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SECOND REPORT

**PENSION POLICY IN EU25
AND
ITS POSSIBLE IMPACT ON ELDERLY POVERTY**

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Contents

1. Introduction and background	1
2. Pension Reforms in EU countries and their possible impact.....	2
2.1 Pension policy in EU countries: An overview.....	2
2.2 Parametric Reforms: Scope and possible impact.....	4
2.3 Systematic reforms and their possible impact	10
2.4 Concluding remarks	17
3. Country-specific details on reforms and possible impacts on pensioner poverty.....	24
3.1 Austria	24
3.2 Germany	30
3.3 Sweden	34
3.4 Poland.....	37
3.5 Hungary	41
3.6 Estonia	45
4. Projections of risks of elderly poverty in EU25 (2025, 2050).....	48
4.1 The current generosity of pension systems.....	48
4.2 Assessing the impact of pension reforms on the risk of elderly poverty	51
5. Synthesizing discussion	55

1. Introduction and background

This report reviews the most relevant recent changes in the pensions policy in EU25 and provides a description of how they might affect the risk of poverty for the elderly populations. These analyses shed light on what is the likely outlook on the expected evolution of poverty among the elderly for coming decades. These insights will be useful to identify any policy responses that might be necessary (and feasible) in order to meet the objective of not only sustainability but also adequacy of pensions by the member countries.

The report provides a detailed and systematic description of what pension reforms has recently been implemented (and those already legislated). The analyses identify specific parameters of a pensions policy reform (such as whether there were any changes in the minimum income guarantee level; in accrual rates; and in indexation; and whether there are provisions of additional financial instruments such as personal accounts, etc.), and then assess how they are likely to impact income situation of the future generations of pensioners. These analyses will provide pointers towards how we foresee that the elderly poverty situation is likely to change in the future in the individual countries in question.¹ The views expressed are those of the authors, and neither the European Commission nor the organisations with whom authors are affiliated with carries any responsibility towards data used and interpretations expressed in the report.²

Most of our work relies on the analyses of published material. We cite and critically evaluate studies that had analysed the likely impact of the relevant policy changes. We use the latest projections provided by the Commission in their various studies. We also looked for information from the official sources about the rationale of the policy changes and what has been perceived to be the likely impact of these policy changes.

The rest of this report is organised as follows. **Section 2** gives a broad overview of changes in the pension policy in the 25 Member States of the EU during the last decade or so, and what might be possible effects on these changes on pensioners' incomes and poverty. **Section 3** provides a detailed country-specific information on pension reforms in six selected countries, and how specific changes in different parameters are likely to have impact on pensioners' realtive incomes and poverty. **Section 4** offers a thought experiment, in which we generate projections of the risk of elderly poverty in 2025 and 2050 for a selected set of countries. **Section 5** concludes.

¹ Our first report of this project, "Poverty of Elderly People in EU25", provides a concise and most up-to-date description of the elderly poverty in EU25. It also includes an analyses of the income composition across poor and non-poor and income decile groups.

² For work reported here, we are grateful for comments and advice from Aaron Grech of the Department for Work and Pensions, the UK, who is also the UK representative to the SPC. Useful insights were also obtained in our informal discussions with Edward Whitehouse of the OECD about the likely impact of reforms in the Eastern European new Member States. Editorial support from Silvia Fassler and Willem Stamatou are also gratefully acknowledged. Authors take full responsibility for all errors, omissions and interpretations.

2. Pension Reforms in EU countries and their possible impact

2.1 Pension policy in EU countries: An overview

- **The pensions landscape in Europe is changing and the systems that nowadays face many young workers in EU countries are significantly different from those present just ten years ago. In some cases the pensions reforms have reversed dramatically the expected increase in spending on public pensions.³ At the broadest level the reforms that have taken place can be classified into two broad sets: parametric and systematic.**

The *parametric reforms* have maintained unchanged the pay-as-you-go (PAYG) nature of existing pension systems but made substantial changes to their underlying rules – such as those on the accrual of pension entitlements, the age at which benefits can be received, and the contribution periods required.⁴ Other countries have gone even further and opted for *systematic reforms* i.e. moving away from the PAYG defined-benefit (DB) structure and adopting new defined-contribution (DC) type schemes. Here one can discern two main types of reforms: World-Bank inspired multi-pillar reforms that set up systems of personal accounts (e.g. Slovak Republic, Estonia and Hungary) and the adoption of non-financial defined contribution (NDC) systems (e.g. Sweden, Italy, Poland and Latvia). The two biggest countries in Europe, Germany and France, have not shifted totally to NDC, but they have introduced features that mimic the rules of this system. France has introduced a link between the number of contribution years and life expectancy while Germany has adopted a sustainability factor that links the level of pension benefits to the dependency ratio. Austria has also significantly modified its public pension plan and could be said to now have a personal notional defined benefit account system⁵.

³ Over the next 50 years, public spending on pensions is expected to decline in Estonia, Latvia, Malta, Austria and Poland, and remain relatively unchanged in Italy and Sweden. When one compares the projections of pension spending made in 2001 by the Economic Policy Committee and the Commission with those made in 2006, one finds that reforms made in just 5 years have managed to cut back more than a third of the projected impact of ageing. This downward revision was achieved despite that the new projections, presented in Annex A are based on assumptions of a sharper acceleration in ageing.

⁴ The impact of parametric reforms can be quite considerable. For instance, whereas in 2001, Germany was forecasting an increase of 5.5 percentage points in spending over the next half century, now it expects an increase of just 1.7 percentage points.

⁵ See Markuy Knell, “Demographic fluctuations, sustainability factors and intergenerational fairness – an assessment of Austria’s new pension system”, Monetary policy and the economy Q1/05, Oesterreichische Nationalbank, 2005.

- **The current period of pensions reforms are driven mainly by increased concerns for the impact of ageing and a need for fiscal consolidation. A common trend is that the pension benefits drawn from the public pension systems are on the decline, and thus the average public pension benefit ratio has dropped in the majority of the countries. Moreover systematic reforms have changed the nature of pension provision from defined benefit type provisions to defined contribution type provisions. In general, but with exceptions, this type of change links pension entitlements to contributions and it is likely to shift more risks towards individuals concerned (of the same generation), with a more restrictive redistribution in favour of the lower income individuals.**

The recent EPC report on spending on the elderly indicated that the average public pension benefit ratio across the EU25 would drop from 22% in 2004 to 17% in 2050 – a decline of more than a fifth.⁶ The EU Commission’s synthesis report on pensions also confirms that theoretical replacement ratios will drop significantly.⁷ These declines are significantly more pronounced when looking at systematic reforms. For instance, the replacement ratio in Sweden is set to drop by nearly a fifth. Multi-pillar reforms have exposed individuals to market-return risk and investment-choice risk (e.g. in Hungary the returns achieved up to now, if they persist, would mean that benefits under the new system would be lower than under the old system).

The linking of benefits to contributions also had negative implications for people with lower lifetime earnings, such as women. This linking has reduced the previous redistributive elements that was common in the majority of the public pension systems. Furthermore the high administrative costs of personal accounts are relatively more burdensome on lower income persons, who usually also do not have the level of financial education needed to make the right investment choices.

Note here that in view of the rising longevity, the total cumulative pension wealth paid out to pensioners may still be at least as generous after the reforms as before the reforms. Thus, the overall impact might on balance be neutral or even resulting in more generous sum of pensions over one’s lifetime. However, for the purpose of the current report, our interest lies in how annual pension incomes may be affected by the reforms, mainly because the poverty risk calculations are conventionally based on pensioners’ annual incomes. Thus, our references to how the generosity of the pension systems have changed are expressed in terms of how annual pension benefits will change from pensions reforms.

Moreover, it can be expected that the policy reforms will be accompanied with behavioural changes by individual agents (such as a greater propensity to save, and possibly an inevitable

⁶ Economic Policy Committee/EU commission, ‘The impact of ageing on public expenditure: projections for the EU25 Member States on pensions, health care, long-term care, education and unemployment transfers (2004-2050), February 2006.

⁷ European Commission, ‘Synthesis report on adequate and sustainable pensions’, Commission Staff Working Document, February 2006.

extension of one's working life). Without denying that there will be counteracting behavioural changes by the individuals, we tend to review the possible impact of pensions reform in a steady state scenario (i.e. if the generosity of pension benefits is on the decline, it is likely to increase risk of poverty for the future pensioners). Where necessary, we do refer to how behavioural changes of certain sort may reduce or enhance one's chances of facing risks on poverty in old age, and also where a switch away from public pensions may generate enough private pensions so as to mitigate the impact of reductions in the generosity of public pensions.

2.2 Parametric Reforms: Scope and possible impact

- **Most countries in the EU25 have opted to enact parametric reforms rather than systematic reforms. However, this does not necessarily mean that the former have a smaller impact on pensioner incomes than the latter. The parametric reforms are different in that the change in the risk-shouldering aspects of the pension arrangements (for the current generation) is less than that observed in systematic reforms.**

The pension reform process met with considerable opposition. Nevertheless along with developments such as European Monetary Union and growing international competition, policy makers have strived on and in many countries have succeeded to put in place major pieces of reform. However, in the majority of cases, reformers have not pushed for a complete overhaul of their system, but have gone for parametric reforms. The reason for this was mostly the fact that shifts to fully funded systems were seen as financially unsustainable or presented too complex a challenge. Yet, though parametric reforms may seem less drastic than systematic ones, in practice their impact on the fiscal sustainability and pensioner welfare can be equally impressive, or even more in some instances (e.g. while the replacement ratio is expected to decline by 11% in Hungary, which has gone for systematic reform, in France it is set to fall by 26%). The main difference between parametric and systematic reforms lies not on the financial impact on pensioners (or contributors) but in the shouldering of risk between the current generation and the State, who then becomes a custodian of the future generations in this respect.

Parametric reforms, in fact, do not change public pension systems from a DB to a DC set-up. This has several important implications, such as the fact that longevity risk is still borne by the pension provider rather than the pensioner. Moreover redistribution is still possible under a DB system, something that is impossible to achieve under a pure DC framework.

- **Parametric reforms may affect either the contribution side or the benefit side. Almost all countries in the EU25 have undertaken parametric reforms during the last decade. In some cases this preceded systematic reforms.**

On the contribution side, countries may change the percentage of income that needs to be paid or the income thresholds that apply. They may change the number of contribution years required to qualify for a pension, affecting the effective retirement age. The state pension age, or the minimum age at which a pension starts to be paid out, can also be modified, a measure that affects both revenue and expenditure at the same time. On the benefit side, an important parametric change is any change in the indexation or uprating of pension benefits. In the same vein, Governments may change the benefit formula by modifying the accrual rates or altering the pensionable earnings. Related to this, countries have also in many cases tried to rollback the early retirement schemes that they had introduced earlier and also sought to extend working lives by offering benefits to older people who continued to work or deferred their pensions.

Documenting all parametric changes that have taken place in European public pensions during the last decade is a hefty task. However there are tools that enable this kind of analysis. Of particular importance in this regard is the ‘MISSOC Comparative Tables’ compiled since 1990 by the Mutual Information System on Social Protection, which is restricted to just Member States of the European Union. This publication, along with other EC and OECD publications, enable us to get a concise snapshot of the major reforms in the rules and regulations underlying the old-age pensions in the 25 Member States of the European Union. **Annex B** provides the details on reforms in the pensions systems that came about during the last decade.

Table 1 below summarises the main parametric reforms that have taken place, or are gradually being introduced, in the PAYG DB public pension schemes of the current Member States of the European Union. The parametric reforms are sub-divided into 5 categories. In some cases, some countries that have made systematic reforms are also listed in the Table, e.g. Italy. This is because in these countries the old schemes still apply to older cohorts of workers, and Governments have sought to reform these also. In general the parametric reforms have been driven by the objective of increasing revenue or decreasing generosity (in terms of annual pensions benefits paid out).

Table 1: Countries that made parametric reforms between 1995/96 and 2005

Retirement Age	Contribution Rate	Contribution Requirement	Benefit Indexation	Pension Formula
Austria	Czech Rep.	Austria	Austria	Austria
Belgium	Denmark	Belgium	Germany	Belgium
Cyprus	Finland	Czech Rep.	Greece	Czech Rep.
Czech Rep.	Germany	Denmark	Hungary	Finland
Denmark	Hungary	Finland	Spain	France
Estonia	Ireland	France	Slovak Rep.	Greece
Finland	Italy	Germany		Hungary
Germany	Latvia	Ireland		Italy
Greece	Lithuania	Italy		France
Hungary	Malta	Slovak Rep.		Luxembourg
Italy	Netherlands	Slovenia		Portugal
Latvia	Portugal	Spain		Slovak Rep.
Lithuania	Slovak Rep.			Slovenia
Portugal	U.K.			Spain
Slovak Rep.				U.K.
U.K.				

Source: Based on analysis of ‘Social Programmes throughout the World’, various editions, and ‘MISSOC Tables’, various years. See Annex B for more details.

a). Retirement age

- **The most frequent reform (done in 16 countries) involved changing the retirement age. In most instances, the reform has just involved the equalisation of the legal retirement age for men and women (as per ruling by the European Court of Justice).**

As can be seen from Table 1, the most frequent reform was changing the retirement age. This reform, though still quite politically difficult to push forward, tends to be more easily justifiable than reductions in generosity, as it can be linked directly to the increase in longevity. Moreover in many cases, the reform has just involved the equalisation of the legal retirement age for men and women.

Only Eastern European New Member State countries (Czech Republic, Estonia, Hungary, Latvia, Slovak Republic, Lithuania) and Italy have effectively increased the retirement age

for both genders, while Denmark actually lowered it from 67 to 65⁸. However, the approaching of the retirement of the Baby Boom generation is increasing the willingness of Governments to actually push for this kind of change. The coalition Government in Germany intends to raise the state pension age from 65 to 67. Similarly, independent Government-appointed pension commissions have recently recommended the extension of the retirement age in both the UK and Malta. This reform increases both the revenues of Government, by adding more years of contributions, while it decreases the longevity risk borne by the State (and thus the future generation) and the amount it needs to pay to contributors when they eventually retire.

b). Changes to the contribution side

- **Many countries (14) also changed contribution rates.**

The second most common reform during this decade was modifying the contribution rate. Again while politically difficult, this reform can be justified as a means how to bolster the finances of the state in advance of the demographic transition. Given the PAYG-nature of public schemes, this reform, on its own, does not yield full benefits. Thus in some cases, such as Ireland and Finland, this has been accompanied by the setting-up of reserve funds that will be used to finance the increase in spending that is projected in future years. In this way, countries are able to conduct tax smoothing, increasing contribution rates only gradually over time and by a smaller amount as extra funds collected before the system goes in deficit would have earned interest. However, globalisation and the increased competition from lower-cost countries have reduced the willingness of Governments to go for this option. Some countries, e.g., the Netherlands and Sweden have even set a cap on contributions.

- **Contribution requirements tended to be toughened, particularly rolling back early retirement opportunities.**

Another measure that impacts on both revenues and expenditures is changing the contribution requirements to be eligible for pension benefits. One of the most common changes across Europe has been a scaling back of the early retirement schemes that had been put in place in the 1970s and 1980s. Contribution requirements for early retirement, or deductions for taking up pensions before the legal retirement age, have gone up in Belgium, Denmark, Germany, France, Italy, Austria, Finland, the Czech and the Slovak Republics, Spain and Slovenia. More crucially, the period of minimum contributions needed to qualify for the maximum pension has been increased or is being raised in several countries, like Austria, Belgium, France and Italy. France has also introduced a significant reform under which after 2009, 'the number of contribution years will increase following the increase in

⁸ A Government-appointed commission has, however, recently proposed for it to go back up to 66.

life expectancy through a rule keeping constant the ratio of the number of contribution years and the number of years in pension to the level of 1.79 as in 2003'⁹.

This reform is interesting in that it introduces a form of automatic stabiliser in the public DB scheme that reduces the risk posed by longevity. The merit of this approach is that the individual, here, can still manage to qualify for a good benefit by working more. The reforms based on NDC or personal accounts also provide this opportunity to the individuals to undertake remedial action of this sort to qualify for more generous pension benefits.

c). Changes on the benefit side

- **On the benefit side, more countries moved away from earnings uprating of pensions in payment; most EU countries now uprate benefits with prices – implying that over time pensioner benefits will fall in relation to general incomes and thus they will lose out their relative position in their society.**

The changes in indexation relate to the benefit side and, unless people are well aware of their implications, they could end up having pension benefits that are much lower than what they were expecting without any possibility of taking remedial action. As can be seen, there have only been a handful of countries that have changed the way they index benefits after retirement. However, this may be somewhat deceptive, as most countries had already effected these changes at an earlier date. Contrary to the commonly held perception, most pension systems in Europe nowadays are not characterised by earnings uprating but rather by price uprating. This implies that replacement ratios of pensions gradually decline with time, as the income of pensioners grows at a much slower rate (inflation) than that of the rest of the population (earnings). This results in a continuous decline in the relative position of the elderly (especially the oldest old).

The countries shown in the Table represent a few of those who had still earnings uprating in 1995, but since have moved away. Austria and Germany had at first moved towards net earnings, so that the burden of any increases in social security contributions would be shared between workers and pensioners. Now they have both moved to an even less generous indexation: Austria to price uprating and Germany has introduced the 'sustainability factor' to adjust pension benefit indexation. Other countries, like Hungary and the Slovak Republic, went for the Swiss formula (50% price uprating and 50% earnings uprating) and in this way reduced what were previously wage-indexed pensions.

- **Pension formulas have tended to shift towards a lowering of the income to be replaced.**

Changes in the pension benefit formula are rather more complex reforms, especially in terms

⁹ Giuseppe Carone, 'Long-term labour force projections for the 25 EU Member States: A set of data for assessing the economic impact of ageing', November 2005.

of their implications being fully understood by the average citizen. There is a wide variety of pension benefit formulae and thus it is hard to synthesise the main changes. However, broadly speaking, the formulae can be divided into two parts – accrual of entitlements and pensionable salary. The accrual side determines how much of the pensionable salary, the pension benefit will be replacing. Thus, for instance, the scheme could be based on having an accrual of 2% of the final salary for every year of contributions. The other component, pensionable salary, amounts to the representative salary to which the earnings-related scheme is linked.

Typically DB schemes (particularly in the private sector) have accrual schedules that are linear to the number of years in the system (i.e. same accrual rates for each year of contribution, irrespective of age and years already contributed for). In order to extend working lives, or alternatively to discourage early retirement, in recent years some Governments, such as Finland and Greece, have modified their accrual rates and tried to give higher entitlement to those who work after certain ages, or else have sought to make people work more by reducing accrual rates. In other cases, the accrual rate may differ on the basis of earnings (Czech Republic and Portugal have higher accrual rates on lower earnings, and lower accrual on higher earnings; France and Sweden has higher accrual rates on higher earnings). There are also differences in accrual rates across sectors (e.g. Firefighters' pension schemes in the UK, and the pension schemes for police in Greece, have much higher accrual rates compared to other sectors in the economy; the French pension system has separate accrual regimes for executives and nonexecutives¹⁰).

A more readily understandable parametric reform involves changing the pensionable salary. Most countries used to have schemes that limited the determination of this salary to the final few years of a career, a period when someone would be near the top of his earnings history. However, in recent years, there has been a considerable lengthening of this period, so that the wage that is replaced is in many cases no longer very representative of the final salary of the person before he retires. Austria, for example, has moved away from using 15 best years to as many as the income earned during 40 to 45 years of working lives. Most notably, this kind of reform is likely to harm more those who had steep earnings career, and will be relatively beneficial to those on low income trajectory. Other countries, like Portugal and Hungary, have also gone towards calculating the pensionable income as the average lifetime salary, while others, such as France, have just increased this period to be more in line with the required contribution periods (as for Austria). A new innovation made by Germany is the introduction of a 'sustainability factor' which links annual pension indexing to changes in the ratio of pensioners to workers supporting the system. German pensions are tied to a basic pension-point value component, which, in turn, is indexed to annual net wage growth. This pension-point value component is adjusted on the basis of the sustainability factor, so to lower pension payouts for all German retirees as the pensioner-to-worker ratio increases over time. Thus pension payments are expected to be on the decline, which in turn is likely to raise the risk of elderly falling into poverty.

¹⁰ Florence Legros, "NDCs: A comparison of the French and German point systems", from 'Pension Reform: Issues and Prospects for Non-financial defined contribution (NDC) schemes' edited by Robert Holzmann and Edward Palmer, The World Bank, 2006.

2.3 Systematic reforms and their possible impact

In essence there have been two broad types of systematic reforms – those inspired by the World-Bank multi-pillar model and those setting up NDC schemes. Though in both cases, the main difference with DB public schemes is that the structure of determination of pension benefits changes from DB to DC, there are some major differences between the two strands of reforms and their impact on pensioners’ incomes is also likely to be quite distinct.

Table 2: Countries that have made systematic reforms

NDC	Funded Second Pillar	NDC First Pillar
Italy	Czech Rep. (voluntary)	Latvia
Sweden	Estonia	Poland
	Hungary	
	Latvia	
	Lithuania	
	Poland	
	Slovak Rep.	
	Slovenia (supplement)	
	Sweden	

Source: Based on Commission Staff Working Document: Synthesis report on adequate and sustainable pensions (Feb 2006).

a). World-Bank multi-pillar reforms

- **Prior to accession, a number of countries opted to go for multi-pillar pension systems, often after assistance from the World Bank. These reforms, though they differ from that in Chile, were inspired by similar motives of moving towards a funded system and increasing the share in the economy of the private sector. The systems face serious challenges (quite similar to those faced by Chile), with major issues surrounding coverage, high fiscal costs of transition and negative impact on certain groups (such as women).**

The review commissioned by the World Bank on its assistance on pension reform reports that eleven of 24 Bank-supported European and Central Asian countries implemented multi-pillar reforms.¹¹ Poland, Estonia, Latvia, the Slovak Republic, Lithuania and Hungary all implemented multi-pillar reforms before they joined the EU (and three other applicant

¹¹ 13 countries (of which only Slovenia is an EU Member State) also received small loans for parametric reforms.

countries, Romania, Bulgaria and Croatia have also gone down this path).¹² However reforms in this region differ from those in Latin America, as multi-pillar systems in Europe tend to include a fairly substantial contribution-based PAYG pillar, for instance Hungary and Latvia.

Moreover reforms in European countries tended to be influenced by the NDC reforms of Sweden and Italy (particularly in cases when Sweden was also a donor country). In some cases, namely Poland and Latvia, the first pillar was converted from PAYG to NDC.

When comparing Latin American and Central and Eastern European countries (CEECs), one notes two main differences - coverage and demographics. CEECs have an older population structure, but life expectancy is lower, while participation tended to be universal (a residue of the communist days). However the financial situation tended to be very similar, as the transition to market systems resulted in the creation of large informal sectors and the rise of tax evasion, while large unemployment and redundancies from privatised firms resulted in a worsening of the ratio of contributors to beneficiaries. In Poland and Hungary the number of contributors declined by 15% and 25%, respectively, and by 8% in the Czech Republic, while early retirement, in part, led to an increase in the number of pensioners by 10% in the Czech Republic, 20% in Hungary and a massive 50% in Poland.¹³ But the desire to join the EU (and therefore the implied adoption of the Maastricht criteria) meant that a full transition to a funded system was not possible as the transition costs would be too high. Thus countries tended to go for the World Bank multi-pillar model.

Setting up systems of individual accounts was seen as an effective means to boost financial sector development, help privatisation and spread the values of the market economy among the population.¹⁴ However several studies¹⁵ have noted that in many countries the preconditions for administering the systems were not in place and that there were serious implementation problems. In Hungary and Poland, the number of workers shifting to private accounts exceeded expectations and reduced the contributions to the PAYG pillar, reducing its sustainability. As in Chile, administrative expenses were relatively high and the industry had to consolidate in a way that few companies started to dominate it. Markets for annuities proved to be difficult to set up; while pension funds ended up investing mainly in Government paper (which coupled with the high administrative costs implied by their decentralised set-up reduced the potential benefits for contributors). Moreover in some countries, e.g. Poland, the collection and the management of contribution records proved to be very problematic and was affected by administrative and technical hitches. In mid-2003 the overall rate of inactive accounts (accounts created that do not have a single contributions

¹² Sweden, an existing Member State, also introduced a mandatory DC funded pillar, but this is minor contrasted to its main pillar.

¹³ See 'The gender dimensions of social security reform in the Czech Republic, Hungary and Poland' Elaine Fultz & Silke Steinhilber, ILO (2003).

¹⁴ See Diana Wehlau & Jorg Sommer, 'Pension policies after EU enlargement: between financial market integration and sustainability of public finances', ZeS-Arbeitspapier Nr. 10/2004, University of Bremen, 2004.

¹⁵ See Barbara E.Kritzer, 'Social Security Reform in Central and Eastern Europe: Variations on a Latin American Theme', Social Security Bulletin, Vol. 64, No. 4, 2001/02.

paid) was 18% of total accounts.¹⁶ The impact of these systems on women has also been little analysed, while the problems associated with coverage in the informal sector remain. It may still be too early to assess, but if the personal account systems of the CEECs evolves like that of Chile, a substantial proportion of individuals may opt to contribute just enough to qualify for the minimum pension guarantees (with the associated risks of poverty and political pressure on Governments to improve guarantees).¹⁷

- **In many cases the multi-pillar reforms are still too new for their long-term impacts to be evident. Yet, in some of the countries which went through the reform earlier than others, e.g. Hungary, there have been studies that have yielded some interesting insights. The returns recorded so far in the private personal accounts fall short of expectations, and it is possible that the second pillar would not fully compensate in public pension benefits.**

A working paper published by the Hungarian Central Bank¹⁸ notes that ‘the pension system, in its present form, is unsustainable with net implicit public liabilities in the system around 240% of GDP’. More crucially it notes that ‘the returns recorded so far in the private pension funds fall short of expectations and, on the condition that these low returns persist, the second pillar is projected to provide annuities that do not make up for the reduction in benefits received from the public pillar’. The Hungarian case is also interesting in that it shows that a move to fully funding does not automatically result in sustainability as after the reform several parametric changes contributed to reverse any improvements in sustainability. The net implicit liabilities of the system had been just 60% of GDP prior to the reform, but a cut in contribution rates, the levelling of benefits across pensioners who retired in different years and the introduction of a 13th month pension contributed to boost the burden of the system.

- **Shifting to a pure DC structure increases risks shouldered by individual contributors (instead of the State, or the employer), and it reduces the redistributive element present in the former public DB pension schemes. Given gender differentials in employment, and difficulties in implementing gender-neutral annuities, it also tends to lead to greater gender inequality.**

Personal accounts reforms introduce two elements of risk to pensioner incomes – namely investment risk and administrative charges risk, and these may lead benefits to be significantly different from those available under the old regime of public DB-type pension

¹⁶ For a full assessment of the myriad problems faced by CEECs, see ILO, “Collection of pension contributions: trends, issues, and problems in Central and Eastern Europe”, edited by Elaine Fultz & Tine Stanovnik, 2004.

¹⁷ “How well has Chile’s retirement program aged?”, Olivia Mitchell, Wharton Pension Research Council, 2005. The average Chilean worker pays into the system about half of the time. Three-quarters of those not making contributions are women.

¹⁸ Gabor Orban & Daniel Palotai, ‘The sustainability of the Hungarian pension system: a reassessment’, Magyar Nemzeti Bank, December 2005.

schemes. The move to DC also implied that contributions and benefits of an individual became directly linked and this reduces the possibilities of effecting redistribution (within a single generation). Thus, such a move was negative for lower income individuals, as progressive elements in pension formulae were removed or decreased, cases in point being Hungary (1998) and Poland (1992 and 1999). Moreover the shift from DB to DC means that longevity risk is shifted squarely to the shoulders of individual contributors of the same generation (and not borne by the State). Taken together all these measures tend to disadvantage those with low lifetime employment and earnings. To further complicate matters, though countries have tended to legislate that gender-neutral mortality tables are utilised, there have been practical problems of implementing these annuity regulations with insurance companies reluctant to offer them and the market proving to be difficult to kick-start. Thus, the net outcome of these reforms increases the risk that women pensioners will continue to have lower annual pension incomes in the future.

- **A further complication arises when individuals are given the option to shift voluntarily into the personal accounts system. Evidence from Poland and Hungary indicates that many opted to shift without having recourse to enough information.**

In many cases, people had the option of staying within the old public DB-type PAYG system or move to the personal accounts pillar. Similar to what happened in the UK with contracting-out, there is evidence that in many cases people who switched may have become less well off as a result. A World Bank study carried out in 2000¹⁹ shows that surveys in Poland from the end of 1999 showed that ‘most people felt they were well informed and that information on the pension reform was readily available’, but then surveys often showed ‘that the knowledge of the pension system was limited to slogans rather than a deep understanding’. Moreover while there are indications of rational switching, there is ‘some evidence that choices made were not based on a detailed understanding of the new system’. The study also notes that ‘a significant proportion of people simply joined the pension fund of the first agent they came across’.

Orban & Palotai (2005) in their study on the Hungarian system remark that ‘it is a puzzle to researchers why so many people joined the multi-pillar system voluntarily, renouncing 25% of their pension claims from the PAYG after having contributed to the pure PAYG for a number of years’. They explain it ‘by the fact that individuals perceived the market risk involved in accumulating savings in a pension fund to be lower than the policy risk of participating in a pure PAYG with very low credibility and an overall negative image’. Moreover they note that ‘this negative image was exploited by large-scale mis-selling and campaign from the part of pension funds, whose agents pressed and often misled customers in order to recruit more members’. There is also the widespread belief that Government will step in at some stage and compensate pensioners for a very unfavourable outcome.

¹⁹ Agnieszka Chlon-Dominiczak, ‘Pension reform and public information in Poland’, Social Protection Discussion Paper Series, World Bank, August 2000.

- **The high administrative costs of the multi-pillar system are more burdensome to lower-income persons.**

Besides exposing contributors to investment return risk, the main negative element of the multi-pillar system is that it is based on a decentralised approach that implies a very expensive administrative cost structure. This is particularly negative on low-income earners who have very small funds. Moreover the decentralised approach gives rise to competition that is not really based on the effective rate of return, but rather on marketing campaigns and large sales forces. This, not only impacts badly on the low income contributors who usually are the least able to evaluate critically these campaigns, and thus end up making the wrong choices, but also raises the costs of the system without leading to any benefit to participants. Whitehouse (2000) reports that countries with relatively similar systems based on individual accounts with individual choice of provider have average charges that vary from less than 15% to more than 30%.²⁰ By contrast, in the DB schemes, administrative costs were fairly small and were financed out of general taxation. This implies that for adequate replacement ratios to be achieved, contribution rates need to be relatively high, and since saving is a luxury good, this impacts more on low income workers than on high income ones.

b). NDC schemes

- **The NDC schemes, though still based on the DC method of determining benefits, differ significantly from the personal accounts systems. They tend to be less risky for individuals, especially for those on lower incomes, since the return on income is the same for all, and less costly as funds do not need to be invested, and there are no marketing and investment advice costs. However, by default, the longevity risk is faced by the individuals of the same generation, thus the current generation of workers will be faced with greater income risks compared to the situation in which they had contributed to the old system.**

Whereas the personal account systems are based on investing funds in the market, the NDC systems involve just notional accounts and thus the investment risk faced by individuals is very different. The rate of return faced under an NDC is centrally determined and reflects the formula chosen, whereas under the personal accounts system the return depends on the choices made by individuals and the performance and stability of financial markets. This has significant implications in that all people face the same risks on return under the NDC scheme, and thus there is no income inequality that results because of better investment choices, something that could possibly be correlated to the income level of an individual. NDC schemes thus do not place lower income individuals at a relative disadvantage arising from their relatively lower level of financial education and experience in investment choices.

That said NDC schemes also have a form of ‘investment’ risk for contributors. This relates to any fluctuations in the notional rate of return that differs from the return under the PAYG

²⁰ Edward Whitehouse, ‘Paying for pensions: An international comparison of administrative charges in funded retirement-income systems’, Financial Services Authority, November 2000.

DB scheme, which amounted to the annual accrual of entitlements. The NDC schemes, in fact, attempt to make the PAYG schemes automatically stabilising so that the ‘assets’ and ‘liabilities’ of the system balance out. For instance, in Sweden through the operation of the ‘automatic balance mechanism’, Government reviews annually the system and if the calculation reveals an unfunded liability, the notional account interest (set at the growth of average wages) and the indexing of annuities is reduced. Thus changes in the size of the contributing labour force are reflected in the rate of return earned on funds. With the NDC system, the financial risk of changing economic and demographic factors is shifted from the Government to current and future pensioners. Besides this, the system also adjusts for longevity increases through changes in the annuity divisor, which converts the notional account upon retirement into pension benefits. As retirees’ life span increases, the monthly benefit available to individuals declines unless they delay retirement. Capretta (2006) reports that “based on mid-range demographic and economic assumptions, the Government projects that the life span adjustment will cut average monthly benefits for those continuing to retire at age 65 by 14% by 2055”. However, it can be doubted whether there won’t be any behavioural adjustments (upwards) in the age at which people retire when faced with the prospect of low pensions benefits and rising life expectancy. Moreover, as mentioned by Capretta, “the Government expects the automatic balance mechanism to be triggered only ‘a few times’ over the next 15 years, thus modestly cutting the rate of return applied to the notional accounts”.²¹

- **While NDC lead to a securitisation of pension claims for individuals, and so may seem to reduce flexibility for Governments to cut benefits in the future, in practice the move itself has reduced the cost of future benefits.**

There is concern that the projections used by the Swedish Government may be optimistic (the current level of fertility and migration together with 2% permanent real wage growth) and the automatic balance mechanism will be used much more frequently than expected. In this case, the political acceptability of the NDC system may be put under threat as its transparency means that individuals will be able to compare the rate of return on their notional accounts with that on market instruments (and ignoring the question of risk, charges, etc). This will put pressure on Governments to sustain the system by shouldering part of the change in economic and demographic factors itself. Furthermore as noted in Knell (2005)²² the NDC system leads to a securitisation of pension claims, making individual benefit levels difficult to modify whereas under the DB systems where benefits were determined at the end of the career, it was easier for Governments to fiddle with the formula and lower benefits (as will be the case in Germany and France). However, the shift to NDC in itself, due to move towards lifetime averaging and the shift of longevity risk, may lead to such a reduction in benefits that Governments may be willing to face these additional

²¹ James C. Capretta, “Building automatic solvency into US Social Security: Insights from Sweden and Germany”, Policy Brief No.151, The Brookings Institution, March 2006.

²² Markus Knell, “Demographic fluctuations, sustainability factors and intergenerational fairness – an assessment of Austria’s new pension system’, Monetary Policy and the Economy Q1/05, Oesterreichische Nationalbank, 2005.

risks. For instance, Franco & Sartor (2006)²³ reports that in the Italian system “under the baseline scenario, the average pension earned at the age of 60 is reduced by 34 percent...the reduction in benefits reaches 50 percent if the lifetime stream of pension benefits is taken into account”. These reductions in benefits, if not compensated by additional contributions or longer working lives, are likely to increase the risk of elderly poverty.

- **Costs to administer NDCs are lower than multi-pillar and so the incomes accrued under these systems are expected to be higher than under personal accounts.**

Another major difference of the NDC schemes is that they are less expensive to administer than multi-pillar pension systems. This is not to say that multi-pillar systems cannot be organised in a way that reduces the administrative charges faced by contributors. The Swedish pension systems also includes a relatively small personal account component (2.5 percentage points out of the total 18.5% contribution paid) which due to its centralised organisation faces significantly lower costs than the multi-pillar systems of CEECs, indicating that this type of risk can be reduced through reforms that decrease decentralisation.²⁴ Nevertheless the personal account systems will always involve more administrative costs as they involve the actual investment of funds, and thus even if contributors are denied any rights of switching providers or given very little choice (both factors that could reduce administrative charges substantially) there would be the costs to effect investments, track them and administer them. Given that these are fixed costs, in a system of personal accounts these costs tend to disadvantage more the lower income groups.

- **The use of gender-neutral annuity will contribute to reducing gender inequality (when total pension wealth is taken into account). As for annual incomes, both men and women will experience the decline in the benefit income that come about due to longevity risk passed onto contributors of the same generation.**

The adoption of the gender-neutral annuity is arguably the most redistributive element of a DC-type system. However, this is true only when one looks at the overall cumulative sum of pensions payment. In terms of annual incomes, the gender specific risk of elderly poverty will not be affected by gender-neutral annuity rates.

One critical element of the NDC pension system is how it credits absences from the labour market (such as those due to sickness and disability, and those for childcare). If the steady state scenario of a shorter working life career for women is assumed, the DC type pensions will reduce the annual benefits paid out to women.

²³ Daniele Franco & Nicola Sartor, ‘NDCs in Italy: Unsatisfactory present, uncertain future’, from ‘Pension Reform: Issues and Prospects for Non-financial defined contribution (NDC) schemes’ edited by Robert Holzmann and Edward Palmer, The World Bank, 2006.

²⁴ It may be indicative that market forces left alone are also leading to a lot of mergers in the private pension providers in the CEECs.

- **The linking of benefits to contributions increases the importance of providing pension crediting for periods of non-work. Without adequate provisions of such credits, the shift to NDC systems reduces the generosity of the pension system towards carers.**

The shift to DC, and the determination of benefits by the amount of funds accumulated, makes it crucial to have in place adequate crediting systems for periods during which an individual is prevented by circumstances, such as sickness, unemployment, training or child and adult caring, from contributing. However, there is evidence that in many cases this element of reform was ignored. Thus, Steinhilber (2004) reports that in Hungary contributors to the personal accounts system contribute 6% of their child care benefit to the pension system (instead of having credits as under the old system) and since this benefit is much less than wages, especially for middle and upper income earners, carers are worse off, and that in Poland the state pays a subsidy but this is based on the minimum wage and is ‘much less generous than it was before’. By contrast in Sweden, the State gives extra pension rights to parents with children under four, though Sweden’s 2005 National Strategy Report for adequate and sustainable pensions still stated that while “in principle, the national pension system gives everyone the same possibilities of building an adequate pension....many women still devote more time to unpaid work and less time to paid work than men, which results in lower average pensions for women.”.

2.4 Concluding remarks

- **Reforms have been guided by fiscal sustainability concerns, and a consideration in terms of a balance between social sustainability and fiscal sustainability may be necessary for future policy changes. In the absence of dynamic microsimulation models in most of the countries, the net impact on risks of poverty for the current and future generations of pensioners is hard to measure.**

Though the recent pension reforms are expected to have significant economic effects, most of the studies that have been carried out to date have mainly focused on their effect on fiscal sustainability. This, in part, confirms that reforms were broadly driven by financial sustainability motives and there appears to have been very little assessment of the potential impact of these reforms on pensioner poverty. Thus, the World Bank’s Independent Evaluation Group that recently reported on countries that followed the Bank’s advice on pension reform concluded that ‘there was insufficient attention on analysing the living conditions of the aged and exploring options for expanding the safety net for those outside of the formal pension system’ and that ‘Bank involvement in pension reform was often prompted by concerns about fiscal sustainability...yet, in doing so, there often was a neglect of the primary goal of a pension system: to reduce poverty and provide retirement income within a fiscal constraint’.²⁵

²⁵ http://www.worldbank.org/ieg/pensions/documents/press_release_pensions_evaluation.pdf

- **One striking finding, one that is most relevant to the work of this report, is that the benefit ratio will fall in EU countries by more than a fifth over the next 50 years.**

The recently released assessment of ageing related public expenditures by the Economic Policy Committee and the European Commission²⁶ suggests that the projected benefit ratio (the ratio of average public pension relative to output per worker²⁷) will decline by more than a tenth by 2025 and by more than a fifth by 2050. As can be seen from the Table below, there are many countries that are projecting a decline in the relative public pension generosity. In some cases the magnitude of the decline is quite worrying, cases in point being most of the new Member States but also Germany, Austria, France Italy and Sweden. The data shown in the Economic Policy Committee/EU Commission paper indicate that the decline in the benefit ratio will offset nearly a third of the fiscal impact of ageing.

Table 3: Projected benefit ratio

	2004	2025	2050	Decline in generosity
Belgium	17.7	17.6	16.4	-7%
Czech Rep	15.7	13.0	14.1	-10%
Denmark	20.2	19.3	19.2	-5%
Germany	18.5	15.6	13.3	-28%
Estonia	10.5	8.0	5.3	-50%
Spain	17.2	19.0	17.1	-1%
France	24.4	21.1	18.9	-23%
Ireland	14.3	16.6	15.7	---
Italy	20.0	18.8	14.0	-30%
Cyprus	25.6	25.5	30.8	---
Latvia	11.4	9.1	7.2	-37%
Lithuania	7.7	8.6	7.5	-3%
Luxembourg	23.5	26.4	28.0	---
Hungary	13.4	15.5	16.2	---
Malta	18.4	17.2	10.3	-44%
Netherlands	19.5	18.2	18.1	-7%
Austria	21.8	19.9	15.2	-30%
Poland	25.0	18.4	10.7	-57%
Portugal	18.6	17.2	15.4	-17%

²⁶ Economic Policy Committee/EU commission, 'The impact of ageing on public expenditure: projections for the EU25 Member States on pensions, health care, long-term care, education and unemployment transfers (2004-2050), February 2006.

²⁷ Note that the benefit ratio does not measure the level of the pension for any individual relative to his/her own wage and, hence, is not equivalent to a replacement rate indicator.

	<i>2004</i>	<i>2025</i>	<i>2050</i>	<i>Decline in generosity</i>
Slovenia	18.9	17.4	17.3	-8%
Slovak Rep	13.0	12.0	8.8	-32%
Finland	19.8	18.8	18.0	-9%
Sweden	21.3	16.9	15.9	-25%
<i>EU25*</i>	<i>21.7</i>	<i>19.8</i>	<i>17.0</i>	<i>-22%</i>

* Excluding Greece and the UK which did not provide data.

Source: Economic Policy Committee/European Commission 2006.

In some countries the expected decline, notably the CEECs, reflects a partial switch to the multi-pillar system, and so it could be partly remedied by the contribution of these new private personal accounts. However in other countries, the decline in generosity will not be offset by any other mandatory component. For instance, it is readily evident that countries that have turned towards the NDC formula, i.e. Sweden, Italy, Poland and Latvia will see a decline in annual state pension benefits, while countries that have introduced features that mimic NDC, i.e. Germany, Austria and France, will also reduce the liberality of their schemes. As stated previously, countries that have 'just' undertaken parametric reforms have still managed to cut back pension income generosity considerably – for example Portugal is projected a decline of nearly a fifth. At the same time, this projection exercise confirms that existing parameters of the pension system will be exerting a lot of influence on future generosity of public pension schemes. For instance, in Malta the setting of a maximum pension ceiling that rises in line with the social wage²⁸ means that by 2050 the system's generosity will have fallen by more than two-fifths. Similarly in the UK, the Second Report of the Pension Commission has reported that if the Basic State Pension remains indexed to prices, its value 'as a percentage of median earnings would keep declining (from 19% today to 8% in 2050) and average state pension payments to pensioners would fall as a fraction of average earnings by about 27% over the next 45 years'²⁹. These are worrying trends, but they may partly be offset by a higher employment and a greater share of private pensions.

- **The take-up ratio of benefits is also set to drop by a fifth. There appears to be a trade-off between the take-up ratio and the relative benefit ratio, since a decline in the former will lead to higher pension benefit entitlements.**

Besides projecting a dramatic drop in the benefit ratio, the Economic Policy Committee/European Commission projection exercise also forecast a decline in the take-up ratio of public pension benefits over the coming 45 years. These projections indicate that on average take-up ratio will decline by nearly a fifth up by 2050, and will reduce the financial effect of ageing by nearly a fifth. These projections, presented in the Table below, indicate

²⁸ In effect this means that this maximum rises by 2/3s of the increase in the social wage, which in turn is the minimum wage plus some other social benefits. This wage is usually increased in line with inflation.

²⁹ Pension Commission, 'A new pension settlement for the twenty-first century – the second report of the Pensions Commission', 2005.

that on average take-up ratio will decline by nearly a fifth up by 2050, and will reduce the financial effect of ageing by nearly a fifth. Note that the number of pensioners in the table is greater than the number of persons aged 65. This is mainly because of the inclusion of persons who receive early, disability and survivors' pensions and also because in some countries there are a number of pensioners who receive their pensions abroad (e.g. Luxembourg has a lot of migrant workers). In the majority of countries, the effective retirement age is also below 65 (e.g. France, Hungary, etc).

Table 4: Projected take-up ratio of pensions: number of pensioners receiving public pensions relative to the population aged 65 and over (in 100s)

	2004	2025	2050	Decline in take-up
Belgium	140	141	137	-2%
Czech Rep	185	141	127	-31%
Denmark	156	140	124	-21%
Germany	160	140	124	-23%
Estonia	173	146	130	-25%
Spain	119	115	100	-16%
France	132	122	115	-13%
Ireland	135	127	117	-13%
Italy	140	124	111	-30%
Cyprus	102	113	115	---
Latvia	160	139	125	-22%
Lithuania	241	222	182	-25%
Luxembourg	201	209	235	---
Hungary	196	159	138	-30%
Malta	116	108	103	-11%
Netherlands	147	125	119	-19%
Austria	185	148	117	-37%
Poland	155	108	97	-37%
Portugal	173	183	169	-2%
Slovenia	175	149	132	-25%
Slovak Rep	195	159	135	-31%
Finland	158	129	122	-23%
Sweden	138	135	135	-2%
<i>EU25*</i>	<i>149</i>	<i>133</i>	<i>122</i>	<i>-18%</i>

* Excluding Greece and the UK which did not provide data.

Source: Economic Policy Committee/European Commission 2006.

The main reasons for these pronounced declines in the take-up ratio are reforms that increase the effective retirement age either through a direct increase in the statutory age at which pension benefits are received and/or through tightening access to early and disability pension schemes. A recent European Commission paper estimated that the average age of exit from the labour force could increase by as much as 2 years by 2025 in Germany, France, Finland and Poland.³⁰ Measures of this sort impact most on the lower income groups, on account of

³⁰ Giuseppe Carone, 'Long-term labour force projections for the 25 EU Member States: A set of data for assessing the economic impact of ageing', November 2005.

their relatively shorter life expectancy and on their greater dependency on state benefits to finance their retirement. This trend points to the fact that there will be significant reductions in the number of older workers who take up early retirement. Thus, a reduction in the take-up ratio is likely to result in a welfare enhancing pension income gains for the elderly.

- **Theoretical replacement ratios provide us useful indications on how the pension systems are evolving, although they are derived from the replacement of income for stylised individuals (i.e. full-career workers, with average earnings throughout their working lives). Changes in the net replacement rate offer us a proxy on the changes in the generosity of the system, and they are set to fall in 11 EU Member States. As many as 9 countries observed a rise in the net replacement rates, and for others the changes are moderate.**

Another attempt to study trends in the generosity of pension schemes has been carried out by the EU Commission for the Social Protection Committee. These analyses³¹ were done on the basis of national calculations made by Member States according to an agreed methodology of theoretical replacement rates. The latter were worked out for a male worker with a career length of 40 years full-time work at average earnings with contributions to first (and in some cases second) pillar schemes retiring at 65.

Table 5: Theoretical replacement rates - 2004 compared with 2050

Countries with projected decline in <u>Net</u> replacement rates	Countries with projected increase in the <u>Net</u> replacement rates
Czech Rep. (-9 pp or 11%)	Belgium (+7 pp or 10%)
Greece (-9 pp or 8%)	Denmark (+5 pp or 7%)
Spain (-5 pp or 5%)	Germany (+4 pp or 6%)
France (-17 pp or 21%)	Estonia (+2 pp or 5%)
Latvia (-6 pp or 8%)	Italy (4 pp or 5%)
Hungary (-4 pp or 4%)	Cyprus (8 pp or 35%)
Malta (-54 pp or 61%)	Lithuania (9 pp or 22%)
Netherlands (-2 pp or 2%)	Austria (14 pp or 17%)
Poland (-34 pp or 44%)	The United Kingdom (3 pp or 4%)
Finland (-1 pp or 2%)	
Sweden (-14 pp or 20%)	

See Annex A (Table A.2) for the full set of data on net as well gross replacement rates.

³¹ European Commission, 'Synthesis report on adequate and sustainable pensions', Commission Staff Working Document, February 2006.

As can be seen from the Table above, the generosity of public pension schemes is set to decline in a number of countries (ranging from a massive 61% in Malta and 44% in Poland to 2% in Finland and the Netherlands). The reductions in replacement rates paint a rather bleak picture for Malta and Poland. The other polar position is offered by Cyprus (an increase of 35%) and Austria (an increase of 17%).

Table 6 provides a comparison of gross replacement ratio before and after the reforms in six countries. These results highlight the fact that the effect of reforms are substantially different across individuals who had earnings at half the average, average and twice the average throughout their working career. In Germany, France and the United Kingdom, the reforms had a redistributive element as the reforms will make low earning individuals better-off (or less worse-off) compared to the average or high earning individuals. This differential effect is much stronger in the UK and Sweden. In contrast, the reforms in Poland and Slovakia appear to reduce the redistributive element that was present in these former socialist systems. Although these replacement rates are theoretical (as they are based on stylised working careers), they provide a good proxy of how the systems differ with each other and how systems evolved as a result of recent reforms.³² The reduction of the redistributive element is consistent with the fact that in the reformed systems benefits are closely linked with the contributory record of the individual in question. This trend, when continued, could result in a greater extent of poverty in the Eastern European new Member States and they will no longer be able to maintain their status as the countries with lowest elderly poverty in EU.³³

Table 6: Entitlements (gross replacement rates) before and after pension reforms at different levels of earnings

Country	Earnings level	Before	After	Change in %
Germany	Half the average	48.7	46.5	-4.5
	average	48.7	39.9	-18.1
	twice the average	44.1	36.2	-17.9
France	Half the average	80.2	81.6	1.8
	average	70.7	50.0	-29.3
	twice the average	64.7	42.8	-33.9
United Kingdom	Half the average	53.5	67.1	25.4
	average	34.0	36.6	7.6
	twice the average	21.4	21.7	1.4
Sweden	Half the average	76.7	86.1	12.2
	average	70.4	63.7	-9.6
	twice the average	70.4	65.1	-7.5

³² Edward Whitehouse and Monika Queisser, 'Forward-looking indicators of pension entitlements', OECD, 2006.

³³ See our first report, "Poverty of Elderly People in EU25", for a discussion on relative ranking of countries with respect to the elderly poverty.

Country	Earnings level	Before	After	Change in %
Poland	Half the average	86.9	61.2	-29.6
	average	67.0	61.2	-8.7
	twice the average	57.1	61.2	7.2
Slovakia	Half the average	65.0	56.7	-12.8
	average	65.0	56.7	-12.8
	twice the average	33.1	56.7	71.3

Source: Whitehouse (2005), presentation in Prague, December 2005.

All in all, the pension landscape in Europe has totally changed from that of a decade ago, with a notable drop in generosity of pension benefits in a number of countries. Our discussions highlight the fact that these reforms will impact on retirement incomes and elderly poverty in different ways. There is a need to reassess reforms and look for best practices in dealing with challenges posed by population ageing for the social sustainability of both the current and the future generations of pensioners.

3. Country-specific details on reforms and possible impacts on pensioner poverty

In view of the discussion in Section 2, our analyses in this section make a distinction across three groups of countries. Firstly, there are countries that have gone through substantive parametric reforms in the recent past (**Austria, Germany**, France, Belgium, Portugal and Spain). Secondly, there are those countries that have opted for a move towards the NDC pension system (**Sweden, Poland**, Italy, and Latvia). Thirdly, there are the Eastern European New Member State countries which opted to reform their system to the multi-pillar type pension schemes (e.g. **Hungary, Estonia**, Czech Republic), with a strong first pillar and social assistance schemes. We select two countries for each of these cluster of countries (mentioned in bold font) and analyse further what possible impact specific pension policy reforms might have on the incomes and poverty risk of the elderly.

3.1 Austria

a). Minimum requirements for pension entitlement, minimum pensions and social assistance

- Only 15 insurance years are required to get entitlements to pension benefits; 7 of which must be derived from a contributory economic activity, the rest could be accrued on the basis of childcare and other forms of credits.

Impact: With the new minimum requirements of insurance years, the future pensioners are more likely to have their own pension entitlements, and this will be particularly beneficial for those subgroups that have lower lifetime employment (such as women). This increased personal entitlement, along with the pension top-up amounts, will help improve the pensioner poverty situation over the long run.

- There is no minimum pension, there is only a top-up for those who are eligible for a pension. The top-up raises pension amounts to a minimum target, which is still below the poverty line. The indexation of these top-up amounts has been higher than the normal pensions indexation.

Impact: The top-up pensions keep pensioners still below the poverty line, and only a slight increase of pension top-up could bring many elderly out of poverty. As it is likely that the policy with a fair adjustment of the pension top-up will be continued, it can be expected that the elderly would not face a substantial rise in their risk of falling in poverty. However, the continuation of a more generous indexation of the top-up amounts will be necessary to keep the relative economic status of pensioners intact within the society.

- Means-tested social assistance is granted for those elderly who are not entitled to pension benefits in their own right. Social assistance benefits are provided by the provinces schemes, and the reference rates currently differ according to the respective Länder. However, as a rule for elderly, its amount and indexation is linked

to top-up amounts.

Impact: The continued availability of social assistance benefits will limit the risk of poverty amongst elderly without own pension entitlement.

b). Age (statutory retirement age, early retirement age, reductions early retirement)

- Austria still has different pension ages for women (standard 60) and men (standard 65). Equalisation will only be phased in between 2024 and 2033.

Impact: Women will probably not have enough contribution years in order to reach the aimed replacement rates calculated on the basis of 45 contribution years (80% at age 65). This will remain an issue at least until 2024 and the following years when the equalisation of the legal retirement age between women and men will start taking place.

- Abolishing stepwise the early retirement scheme (age 61.5 for men, 56.5 for women) by 2017. However, the 2004 reform introduced a new early retirement scheme between 62 and 65 years of age. Overall, the reforms increased actuarial deductions for earlier retirement, and provided higher incentives to work longer.

Impact: The increase of the employment rate because of the (long run) amplification of the legal retirement age will lead to a noticeable turnaround in the number of pensioners in the age group 55-64. The share of early pensions of total pensions will be reduced from 32% to 20% until 2050. A marked drop in early pensions is assumed as of 2025. Provided there is enough employment capacity in the economy, higher employment and extended working lives would undoubtedly improve the income position of pensioners.

It is undoubtedly the case that the pension reforms need to be accompanied by a significant increase of employment among older workers in order to ensure both adequacy and sustainability of pensions. This could lead to a further decrease of the poverty risk for pensioners, as well as to the stabilization of the future replacement rates at its current level. However individuals in lower income groups tend to be less educated and less employable at older ages due to the type of skills that they possess and the types of work that they undertake. Thus if the employability of these individuals is not increased, these reforms will have a detrimental effect on income inequality amongst the pensioners and (possibly) a rising risk of elderly poverty.

c). Accrual rates and assessment period for pension calculations

- Gradual decreasing of the annual accrual rate from 2 to 1.78% point, thus a significantly longer insurance time (45 years instead of 40) is a precondition for the full pension with a replacement ratio of 80%.³⁴
- The assessment period for pension calculations has been increased from 15 best years up to 40 years and with the reform 2004 to the whole working career.

³⁴ 80% are the “regular” full pension. However, with more than 45 insurance years and deferred retirement a replacement rate of more than 80% is possible.

Impact: The accrual rate reductions will translate into a decrease in individual's pensions. Decreasing replacement rates are especially likely to happen in steep income careers because of the extended pension calculation period (and it is possible that low income workers will benefit from this change as the uprating factors for contribution periods were also increased). The replacement rates are depending on life-long incomes and not on the last incomes of the working career. Although improvements like better accounting for child-care periods were made, individual pensions rights for women will continue to be significantly lower than those for men, reflecting their lower earnings and labour-market participation.

Replacement rates are currently relatively high, notably due to the calculation of the pension from the best 15 years of income. After the 2003/04 pension reforms the gross theoretical pension replacement rate for workers retiring at 65 (after 40 years of contributions at the average wage) will decrease from 74% to 69% (total net 94%). This decrease in income could increase the at-risk-of-poverty rate among the elderly.

d). Indexation of pension payments

- In the last few years within the system of the “net adjustment” (principal linkage to wage increases) the average adjustment of pensions was below the CPI. A changeover to adjustment of pensions based on the CPI was adopted in the framework of the pension reform 2004.

Impact: Already in the last few years there were only moderate pension adjustments (partly even below CPI). Also in the medium and long run it is to be expected that average pensions will rise in line with prices. This means that over time, the relative income position of the elderly will worsen. Furthermore since lower income pensioners tend to be more dependent on state pensions, this decrease in future pension growth may impact significantly on them.

e). Adjustment to life expectancy/ sustainability factor

- To secure long-term sustainability of the pension system, as from 2007 a monitoring mechanism has been introduced (to take place every three years). There is no automatic adjustment mechanism but, in case of increasing life expectancy, the expert committee will make proposals, concerning the ways to finance the expected expenditure increase – sharing this in a balanced way between contributions, pension adjustments and retirement ages. In case of deviations from other assumptions, such as lower participations rate or productivity growth, the government is to report this to parliament with legislative recommendations.

Impact: If the life expectancy of lower income groups grows by a smaller margin than that of the total population, the sustainability factor of this sort penalises more lower income groups. Furthermore, such a sustainability factor also lowers the pension incomes of the elderly, and so worsens their overall relative position in the society.

Synthesizing conclusions

The pension reforms that have been carried out in Austria have decreased generosity (in annual pension benefits) significantly, with the benefit ratio projected to decline by a third of its present level. This will likely drive up the at-risk-of-poverty rate, although some of this effect will be mitigated by extending working lives and when pensioners have higher income from private pensions. Given that lower income groups are less likely to be in a position to do this, the end result could be to have higher income inequality among the elderly. The social safety net provided by the pension top-up and the social assistance benefits could keep poverty at a low level compared to other EU countries if the strategy of a fair adjustments will be continued..

A rising take-up of occupational pensions (through the 2002 Occupational Staff Provision Act), and also continuous tax-incentives for private personal pensions, will help people generate pension income from other private sources. This is likely to improve pensions on the one hand, but on the other hand to result in a greater inequality amongst pensioners.

Explanatory notes for Tables 7-12

1. + *inc.* /- *inc* refers to impact of the specific reform on the incomes of pensioners (an improvement in incomes is signalled with + *inc*, and a reduction in income is given by – *inc*);
2. + *pov.* /- *pov.* refers to an impact of the specific reform on the poverty of pensioners (+ve implies an improvement, and thus lower incidence of elderly poverty)
3. + *distr.* /- *distr.* refers to an impact in terms of changes in the income distribution (+ve implies that the reform leads to a more egalitarian position)

Table 7: Parametric reforms and their possible impact on pensioners' incomes and poverty in Austria

AUSTRIA	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
Parametric reforms in 1997 2000 2003 2004	Entitlement: for times after 2004 only 15 insurance years, thereof 7 from employment; before 15 contribution years, or 15 insurance years in last 30 years, or 25 insurance years during lifetime + <i>pov.</i> , + <i>distr.</i> In past top-up amounts (no real minimum pension) often increased more significantly than normal pensions and above CPI; however still below poverty line (social assistance provided by the provinces for elderly above 60 women/ 65 men without pension entitlement usually linked to top-up amounts)	Increase legal retirement age women (currently 60) to those for men (65) from 2024 to 2033 Early retirement with at least 37.5 insurance years with 56,5 (women)/ 61,5 (men) to be phased out till 2017 (then only legal re-tirement age) Introduction of new early retirement scheme between 62 and 65 if 37.5 insurance years and pension above minimum pension-top-up From 2004 on reduction for each year before 60 (women)/ 65 (men) increased from 3% to 4.2%	Decrease accrual rate from 2% to 1,78% per year till 2009, 45 years required for full pension (80%) at the age of 65 - <i>inc.</i> Increase calculation period from best 15 to 40 years till 2028 In parallel calculation after harmonisation of pension systems whole active career taken into account - <i>inc.</i>	Changeover to adjustment of pensions based on CPI as of 2006; before: despite principal indexation to wages in last years ad hoc adjustment with as a rule price indexation till certain level, above flat amount + <i>inc.</i> , - <i>distr.</i> ; long term: - <i>inc.</i>	Sustainability factor introduced to cope with unforeseen developments, such as adverse demographic deviations, permanent monitoring as of 2007 - <i>inc.</i>

AUSTRIA	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
	+ <i>pov.</i> , + <i>distr.</i>	- <i>inc.</i> From 2004 on bonus for deferral for each year after 60 (women)/ 65 (men) increased to 4.2% even if 80% of assessment base exceeded + <i>inc.</i>			

3.2 Germany

a). Minimum requirements for pension entitlement, minimum pensions and social assistance

- To achieve minimum financial standard of pensioners, a basic insurance is introduced. Beneficiaries are persons from the age of 65, as well as those from the age of 18 onwards whose earning capacity is fully reduced. Benefits are at the subsistence level and means-tested, but in distinction to social assistance there is no recourse to the children of the beneficiaries and also no account is taken of income of household members other than the spouse taken into account.

Impact: Reforms improved the protection of older people against the risk of poverty. Although there is still no guaranteed minimum pension, the granting of a minimum income to older people is no longer subject to a means test against their children's income. This should increase the rate of the benefit take-up and reduce also the so-called "shameful poverty".

The introduction of the sustainability factor (on the basis of the ratio of the contribution payers to pensioners) would imply that the individuals will require longer periods of contributions to attain a given level of replacement of their income during working life.

b). Age (statutory retirement age, early retirement age, reductions early retirement)

- Reduced incentives to take up early retirement: a gradual increase of age limit to draw old-age pension because of unemployment or part-time working from 60 to 63 for those born after 1946. For those born after 1951, this possibility together with the deduction-free early old-age pension for women (from the age of 60) has already been completely eliminated. In future, only possibility to draw pension before 65 is for persons with disabilities and long-time insured, with reductions applying (0.3% for every month of early retirement). Those who postpone retirement beyond 65 will receive a bonus (0.5% for every month).

Impact: Germany has been terminating early retirement paths, and this is happening within a rather short transition period. A longer working life will undoubtedly help raise pensions levels, although it is imperative that a continuous progress in raising the employment rates, particularly of older workers, is made.

- The new government has planned to gradually raise the statutory retirement age from 65 to 67 from 2012 to 2029, while keeping open the possibility of retirement at 65 without reductions for people who already have 45 years of contributions.

Impact: Greater employment will enhance retirement incomes, although this will be determined entirely by whether there are enough labour demand for the older workers in the economy.

c). Accrual rates/ calculation period

- The 2001 reforms led to a lower increase of first pillar pension levels. Changes in pension-calculating formula to reach a lower limit of the provision-level. However, the clause to safeguard pension levels should prevent the average level of pensions falling below a certain limit in relation to workers' income.

Impact: On average, the latest pension reforms will lead to reductions in old-age pension provision within the first pillar. The gross replacement rate for a worker working 40 years at the average wage and retiring at 65 is currently at 43% (63% net), with 45 years at 53% (71% net). Due to the most recent enacted reforms, the gross replacement rate of the statutory pension scheme will decrease to 34% in 2050. However, the reduction in the replacement rate of the 1st pillar should be compensated by the pension incomes from the subsidised 2nd and 3rd. There are signs that the coverage of private occupational and personal pensions is on the increase, and this should boost pensioners' private sources of income.

- In *Riester* contracts introduced in 2001, tax incentives are provided to attract additional private savings for pensions. The greatest support is provided to low incomes and for families with children.

Impact: Such specific measures related to children should favour the accrual of personal pension entitlements for women which is a major factor to counter pension disadvantages of women in old age.

- Due to recent pension reforms and the gradual change in taxation (in the long run pensioner's income will be fully taxed while a tax deductibility of pension insurance contributions of the employed will be introduced), the replacement rates of public pensions will be significantly reduced.

Impact: As several recent pension reforms will translate into a reduction of first pillar benefits, the German government committed itself to make adjustments, should the pension benefit with 45 years fall below a minimum level of 46% until 2020 and 43% until 2030. Unless income from the 2nd and 3rd pillar increases, this will lead to an increase in the proportion of elderly that are at risk of poverty.

d). Indexation pension payments

- Modified pensions adjustment relinquishing inflation adjustment. Relevance now attached to trends in gross wages, contribution rate and the proportion of old-age provision. It is established that if wage developments are positive, pensions adjustment cannot be negative and negative wage trends may not further increase a negative pension adjustment.

Impact: In general, pensions are adjusted in line with growth of average earnings but this increase is reduced by the sustainability factor. Modified pension adjustment could lead to adjustments below the inflation rate. As the announced policy for future years is to increase public pensions in line with price movements, over time the value of the public pension is

falling relative to average earnings. This was also the case in most of the past 20 years, however, in 2001/02 above inflationary increases were implemented (EPC country fiche). Thus this indexation regime will lead to pensioners' relative income position to worsen over time.

e). Adjustment to life expectancy/ sustainability factor

- The Sustainability Act of 2004 introduced a sustainability factor to the pension indexation formula, requiring additional adjustments if the ratio between contributors and beneficiaries worsens.

Impact: The impact of the sustainability factor depends on the demographic and economic development and therefore differs in respect to the underlying assumptions. In order to avoid pension reductions, it is stipulated by law that the sustainability factor can lower the adjustment down to zero but can not go beyond this point. However, the new government has already envisaged curbing future indexation by introducing a new adjustment factor in order to make up for lost indexation cuts because of this restriction. This kind of adjustment mechanism works against lower income groups, who tend to experience a smaller life expectancy increases than the average.

Synthesizing conclusions

The generosity of the public system in Germany is set to decline, with the relative benefit ratio nearly falling by a third from its current level. Thus, if individuals do not compensate by finding other sources of income, the risk of poverty could rise significantly. It appears to be the case that the coverage of schemes in the 2nd and 3rd pillar is improving, and thus one could assume that the decline in the generosity of public pensions will at least partly be compensated by an increase in the private sources of pensions incomes. However, in order to meet the expectation to compensate the pension cuts in the statutory pension scheme by better occupational and personal provision, further improvements in the coverage might be necessary. The relative income position of the elderly will worsen due to the changed indexation regime and by the adoption of the sustainability factor.

Table 8: Parametric reforms and their possible impact on pensioners' incomes and poverty in Germany

GERMANY	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
Parametric reforms in 2003 2004	Introduction basic insurance for persons 65+ as well as 18+ with earning capacity fully reduced: at subsistence level and means-tested, but no recourse to children nor income household members other than spouse taken into account any longer + <i>pov.</i>	Increase of statutory retirement age to 65 completed by 2012, gradual increase to 67 till 2029 Deduction-free old-age pensions women: age limit increased from 60 to 65 by 2011 Age limit old-age pension because of unemployment or part-time working increased gradually from 60 to 63 by 2008; born after 1951 possibility eliminated For those born after 1951, early retirement possible with 62 if at least 35 contribution years Before 65 (63 with disabilities) actuarially-calculated reductions applying (3,6% per year) - <i>inc.</i> Bonus of 6%/ year for deferred retirement + <i>inc.</i>	Changes in pension-calculating formula to reach lower limit of provision-level; however, clause to safeguard pension levels - <i>inc.</i>	Relinquishing inflation adjustment of pensions, relevance now attaches to trends in gross wages, contribution rate and proportion of old-age provision - <i>inc.?</i> 2004-2009: no adjustment of pensions - <i>inc., -pov.?</i>	Sustainability factor introduced: annual adjustment of pensions takes into account change in life expectancy and change of number of contributors in relation to number of pensioners - <i>inc.</i>

3.3 Sweden

a). Minimum requirements for pension entitlement, Minimum pensions and social assistance

- If there is no adequate pension from national pension system, state provides guarantee pension or maintenance support (lower level of support) for those who do not qualify. This is supplemented by means-tested housing benefits.

Impact: The guarantee pension is set at slightly more than 50% of median income and thus provides a good level of income replacement. At the same time, those with not enough residence years for adequate pensions have access to the maintenance support, which gives around 30% of median income. The overall impact of these schemes is positive for reducing poverty risks for the elderly.

b). Retirement age

- State pension age has become flexible from 61 to 70.

Impact: The accrual rates used for those who retire earlier than 65 are worse than for those who retire after that age. This puts at an advantage those who are able to extend their working lives. To the extent that people from lower income groups are in a worse state of health and have relatively lower employability, it is debatable to what extent these flexible arrangements will have a net positive effect on them.

c). Accrual rate/calculation period

- Move to NDC means that benefits are computed on the basis of contributions made.

Impact: This reduces the income payable to individuals with lower lifetime earnings, as there is no redistributive element in accrual rates. It also is less generous than the previous scheme for those with rising career incomes. The extension of the contribution period also works against people who stay out of paid work.

d). Indexation

- Pensions adjusted upwards in line with earnings, but growth norm of 1.6% is deducted. Minimum pensions are price-indexed.

Impact: The income of pensioners grows in line with earnings and this is positive, while the growth norm is deducted to reflect the notional interest paid to individuals on their contributions during their working life. However, the fact that minimum pensions are indexed to prices has a negative effect on poverty prevention, with pensioner incomes falling gradually behind those of people of working age.

e). Adjustment to Life expectancy/sustainability factors

- Automatic balancing mechanism and the annuitising factor

Impact: In case of unfavourable demographic or economic conditions, the Government may utilise the automatic balancing mechanism to reduce the notional interest paid to individuals. This has a negative impact on their future pension incomes. Moreover any increase in life expectancy is borne by individuals as it results in lower pension benefits. Again this has a negative effect on the income of pensioners.

Synthesizing conclusions

The Swedish pension system has established a close link between pensions and contributions and thus it is financially stable to changes in demographic trends, life expectancy and economic growth. However, this has come at the cost of shifting risks onto individuals and the generosity of the system has been reduced significantly. The benefit ratio is set to decline by a quarter over the coming 45 years. Unless people decide to work for a longer period of time, the net result will be that the risk of poverty will increase. Since income groups have differing abilities to do this, this impacts them differently. The close linking of benefits to contributions may also increase income inequality among the elderly.

Table 9: Systematic reforms to NDC and their possible impact on pensioners' incomes and poverty in Sweden

SWEDEN	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
Introduction NDC: Sweden	<p>Previous basic security adjusted upwards and replaced by fully taxed guarantee pension (for those born before 1938 pensions recalculated and interim guarantee pension with somewhat deviating rules): if no adequate pension from national pension system, state provides guarantee pension (slightly more than 50% of median income, means-tested only against pensions) or new introduced maintenance support (around 30% of median income, for those with not enough residence years for adequate guarantee pension), supplemented by means-tested housing supplement (in total in most cases >60% median income); all benefits can be claimed with 65</p> <p>+ <i>pov.</i></p>	<p>In new system income-based and premium pensions can be drawn with 61 at the earliest, pension rights may be earned for unlimited time, no definite retirement age exists</p> <p>In new system the later person retires, the higher annual pension since pension capital increases and remaining life expectancy decreases (before: early retirement reduces pension by 0.5% for every month before 65, postponed retirement increases pension by 0.7% for every month postponed up to 70)</p> <p>Forms of basic security disbursed with 65 at the earliest</p> <p>Currently applicable tax rules for occupational and private pension saving contribute to early retirement, commission of inquiry appointed to examine tax handling of occupational and tax deductible private pension</p>	<p>In new system pension rights equivalent to 18.5% of pensionable income credited throughout lifetime (before reform: 30 years of service required to receive full ATP pension of 60%), on retirement, annual value of pension calculated by dividing individual's accrued capital in PAYG system by annuitisation divisor based on remaining life expectancy at retirement age of cohort and norm for future annual growth of average wages of 1.6%</p> <p>- <i>inc.</i></p> <p>In new system: life-income principle: every contribution paid results in equivalent pension entitlement (before: best 15 income years)</p> <p>- <i>inc.</i></p>	<p>In new system flexible indexing for pension disbursements: pension adjusted upwards in relation to average income development in society, deducting growth norm of 1.6 %-points which already calculated for on retirement (exception: basic security guarantee pension and other basic securities price-indexed)</p> <p>+ <i>inc.</i>, - <i>pov.</i></p>	<p>In new system automatic balancing mechanism of PAYG-system in case of unfavourable demographic or economic development: indexing of pensions and pension balances annually recalculated using lower index number</p> <p>- <i>inc.</i></p>

3.4 Poland

a). Minimum requirements for pension entitlement, Minimum pensions and social assistance

- In the new NDC-system the guarantee of a minimum pension (applies to persons at statutory pension age that meet the contribution period required by law: 25 years for men, 20 years for women) is financed from the state budget, whereas in the old system it was financed directly in framework of social insurance.

Impact: Following the change of the pension system into a defined contribution type, the financing of the minimum pension guarantee outside the insurance system is a logical consequence. As the amount of the minimum pension is above the 60%-poverty threshold as before, the change should not have an effect on future poverty rates of the elderly. (A supplementary element of solidarity is the minimum level of income determined in the social assistance system, which is currently below the 60%-poverty line).

b). Age (statutory retirement age, early retirement age, reductions early retirement)

- Apart from disability there is no longer the option for early retirement before the statutory retirement age (women: 60 years, men: 65 years) for those born after 1948 and retiring after 2006

Impact: With the limited access to early retirement it can be expected that elderly people remain longer on the labour market, which would increase their pension entitlements within the new NDC system. However, beside the large number of inactive people in general the employment rate for people aged 55 to 64 is currently particularly low. Therefore the creation of positive conditions for increasing the employment rate of the elderly seems to be a very important task in order to secure the adequacy of the pension system. This is especially a concern for less educated people in low-income groups who – due to low skills and mostly manual type of work – are less employable above a certain age.

Women are facing a higher risk of poverty within the new defined contribution system, as the unchanged lower statutory retirement age for women result in shorter saving periods accompanied by a longer period of receiving the old-age benefit. Therefore, the differences between old-age pensions for women and men are expected to grow. A proposal by the government for gradual equalisation of the retirement age was withdrawn.

c). Accrual rates and assessment period for pension calculations

- In the new NDC-system the contribution of 12.2% of earnings is credited to individuals' notional accounts
- The earnings level over the whole working career is decisive for the amount of old-age pension (in the old system 10 consecutive years out of 20)

Impact: The transformation of the PAYG-pillar into a system based on a defined contribution makes the amount of future benefits dependent on contributions paid throughout one's professional life and on the average life expectancy at retirement age (see below). In addition to the length of the total work period, which was already relevant before, also the earnings level over the whole working career is decisive for the amount of old-age pension.

The change in the pension-calculation formula will cause a considerable decrease of the pension level. For a worker retiring at age 65 after 40 contribution years at the average wage, the replacement rates for the 1st pillar show a gradual decline from 2005 (net: 78%, gross: 63%) to 2050 (net: 44%, gross 36%). Only if the balance between years in employment and retirement would be more or less maintained (e.g. people retiring at age 67 after 42 contribution years), there would be a lower decrease.

The current low level of employment, especially in the age-group 55-64, threatens the future adequacy of pensions. In order to improve the situation in the pension system it is clearly necessary to provide conditions for the development of the labour market. The close link between contributions and benefits in the NDC could help to increase declared work, and thereby increasing the contributions to the pension scheme. Furthermore, in general younger generations should have more contributions periods when they become old. However, even if Poland succeeds in creating higher employment rates and lifetime contributions to the pension system, the changes in the pension formula will translate into a decrease in individual's pensions.

d). Indexation of pension payments

- From 2004 onwards indexation of pensions with at least CPI (before 80% prices, 20% average earnings)
- The yearly indexation was replaced by an adjustment which takes place every 3 years (earlier if the cumulative inflation reaches 5%)

Impact: Under the new adopted indexation rule, the relationship between the average old-age pension and the average wage will change. The recent switch in the indexation from yearly adjustment to an interval of three years may expose retirees even more to the risk of lagging behind the overall living standard. Over time, the relative income position of the elderly will worsen: In relation to the average wage, the replacement rate for a worker retiring in 2005 declines from the current level of 78% (net) to 53% in 2015.

e). Adjustment to life expectancy/ sustainability factor

- In the new NDC-system, at retirement the accumulated notional capital is divided by the average life expectancy at retirement age

Impact: The pension formula implements a direct link between the (unisex) life expectancy at retirement age and the amount of the pension benefit. If the number of years receiving the pension is increased, the level of pension paid out per month will decrease. To keep the pension level adequate it will be necessary to distribute a part of the increasing life expectancy to an extended working life. However, poor population groups facing lower

increases in life expectancy are disadvantaged by this automatic adjustment.

- A balancing factor makes sure that the pension value depends beside the wage growth rate also on the number of contribution payers

Impact: Due to the balancing mechanism, a declining number of insured persons leads to a decreased liability of the pension system. This kind of sustainability factor tends to lower the pension incomes of the elderly in addition. Therefore, activation and inclusion of the large share of inactive people in the pension system seems to be crucial in order to reduce the poverty risk among older people in the future.

Synthesizing conclusions

With the NDC pension formula the projections for 2050 indicate a significant drop in average replacement rates. This is due to the fact that in the new system the amount of future benefits depends on the length and amount of contributions paid throughout the whole work career and on the average life expectancy at the retirement age. In addition, there is a balancing factor which adjusts the pension level according to the number of contribution payers. Especially the pension incomes of women are at risk, as their lower statutory retirement age results in shorter saving periods accompanied by a longer period of receiving the old-age benefit.

With the transformation of the pension system, also a funded tier was introduced. Therefore, for those born after 1968 the pension system consists of two mandatory parts. As the funded scheme is relatively large, its financing will require a major effort over the next decades. The mandatory funded tier should be supplemented with state-supported voluntary saving in the form of occupational pension plans and individual private pension provision. However, due to an unfavourable economic situation in recent years and low saving capabilities, the participation rates are still low.

After the reform the value of future pension benefits and the income situation of the elderly will heavily depend on the development of wages and the performance of the financial market. According to the government, keeping the guarantee of a minimum old-age pension should protect against poverty among the elderly. However, an important issue that remains pending is the large number of inactive people, who are not covered by social security. Activation and inclusion of these people in the pension system seems to be crucial in order to reduce poverty risk among older people in the future, as social assistance standards tend to be below the poverty line.

Table 10: Systematic reforms to NDC and their possible impact on pensioners' incomes and poverty in Poland

Poland	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
Introduction NDC	<p>Guarantee of minimum pension (applies to persons that meet contribution period required by law) in old system financed directly in framework of insurance, in new system from state budget</p> <p>- <i>pov.</i>?</p>	<p>Apart from disability no longer option for early retirement (before 60 [women]/ 65 [men]) for those born after 1948 and retiring after 2006</p>	<p>New system: contribution of 12.2% of earnings credited to individuals' notional accounts, at retirement accumulated notional capital divided by "g-value" (average life expectancy at retirement age) to arrive at pension benefit (before: DB formula)</p> <p>- <i>inc.</i></p> <p>Earnings level over whole working career decisive for amount of old-age pension (before 10 consecutive years out of 20)</p> <p>- <i>inc.</i></p>	<p>From 2004 onwards indexation of pensions with at least CPI: relationship between average old-age pension and wage will change (before: 80% prices, 20% average earnings)</p> <p>- <i>inc.</i></p> <p>In 2004 yearly indexation replaced by adjustment every 3 years (earlier if cumulative inflation reaches 5%)</p> <p>- <i>inc.</i>, - <i>pov.</i></p>	<p>Factor for life expectancy included in pension calculating formula</p>

3.5 Hungary

a). Minimum requirements for pension entitlement, Minimum pensions and social assistance

- From 2009 onwards, a requirement of 20 contributions years for entitlement to both earnings-related and minimum pension.

Impact: With the higher minimum requirements of insurance years, the conditions to acquire a pension in one's own right will be strengthened. This could lead to a pensions disadvantage of women as they tend to have shorter employment careers – despite the fact that there is now a better recognition of time spent raising children. Furthermore, a large share of farmers remain outside the mandatory pension insurance as their taxable income is not sufficient to reach the threshold for contribution payments. In general, undeclared work and contribution evasion is a problem.

- The minimum pension function will be shifted to the social assistance minimum as benchmark for social benefits as of 2009. If person at retirement age has not acquired a pension in own right, or if the amount of pension is below a certain level, he/she will get an entitlement to a newly introduced old age allowance

Impact: The stricter conditions for personal entitlement in conjunction with abolishing the minimum pension within the pension system could lead to higher poverty rates for elderly in the future. This is particularly true in view of the fact that in 2003 over 30% of contributors to the pension system made payments on minimum wages.

b). Age (statutory retirement age, early retirement age, reductions early retirement)

- The statutory retirement age is increased to uniform 62 years (women 2009, men 2000)

Impact: Especially for women it could be difficult to reach the requirement of 40 insurance years for the targeted total pension level of around 60% replacement rate. The rising and equalisation of the legal retirement age for men and women could make the achievement of this goal easier and reduce the gender gap in pension entitlements as women could acquire more contribution years. However, a precondition for this would be to generate sufficient employment opportunities for elderly workers (particularly for women) and therefore higher employment rates among the elderly.

- From 2009 on the earliest possible retirement age will be 59 years with at least 37 years of employment. Early retirement without reductions will only be possible with 40 years of service

Impact: The tightening of the early retirement options should strengthen employment rates among older people. Again, if there is enough employment capacity in the economy, the higher employment rates and the extended contribution years would contribute to make

future pensioners better off. On the other hand, for those who have to rely on early retirement for various reasons, it is more likely to face reductions of their pension entitlement. Especially employees with low education and in low income groups face the risk of being not employable above a certain age. Therefore measures to increase the employability of this group of persons is a major concern, in order not to create higher poverty rates of the elderly as the outcome of the reform steps concerning retirement age.

c). Accrual rates and assessment period for pension calculations

- In the mixed system, the yearly accrual rates are reduced to 1.22% compared to 1.65% in the pure PAYG-scheme
- As basis for the pension calculation, earnings-periods of every single year following 1987 are included so that in the long run the whole working career will be taken into consideration

Impact: Both of the reform steps – declining accrual rates and higher number of earnings periods taken into account –will strengthen the link between contributions and benefits. This will lead to reduced pensions from the social security pillar: The gross replacement rate for a worker retiring at age 65 after 40 contribution years will decrease from today's 66% to 59% in 2050. This will especially be the case in steep income careers, as the replacement rates are depending on life-long incomes. Furthermore, declining accrual rates with a higher number of contribution years are changed into linear ones as of 2013. On the one hand, this could provide incentives for longer working-careers, on the other hand, the replacement rates with fewer contribution years will be lower than before. Without a significant increase in the employment rates of the elderly, and thus a prolonged working career, the changes in the pension formula will translate into lower incomes and higher poverty risks of pensioners.

However, the gradual introduction of a 13th month pension from 2003 to 2006 could offset some of the pension reducing outcomes.

d). Indexation of pension payments

- The wage indexation formula has gradually been replaced by the Swiss indexation as of 2001

Impact: After the introduction of a wage indexation formula in 1991, which was changed several times, usually lower pensions were increased at higher rates. Medium and higher pensions faced low and irregular increases. The replacement by the Swiss indexing system since 2001 will result in a relative decline in the pension level, but offer better conditions than indexation to just CPI. However, compared to the working population the income situation of pensioners will loose ground in the long run.

e). Adjustment to life expectancy/ sustainability factor

- Accumulated contributions in the 2nd tier (funded system) introduced in 1998 are converted into a life annuity.

Impact: By converting pension pot into a life annuity at the time of retirement, pension incomes will be lowered with increasing life expectancy.

Synthesizing conclusions

Currently, poverty among the elderly is lower than that observed for the general population. However, changes in the pension formula (lower accrual rates, extension of earnings-calculation period) will lead to reduced replacement rates in the 1st tier of the system. In 1998 a mandatory fully-funded defined contribution pension funds was introduced as 2nd tier of the pension system. In 2050, the level of the average total benefit in the two-pillar-system is expected to be approximately the same as that in the pure PAYG-scheme. The total replacement rate is assumed to remain quite constant at the average wage: after 40 working years the net rate amounts to 102% (gross: 66%), in 2050 to 98% (gross: 77%).³⁵

Therefore in the long term the funded elements of the systems are expected to compensate for the reduced level of public pensions. Nevertheless, there is always a risk concerning the development of the financial markets which has to be carried by the future pensioners. Especially for those with only short accumulation period in the 2nd tier pensions from private funds in addition to the PAYG-pension could turn out to be lower than those from the pure PAYG-system.

In addition, after the introduction of a voluntary funded retirement scheme in 1993, at present 32% of the employed population are members of a voluntary pension plan. Increases in the number of participants are to be expected. With 30 years of membership, on average a supplementary pension of 8-10% of earnings is assumed. However, it is likely that the voluntary schemes are more suitable to higher income groups.

The reform steps concerning statutory and early retirement age could lead to higher pension incomes if Hungary succeeds in providing sufficient employment opportunities for elderly workers. If not, there is in turn – especially for lower educated and low income groups – the risk of higher poverty in the future. The increasing of the minimum contribution period for a entitlement to pension and the outsourcing of the minimum income function for elderly from the pension system are possibly the most important threat for higher poverty rates among the elderly in the future.

³⁵ From 2013 on the pension base will be calculated from gross earnings, i.e. no reduction by income tax will be done any more. On the other hand, pension are taxable from 2013 on.

Table 11: Systematic multi-pillar reforms and their possible impact on pensioners' incomes and poverty in Hungary

Hungary	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
Introduction funded tier ("World-Bank-type"):	<p>From 2009 on 20 contributions years for both earnings-related and minimum pension instead of 10 (before 2009 entitlement to partial pension, for which no set minimum exists, for at least 15 years of service)</p> <p>- <i>inc.</i>, - <i>pov.</i></p> <p>By 2009 pre-set minimum pension will come to end minimum pension function will be shifted to social minimum as benchmark for determining eligibility for social benefits: If person at retirement age has not acquired pension in own right, or if amount of pension below certain level, entitled to old age allowance</p> <p>- <i>pov.</i>?</p>	<p>Increasing retirement age from 57 (women) and 60 (men) to uniform 62 years (women 2009, men 2000)</p> <p>From 2009 earliest retirement age will be 59 years if at least 37 years of employment (before women 57, men 60 if at least 33 years of employment)</p> <p>From 2009 early retirement without reductions only possible with 40 years of service (before: 38 years)</p> <p>- <i>inc.</i></p>	<p>Alteration of pension formula as of 2013 (changing present degressive scale into linear) to conform to performance conditions (length of employment period, differences in income)</p> <p>Reform targeted pension level of 60% of net average earnings (roughly level prior reform), but in future only with periods of employment close to 40 years (1.22% per year in mixed system, 1.65% in pure PAYG)</p> <p>- <i>inc.</i></p> <p>Instead of best 3 of last 5 years before retirement as basis for pensions, now earnings for every single years following 1987 included (moving towards full lifetime)</p> <p>- <i>inc.</i></p>	<p>Introduction indexing system of guaranteed pension in 1993, and shifting to Swiss indexation system (50% based on price increases, 50% on earnings increases) as of 2001</p> <p>- <i>inc.</i></p>	

3.6 Estonia

a). Minimum requirements for pension entitlement, minimum pensions and social assistance

- Recent increase in level of flat-rate pension relative to earnings

Impact: The task of the national flat-rate pension is to secure a minimum income for those who are not entitled to an employment-related benefit. Due to the recent increase in the level of the flat-rate pension relative to earnings, the incomes of the poor elderly have risen. At present, poverty among the elderly on average is about the same as among the total population.

The further development of the national pension seems to be crucial in terms of pensioner poverty, as the old-age pension formula introduced in 1999 includes a coefficient on contributions to the pension system which is expected to lead to dramatic increase of recipients of minimum pensions (the current share of 1% of receivers is expected to grow to 17% in the future).

b). Age (statutory retirement age, early retirement age, reductions early retirement)

- Retirement age for women increased to 63 till 2016 (for men since 2001)

Impact: Due to the increased statutory retirement age for women, an increase of their effective retirement age is to be expected which would also lead to more contribution years in the future. The precondition for this would be that the already high employment rates of the elderly can be further increased in the future. An incentive is also the increase of the pension by 0.9% for every month of deferred retirement after reaching the statutory retirement age.

However, it remains to be seen if this goal can be achieved as there is also the possibility for early retirement prior to the legal retirement age if the person has worked for at least 15 years. In this case, for every month of early retirement the entitlement is reduced by 0.4%. Given the very low replacement rates even with a contribution history of 40 years, it will only be possible to prevent from high pensioner poverty rates in the future by extending working lives.

c). Accrual rates/ calculation period

- With the revised benefit formula in the PAYG-pillar, the length of service component applies to periods of pensionable service through to the end of 1998, insurance component applies to periods from 1999 on. The new formula introduced a coefficient on personal contributions.

Impact: The adequacy of pensions is already an issue in Estonia today as the replacement rates are low: the theoretical replacement rate of a worker at age 65 with 40 contributions

years stands at 41% net in 2005 (gross: 33%).

With the new pension formula a strong link between contributions and benefits was introduced. In the future, pension rights will be based on social tax payments only. The social tax payments covered by the state for periods of child-raising tend to be very low.

With the coefficient on personal contributions to the pension system included in the new pension formula, the replacement rates are expected to decline further. Till 2050, a steady fall in the theoretical replacement rate of the 1st pillar (by more than half) is projected. While the future poverty rates of the elderly will also depend heavily on the development of the flat-rate pension, at least the overall adequacy of the pension system and the overall income situation of pensioners will pose a challenge.

d). Indexation pension payments

- In addition to regular indexation (Swiss indexation with 50% to social tax increase, 50% to CPI) different governments have also applied supplementary ad hoc pension increases.

Impact: In general, the Swiss indexation will reduce the level of pensions relative to wages. Plans to increase the share of social tax revenues and to reduce the share of prices have been postponed. If additional discretionary increases will not be continued in the future, this will translate into a worsening of the relative income position of pensioners over time.

Synthesizing conclusions

Starting from already low replacement rates, the gross pension level provided by the 1st tier of the pension system is projected to fall by more than half to only 15% in 2050. This is due to the new pension formula which bases pension rights on social tax payments only and which includes a coefficient on personal contributions. Therefore the adequacy of the pension system is substantially at risk.

In 2002 Estonia introduced a defined contribution funded 2nd pillar, for which part of the statutory social security contributions are switched into private pension funds. By 2005 around 75% of the labour force have joined the 2nd pillar. The size of the pensions depends on the total contributions and the rate of return of the pensions fund. With the accumulation of funded pensions it is projected to maintain the pension level over time. The total net replacement rate at age 65 with 40 working years is expected to increase slightly from 41% in 2005 (gross: 33%) to 43% in 2050 (gross: 36%). However, for low income groups (2/3 of average earnings) the total replacement rate is expected to decline. Possibilities for supplementary funded pensions were created in 1998 with some tax incentives. However, with 8% of the labour force, participation is still low.

Therefore the prevention of a future increase of poverty among the elderly will depend on two factors: an extension of the working life and thereby acquiring a higher number of contribution years and the future development of the flat-rate pension which provides a safety-net for people without entitlement to a pension related to employment.

Table 12: Systematic multi-pillar reforms and their possible impact on pensioners' incomes and poverty in Estonia

Estonia	Minimum years for pension entitlement/ Minimum (pension)	Age (statutory retirement age, early retirement age, reductions early retirement)	Accrual rate/ calculation period	Indexation pension payments	Adjustment to life expectancy/ sustainability factor
Introduction funded tier ("World-Bank-type"): Estonia	Recent increase in level of flat-rate pension relative to earnings + <i>inc.</i> , + <i>pov.</i>	Retirement age for women increased to 63 till 2016 (for men 63 since 2001)	Introduction insurance component (depending only on social tax paid) (before only flat-rate basic pension depending on years of service) Revised benefit formula in PAYG: length of service component applies to periods of pensionable service through the end of 1998, insurance component applies to pensionable service from 1999 Introduction coefficient on personal contributions - <i>inc.</i>		

4. Projections of risks of elderly poverty in EU25 (2025, 2050)

This section provides exploratory projections of how risk of elderly poverty might evolve in the future. The underlying data for these projections is the median pensions to median earnings ratio (referred to as the generosity of the system). A simplistic methodology is adopted here, so as to ensure transparency to the assumptions used in the projections. At this stage, this work should be considered exploratory, and some further improvements in the specification of the regression model (particularly in the choice of explanatory factors) will be brought about in our follow-up work.

4.1 The current generosity of pension systems

Table 13 presents data on the current overall generosity of pension systems. It compares the median individual pension income of retirees in relation to median earnings of employed persons aged 50-59, excluding private pensions and public social benefits other than pensions.

Table 13: Median pensions relative to median earnings

	Men	Women		Total
Belgium	0.62	0.61		0.61
Czech Republic	-	-		-
Denmark	0.74	0.71		0.71
Germany	-	-		-
Estonia	0.70	0.68		0.68
Greece	0.81	0.69		0.76
Spain	0.49	0.61		0.49
France	0.76	0.73		0.75
Ireland	0.52	0.57		0.52
Italy	0.82	0.71		0.78
Cyprus	0.41	0.41		0.41
Latvia	0.62	0.54		0.54
Lithuania	0.68	0.61		0.63
Luxembourg	0.75	0.83		0.77
Hungary	0.68	0.72		0.71
Malta	0.75	0.53		0.67
Netherlands	0.43	0.42		0.42
Austria	0.81	0.77		0.79
Poland	-	-		-
Portugal	0.70	0.67		0.68

	Men	Women		Total
Slovenia	0.74	0.61		0.68
Slovak Republic	-	-		-
Finland	0.67	0.63		0.64
Sweden	0.72	0.65		0.68
UK	-	-		-

Source: Commission synthesis report on adequate and sustainable pensions (February 2006)

- **Public pensions are relatively generous across most European countries, with only 5 countries having median public pensions relative to median earnings of less than 60% (namely Spain, Ireland, Cyprus, Latvia and the Netherlands). Men, in general, have better pensions.**

Among the five countries with the least generous systems, one finds Ireland and the Netherlands, who both have flat rate pensions. A similar situation appears to exist for the UK, even though data on median pensions are not available. However, while occupational pensions are widely available in the Netherlands and the UK and in fact constitute the largest pillar, they are not as widespread in Ireland.

Generally, the level of pensions being paid to men exceeds in generosity those being paid to women. There are only four countries where this is not the case, i.e. Spain, Ireland, Hungary and Luxembourg. In some countries there is a significant gap in generosity, notable examples being Malta, Greece, Slovenia and Italy (possibly reflecting a lower employment rate among women).

- **There appears to be a significant negative correlation between the generosity of public pensions and the risk of poverty rate. This correlation is strongest for women and for people aged 75+.**

Figures 1-3 are a cross plot of the generosity of public pensions and the at-risk-of-poverty rates at 65+ and at 75+. Although there are some outliers³⁶, this relationship appears to be statistically significant, with differences in generosity explaining 57% of the difference in risk-of-poverty rates for those 65+. Thus a country like Cyprus where public pensions amount to just 41% of median earnings, the lowest level among Member States, the at-risk-poverty rate is the highest in the EU-25. By contrast, Luxembourg - the country with one of the highest levels of generosity - has the lowest proportion of at-risk-of-poverty rate.

When one limits the analysis to just women, the strength of the relationship increases, with the generosity of pensions exerting a stronger influence on reducing at-risk-of-poverty rates. This reflects the fact that women are less likely than men to work, or to have other sources of

³⁶ Notably Latvia where less generous pensions do not seem to result in a significantly higher at-risk-of-poverty rate and Greece where though pensions appear to be generous, the at-risk-of-poverty rate is relatively high. Note that Netherlands has been excluded from this cross plot on account of the fact that public pensions represent less than half of the pension income of individuals (with the rest coming from quasi-mandatory occupational provision).

income, beyond the age of 65. Again, women in Cyprus which face the least generous pension benefits have the highest at-risk-of-poverty rate, while those in Luxembourg are the least likely to be at risk of poverty (just 6%).

Looking at people aged 75+, there is a correlation of 58% between the generosity of public pensions and the at-risk-of-poverty rate. The countries with median pensions to median earnings of less than 60% (excluding Latvia) have the highest levels of at-risk-of-poverty among 75+. Furthermore, limiting the analysis to just women aged over 75; one finds the strongest effect of pensions in reducing at-risk-of-poverty rates.

Figure 1: Cross-plot: Public Pension Generosity vs Risk of Poverty 65+ (total)

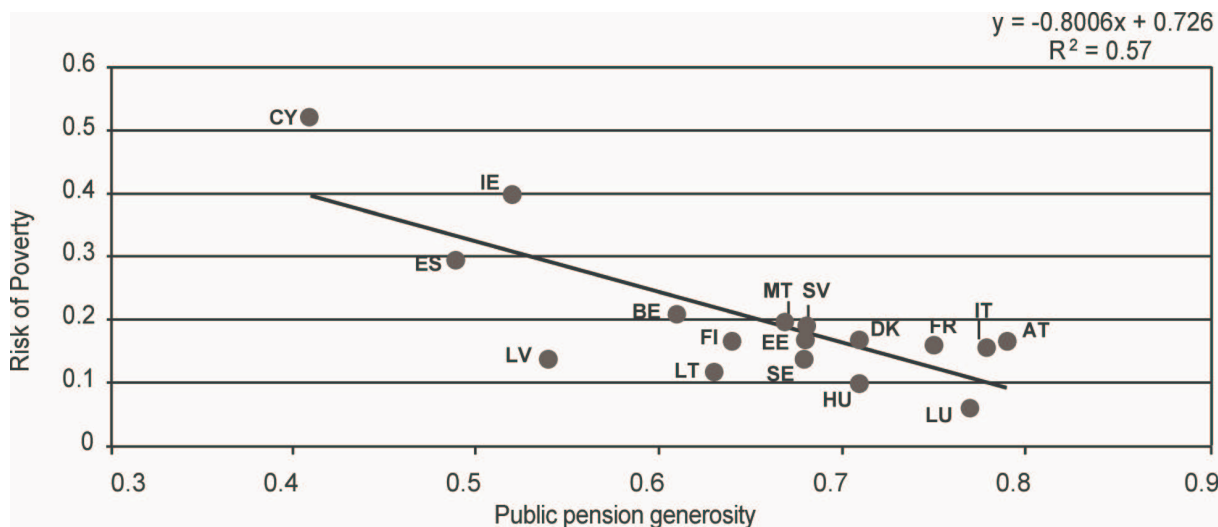


Figure 2: Cross-plot: Public Pension Generosity vs Risk of Poverty 65+ (Men)

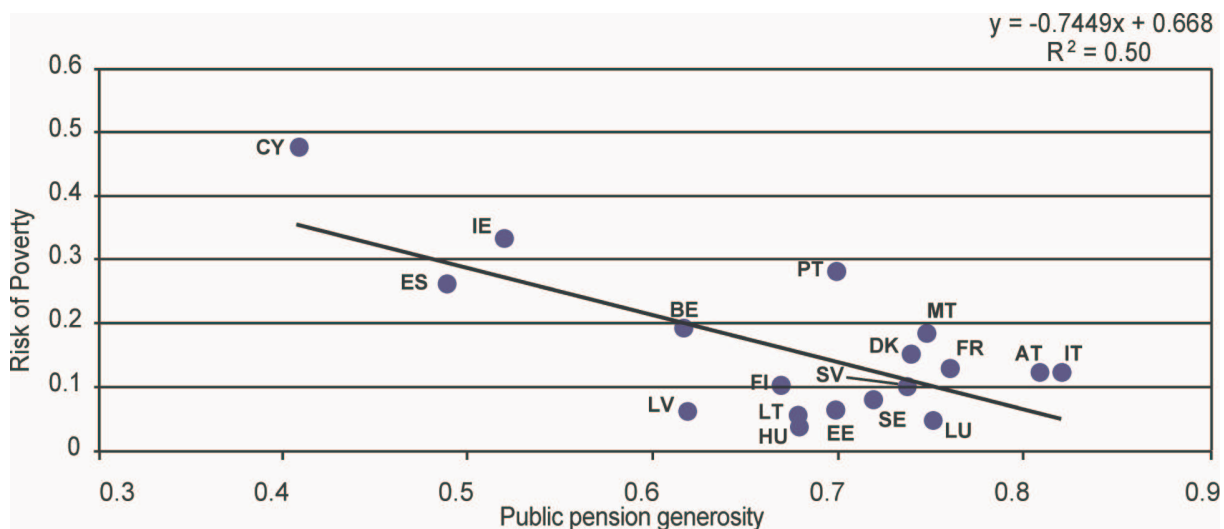
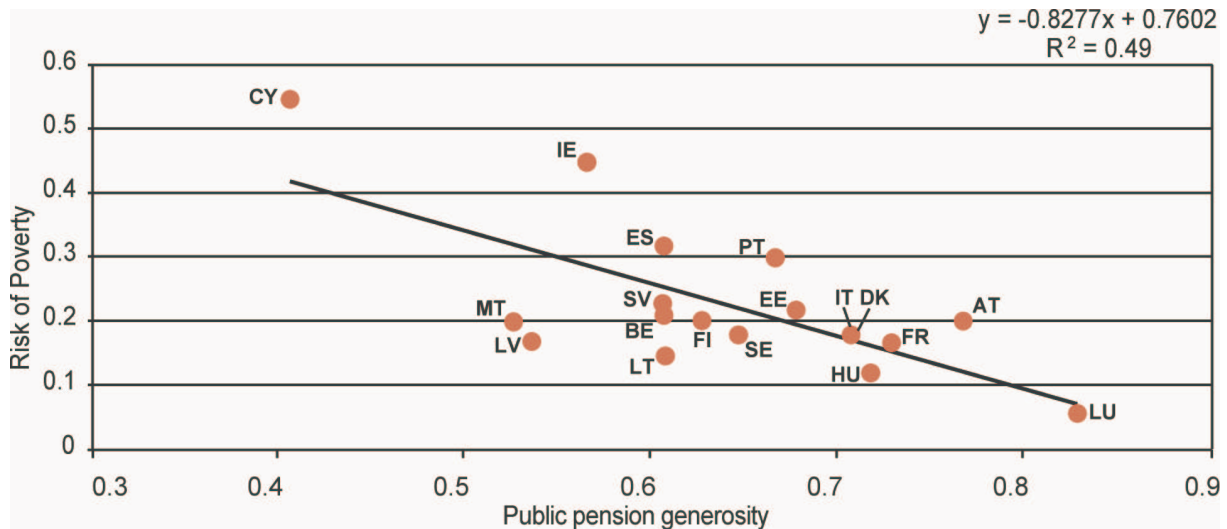


Figure 3: Cross-plot: Public Pension Generosity vs Risk of Poverty 65+ (Women)



4.2 Assessing the impact of pension reforms on the risk of elderly poverty

- **While the theoretical replacement ratios are useful indicators of a system's relative generosity, they do not capture the actual replacement ratios faced by individuals. The median pension to median income ratio is more useful in this regard. Though projections of this ratio have not been produced to date, tentative projections can be made on the basis of the existing projections work done by the EPC and the EU Commission.**

The average benefit ratio projections published in the EPC-EU Commission paper on ageing-related public spending are a useful indicator of how future generosity of public pension systems will evolve. The definition of the benefit ratio – average benefits to output per worker – implies that it should evolve to a similar degree to the median benefit to median earnings (unless one assumes that the share of profits will be changing significantly over the coming years). Thus one may come up with a projection of the median pension to median earnings ratio based on the basis of projections made on the evolution of the benefit ratio. These projections are presented in Table 14 below.

Table 14: Projections of the median pensions relative to median earnings

	Total			Men			Women		
	2004	2025	2050	2004	2025	2050	2004	2025	2050
Belgium	0,61	0,61	0,57	0,62	0,62	0,57	0,61	0,61	0,57
Denmark	0,71	0,68	0,67	0,74	0,71	0,70	0,71	0,68	0,67
Estonia	0,68	0,52	0,34	0,7	0,53	0,35	0,68	0,52	0,34
Spain	0,49	0,54	0,49	0,49	0,54	0,49	0,61	0,67	0,61
France	0,75	0,65	0,58	0,76	0,66	0,59	0,73	0,63	0,57
Ireland	0,52	0,60	0,57	0,52	0,60	0,57	0,57	0,66	0,63
Italy	0,78	0,73	0,55	0,82	0,77	0,57	0,71	0,67	0,50
Cyprus	0,41	0,41	0,49	0,41	0,41	0,49	0,41	0,41	0,49
Latvia	0,54	0,43	0,34	0,62	0,49	0,39	0,54	0,43	0,34
Lithuania	0,63	0,70	0,61	0,68	0,76	0,66	0,61	0,68	0,59
Luxembourg	0,77	0,87	0,92	0,75	0,84	0,89	0,83	0,93	0,99
Hungary	0,71	0,82	0,86	0,68	0,79	0,82	0,72	0,83	0,87
Malta	0,67	0,63	0,38	0,75	0,70	0,42	0,53	0,50	0,30
Austria	0,79	0,72	0,55	0,81	0,74	0,56	0,77	0,70	0,54
Portugal	0,68	0,63	0,63	0,7	0,65	0,65	0,67	0,62	0,62
Slovenia	0,68	0,63	0,62	0,74	0,68	0,68	0,61	0,56	0,56
Finland	0,64	0,61	0,58	0,67	0,64	0,61	0,63	0,60	0,57
Sweden	0,68	0,54	0,51	0,72	0,57	0,54	0,65	0,52	0,49

- **Given the relatively strong negative relationship found between the generosity of public pensions and the at-risk-of-poverty rates, the anticipated decline in generosity is expected to result in an increase in at-risk-of-poverty rates among the 65+. The worst affected countries appear to be Estonia, Malta, Austria and Italy, with most of the increase expected between 2025 and 2050. On the other hand, at-risk-of-poverty rates should decline in Ireland and Cyprus, where the pension system is expected to become more generous.**

On the basis of the projections of median pensions to median earnings, if one assumes that the current relationship between generosity of public pensions and the at-risk-of-poverty rates holds, one can make projections of the proportion of the population aged 65+ that could be at risk of poverty in 2025 and 2050. This analysis should, however, be treated with caution as:

- (a) it is based on the current relationship holding over the time;
- (b) it is based on a limited number of countries and so results may not be statistically very robust; and

(c) it had to be assumed that the decrease in generosity of the system for males and females would be the same percentage.

In particular with regard to (a) one must note that this analysis ignores any growth in other sources of pensioner incomes, such as from private pensions, offsetting the drop in the generosity of the state system.

The countries where generosity is set to decline significantly, as expected, would see at-risk-poverty rates increase quite substantially, especially during the period 2025-2050, when the bulk of the reduction of generosity is expected. The at-risk-of-poverty rate in Malta and Estonia would end up becoming very close to that of Cyprus, while those in Italy, France, Austria, Latvia and Sweden would double. Pensioners, risk of poverty would become very acute for women in Estonia, Malta and Austria.

Table 15: Projections of at-risk-of-poverty rates for 65+, 2025 and 2050

	Total			Men			Women		
	Now	2025	2050	Now	2025	2050	Now	2025	2050
Belgium	0,210	0,213	0,246	0,200	0,203	0,234	0,210	0,213	0,247
Denmark	0,170	0,195	0,198	0,160	0,185	0,187	0,180	0,206	0,209
Estonia	0,170	0,300	0,440	0,070	0,194	0,328	0,220	0,354	0,499
Spain	0,300	0,259	0,302	0,270	0,232	0,272	0,320	0,267	0,323
France	0,160	0,241	0,295	0,140	0,217	0,268	0,170	0,252	0,306
Ireland	0,400	0,333	0,359	0,340	0,278	0,302	0,450	0,374	0,404
Italy	0,160	0,197	0,347	0,130	0,167	0,313	0,180	0,215	0,356
Cyprus	0,520	0,521	0,453	0,480	0,481	0,418	0,550	0,551	0,481
Latvia	0,140	0,227	0,299	0,070	0,163	0,240	0,170	0,260	0,335
Lithuania	0,120	0,061	0,133	0,050	-0,009	0,063	0,150	0,091	0,163
Malta	0,200	0,235	0,436	0,190	0,226	0,436	0,200	0,229	0,393
Austria	0,170	0,225	0,361	0,130	0,183	0,313	0,200	0,256	0,393
Portugal	0,290	0,331	0,328	0,290	0,329	0,326	0,300	0,342	0,339
Slovenia	0,190	0,233	0,236	0,110	0,154	0,157	0,230	0,270	0,273
Finland	0,170	0,196	0,217	0,110	0,135	0,155	0,200	0,226	0,247
Sweden	0,140	0,252	0,278	0,090	0,201	0,226	0,180	0,291	0,316

Note: This list includes only 16 Member States. This reflects data availability and in the specific cases of Hungary and Luxembourg statistical issues related to the robustness of projections.

- **A similar picture emerges when looking at persons aged 75+, in particular for women. Only a handful of countries would have at-risk-of-poverty rates below 30%.**

Given the fact that the over 75s are more dependent on state pensions, the anticipated decline in generosity is expected to increase risk-at-poverty rates by a significant margin for them. Only three countries would have rates lower than 30%, while for women most countries would have rates that exceed 35%. Malta and Estonia again would see the sharpest increase in the at-risk-of-poverty rates, but even countries like Sweden, Italy, Austria and France would see very significant increases. Conversely countries, like Belgium, Denmark, Spain, Ireland, Cyprus, Lithuania, Portugal, Slovenia and Finland would be having a moderate increase or a minor decrease.

Table 16: Projections of at-risk-of-poverty rates for 75+, 2025 and 2050

	Total			Men			Women		
	Now	2025	2050	Now	2025	2050	Now	2025	2050
Belgium	0,21	0,213	0,255	0,20	0,204	0,246	0,21	0,213	0,255
Denmark	0,23	0,261	0,265	0,25	0,283	0,287	0,22	0,252	0,256
Estonia	0,18	0,341	0,515	0,03	0,197	0,378	0,24	0,404	0,582
Spain	0,34	0,289	0,343	0,32	0,268	0,323	0,35	0,285	0,354
France	0,18	0,281	0,348	0,15	0,253	0,322	0,19	0,290	0,357
Ireland	0,44	0,357	0,389	0,35	0,266	0,299	0,50	0,407	0,443
Italy	0,15	0,197	0,383	0,12	0,169	0,367	0,17	0,213	0,386
Cyprus	0,67	0,672	0,587	0,67	0,672	0,586	0,67	0,672	0,586
Latvia	0,16	0,268	0,358	0,05	0,176	0,279	0,21	0,320	0,412
Lithuania	0,15	0,077	0,166	0,06	-0,020	0,078	0,19	0,118	0,206
Malta	0,21	0,254	0,504	0,18	0,229	0,512	0,24	0,275	0,477
Austria	0,18	0,249	0,418	0,10	0,171	0,346	0,21	0,278	0,446
Portugal	0,35	0,401	0,397	0,35	0,403	0,399	0,36	0,411	0,407
Slovenia	0,25	0,304	0,307	0,17	0,229	0,233	0,28	0,329	0,332
Finland	0,25	0,282	0,308	0,15	0,184	0,211	0,30	0,332	0,358
Sweden	0,20	0,340	0,372	0,14	0,289	0,323	0,24	0,376	0,407

- **These projections must be interpreted with caution. In particular, it must be stressed that they assume that the decline in state benefits is not compensated by individuals' behavioural responses to work longer or accrue greater income from private pensions.**

These projections have assumed throughout that the only thing that matters for the at-risk-of-poverty rates is the generosity of the state system. However this does not give an entire

assessment of the actual sources of income of current pensioners, let alone future ones. These projections must rather be interpreted as providing an indication of what could happen to elderly poverty if individuals do not work more or save more.

In our follow-up work, we will assess to what extent a more rigorously defined regression model will result in any different sets of projections. It will be tested whether other factors (such as a decline in the take-up ratio) might mitigate the increase in the elderly poverty projected in some countries. Moreover, we will test to what extent (projected) data on other explanatory factors could serve as the explanatory factor in such projections.

5. Synthesizing discussion

This report has sought to describe briefly the pension reforms that have taken place during the last decade or so in the present 25 Member States of the European Union. While in 1995, nearly all the Member States of the EU had an earnings-related DB PAYG scheme as the main centrepiece of their pension system, by 2005 nearly half of the Member States had shifted towards other pension models, notably personal accounts or NDC schemes. Moreover all countries had, or considered, changes to their state pension schemes during this time. In most cases the reforms were mainly driven by fiscal sustainability concerns and the impact of these reforms on income adequacy and pensioner poverty do not appear to have been given significant consideration. In particular, the effects of systematic shifts on particular groups, such as women and lower income earners, have not been assessed in great depth. The current report takes a first step in that direction.

The qualitative analyses included in the report point us to three main issues:

- (i) To what extent individuals are aware of the impact of the changes that are happening in the pension system, and whether they are trying to accommodate these by increasing their savings and employment;
- (ii) In the absence of a positive behavioural change, will certain groups, particularly lower income earners with a worse state of health and less employable skills, be able to adjust their working lives to maintain their living standards in retirement; and
- (iii) Will these reforms prove to be politically sustainable in the face of growing elderly electorates? The scope of the reductions in generosity in annual pension benefits appears to be rather large in some countries, and further increases in longevity will mean an even more pronounced decline.

These issues point towards the need to reassess most of the reforms that have been carried out and outline those that are less likely to result in pensioner poverty. For instance, France's reform to link the number of contribution years required to qualify for the state pension with longevity may be less socially risky than Germany's policy to link the value of pension benefits to the dependency ratio. This is mainly because this policy sends clear signals to

individuals that they need to work more to qualify for the same benefit, rather than simply giving them a smaller benefit and then possibly facing a political backlash. Similarly the administrative structure adopted by the multi-pillar reforms in the CEECs needs to be looked at and reformed in a way as to reduce administrative costs and make the systems less burdensome on low-income earners. Moreover policymakers need to ensure that individuals understand the choices before them, particularly the longevity risk, and that incentives for private personal savings must increase. Policymakers need to remember that pensions were not introduced by chance, but were the result of social consensus that poverty amongst the elderly must be eliminated. If pension systems end up failing this main task, it is very probable that the social forces that combined to create pension systems may unravel the recent reforms that have taken place.