there were 16.9 million people aged 65 and over in the EU who were at risk of poverty or social exclusion. Around 5.4 million of them were severely materially deprived and 13.4 million were at-risk-of-poverty[83]. In the majority of Member States people aged 65+ who are at risk of poverty or social exclusion represent between 10% and 20% of the total population at risk of poverty or social exclusion. The average for the EU-27 was at almost 15% in 2010[84], while in CY and BG the share of older people in total population at risk of poverty or social exclusion was over 20% (see Figure 25). This demonstrates that achieving the 2020 poverty reduction target crucially depends on developments for people aged 65+ and that **the potential ability of pension systems to affect the numbers in poverty and achieve the poverty target is considerable,** especially for Member States where older people represent an important share of people at risk of poverty or social exclusion. Clearly, the challenge would be bigger in Member States with higher proportion of the poor people.

Figure 25. Population 65+ at risk of poverty or social exclusion in relation to total population at risk of poverty or social exclusion, 2010



Source: Eurostat

Note: The EU Survey on Income and Living Conditions (EU-SILC) has a significant time lag. 2010 (t) data refer to income and employment for 2009 (t-1) while only the information on living conditions and material deprivation

[83] The severe material deprivation tries to identify the inability to afford some items considered desirable or even necessary by most people to lead an adequate life, while the at-risk-of-poverty is a measure of income poverty. The former is an absolute while the latter is a relative measure. The two numbers do not add up to 16.9 million, as around 2 million older people suffer from both deprivation and poverty as defined by the EU indicators.
[84] People aged 65 and more represented around 17.4% of total population in 2010.

refer to 2010 (t). In IE the reference period refers to the 12 months prior to the interview, while in the UK it is centred on the interview date.

In the case of older people, successful reduction of poverty will depend on whether the severe material deprivation and at-risk-of-poverty rate are tackled. In the coming decade, when the economic crisis is overcome, one can expect that the catching-up countries will record a decline in the severe material deprivation of older people along the overall increase of living standards.

It is more difficult to project the evolution of the at-risk-of-poverty among the elderly, which is a relative concept and to a large extent depends on the evolution of both future pension benefits (which to a large degree depends on their valorisation and indexation) and future earnings. Given the uncertain economic outlook for the next decade, it is tricky to forecast the evolution of pension benefits and earnings.

On one hand, in the event of protracted low growth Member States will have to continue to adjust social security expenditure to levels that reflect the trend of growth rate of the economy and are affordable in the long run. This could also affect pension expenditure, e.g. through lower indexation. An increase of the poverty rate can result from a slower increase in pensions than of general incomes, in particular for Member States with higher growth of wages and where pensions are indexed on prices.

On the other hand, painful economic adjustment might also affect evolution of wages in some EU Member States. If wages fall behind increases in prices and in consequence the median income stabilises or declines, pensioners on price-indexed benefits might be better protected against the risk of poverty.

As discussed in chapter 3.2.1, not only the scale of at-risk-of-poverty is an important factor, but also the depth of the poverty gap. In the EU-27, 3.2% of people aged 65 or over (2.7 million) live on an income below 40% of the median income in their country, 7.6% below 50% (6.4 million), 15.9% below 60% (13.4 million), and 26.2% below 70% (22.1 million, for reference see Figure 18).

Increasing the relative equivalised income of older people who are at-risk-of-poverty by 20% would help to lift around 7 million persons (those between 50% and 60% of median income), out of poverty (as defined within the EU2020 strategy). Such calculations assume that the value of the poverty thresholds do not change over time so incomes of working age population do not increase. This, of course, is not a desired result for the economic development of the EU.

Similarly, a relative drop in incomes of elderly people by $1/7^{th}$ could add another 8.7 million people to the group at-risk-of-poverty, as those with the income currently between 60% and 70% of median would fall under the 60% at-risk-of-poverty threshold.

The example above shows that **pension systems can achieve large scale contributions to the poverty reduction goal**. The questions are (1) whether the minimum income provision levels for older people can produce benefits that hover above the poverty threshold and help move people out of monetary poverty; and (2) how this can be financed?

3.3. Valorisation and indexation of pensions

Valorisation (pre-retirement indexation of contributions) and indexation (of benefits in payment) are both closely linked. Valorisation (Table 5) of past salaries or contributions has an impact on how pensions replace income from work at the moment of retirement, and indirectly on how much pensioners are exposed to the risk of poverty. Indexation of pensions is crucial for maintaining living standards after retirement.

Table 5. Valorisation of pensionable earnings in Member States

Variable	Member States
Wage growth	CZ, CY, LT, LU, SI, SK and UK
Wage growth and change in pensioner-contributor-relation or in number of contributors	DE, LV
Prices and wages	FR, FI, EE, LU and MT
Prices	BE, ES
Labour productivity and prices	PT
Average income	SE
Ad hoc	HU

Source: Indicators Subgroup of the Social Protection Committee

Note: Luxembourg – after 2020 100% prices and 50% wages

In the earnings-related pension schemes, all countries revalue earnings from earlier years to the time of retirement when calculating benefits. This mechanism adjusts for changes in costs and standards of living between the time pension rights were earned and when they are claimed. Valorisation of past earnings impact on replacement rates and fiscal sustainability in major ways. This is a result of the compound-interest effect.

Table 6. Indexation of income-related pensions in Member States

Variable	Member States
Wage growth	SI, DK and SE
Wage growth and change in pensioner-contributor-relation	DE
Prices and wages	BG, CZ, EE, CY, LU, HU, PL, FI, SK, MT and RO
Prices	BE, ES, FR, IT, LV, AT and UK
Prices and GDP growth (partially)	PT
Discretionary	EL, LT, IE and AT
Progressive	EL, IT and PT

Source: The 2012 Ageing Report, Joint Report on Social Protection and Social Inclusion 2009, Indicators Subgroup of the Social Protection Committee.

Note: Belgium: prices + partial adjustment to living standards. ***Hungary: prices + partial adjustment to net earnings growth in case of high GDP growth.*** Luxembourg: after 2020 100% prices and 50% wages. Latvia: no indexation until 2013 and price indexation from 2014.

Many EU countries with earnings-related schemes valorise past earnings in line with economy-wide wage growth. However, several countries have moved away from earnings valorisation in recent years and they valorise earnings to price inflation or a mix of price inflation and earnings growth.

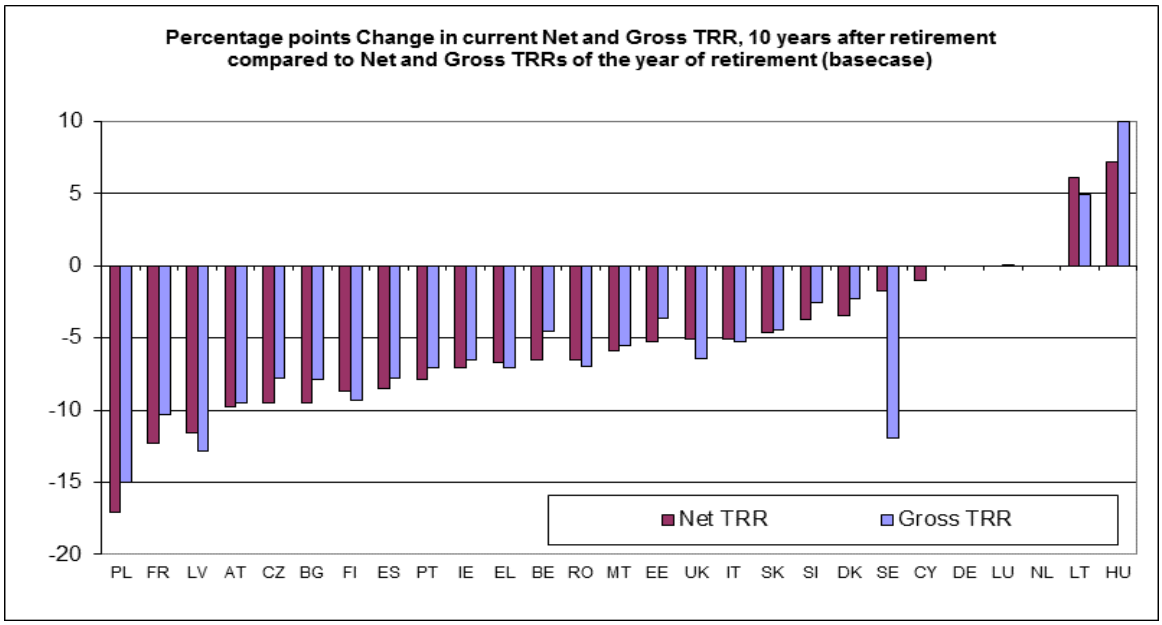
In addition, many countries have amended their indexation rules of pensions in payments granted under their main public pension scheme. See Table 6 for a summary of indexation rules of income-related pensions in Member States.

Indexation is no less important than valorisation to maintain the living standards of pensioners. Unless pensions in payment are protected by indexation, older people's consumption levels and relative standards of living can be disproportionately affected by inflation. Indexation of benefits makes their long-term real value more certain and helps to avoid recurrent political debates. Price indexation maintains the purchasing power of pensions, but is generally less than wage indexation. Therefore, in case of price indexation, replacement rates of the year of retirement explain only partially the adequacy of the pension system because they do not cover the relative decline during the pensioners' life.

The variant case of current Theoretical Replacement Rates that analyses “a worker ten years after retirement” is a useful tool to assess the situation in 2020 of pensioners who are retiring today (in 2010). This variant case calculates the pension 10 years after retirement (i.e. in 2020 for current replacement rates) of the individual who retired in 2010 divided by the income of another worker retiring in 2020 after 40 years career. This helps to provide an assessment of the evolution of the relative position of the individual, typically reflecting pension indexation. The Figure 26 shows, for a pensioner retiring in 2010, the percentage point difference between net and gross replacement rates ten years after retirement (i.e. 2020) compared to those ratios at the year of retirement (2010). According to the calculations, in all but a few Member States net replacement rates fall significantly (at least 5 p.p. and in some cases more than 10%) in all schemes ten years after retirement. This shows how the living standards of a pensioner will drop over time relative to the rest of the population as pensions in payment most often lag behind the evolution of wages. In case of LT the positive change is possible because pensions

have been temporarily cut in 2010 and 2011, and their original value would be restored afterwards. Indexation to wage growth was assumed in the calculation of pensions, so the 2020 value would be higher compared to the value in the base year 2010.

Figure 26. The effect of indexation on replacement rates 10 years after retirement



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

For a given expenditure level, the indexation issue can be viewed as a choice between a lower initial pension combined with earnings indexation and a higher starting benefit combined with price indexation. Different criteria could determine the choice[85].

Higher initial pension level may encourage early retirement, since people do not usually make calculations about later indexation. Younger retirees have more opportunities for spending on leisure, but health expenditures may increase with age, especially for long-term care. Indexation policy can have distributional effects, as people with lower incomes have shorter life expectancy. In addition, since women live longer, the choice applied is not gender neutral. Moreover, wage indexation of minimum income benefits may raise their level and strengthen work disincentives for those with lower incomes. Recipients of generously indexed benefits also have fewer gains from anti-inflation policies and thus have fewer incentives to bear the cost of adjustment.

A majority of countries in the EU rely on indexation rules for their earnings-related pensions that do not fully reflect developments in nominal wages. Some countries have introduced 'sustainability factors' and link indexation to demographic developments or financial stability of the system (e.g. DE, SE, PT), or use above-inflation rises in pension payments only in times of high economic growth (e.g. HU, PT).

[85] E. R. Whitehouse (2009), "Pensions, Purchasing-Power Risk, Inflation and Indexation", *OECD Social, Employment and Migration Working Papers*, No. 77, OECD Publishing. http://dx.doi.org/10.1787/227182142567

Low indexation of pension benefits often leads to a situation where older pensioners are more exposed to monetary poverty. Moreover, the inflation rate for older and younger pensioners might differ. This is why some countries have introduced progressive indexation of their pensions, where the increases granted to smaller pensions are larger. Otherwise, the poorest pensioners often have to rely on minimum income provisions. Some Member States adjust pensions by using indexes which reflect the appropriate basket of goods and services to measure the changes in cost of living faced by retirees.

The crisis has prompted some pension policy measures which are seen as part of the fiscal consolidation strategy. Notably, the need for cost-containment has motivated many Member States to review their methods for the indexing of pension benefits in payment and they have come to reduce the indexation of pensions or temporarily frozen pension benefits levels (e.g. ES, LV, and PT). However, **Member States have often prioritized the full indexing of basic, guarantee and minimum income provisions, so as to mitigate the risk of poverty and material deprivation for low income and vulnerable older people** (e.g. in ES, LT, PT). In CY cash benefit schemes have been addressed to pensioners' households whose total annual income is below the poverty threshold. Thus, in order to avoid increasing precariousness as part of austerity measures, Member States consider it important to concentrate pension benefits where they are most needed and seek savings where they can be more easily absorbed without causing a significant detrimental effect.

3.4. Other available economic resources

Adequate standards of living in old-age are not only about pensions. The discussion of the adequacy (and sustainability) of pensions is influenced by other policy areas such as labour market, health and long term care, and other benefits available to the elderly. Thus the question may arise as to the need for high pensions if all necessary services are available for free for pensioners or what the real value of a high pension is if no age-related services are available. There is a wide range of other specific benefits that are afforded to older people to help with a variety of expenses, such as health care, assistance with housing costs, transport and home care assistance and payments to help with things like heating costs in the winter or with general utility bills, such as gas, electricity and telephone costs. These benefits are another way of ensuring a higher standard of living in old age.

Box: Imputation of in-kind benefits

The monetary value of in-kind benefits

The cost of production is usually used as the basis of the monetary value of in-kind benefits. However, it does not reflect exactly the value of the service to the beneficiary. In fact, it may overestimate the real increase in well-being since some people would rather opt for a smaller monetary transfer than for the free use of public services that does not entail the liberty to consume the money as wished (Smeeding *et al*. 1993, 249; Canberra Group 2001, 15; Garfinkel *et al*. 2006, 24). Furthermore, public expenditure does not always reveal the real quantity and quality of services provided.

We can also employ other ways to assess the benefit's monetary value, such as the price that

individuals would be ready to pay themselves for the services, *the equivalent monetary value or utility value*, and the money 'freed' for other consumption (Smeeding 1977; Smeeding and Moon 1980; Hugounenq 1998, 6). However, the empirical findings with these methods do not differ greatly from the standard method of using the cost of production and may cause additional data problems.

Usually in-kind benefits are considered to be as valuable to the rich as to the poor. However, Smeeding (1977) discovered that as an individual's income grows, the public services substitute the cash transfers better.

Determining beneficiaries

Generally, it is assumed that only those who really use the service in question (or those eligible to do so) will receive the benefit. When the data used do not contain information on the receipt of in-kind benefits, the imputation is based on the probability of being a beneficiary.

For instance, in the case of healthcare or long-term care, data on the public spending by age and gender allow us to use a so-called *insurance approach*. The insurance value, or the benefit allocated to each individual, can be considered as the price of a private insurance and the premium is the same for everyone within the same age group – the higher the age, the higher the premium as the chances of being hospitalized increase. The government provided service is a substitute for a private insurance and this is the benefit a person receives from the system. In comparison, in an approach based on *real use* the value of the service (like medical visit) is allocated to each real user.

It is easier to acquire comparable data for the insurance approach, so this method is usually employed, but there are also some theoretical differences between the two methods. It is not reasonable to allocate a value of €150,000 for surgery to a patient's economic resources, but it makes sense to allocate the value of the insurance that a person would most probably purchase from the private market if there was no public health care system available.

In the assessment of the impact of in-kind benefits on wellbeing it is also important to bear in mind that in-kind benefits may merely compensate e.g. recipients' lower health status rather than increase their living standards. This is especially relevant in the case of recipients of terminal care.

The diverse nature of benefits and delivery mechanisms makes it difficult to quantify their impacts, which, however, should not be underestimated.

Depending on the mix of services provided in a given country, the well-being of different age groups (or household types) is affected in distinct ways. This is studied through a so-called *imputation* method where public spending on in-kind benefits is allocated to actual or potential users. The principal assumptions relate to monetary value of the in-kind benefit in question and determining beneficiaries. The definition of this mix of services would determine the data requirement for factoring in the in-kind benefits, which data collection in some Member States could pose a problem. This is explained in the Box above.

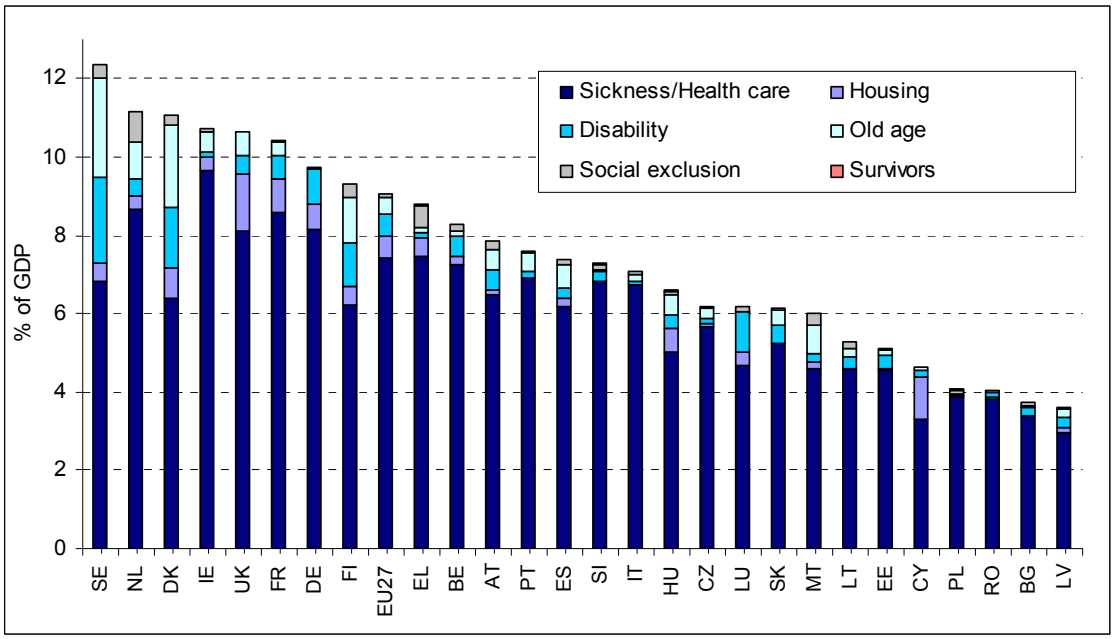
The size of publicly-provided in-kind services varies considerably across countries. Among EU Member States the share of in-kind services in GDP ranges from under 10% to almost 20%[86], but this covers services provided for the whole population and not older people only. There is also a wide variation in expenditure on social protection benefits in-kind which can be related to old age (healthcare/sickness, housing, invalidity, old-age, social exclusion, and survivors: see

[86] The impact of publicly provided services on the distribution of resources, OECD-European Commission, February 2011 (no data for BG, MT, RO).

Figure 27), especially when it comes to benefits other than healthcare. Depending on a mix of in-kind services provided in a given country, well-being of different age groups can be affected to a dissimilar extent.

In 2009 the expenditure on health-care in kind ranged from 3% of GDP in LV to 9.7% in IE, with the EU-27 average of 7.4%. Only UK and CY were spending more than 1% of their GDP on housing (EU-27: 0.6%). Furthermore, old-age in-kind benefits absorbed expenditure of at least 1% of GDP in SE, DK, FI and NL. However, one of the challenges in taking into account in-kind benefits is the lack of reliable harmonised data, and the fact that expenditure is usually not broken down by age group.

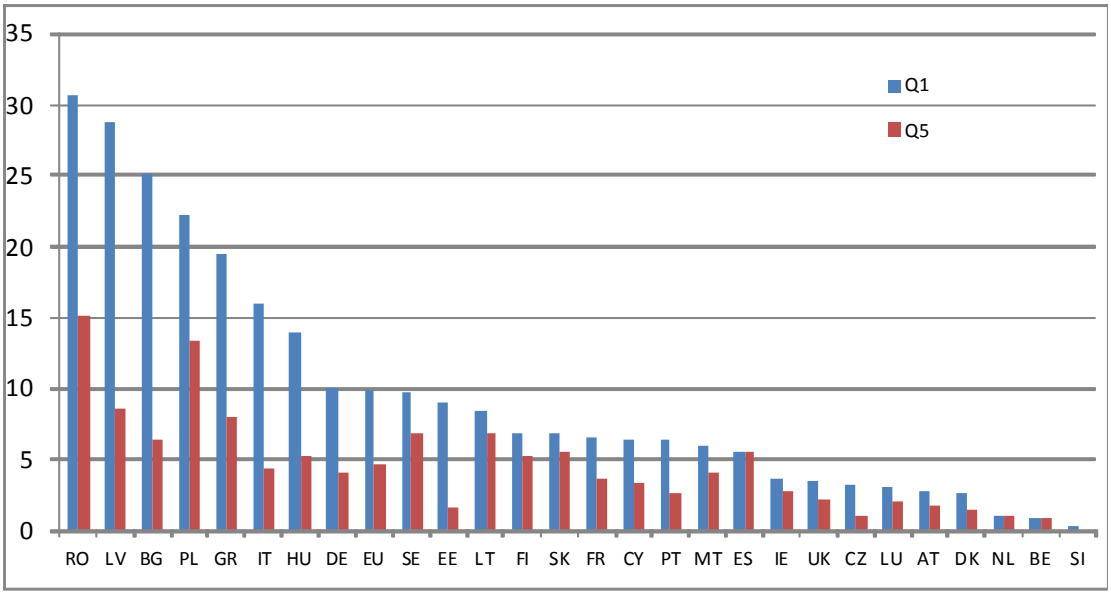
Figure 27. Spending on selected in-kind benefits, % of GDP, 2009



Source: Eurostat, ESSPROS

The level of access to services helps to better assess living standards across countries. Figure 28 is an illustration of the self-reported unmet health care needs of older people. More than a fifth of the poorest respondents replied that their healthcare needs were not met in the previous year in RO, LV, BG, and PL, as well as more than 10% of the richest respondents in RO and PL.

Figure 28. Unmet healthcare needs: % of the poorest and the richest income quintile, people aged 65-74, 2009



Source: Eurostat, EU-SILC

Data on expenditure on in-kind benefits and on the level of unmet care needs experienced show that in a number of countries in-kind benefits play a significant role and the actual wellbeing of older people might be higher than for instance the indicators of relative monetary poverty suggest. It needs to be noted that older people may be more vulnerable to cutbacks in the provision of health or care services, introduced as a part of austerity measures.

Tenure status is another non-monetary factor which influences living standards. Older people are more likely to own their homes, mortgage free, or have rents below market prices, so that their relative disposable income is in fact better than it seems from the cash measures on the indicators for poverty and average income used in previous sections. The imputed rent method takes into account housing tenure, and the results are significant in certain countries. For example in Spain the proportion of people over 65 at risk of poverty drops more than 11 percentage points when imputed rent is considered.

3.5. The gender gap in pensions

Since women are significantly overrepresented among people with adequacy problems in terms of at-risk-of-poverty-rates, low replacement rates and insufficient coverage, a deeper than usual reflection of gender issues is called for in a report on pension adequacy.

Few areas of social protection are as marked by gender differences in outcomes as pensions. One key reason for this is because **women** across the EU27 currently **outlive men by 6 years**

measured from birth and by 3.5 years measured from age 65[87]**.** Another key reason is that when interacting with pension systems **key differences between men and women**'s biology, life courses and employment will tend to **aggregate into major gender differences in pension adequacy** outcomes. Just as one can speak of a gender pay gap there is **a gender gap in individual pension entitlements**: on average men have significantly higher pensions than women.

Pension system features may be viewed as the **filtering mechanisms** that determine to what extent gender differences in families and labour markets and economic behaviour are mitigated, reproduced or accentuated in old age income streams.

Some Member States have rules that intentionally create ***separate pension systems for men and women***: e.g. different pensionable ages, pension rights derived from husbands' contributions, widows but no survivor's pensions, care crediting only for women.

Yet, in the context of gender specific work patterns and life circumstances general arrangements for social protection entitlement can easily lead to gender inequalities: that is where certain aspects of pension schemes and changes in them fit the circumstances of one gender more than the other.

In fact many Member States primarily have ***general rules with gender specific outcomes*** such as entitlement based on earning-related contributory record – which will benefit men as they have longer working careers with higher pay – or such as residence based basic pensions which primarily benefit people with short contribution records and lower incomes, among which women predominate. Some of these general rules may actually be intended to - and do in fact manage to - generate more gender equality in pension outcomes than one would expect given gender differences in employment and pay.

It should also be noted that since women's roles and their employment and life course behaviour have been changing, ***past, present and future cohorts of working age women*** (as well as women with different income) can be differently affected by the same pension system features.

Moreover, while women on average tend to end of with lower individual benefit entitlements than men they are generally not at a disadvantage in a key aspect of pension systems: social protection against the longevity risk. To the contrary, as almost all pension schemes use uni-sex life tables the insurance sharing in pensions involves a ***significant redistribution from men that die earlier to women that live longer***. This difference is often accentuated because women tend to retire and take up a pension before men. Thus, whereas women tend to have smaller pensions than men they receive these for longer periods. Differences in realised pension wealth between men and women will therefore be smaller than differences in entitlements and monthly benefit levels.

The present higher at-risk-of-poverty for retired women, notably older women 75+, (Figure 23 and Figure 25) is likely to results from a number of factors. With lower pay and significantly less work in the formal sector on average these cohorts of women will through contributory records have earned far lower entitlements than men - if any at all. If they have worked in the formal sector they are likely to have had more and longer career breaks than men of their cohorts as an effect of maternity and informal care work for children and the elderly. In many

[87] Gender specific life expectancies seem to be narrowing but for the foreseeable future (and for as long as there has been pensions) the majority of pensioners - usually about two thirds or more – will be women.

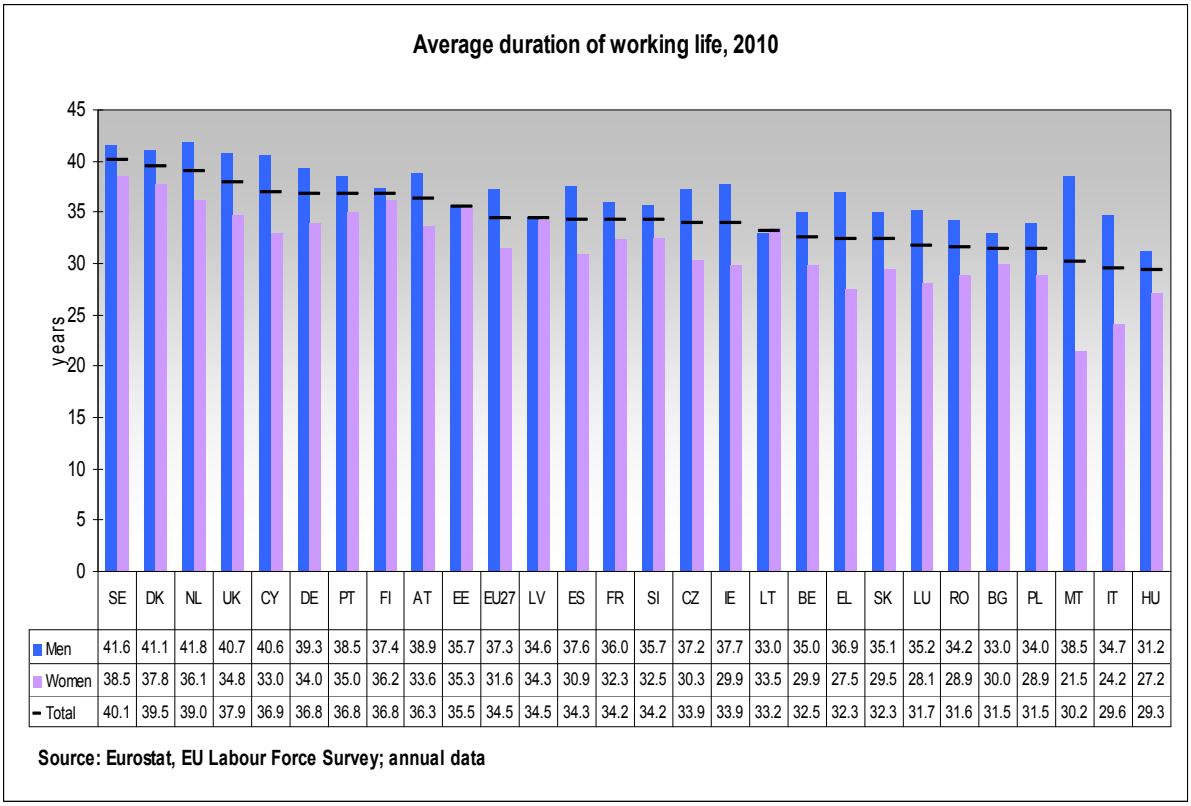
countries many of them will have retired before their spouses and are now outliving them while drawing on widows or survivors pensions as derived rights if not covered by residence based basic pensions or minimum or guarantee pensions. Some will only have social assistance or minimum income provision for older people to fall back on. With longer periods in retirement than men the relative value of their benefits will also be more exposed to the gradual erosion of the relative value of their pension stemming from the lack of full indexing to wages in most countries (Figure 26).

Differences in gender specific poverty rates for people 65+ and 75+ (Figure 23 and Figure 25) would thus generally relate to a mix of employment related differences and pension scheme specific features - including the lack of elements that fully rewards the informal work record of women.

Gender differences in the employment rates of older workers 55-64 are depicted in figures 41-44. Differences in pensionable age and average exit ages for men and women are discussed in and around Figure 45.

Gender differences in the average duration of working lives are illustrated in Figure 29 below.

Figure 29. Average duration of working life



	SE	DK	NL	UK	CY	DE	PT	FI	AT	EE	EU27	LV	ES	FR	SI	CZ	IE	LT	BE	EL	SK	LU	RO	BG	PL	MT	IT	HU
Men	41.6	41.1	41.8	40.7	40.6	39.3	38.5	37.4	38.9	35.7	37.3	34.6	37.6	36.0	35.7	37.2	37.7	33.0	35.0	36.9	35.1	35.2	34.2	33.0	34.0	38.5	34.7	31.2
Women	38.5	37.8	36.1	34.8	33.0	34.0	35.0	36.2	33.6	35.3	31.6	34.3	30.9	32.3	32.5	30.3	29.9	33.5	29.9	27.5	29.5	28.1	28.9	30.0	28.9	21.5	24.2	27.2
Total	40.1	39.5	39.0	37.9	36.9	36.8	36.8	36.8	36.3	35.5	34.5	34.5	34.3	34.2	34.2	33.9	33.9	33.2	32.5	32.3	32.3	31.7	31.6	31.5	31.5	30.2	29.6	29.3

Source: Eurostat, EU Labour Force Survey; annual data

3.5.1. Gender implications of trends in pension reforms

Men and women are *affected in distinctly different ways by* recent general trends in **pension reforms** towards greater emphasis on contributory entitlements and on 2nd and 3rd pillar pre-funded schemes.

This is part of the shift in the accent in many Member State approaches to pensions: *from social protection towards income smoothing* and from collective insurance towards individualization of responsibility and risks. That is entitlement based less on demonstrable need in old age than on entitlement deserved by ability or willingness (i.e. in contribution record) to shift consumption from active to passive years.

The social protection approach was evident in earlier contribution-benefit formula in contributory earnings-related pensions: by basing the calculation on income in the "best years" (e.g. best 5, 10 or 15 years) the formula allowed people with extensive periods of unemployment, sickness or low income to end up with good pensions nonetheless. In terms of more frequent career breaks this held some advantages for women but these could be outweighed, since men were far overrepresented in jobs with steep seniority-wage profiles and thereby became the key beneficiaries of best year formulas.

The gender impact of the ***new risks implied by pension reforms***: The Joint EPC-SPC report from 2010 noted that the last decade of pension reforms had made the adequacy and sustainability of pension systems far more contingent on outcomes in the labour market and in financial markets. This does not just imply new risks in general, but risks that weigh particularly to the detriment of pension adequacy for women.

Or more precisely, these new risks will ***accentuate gender differences*** in pension outcomes, because women's coverage in occupational pension schemes (apart from DK & SE) tend to be significantly lower than men's and because women's propensity to save in voluntary third pillar pension schemes is markedly lower everywhere (though less so in DK). Obviously, this is another reflection of those differences in men's and women's working time, remuneration and careers which also show up in the gender pay gap. And consequently it can also change if effective policies to raise the occupational pension coverage or the third pillar savings of women are put in place.

On closer examination a number of trends in the last decade of pension reforms which were intended to be general do in fact affect the genders quite differently or in counter intuitive ways.

The *equalization of pensionable ages* may at first glance look like a major disadvantage for women. However, under the condition of equal access to employment and in the context of schemes which increasingly move towards defined-contribution designs, the loss of a traditional privilege for women does in fact turn out to be a major improvement in women's possibilities for building sufficient pension entitlements. It also shortens the period in which they are exposed to the gradual erosion of the value of benefits and therefore lessens the likelihood that they will be exposed to the risk of poverty in their late years.

The move *from best years to career average* earnings as basis for benefit calculation will tend to benefit women more as the majority will tend to have flatter age-wage profiles, but this can be counter-weighted by the fact that women have lower pay than men.

By contrast where countries have moved from valorization of past earnings in line with economy wide wage growth to *price valorization only*, people with steeper age-earnings profile

where men will be over represented will tend to lose less than those with relatively constant real earnings where women will predominate.

The adjustment of pension *in line with gains in life expectancy*, so-called longevity linking or indexing to average lifetime gains, will have ambivalent effects as long at unisex life tables are used. Increases in eligibility ages (i.e. contribution periods) or reductions in benefits will have more negative effects for lower earners where women are overrepresented than for higher earners where men are overrepresented. However, through gender advantages in longevity women may overall be less affected than men: the relative reduction of their remaining life expectancy will be smaller than for men.

Bonus/malus rules will benefit those groups that have a freer choice about whether to continue working that those that have little choice. Men will usually be better placed to benefit.

Changes in indexing rules from wages to mixed or *pure price indexes* will affect those with the longer periods of retirement the most. Women are therefore more at risk. Long periods in retirement – such as the extra 8-10 years women may have in countries with different pensionable ages for men and women and larger longevity gaps – entail much more exposure to the erosion over time of the relative value of a pension.

3.5.2. Strategies for addressing Gender differences in pensions

Two strategies are possible to fight the gender pension gap: (1) ***Change*** women's labour market participation, i.e. raise their activity rate and lower their part-time rate, while stepping up efforts to secure equal pay for equal work; (2) ***Compensate*** women to some extent within pension regulations for their career breaks and part-time work while also strengthening general design features that cater to people with shorter contribution records and lower pay among whom women presently are overrepresented.

In most Member States a combination of the two would be required if the gender pension gap is to be effectively addressed. By focusing only on compensating for employment related differences through special gender features in the pension system one would run the risk of locking many women into traditional gender roles. If one concentrates only on equalizing employment and work places measures it would take a while before the effects would begin to reduce the gender pension gap and current cohorts marked by lower employment and pay would tend to be left out.

Securing higher (full-time) activity rates for women would beyond changes to labour market and work place practices generally require income taxation of individuals instead of households and an increase in (high quality) childcare facilities and support structures in elderly care.

Pension policy itself holds various instruments which contribute to the reduction of the gender pension gap: minimum pensions, redistributive elements in the pension formula and credits for caring periods.

Minimum pension schemes can enable women to build up an individual pension benefit above the poverty line if the entitlement to the minimum pension is an individual right. Minimum pensions can be **residence-based**. In this case everybody who has lived in the country for a

certain amount of time is guaranteed a minimum pension income without the requirement for any paid contributions. Women with a short or no employment record would benefit from such residence-based minimum pensions as is the case e.g. in DK, NL, SE, FI. In contrast to this, contributory minimum pensions require people to have paid contributions and be covered by the pension scheme as is the case e.g. in IT, UK. Usually **contributory minimum pensions** are linked to a certain insurance period; sometimes they are means-tested like e.g. in AT. Again, they are favourable for women with short employment records and low average earnings. DE does not provide any minimum pension, but a means-tested social assistance scheme for old-aged persons.

Statutory public pension schemes are especially important for women's old age income, since their coverage in occupational and private schemes is less favourable compared with men. Persistent gender inequalities in labour market participation and an unequal division of caring roles make it difficult for women to close the gender pension gap.

Redistributive elements in the pension formula aimed at weakening the link between contribution payments and benefits would also work to the benefit of women with low employment records and lower pay e.g. by using a "few best years" rule for benefit calculation, which many countries like e.g. SE had before the pension reforms of the last decade. Thus, periods of low waged employment or short employment records could be compensated. Another redistributive measure would be to upgrade periods of low income to a certain amount which is the case in BE and is the case in DE for periods until 1992. Such measures benefit especially part-time workers and may have a significant effect.

Credits for childcare vary considerably among Member States. The periods of childcare beyond maternity leave range from only three months in BE to up to three years in DE. Credits are either linked to previous individual earnings like in IT or FI; or they relate to an average reference value like in DE or AT. In many countries credits for childcare are only provided if the carer is not employed during the childcare period. This might impact negatively on the working career of women since longer career interruptions lead to more difficulties in re-entering the labour market and to lower salaries. Thus, credits for childcare either compensate for a gap in contribution periods or also for periods of part-time employment due to childcare responsibilities. Other care credits for the care of dependent adult family members are not yet particularly widespread in Europe. In general those credits are linked to the average wage or the minimum wage or they are considered as contributory periods for a minimum pension guarantee. In DE, credits are granted for the care of adult family members though on a lower scale than for child care.

Since labour market participation continues to be the main predictor of old age security, policies to **foster labour market equality** remain key to greater gender equality in pension outcomes. Expanding services for children (especially for children under three, provide flexible and long hours, provide after school care) and frail elderly (home help & care, relief services for informal carers etc. would be important. But policies to equalise gender conditions in work place and labour market practices would also be needed.

3.5.3. Measuring gender specific pension inadequacies

At the bottom gender inequalities in pension adequacy is measured as the difference in at risk of poverty rates for men and women.

In some Member States these differences are very significant – and this can be read as an inability of the pension system to sufficiently reduce the impact of gender differences in employment and life course. This would be part of a gender risk-profiling. At EU average level gender differences in at-risk-of-poverty-rates are less wide.

The agreed measurement for adequacy in the middle, the Theoretical Replacement Rates, is in its present form where gender differences in pay, hours worked and career durations are ironed out in the assumptions not really suited to depict gender differences in replacement rate adequacy. Only where pensionable ages are different do we have some illustrations (see Figure 5).

There is therefore a need for developing indicators that better catch the gender differences in pension outcomes. Chapter 5 will discuss the possibility of developing a common indicator for the Gender Pension Gap – i.e. the gap between the average individual pension entitlements of women and men.

4. Future adequacy of pension systems

This chapter looks at challenges for the provision of adequate pensions of future pensioners (i.e. people who start working today). Section 4.1 builds on the analysis of the theoretical replacement rates, and tries to answer the question what are the long-term adequacy risks for people with different career profiles given recent pension reforms and what kind of pension schemes will be the main sources of future income of pensioners. The section also presents indicators of future adequacy calculated within the Ageing Report (4.1.2).

The section 4.2 considers the link between pensions and labour market, and in particular how current pension rules encourage longer working. Using the theoretical replacement rates the section looks whether improvements in adequacy can be gained through longer working in the future. The section 4.3 discusses adequacy risks inherent to different pension schemes, and concludes with a call to provide people with better information about the reformed pension systems (4.4).

The chapter finds that reforms to the pension systems in many Member States will result in lower replacement rates in the future for a given retirement age. This is due, **for example,** to higher pensionable ages, longer required contributory periods, introduction of life expectancy factors, and transition into multi-tier pension arrangements. To achieve adequate replacement rates, more people will in many countries have to be given opportunities to build supplementary entitlements through safe complementary retirement savings in public or private pension schemes.

Calculations of replacement rates show that Member States differ in terms of distributional effects of the pension reforms and face difficult choices to balance the conflicting objectives of, on the one hand, protecting people in different life situations, whilst at the same time providing the financial incentives for individuals to return to the labour market.

The design of pension systems has a strong impact on effective retirement ages and adequacy of pensions. It seems that the pension challenge is more about reducing early retirement and making people work until pensionable age rather than deferring retirement after the pensionable age. Employment of older workers has been one of the most dynamic components of the EU labour market in recent years, but despite of these improvements, they are still low in many Member States. Younger workers have been particularly hard hit by the crisis and this might have a negative effect on future level of their pension benefits.

In order to meet the demographic challenge recent reforms of public pensions have concentrated on increasing effective retirement ages by delaying retirement, increasing flexibility and strengthening eligibility requirements. This, however, entails a higher decision burden on beneficiaries and knowledge that comparable standards of living in retirement in the future will require a longer working life and policies collectively supporting such prolongation of working life.

For countries where defined contribution schemes play an important the questions seem to be how to control the various risks for individual (such as investment and longevity risks), how to give people a realistic idea about what can be obtained, and how to ensure that the payout phase matches the original purpose of pension savings as efficiently as possible. In funded defined-

benefit schemes the dialogue between social partners is often a key, in particular attempts to share the impacts not only over time but also between different interests. Participants to the PAYG schemes are also affected by demographic and economic changes, but the effect of these changes on different cohorts of pensioners varies depending on how future pension systems will differ from the current arrangements.

4.1. Longer-term adequacy of pension systems

Since projections of possible poverty outcomes are currently not available, this part of the chapter will look at the long-term adequacy projections from the income smoothing point of view. It will be based mainly on two data sources: projected Theoretical Replacement Rates (2050 TRR) calculated by the Indicators Subgroup of the SPC (ISG) and adequacy indicators provided in the 2012 Ageing Report. The main consideration will be given to the **change in adequacy** from present to future.

4.1.1. Trends in theoretical replacement rates

TRR inform on current and *future* adequacy defined as the standard of living that people can achieve in retirement compared to their own situation when working, given certain assumptions. *Current* TRR describe the situation of people who retire today (in the most recent ISG exercise, people who retired in 2010). *Prospective* TRR describe the foreseen situation of people retiring in the future (in this exercise, people retiring in 2050) **under the pension legislation enacted by 2010**[88], including transitional rules to be implemented gradually that may be legislated in enacted reforms. Thus, the calculations for prospective TRR should typically reflect reformed pension systems in full maturity. Prospective TRR rely also on specific assumptions on the **key economic and demographic parameters** that are relevant for the calculation of future earnings and benefit entitlements. **In this round of TRR, like in former ones, calculations such assumptions have been aligned to the ones used by the Ageing Working Group (AWG) of the Economic Policy Committee (EPC) for the 2012 Ageing Report**. Overall, changes in TRR allow an assessment of future adequacy of pensions that takes into account assumed future economic and demographic circumstances as well as changes that have been decided in many countries as a result of recent reforms. This is important both at a general level for policy-making and for individuals' retirement planning, who need to anticipate the possible situation of their future income.

In order to properly interpret this section and conclusions that can actually be drawn (or not) from TRR calculations, it is very important to **take into account all the background and context information** to fully understand how representative the following calculations are for the different Member States (See Tables 4, 5 and 6 in sections 3.1 and 3.3 and Annex 2), especially with regards to the increase in pension expenditure, which gives an indication of the

[88] Therefore the impact of very recent pension reforms in some countries (e.g. BE, BG, FR, HU, NL, IE) is not included in these calculations.

financial sustainability of the pension promise and the contribution rates which can help to analyse the efficiency of the pension system together with the replacement rate calculations. In particular, it is essential to keep in mind that has been agreed in the ISG of the SPC, the indicator of TRR actually refers to changes over time or between various situations (comparisons in levels do not make sense since they refer to situations that have actually very different meanings in the different Member States).

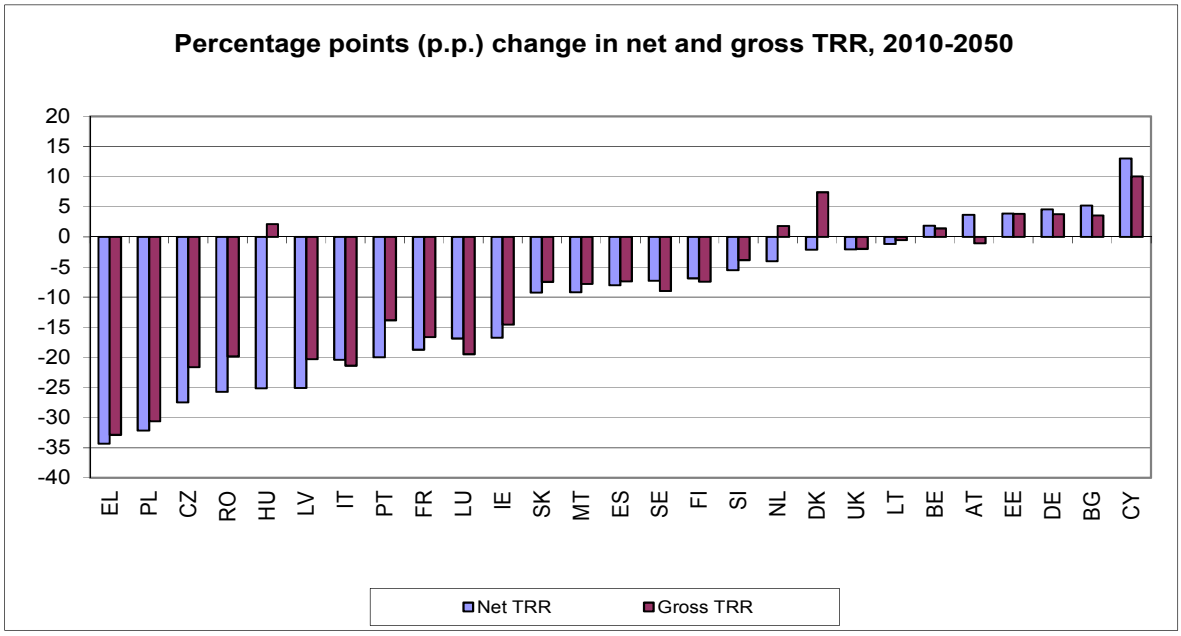
- *What are the main trends in replacement rates for a base-case theoretical individual (male with a full 40 years career retiring at 65)?*

Given the assumptions for the calculations of TRR in the 2010-2050 exercise in the base-case, **17 Member States** (EL, PL, CZ, RO, LV, IT, PT, FR, HU, LU, IE, SK, MT, ES, SE, FI and SI) display the result of **decreases in net replacement rates between 2010 and 2050 of at least 5 percentage points (p.p.) with respect to the 2010 levels, and the first 11 of them display drops of more than 15 p.p.**, for a worker with average earnings retiring at 65 after 40 years – see Figure 30 below, displaying the change in prospective replacement rates with respect to initial levels in each country in 2010 in percentage points. This is an indication that in order to deal with the financial strain put on pension systems due to demographic changes, many countries have chosen to add incentives to prolong working lives in their pension schemes in efforts to provide a reliable and sustainable pension promise in the future. As an effect, given a fixed retirement age, theoretical replacement rates tend to fall compared with today.

Some of the factors that may influence the projected evolution of replacement rates are summarised below.

Most Member States have statutory pension schemes providing earnings-related pensions. Benefits under these pension schemes are related to earnings either during a specified number of years during the career, or as is increasingly common practice, during the entire length of the career. Several countries have extended — or are still in the process of extending — the period of an individual's earnings history that is used for calculating the pension entitlement in the statutory pension schemes. Thus, instead of using the years of highest earnings towards the end of the career for the pension benefit calculation, earnings during a much longer period or even the entire career (e.g. PL, PT, ES) are taken into consideration. *This change will usually lead to lower replacement rates*, particularly if accrued entitlements are not fully adjusted for (nominal) wage growth.

Figure 30. Trends in net and gross TRR 2010-2050, the "base-case" scenario (sorted according to ascending percentage point changes in net TRR)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Pension levels can also be lowered through adjustments in the pension formula used to calculate benefits. One significant development has been the introduction of a demographic adjustment factor in some Member States. For countries which have introduced life expectancy adjustment factors in their statutory pension systems (e.g. FI, FR, PT, PL, SE), this can translate into a *decrease of theoretical replacement rates*. Thereby, in order to keep income replacement rate constant, they provide incentives for people to postpone their retirement in accordance with rising life expectancy and offer opportunities for achieving adequate pension levels.

Increasing the retirement age can also result in falling replacement rates where a retirement age of 65 is assumed in the calculations. For instance, in some cases increasing the legal retirement age from 65 to 67 gives deductions per year of early retirement before the age of 67, and explains some of the fall in net theoretical replacement rates from the statutory pension scheme, when the retirement age is assumed at 65.

The structure of "bonus/malus" in pension systems often combined with an increased flexibility in the retirement age and decisions for deferred and early pensions also has an impact on the calculations.

In some cases, especially in those countries that have shifted large shares of the pension provision towards mandatory funded schemes, decreasing replacement rates have to be seen in the context of this transition into two tier pension arrangements. In 2050 part of the statutory pension will be disbursed from private pension or life insurance companies in the form of annuities. In some Member States with lower retirement age than 65 years, there is no special bonus for later retirement in the funded schemes, as it exists in the pay-as-you-go pillar. As there is no theoretical necessity behind this difference, in other countries later retirement is awarded even in the statutory funded scheme (e.g. SE).

For another group of Member States there seem to be no significant changes in their net replacement rates between 2010 and 2050 (NL, DK, UK, LT, BE, AT).

In the case of AT, for example, this is due to a new evaluation of the past earnings in the pensions-account scheme in recent reforms. In the case of LT there is no significant change in the net TRR as the pension amount evolves in line with wage increase, without any reaction in defined-benefit pension formula to increasing life expectancy (the impact of statutory funded system part is negligible). The only small difference is because of a special bonus for later retirement in 2010, which disappears in 2050 (statutory retirement age is 65 in 2050). For DK this is due to a greater increase in total income from pensions, including public old age pension, than the increase in housing costs that are projected to increase as the prices. The result of the assumptions is therefore that the value of the tax free, income-tested housing benefit is gradually decreasing in the projection period. It should also be noted, that the basic assumption of a retirement age of 65 years in 2050 implies that the full effect of the maturing Danish labour market pensions and the enacted indexing and increase of the retirement age in Denmark are not fully reflected in the replacement rates. In BE, the legal pension shows a decline in replacement rate (as a result of the wage development pattern over the career), but this decline is compensated by the contribution of the second pillar pensions (under the assumptions applied).

Another group of Member States may actually observe their net and gross replacement rates rise as a result of past or recent reforms that will be fully in place by 2050 (DE, EE, CY, BG). Among the reasons for these trends, are the increase of pension contribution and accrual rates (e.g. in BG), the maturation of the pension scheme (in CY) or the increasing role of supplementary schemes (DE).

HU and DK display different trends in the gross (increasing) and net replacement rates (decreasing), a possible effect of taxation systems in pensioners' income. For DK this is due to assumptions made in the projection concerning housing costs, etc. which imply that the value of the tax free, income-tested housing benefit is gradually decreasing in the projection period.

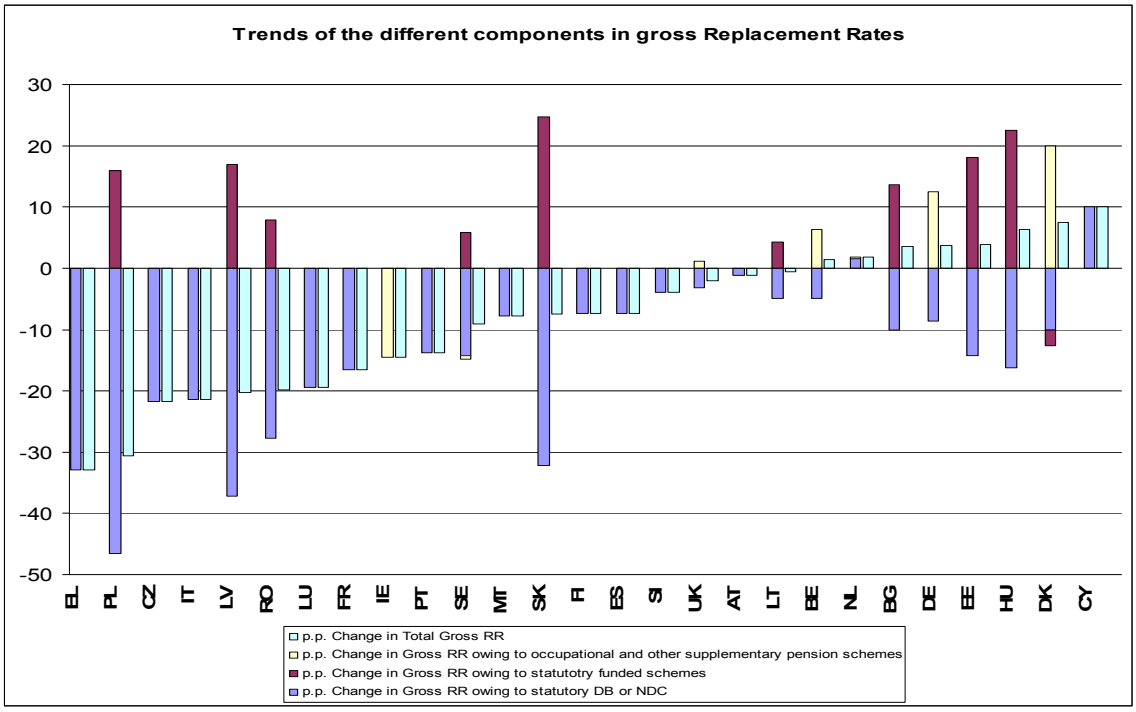
- *What are the trends in each of the (gross) replacement rates components?*

Besides the trends of total rates, it is important to understand in this base-case situation the contribution of the different pension components to the total gross TRR trends in each country (taking into account that only mandatory, typical and wide-reaching schemes were included in the TRR calculations). This allows us to study extent to which public pension provision will or will not be less generous in the future and to what extent this is compensated by a bigger role of supplementary systems. The trends in public pension provision can be further decomposed into PAYG (DB and NDC) and funded systems and this facilitates a discussion of the risks/strengths of the different pension arrangements. Figure 31 shows the percentage point changes in prospective gross replacement rates (with respect to initial levels in 2010) resulting from changes in (i) statutory DB or NDB schemes, (ii) statutory funded schemes and (iii) occupational and other supplementary schemes[89]. The three components add up to the total change in gross TRR[90].

[89] DK and SE are the only countries where these three components show up in the TRR calculations. It should be noted that TRR only take account of significant and wide-spread pension schemes in each country.

[90] As an example to interpret Figure 43: in SK the 2010 level of the gross RR would fall by 32.2 p.p. in 2050 due to the decreasing role of the PAYG system, while at the same time the second tier makes the 2010 level of gross RR go up by 24,75 p.p., thus the final effect is a decrease of about 7.4 p.p. decrease of the current level.

Figure 31. Trends in the different components of gross replacement rates between 2010 – 2050 (sorted ascending according to percentage point changes in total gross TRR)



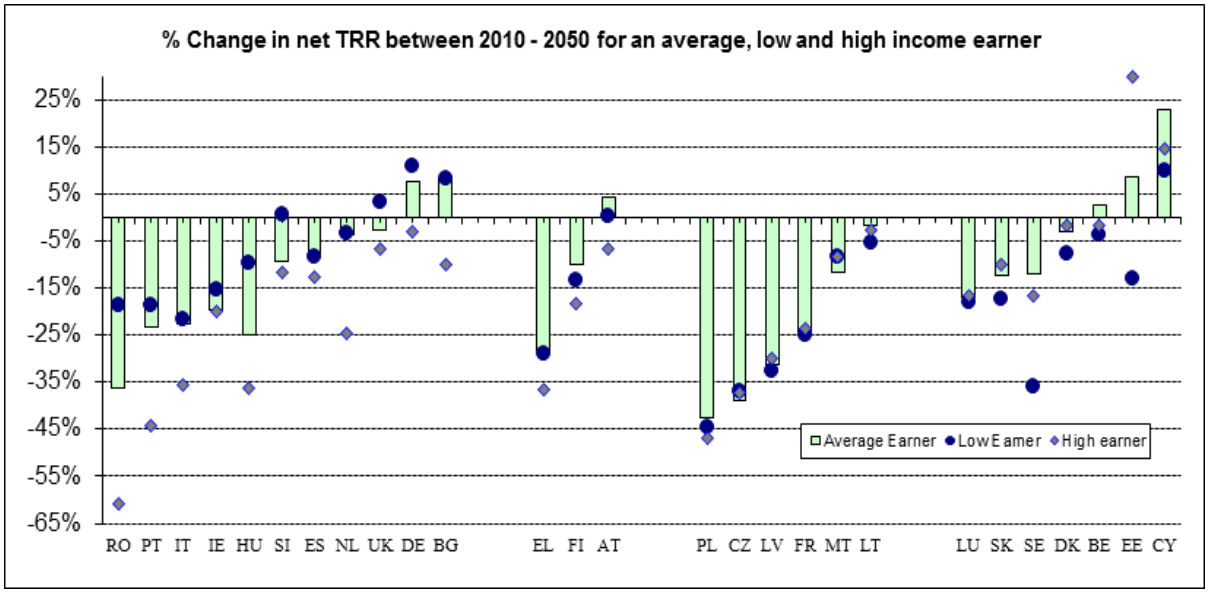
Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Pension benefits from statutory DB and NDC systems are falling everywhere (except NL and notably CY). This is **partially or more than fully compensated by increases in the pension benefits from statutory funded systems** in PL, RO, LV, SK, EE, HU, BG and to a lesser extent in SE and LT, **or by a bigger role of occupational and other supplementary systems** in BE, DE and DK. Apart from NL and CY, the statutory funded and supplementary schemes are responsible for the positive trend of gross replacement rates in the countries where these are growing. This positive weight of supplementary schemes should be considered together with coverage issues of these pensions, especially from a gender perspective and the risks of funded systems.

- *What are the effects of pension reforms on different income groups (i.e. distributional effects?)*

Looking at the trends in replacement rates for workers at different earning levels is an informative way to analyse **the redistributional effects of recent pension reforms**. Figure 32 shows the trends in net TRR for different earning profile**s** (percentage variation change in net TRR between 2010 and 2050 with respect to initial 2010 level, for average / low / high income earners, all retiring at 65).

Figure 32. Trends in net TRR for different earning profiles (all retiring at 65) (sorted ascending according to trend for average earner)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Figure 32 groups countries according to the **projected distributional effects of their pension systems** (recently reformed in most cases), **according to the assumptions used** in the TRR calculations. The first group to the left (RO, PT, IT, IE, HU, SI, ES, NL, UK, DE and BG) are the countries where TRR developments would be more redistributive as low income earners show more favourable trends in their replacement income (low income earners will have smaller drops, no drops or larger increases- than average or high income earners). However, the extent of the relatively higher protection of low income earners varies across countries. The second group from the left (EL, FI, AT) will also be doing more redistribution with their pension systems in the sense that the trend indicates penalisation of high income earners compared to average or low earners (larger drops in replacement rates for high earners). In the third group of countries recent pension reforms would result in changes in TRR of similar magnitude for all earning groups (PL, CZ, LV, FR, MT and LT). As replacement rates are generally higher for low-earning careers, this indicates that the decline in disposable income is projected to be higher for more modest workers and the effect would therefore be increasing inequality in the distribution of income of the elderly. This would be even more the case in the fourth group of countries (LU[91], SK, SE, DK, BE, EE, CY), where the trend in TRR for low earners is the less favourable of all income groups. This can due to the strengthened link between contributions and benefits and to the indexation assumptions used in calculations for the minimum income or other pension schemes. More generally, it can be noted that a reinforcement of the link between contributions and benefits can result into a flatter profile of the evolution of replacement rates according to initial levels, which could translate into relatively larger declines of replacement rates for more modest pensioners and increased inequality in old age.

- How do pension systems protect future incomes in case of absences from the labour market (e.g. for childcare or unemployment)?

[91] For Luxembourg, a change in the legally fixed pension indexation rule will change once financial resources of the pension scheme get insufficient.

While maintaining scheme incentives to return to work as quickly as possible many Member States have two mechanisms for addressing the issue of adequacy for those with career breaks, minimum pensions and the accrual of pension rights in non-contributory periods. Earnings-related systems usually offer a minimum pension calculated on more favourable terms for those with lower incomes or shorter working lives (e.g. BE, BG, CZ, ES, FR, LV, LT, LU HU, PL, PT, SE, SI). In their main statutory schemes all Member States offer some form of **protection of the accrual of pension entitlements** in typical contingencies of involuntary interruption of employment. Usually periods of unemployment, long-term illness and maternity are credited by pension contributions being paid on behalf of the affected individuals by the relevant social insurances dealing with the contingency. Yet, in earnings related contributions are mostly only continued at a general low level of income equivalent to the minimum wage and so pension accruals will therefore be much smaller in such periods under the earnings-related those systems. **Similar protections may exist in occupational schemes, but would probably not be present in voluntary funded schemes**.

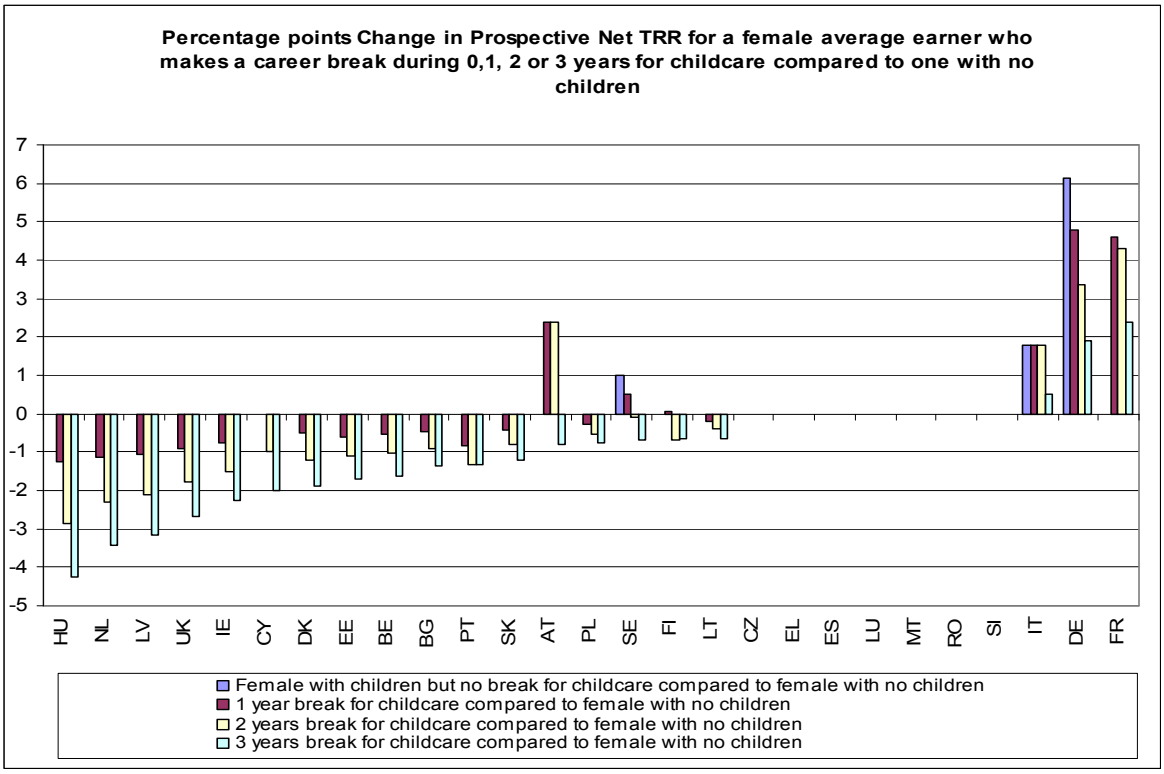
Recent reforms of the public systems have also dealt with crediting systems (reviewed below). Apart from the more traditional childcare and unemployment protection, in recent years, a number of member States have also introduced **care credits for other types of care than for children**. These are usually linked to a general reference value rather than earnings (e.g. BE, DE, AT) or take into account of care periods in determining eligible qualifying periods (e.g. EL, IE, LT, PL, UK).

The discussions on crediting systems bring up the key point of how future pension systems should try to balance the conflicting objectives of, on the one hand, protecting people in different life situations, whilst at the same time providing the financial incentives for individuals to return to the labour market. Furthermore, the gender dimension of caring, the treatment of time spent out of the labour market for care other than childcare (e.g. for care for the elderly or other relatives or disability care) and the different crediting protection in different pension pillars are important issues that impinge on the future adequacy of pension systems.

All Member States provide some kind of recognition of caring duties in pension entitlements. Many Member States have recently improved the crediting of **career breaks for childcare years** (e.g. EL, ES, LT, MT, PT, UK). The most common approach is to credit caring years at the same level for everybody irrespective of the level of income lost or foregone. LU plans to introduce credits for childcare years. ES allows a person restricted to part-time work due to child or family care to be credited for a full day's work in the eligibility calculations. Other Member States provide a protection of pension entitlements during childcare which is linked to the employment situation and income of the individual (e.g. EE, HU, PL, PT, RO, SE). In SE extra pension entitlements for childcare are given over and above the coverage for loss of income during a period of labour market absence for childcare. Some countries, however, still deal with the issue of care years by lowering the pension eligibility age for women with children (e.g. CZ, SI).

Figure 33 can be compared to Figure 8 (effect of childcare years on current replacement rates of women retiring today). More countries (FR, AT, SE) have put in place crediting systems which provide extra pension entitlements following periods of childcare leave, so that the pension of women with childcare years in these countries will also be greater than for women with no children (up to 2 years in AT and up to 3 in FR).

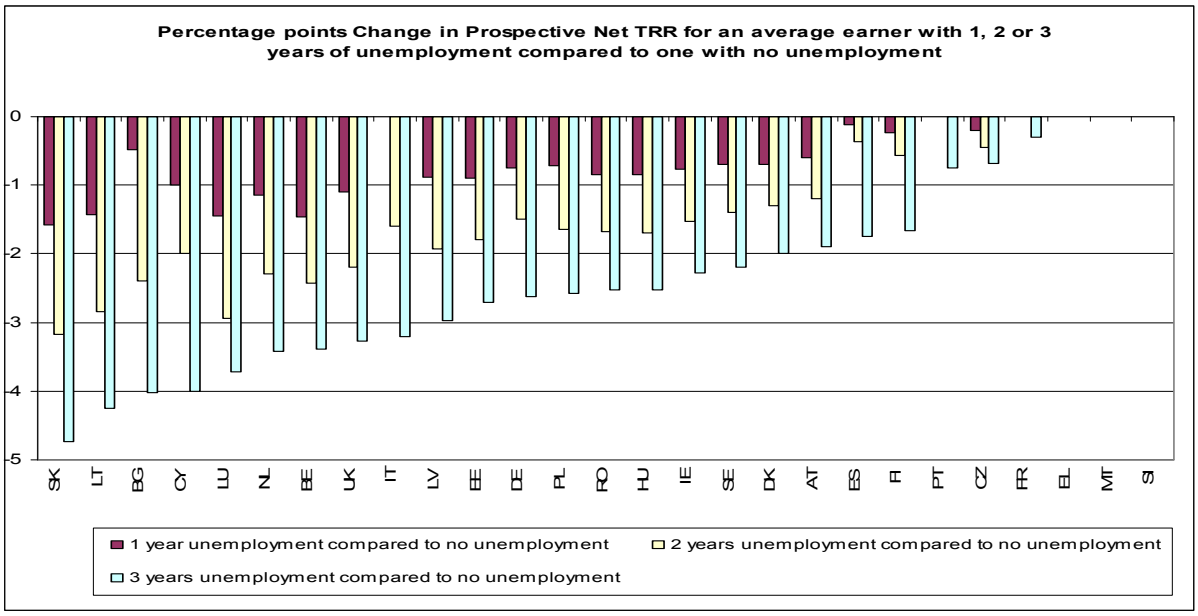
Figure 33. Effects on prospective net TRR of career breaks for childcare years (female worker)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Figure 34 can be compared to Figure 9. This comparison demonstrates that **unemployment protection in pension systems** in the future will be similar to the present in most Member States. Protection up to three years of absence from the labour market owing to unemployment records better developments in BE, IE and FI (smaller drops compared to the base-case of full career than currently) and worse in BG and SE (larger drops compared to the base-case than in current situation). It should be taken into account that changes in these variant cases over time may be rather explained by life expectancy developments and earnings base changes, rather than by changes in the rules concerning unemployment protection.

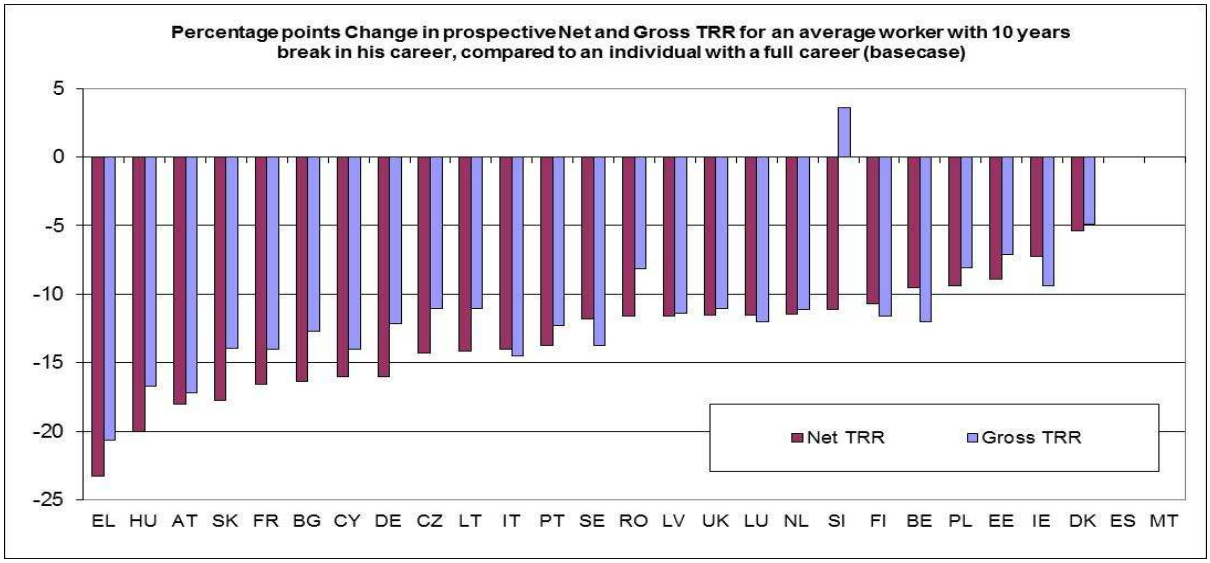
Figure 34. Effects on prospective net TRR of career breaks due to unemployment



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Inadequately cushioned long term career breaks will continue to produce large falls in replacement rates in the future. **Career breaks of 10 years out of the labour market** result in more than 10 p.p. lower rates than in case of a full 40 year career in most Member States. Figure 35 illustrates the possible impact on net and gross replacement rates of long-term (10 year) absences from the labour market.

Figure 35. Effects on prospective net and gross TRR of long-term career break (10 years out of the labour market)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Note: ES[92] and MT: non applicable

- To what extent can supplementary schemes improve the adequacy of pension systems?

[92] In ES a worker reaching 65 years with less than 33 contributory years will have to postpone retirement.

The increasing role of mandatory funded schemes, as well as occupational pensions (which are not fully covered in the Ageing Report) can be described with the help of theoretical replacement rates (which include only pension schemes that are mandatory, typical or with wide-reaching coverage in a country). Figure 36 presents shares of three different pension schemes[93] in the replacement rate of an individual who started working in 2010 and will retire in 2050 (a male with 40 years contributory career, retiring at 65). The breakdown of the replacement rates into the three schemes gives an indication of the future role of the different types of pensions in pensions' adequacy, and should be compared with the results presented in Figure 11.

The difference between the two figures reveals that in a number of countries in the coming decades the role of statutory funded (BG, EE, LV, LT, PL, RO, SK and SE) and occupational pensions (DK, DE and SE) will increase in pension income of hypothetical individuals enrolled in these schemes. In IE statutory pay-as-you-go is expected to play a more significant role in the future (compared to the non-contributory scheme) while private pension coverage is also expected to increase, and in NL and UK the role of occupational schemes (in pension incomes of individuals enrolled in these schemes) should be kept more or less constant.

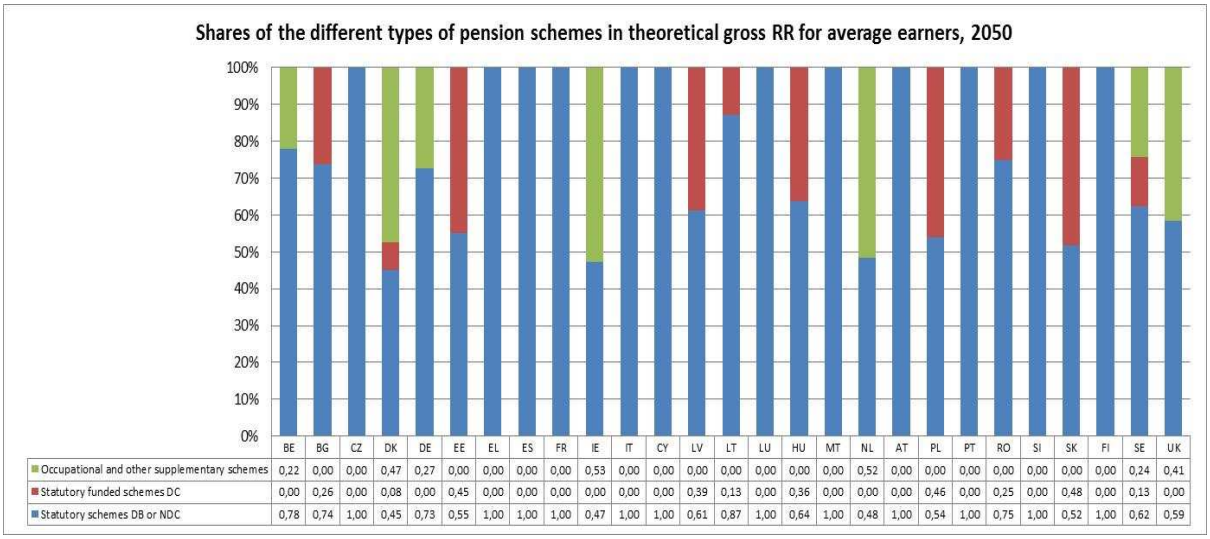
The calculations also highlight the breakdown of the pension package for different income groups (low, average and high): in 2050 in BE, DK, IE, NL, SE and UK the high income earners will receive a higher proportion of their pension income from occupational and other supplementary pensions than the low income earners. In EE, LV, PL and SK a relatively high proportion of pension income will come, including for low-income earners, from mandatory funded defined-contribution schemes.

The growing role of statutory PAYG notional defined contribution, statutory funded defined contribution and occupational defined contribution schemes will certainly have an impact on the change of character of risk related to the level of pension benefits. Different **adequacy risks** inherent to particular pension schemes are described in Chapter 4.4.

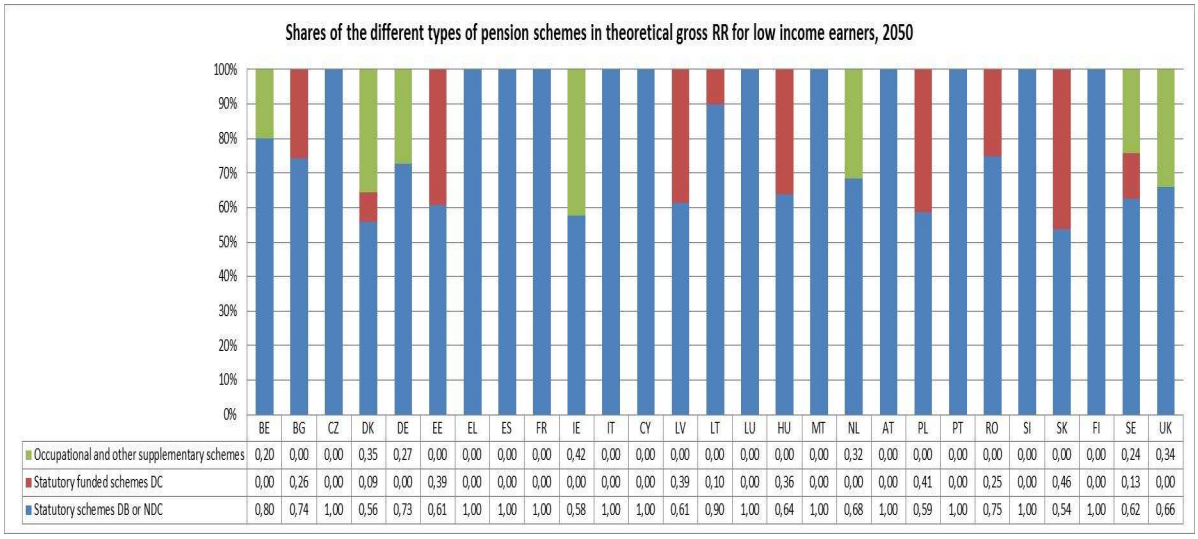
For the correct assessment of both Figure 11 and Figure 36 elements of representativeness of the reference individuals need to be taken into account, as well as details of the assumptions in the calculations of theoretical replacement rates (See Annex 2).

[93] The three schemes covered: (1) statutory pay-as-you-go (whether of defined-benefit or notionally defined-contribution character), (2) statutory funded (usually of defined-contribution character), (3) occupational and other supplementary schemes (of defined-benefit or defined-contribution character). Individual pension savings' contracts are neglected in Theoretical Replacement Rate calculations, unless their coverage is significant.

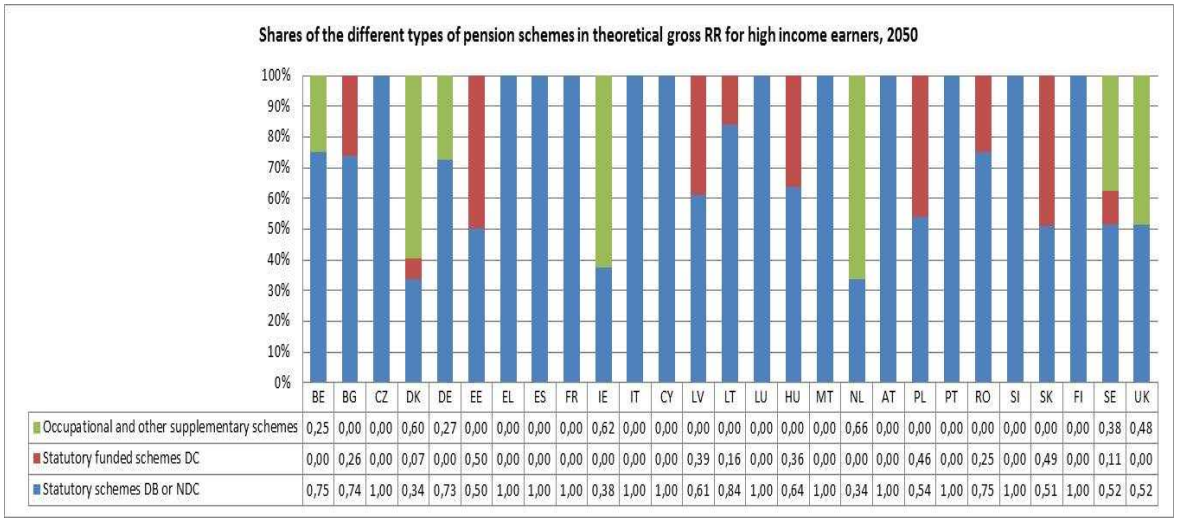
Figure 36. Shares of different pension schemes in gross theoretical replacement rates, 2050



	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Occupational and other supplementary schemes	0,22	0,00	0,00	0,47	0,27	0,00	0,00	0,00	0,00	0,53	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,52	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,24	0,41
Statutory funded schemes DC	0,00	0,26	0,00	0,08	0,00	0,45	0,00	0,00	0,00	0,00	0,00	0,00	0,39	0,13	0,00	0,36	0,00	0,00	0,00	0,46	0,00	0,25	0,00	0,48	0,00	0,13	0,00
Statutory schemes DB or NDC	0,78	0,74	1,00	0,45	0,73	0,55	1,00	1,00	1,00	0,47	1,00	1,00	0,61	0,87	1,00	0,64	1,00	0,48	1,00	0,54	1,00	0,75	1,00	0,52	1,00	0,62	0,59



	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Occupational and other supplementary schemes	0,20	0,00	0,00	0,35	0,27	0,00	0,00	0,00	0,00	0,42	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,32	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,24	0,34
Statutory funded schemes DC	0,00	0,26	0,00	0,09	0,00	0,39	0,00	0,00	0,00	0,00	0,00	0,00	0,39	0,10	0,00	0,36	0,00	0,00	0,00	0,41	0,00	0,25	0,00	0,46	0,00	0,13	0,00
Statutory schemes DB or NDC	0,80	0,74	1,00	0,56	0,73	0,61	1,00	1,00	1,00	0,58	1,00	1,00	0,61	0,90	1,00	0,64	1,00	0,68	1,00	0,59	1,00	0,75	1,00	0,54	1,00	0,62	0,66



	BE	BG	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Occupational and other supplementary schemes	0,25	0,00	0,00	0,60	0,27	0,00	0,00	0,00	0,00	0,62	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,66	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,38	0,48
Statutory funded schemes DC	0,00	0,26	0,00	0,07	0,00	0,50	0,00	0,00	0,00	0,00	0,00	0,00	0,39	0,16	0,00	0,36	0,00	0,00	0,00	0,46	0,00	0,25	0,00	0,49	0,00	0,11	0,00
Statutory schemes DB or NDC	0,75	0,74	1,00	0,34	0,73	0,50	1,00	1,00	1,00	0,38	1,00	1,00	0,61	0,84	1,00	0,64	1,00	0,34	1,00	0,54	1,00	0,75	1,00	0,51	1,00	0,52	0,52

Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

4.1.2. Trends in sustainability and other projected adequacy indicators

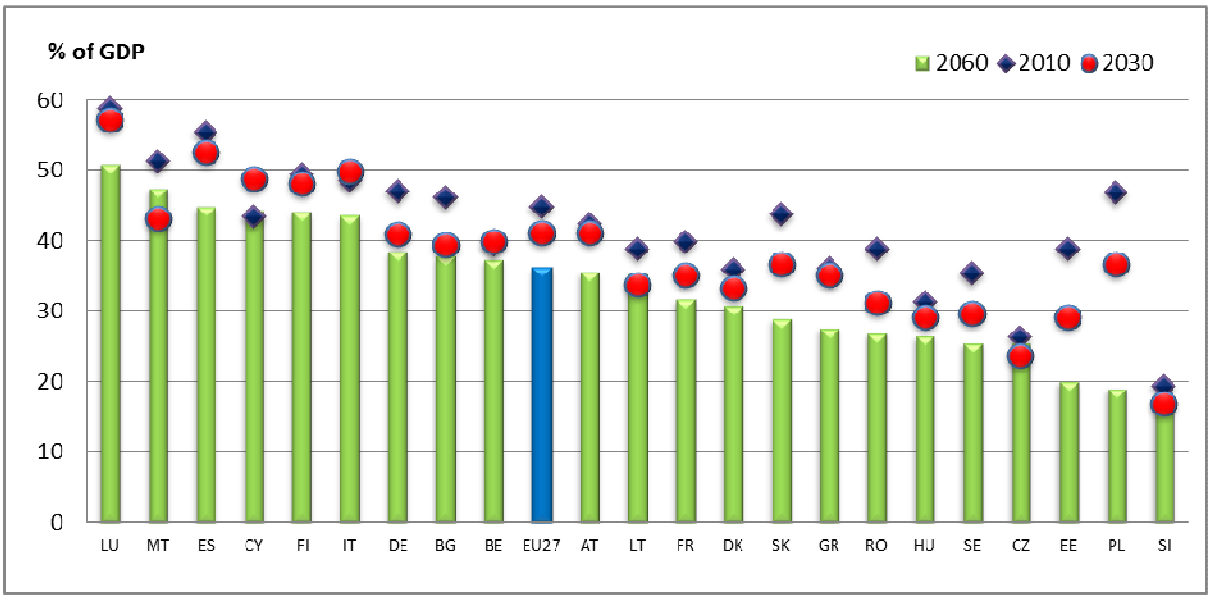
Trends in the future pension adequacy can be assessed not only with the help of theoretical replacement rates, which look at future income replacement for specific hypothetical individuals, but also with some **indicators** derived from the models used to project expenditure, which represents all public pensions. The Ageing Report uses the *benefit ratio* and *gross average replacement rate*. Unlike the theoretical replacement rates, these indicators reflect the overall pension expenditure and are based on different components of the pension mix. The benefit ratio is the average benefit of public pension or public and private pensions, respectively, as a share of the economy-wide average wage (gross wages and salaries in relation to employees), as calculated by the European Commission. The gross average replacement rate is calculated as the average first retirement pension as a share of the economy-wide average wage, as reported by Member States in ad-hoc pension questionnaires[94].

There are a number of factors that explain the difference in the magnitude of the change over time of the pension benefit in relation to earnings in the theoretical replacement rates and the benefit ratios / gross average replacement rates. The concept of the indicators, their coverage of pension schemes and their time horizons are different (see Annex 1 for a detailed description of these differences). In particular, the main conceptual difference is that the ratios represent average situation of the retired population and not the situation of a hypothetical individual covered by the most general scheme with a full career at the moment of retirement (as in the theoretical replacement rates). The fact that the same demographic and macroeconomic assumptions have been used in this round for calculating the two indicators does not make them entirely comparable.

According to the Ageing Report, benefit ratios from social security pensions are projected to decline in a majority of Member States (Figure 37). Some of these declines will be compensated by more widespread use of supplementary pensions.

[94] Public pensions used to calculate the benefit ratio include old-age and early pensions and other pensions, such as invalidity and survivor, while public pensions used to calculate the Gross Average Replacement Rate only includes old-age and early pensions. Private pensions are not included for all Member States. The benefit ratio and the gross average replacement rate convey different information. In particular, due to differences in wage concepts used when calculating the benefit ratio and the replacement rate, the two indicators (and especially their level) are not strictly comparable and should be interpreted with caution.

Figure 37. Benefit ratio (Public pensions) in 2010, 2030 and 2060, % of GDP

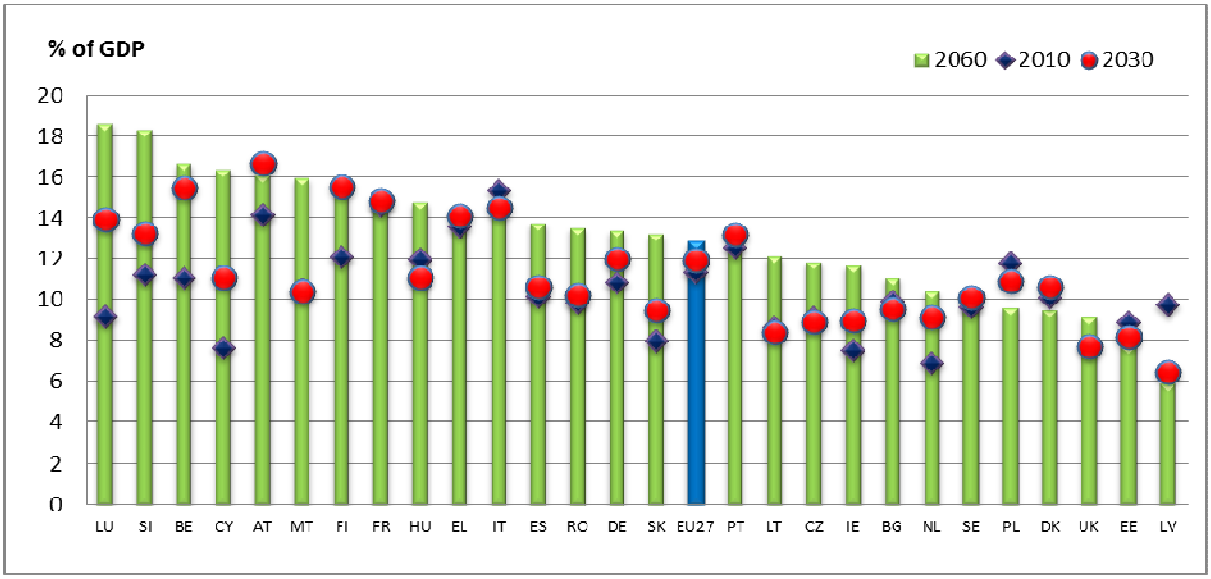


Source: The 2012 Ageing Report

Note. Data not available for IE, LV, NL, PT, UK. The impact of very recent pension reforms in Member States is not included in the calculations (see Box 2, The 2012 Ageing Report)

Despite a decrease in the future adequacy as measured with the benefit ratios, the 2012 Ageing Report projects an increase in the statutory pension expenditure in the EU-27 from 11.3% of GDP in 2010 to 12.8% in 2060. Some countries face very significant increases, while others through pension reforms managed to reduce the future pension expenditure (Figure 38).

Figure 38. Projected gross public pension expenditure, % of GDP, in 2010, 2030 and 2060



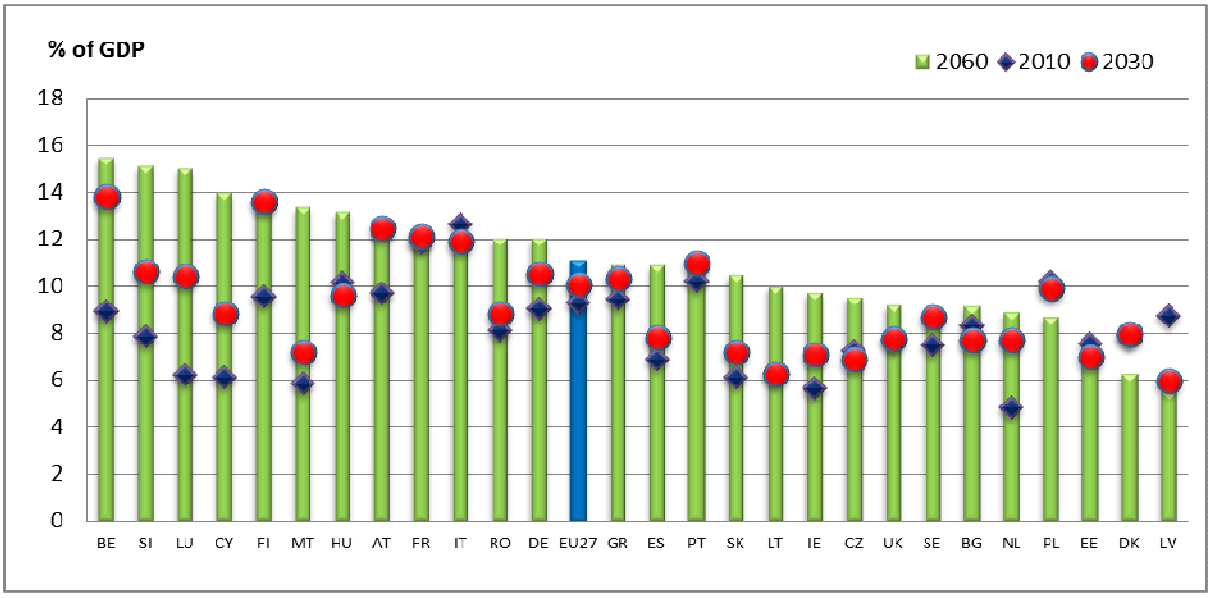
Source: The 2012 Ageing Report

Note: The impact of very recent pension reforms in Member States (BE, BG, FR and NL) is not included in the calculations (see Box 2, The 2012 Ageing Report)

Interestingly, Member States face not only a divergence in the 2060 levels of expenditure on earnings-related old-age and early pensions (from in 5.9% of GDP in LV to 18.6% in LU), but also other categories of benefits (mainly disability and survivors, from 0.3% of GDP in LV to 3.2% in DK).

Projected gross old-age and early pension expenditures in 2060 vary from 5.5% in LV to 15.4% in BE (Figure 39).

Figure 39. Projected gross old-age and early pension expenditure, % of GDP, in 2010, 2030 and 2060



Source: The 2012 Ageing Report

Note: The impact of very recent pension reforms in Member States (BE, BG, FR and NL) is not included in the calculations (see Box 2, The 2012 Ageing Report)

The trends in adequacy indicators can be put in relation to prospects for financial stability. Table 7 helps in that way to examine to what extent an adequate balance between financial sustainability and pensions adequacy, the two sides of the same coin, is maintained in the long term. Table 7 provides information on net and gross replacement rates and changes in gross replacement rates by type of scheme (statutory DB or NDC, statutory funded and occupational and other supplementary pensions), so that the changes can be more easily compared to the pension schemes included in the expenditure variable (public pension expenditure calculated by Ageing Working Group includes old-age pension expenditure, early retirement, disability and survivor pensions).

Table 7. Changes between 2010 – 2050 in public pension expenditure (as % of GDP) and pension adequacy indicators: TRR and benefit ratios

	Pulbic Pension Expenditure as % GDP (2010)	Pulbic Pension Expenditure as % GDP (2050)	Change in Public Pens Expedure. 2010 - 2050 in p.p.	Change in Net TRR. 2010 - 2050 in p.p.	Change in Gross TRR. 2010 - 2050 in p.p.	Change in Gross TRR owing to statutory DB or NDC schemes, 2010 - 2050 in p.p.	Change in Gross TRR owing to statutory funded schemes, 2010 - 2050 in p.p.	Change in Gross TRR owing to occupational and other supplementary pensions, 2010 - 2050 in p.p.	Benefit Ratio (Social Security pensions) (2010)	Benefit Ratio (Social Security pensions) (2050)	Change in Benefit Ratio 2010 - 2050 in p.p.
Countries with declining net replacement rates between 2010-2050											
EL	13,56	15,43	1,87	-34,30	-32,87	-7,37	0,00	0,00	35,95	29,04	-6,91
PL	11,80	10,04	-1,76	-32,17	-30,61	-46,49	15,89	0,00	46,73	22,42	-24,31
CZ	9,11	11,04	1,93	-27,47	-21,64	-21,64	0,00	0,00	26,21	25,21	-1,01
RO	9,82	12,76	2,94	-25,73	-19,86	-27,75	7,89	0,00	38,69	28,13	-10,56
HU	11,95	13,47	1,52	-25,09	2,06	-20,51	22,56	0,00	31,17	26,57	-4,59
LV	9,71	6,37	-3,34	-25,08	-20,31	-37,20	16,88	0,00	:	:	:
IT	15,30	15,66	0,36	-20,40	-21,40	-21,40	0,00	0,00	48,51	45,42	-3,09
PT	12,54	13,09	0,56	-19,98	-13,85	-13,85	0,00	0,00	:	:	:
FR	14,56	15,14	0,58	-18,73	-16,60	-0,08	0,00	-14,45	39,78	32,33	-7,45
LU	9,15	18,12	8,96	-16,88	-19,48	-19,48	0,00	0,00	58,70	53,70	-5,00
IE	7,53	11,38	3,86	-16,74	-14,53	-32,87	0,00	0,00	:	:	:
SK	7,98	12,21	4,23	-9,26	-7,46	-32,21	24,75	0,00	43,74	29,66	-14,08
MT	10,44	13,44	3,00	-9,20	-7,80	-7,80	0,00	0,00	51,23	47,61	-3,62
ES	10,11	13,95	3,84	-8,06	-7,37	-16,60	0,00	0,00	55,28	46,43	-8,85
SE	9,60	9,88	0,28	-7,30	-9,00	-14,20	5,80	-0,60	35,34	26,40	-8,94
FI	12,04	14,92	2,87	-6,90	-7,40	-7,40	0,00	0,00	49,41	45,30	-4,10
SI	11,20	17,87	6,67	-5,50	-3,84	-3,84	0,00	0,00	19,23	17,28	-1,95
NL	6,85	10,43	3,58	-4,02	1,82	1,56	0,00	0,25	:	:	:
Countries with no significant change in net replacement rates between 2010-2050											
DK	10,08	9,62	-0,46	-2,10	7,40	-10,00	-2,60	20,00	35,80	30,47	-5,33
UK	7,67	8,18	0,51	-2,06	-2,00	-3,16	0,00	1,16	:	:	:
LT	8,64	10,76	2,12	-1,15	-0,56	-4,85	4,29	0,00	38,68	34,94	-3,74
BE	11,03	16,70	5,67	1,85	1,39	-4,84	0,00	6,23	39,20	38,30	-0,90
Countries with increasing net replacement rates between 2010-2050											
AT	14,11	16,45	2,34	3,70	-1,10	-1,10	0,00	0,00	42,33	36,54	-5,79
EE	8,87	8,01	-0,86	3,90	3,80	-14,30	18,10	0,00	38,75	22,99	-15,76
DE	10,79	12,97	2,18	4,57	3,78	-8,70	0,00	12,48	47,02	38,12	-8,89
BG	9,92	11,15	1,23	5,21	3,57	-10,10	13,67	0,00	46,12	38,63	-7,49
CY	7,62	14,37	6,75	13,00	10,00	10,00	0,00	0,00	43,30	45,23	1,92
EU27	**11,34**	**12,80**	**1,46**						**44,66**	**37,03**	**-7,64**
:	Data not available										

Source: The 2012 Ageing Report and 2010 – 2050 Theoretical Replacement Rates exercise Indicators Subgroup. EU27 TRR are non-weighted averages.

Note: The calculations of prospective theoretical replacement rates and benefit ratio rely on common assumptions about the future key economic and demographic parameters. Despite this, differences in projection results still exist due to a number of factors, notably the different conceptual underpinnings of the indicators (theoretical vs. average approaches) and the different coverage of pension schemes by each indicator. This points out to the need of careful comparison between indicators. See Annex 1 for more details.

Note: Public pension expenditure includes all types of pensions and occupational schemes. The impact of very recent pension reforms in Member States is not included in the calculations (see Box 2, The 2012 Ageing Report)

4.2. Labour market: working more and longer

In the coming decades, Europe's population will undergo major demographic changes due to low fertility rates, continuous increases in life expectancy and the retirement of the baby-boom generation. Longer working and later retirement have been identified as key responses to the ageing challenge which can improve both the sustainability and the adequacy of pension systems.

This section first looks at how current pension rules encourage longer working, and how labour markets support the objective of better balancing the time spent working and in retirement. Then, it tries to assess with the help of future theoretical replacement rates whether improvements in adequacy can be obtained through longer working.

4.2.1. How pension systems support longer working

In 2011 the SPC conducted a **questionnaire on possibilities for people to improve the adequacy of their pension entitlements**, **especially through longer working**. The questionnaire[95] looks at incentives and disincentives in social protection systems (old-age pensions, invalidity pensions, unemployment benefits for older workers) for older workers to join or remain in the labour market and at measures aimed at promoting longer working lives. The following summarizes the responses.

There is a wide variation in **pensionable ages**[96] between Member States. In 2010 65 was the pensionable age for both genders in nine countries (BE, DK, DE, IE, ES, CY, LU, NL, PT), while in five (in EL, IT, AT, PL, UK) it was the pensionable age only for men as women could claim pension from the age of 60. A few countries (FR, FI, SE) were giving people the possibility to claim a pension within an age bracket (60-65, 63-68, and 61-67 respectively). In the ten remaining countries the pensionable age was set below 65, with LV and HU having no gender gap while BG, CZ, EE, LT, MT, RO, SI and SK had lower pensionable ages for women.

A number of Member States have increased the pensionable age for both genders in recent reforms. In most of these countries the higher eligibility ages for a pension will be phased in over a long period and has more effect on the younger cohorts. Ultimately, the pensionable age will reach 68 in IE and UK, 67 in CZ[97], DK[98], DE and ES, while it will reach 65 in EE, EL, LT,

[95] The 2011 questionnaires are updates of the ones used in the 2007 – 2008 SPC studies "*Promoting longer working lives through pension reforms – Flexibility in retirement age provision and early exit from the labour markets*".

[96] One should distinguish between the **pensionable age** (sometimes referred to as the statutory retirement age: the age at which pension benefits can be accessed without any actuarial reductions), the **effective pension age** (the age at which an individual actually starts to draw a pension) and the **effective labour market exit age**.

[97] 67 reached in 2044, further increases by 2 months per cohort with no upper limit.

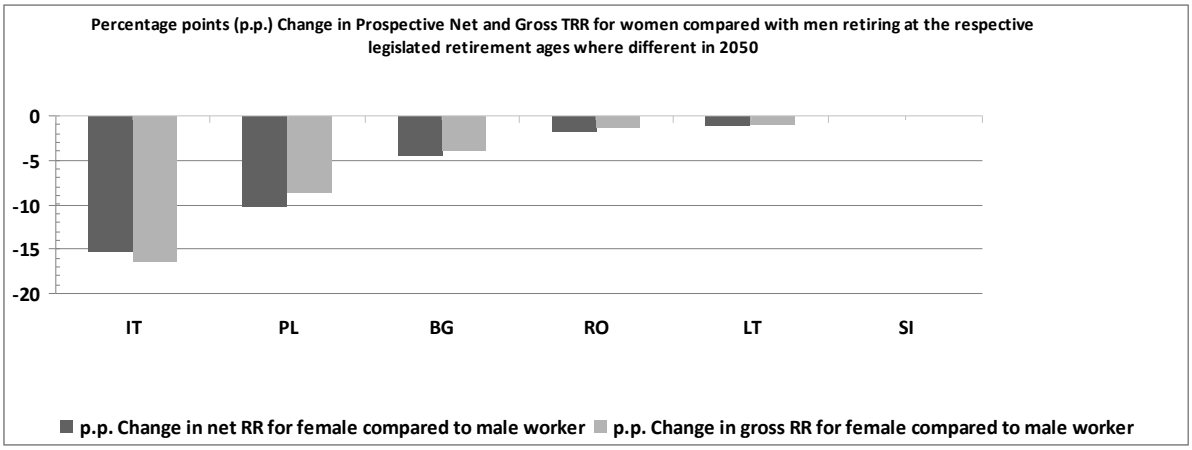
[98] Further linked to increases in life expectancy.

HU, MT and AT. In BE and FR the minimum pensionable age for people with full contributory careers (i.e. 41.5 years in FR and 45 in BE) will increase from 60 to 62. The discussion about further pension reforms and increases in the pensionable age is on-going in a number of countries (e.g. NL and PL intend to raise it to 67, LV to 65).

Even though an increase in the pensionable age will not necessarily be reflected in a corresponding rise in the effective labour market exit age, it sends a strong signal to workers and employers and – particularly if also underpinned by labour market measures to encourage and enable working longer - it is likely to influence expectations and norms with regards to employment[99].

By 2020 there would be nine countries left with a **gender gap in pensionable age** (EE, EL, MT, and UK will have equalised in the meantime), and ultimately the number of countries would drop to only five (BG, IT, PL, RO and SI) because CZ, LT, AT and SK intend to reach the gender equalisation of pensionable ages after 2020).

Figure 40. Changes in replacement rates for women compared with men retiring at the respective legislated retirement age in 2050 (where different)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

TRR are useful to gauge the effect of different pensionable ages for men and women in these countries in 2050 (calculations assume retirement at the legislated retirement age for both men and women – Figure 40 can be compared to Figure 5). The gross and net replacement rate results are lower for women than for men in almost all of these Member States as a result of women retiring earlier than men. The most notable gender differential in future replacement rates is observed for IT and PL (more lower replacement rates for women) which have notional defined-contribution systems with actuarial reductions of the pension the earlier it is retrieved.

According to current legislation pension eligibility age will still differ for men and women in SI in 2050, but the contributory requirements are adjusted in a manner that women receive the same gross replacement rate as men despite retiring two years earlier at age 61. Therefore, the calculations show no change for SI. LT has legislated equalisation of pensionable ages for men

[99] *Analytical Support on the Socio-Economic Impact of Social Protection Reforms*, GVG. http://www.socialprotection.eu/ . "Synthesis Report 2011".

and women in 2050, but due to sex-specific mortality tables for the funded pension part, it still shows different prospective TRR for male and female in 2050.

The calculations for BG and RO present much narrower differences in the results between men and women in the future than currently, showing the closing of the pensionable age gap and reflecting better protection for shorter careers for women from now onwards.

Apart from the age limit, many Member States apply the minimum or standard **contributory periods** to qualify for a minimum or full pension. Contributory periods are required in flat-rate contributory pensions, where benefits are granted on the basis of contributory years (e.g. IE, LT, and to a certain degree UK). They are also used in a number of earnings-related pension systems, to create incentives to stay connected to the labour market. In other countries the concept of full statutory pension is not applied (e.g. CZ, DE), and for instance the value of the pension benefit is in principle based on a number of individual pension points, regardless of the contributory period.

In reality, the labour market exit age is usually lower than the pensionable age. This is due to fact that **early retirement**, unemployment benefits and disability benefits are often used as early exit paths by those aged 55-59.

In some Member States in the statutory pension systems people with full contributory periods are entitled to retire before the standard pensionable age (e.g. BE, FR, LU, AT, SI). This underlines the fact that pension reforms cannot be focussed on increases in pensionable ages only, but also, where relevant, the **minimum or full contributory periods need to reflect increasing life expectancy**. However, situation of people who started their careers early (usually unskilled workers and people with lower life expectancy) needs special attention.

People in demanding or hazardous occupations are sometimes granted special treatment and can retire earlier (e.g. ES, HU, PT), as well as the long-term involuntarily unemployed or those who retired due to economic reasons (e.g. PT). Some countries also offer early retirement, where people can draw a pension with an applied malus (e.g. an actuarially reduced pension) which acts as a financial disincentive (e.g. HU, SK, FI). In others some occupational groups are permitted to retire earlier and on more generous basis compared to standard old-age pensioners (e.g. BG).

Possibilities of early exit through unemployment benefits vary between Member States, and are sometimes limited by short benefit duration (e.g. SK). Conditions for granting disability benefits are also different between countries. Use of disability benefits needs to be checked against health status of different age cohorts, as one can expect higher share of people with health problems among older workers (55-64) than prime-age workers. Moreover, Member States have recently reformed their disability schemes. The focus is now rather than on people's capabilities on the diminished working ability in relation to old occupation, personalised approaches, prevention, inflow management, the changing nature of incapacity, participation by social partners, involvement of employers and more inclusive labour markets[100].

Lower pensions do not necessarily discourage people from using early retirement possibilities. In a number of countries between ¼ and ½ workers follow early exit paths without going

[100] http://www.peer-review-social-inclusion.eu/peer-reviews/2009/modernising-and-activating-measures-relating-to-work-incapacity

straight into retirement (e.g. CZ, ES, LU). This can certainly have an impact on future at-risk-of-poverty rates, especially for older pensioners who left early the labour market. Member States should be careful **not to introduce too much flexible old-age pensions through access to early retirement**. Early pensions reduced with actuarial principles could create a group of old-age pensioners with unacceptably low income, especially if indexation is below the evolution of median income.

Member States with early retirement schemes reform them in different ways. A first dimension is to ensure that employers bear all or at least a significant share of the costs of early retirement benefits. Secondly, particularly demanding or hazardous jobs can be compensated through higher pay, or higher contributions to a voluntary supplementary pension scheme (e.g. SK), rather than leaving the State to shoulder the whole compensation burden in the form of earlier retirement. Thirdly, in some Member States, eligibility rules are being tightened – for instance by increasing the eligibility age and the required contributory period (e.g. BE). The recent reform adopted by BE in December 2011 has combined both increasing the eligibility age for early retirement and the required career length.[101] Some countries are also either reducing the levels of benefits provided by special schemes or closing the schemes.

In the past early exit pensions have often been used by employers as an instrument to manage their workforce in times of high unemployment. Recent reforms led to tightening of eligibility conditions and at least in some Member States (e.g. BE, EL) partially shifted the cost of early retirement towards employers. It seems that this could lead to a re-orientation of practices and could contribute to an increase in the effective retirement age (e.g. in BE, DK, EL, AT, PL)[102]. This also **underlines the importance of a consistent approach of transitions from employment to retirement (for instance not only focusing on the legal retirement age, but also the effective retirement age**).

A majority of policy measures **to promote longer working** is focussed on the abolition of disincentives to work. Such negative incentives include a default retirement age, regulations with regard to employment after the pensionable age and how employment income is taxed or deducted from pension income and whether it is considered in the future calculation of pensions[103].

[101] A parametric pension reform aimed at delaying early retirement and restricting access to it was voted in the Belgian Parliament at the end of December 2011. In the three main old-age pension schemes (private wage-earners, self-employed, civil servants), the minimum early retirement age and the minimum number of career years required for eligibility will gradually be increased, respectively from 60 to 62 years and from 35 to 40 years (in fact, before the reform, the 35-year threshold did not apply to the civil servant scheme). People with a 42-year career will still be eligible for early retirement at 60 (and at 61 with a 41-year career). The transition starts from 2013 and the reform will be completed in 2016 (a few years later for specific schemes with higher accrual rates). The impact of the reform on workers presently aged 57 and over who have worked at least 31 years will be capped to 2 years additional working years. In the civil servant scheme, the pension amount will take into account the earnings over the last 10 years instead of the last 5 years; this reform will not apply to civil servants who reached the age of 50 on 1 January 2012. For "prepensions" (an early retirement scheme for labour market reasons embedded in the unemployment insurance), the minimum career length requirement will also be gradually increased to 40 years. The minimum age will remain 60 years in general, and be increased to 60 years for specific cases to which a lower age presently applies. Pension entitlements for "prepension" before the age of 60 years will be reduced. Pension entitlements for certain periods of unemployment and certain career interruptions will also be reduced.

[102] ASISP Network (*Analytical Support on the Socio-Economic Impact of Social Protection Reforms)*, GVG: Synthesis Report on 2011 Annual Reports http://www.socialprotection.eu/

[103] Ibidem.

Most Member States encourage workers to stay longer in employment, so that they earn additional pension rights. Longer working (and reducing early retirement) is thus one of the ways of improving pension replacement rates. Nevertheless, even if the pension incentives are in place, **the challenge is to a large extent with the labour market to provide enough job opportunities for the older workers**. Improving working conditions is crucial so that the nature of the job is less harmful to workers' health. Promotion of retraining and a change of occupation when the previous one becomes too physically challenging are other possibilities. Older workers are generally considered to be one of the most vulnerable groups in the labour market (others being, for example, youth, women and disabled workers). One reason for this is that they are often viewed as being more costly than their younger counterparts, due mainly to the prevalence of age-related remuneration systems and seniority wages.[104]

In most Member States it is possible **to combine earned income with the receipt of pension benefits**. However, some countries use earnings thresholds or benefit reductions for early retirement pensioners (e.g. CZ, DE, FR, LU, PL). The idea behind is to ensure that the social protection objectives of benefits are achieved without resulting in high benefit/earnings combination, while still supporting a parallel objective of higher labour market participation.

Some Member States offer unlimited possibilities for suspending pensions or de-retirement (e.g. LV, SE), while in others people who re-enter the labour market continue to receive benefits and their pension is suspended only if earnings exceed certain threshold.

In a number of Member States there are no **special incentives to hire older people**. Other countries report that they propose reductions in social contributions (e.g. BE, ES, LV, LU, PL, PT, SK), shift part of contributions towards employees (FI), offer special flexible contracts (FR) or subsidise salaries (LT) of people in their pre-retirement age or old-age pension beneficiaries.

In a few Member States, early exits through **supplementary pensions** (occupational or private) used to be a common practice, though it is now diminishing or has stopped. Supplementary pensions should be seen not only as a potential bridge between early retirement and reaching pensionable age, but primarily as a way to improve adequacy of retirement income. If they are used to finance early withdrawal from employment, supplementary pensions are not fulfilling their **role of improving pension adequacy**.

Some Member States discourage early take-up of supplementary pensions by imposing higher taxes or social contributions on annuities drawn under certain age threshold (e.g. BE). Moreover, private or occupational pension benefits are actuarially reduced in case of early withdrawal. But this may not actually influence labour market exit, as employees are often unaware of these reductions. It seems that more needs to be done to change the labour market exit behaviour than providing the right financial incentives only. In SE employment of older workers is encouraged through lower social contributions resulting in employer incentives and through the in-work tax credit resulting in incentives for employees.

4.2.2. Recent performance of the labour markets

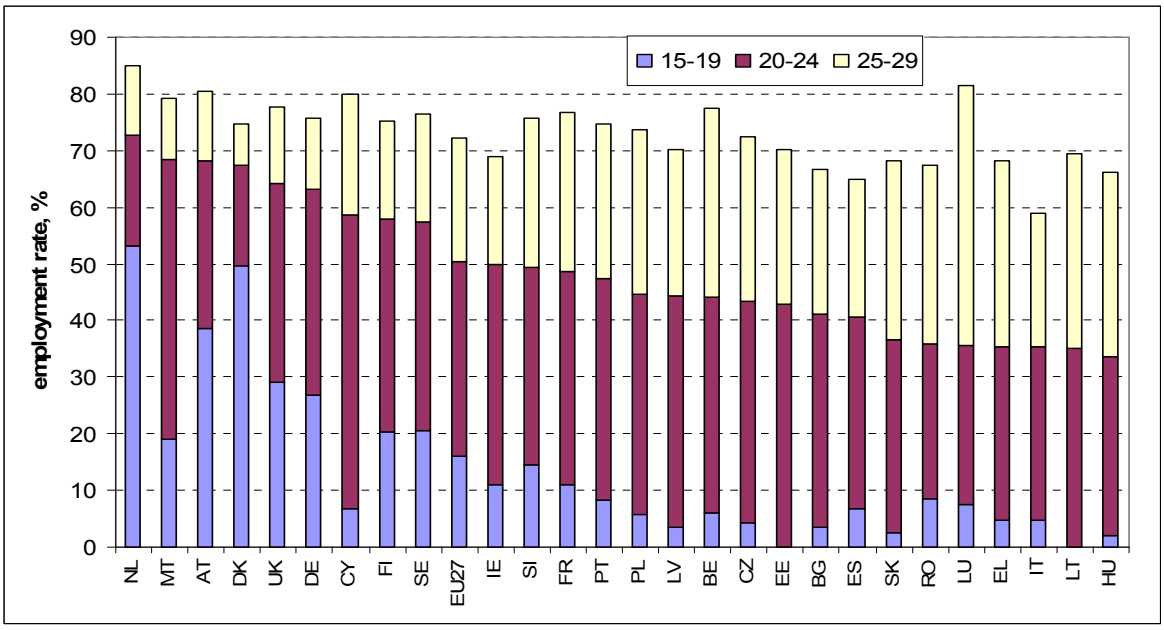
[104] *Employment in Europe 2007*, Chapter 2 Active ageing and labour market trends for older workers.

It is now widely accepted that there is no trade-off between the employment of younger people and that of older people (compare Figure 41 and Figure 42) [105].

International comparisons show that restricting the labour supply of older workers can actually reduce overall employment, as it generates an additional cost to social protection systems.

In the majority of Member States there are no special incentives to encourage young workers not in training or education to enter early the labour market. Some instruments, for instance the required contributory period or the principle of lifetime earnings, act indirectly, but given the focus in public debates on pensionable ages it is questionable whether younger workers are aware of the risks to the future adequacy of their pensions. Research[106] indicates a lack of awareness of the link between work and pension income.

Figure 41. Employment rate of people aged 15-19, 20-24, and 25-29 in EU Member States in 2010



Source: ESTAT LFS

Employment rates of young workers vary considerably between Member States. Lower employment rates of those under the age of 25 are usually explained by enrolment in education or unemployment. In 2010 there were nine Member States where the employment rate of those aged 25-29 was below 70% (IT, ES, HU, BG, RO, SK, EL, IE and LT).

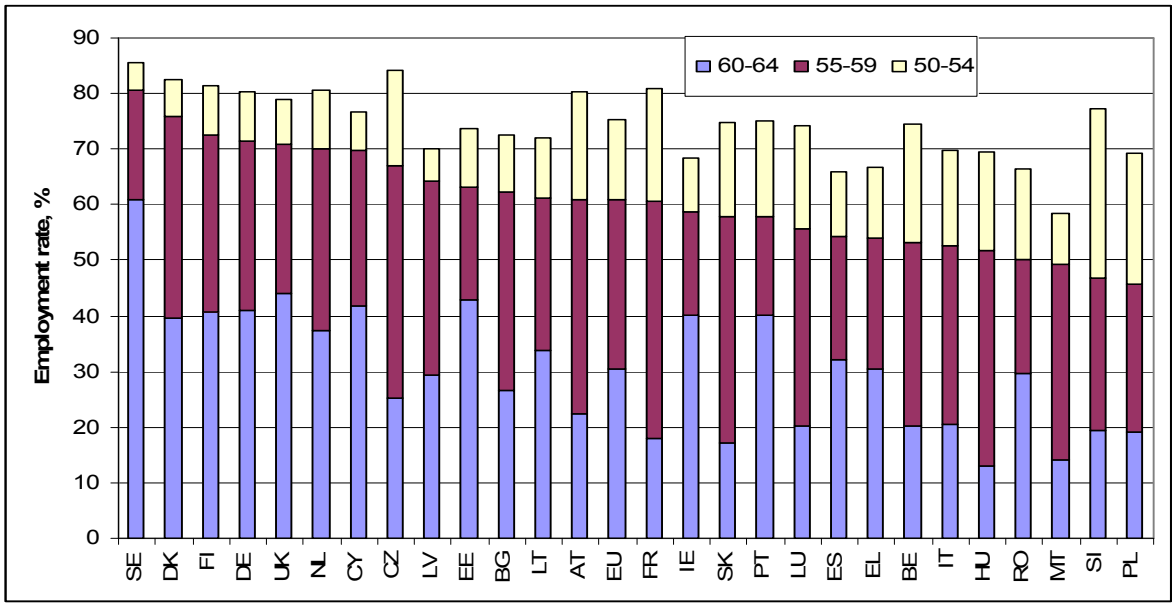
[105] See for instance empirical studies from Kalwij, A., Kapteyn, A. and K. De Vos (2009), "Early Retirement and Employment of the Young", Working Paper, RAND, and Agar Brugiavini & Franco Peracchi,(2010). "Youth Unemployment and Retirement of the Elderly: The Case of Italy," NBER, which shows that the "lump of labour" assumption fails in Italy. The direct relationship between the unemployment rate of the young and the labour force participation of the old is pro-cyclical, i.e. a higher labour force participation of the old is related to a lower unemployment rate of the young.

[106] Social Protection Committee 2006 report on minimum income provisions.

Younger workers have been particularly hard hit by the crisis. The employment rate in the 20-24 age group decreased from 54.9% in 2008 to 50.3% in 2010, having a negative effect on pension accruals of young workers. Given the fact that longer contributory periods are usually required in the reformed pension systems, this might have a negative effect on future level of pension benefits.

Due to the use of early retirement schemes, **effective retirement age** is usually lower than the normal pensionable age. In several Member States 33% or more of new retirees are under the age of 60 (e.g. SK, CZ, HU, FI). In a majority of countries more than ½ of new retirees are 60-64 years old (e.g. BE, BG, CZ, DE, FR, LV, MT, PL and FI). A majority of new retirees is 65 and more years old in countries with universal or contributory flat-rate pensions (e.g. DK), but also some countries with earnings-related pensions (e.g. PT and ES). It is important to notice, however, that retiring before 65 (and in some countries even before 60) is not a general evidence of early retirement, as the pensionable age is very often set below the age of 65.

Figure 42. Employment rate of people aged 50-54, 55-59, and 60-64 in EU Member States in 2010



Source: Eurostat LFS

People can combine retirement with work, or leave the labour market before applying for a pension. Nevertheless, in a majority of countries early exit from the labour market and early access to retirement are two sides of the same coin. In the context of retaining older people in employment longer, it is interesting to examine **the employment rate profile across specific ages**.

Figure 42 presents differences between employment rates of those aged 60-64, 55-59 and 50-54. One can see that a high proportion of people are not working before the age of 55 in SI, PL, but also in BE, FR, AT, LU, and HU. The employment rate of people aged 55-59 drops by more than 35 p.p. in FR, CZ, SK, AT, HU, DK, LU, BG and MT. SE is the only Member State with the employment rate of people aged 60-64 higher than 60%.

Compared to the situation reported in the 2008 SPC study, some Member States have reduced the share of people under the age of 60 or in the 60-64 age bracket (e.g. DE, PL) among the new retirees. This is also reflected in the recently growing employment rates of older workers.

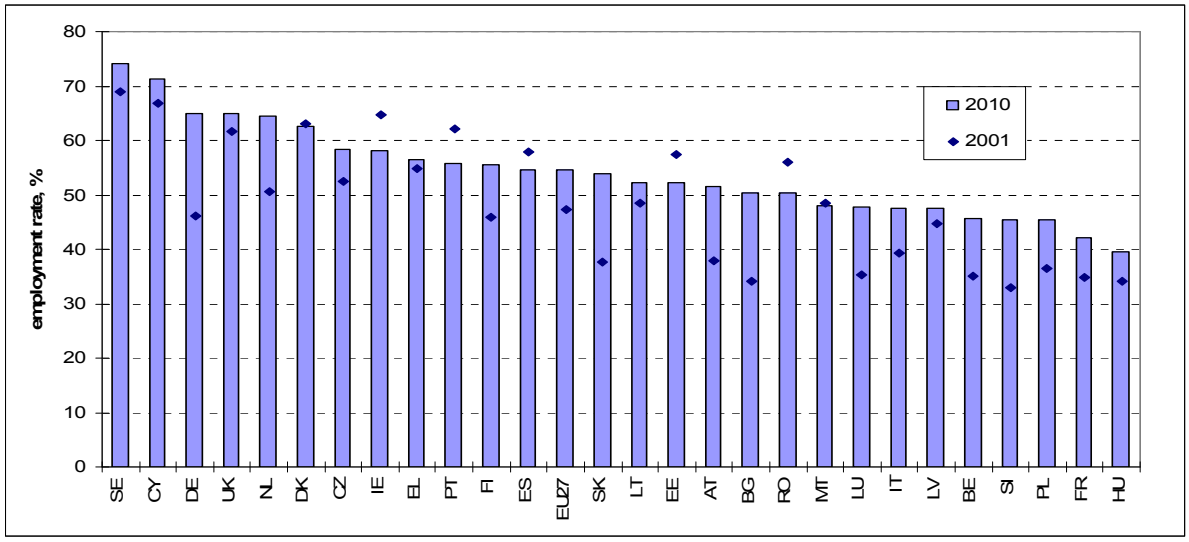
Along with the rise in female participation, **employment of older workers** has been one of the most dynamic components of the EU labour market in recent years. The employment rate of older female workers (55-64) increased by more than ⅓ in the last decade, from 28.2% in 2001 to 38.6% in 2010. The corresponding increase for older male workers, at less than one sixth, was less pronounced (from 47.4% in 2001 to 54.6% in 2010) (Figure 43).

For older women this is largely a consequence of the longer-term trend of rising female participation in general, with higher participation in successive cohorts of better educated younger women progressively feeding through into improved participation in older age groups. This will also be reflected in future pension levels. For older men it marks a turnaround in the long-term trend of falling participation rates observed since the 1970s. The overall increase in

the employment rate of older workers is also partially a result of the underlying demographic change. In some countries the baby-boom generation is entering their late fifties, so partially the increase in employment rate is attributable to changes in population structure (as employment rates for 55-59 years old are higher than for the 60-64 years old).

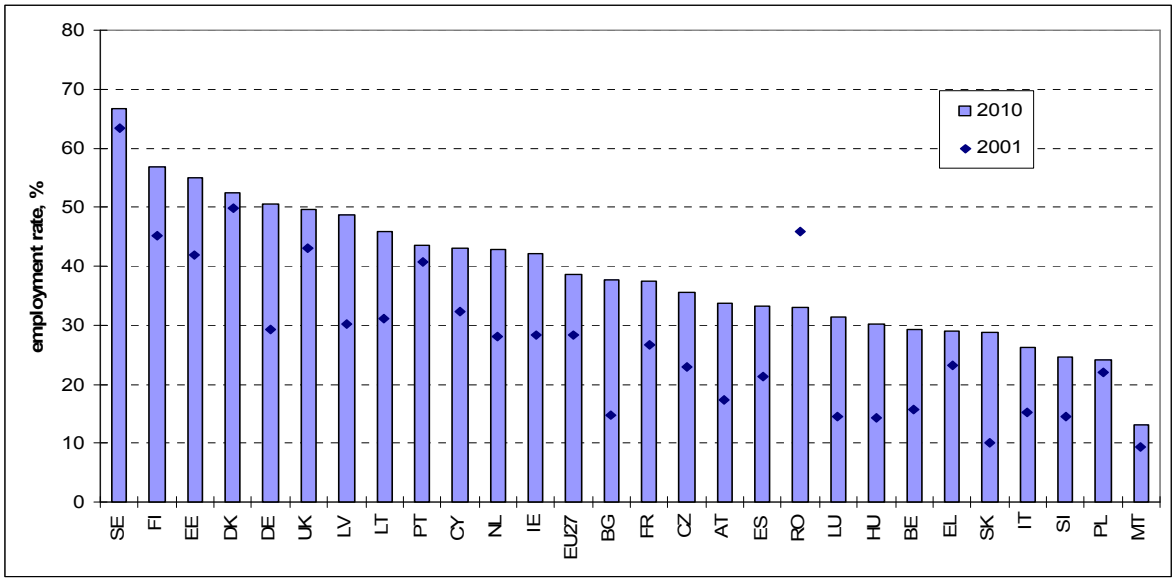
The most marked increases in employment rates of older women (of 15 p.p. or more) in the last decade have been observed in BG, DE, SK, LV, LU, AT and HU. For older men the employment rate has increased by 10 p.p. or more in DE, SK, BG, NL, AT, SI, LU and BE. Although it is not always so, generally the larger increases in employment rates of older workers have occurred in countries that started the decade at the lowest levels. RO has been the only Member State to observe a decrease in employment rates of both older women and men. PT, IE, EE, and ES have recorded lower employment rate for older male workers in 2010 than in 2001, whilst SE is the country with the highest labour market participation for both men and women throughout the period.

Figure 43. Employment rates of men aged 55-64 in the current EU-27 Member States in 2001 and 2010



Source: ESTAT LFS

Figure 44. Employment rates of women aged 55-64 in the current EU-27 Member States in 2001 and 2010



Source: ESTAT LFS

In spite of these recent improvements, **in many Member States the employment rates of older workers are still low**, lying in 2010 either below 40% in MT, PL, HU, SI, IT, BE, LU and FR, or above 40% but still below the EU-27 average of 46.3% in SK, RO, EL, AT, BG and ES, and exceeding 55% in only a few cases (FI, CY, UK, DK, DE and SE). And it is noteworthy that employment rates of older workers (55-64) is everywhere lower than employment rates for the total population (15-64), which reached 64.1% in 2010 in the EU-27. Furthermore, despite progress in female employment rates, **differences for older workers according to gender are still substantial in most Member States**. This is due at least in part to lower levels of female participation in general, including at younger ages, the lower skill levels of older women and lower pensionable ages for women compared to men in many Member States. This indicates both a strong need for enhanced efforts as well as ample room for further improvement.

Older workers are relatively unlikely to move from employment to unemployment, but once unemployed, they experience longer unemployment spells. This might be due to the fact that they search less intensively for work, but also because they are trapped in early retirement, or they may face stigmas in the labour market. Health status also affects the retirement decision.[107]

The **gap between the normal and the effective pensionable age**s can be an indication of a possible use of early retirement schemes (Figure 45). As mentioned above, the age of exit from the labour market does not necessarily equal the age of pension take-up.

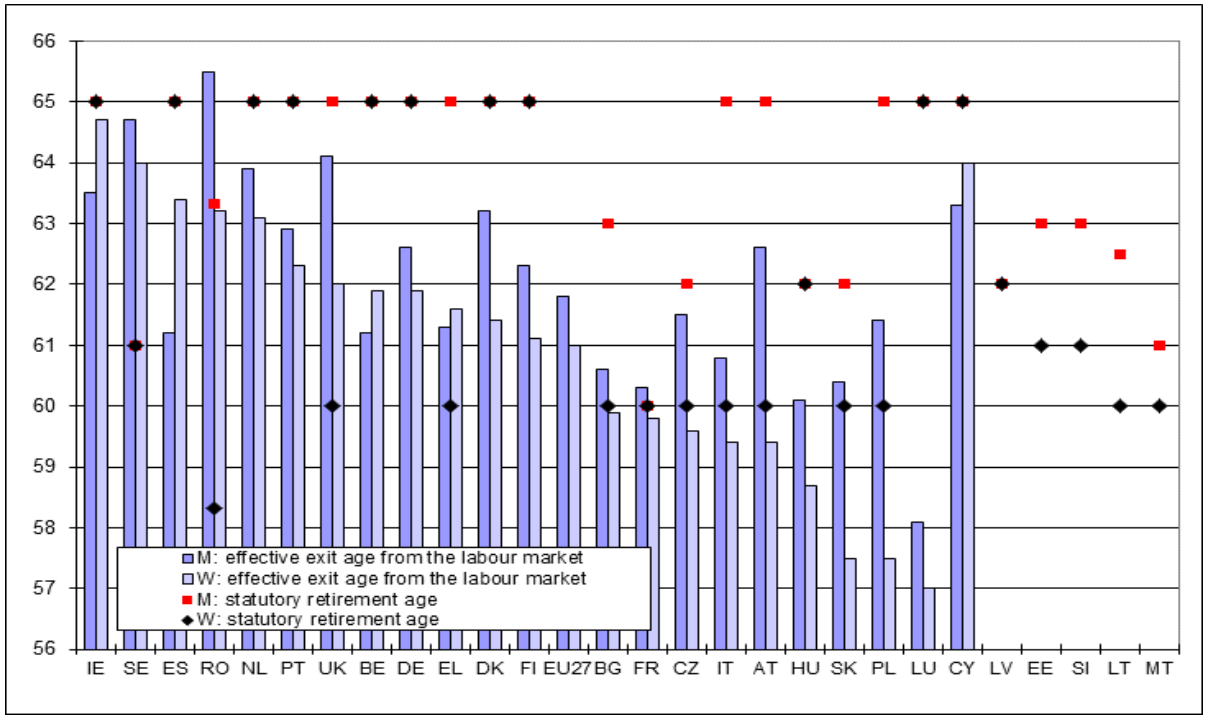
In 2009 the effective exit age of men from the labour market was lower than the pensionable age by three years or more in CY, LU, IT, BE, ES, EL and PL, and between two and three years in AT, DE and PT. For women the gap exceeded three years in LU, SK, DK, HU, BE and DE, while between two and three years in PT and PL (see Figure 45). RO and SE were the only countries where the average effective exit from the labour market for both genders took place

[107] *Employment and Social Developments in Europe 2011*, Chapter 5, Active Ageing http://ec.europa.eu/social/main.jsp?catId=113&langId=en&pubId=6176&type=2&furtherPubs=yes

after the pensionable age. Also women in EL and UK on average were leaving the labour market after having reached the pensionable age.

A high gap between the pensionable and effective retirement ages can reflect low incentives in pension systems to work longer (where they are not actuarially neutral), easy access to early retirement schemes, or inadequate employment opportunities for older workers.

Figure 45. Pensionable age and average effective exit age from the labour market, 2009



Source: ESTAT LFS, SPC National questionnaires

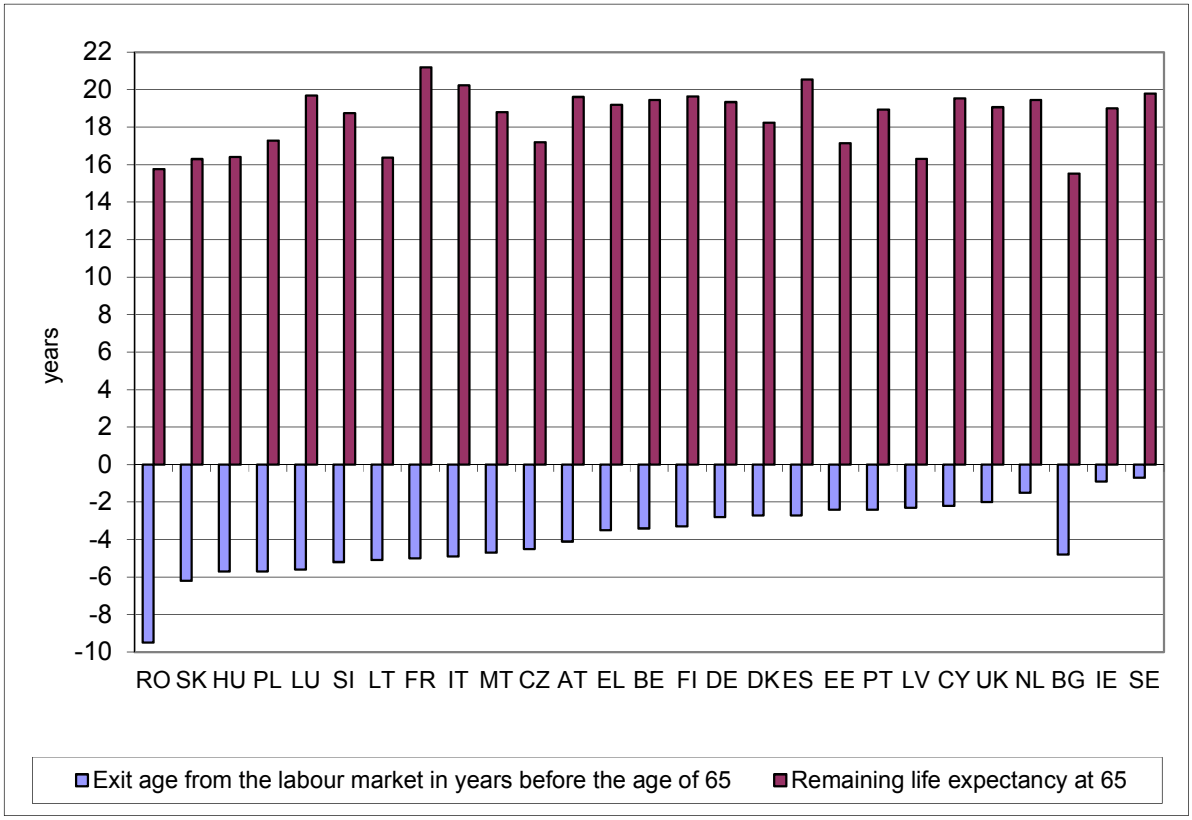
Notes: According to the administrative data for PT, in 2010 the average effective age to call for an old-age pension was 63.1 years in the case of men and 63.8 years in the case of women (higher than the graph presents). Source for BG: Administrative pension database of the National Social Security Institute.

In some countries exit age from the labour market is close to the pensionable age, but still relatively low if life expectancy is taken into account (see Figure 46). Comparison of the exit age from the labour market with the remaining life expectancy at 65 helps to estimate the remaining life-time spent out of the labour market[108]. In some countries, **people who left the labour market in 2009 can expect around 25 years or more in retirement in FR, LU, IT, less than 20 years in BG, LV, EE and IE, and between 20 and 24 years in the majority of Member States**. Comparison of **time spent in retirement** with life expectancy at birth and at the time of retirement **is an important aspect of pension adequacy** and inter-generational solidarity.

According to the 2012 Ageing Report, the average total effective exit age from the labour force in the EU-27 in 2010 was 62.1 (62.5 – for men, 61.7 – for women).

[108] Or time spent in retirement if the exit age from the labour market is used as a proxy of the retirement age.

Figure 46. Exit age from the labour market (years before the age of 65) and remaining life expectancy at 65, EU Member States, 2009



Source: ESTAT

Note: Data for RO are different than reported separately for the two genders. According to the administrative data for PT (63.4 years) the number of years to attain the exit from the labour market (statutory age: 65 years) should be 1.6 years instead of 2.4 obtained through the indicator from the LFS. Source for BG: Administrative pension database of the National Social Security Institute.

Pension reforms in the Member States will play a role in the EU's ability to achieve its goal of raising the employment rate to 75% by 2020. The goal would be de facto impossible to achieve, unless employment of older workers is boosted.

It seems that the pension challenge is more about reducing early retirement and ensuring that people work until pensionable age rather than deferring retirement after the pensionable age. Considerable drops in the employment rates in the 50-54 and 55-59 age brackets suggest that possibly in some countries the balance between having high level of guaranteed pensions and incentives to work longer could be improved. The marginal effects of benefit systems in promoting longer working lives should be strengthened.

The design of pension systems has a strong impact on effective retirement ages and adequacy of pensions. Rules on deferred and (especially) early retirement influence people's decisions on when to retire. In recent years Member States have seen progress in tackling early retirement schemes, but more efforts are needed in many cases. With increases in pensionable ages and required contribution periods, the challenge of supporting adequacy of pensions is to a

larger extent shifted to the ability of labour markets to create jobs and to keep people in the labour market. This calls for comprehensive active ageing strategies, including investments in the employability and life-long learning of older workers, and efforts to take their health and safety needs into account.

In a situation where the link between contributions and benefits is strengthened in the wake of the pension reforms, there is a risk that a growing number of people reaching the pensionable age will not see a possibility to accrue rights to pension benefits which would exceed the level of minimum income provisions. In consequence, they would be insensitive to pension systems incentives to work longer. These incentives should thus be balanced against the goal of adequacy of pensions expressed both in terms of poverty avoidance (minimum income provisions) and income replacement (accrual of pension rights).

Pension levels can also be lowered through adjustments in the pension formula used to calculate benefits. One significant development has been the introduction of a demographic adjustment factor in some Member States. For countries which have introduced life expectancy adjustment factors in their statutory pension systems (e.g. FI, FR, PT, PL, SE), this can translate into a decrease of theoretical replacement rates. Thereby, in order to keep income replacement rate constant, they provide incentives for people to postpone their retirement in accordance with rising life expectancy and offer opportunities for achieving adequate pension levels. For LU, a change in the legally fixed pension indexation rule will change once financial resources of the pension scheme get insufficient with as a consequence a reduction of the theoretical replacement rate.

4.2.3. Impact of longer working on future replacement rates

Amongst other measures, allowing people to increase their replacement rates within public pension schemes can make a major contribution to future adequacy. In several Member States, working longer can compensate for the reduction in replacement rates of public pensions at a given retirement age.

Currently, deferred retirement is usually possible and unlimited, but in some Member States consent of employer (SE) or minimum number of hours worked (DK) are required, and deferred retirement can be limited by collective agreements (ES). One year of additional work usually can lead to a 2-7% bonus. In some countries bonus is higher for people with longer contribution periods (e.g. ES, PT). If economic incentives to retire later are not actuarially neutral and are too low, they may not have the desired effect. But if they are too high, the cost to the public purse may be significant. There is also a risk of subsidising those who would in any case have postponed retirement.

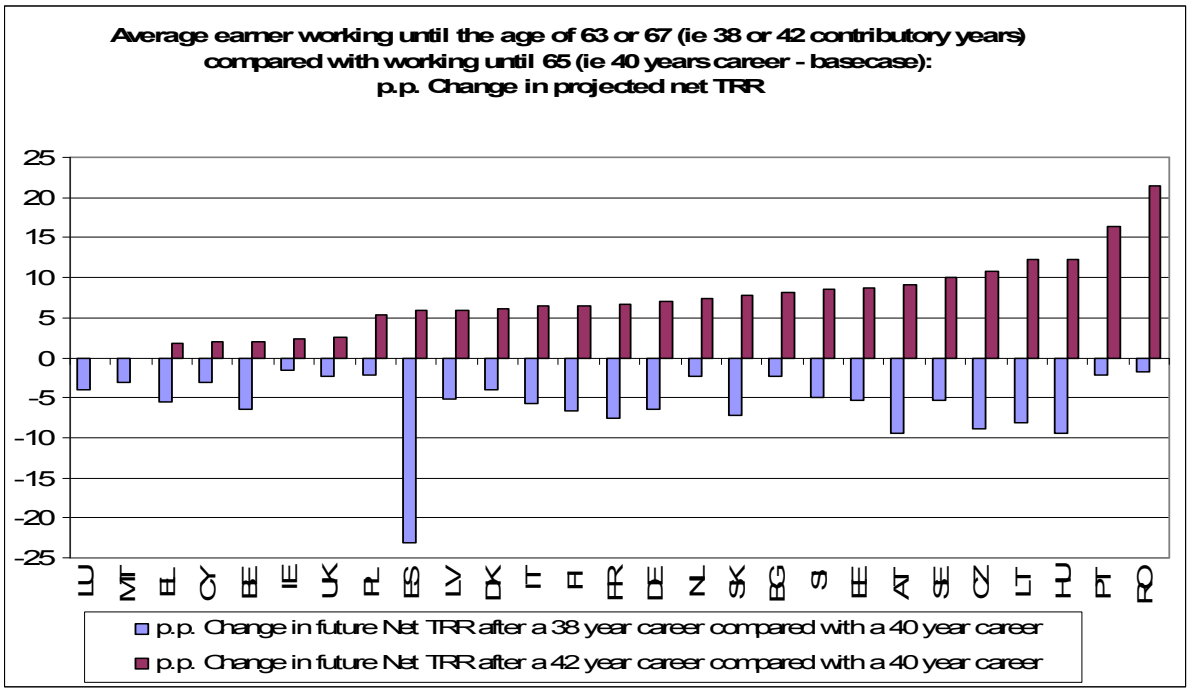
Deferred retirement in a majority of Member States has much lower appeal than early retirement. Some countries report there is no clear evidence to indicate that deferral had an impact on the labour market exit age of individuals.

Analysis of the prospective theoretical replacement rates can help to find the answer to what extent **in the future** will people get a better pension by staying longer in employment? And will incentives to work longer or disincentives to retire earlier be comparable for different wage levels?

Calculations show that in all Member States delaying retirement by two years (retirement in 2052 at 67 after a 42-year career) (Figure 47) results in higher future net TRR (increases of 10 p.p. or more with respect to retirement at 65 are projected in SE, CZ, LT, HU, PT, RO), while earlier retirement (in 2048 at 63 after a 38-year career) results in lower replacement rates (drops of more than 20 p.p. occur in ES). Again, as is the case with *current* replacement rates (which reflect past pension rules) and according to the assumptions used, the incentives embedded in current rules of pension systems (which are reflected in future theoretical replacement rates) **are not symmetric**. In all but a few Member States the increments in rates for prolonged working lives by two years are larger than the falls in replacement rates owing to two years shorter careers. It is also important to note that since the analysis here shows net replacement rates some of the work incentives reflected in the results can be imbedded in the **taxation systems** and not just the pension systems.

Penalties for early retirement take different forms. In some countries a low initial early retirement benefit is replaced at the pensionable age with a higher old-age pension (e.g. LV), but in others the penalty has an impact on the whole retirement period (e.g. ES, HU). Value of the benefit is usually reduced by 3-8% of the old-age pension per year before the pensionable age.

Figure 47. Effects on prospective net TRR of different career lengths (shorter / longer careers compared to retirement at 65 in 2050)

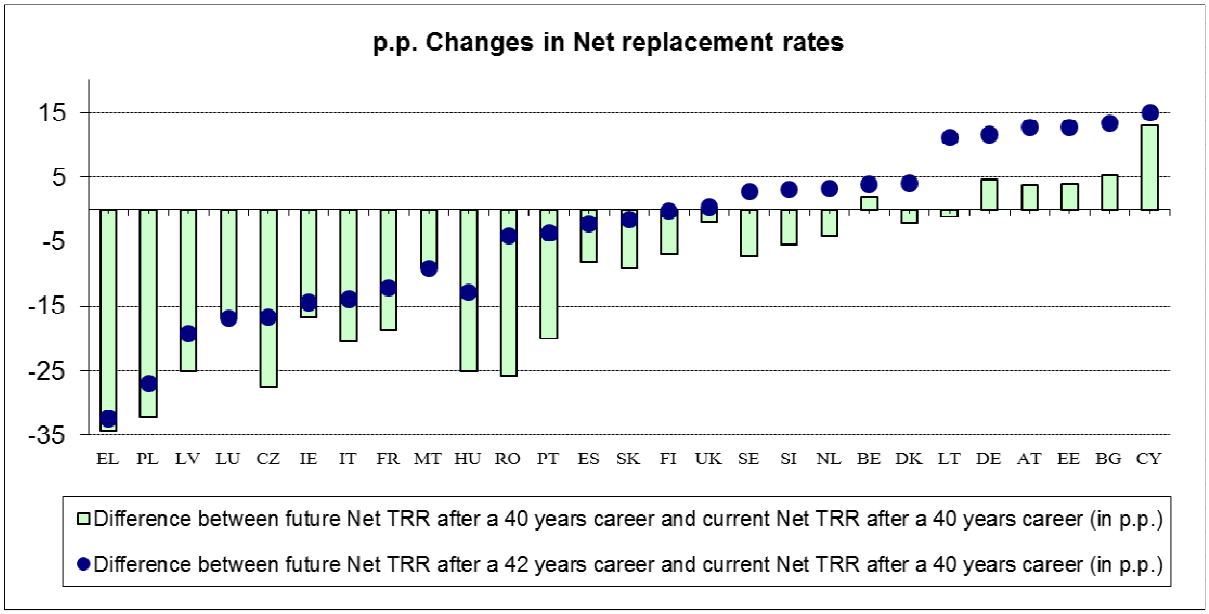


Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Given the reality of **increasing pensionable ages**, it is also interesting to analyse the **impact of this policy on replacement rates**. A higher pensionable age in the future might help to maintain or even increase the current level of replacement rates (otherwise dropping in many cases over time as discussed earlier). This can be seen by a dynamic example comparing the

replacement rates received by people retiring currently at 65 after a 40-year career with replacement rates of people retiring at a higher age (67, after a 42-year career) in the future. The Figure 48 shows that **2 years longer working can provide higher pension entitlements in the future**, counterbalancing for the large drops in total net replacement rates in many countries or even yielding higher replacement rates than today (see further discussions on how working longer can improve pension provision in the future in section 4.3).

Figure 48. Projected impact on net replacement rates of working longer in the future

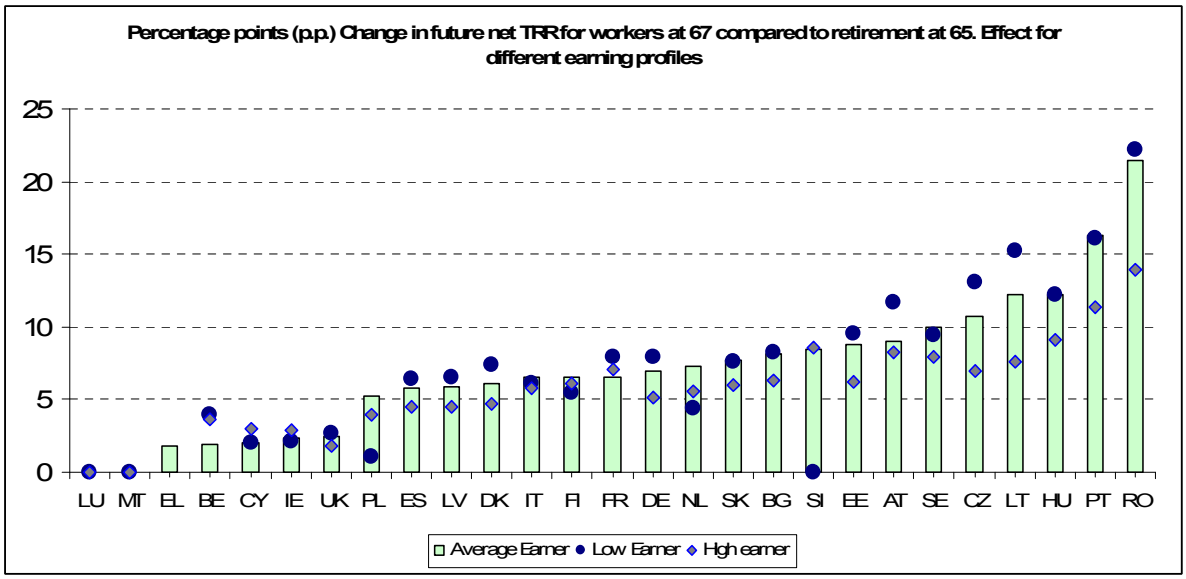


Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

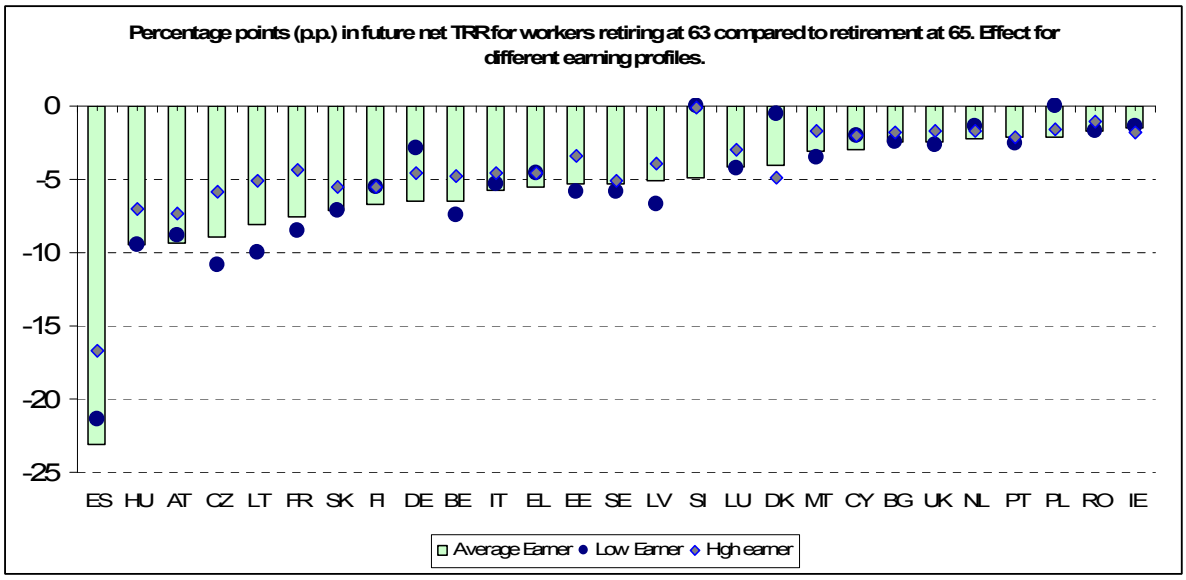
It is also of interest to analyse whether the **incentives to work longer are comparable for different wage levels in the future**, thus contributing to reflections on the adequacy impacts of working longer across different income groups.

Figure 49. Effects on prospective net TRR of longer / shorter careers for different earning profiles

a) Longer careers (42 contributory years compared to 40 years)



b) Shorter careers (38 contributory years compared to 40 years)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Figure 49 demonstrates that the **incentives to work longer and disincentives to early retirement are broadly preserved across the different income groups** for the majority of Member States: thus, the percentage points change in prospective net TRR after 38 / 42 years career compared to 40 years career is similar for all income groups (low / average / high income earners). In a few Member States the incentives to longer working (measured by increase in TRR in p.p.) are bigger for low income earners than for high income earners (ES, LV, DK, FR, DE, EE, AT, CZ, LT, RO), while the reverse is true in CY and IE (high income earners have marginally better incentives to work longer than low income earners). On the other hand, disincentives to shorter careers are stronger for low income earners in CZ, LT, FR

and LU and marginally in MT, and only in DK high income earners have stronger disincentives to early retirement than their counterparts with average or low incomes.

4.3. Adequacy risks inherent to different pension systems

All types of pension systems need periodically to be adapted to demographic trends, in particular to the ongoing increase in life expectancy. Longer working would be necessary to underpin adequacy in the reformed pension systems. Nevertheless, a decline in the relative level of public pensions and greater role of prefunding (4.1.1) make pension benefits more dependent on the outcomes of labour and financial markets. This entails some risks for pension adequacy, which have different character in particular pension schemes.

From the point of view of the individual, the risks are the most imminent in the funded defined-contribution schemes, but members of the funded defined-benefit and the pay-as-you-go schemes also have to bear the burden of adjustment.

In a number of Member States we can already observe growing importance of funded defined-contribution (DC) provision. DC-funded pensions can be statutory, occupational and voluntary, and all three are expected to see some growth in at least some Member States. Currently, statutory DC-funded schemes are found in the majority of new Member States (BG, EE, LT, LV, PL, RO, and SK) together with SE and IT. In the wake of the crisis a number of Member States have temporarily (e.g. EE) or ultimately (e.g. LV, LT, PL) reduced or abolished (HU) contributions to the mandatory DC schemes. A number of Member States have DC occupational pension schemes, notably UK, IE, SE and DK, although others including NL, BE and CY also have some provision of this type. Voluntary DC provision is currently only of importance in IE, UK, CZ and particularly DE, on the back of the strongly incentivised Riester pensions[109].

For these countries the questions seem to be how to control the risk for pension level, how to give people a realistic idea about what can be obtained, and how to ensure that the payout phase matches the original purpose of pension savings as efficiently as possible. The questions are particularly relevant for countries where DC schemes are mandatory and play a significant role in income replacement.

In relation to an individual's capacity to bear risk a possible solution is to gradually lowering the investment risk as people get closer to retirement age (so-called life-styling or life-cycling investment strategies). Meanwhile, the choice between investment strategies with different potential rates of return and levels of risk leads to questions as to the accuracy of information. Evidence from the 2008 peer-review in Warsaw suggests that many people went for riskier options than would have been justified given their earning capacity and the length of their working life. Additional information provided by non-partisan organisations such as consumer NGOs could help people make the right choices. Introducing limited-risk default options designed to be a reasonable choice for most people would likewise help.

[109] It is important to remind that Riester pensions are not pure DC schemes because they do not leave the investment risk entirely with scheme members. Financial institutions are obliged to offer to their customers a guarantee of maintenance of nominal value of capital.

The payout phase in DC pension design often appears to be an afterthought when it should be central to the scheme. A poorly designed payout phase means money supposedly saved to provide retirement income leaks out of the pension system to be used for other purposes such as bequests. This is a problem unique to DC pensions. Pay-as-you-go (PAYG) and defined-benefit (DB) schemes and their inherent cross-subsidies between those who live for longer or shorter periods in retirement ensure that all resources are used to provide pensions, also in the form of survivors' benefits.

Moreover, in funded DC schemes actuarial adjustments occur automatically in the payout phase. The pension fund accumulated will have to cover more or less years of retirement depending on when a person retires and how long they can expect to live on average, so the amount they will receive annually will vary accordingly. This is made most overt (and individual longevity and investment risks are most reduced) when the payout phase is via annuities.

The investment risk in the defined-benefit (DB) occupational pension schemes is with the scheme sponsor, so in the shorter term people in generally get the pension they expect. Going forward some impacts of the economic crisis will be felt as funded DB pension schemes that are in deficit as a result of falls in investments seek to restore their funding balance. The crisis has caused most DB funds to move into deficit, due not only to falls in the value of investments but also to changes in the market interest rates used to translate future liabilities into today's money terms.

Member State reactions to the problems with funded schemes have in the short term been pragmatic. National pension supervisory authorities have aimed to allow pension funds more flexibility than normal. The normal maximum period allowed for recovery from deficits has been extended and greater use has been made of existing flexibility. Regulators and the insurance and pension industry have agreed to temporary changes in the standards by which the solvency of funds is calculated to avoid funds locking in their losses by being forced to sell assets in the depressed markets. The double aim is to avoid destabilisation of the mortgage bond market and substantial losses for pension savers.

Dialogue between social partners is often a key element behind the recovery plans, as they involve attempts to share the impacts not only over time but also between different interests. A greater sharing of risks between scheme members and employers may be needed if the decline in DB provision is to be halted and such schemes are to have a viable future. The existing risk-sharing mechanisms can be used to lower or freeze indexation of benefits, increase contribution levels and/or increase the pensionable age. This shares the impacts between employers and pension scheme members, whether still working or retired. These mechanisms and the increase in permitted recovery periods aim to avoid the need for any last-resort adjustment of actual benefits.

Another important issue with regard to complementary occupational or private savings is how to increase their coverage, in particular for women. The DC and DB complementary schemes are often limited in coverage to prime-age workers with higher earnings. They also are gender-unbalanced (see 3.1.2). Auto-enrolment whereby employees are automatically enrolled into a complementary scheme (with a possibility to opt-out.) is seen as a solution for low coverage in some Member States.

Statutory PAYG schemes also are not immune to the economic downturns. The sustainability of PAYG pensions ultimately depends on the strength of the underlying economy, such as

fewer people working and paying contributions, lower economic growth and depending also on institutional arrangements on national public debt. At least over the short term the effects are limited. Where they occur, impacts may take the form of lower indexation, higher contributions or changed timing of reforms.

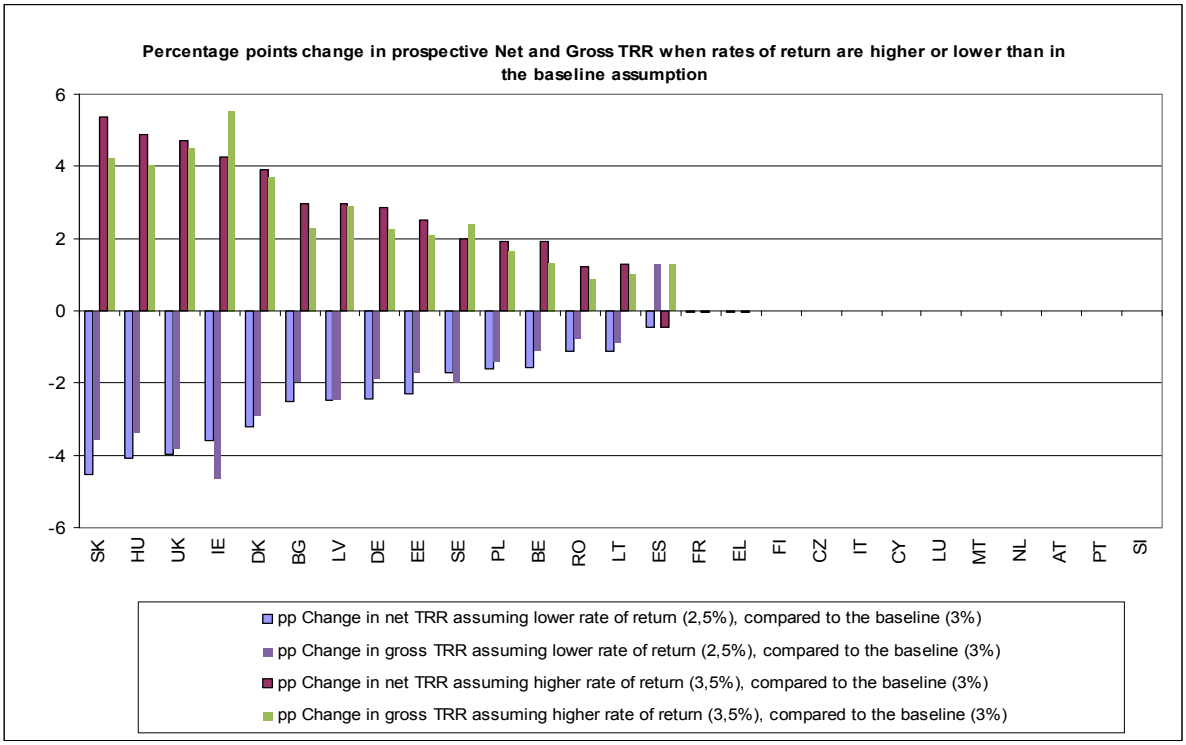
One strength of PAYG pensions is that they are more resilient to shocks from economic recessions in the short term, and these impacts can be smoothed and shared over long periods. The majority of Member States have preferred to accept increased conjuncture linked deficits in their social security schemes, so that automatic stabilisers can play their role, by not affecting pensions currently in payment (EL, LT and HU are exceptions). Anti-cyclical behaviour in social spending is an important part of supporting an economy in recession. This is one of the factors that can contribute to ballooning general government deficits and a dramatic increase in the level of gross general government debt in the EU. In order to limit the increase in public debt some countries have decided to deplete their reserve funds.

The effect of the crisis on different cohorts of pensioners varies depending on how much future pension systems will differ from the current arrangements. In most Member States, most retired cohorts today obtain their pensions under pre-reform rules providing for guaranteed pension levels. Younger cohorts in reformed schemes may be affected to some extent depending on the design of the scheme.

By varying the assumptions about the future evolution of macro-economic variables, **Theoretical Replacement Rates allow studying future pension adequacy to be studied under different possible macro-economic scenarios** and therefore give an indication of adequacy risks inherent to different pension schemes.

For example, the base-case calculations of prospective replacement rates are based on the assumption that the annual real rate of return for funded schemes is 3% (as from 2017 onwards to 2050). Studying the effect on theoretical replacement rates of changing this assumption is a way of assessing how financial market fluctuations may affect the future adequacy performance of DC pension systems. Figure 50 shows the effect on prospective replacement rates of higher (3.5%) or lower (2.5%) rates of return.

Figure 50. Effects on net TRR of higher/lower rates of return (compared to the baseline assumption) (CZ, CY, ES, LU, MT, NL, AT, SI, PT, FI no change)

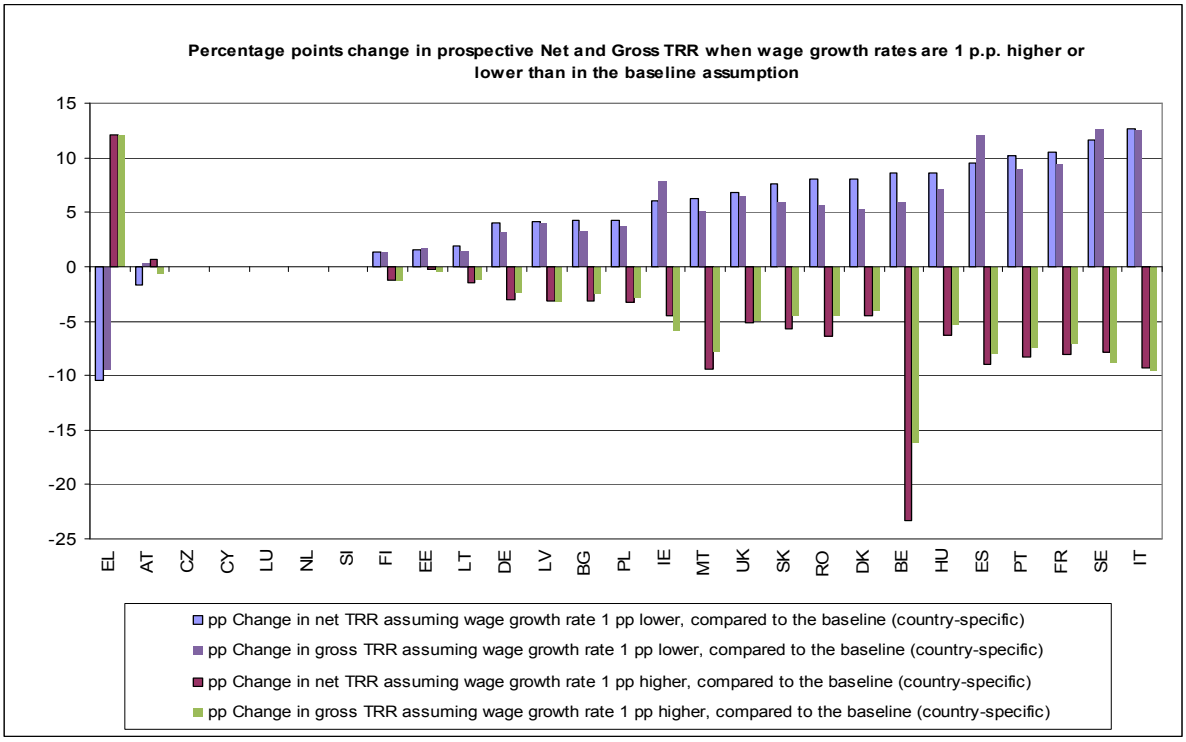


Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Member States where funded systems have a greater role (i.e. either mandatory funded schemes or occupational and other supplementary systems) are clearly sensitive to changes in rates of return, and the effect is such that an increase in rates of return provides hikes in the replacement rates of a larger magnitude than the falls caused by equivalent drops in rates of returns. 0.5 percentage points higher rates of return often entail gains of more than 2 p.p. in replacement rates (compared to the basic assumption). These results are important to reflect on the increasing exposure to financial risks in Member States where funded pensions are being / have been introduced.

Likewise, the base-case calculations of prospective replacement rates are based on country-specific assumptions about the future evolution of earnings growth rates (see table inAnnex 2: average annual earnings real growth between 2010 and 2050 lies between 1.3 and 2.5 for all Member States). Studying the effect on theoretical replacement rates of changing this assumption is a way of assessing how macroeconomic fluctuations may affect future adequacy performance of pension systems. Figure 51 shows the effect on prospective replacement rates of higher (1 p.p.) or lower (1 p.p.) wage growth rates than in the country-specific base case.

Figure 51. Effects on net TRR of higher/lower wage growth rates (compared to the baseline assumption) (CZ, CY, LU, NL, SI: no change)



Source: Indicators Subgroup of the SPC, 2010 - 2050 Theoretical Replacement Rates exercise

Higher wage growth yield lower TRR in the long-run in the vast majority of Member States, whilst lower earnings growth lead to higher TRR in the future. Drops or hikes in TRR associated with 1 p.p. change in earnings growth rate are often beyond 5p.p. (compared to the baseline scenario). The first pension and the last salary are the numerator and the denominator of the replacement rate. The value of the pension usually depends on valorised past earnings. Some EU countries with earnings-related schemes valorise past earnings in line with economy-wide wage growth. However, other countries valorise earnings to price inflation or a mix of price inflation and earnings growth. In the situation of higher wage growth, the first pension will be relatively lower in comparison to the last salary, so that the replacement rates will be lower. In a few countries (CZ, CY, LU, NL, SI) changes of the wage growth rates entail virtually no changes in the net TRR.

4.4. Providing information to future pension beneficiaries

As explained in chapter 2, growing concerns about the sustainability of public pension systems have led to reforms some of which have tended to increase the degree of uncertainty over the amount of pension which individuals will receive when they retire, particularly with funded DC schemes or PAYG NDC schemes. The changes in question include, in particular, linking contributions to benefits, building in annuity factors to take account of longevity, and introducing funded schemes to link pensions to the performance of the economy. Previous section of chapter 4 illustrate that Member States are more likely to support adequate pensions by achieving a better balance between the time people spend working and the time they spend

in retirement or out of the labour market. Income replacement role of pensions can be also enhanced through complementary retirement savings. This in turn makes pension adequacy more dependent on the performance of labour and financial markets.

The assumption is that people will respond in a rational manner to the new financial incentives to work longer and save more being built into the system. However, this is unlikely to happen if they lack detailed information or fail to understand the information they do have. Public authorities play an essential role in this regard.

In general, the level of information provided to beneficiaries depends on the structure of the national pension system – DC schemes require more information compared to DB schemes. This important matter is not brought up in the section.

In general, the level of information provided to beneficiaries depends on the structure of the national pension system.

The government responsibility in providing information is threefold: alerting people to their responsibilities; informing them about the choices on offer; advising them on new policies (e.g. by providing default options leading to desired results). However, these roles may conflict, leading to a potential loss of credibility. To ensure the provision of politically unbiased information, therefore, governments should not be the only source of information on pensions. Third-party information sources can include NGOs, consumer groups, sectoral organisations and the social partners, including employers with fiduciary liability for their employees' pension choices. Pension rating companies also appear to be very successful in some countries, but, as regards independent advisers, some regulation of fees may be necessary to ensure truly unbiased advice. The government should also seek to assist market mechanisms that facilitate consumer choice, such as market concentration, corporate reputation and informative advertising.

In terms of information content, pension payout projections emerged as an important item, while the relative risks linked to different kinds of pension schemes and funds also need to be made clear.

Moreover, different groups may need different types of information. This may be the case for women and men, but also for groups with different economic, occupational and educational backgrounds.

To make rational decisions, people need a unified picture of their pension options. Public authorities should therefore coordinate their activities and standardise information. Most Member States have internet sites and brochures **to provide information** to future pension beneficiaries and their employers. Some countries send out specific individual information on pension accruals. But presenting information in a form that people can understand and absorb is difficult notably when retirement rules become more complex. Research in some Member States showed that a large percentage of older workers were not aware of the possibility of deferring their pension. **Broad and complete information must be provided on the effects of reforms for individuals and on the potential impact of their choices**.

5. Knowledge gaps in measuring adequacy: possible future developments

This section identifies a number of areas which could be developed in order to facilitate a more detailed analysis of pension adequacy at EU level in future. In particular a number of potential new indicators are proposed and suggestions for future work are set out.

5.1. Gender differences in pension adequacy

Gender differences in employment and life course may be reproduced, mitigated or compounded in pension systems. It is therefore often suggested that policy makers should subject present pension systems and all ideas for changes to a test of their differentiated implications for men and women.

There is, however, **considerable complexity** in stating the gender impact of pension policies because past, present and future cohorts may be affected in rather different ways and because gender differences of course also interact with income differences - and to an increasing degree as women become better represented in labour market hierarchies.

Even the notion of gender differences in pension adequacy is ***somewhat difficult***. Whereas women's average pensions are lower than men's in terms of monthly or annual benefit amounts their average replacement rates will tend to be higher as effect of minimum or guarantee pensions. Moreover, if pensions are seen as primarily income smoothing women can also have a higher "return" on their insurance contributions than men if they benefit disproportionally from basic and guarantee pensions. However, requirements about minimum contributory periods may also deprive women of a return as they may fail to qualify for the minimum pension.

Obviously, results also depend on the ***overall objective behind policy designs***. Member States presently do in fact have different gender and family policy goals. Whereas in some Member States, the goal is to create dual-income families other countries may not expect all adults (women in particular) to work full-time. Instead they may aim to expand choices and options by enabling people to take time out of their careers, without incurring disadvantages.

In order to achieve ***gender equality*** a pension system countries would have to combine *gender sensitive* features in line with gender specific life circumstances with *gender neutral* aspects. A pension system would be gender-neutral - or to a successfully extent promoting gender equality - if neither men nor women are penalized in their benefits for being poor or low-waged, living longer, bringing up children, getting divorced or being widowed. It would be fair in gender terms, if it at the same time established similar incentives for men and women to take part in the world of work and to contribute to the pension system.

5.1.2. Risk profiling: identifying threats to adequacy in gender gaps

One major point of agreement in the work towards the EPC-SPC Report was that what pension policy makers need to concern themselves with more than anything are the short, medium and long term risks entailed in the pension system designs and mixes countries have opted for. This point follows from the observation that no-size-fits-all and that different designs can in fact - where well implemented - deliver pensions that are equally adequate and sustainable, but in order to manage a pension system one needs to be aware of its inherent risks.

Such risk profiling for gender would be about how the character of the pension system relates to the (pre-existing) gender gaps in participation, employment and in life expectancy at 65 - how good is the fit in terms of reproduction, mitigation or accentuation? The question to ask would be: How gender sensitive is a national pension system – how well does it correspond to gender differences in the sense of being able to compensate or mitigate how such differences in employment and life course impact on the fairness of pension adequacy outcomes for men and women?

In assessing the likely risk in a Member State's pension system one can possibly *work backwards from a calculation of the pension gap and try to disaggregate* the pension adequacy outcome into the factors at work pertaining respectively to features of the pension systems and pre-existing gender differences in labour markets and life courses.

Risks can also be deducted from a number of *employment related indicators* such as the gender gaps in pay, hours worked, career duration, employment and unemployment rates – particularly after 50 – in exit ages and in life expectancy at 65.

Likewise risks of transmitting or accentuating pre-existing gender gaps could be deducted from *features of the pension system*. For example one could look at the relative accent on 2nd & 3rd pillar in relation to gender gaps in coverage and average entitlement accruals, whether there are any minimum pension, whether there are any credits for periods of care and the degree of close ties between contributory record and entitlements etc.

5.1.3. The Gender Pension Gap as potential common indicator

Since the detailed design of pension schemes thus will determine the extent to which those differences in employment and remuneration which give rise to the gender pay gap will tend to be compounded into an even larger gender gap in pensions it would be useful to develop a standard way to measure and compare the difference in pension outcomes for men and women.

One composite indicator of gender equality in pension adequacy could be a measurement of the pension gap as expressed as the difference between the average individual pensions entitlements of men and women. This would be particularly useful if it were possible to measure differences in the combined pension package for men and women, i.e. the sum of old age income from entitlements under the 3 pillars.

At the recent peer-review on the *Effects of life courses on women's pensions* in Berlin the 'Gender Pension Gap' (GPG) was used as an indicator of unequal pensions today, the product

of the interaction between pension schemes and gender specific employment and life course behaviour. The following box is an excerpt from the Host Country Report discussed at the peer-review.

Definition of gender pension gap

The gender pension gap is defined as the percentage difference between the average female individual pension benefits and the average male individual pension benefits. The formula is:

$$\text{Gender Pension Gap \%} = 100\% - \frac{\text{average female individual pension benefits}}{\text{average male individual pension benefits}}\%$$

Reference benefits are the monthly gross benefits. If, for instance, women's individual pension benefits amount to 600 Euros per month and men's to a monthly 1,000 Euros, the gender pension gap is 40%.

The index takes into account individual pension benefits from all three pillars of the pensions system (statutory, occupational and private). And while all old-age benefits a person has accumulated individually are taken into consideration, derived old age pension entitlements, especially survivor's pensions, are excluded.

The gender pension gap looks at individual persons aged 65 or older so that, unlike with other analyses of retirement income, it does not refer to the household as an economic unit. Accordingly, these figures do not allow any conclusions to be drawn on the actual income situation of elderly women or men.

In future work on adequacy it would make sense to ask the Indicators Subgroup to investigate if such an indicator could be developed and agreed.

5.2. Wider measures of adequacy

As explained in chapter 3.4, adequate standards of living in old-age are not only about pensions. There is a wide range of other specific benefits that are afforded to older people to help with a variety of expenses. These benefits are another way of ensuring a higher standard of living in old age. Therefore, it is necessary to take into account the overall context in order to determine adequate level of pensions.

The Indicator Sub-Group (ISG) of the Social Protection Committee could help to develop a more detailed data collection. This would allow illustrating complexities in the service systems (access, coverage, user fees, user profiles etc.). One approach would be to develop a better understanding of *the availability of services* and the effect they have on the living standards of the elderly people. The focus would be on the level of spending and, to some extent, on the use of services (number of users, access to services). The other way would be to measure *the lack of services*, i.e. to what extent the retired people need to purchase services themselves.

The ISG could help with developing: (a) a list of possible in-kind benefits provided to the elderly in each Member State and their characteristics (whether means-tested or universal); (b) total number of users and percentage of age groups benefiting (by gender); (c) the total public spending and spending per user (total spending divided by 65+ population or by number of actual users) in EUR in purchasing power parities; (d) access to services and user fees.

Poverty reduction impact

An analysis of the adequacy outcomes (in terms of poverty prevention) by the type of minimum income provisions (residency-based, earnings-related, supported by tax system, etc.) could be developed by the ISG. In particular, national poverty thresholds and their evolution could be compared with the level of minimum pensions and conditions attached to eligibility (e.g. residence or contributory period required, the size of the household, etc.). This could be complemented with an analysis of the number of beneficiaries of different kinds of minimum income provisions or social assistance. This work could help assess the impact of pension developments on the achievement of the Europe2020 poverty reduction goal.

5.3. Single / households trends

Theoretical Replacement Rates (TRR) are individuals' calculations while poverty and incomes are household based indicators. This implies that there can be a gap between TRR trends and household-based indicators' trends. Since there are very strong structural trends that are not captured at the individual level, such as the structural increase in the employment rate of women, it is thus essential to complement the analysis at the individual level by information at the household level. Indeed, assessments of future adequacy could well different significantly at household level compared to individual ones. For instance, while individual TRRs are projected to decline to a significant extent in a number of MSs, the increase of women employment can translate, with different timings in a significant increase of the number of pensions by household in the future, thus mitigating part of the projected decline in individual replacement rates. Therefore, it seems, notably within the Europe 2020 context, that there is a need to begin to examine the various factors at play here in this gap between individual and household trends (notably trends in female employment rates). In this regard, **it would be helpful in the future to provide some trends of TRR at household level** and some indication of the trends in the structure of households (for instance, share of two earners households in recent and future decades).

In general, it would be useful to start a discussion on how to bridge the individual and household concepts and what variations of existing indicators can be developed in order to close the gap.

5.4. Modelling tools to project future adequacy: the example of micro-simulation models

There are clear limitations to the analysis that can be carried out regarding future adequacy of pensions with the current set of commonly agreed upon indicators. Presently our methodological tools do not allow us to assess the likely extent to which pension systems in Member States will contribute to goal of reducing the number of people exposed to poverty or social exclusion by 20 million by 2020. Developments in the relation of minimum benefits for older people to poverty thresholds are very difficult to forecast. But if all Member States were

able to apply dynamic micro-simulation models to this task, likely scenarios which could offer guidance to policy makers could be constructed.

Micro-simulation models have in recent years gained popularity in the assessment of social security systems because of the accuracy they provide for the purpose that are used. In particular, they can be used to help inform policy-making by giving a better understanding of the likely short-term impact of reforms on the dispersion of pension benefits across individuals with different circumstances. Micro-simulation models can monitor the detailed effects of policy measures on the income distribution (poverty risks, Gini-coefficient and replacement rates). Static and dynamic micro-simulation models differ from (semi-) aggregate budgetary models in that they simulate the impact of policy measures and schemes on real people. If large samples of administrative data are used the results that micro-simulation models deliver can be representative for the entire population. Thus they can be used to assess the adequacy of social security schemes. Furthermore these models could be used as complement to other modelling tools which are primarily used for assessing sustainability of pensions. For example, micro-simulation models could be useful in calibrating and confirming the validity of the macro-economic aggregate model.

Recently calls for proposals under the PROGRESS programme have been used to help interested Member States develop their capacity to build and use micro-simulation models in their policy making[110] – and more calls are planned. At the same time further EU-level long-term work in this area is called for, so that a proper process can be established for **using modelling tools to determine future adequacy** (peer reviews, voluntary projection exercises, etc.).

As a first step the ISG could review for which indicators it would be useful to carry out projections. Secondly, the capacity of Member States to produce these projections would need to be determined. The ISG could start a voluntary projection exercise which could be extended to all Member States as their capacity, models and datasets develop. In general, it is important to discuss the **possibility of developing a common EU methodological framework** for assessing the effective implication of policies for the future balance between the adequacy and sustainability of pensions. Commonly agreed standards and principles would enhance the comparability of results among Member States and increase the transparency of results.

5.5. Joint assessment of current adequacy and sustainability

A better understanding of the sustainability and adequacy challenges of public pensions is needed. In that regard, indicators that look at the pension system's financial position today, by comparing pension systems' revenue and expenditure can also be explored.

For example, **comparable and time series data on coverage of pension systems is currently non-existent**. The development of data on the number of pensioners by gender, in different age groups (e.g. 55-59, 60-64, or 65-69) and in different pension categories (e.g. old-age pensions, survivors, disability pensions, anticipated old age pensions, etc.) could be given more attention.

[110] Countries that have developed such models under the 2009 PROGRESS Call for Proposals on "*Actions related to the development of administrative datasets and models for labour market and pension analysis*" include BE, IT, AT, LT, LU, SI, CZ and IE.

In analytical terms it would be the change in the number of people covered by pension systems over time and across pension categories that is politically interesting. For example, it would be useful to analyse how many people within the age group 55-65 have a disability benefit, an unemployment benefit (including social assistance), an anticipated old age pension and are still working. A time series of these data would help to check whether there are shifts across the different categories over time, for example if a reform in disability pensions or anticipated old age has not the unintended effect of increasing unemployment benefits or social assistance. For the moment there are no data on the number of pensioners in different age brackets and/or different pension categories that would allow such analysis. Likewise, existing data on number of pensioners receiving occupational or other supplementary pensions is scarce and not widely available for all countries (see section 3.1.2 and Annex 3 for some data on pension beneficiaries of private pensions in selected EU countries where information is available).

Further analysis is needed to assess the **cost-effectiveness** of pension expenditure (including expenditure tax exceptions aimed at promoting 2nd and 3rd pillar private pensions) in relation to various income, distributional and social protection goals. One obvious question could be if it is possible to maintain adequate pensions at a lower cost to public budgets, or in other words, can spending for adequate pensions be made more efficient? This question, although analysed within the context of current adequacy, is of central importance for the future of pensions in a context of ageing societies and the serious budgetary imbalances and social uncertainties left by the financial and economic crisis.

It is interesting to put the current adequacy outcomes of pension systems of EU Member States, such as poverty among the elderly, relative living standards, duration of retirement and equality and fairness, together with pension spending in each country in order to identify possible scope for improvements. However, it has to be clearly understood that comparing what countries get for their public expenditure on pensions is not straightforward and this analysis has important limitations, as different aspects influence each part of the equation.

It should be noted that countries differ in their demographic profile and therefore a demographically older country would need to spend more on pensions to reach the same adequacy outcomes as a younger country. The actual pension spending can thus be adjusted to the demographic situation. What is needed is to see how high the level of public pension expenditure would be, had each country the same old age dependency ratio as the EU average. Countries with less/more favourable dependency ratio than the EU average would have lower/higher pensions expenditure than the real one, all else equal.

To develop appropriate conclusions, a number of requirements have to be met. Firstly, it is important to restrict expenditure to pensions for people above the age of 65. For instance in the case of the Netherlands, ESSPROS expenditure contains pensions for people aged 65+, but also the earnings-related disability benefits for people below the age of 65.

Secondly, expenditure from supplementary pension schemes needs to be included, together with tax rebates. The question also arises how to treat the expenditure on other supports for older people (i.e. "other benefits").

In Member States with a multi-pillar provision (e.g. with an important role for occupational pensions) cost-effective public expenditure can create opportunities for cost-effective solutions in supplementary schemes. While poverty avoidance would be the major role of public pensions, occupational pension plans can enhance their income replacement role, e.g. by adjusting risk levels in their investment strategies. Balanced risk sharing mechanisms between

and across generations could then help to spread the benefits of the risk premium over all generations as much as possible. At any rate the scope for improving pension spending can be gauged by comparing spending levels, pension scheme designs and social outcomes across the Member States.

Looking for greater cost-effectiveness of public spending on pensions would require an examination of the administrative expenses in public schemes. However, there would seem to be limited scope for improvements here for big mandatory public schemes, contrary to some privately-managed funded schemes. Administration costs can indeed be a major issue for private pension schemes[111]: public spending to promote private provision will be less cost-effective if these administration costs are not kept under control.

Cost-effectiveness of public spending in achieving adequate pensions should also not be reduced to administration of public schemes. It should be much more about the overall design of a complex pension system with its different components, or pillars, the incentives it creates and the social outcomes it produces.

Annexes

[111] SPC 2008 study on *Privately managed funded provision and their contribution to adequate and sustainable pensions*.

Annex 1. Methodological explanation of indicators[112]

Presently there are a number of indicators in use to measure:

– the current risk of poverty or social exclusion of older people;
– the relative income of the elderly currently and projected into the future.

Current adequacy indicators

At-risk-of-poverty rate for people aged 65+ is defined as a percentage of population with income after social transfers below the at-risk-of-poverty threshold. The threshold is set at 60% of the median equivalised[113] income in a given country, thus the indicator treats poverty as a relative and not absolute concept (the value of the at-risk-of-poverty threshold evolves with the wealth of the society and can also go downward, as has happened during the crisis). As a result, the observed increases/decreases can be partly explained by pension incomes rising at a higher/lower pace than income of the working population.

The indicator is also relative in a sense that thresholds are defined at national and not the European level. The indicator reflects monetary poverty (income inequalities in a society), but does not take into consideration access to in-kind services (e.g. education, healthcare) which in some countries are publicly provided for free. The fact that the indicator does not take wealth into account is another shortcoming, as house ownership and associated imputed rents have a strong impact on the welfare of pensioners.

The risk-of-poverty rate for the elderly is a relative poverty measure that **reflects (monetary) income inequalities**. Thus a Member State with a low risk of poverty rate for the elderly reflects a rather egalitarian income in different groups at the lower half of the income scale (and not necessarily a decent standard of living or a low poverty threshold). It is important to note that the standard of living of elderly people as measured by the current level of income at a large extent depends on the performance of national pension system in the past. Poverty rates also depend on the tax system which affects the poverty threshold. It is possible to have low poverty thresholds together with high poverty rates (i.e. if inequalities at the bottom are very large and people in the first income deciles are very poor) and high thresholds and low rates when income distribution in the bottom part of the income scale is more egalitarian. The ratio does not measure the distribution of income in the top part of the income scale.

Severe material deprivation rate of people aged 65+ is an absolute measure of poverty and can be compared across countries. It intends to identify the inability to afford some items considered desirable or even necessary by most people to lead an adequate life. Individuals

[112] Abbreviations used:
-- EPC/AWG: Economic Policy Committee working group on Ageing Population
-- Eurostat/ESPROSS: European System of integrated Social Protection Statistics
-- Eurostat/LFS: European Union Labour Force Survey
-- Eurostat/EU-SILC: EU Statistics on Income and Living Conditions

[113] Equivalised income is a measure of household income that takes account of the differences in a household's size and composition, and thus is equivalised or made equivalent for all household sizes and compositions. The equivalised income is calculated by dividing the household's total income from all sources by its equivalent size, which is calculated using the modified OECD equivalence scale. This scale attributes a weight to all members of the household: 1.0 to the first adult; 0.5 to the second and each subsequent person aged 14 and over; 0.3 to each child aged under 14. The equivalent size is the sum of the weights of all the members of a given household.

who cannot afford four out of nine items[114] on the list are considered to fall under the scope of the indicator. The indicator distinguishes between individuals who cannot afford a certain good or service, and those who do not possess this good or service for another reason, e.g. because they do not want or do not need it (it shows enforced lack of four out of nine items). Evolution of the value of the indicator helps to track growing wealth of a given society, as a decreasing number of people falls into the category of material deprivation.

The risk of poverty or social exclusion of the people over 65 (the EU2020 indicator) combines both the at-risk-of-poverty rate and the severe material rate without double counting of people who fall into these two categories. The EU2020 indicator for population under the age of 65 also includes those who live in households with low work intensity (this is not applied to population of 65 and more years of age).

The median relative income of elderly people reflects equivalised (the indicator takes into account household composition) median disposable household income and is relevant to measure the overall income situation of older people (those aged 65 and more) relative to the active population (population aged less than 65). As this indicator is based on equivalised household income, differences between men and women fundamentally reflect income differences between people living in single households.

The aggregate replacement ratio: is defined as median individual pensions of 65-74 year olds relative to median individual earnings of 50-59 year olds, excluding other social benefits. This is relevant to monitor current adequacy and the actual contribution of pensions to the replacement of earnings. This is based on individual gross income, and several factors besides aggregate replacement rates (such as differences in household composition and size and the overall design of social protection and taxation systems) can have a strong influence on the overall living standards of individuals.

The income quintile ratio is another indicator measuring distribution of income across society. It compares the income of the individuals at the top of the distribution to the income of those at the bottom (the total income received by the 20% of the population with the highest income – top quintile – to the total income received by the 20% with the lowest income – lowest quintile). Income must be understood as equivalised disposable income.

Future adequacy indicators

Indicator developed by the Social Protection Committee

- **Theoretical replacement rates:** Theoretical Replacement Rates (TRR) are defined as the level of pension income the first year after retirement as a percentage of individual earnings at the moment of take-up of pensions. The exercise on TRR gives therefore a picture of **pension systems' *adequacy***, when adequacy is understood as to what extent the level of pension benefits replace (the theoretical) individual previous' earnings. TRR can measure current and future adequacy. *Current* TRR describe the situation of people who retire today. *Prospective* TRR describe the foreseen situation of people retiring in the future (in this exercise, people retiring in 2050 in the base case under the pension legislation enacted by 2010). Calculations for prospective TRR typically reflect reformed pension systems in full maturity. TRR are case study based calculations for an assumed hypothetical worker, with a given earnings and career profile and a corresponding affiliation to pension schemes. TRR cover public pensions and mandatory private schemes, as well as

[114] The list of nine items covers the ability/inability to (1) pay the rent, mortgage or utility bills; (2) keep the home adequately warm; (3) face unexpected expenses; (4) eat meat or protein regularly; (5) go on holiday; (6) afford to buy a television; (7) afford to buy a washing machine; (8) afford to buy a car; (9) afford to buy a telephone.

occupational and other supplementary schemes with wide-reaching coverage and that are considered to play a significant role in the future (More details in Annex 2)

Indicators developed by the Economic Policy Committee

These indicators are derived from the models used to project pension expenditure, and thus represent averages, not specific cases.

- The **Benefit ratio** is the average benefit of: (i) public pension; and (ii) public and private pensions, respectively, as a share of the economy-wide average wage (gross wages and salaries in relation to employees). Public pensions used to calculate the Benefit Ratio includes old-age, early pensions and Other pensions (disability and survivors),

- The **Gross Average Replacement Rate** is calculated as the average first retirement pension as a share of the economy-wide average wage. Public pensions used to calculate the Gross Average Replacement Rate only include old-age and early retirement pensions.

The calculations of prospective TRR in the current round has relied on assumptions about the future key economic and demographic parameters, which have been aligned to the ones used by the AWG for the pension projections in the 2012 Ageing Report.

Despite the alignment of assumptions on key demographic and macro-economic parameters for the future, differences in projection results may still exist between the various future adequacy indicators of the ISG / AWG (i.e. differences in the magnitude of the changes over time and/or in the sign of the changes). This may be due to a number of factors, notably the different conceptual underpinnings of the indicators and the different coverage of pension schemes by each indicator.

Box: Differences between theoretical replacement rates and benefit ratios

There are a number of factors that explain the difference in the magnitude of the change over time of the pension benefit in relation to earnings:

- *The concepts of the indicators are different:* The benefit ratio is defined as the average pension in relation to the average wage at time t. The theoretical replacement rate is defined as the first retirement pension at time t in relation to the last wage at time t-1 for a representative, hypothetical person (male worker) with a typical career (40 years). There are several underlying differences in the methodologies to compute these two measures of adequacy. First, the benefit ratio measures the average pension comprising all pensions, both new and old, thus covering several cohorts. As such, it captures the evolution of pension after retirement, which depends on how the pension benefit is updated (the indexation regime). Second, the benefit ratio includes all pension benefits and all features that affect the value of pension contributions (e.g. crediting for maternity leave, higher education…). Third, the benefit ratio measures real or expected careers, as opposed to a hypothetical one, and their changes over time. These factors contribute to the larger decline in the benefit ratio than in the theoretical replacement rate in the long term.

- *The projection period is different:* The projection period for the benefit ratio is 2010-2060, while for the theoretical replacement rate it is 2010-2050. Aligning the period over which developments are measured reduces the difference between the indicators.

- *The coverage of the pension benefits is different:* The benefit ratio includes all public pensions (e.g. old-age, early and disability pension, schemes for self-employed or other types of workers) and, where available, private pensions. The theoretical replacement rate includes old-age and early public pensions as well as mandatory private pillars and some other private pensions when these schemes are projected to play a significant role for a given type of employee.

- *Gender differences are reflected in benefit ratio and not in theoretical replacement rates: as a result benefit ratios are lower.*

The following presents **country-specific tables containing the schemes covered by each indicator (Theoretical Replacement Rates, Benefit Ratio and Gross Average Replacement Rate)**, as well as the ad-hoc assumptions on valorisation/indexation and contribution rates, etc. used for the current exercise of Theoretical Replacement Rates (2010-2050) and Benefit Ratio / Gross Average Replacement Rate (base year: 2010). (Source: Indicators Subgroup of the Social Protection Committee).

Annex 2. Methodological and Background Information on Theoretical Replacement Rates

The Indicators Subgroup of the SPC has carried out in 2011 the exercise for updates and validation of prospective (2050) and current (2010) Theoretical Replacements Rates. The package of cases currently adopted includes:

- Base case
- Variant cases, including
    - A female base case worker (applicable only for a handful of MS)
    - A shorter career for the average earner– typically working till 63
    - A longer career for the average earner– typically working till 67
    - A lower wage – 2/3 of average earnings- and retirement at 65
    - A higher wage – 100-200% of average earnings – and retirement at 65
    - A shorter/longer career for both lower/higher wages
    - A worker ten years after retirement
    - A career break for childcare years – 0-3 years
    - A career break for unemployment years – 0-3 years
    - A career break for 10 years out of the labour market
    - Lower/higher wage growth rates
    - Lower/higher rates of return

This Annex presents more details on the technical, macroeconomic and demographic *assumptions* used in theoretical replacement rates calculations (macroeconomic and demographic assumptions have been aligned to the ones used by the Ageing Working Group for the pension projections). It also stresses the importance of using the given **background information** for a correct interpretation of theoretical replacement rates.

Theoretical Replacement Rates (TRR) are defined as the level of pension income the first year after retirement as a percentage of individual earnings at the moment of take-up of pensions. The exercise on TRR gives therefore a picture of **pension systems' *adequacy***, when adequacy is understood as to what extent the level of pension benefits replace individual previous' earnings. In that sense TRR can be considered a proxy to the standard of living that people can achieve in retirement compared to their own situation when working.

TRR can measure current and future adequacy. *Current* TRR describe the situation of people who retire today (in this exercise, people who retired in 2010 in the base case).

Prospective TRR describe the foreseen situation of people retiring in the future (in this exercise, people retiring in 2050 in the base case) under the pension legislation enacted by 2010, including transitional rules to be implemented gradually that may be legislated in enacted reforms. Thus, the calculations for prospective TRR should typically reflect reformed pension systems in full maturity. Prospective TRR rely also on specific assumptions on the key economic and demographic parameters that are relevant for the calculation of future earnings and benefit entitlements. In this round of TRR calculations such parameters have been aligned to the ones used by the Ageing Working Group (AWG) of the Economic Policy Committee (EPC) for the 2012 Ageing Report, in order to improve the comparability of adequacy indicators between the two exercises. Overall, prospective TRR allow an assessment of future adequacy of pensions that takes into account assumed future economic

and demographic circumstances as well as changes that have been decided in many countries as a result of recent reforms. This is important both at a general level for policy-making and for individuals' retirement planning, who need to anticipate the possible situation of their future income.

The calculations presented here for the *current* replacement ratios are carried out by Member States in national models. The calculations for *prospective* replacement ratios are also carried in the national models, except for DE, HU, IE, LU, LT, LV, PL, PT, RO, SK and UK that have used the APEX (Analysis of Pension Entitlements across Countries) model infrastructure of the Organisation for Economic Co-operation and Development (OECD).

The TRR calculations take into consideration social security contributions to statutory and supplementary pension schemes or funds. Taxes and means-tested social benefits are included in the calculations. The *gross replacement rate* is defined according to the pre-taxed income (after employer contributions, but including employee contributions). The *net replacement rate* is calculated as net of income taxes and employee contributions.

TRR calculations include all (and only) pension schemes that are mandatory, typical or with wide-reaching coverage in a country (See Annex 1 for more information on schemes included in the TRR calculations).

TRR are calculated for **an assumed hypothetical worker**, who in the so-called "base case" has a given earnings and career profile (male, earnings of average wage constant over his fulltime 40 years career, retiring at 65, etc.) and a corresponding affiliation to pension schemes (i.e. the most general schemes for private sector employees). In the so-called "variant cases" the key assumptions of the base case are changed, once at a time, (for example, variant earnings profiles or length of contributory period) in order to illustrate how the replacement rates vary for different departures from the main assumptions.

The choice of specific common assumptions about the hypothetical worker used for the calculation, such as the age of retirement and the length of the contributory period before retirement, inevitably imply that only a share of individuals are actually represented by this career scenario. Therefore, in order not to misinterpret the results it is vital to consider TRR with information on representativeness and the assumptions, as they are calculated for a hypothetical worker.

Furthermore, this implies that comparability of replacement rate levels across countries is not possible. The base case, for example, is chosen in order to reflect as closely as possible current actual situations and institutional frameworks. However, given the diversity of situations across Member States, the base case may not necessarily be representative of workers in all Member States and therefore TRR need to be analysed in the light of background information aimed at showing in particular how "representative" the hypothetical worker is in a specific Member State. For example, in the calculations a **forty year career is typically assumed with a person entering the labour market at the age of 25 and retiring at 65**. The fallback with these calculations is that the TRR for countries with a higher or lower legislated retirement age than that which is assumed can mean that the pension results may be under or overestimated depending on how they are legislated (see Table 1 for a summary of current and future legislated pensionable ages). And more generally, the representativeness of the base case assumption of a 40-year career is closely related to elements like average age at retirement and seniority or career lengths of the flows of retirees. The closer these elements to the assumed 40-year career with retirement at 65, the closer the replacement rates exercise

represent reality of a country. Otherwise the results can under or overestimate the real situation. Table 1 gives details on average age at retirement and seniority of new flows of retirees in 2010 for such an assessment.

Consequently, comparability between Member States of current and projected replacement rates depends on the degree to which the commonly defined individual case is representative in different Member States. This varies considerably across Member States, impairing the direct comparability of the results based on actual replacement rate levels.

Therefore, the analysis of TRR focus on percentage variation changes in theoretical replacement rates over time or between different profiles at a point in time within each country, to assess different reforms, rather than on levels' comparison across countries. Also the interpretation of the TRR over time has to consider that it is a fixed theoretical case, not matched by the reality of increasing average careers.

Table 1. Macro-economic historical data for current Theoretical Replacement Rates

Macro-economic historical Data used for Current Theoretical Replacement Rates					
	Average earnings (after employers' social security contributions) in national currency, 2009	Average annual earnings growth, 1970 - 2010	Average annual GDP growth, 1970 - 2010	Average annual inflation, 1970 - 2010	Average annual interest rates, 1970 - 2010
BE	34629 EUR	5,5% nominal		3,8%	2,5% applied between 1992 and 2009
BG					
CZ	280128 CZK	6,58	n.a.	4,66	n.a.
DK	367100 DKK	3,5%	n.a.	n.a.	7,2%
DE	27867 EUR	3,50	1,6	2,9	3,8 *
EE	9408 EUR	5,6 *	4,4 *	4,5 *	0,5 **
EL					
ES	23843.38 EUR		11,12% nominal	7,67%	
FR	33364 EUR				
IE	42421 EUR	2,10	1,8	6,6	n.a.
IT	24875,22 EUR	1,62	2,0	7,4	
CY	28032 EUR		4,1	4,7	
LV	393,79 * LVL	**	,,,	,,,	***
LT	24672 LTL	n.a.	n.a.	n.a.	n.a.
LU	n.a.	n.a.	n.a.	n.a.	n.a.
HU	202576 HUF	4,20	2,7	4,9	
MT	16679* EUR	1.15**	1.6***	1.79**	n.a.
NL	32455 EUR	-	-	-	-
AT	30758 EUR	4,90%	6,1%	3,5%	
PL					
PT	15985 EUR	1,8% (1)	3,2% (1)	10,7%	
RO					
SI	17.268 EUR	17,5*	3,24**	4,27***	-25,3****
SK	8934 EUR	6,5	4,8	7,7	n. a.
FI	2940 EUR/month	2,2*	2,5*	1,5*	4,9*
SE	289679 SEK	0,04		0,02	0,02
UK	25349 GBP	8,21	7,9	6,6	8,3

FI:
* 1995-2010, which is relevant period in the calculations
DE:
* 1975 -2010
MT:
* 2009 figure based on the system of National Accounts, NSO
** 2008-2010 only taken for the calculation of TRRs base case
*** data 2001-2010 only, GDP growth rate was not needed for the calculation of TRRs base case, source EUROSTAT
SI:
* Data available for period 1991-2010; Data source: Statistical Office of Republic of Slovenia; Calculation: ZPIZ (Pension and Invalidity Insurance Institute of Slovenia)
**Data available for period 1996-2010; Data source: Statistical Office of Republic of Slovenia; Calculation: ZPIZ (Pension and Invalidity Insurance Institute of Slovenia)
***Data available for period 2000-2010; Data source: Statistical Office of Republic of Slovenia; Calculation: ZPIZ (Pension and Invalidity Insurance Institute of Slovenia)
****Data available for period 1991-2010; Data source: Bank of Slovenia; Calculation: ZPIZ (Pension and Invalidity Insurance Institute of Slovenia)
EE:
*: 1998 - 2010
**: 2002- 2010 from the beginning of II pillar, real

PT:
(1) In real terms

LV:
* per month
**According to Latvian design of the NDC scheme's transition provisions, insurance period until the year 1995 (inclusive) is credited with an initial capital, calculated using an average contribution wage of individual in 1996-1999 (four years). Average annual growth of the average contribution wage 1996 - 2010 (included) : 10,6%
*** Average annual growth for NDC capital indexation 1996-2010 (included):10,8%

SK.:
Average earnings growth is nominal
Average GDP and inflation are calculated from period 1993 to 2010

Table 2. Macro-economic assumptions for prospective Theoretical Replacement Rates

Macro-economic assumptions for prospective Theoretical Replacement Rates (aligned to AWG projections)					
	Average earnings (after employers' social security contributions) in national currency, 2010	Average annual earnings real growth, 2010 - 2050	Average annual GDP real growth, 2010 - 2050	Average annual inflation, 2017 - 2050	Average annual real interest rates, 2017 - 2050
BE	37957.73 EUR	1,49	1,68	2,0	3,0
BG	9203.92 BGN	2,48	1,54	2,0	3,0
CZ	283115.11 CZK	2,00	1,69	2,0	3,0
DK	376100 DKK	1,49	1,54	2,0	3,0
DE	28762.35 EUR	1,52	0,90	2,0	3,0
EE	9504 EUR	2,28	1,91	2,0	3,0
EL	25268,31 EUR	1,25	1,07	2,0	3,0
ES	25173.90 EUR	1,36	1,77	2,0	3,0
FR	33965 EUR	1,60	1,77	2,0	3,0
IE	43099.63 EUR	1,64	2,28	2,0	3,0
IT	25586,54 EUR	1,33	1,28	2,0	3,0
CY	29150 EUR	1,43	1,97	2,0	3,0
LV	6516.51 LVL	2,27	1,63	2,0	3,0
LT	23857.77 LTL	2,26	1,69	2,0	3,0
LU	32321.46 EUR	1,54	2,09	2,0	3,0
HU	2704898.73 HUF	1,80	1,38	2,0	3,0
MT	16646.2 EUR	1,70	1,63	2,0	3,0
NL	33104 EUR	1,52	1,35	2,0	3,0
AT	33231.72 EUR	1,55	1,47	2,0	3,0
PL	33525.46 EUR	2,34	1,73	2,0	3,0
PT	16213.88 EUR	1,46	1,29	2,0	3,0
RO	27339.37 RON	2,33	1,33	2,0	3,0
SI	17984 EUR	1,84	1,48	2,0	3,0
SK	9228 EUR	2,4	1,86	2,0	3,0
FI	35510.57 EUR	1,8	1,69	2,0	3,0
SE	290817.11 SEK	1,58	1,86	2,0	3,0
UK	25679.26 GBP	1,71	2,05	2,0	3,0

Annex 3. The 2011 OECD study on indicators of coverage, contributions and benefits in private pensions in selected OECD countries

	Germany (2008)	Ireland (2009)	Italy (2010)	Netherlands (2010)	Spain (2005)	United Kingdom (2009)
Coverage (% labour force or employment) (1)						
Total	51,6	41,3	21,3	93,4	22,7	53,0
Type of plan						
Occupational	24,9	31,0	11,8	92,9	4,1	38,7
Personal	40,5	12,0	9,5	30,4	19,1	12,9
Age group						
16-24	23,4	13,1	1,5	59,5	0,5	11,9
25-34	52,7	38,8	5,7	93,7	8,4	42,2
35-44	63,5	47,7	12,1	94,9	26,0	56,8
45-54	55,3	46,6	10,7	93,4	37,0	62,1
55-64	31,6	43,7	7,3	95,5	42,5	55,3
Gender						
Male	51,7	46,0	23,3	95,7	23,9	48,0
Female	51,6	35,7	17,9	90,5	20,9	48,5
Income						
1st decile	15,8	..	3,0	67,4	13,9	15,3
2nd decile	28,8	..	4,4	76,9	10,6	23,5
3rd decile	43,7	..	4,4	96,3	14,9	27,9
4th decile	56,2	..	5,1	97,9	17,3	37,6
5th decile	52,6	..	6,2	100,0	22,0	44,4
6th decile	57,2	..	8,9	98,0	26,7	51,3
7th decile	65,5	..	10,3	98,9	20,6	63,1
8th decile	66,6	..	13,8	98,7	24,5	69,9
9th decile	70,0	..	19,2	100,0	35,1	77,6
10th decile	68,7	..	23,2	100,0	42,6	80,6
Type of employment						
Full-time	57,8	47,2	10,7	..	22,5	55,9
Part-time	53,4	21,8	10,1	..	17,8	24,3
Average Contributions (% of average earnings) (2)						
Total in national currency	1 828	4 319	2 178	..	1 530	3 406
Total as % of average earnings	3,3	8,3	12,3	..	11,4	15,8
Type of plan						
Occupational : in national currency	1 903	4 329	2 880	..	1 986	..
as % of average earnings	3,4	8,3	16,7	..	14,8	..
Personal : in national currency	1 160	2 154	1 147	1 205	1 376	
as % of average earnings	2,1	4,1	6,8	4,2	10,2	..
Age group						
16-24	2,0	6,1	4,0	..	6,4	..
25-34	2,5	6,9	8,9	3,3	7,4	..
35-44	3,3	7,7	12,9	3,1	7,8	..
45-54	3,8	9,0	15,0	3,5	10,8	..
55-64	3,5	9,6	24,9	6,3	20,4	..
Gender						
Male	3,4	8,5	15,3	4,9	12,4	..
Female	3,2	7,8	11,8	2,8	9,7	..
Income						
1st decile	0,7	1,3	8,8	6,5	4,3	..
2nd decile	1,2	2,9	7,4	3,1	5,5	..
3rd decile	2,6	3,5	9,0	4,0	6,0	..
4th decile	2,1	4,1	8,7	4,2	5,6	..
5th decile	3,3	4,7	9,8	3,0	6,7	..
6th decile	2,1	5,3	11,8	5,5	6,7	..
7th decile	2,4	6,0	9,6	3,1	8,4	..
8th decile	3,4	8,0	22,4	3,5	9,5	..
9th decile	4,8	9,6	20,8	5,5	18,2	..
10th decile	6,9	21,0	30,5	5,7	21,8	..
Type of employment						
Full-time	3,9	8,6	13,9	..	12,2	..
Part-time	2,3	5,4	7,5	..	7,7	..
Pension Beneficiaries (% of 65+)						
Total	15,4	26,5	1,2	62,7	1,9	61,9
Type of plan						
Occupational	13,6	22,5	..	60,8	..	52,7
Personal	2,5	4,1	..	5,8	..	13,4
Average Benefits: in national currency or as % of average earnings (3)						
Total in national currency	6 945	14 795	12 649	10 836	9 599	6 495
Total as % of average earnings	26,4	57,7	74,0	38,6	71,4	30,2
Type of plan						
Occupational : in national currency	6 768	15 325	..	10 360	..	6 662
as % of average earnings	25,7	59,8	..	36,9	..	30,9
Personal : in national currency	6 094	11 183	..	8 585	..	3 791
as % of average earnings	23,2	43,6	..	30,6	..	17,6
Accumulated savings (% of average earnings)						
Total	23,4	..	91,2	..	92,6	..

Source: **OECD report on indicators of coverage, contributions and benefits in private pensions in selected OECD countries, 2011**. Data Sources: OECD calculations using the Irish Quarterly National Household Survey (QNHS), the OECD Global Pension Statistics data set (for Italy), the Dutch DNB Household Survey (DHS), the Spanish Survey of Household Finances (EFF) and the British Family Resource Survey (FRS) and the German SAVE survey[115].

Notes:

(1) Several measures coexist of private pension coverage. Individuals can be considered as covered by a private pension plan if they have a positive account balance, if they have accrued benefits, if they contribute to a plan, or if contributions are being made on their behalf. To be a member of a private pension plan from the perspective proposed in this OECD report, an individual must have assets or accrued benefits in a plan. Hence, an individual who does not contribute (for various reasons, including unemployment) or on behalf of whom contributions are not made during a year would still be considered as a plan member if s/he has assets accumulated or benefits accrued in the plan.

For DE, the coverage rate represents the percentage of households where at least one of the partners is enrolled in private pension plans, and in which the head is younger than 65 and at least one of the partners is in the labour force. For IE, the coverage rate represents the percentage of employed individuals enrolled in private pension plans and aged between 20 and 69. For IT, the coverage rate represents the ratio between the total number of pension accounts and the total number of individuals in the labour force. For the other countries, the coverage rate represents the percentage of individuals enrolled in private pension plans who are in the labour force and younger than 65.

The sum of the coverage rates by type of plan does not equal the coverage rate for the total as individuals may have both occupational and personal plans simultaneously.

(2) Average contribution levels are expressed as a percentage of average earnings in the country and do NOT represent contribution rates but only allow expressing the level of contributions as a share of average earnings in the economy of each country.

(3) Average benefit levels are expressed as a percentage of average earnings in the country and do NOT represent replacement rates but only allow expressing the level of benefits as a share of average earnings in the economy of each country.

[115] SAVE is just one of the datasets in Germany which provides information on second and third pillar coverage and distribution, but due to the relatively small sample size there exists doubts about the representativity of data for the German population.

Annex 4. Glossary

Accrual rate – Rate at which future pension benefits are built up. It is used in defined benefit schemes and based on the formula linked to the scheme. For example, a pension accrual rate could be 1.5% of final pensionable salary for each year of pensionable service (See also: Defined benefit (DB) schemes).

Annuity – A financial contract, sold by a life insurance company for example, that guarantees a fixed or variable payment of income benefit (monthly, quarterly, half-yearly, or yearly) for the life of a person(s) (the annuitant) or for a specified period of time. It differs from a life insurance contract which provides an income to the beneficiary after the death of the insured. An annuity may be bought on instalments or by paying a single lump sum. Benefits may start immediately or at a pre-defined time in the future or at a specific age. An annuity is one way of securing a regular retirement income for individuals who have saved in a defined contribution scheme. (See also: Defined contribution (DC) schemes).

Automatic (or auto-) enrolment – Generally refers to employees being members of their employer's pension scheme as a default choice, with the possibility of opting out on request.

Automatic adjustment mechanisms – Generally refers means of adjusting benefits, rights and/or contribution levels to changing circumstances, e.g. economic conditions, financial market returns or longevity assumptions.

Book reserve pension scheme – A method of accounting used by some sponsoring employers to finance pension promises. Sums are entered in the balance sheet of the scheme sponsor as reserves or provisions for scheme benefits. Some assets may be held in separate accounts for the purpose of financing benefits, but they are not legally or contractually pension plan assets. (See also: Defined benefit (DB) schemes).

Defined benefit (DB) schemes – Pension schemes where the benefits accrued are linked to earnings and the employment career (the future pension benefit is pre-defined and promised to the member). It is normally the scheme sponsor who bears the investment risk and often also the longevity risk: if assumptions about rates of return or life expectancy are not met, the sponsor must increase its contributions to pay the promised pension. These tend to be occupational schemes. (See also: Defined contribution (DC) schemes).

Defined contribution (DC) schemes – Pension schemes where the level of contributions, and not the final benefit, is pre-defined: no final pension promise is made. DC schemes can be public, occupational or personal: contributions can be made by the individual, the employer and/or the state, depending on scheme rules. The pension level will depend on the performance of the chosen investment strategy and the level of contributions. The individual member therefore bears the investment risk and often makes decisions about how to mitigate this risk. (See also: Defined benefit (DB) schemes).

Effective retirement age – Age at which an individual actually retires. Not necessarily the same as the labour market exit age or normal retirement age. (See also: Labour market exit age, and Normal pension age).

Funded scheme – A pension scheme whose benefit promises are backed by a fund of assets set aside and invested for the purpose of meeting the scheme's liability for benefit payments as they arise. Funded schemes can be either collective or individual. (See also: Pay-As-You-Go schemes).

Individual pension scheme – Access to these schemes does not depend on an employment relationship. The schemes are set up and administered directly by a pension fund or a financial institution acting as pension provider without the involvement of employers. Individuals independently purchase and select material aspects of the arrangements. The employer may nonetheless make contributions to individual pension schemes. Some schemes may have restricted membership.

Labour market exit age – Age at which an individual actually leaves the labour market. For data availability reasons labour market exit age is often used as a proxy for the effective retirement age. Differences between the two may exist, as some people leave the labour market before they actually retire while others continue working after retirement. (See also: Effective retirement age).

Life styling or life-cycling strategies – Investment strategies used in defined contribution pension schemes to reduce investment risk and volatility by gradually and automatically reducing the investment risk taken by the scheme member as they approach retirement. (See also: Defined contribution (DC) schemes).

Occupational schemes – A pension plan where access is linked to an employment or professional relationship between the plan member and the entity that sets up the plan (the plan sponsor). Occupational pension schemes may be established by employers or groups of employers (e.g. industry associations) or labour or professional associations, jointly or separately, or by self-employed persons. The scheme may be administered directly by the sponsor or by an independent entity (a pension fund or a financial institution acting as pension provider). In the latter case, the sponsor may still have responsibility for overseeing the operation of the scheme.

Pay-As-You-Go (PAYG) schemes – Pension schemes where current contributions finance current pension expenditure (See also: funded schemes).

Payout phase or decumulation phase – Period during which assets accrued in the accumulation phase are paid out to the pension scheme member in a funded scheme. An example of a payout phase is a period in which regular retirement income is received through the purchase of an annuity. (See also: Annuity).

Pensionable age – Age at which a member of the pension scheme is eligible to receive full pension benefits.

Pension pillar – Different types of pension schemes are usually grouped into two, three, four or more pillars of the pension system. There is however no universally agreed classification. Many pension systems distinguish between statutory, occupational and individual pension schemes, or between mandatory and voluntary pension schemes. Participation in occupational and individual pension schemes, usually private pension arrangements, can be mandatory or voluntary.

Replacement rate – Generally refers to an indicator showing the level of pension income after retirement as a percentage of individual earnings at the moment of take-up of pensions or of average earnings. Replacement rates measure the extent to which pension systems enable typical workers to preserve their previous living standard when moving from employment to retirement.

Statutory pension scheme – Social security and similar statutory programmes administered by the general government (that is central, state, and local governments, plus other public sector bodies such as social security institutions). Public pension plans have traditionally been of the PAYG type.

Supplementary pension schemes – Mandatory or voluntary pension schemes which generally provide additional retirement income to the statutory pension scheme.

Annex 5. ISG Theoretical Replacement Rates and AWG Benefit Ratio and Gross Average Replacement Rates

		ISG: Theoretical Replacement Rates									
	Pension schemes (Country-specific)	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
				2010	2050						
					Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	
	* Public pensions:	Yes - employees private sector	Mixed	16,36	16,36	Legislated			Constant prices (as imposed)		
	* Occupational pensions:	Yes	Contributions	4,25	4,25	Ad-hoc			Constant prices (as imposed)		
	* Private pensions:	No									

		AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Pension schemes (Country-specific)	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
				Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
					2010	2050					
		BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
	* Public pensions:	Yes	Yes	Mixed							
BE	1) Wage-earner	Yes	Yes		Employers: 24,77%; Employees: 13,07% (for all Social Security schemes)	Constant rates	Legislated	The reference wage up to a ceiling is adjusted to the current prices by the CPI. Periods of unemployment, prepension or disability are valued at the last corresponding earned wage. A minimum claim per working year also exists.	Legislated	Automatically adjusted to the CPI and partially adapted to living standards (Generation Pact): annual growth of 1.25% for the wage ceilings and the minimum claim; 1% for the lump-sum benefit; 0.5% for the non lump-sum benefit	Legislated
	2) Self-employed	Yes	Yes		In 2011: from 12,129.76 to 52,378.55: 22%; from 52,378.55 to 77,189.40: 14,16% (for all Social Security schemes)	Constant rates	Legislated	The reference income (valued at a fixed income before 1984, and calculated on the basis of the business income as from 1984) up to an income ceiling is adjusted to the current prices by the CPI.	Legislated		
	3) Civil servants	Yes	Yes		Employees: 7.5% survivor pension (other rules for local authorities)	Constant rates	Legislated	The wage is adjusted to the current prices by the CPI.	Legislated	Automatically adjusted to the CPI and to the real wage increases of the working civil servants	Legislated
	* Occupational pensions:	No	No								
	* Private pensions:	No	No								

BG

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
1.1 Earnings related PAYG, DB, administrated by National Social Security Institute	Yes	mixed	17,8 % for persons born before 01.01.1960 (EE - 7,9%; ER - 9,9%); 12,8% for persons born after 31.12.1959 (EE - 5,7%; ER - 7,1%); 12% State	The same contribution rates as in 2010.		No volarisation of pensionable earnings. Instead, in the pension formula an individual coefficient is applied which is the ratio of an individual's average insurable income and the national average insurable income.		No indexation in 2011-2012. As of 2013 50% CPI + 50% wages will be applied.	
1.2 Pensions not related to labour activity	No	taxes-funded							
2. Earnings related, funded tier of statutory scheme, DC									
2.1 Universal Pension Funds (UPF)	No	contribution	5% for persons born after 31.12.1959 (EE - 2,2%, ER - 2,8%)	7% since 2017					
2.2 Professional Pension Funnds (PPF)	No	contribution	12%/7% for first/second labour category, paid by ER						
*** Occupational pensions:**									
*** Private pensions:**	No								

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
1.1 Earnings related PAYG, DB, administrated by National Social Security Institute	Yes	Yes	mixed	17,8 % for persons born before 01.01.1960 (EE - 7,9%; ER - 9,9%); 12,8% for persons born after 31.12.1959 (EE - 5,7%; ER - 7,1%); 12% State	The same contribution rates as in 2010.		No volarisation of pensionable earnings. Instead, in the pension formula an individual coefficient is applied which is the ratio of an individual's average insurable income and the national average insurable income.		No indexation in 2011-2012. As of 2013 50% CPI + 50% wages will be applied.	
1.2 Pensions not related to labour activity	No	No	taxes-funded						No indexation in 2011-2012. As of 2013 50% CPI + 50% wages will be applied.	
2. Earnings related, funded tier of statutory scheme, DC										
2.1 Universal Pension Funds (UPF)	No	No	contribution	5% for persons born after 31.12.1959 (EE - 2,2%, ER - 2,8%)	7% since 2017					
2.2 Professional Pension Funnds (PPF)	No	No	contribution	12%/7% for first/second labour category, paid by ER						
*** Occupational pensions:**	No	No								
*** Private pensions:**	No	No								

CZ

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
Basic pension insurance	Yes	Contribution funded	28 Employer – 21,5 Employee – 6,5	28 Employer – 21,5 Employee – 6,5	Legislated	Average nominal wage growth	Legislated	CPI + 1/3 real wage growth	Legislated
*** Occupational pensions:**	No (do not exist)	N (do not exist)							
*** Private pensions:**									
Supplementary pension insurance with state contribution	No	Contribution funded and state subsidy							

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**	Yes (average pension benefit/average wage)	Yes (average newly granted pension benefit/average wage)	Contribution-funded	28% total (21.5% employers, 6.5% employees)	28% total (21.5% employers, 6.5% employees)	Legislated (assumption of no-policy change)	Nominal wage growth	Legislated (Assumption of no-policy change)	CPI + 1/3 real wage growth	Legislated
*** Occupational pensions:**	No (do not exist)	No (do not exist)	-	-	-	-	-	-	-	-
*** Private pensions:**	No (not enough data for calculations)	No (not enough data for calculations)	Private contributions, employer and state subsidized	Approximately 1.4% of average wage (private contributions), 0.3% of average wage (state subsidy)	Approximately 1.4% of average wage (private contributions), 0.3% of average wage (state subsidy)	Assumption in order to keep constant share of contributions on average wage as observed in past five years	Nominal wage growth	Assumption in order to keep pensionable earnings equal to wage	- (calculations of pension payments are not calculated)	-

DK

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
Folkepension	Yes	Tax	-	-	Legislated, automatic regulation of benefits (satsregulering)			Automatic regulation of benefits (satsregulering)	Legislated
ATP	Yes	Private 1/3 – employer 2/3	3.240 kr.	12.860 kr.	Ad hoc, follows wages (set by negotiation)			Follows wages	Ad hoc
Efterløn	Yes	Tax/private	5.076 kr.	20.628 kr.	Legislated, automatic regulation of benefits (satsregulering)			Automatic regulation of benefits (satsregulering)	Legislated
Supplerende pensionsydelse	Yes	Tax	-	-	Legislated, automatic regulation of benefits			Automatic regulation of benefits	Legislated
*** Occupational pensions:**	Yes	Private 1/3 – employer 2/3	10.8 %	10.8 %	Ad hoc (set by negotiation)			Follows wages	Ad hoc
*** Private pensions:**	No	-	-	-	-	-	-		-

	Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
		Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
				Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
					2010	2050					
		BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
DK	*** Public pensions:**										
	Folkepension	Yes		Tax	-	-	-			Wage indexation	Legislated, automatic regulation of benefits (satsregulering), but without subtraction of 0,3 pct. points
	Efterløn (VERP)	Yes		Tax/contribution	-	-	-			Wage indexation	Legislated, automatic regulation of benefits (satsregulering), but without subtraction of 0,3 pct. points
	Førtidspension (disability pension)	Yes		Tax	-	-	-			Wage indexation	Legislated, automatic regulation of benefits (satsregulering), but without subtraction of 0,3 pct. points
	Tjenestemandspension (Civil servants pension)	Yes		Tax	-	-	-			Wage indexation	Ad-hoc
	*** Occupational and private pensions:**	Yes		Contribution	9,60%	10,00%	Ad-hoc			Depends on accumulation of pension funds, which in turn depends on e.g. the interest rate	No legislation as scheme is defined contribution scheme
	ATP	Yes		Contribution	0,80%	0,70%	Ad-hoc			Depends on accumulation of pension funds, which in turn depends on e.g. the interest rate	No legislation as scheme is defined contribution scheme
	LD	Yes		Contribution	0	0	Ad-hoc			Depends on accumulation of pension funds, which in turn depends on e.g. the interest rate	No legislation as scheme is defined contribution scheme

DE

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	mixed (contribution and tax-funded)	19,90%	OECD-calculation		accumulated pension points (see indexation)	Legislated	The pension-point value is indexed annually in relation to the gross wage growth (wage-factor) as a starting point. In addition, the contribution-rate-factor accounts for changes of the contribution-rate to the statutory pension scheme and to the subsidised (voluntary) private pension schemes. The sustainability-factor, that measures the change of the number of standardized contributors in relation to the number of standardized pensioners, links the indexation of the pension-point value to the changes in the statutory pension scheme's dependency ratio, the ratio of pensioners to contributors.	Legislated
* Occupational pensions:									
* Private pensions:				OECD-calculation (4% of gross wages each year of working career)					

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	Yes	mixed (contribution and tax-funded)	19,90%	see: The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies	Legislated	pension points	Legislated	see Table on ISG indicators	Legislated
* Occupational pensions:										
* Private pensions:										

EE

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source -2	Contribution rates -3			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	
*** Public pensions:**	Yes	Social tax + general budget (if deficit)	20% , who has not joined II pillar. 16%- has joined II pillar - employer	20%,16% - employer	Legislated	Labour productivity and CPI	Ad-hoc (AWG assumptions)	80% social tax revenues growth (depends on wage growth and change of labor force)+20% CPI	Legislated	
*** Occupational pensions:**	No – Do not exist	-	-	-	-	-	-	-	-	
*** Private pensions:** Mandatory funded scheme (II pillar)	Yes	Contribution funded	4% employer + 2% employee	4% employer + 2% employee	Legislated	Labour productivity and CPI	Ad-hoc (AWG assumptions)	Accumulation phase real investment reurn 2,5%. Outpayment phase annuity investment return nominal 3%	Ad-hoc assumptions	

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**	Yes	Yes	Social tax + general budget (if deficit)	20% , who has not joined II pillar. 16%- has joined II pillar - employer	20%,16% - employer	Legislated	Labour productivity and CPI	Ad-hoc (AWG assumptions)	80% social tax revenues growth (depends on wage growth and change of labor force)+20% CPI	Legislated
*** Occupational pensions:**	No – Do not exist					-				-
*** Private pensions:**	Yes	Yes	Contribution funded	4% employer + 2% employee	4% employer + 2% employee	Legislated	Labour productivity and CPI	Ad-hoc (AWG assumptions)	Accumulation phase real investment reurn 2,5%. Outpayment phase annuity investment return nominal 3%	Ad-hoc assumptions

EL

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:									
IKA	Yes	Contributions	Employers 13.33% Employees 6.67%	Employers 15.4% Employees 7.6%	Legislated	Wage growth	Legislated	Benefit Indexation	Legislated
ETEAM	Yes	Contributions	Employers 3% Employees 3%	Employers 3% Employees 3%	Legislated	Wage growth	Legislated	Benefit Indexation	Legislated
* Occupational pensions:									
* Private pensions:									

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:										
IKA	Yes	Yes	Contributions	Employers 13.33% Employees 6.67%	Employers 15.4% Employees 7.6%	Legislated	Wage growth	Legislated	Benefit Indexation	Legislated
ETEAM	Yes	Yes	Contributions	Employers 3% Employees 3%	Employers 3% Employees 3%	Legislated	Wage growth	Legislated	Benefit Indexation	Legislated
* Occupational pensions:										
* Private pensions:										

FR

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
			Employers	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
Private pensions scheme (CNAV)	Yes	Taxes/Contributions	**Employers:** 8.30% up to the SSC (1), plus 1.60% on the full wage (1) ; **Employees:** 6.65% up to the SSC (1), plus 0.10% on the full wage	Data of 2010. Constant contribution rate	Ad-hoc assumption	Prices	Legislated	Prices	Legislated
Complementary pension scheme (ARRCO)	Yes	Contributions	(2) 7,5% up to the SSC (1), plus 20% between one and three SSC. No distinction between employers and employees contributions	Data of 2010. Constant contribution rate	Ad-hoc assumption	Prices	Legislated	Prices	Legislated
*** Occupational pensions:**	No								
*** Private pensions:**	No								

(1) SSC: "social security ceiling", wage ceiling which determines the contribution rate level. In 2011, the SSC is 2946 euros per month.

(2) In the TRR of ISG, it is favoured an individual rights perspective. Consequently, the complementary pension system includes: ARRCO, not AGIRC, AGFF, CET.

	Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
		Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
				Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
					2010	2050					
		BR	GARR		Employers	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
FR	*** Public pensions:**										
	Private pensions scheme (CNAV)	Yes (1)	Yes (1)	Contributions	**Employer:** 8.30% up to the SSC (3), plus 1.60% on the full wage; **Employee:** 6.65% up to the SSC (3), plus 0.10% on the full wage	Data of 2010. Constant contribution rate	Ad-hoc assumption	Prices	Legislated	Prices	Legislated
	Complementary Pension Scheme (AGIRC)	Yes	Yes	Contributions	**Employer:** (2) 5.70% up to the SSC (3), plus 13.90% between one and four SSC, plus 12.60% between four and eight SSC, plus 0.22% up to eight SSC ; **Employee:** (2) 3.80% up to the SSC (3), plus 8.60% between one and four SSC, plus 7.70% between four and eight SSC, plus 0.13% up to eight SSC	Data of 2010. Constant contribution rate	Ad-hoc assumption	Wages - 1.5%	Ad-hoc	Wages - 1.5%	Ad-hoc assumption
	Complementary pension scheme (ARRCO)	Yes	Yes	Contributions	**Employer:** (2) 5.70% up to the SSC (3), plus 13.30% between one and three SSC; **Employee:** (2) 3.80% up to the SSC (3), plus 8.90% between one and three SSC	Data of 2010. Constant contribution rate	Ad-hoc assumption	Wages -1.5%	Ad-hoc	Wages -1.5%	Ad-hoc assumption
	*** Occupational pensions:**	No									
	*** Private pensions:**	No									

(1) The observed outcomes do not distinguish the different pension schemes.
(2) In the BR and the GARR of AWG, a financing perspective is favoured. Consequently, AGFF is included (2%).
(3) SSC: "social security ceiling", wage ceiling which determines the contribution rate level. In 2011, the SSC is 2946 euros per month.

IE

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:									
State Contributory Pension	Yes	State	All State Pensions measured 40% of TRR	Increase in line with wages	Ad hoc	Calculated by average earnings and poverty threshold	Ad hoc	Earnings	Ad hoc
State Non-Contributory Pension	Yes	State	All State Pensions measured 40% of TRR	Increase in line with wages	Ad hoc	Calculated by average earnings and poverty threshold	Ad hoc	Earnings	Ad hoc
* Occupational pensions:									
Private Schemes	Yes	Employee/employer contributions	All TRR not covered by State	10% Contribution rate	Ad hoc	Value of contributions	Ad hoc	Earnings	Ad hoc
* Private pensions:									
Investment, etc.	No	Not Included							

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:										
State Contributory Pension (SCP)		Yes, 37-38%	Current expenditure (notionally SIF)						The 100% SCP payment rate as a percentage of the gross average industrial wage. Indexed to average wage growth so replacement rate remains fairly constant	Ad hoc assumption
* Occupational pensions:										
Public service pensions		60% (1)	Current expenditure	1/40					Nominal wage growth	
* Private pensions:										

(1) This encompasses a pension replacement rate of 50% and also takes into account a lump sum payment of 1.5 times final salary

IT

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:									
* Occupational pensions:									
* Private pensions:									

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:										
* Occupational pensions:										
* Private pensions:										

CY

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
General Social Insurance Scheme	Yes	Contribution-funded	17,90%	25,70%	Legislated	Wage indexation	Legislated	Basic part: wage indexation Supplementary part: price indexation	Legislated
Government Employees Pension Scheme	No								
Social Pension Scheme	No								
*** Occupational pensions:**									
*** Private pensions:**									

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
General Social Insurance Scheme	Yes	Yes (old-age pension only)	Contribution-funded	17,90%	25,70%	Legislated	Wage indexation	Legislated	Basic part: wage indexation Supplementary part: price indexation	Legislated
Government Employees Pension Scheme	Yes	No	Mixed (employee and general taxation)	5% (employee only)	5% (employee only)	Legislated	Wage indexation	Legislated	Price indexation	Legislated
Social Pension Scheme	Yes	No	Tax-financed	N/A	N/A	N/A	N/A	N/A	Price indexation	Legislated
*** Occupational pensions:**										
*** Private pensions:**										

LV

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:									
NDC	Yes	Contribution funded	18%	14%		Contribution wage sum index		No indexation until 2013. From 2014 - with CPI.	
* Occupational pensions:									
* Private pensions:									
Mandatory DC funded scheme	Yes	Contribution funded	2%	6%		Market rate of return			

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR*	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:										
NDC		Yes	Contribution funded	18%	14%		Contribution wage sum index		No indexation until 2013. From 2014 - with CPI.	
* Occupational pensions:										
* Private pensions:										
Mandatory DC funded scheme		Yes	Contribution funded	2%	6%		Market rate of return			

* The Benefit Ratio has not been calculated and showed in the LV filled Questionnaire file for 2012 projection exercise as it was a voluntary part.

LT

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	
*** Public pensions:**										
Social insurance pensions	Yes (old age social insurance pensions)	Contribution-funded	Employers - 23.3%; Employees - 3% (1% for participant in the second pillar)	Employers - 23.3%; Employees - 3% (1% for participant in the second pillar)	Legislated	Average annual real wage growth 2.26 %	Discretionary	Average annual real wage growth 2.26 %	Discretionary	
*** Occupational pensions:**	-	-	-	-	-	-	-	-	-	
*** Private pensions:**										
Quasi-mandatory private scheme	Yes	Contribution-funded	Employees - 2%	Employees - 2%	Legislated ***	3% rate of return	market rate of return	2% price inflation	-	

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
Social security pensions	Yes (social security pensions*)	Yes (social insurance old age pensions)	Tax-funded and contribution-funded (BR); contribution-funded only (GARR)	Employers - 23.3%; Employees - 3% (1% for participant in the second pillar)	Employers - 23.3%; Employees - 3% (1% for participant in the second pillar)	Legislated	Average annual real wage growth 1.85 %**	Discretionary	Average annual real wage growth 1.85 %**	Discretionary
*** Occupational pensions:**	-	-	-	-	-	-	-	-	-	-
*** Private pensions:**										
Quasi-mandatory private scheme	No	Yes	Contribution-funded	Employees - 2%	Employees - 2%	Legislated ***	3% rate of return	market rate of return	2% price inflation	-

* Includes all types of pensions (both tax-funded and contribution-funded)

** According to AWG macro assumptions average annual real wage growth used was 2.22%. With frozen indexation of the pensions at the period 2011-2014 the recalculated average annual real wage growth was 1.85%

***Legislated for 2010 and 2011. In 2012 contribution rate has been reduced to 1.5%. This reduction will be compensated by raising the rate to 2.5% in 2013. Further reform is planned from 2014.

LU

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
general and public pension scheme	Yes	taxes and contributions	23% (including tax-funding of 1/3 of contributions)	47%	ratio of line 6 to line 3 in AWG baseline questionnaire	< 2020: 100% prices and 100% wages > 2020: 100% prices and 50% wages	AWG constant legislation scenario (section 1.3 of country fiche)	< 2020: 100% prices and 100% wages > 2020: 100% prices and 50% wages	AWG constant legislation scenario (section 1.3 of country fiche)
*** Occupational pensions:**									
*** Private pensions:**									

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
general and public pension scheme	Yes	Yes	taxes and contributions	23% (including tax-funding of 1/3 of contributions)	47%	ratio of line 6 to line 3 in AWG baseline questionnaire	< 2020: 100% prices and 100% wages > 2020: 100% prices and 50% wages	AWG constant legislation scenario (section 1.3 of country fiche)	< 2020: 100% prices and 100% wages > 2020: 100% prices and 50% wages	AWG constant legislation scenario (section 1.3 of country fiche)
*** Occupational pensions:**										
*** Private pensions:**										

HU

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
PAYG DB: mandatory social insurance pension scheme	Yes	contribution	Employers: 24% Employees: 1,5% (in 2010 total: 9,5% - 8% to private pension system, 1,5% to Pension Insurance Fund; In 2011 and 2012: 10%)			Valorisation multiplicators are set in legislation in every March.	Legislated	Indexation is set in legislation (1)	Legislated
Mandatory DC private pension system (2)			8% (of total 9,5%)						
*** Occupational pensions:**									
*** Private pensions:**									

(1) From 2010 related to GDP growth (different proportion of consumer prices and average wages related to different percentages of GDP growth):
(2) Rules on private pensions are changing from the end of 2010. Employees' contributions to the 2nd pillar are suspended between 1st November 2010 and 31st December 2011, the whole contribution flows to the

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
PAYG DB: mandatory social insurance pension scheme	Yes	Yes	contribution	Employers: 24% Employees: 1,5% (in 2010 total: 9,5% - 8% to private pension system, 1,5% to Pension Insurance Fund; In 2011 and 2012 10%)			Valorisation multiplicators are set in legislation in every March.	Legislated	Indexed to HICP	Legislated
mandatory DC private pension	Yes	Yes		8% (of total 9,5%)						
*** Occupational pensions:**										
*** Private pensions:**										

MT

Pension schemes (Country-specific)	Covered by TRR? (Y/N - Comments)	Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
ISG: Theoretical Replacement Rates									
Scheme –specific assumptions									
*** Public pensions:**									
Two-Thirds pension scheme	Yes	Social Security Contributions	10% employee ; 10% employer ; 10% the state Subject to ceiling	Same as in year 2010	Legislated	inflation	Legislated	70% inflation and 30% wage growth	Legislated
*** Occupational pensions:**	not applicable								
*** Private pensions:**	not applicable								

Pension schemes (Country-specific)	Covered by BR / GARR? (Y/N -Comments)		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)										
Scheme –specific assumptions										
*** Public pensions:**										
Two-Thirds pension scheme	Yes	Yes	Social Security Contributions	10% employee ; 10% employer ; 10% the state Subject to ceiling	Same as in year 2010	Legislated	Linked to inflation	Legislated	70% inflation and 30% wage growth	Legislated
*** Occupational pensions:**	not applicable	not applicable								
*** Private pensions:**	not applicable	not applicable								

Benefit Ratio

Coverage:

- Old age pensions include: 2/3 retirement pension (TTP); National minimum pension (NMP); increased national minimum pension (INMP); increased retirement pension (IRP); decreased national minimum pension
- Disability pensions include: national minimum invalidity pension (NMIP); invalidity pension (IP); increased invalidity pension (IIP); decreased national invalidity pension (DNIP); share of the contributory bonus
- Other pensions includes: national minimum widows' pension (NMWP); survivors pension (SRP); early survivors pension (ESRP); retirement pension (RP); widows pension (WP); share of contributory bonus
- Treasury Pensions

GARR

Coverage:

Two-Thirds pension (TTP); National minimum pension (NMP); increased national minimum pension (INMP); increased retirement pension (IRP); decreased national minimum pension (DNMP);

NL

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates				Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?		Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	mixed	17,9	17,9	Legislated		not applicable		wages	Legislated
* Occupational pensions:	Yes	contribution	Employers: 13,3; Employees: 6,7	Employers: 13,3; Employees: 6,7	Ad-hoc		not applicable		wages	Ad-hoc
* Private pensions:	No									

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	Yes	mixed	17,9	17,9	legislated	not applicable		wages	legislated
* Occupational pensions:	Yes	Yes	contribution	Employers: 13,3; Employees: 6,7	Employers: 13,3; Employees: 6,7	ad-hoc	not applicable		wages	ad-hoc
* Private pensions:	No	No								

AT

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	
* Public pensions:										
	Yes	Contribution-funded	22,8% (Employer 12,55%; Employee 10,25%)		Current legislation	1,50%	Assumption in line with the EPC-Ageing Report-Assumptions	2%	Legislation: CPI-Indexation; Assumption in line with the EPC-Ageing Report-Assumptions	
* Occupational pensions:	No									
* Private pensions:	No									

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	Yes	Contribution-funded	Private sector: 19%; Public sector: 11,2%	Private sector: 19,1%; Public sector: 8,6%	Legislated	Wages (2010 - 2050 average: 3,5%)	Legislated	CPI (2010 - 2050 average: 2%)	Legislated
* Occupational pensions:	No	No								
* Private pensions:	No	No								

PL

Pension schemes (Country-specific)	Covered by TRR? (Y/N - Comments)	Funding source	Contribution rates 2010	Contribution rates 2050 – Assumptions used for TRR projections	Contribution rates 2050 – Legislated or ad-hoc assumption?	Valorization of pensionable earnings – Assumptions used for TRR projections	Valorization of pensionable earnings – Legislated or ad-hoc assumption?	Indexation of pensions in payment – Assumptions used for TRR projections	Indexation of pensions in payment – Legislated or ad-hoc assumption?
			ISG: Theoretical Replacement Rates – Scheme -specific assumptions						
Public pensions:	Y	Contributions to old-age pension insurance (19,52%) are financed in equal parts (9,76%) by employee and employer	19,52%	19,52%	Legislated (assumption of no-policy change)	mixed	Legislated (assumption of no-policy change)	CPI + 20% real wage growth	Legislated (assumption of no-policy change)
National Scheme:			-	-		-			
ZUS			12,22%	12,22%		nominal value of gross written premiums			
Sub-account			-	3,80%		average annual GDP growth rate in current prices from the last 5 years			
Founded Scheme (OPF)			7,30%	3,50%		real (market) interest rate			
Occupational pensions:	N								
Private pensions:	N								

Pension schemes (Country-specific)	Covered by BR / GARR? (Y/N - Comments) – BR	GARR	Funding source	Contribution rates 2010	Contribution rates 2050 – Assumptions used for BR/GARR projections	Contribution rates 2050 – Legislated or ad-hoc assumption?	Valorization of pensionable earnings – Assumptions used for BR/GARR projections	Valorization of pensionable earnings – Legislated or ad-hoc assumption?	Indexation of pensions in payment – Assumptions used for BR/GARR projections	Indexation of pensions in payment – Legislated or ad-hoc assumption?
				AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR) – Scheme -specific assumptions						
Public pensions:	Y	Y	Contributions to old-age pension insurance (19,52%) are financed in equal parts (9,76%) by employee and employer	19,52%	19,52%	Legislated (assumption of no-policy change)	mixed	Legislated (assumption of no-policy change)	CPI + 20% real wage growth	Legislated (assumption of no-policy change)
National Scheme	Y	Y		-	-		-			
ZUS	Y	Y		12,22%	12,22%		nominal value of gross written premiums			
Sub-account	Y	Y		-	3,80%		average annual GDP growth rate in current prices from the last 5 years			
Founded Scheme (OPF)	Y	Y		7,30%	3,50%		real (market) interest rate			
Occupational pensions:	N	N								
Private pensions:	N	N								

PT

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:									
Social security general scheme: old-age pensions	Y	Contribution-funded	34.75% (23.75% employers; 11% employees) (a)	34.75% (23.75% employers; 11% employees) (a)	Legislated	Reference earnings are projected according with labour productivity growth and adjusted according to the Consumer Price Index (CPI)	Legislated	According with CPI and GDP growth	Legislated
* Occupational pensions:									
* Private pensions:									

(a) General contribution rate

	Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
		Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
				Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
					2010	2050					
		BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
PT	*** Public pensions:**										
	Pension scheme for civil servants hired until Dec. 2005 (CGA) [a]: old-age and disability pensions	Yes	Yes	Contribution-funded [b]	38.4% [c]	38.4% [c]	Ad-hoc assumption	Wage freezing in 2010, 2012 and 2013 and an average wage cut of 5% in 2011. From 2014 onwards wages are updated by inflation rate plus 25% of total factor productivity growth rate	2010 to 2011 (legislated); 2012 to 2013 (according to the Adjustment Programme for Portugal); from 2014 onwards (ad-hoc assumption)	Pensions are frozen between 2010 and 2013, except minimum pensions [d]. From 2014 onwards pensions are updated according with CPI and GDP growth	Legislated, except for 2012 and 2013 (according to the Adjustment Programme)
	Pension scheme for civil servants hired until Dec. 2005 (CGA) [a]: survivors' pensions	No	No	Contribution-funded [b]	38.4% [c]	38.4% [c]	Ad-hoc assumption	Idem as CGA old-age and disability pensions [e]	Idem as CGA old-age and disability pensions	Idem as CGA old-age and disability pensions	Idem as CGA old-age and disability pensions
	Social security general scheme: old-age and disability pensions	Yes	Yes	Contribution-funded	34.75% (23.75% employers; 11% employees) [c]	34.75% (23.75% employers; 11% employees) [c]	Legislated	Reference earnings are projected according with labour productivity growth and adjusted according to the Consumer Price Index (CPI)	Legislated	According with CPI and GDP growth	Legislated
	Social security general scheme: survivors' pensions	No	No	Contribution-funded	34.75% (23.75% employers; 11% employees) [c]	34.75% (23.75% employers; 11% employees) [c]	Legislated	According with wage growth and average social security general scheme old-age pensions growth	Ad-hoc assumption	According with CPI and GDP growth	Legislated
	Special social security scheme for agricultural activities (RESSAA) [f]: old-age and disability pensions	Yes	Yes	Mixed (mostly tax-funded)	Not applicable	Not applicable		Not applicable		According with CPI and GDP growth	Legislated (except for 2012 and 2013, according to the Adjustment Programme)
	Special social security scheme for agricultural activities (RESSAA) [f]: survivors' pensions	No	No	Mixed (mostly tax-funded)	Not applicable	Not applicable		According with CPI and GDP growth	Ad-hoc assumption	According with CPI and GDP growth	Legislated
	Non-contributory scheme (means-tested): old-age, and disability pensions	Yes	Yes	Tax-funded	Not applicable	Not applicable		Not applicable		According with CPI and GDP growth	Legislated (except for 2012 and 2013, according to the Adjustment Programme)
	Non-contributory scheme (means-tested): survivors' pensions	No	No	Tax-funded	Not applicable	Not applicable		According with CPI and GDP growth	Ad-hoc assumption	According with CPI and GDP growth	Legislated
	Social supplement for the elderly (means-tested)	Yes	Yes	Tax-funded	Not applicable	Not applicable		Not applicable		According with CPI and GDP growth	Ad-hoc assumption
	*** Occupational pensions:**										
	First pillar DB plans	Yes	No [g]	Contribution-funded	50% [h]	25.48%	Ad-hoc assumption	For the projection of pensionable salary, the average salary growth underlying the given macroeconomic scenarios was considered [i]		0.5%	Ad-hoc assumption
	Other DB plans	Yes	No [g]	Contribution-funded	11% [h]	10.20%	Ad-hoc assumption	Idem as First pillar DB plans		0%	Ad-hoc assumption
	DC plans	Yes	No [g]	Contribution-funded	4.87% [h]	5.37%	Ad-hoc assumption	Idem as First pillar DB plans		0%	Ad-hoc assumption
	*** Private pensions:**										

Notes:
(a) CGA is a closed regime. Civil servants hired from Jan. 2006 onwards are covered by the social security general scheme
(b) In the case of CGA, the gap between pension expenditures and contributions is financed by State transfers. The employee pays a contribution rate of 11% (8% for old-age and disability pensions and 3% for survivor pensions) and the
(c) General contribution rate
(d) In 2010 and 2011, pensions equal or below €628.83 were increased by 1.25% and pensions between €628.83 and €1500 in 2010 and €1515 in 2011 by 1%, not exceeding the respective upper limit of these brackets.
(e) According to the law, each new survivor's pension is equivalent to 50% of the old age pension that originate it. In the AWG model, it was assumed the average new survivors pensions to be around 40% of the ceased old age pensions
(f) The Special Social Security Scheme for Agricultural Activities (RESSAA) is a closed regime
(g) The replacement rate was not determined due to unavailability of information
(h) These values correspond to assumptions made for the year 2010 and not the values actually observed
(i) DB plans are commonly final salary pension plans. Therefore, is most cases, it is not necessary to establish a rule for valorisation of pensionable earnings

RO

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
	Yes	contribution funded	a) 31,3% for normal working conditions, of which 10,5% for the employee and 20,8% for the employer; b) 36,3% for difficult working conditions, of which 10,5% for the employee and 25,8% for the employer; c) 41,3% for special working conditions, of which 10,5% for the employee and 30,8% for the employer;	a) 31,3% for normal working conditions, of which 10,5% for the employee and 20,8% for the employer; b) 36,3% for difficult working conditions, of which 10,5% for the employee and 25,8% for the employer; c) 41,3% for special working conditions, of which 10,5% for the employee and 30,8% for the employer;	Legislated Law 263/2010			a) starting on 1/1/2012, the pension point value will be annually indexed at 100% of inflation rate plus 50% of real increase of the average gross wage of the previous year. If one of these is negative, only the positive value will be considered; b) starting on 2021, the pension point value will be annually indexed with 100% inflation rate plus 45% of the real increase of the average gross wage of the previous year. The percentage attached to the real increase of the average gross wage will be gradually reduced by 5% each year; starting on 2030, the pension point value will be indexed annually by 100% inflation rate	Legislated Law 263/2010
*** Occupational pensions:**	No								
*** Private pensions:**	No								

	Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
		Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
				Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
					2010	2050					
		BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
	* Public pensions:										
RO		Yes	Yes	contribution funded	a) 31,3% for normal working conditions, of which 10,5% for the employee and 20,8% for the employer; b) 36,3% for difficult working conditions, of which 10,5% for the employee and 25,8% for the employer; c) 41,3% for special working conditions, of which 10,5% for the employee and 30,8% for the employer;	a) 31,3% for normal working conditions, of which 10,5% for the employee and 20,8% for the employer; b) 36,3% for difficult working conditions, of which 10,5% for the employee and 25,8% for the employer; c) 41,3% for special working conditions, of which 10,5% for the employee and 30,8% for the employer;	Legislated Law 263/2010			a) starting on 1/1/2012, the pension point value will be annually indexed at 100% of inflation rate plus 50% of real increase of the average gross wage of the previous year. If one of these is negative, only the positive value will be considered; b) starting on 2021, the pension point value will be annually indexed with 100% inflation rate plus 45% of the real increase of the average gross wage of the previous year. The percentage attached to the real increase of the average gross wage will be gradually reduced by 5% each year; starting on 2030, the pension point value will be indexed annually by 100% inflation rate	Legislated Law 263/2010
	* Occupational pensions:	No	No								
	* Private pensions:	No	No								

SI

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source -2	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:									
	Yes	Contribution-funded	8,85% employer; 15,50% employee	8,85% employer; 15,50% employee	Legislated	Growth of average age and pensions	Legislated	Wage growth	50% of wage growth in 2010, 25% of wage growth in 2011, withouth indexation until 30/6/2012 (temporarily legislated)
* Occupational pensions:	No								
* Private pensions:	No								

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:										
	Yes	Yes	Contribution-funded	8,85% employer; 15,50% employee	8,85% employer; 15,50% employee	Legislated	Growth of average age and pensions	Legislated	Wage growth	50% of wage growth in 2010, 25% of wage growth in 2011, withouth indexation until 30/6/2012 (temporarily legislated)
* Occupational pensions:	No	No								
* Private pensions:	No	No								

SK

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
1) Mandatory PAYG, earnings related scheme (2010 and 2050)	Yes	Mixed (contributions + state budget)	28,75%	19,75%	Legislated	Wage growth	Legislated	Combination wage growth and price index (50%:50%)	Legislated
*** Occupational pensions:**									
*** Private pensions:**									
2) Mandatory fully funded, DC scheme	Yes	Contributions	n. a.	9%	Legislated	Market rate of return	Ad-hoc: WG assumption (3 % for	Price index	Ad-hoc: Assumption used by OECD in the APEX
3) Voluntary supplementary pension savings DC private scheme	No								

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
1) Mandatory PAYG earnings related scheme (2010 and 2060)	Yes	Yes	Mixed (contributions + state budget)	28,75%	19,75%	Legislated	Wage growth	Legislated	Combination wage growth and price index (50%:50%)	Legislated
*** Occupational pensions:**										
*** Private pensions:**										
2) Mandatory fully funded, DC private scheme (2060)	Yes	Yes	Contributions	n. a.	9%	Legislated	3%	Ad-hoc: AWG assumption	0% (*)	Ad-hoc: Assumption
3) Voluntary supplementary pension savings DC private scheme	No	No								

* Currently, the Act on Old-age Pension Saving defines only general principles for pay out phase in the form of annuity and does not cover the question of indexation of the annuity in payment. Hence the calculations by AWG assume no

FI

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
Earnings-related old-age (Private sector employees TyEL	Yes	Contributions	16.9 Employers 4.5(18-52) /5.7 (53-68) employees	As in 2010	`(1)	80% wages and 20% prices	Legislated	20% wages and 80% prices	Legislated
National old-age pension	Yes	Tax-funded						50% wages and 50% prices (No effect in TRR cases)	Ad-hoc assumption (legislated index is 100% prices)
Guarantee pension (No effect in TRR cases)	Yes	Tax-funded							
*** Occupational pensions:**	No								
*** Private pensions:**	No								

(1) OECD model APEX could use only the present contribution rate. This has not been changed when FI moved to do calculations in a national model. Normaly the pension contribution is decided separately for each year and it will rise

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
Earnings related	Yes	Yes	Contributions	21,6	28,0		80% wages and 20% prices	Legislated	20% wages and 80% prices	Legislated
National pensions	Yes	Yes	Tax-funded						50% wages and 50% prices	Ad-hoc assumption (Legislated index is 100% prices)
*** Occupational pensions:**	No	No								
*** Private pensions:**	No	No								

SE

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates								
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions							
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
			2010	2050					
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
*** Public pensions:**									
Income pension	Yes	Contribution	16%	16%	Legislated	Average income	Legislated	Average income-1.6%	Legislated
Supplementary pension (born before 1954)	Yes	Contribution**		n/a	Legislated	Points system	Legislated	Average income-1.6%	Legislated
Premium pension	Yes	Contribution	2.5%	2.5%	Legislated	Rate of return		Rate of return	
Guarantee pension	Yes	Tax-funded	n/a	n/a	Legislated	n/a	n/a	Prices	Legislated
Housing supplement	Yes	Tax-funded	n/a	n/a	Ad-hoc assumption	n/a	n/a	Prices	Ad-hoc assumption
*** Occupational pensions:**									
ITP	Yes	Employer contributions	n/a	4.5, 30%	Collective agreement	Rate of return	n/a		n/a
*** Private pensions:**	No								

** The supplementary pension is integrated as part of the income pension system.

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
*** Public pensions:**										
Income pension	Yes	Yes	Contribution	16%	16%	Legislated	Average income	Legislated	Average income -1.6%	Legislated
Supplementary pension (born before 1954)	Yes	Yes	Contribution**		n/a	Legislated	Points system	Legislated	Average income -1.6%	Legislated
Premium pension*	Yes	Yes	Contribution	2.5%	2.5%	Legislated	Rate of return		Rate of return	
Guarantee pension	Yes	Yes	Tax-funded	n/a	n/a		n/a	Legislated	Average income	Ad-hoc assumptions
Housing supplement	Yes	Yes	Tax-funded	n/a	n/a		n/a	Legislated	Average income	Ad-hoc assumptions
*** Occupational pensions (all major plans)**	Yes	Yes	Employer contributions	2,5-30%	2.5-30%	Collective agreement				
*** Private pensions:**	No	No	Tax deductible private savings	n/a	n/a	n/a	Rate of return		Rate of return	

** The supplementary pension is integrated as part of the income pension system.

UK

Pension schemes (Country-specific)	ISG: Theoretical Replacement Rates									
	Covered by TRR? (Y/N - Comments)	Scheme –specific assumptions								
		Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment		
			2010	2050						
				Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?	Assumptions used for TRR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	Tax Funded	23,8% (1)	23.8%	Legislated	Average Wage growth	Ad-hoc Assumption	4.95%	Ad-hoc Assumption
* Occupational pensions:	Yes	Contribution funded	8%	8%	Ad-hoc Assumption	Average Wage growth	Ad-hoc Assumption	Prices (3.2%)	Ad-hoc Assumption
* Private pensions:	No								

(1) The contribution to the statutory scheme stands at 23.8 (12.8% from employers and 11% from employees) in 2010/11. However income below the primary/secondary threshold is exempt and different rates would apply to any income above the Upper Earnings Limit. The contribution covers some social benefits other than pensions such as the National Health Service.

Pension schemes (Country-specific)	AWG: Benefit Ratio (BR) and Gross Average Replacement Rates (GARR)									
	Covered by BR / GARR? (Y/N -Comments)		Scheme –specific assumptions							
			Funding source	Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment	
				2010	2050					
	BR	GARR			Assumptions used for BR/GARR projectionss	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?	Assumptions used for BR/GARR projections	Legislated or ad-hoc assumption?
* Public pensions:	Yes	Yes	Tax Funded	23,8% (2)	23,80%	Legislated	Average Wage growth	Ad-hoc Assumption	4,95%	Ad-hoc Assumption
* Occupational pensions:	No	No								
* Private pensions:	No	No								

(1) The contribution to the statutory scheme stands at 23.8 (12.8% from employers and 11% from employees) in 2010/11. However income below the primary / secondary threshold is exempt and different rates would apply to any income above the Upper Earnings Limit. The contribution covers some social benefits other than pensions such as the National Health Service.

Annex 6. Members of the working groups

a) Members of the Indicators Subgroup (ISG) of the Social Protection Committee (SPC)

CHAIR (FI)
Carin Lindqvist-Virtanen

AUSTRIA (AT)

Brigitte Schwarz	Federal Ministry of Social Affairs and Consumer Protection
Martin Bauer	Statistics Austria
Hans Steiner	Federal Ministry of Social Affairs and Consumer Protection
Josef Bauernberger	Federal Ministry of Social Affairs and Consumer Protection
Silvia Türk	Federal Ministry of Health

BELGIUM (BE)

Rudi van Dam	International Affairs and Research, Federal Public Service Social Security
Jean-Maurice Frère	Federal Planning Bureau
Dirk Moens	International Affairs and Research, Federal Public Service Social Security
Peter Lelie	International Affairs and Research, Federal Public Service Social Security

BULGARIA (BG)

Radi Foutekov	Ministry of Labour and Social Policy
Teodora Demireva	Ministry of Labour and Social Policy

CYPRUS (CY)

Stella Playbell	Ministry of Labour and Social Insurance
Koulia Onisiforou	Ministry of Finance
Maria Chrysostomou	Ministry of Labour and Social Insurance
Costas Stavrakis	Ministry of Labour and Social Insurance
Georgia Antoniou	Ministry of Labour and Social Insurance
Anna Demetriou	Ministry of Health

CZECH REPUBLIC (CZ)

Sarka Kasalova Dankova	Institute of Health and Inf. and Statistics
Jan Skorpik	Ministry of Labour and Social Affairs
Milos Zdenek	Ministry of Labour and Social Affairs
Jiří Král	Ministry of Labour and Social Affairs
Martin Žárský	Ministry of Labour and Social Affairs

DENMARK (DK)

Josefine Kruse	Ministry of Social Affairs and Integration

ESTONIA (EE)

Hede Sinisaar	Ministry of Social Affairs
Mari Sepp	Ministry of Social Affairs
Priit Kruus	Ministry of Social Affairs
Liis Rooväli	Ministry of Social Affairs
TönuLillelaid	Ministry of Finance

FINLAND (FI)

Sari Kauppinen	Ministry of Social Affairs and Health
Marjukka Hietaniemi	Finnish Centre for Pensions

FRANCE (FR)

Olivier Bontout	Ministère des affaires sociales
Anne-Marie Brocas	Ministère des affaires sociales (DREES)

GERMANY (DE)

Volker Schmitt	Bundesministerium für Arbeit u. Soziales
Martin Koppernock	Bundesministerium für Arbeit u. Soziales
Anja Prothmann	Federal Ministry of Health
Daniela Kuck-Schneemelcher	Bundesministerium für Arbeit u. Soziales

GREECE (EL)

Eric Gazon	Ministry of Employment and Social Protection
Paraskevi Peristera	Ministry of Employment and Social Protection
Aspassia Strantzalou	Ministry of Employment and Social Protection
Konstantinos Chabidis	Permanent Representation of Greece to the European Union
Angelos Angelidis	Permanent Representation of Greece to the European Union

HUNGARY (HU)

Pálné (Judit) Salamin	Hungarian Central Statistical Office
László Ulicska	Ministry of Public Administration and Justice

IRELAND (IE)

Paul Morrin	Department of Social Protection
Jim Walsh	Department of Social Protection
Joanne Mulholland	Department of Social Protection
Barry Sobey	Department of Social Protection
Alan Cahill	Department of Health and Children
Dympna Boyle	Permanent Representation of Ireland to the EU

ITALY (IT)

Stefano Ricci	Ministry of Labour and Social Security
Giuliana Coccia	Ministry of Labour
Angelo Marano	Prime Minister's Office ,Department of Economic Affairs
Carla Antonucci	Permanent Representation of Italy to the European Union
Oreste Nazzaro	Ministry of Labour, Health and Social Affairs

LATVIA (LV)

Evija Kūla	Ministry of Welfare
Sandra Stabina	Ministry of Welfare

LITHUANIA (LT)

Gražina Jalinskienė	Ministry of Social Security and Labour
Vidija Paštukienė	Ministry of Social Security and Labour
Aušrutė Armonavičienė	Ministry of Health
Vitalijus Novikovas	Permanent Representation of Lithuania to the EU
Audronė Morkūnienė	Permanent Representation of Lithuania to the EU

LUXEMBOURG (LU)

Eric Marlier	CEPS/INSTEAD Research Institute
Tom Dominique	Inspection générale de la Sécurité Sociale (IGSS)
Laurence Weber	Inspection générale de la Sécurité Sociale (IGSS)
Marianne Loutsch	Inspection générale de la Sécurité Sociale (IGSS)
Christine Weisgerber	Inspection générale de la Sécurité Sociale (IGSS)

MALTA (MT)

Maya Miljanic Brinkworth	Ministry for Social Policy
Miriam Dalmas	Department of Health Information

THE NETHERLANDS (NL)

Henk van der Stelt	Ministry of Social Affairs & Employment
Paula van der Brug	Ministry of Social Affairs & Employment
Ottolien de Rijk	Ministry of Social Affairs & Employment
Adrie Moons	Ministry of Social Affairs and Employment
Marcel de Kort	Ministry of Health, Welfare and Sport
Jos G.H. Draijer	Counsellor for Health, Welfare, and Sport

POLAND (PL)

Marzena Breza	Ministry of Labour and Social Policy
Joanna Stachura	Ministry of Finance
Michal Marek	Ministry of Health
Dorota Wijata	Ministry of Labour and Social Policy

PORTUGAL (PT)

Rute Guerra	Ministry of Solidarity and Social Security
José Luís Albuquerque	Ministry of Solidarity and Social Security

ROMANIA (RO)

Dan Florin Docsånescu	Ministry of Labour and Social Protection
Laura-Adina Dobrescu	Ministry of Labour and Social Protection
Dumitru Hang	Ministry of Labour and Social Protection
Daniel Costache	National House of Public Pensions
Dana Påun	National House of Public Pensions

SLOVAKIA (SK)

Silvia Gregorcová	Ministry of Labour, Social Affairs and Family of the Slovak Republic

Slavomír Ďuriška	Ministry of Labour, Social Affairs and Family of the Slovak Republic
Eugen Nagy	Ministry of Health of the Slovak Republic
Andrea Vanovicova	Ministry of Labour, Social Affairs and Family of the Slovak Republic

SLOVENIA(SL)

Martina Trbanc	Ministry of Labour, Family and Social Affairs
Ines Sarazin Lovrečič	The Pension and Disability Insurance Institute of Slovenia
Erika Žnidaršič	Statistical Office of Republic of Slovenia
Tatjana Kofol Bric	Health protection Institute of Republic of Slovenia

SPAIN (ES)

Dolores Allona Alberich	Ministry of Labour and Inmigration
José-Manuel Morales González	Ministry of Health, Social Policy and Equality
Mercedes Alfaro Latorre	Ministerio de Sanidad, Política Social e Igualdad

SWEDEN (SE)

Asees Ahuja	Ministry of Health and Social Affairs
Kristoffer Lundberg	Ministry of Health and Social Affairs
Håkan Nyman	Ministry of Health and Social Affairs

UNITED KINGDOM (UK)

Mike Elkins	Department for Work and Pensions Caxton House Tothill Street
Clare Jones	Health Improvement Analytical Team Department of Health
Jennifer Bradley	Department for Work and Pensions Caxton House Tothill Street
Laura Adelman	Child Poverty Unit, Sanctuary Buildings

b) Members of the Working group on Ageing issues (SPC-WG-AGE)

CHAIR (SE)
Niclas Jacobson

AUSTRIA (AT)
Johann Stefanits
Josef Brauernberger

BELGIUM (BE)
Dirk Moens
Michel Englert
Muriel Rabau

CYPRUS (CY)
Costantinos Stavrakis

CZECH REPUBLIC (CZ)
Jan Skorpik

DENMARK (DK)
Eva S. Pedersen
Malene Witzel Hirtsgaard
Torben Hede

ESTONIA (EE)
Lauri Leppik

FINLAND (FI)
Christina Lindell

FRANCE (FR)
Anne-Juliette Lecourt-Giraud
Olivier Bontout

GERMANY (DE)
Mark Kamperhoff
Thomas Salzmann

GREECE (EL)
Aspassia Strantzalou

IRELAND (IE)
John Heuston
Nic Giolla Mhicil Dearbháil
Ronan Toomey

ITALY (IT)
Giovanni Geroldi

LITHUANIA (LT)
Audrone Morkūnienė
Inga Buškutė

LUXEMBOURG (LU)
Tom Dominique

MALTA (MT)
Maya Miljanic-Brinkworth

THE NETHERLANDS (NL)
Adrie Moons
Geert Jan Buisman

POLAND (PL)
Marzena Breza
Ryszard Mikonowicz

PORTUGAL (PT)
Ana Ferreira Reis
Rute Guerra
Vitor Junqueira

SLOVAKIA (SK)
Slavomír Ďuriška

SLOVENIA(SL)
Andraz Rangus
Davor Dominkus

SPAIN (ES)
Diego Rodriguez Tornos
Mercedes Castro López

SWEDEN (SE)
Anna Gralberg
Asees Ahuja
Håkan Nyman
Olle Sundberg

UNITED KINGDOM (UK)
Ashley Sawyer
Tony Mantell

Annex 7. Country profiles