

Figari, Francesco; Matsaganis, Manos; Sutherland, Holly

**Working Paper**

## The financial well-being of older people in Europe and the redistributive effects of minimum pension schemes

EUROMOD Working Paper, No. EM7/11

**Provided in Cooperation with:**

Institute for Social and Economic Research (ISER), University of Essex

*Suggested Citation:* Figari, Francesco; Matsaganis, Manos; Sutherland, Holly (2011) : The financial well-being of older people in Europe and the redistributive effects of minimum pension schemes, EUROMOD Working Paper, No. EM7/11, University of Essex, Institute for Social and Economic Research (ISER), Colchester

This Version is available at:

<https://hdl.handle.net/10419/64883>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

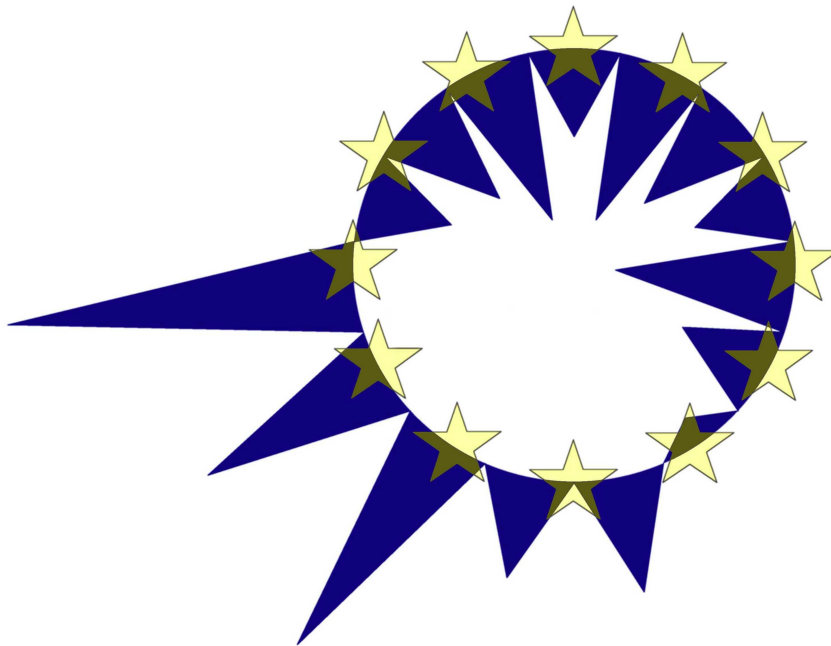
*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

# EUROMOD

## WORKING PAPER SERIES



EUROMOD Working Paper No. EM7/11

THE FINANCIAL WELL-BEING OF  
OLDER PEOPLE IN EUROPE AND THE  
REDISTRIBUTIVE EFFECTS OF  
MINIMUM PENSION SCHEMES

Francesco Figari, Manos Matsaganis,  
Holly Sutherland

December 2011

# The financial well-being of older people in Europe and the redistributive effects of minimum pension schemes <sup>1</sup>

Francesco Figari<sup>a,b</sup>, Manos Matsaganis<sup>c</sup>, Holly Sutherland<sup>b</sup>

<sup>a</sup>University of Insubria

<sup>b</sup>ISER - University of Essex

<sup>c</sup>Athens University of Economics and Business

## Abstract

This study analyses the financial well-being of elderly people across Europe. Using the European microsimulation model EUROMOD, which facilitates the identification of minimum pension schemes in a comparable way across countries, we show the extent to which these schemes serve to reduce the risk of poverty among elderly. The main findings show that there is a strong correlation between the resources allocated to the minimum pension schemes and the reduction in poverty risk among the elderly. Nevertheless, the financial well-being of older people depends crucially on the pension system as a whole. Countries with generous minimum pension schemes seem to allocate relatively fewer resources to other pillars of the pension system. On the one hand, they are more effective in reducing elderly poverty rates. On the other hand, they fail to ensure a level of financial well-being of older people in line with the overall population.

**JEL Classification:** C81, H55, I38

**Keywords:** minimum pensions, European Union, microsimulation, poverty, elderly

## Corresponding author:

Francesco Figari  
University of Essex  
Wivenhoe Park  
Colchester, Essex  
CO4 3SQ, UK  
E-mail: ffigar@essex.ac.uk

---

<sup>1</sup>Thanks are due to Alari Paulus and Francesca Zantomio for assistance, and to Terry Ward, the members of the Indicators Sub-Group of the Social Protection Committee (European Commission), and two anonymous referees for comments. This paper forms part of the ALICE (Analysis of Life Chances in Europe) project – funded by the UK’s Economic and Social Research Council (ESRC) under grant number RES-062-23-1455. We also acknowledge the support of the Social Situation Observatory – Income distribution and living conditions – of the European Commission on previous versions of this work. The analysis is based on EUROMOD version D23. EUROMOD is continually being improved and updated. The results presented here are based on the version available at the time of writing. Any remaining errors, results produced, interpretations or views presented are the authors’ responsibility. See Table 1 for the acknowledgment of the data used in this article. Data providers do not bear any responsibility for the analysis or interpretation of the data reported here.

## **1. Introduction**

Providing elderly citizens with adequate pensions is a widely recognised objective of European welfare states. However, the evidence of the success of this aim differs enormously across Europe. An adequate retirement income is a matter of inter- and intra-generational solidarity and preventing the elderly from falling into poverty is a growing concern for the European Union (European Commission, 2010b). However, ensuring financial well-being in retirement will be a real challenge for the future due to increasing pressures on the pension systems: low fertility rates, reduction of working-age population, increase in longevity, shorter working lives due to longer periods spent in education, effects of early retirement schemes and prospective retirement of baby-boom generations. Changes in the demographic characteristics of the population and the need for fiscal consolidation drive most of the pension reforms, whether parametric or systematic, ongoing in most of the European countries (Zaidi and Grech, 2007). As a consequence the fraction of the elderly population at risk of poverty shows a generally increasing trend. In Italy, for example, the poverty rate increased from 18% in 1996 to 22% in 2007 (Zaidi, 2010). Moreover, the current economic downturn has seriously aggravated the underlying challenges posed by ageing. More needs to be done to improve the efficiency of the pension schemes across Europe and to guarantee their adequacy and sustainability (European Commission, 2010b). A decline in public pension incomes relative to earnings is expected in the near future with more of the financial risk being borne by private individual pension plans and reduced redistribution in favour of lower income individuals through the public pension systems. As a consequence, recent projections show that, by 2050 more than 30% of those aged over 75 will be at risk of poverty in most European countries (Zaidi et al., 2006), compared to a European average of 20% in the 2009.

Nevertheless adequate as well as sustainable pension systems are necessary to strengthen social cohesion and to meet the Europe 2020 targets related to poverty reduction and long-term sustainability of public finances (European Commission, 2010a).

Retirement income arrangements are very different across European countries with a combination of basic, occupational and personal pension schemes, minimum pensions, tax-financed benefits, earnings and other sources of retirement income (OECD, 2009).

While the bulk of income in old age in all countries is represented by public pensions, the separate contribution of each component of the public system on the financial well-being of the

elderly is seldom analysed. However, from a policy point of view, the effect of minimum pension schemes on economic well-being is particularly relevant because these schemes might be an effective way of targeting resources at the most vulnerable groups. Women with weak labour market attachment over their lives, disabled individuals, older migrants, workers with disruptive contribution careers, older single persons, long-term unemployed, people moving in and out of self employment usually face multiple disadvantages in building adequate old-age income. In such cases, socially provided pensions are the most important source of income maintenance and represent an important safety net (Atkinson et al., 2002).

Although minimum pension schemes are usually viewed as an integral part of the European social model aimed at encompassing the need to guarantee a decent minimum standard of living for all (Pestieau, 2006), a comprehensive empirical assessment of their effectiveness in the EU is still lacking.

The aim of this paper is to shed light on the effects of minimum pension schemes on income and poverty rates in old age, acknowledging that a cross-country comparison is affected by the heterogeneity of the policy measures that are usually considered as minimum pensions. Nevertheless, by using EUROMOD, the European tax-benefit model, the categorisation of benefit payments by type in a comparable way across countries is facilitated, overcoming the main limitations embodied in the underlying surveys.

Moreover, using microsimulation techniques, the paper shows the extent to which minimum pension schemes are complemented or indeed integrated in other benefit schemes in place in each country. Such cross country analysis might facilitate policy learning across countries with the exchange of good practices through a peer review approach (Atkinson et al., 2005). Although social policy remains firmly a national responsibility, under the principle of subsidiarity, countries could take advantage of the Open Method of Coordination on pension reforms in the European Union (Eckardt, 2005).

This paper contributes to the growing literature on the economic well-being of elderly (among others, Smeeding, 2003; Smeeding and Sandstrom, 2005; Dang et al., 2006; Brandolini et al., 2007 for a focus on the joint effects of income and wealth on financial well-being at older ages), by providing a deeper knowledge of the redistributive effects of the minimum pension schemes. They are one important component of the income portfolio of (poor) older people and the

analysis of their redistributive effects is an essential step towards designing a more effective system to further reduce poverty and increase security.

Furthermore, the empirical evidence presented in this paper contributes to the debate about the effectiveness of policy targeting (Korpi and Palme, 1998; Kenworthy, 2011) by looking at the extent to which there is a trade off between generous minimum pension schemes and other pillars of the pension system and its effects on the financial well-being of older people.

The rest of the paper is structured as follows. Section 2 describes the main characteristics of EUROMOD. Section 3 briefly describes the minimum pension schemes followed by an analysis of the financial well-being of the elderly in 19 European countries. Section 5 examines the composition of the income of older people by source. Section 6 assesses the effect of minimum pension schemes in reducing poverty. Section 7 concludes the paper.

## **2. Methodology and data**

The analysis is based on EUROMOD, the multi-country European tax-benefit model covering the 15 pre-2004 European Union member states plus Estonia, Hungary, Poland and Slovenia.<sup>2</sup> EUROMOD is a static microsimulation model which simulates tax liabilities (direct tax and social insurance contributions) and benefits in a comparable way across countries on the basis of the tax-benefit rules in place and information available in the underlying datasets. The components of the tax-benefit systems which are not simulated due to a lack of information in the survey data (e.g. contributory pensions) are taken directly from the data, along with information on original incomes. Moreover EUROMOD enables the measurement of the effects of policy reforms on incomes, poverty, inequality and social inclusion in a comparative perspective. See Sutherland (2007) for further information.

As with most tax-benefit models, EUROMOD enables us to assess the effect of consolidated tax-benefit systems on the main monetary social indicators. EUROMOD is of value in understanding how different policies in different countries may contribute to common objectives through (i) cross-country comparison of specific tax-benefit instruments and (ii) analysis of the impact of common changes across countries (Lietz and Mantovani, 2007).

---

<sup>2</sup> Currently EUROMOD is being extended to cover all the 27 Member States and using mainly the new European level micro-data source, namely EU-SILC (European Union Statistics on Income and Living Conditions). See <http://www.iser.essex.ac.uk/euromod>.

In this analysis we do not take into account non take-up of benefits or tax evasion.<sup>3</sup> The more relevant of the two phenomena for minimum pensions is non take-up and it is effectively assumed, therefore, that the legal rules are universally respected and that the costs of compliance and claiming are zero, even if the performance of tax-benefit policies diverges to some extent from this ideal in practice. This can result in the over-estimation of taxes and benefits and is one factor that gives rise to differences between EUROMOD estimates of disposable income and income values recorded in the underlying datasets (see Mantovani and Sutherland, 2003).

While in most of the surveys minimum pension schemes are not identifiable in separate variables (in the EU-SILC, for example, minimum pension schemes are recorded in one single variable together with all other old age related benefits), EUROMOD facilitates the identification of minimum pension schemes in a comparable way across countries because it simulates most of them, applying the relevant policy rules on the information about income and family composition of the individuals in the input data.

The analyses in this paper refer to nineteen European countries and the underlying datasets used are listed in Table 1.<sup>4</sup> The choice of dataset is based on judgement of the national EUROMOD experts of the most suitable dataset available for scientific research at the time of the implementation of the relevant version of EUROMOD. When the input datasets refer to a period a few years prior to the tax-benefit system simulated in EUROMOD, each income component has been indexed by appropriate growth factors, based on actual changes over the relevant period.<sup>5</sup> In general no adjustment is made for changes in population composition<sup>6</sup>. The tax-benefit systems that are considered refer to different years across countries ranging from 2001 to 2005 (see Table 1 for details).

Although the analysis of pension structural reforms generally requires a dynamic microsimulation modelling approach that takes into account the life-cycle of each individual

---

<sup>3</sup> The exception is Italy where the recorded self-employment income has been split in two components, assuming that only a part of the total income has been declared to the tax authority. This allows us to obtain an aggregate amount of the declared income corresponding to that reported in the fiscal data (Fiorio and D'Amuri, 2006).

<sup>4</sup> The countries included in the analysis are those available in the version of EUROMOD used in this paper. The analysis is restricted to fifteen countries in Section 5 and 6 due to the impossibility of identifying the minimum pension schemes in the remaining four countries.

<sup>5</sup> This process is documented in EUROMOD Country Reports. See: <http://www.iser.essex.ac.uk/euromod/resources-for-euromod-users/country-reports>

<sup>6</sup> Moreover, the results do not take into account the different proportions of elderly people living in residential care institutions across countries because they are not covered in the surveys.

(Harding, 1993), a static approach, such as the one applied in this paper, is particularly informative in a comparative perspective when the main interest is in the redistributive and budgetary effects of specific components of the current pension system on the elderly population as observed at a point in time (see Mantovani et al., 2007).

### **3. Minimum pension schemes**

Pension systems greatly differ across Europe. However, three pillars are recognised everywhere, with different tiers in each pillar (OECD, 2009). The first pillar generally refers to the “public sector schemes” which aim at ensuring adequacy of retirement income. The second pillar comprises the “occupational sector schemes”, managed in either the public or private sector, and makes up the great bulk of retirement support in most of the countries. The third pillar includes all voluntary and individual private schemes.

The first tier of the first pillar usually consists of at least one minimum pension scheme, whose aim is to guarantee a minimum level of income below which an elderly person should not fall (Immergut et al., 2007; Goedemé and Van Lancker, 2009; OECD, 2009).

Although, minimum pension schemes differ across countries as different social protection systems use very different policy instruments to support income in old age, we adopt a widely accepted classification (Table 2) based on the main features of the schemes, as they are identified in EUROMOD. Three broad types of minimum pension schemes can be identified.

*Basic pensions* are awarded as a citizen’s right on reaching a certain age. Benefits are usually paid at a flat rate, calculated either per year in residence (as in Denmark, Finland and the Netherlands) or per year in employment (as in the UK). Basic pensions support incomes in old age by providing a minimum income floor for all (or nearly all) elderly citizens, and may be combined with second-tier contributory pensions and other sources of income without loss of benefit.

*Resource-tested pensions* may either be social pensions, or means-tested supplements, or social assistance. *Social pensions* are usually paid at a flat rate, on the basis of a means-test, to elderly people with no or insufficient contributions, in order to fill the gap left by contributory pension schemes (e.g. in Italy, France, and Ireland). *Means-tested supplements* “top up” second-tier pensions when these fail to lift recipients over a certain level of income. Examples of



supplements to contributory pensions are *EKAΣ* in Greece and *Ausgleichszulage* in Austria, while supplements to flat-rate pensions are also found in Denmark (*Pensionstillæg*). *Social assistance* is usually organised outside the pension system. Such schemes may be general in scope or specifically targeted at the elderly (as in Belgium, Hungary and the UK). Conversely, social assistance may explicitly exclude the elderly if generous universal basic pensions are in place (as in Denmark). Eligibility to social assistance benefits generally depends on a means test which takes account of all family income and (often) assets or accumulated savings.

*Minimum contributory pensions* often take the form of a mechanism within the benefit formula for the calculation of second-tier (earnings-related) pensions. The mechanism ensures that pensions reach the defined minimum, even when those retiring have paid contributions for only a short period or have a history of low earnings (other incomes or resources are not taken into account). Mechanisms of this kind are common in many countries with contributory earnings-related pension schemes. In most cases they cannot be observed separately, the main exception being the Spanish *Complemento por mínimo de pension de jubilación*.

#### [Table 2]

The different minimum pension schemes are one of the elements of the “ideal types of institutional structures” identified by Korpi and Palme (1998) in their welfare state typology. Focussing on old age pensions and sickness benefits, their taxonomy (i.e. targeted, voluntary-subsidized, corporatist, basic security, and encompassing models) is based on the institutional characteristics and the strategies of equality embodied in the different benefit schemes. The targeted model relies heavily on means testing and does not exist in its pure form in any of the European countries. However, as noted above, some countries have a *resource-tested pension* specifically targeted to the elderly poor. The voluntary-subsidized model was in many European countries the precursor to the corporatist model inspired by Bismarck, where social insurance is compulsory, even though still organised along occupational lines. Those who have no access to a contributory pension because of an inadequate record of contributions might be entitled to the *Minimum contributory pensions*. The basic security model resembles the original Beveridge design, with more comprehensive flat-rate benefits. and low ceilings on earning-related ones, on the assumption that higher-income groups will turn to the market and private insurance. Finally, the encompassing model combines ideas from Bismarck and Beveridge into a new pattern with generous citizenship-based universal *basic pensions* combined with earnings-related benefits for the economically active population.

#### **4. Financial well-being of the elderly**

In order to assess the financial well-being of the elderly, one of the most widely used indicators is relative poverty based on household equivalised income which takes into account the composition of the household. Individuals living in households with equivalised disposable income below the threshold of 60% of national equivalised median income are considered at risk of poverty.

The proportion of the elderly (aged 65+) at risk of poverty, according to EUROMOD estimates<sup>7</sup>, varies from 3.3% in Luxemburg to 42.6% in Ireland.

#### **[Figure 1]**

As shown in Figure 1, in most of the countries the poverty rates of those aged 65 and over are higher than the poverty rates of the overall population. The difference is minimal in Estonia, Italy, the Netherlands and Sweden while it is about 6-9 percentage points in Belgium, Greece, Spain, Austria, Slovenia and Finland and about 14 percentage points in Denmark and Portugal. However looking at the poverty gaps among the poor people (Figure 2), it emerges that in most of the countries when the elderly are at risk of poverty they are less likely than the non-elderly poor to have income far below the poverty line because in many countries a high proportion of pensioners receive a pension that is just slightly lower than the poverty line (Mantovani et al., 2007).

#### **[Figure 2]**

In contrast, in Luxemburg, Hungary, and Poland the proportion of the elderly at risk of poverty is lower than the proportion of the overall population, with poverty rates for older people that are very low, around 5%.

For the individuals aged 75 and over, poverty rates are higher in most countries than for those aged 65 and over, with the notable exceptions of Ireland (31% compared with 43% for those aged 65 and over) and the countries where elderly poverty rates are below the overall poverty rates. Moreover, older women (not shown) are more vulnerable to poverty than men due to their weaker attachment to the labour market and less opportunities to accrue full pension rights during their lives.

---

<sup>7</sup> As explained in Section 2, estimates of disposable income in EUROMOD may differ from income values recorded in the underlying datasets. See Zaidi (2010) for an extensive analysis based on EU-SILC data.

A complementary way to measure the well-being of elderly people is to look at their position along the income distribution. Figure 3 shows the proportion of the elderly population (aged 65 and over) in each income quintile (black line).

**[Figure 3]**

A large proportion of the population aged 65 and over falls into the bottom income quintile in most of the countries. The elderly make up as much as 59% of the bottom quintile in Denmark and over 30% in Ireland (39%), Finland (36%), Sweden (35%), Belgium (35%) and Portugal (32%). As income increases, the share of the elderly tends to decline. A few countries, however, deviate from this pattern. In Estonia, Germany, Greece, and the UK, the largest number of elderly are found in the second from bottom quintile, while a relatively pronounced ‘inverted U’ pattern is observed in Italy, Luxembourg, Hungary and Poland. The population aged 75 and over (not shown) follows the same pattern in all countries with a higher percentage of people in the bottom quintile in Denmark, the Netherlands, Finland and Sweden.

## **5. Composition of the incomes of older people**

The make-up of the incomes of older people gives an indication of the relative importance of different policy measures (minimum pensions, other public pensions<sup>8</sup>, other social benefits, private pensions, income taxes and social contributions) in different countries as well as that of market income.

Figure 3 shows the different sources of income, as a proportion of overall national per capita disposable income by income quintile in each country, for the individuals over 65 years.<sup>9</sup> In most of the countries these are all over the age of retirement, with the main exception of Denmark where the retirement age in 2001 was 67 years.

Market incomes contribute significantly to the total incomes of the elderly, especially those who are better off, in a number of countries (Denmark, Finland, Ireland, Italy, Portugal, the UK and Estonia). As might be expected, the contribution of market incomes is greatest in the top income quintile, where the population share of the elderly is typically small (in some cases, very small), which gives rise, it should be noted, to possible problems of statistical significance. This is less

---

<sup>8</sup> All public pension schemes not considered as minimum pensions (see Table 2) are included in the category “Other public pensions”.

<sup>9</sup> The findings related to the top quintiles should be interpreted with caution given the few observations recorded in some countries.

likely to be the case in Italy, where 15% of the elderly are in the top quintile with net income of almost three times higher than the average, 36% of which is made up of earnings from market sources rather than of pensions or social benefits of any kind.

In most of the countries covered, private pensions are virtually non-existent (though it is possible that they are misrecorded as capital income by the original surveys in some cases). The main exceptions are Sweden, the UK and, most especially, the Netherlands, where the 16% of the elderly are in the top quintile and of their income 84% comes from private pensions, on average. Social benefits other than pensions (mostly housing benefits and/or social assistance) make up a small part of the income of the elderly in Austria, Poland, Slovenia and a larger part in the UK and Denmark.

Public pensions (including minimum pensions) account for the bulk of income in old age in all countries. In countries with flat-rate schemes and modest second-tier pensions (such as Denmark, Sweden, the UK, Ireland and the Netherlands), public pensions are distributed more or less equally across income quintiles. On the other hand, in countries featuring strong ‘Bismarkian’ earnings-related schemes (e.g. Austria, France, Germany and the southern European countries), public pensions are distributed more towards the upper end of the income scale than the lower end. The distribution of public pensions in the 4 new Member States included in the analysis falls somewhere in between.

In four countries (Germany, Sweden, Estonia and Slovenia) minimum pension schemes cannot be distinguished from ‘other public pensions’. Among the remaining 15 countries, minimum pensions appear to make up a substantial part of income in old age in countries with significant flat-rate schemes (Denmark, the UK, Ireland and the Netherlands).<sup>10</sup>

Figure 3 also shows the relative importance of taxes (mainly income taxes) and social contributions paid by those over 65 years. In most of the countries pensions are subject to income tax but generally higher allowances apply to people in older age groups resulting in low average amounts of taxes paid, in particular by those in the bottom quintiles. Moreover pensions are tax exempt in Hungary and due to basic tax allowance and special tax reliefs for pensioners,

---

<sup>10</sup> In some cases minimum pensions may appear in top quintile because the unit of assessment for minimum pensions is narrower than the household and the quintiles have been constructed on the basis of equalised household disposable income of the entire population.

the majority of them effectively do not pay income tax in Estonia, Slovenia, and Finland (if they receive only the state pension). The majority of instruments considered as minimum pension schemes in this analysis are, in principle, subject to income tax, with the exception of those in Belgium, France, Hungary, Italy (*Assegno sociale*), Poland, and Spain. However in practice many recipients have income below the tax threshold.

As expected, in all countries the income, as a proportion of overall national per capita disposable income, reported by women (not shown) is much lower than that of men (with the only exception being Estonia), and has a more equal distribution across quintiles. The main reasons are related to the smaller contribution of market income (in particular in Germany, Ireland, Italy, and Portugal) among the women in the top quintiles and the generally smaller contribution of earnings-related public pensions and private pensions. On the other hand, when considering the income composition of women it emerges that the relative importance of minimum pensions is higher especially in Denmark, Ireland, the Netherlands, and Finland.

## **6. The effect of minimum pension schemes on poverty rates**

As explained in section 2, EUROMOD enables comparisons to be made between the social protection system as it currently exists (i.e. including the minimum pension schemes) with a counterfactual social protection system in which minimum pensions are assumed not to exist or to have been abolished. The starting point of the analysis is, therefore, the assumption that minimum pensions are simply deducted from the disposable income of recipients. This can be termed the ‘static’ scenario which allows us to establish the share of minimum pensions in total income.

This counterfactual situation, however, is not particularly plausible. If the minimum pension schemes were withdrawn or had never existed, their effects would tend to have been at least partly compensated by the social assistance schemes in place. In some countries, where basic pensions are widely available, social assistance schemes explicitly exclude old-age pensioners (in Denmark, Finland and Ireland), as they do in France in respect of guaranteed minimum income (*RMI*) and Belgium in respect of Income Support (*Minimex*). In our calculations this exclusion is assumed no longer apply if minimum pensions are withdrawn. In addition, social benefits, including pensions, are in many countries subject to income tax and, in some cases, to social contributions. This also needs to be taken into account when assessing the effect of withdrawal. This more realistic simulation, which takes into account both access of pensioners to

‘standard’ social assistance and the effect of taxes and social contributions, is termed the ‘interactive’ scenario.

Table 3 compares poverty rates (defined as the proportion of individuals living in households with equivalised income below 60% of the national median) in the current situation with those estimated under the ‘static’ and ‘interactive’ scenarios, for those aged 65 and over and those aged 75 and over.<sup>11</sup> It also shows the public expenditure savings (as a proportion of disposable income) involved following the hypothetical abolition of minimum pensions under the two scenarios.

**[Table 3]**

‘Abolishing’ minimum pensions, especially where these are defined as basic pensions, without considering the mitigating effect of social assistance and taxes and social contributions (i.e. the ‘static’ scenario) would cause elderly poverty rates to increase by 12 percentage points in Belgium, 44 percentage points in the UK, 60 percentage points in the Netherlands and 63 percentage points in Denmark. Allowing social assistance and taxes or social contributions to absorb some of the shock (the ‘interactive’ scenario) would cause the elderly poverty rate to fall back by 10 percentage points in Belgium, 25 percentage points in the UK and 33 percentage points in the Netherlands but by only 7 percentage points in Denmark.

Elderly poverty rates would also be increased by 24-25 percentage points in Finland and Ireland, and fall back by 3-4 percentage points under the ‘interactive’ scenario. Poverty rates would rise under both scenarios by between 5 percentage points and 16 percentage points in Spain, Luxembourg, Italy, and Greece. In these countries, social assistance makes no difference to the outcome, either because it is less developed (Spain, Italy and Greece) or because it is considered as minimum pension (Luxembourg). In all other countries, the effect is very small.

Taking into account the differences in poverty rates in the baseline scenario, the effect of ‘abolishing’ minimum pensions on poverty rates is similar for those aged 65 and over and those aged 75 and over.

---

<sup>11</sup> In the assessment of the poverty rates under the simulated scenarios, the poverty line is kept constant as in the baseline scenario.

As regards public expenditure, ‘abolishing’ minimum pensions as defined here would, under the ‘static’ scenario, save an amount equivalent to about 10% of aggregate disposable income in Denmark and the Netherlands and between 3% and 6% in Finland, Greece, Ireland and the UK. Under the ‘interactive’ scenario, savings would be reduced to 6-7% of aggregate disposable income in Denmark and the Netherlands, and to 3-4% in Ireland, Greece and the UK.

Table 4 compares poverty rates under the different scenarios, when the poverty line is equal to 40% of median equivalised household income.

**[Table 4]**

The increase in the proportion of individuals living in extreme poverty (with equivalised income below 40% of the national median) after ‘abolishing’ minimum pensions is much higher than the increase in poverty when the poverty line is set at 60% of the median income. On the one hand, this emphasises the role of “safety net” that is played by most of the minimum pension schemes. On the other hand, this confirms that often minimum income schemes provide elderly with an income level close to the poverty threshold, making the cross-country comparison of poverty risk highly sensitive to the choice of the poverty line.

The positive association between the aggregate amount of resources allocated to minimum pension schemes and the reduction in poverty is shown clearly in Figure 4. The correlation coefficient is equal to 0.88: countries with more generous minimum pension schemes, such as Denmark, Netherlands and the UK, show a much larger relative reduction in the elderly poverty rates due to their minimum pension schemes than other countries.

At the same time, Figure 5 reveals that in countries with generous minimum pension schemes a larger share of the elderly is found at the bottom of the income distribution. The extreme case is represented by Denmark, where almost 60% of elderly people have income below the first quintile.

**[Figure 4]**

**[Figure 5]**

The effectiveness in the poverty reduction and the concentration of elderly people at the bottom of the distribution are the consequence of the trade-off in the allocation of resources within the pension system. Countries with more generous minimum pension schemes tend to allocate relatively little in terms of resources to the other pillars of the pension systems (Figure 6): elderly

people are able to reach a decent minimum level of income in these countries due to the minimum pensions (Figure 4) but they do not have enough resources to maintain their living standards in line with the rest of the population (Figure 5).

### **[Figure 6]**

These findings contribute to the ongoing debate about targeting of social benefits (Korpi and Palme, 1998; Kenworthy, 2011) and its efficiency at enhancing the financial well-being of elderly. Focussing on the elderly, the empirical evidence reveals the importance of considering the minimum pension schemes as an integral part of the pension system as a whole.

A pension system which is relatively more targeted at the poor (through generous minimum pension schemes rather than earnings related schemes) can be more effective in reducing elderly poverty but not at ensuring a level of financial well-being of older people in line with the overall population.

Such a result confirms, although from a different perspective, the “*Paradox of Redistribution*” (Korpi and Palme, 1998): strict targeting by income might not be the most efficient way to improve the financial well-being of elderly people. The degree of redistribution depends also on the total budget channelled through the overall pension system and the resources allocated to the other pillars tend to shrink as the extent of minimum pension schemes grows.

However, as Kenworthy (2011) points out, this calls for a more “nuanced version” of the paradox of redistribution, based on an assessment of the redistributive system as a whole. Minimum pension schemes can be sustained as long as income-tested instruments are seen as subsidiary to well-established universalistic social insurance programs providing broad insurance against risks.

## **7. Conclusions**

The pension system plays a predominant role in the distribution of income among the elderly in particular for those at the bottom of the income ladder. In this study we have focused on the poorest elderly showing the different extent to which the minimum pension schemes across Europe are successful at ensuring elderly people a decent minimum level of income.



Simulations of the effect of minimum pension schemes show that, without these, poverty rates among people aged over 65 would be 56 percentage points higher in Denmark, 27 percentage points higher in the Netherlands, 16-22 points higher in Greece, the UK, Finland and Ireland, 5 points higher in Luxembourg and Spain and 2 points higher in Austria and France. In the other EU15 Member States, the effect would be negligible. At the same time, abolishing minimum pensions would reduce public expenditure by around 6% of aggregate disposable income in Denmark and the Netherlands, 4% in Greece, 2-3% in, Finland, Ireland and the UK, and 1% in Austria, Belgium, Luxemburg and Spain.

Nevertheless, the results reveal that the strong correlation between the resource allocated to the minimum pension schemes and the reduction in elderly poverty is accompanied by a larger share of elderly in the first quintile of the income distribution in the countries where minimum income schemes are more generous. This calls into question the ways in which a strict policy of income targeting can enhance the well-being of older people.

The analysis presented in this paper raises both methodological and conceptual issues to be considered in further work.

First of all, as explained above, the identification of minimum pensions is only partly related to the lack of information in the data used for the analysis because some of the schemes are internal to earnings-related formulae and are not identifiable easily. A cross-country comparison, however, is hampered by the heterogeneity of the policy measures that can be legitimately thought of as minimum pensions. However the use of a microsimulation model allows us to identify more schemes than those normally recorded as such in the underlying data.

Secondly, our assumption of 100% take-up of means-tested minimum pensions and social assistance benefits will have tended to make them look more effective than they actually are. Non-take-up is thought to characterise different systems to different extents, depending on many factors including the nature of the administration of the benefit and the size of entitlements in relation to other incomes. Therefore the results shown here should be considered as the ones characterising the most optimistic scenario.

Third, it will be important to look at the trends of elderly incomes given that recent reforms introduced in some European countries have either strengthened (as in France, Ireland and

Sweden) or weakened (as in Finland, Hungary, Poland and Slovak Republic) the minimum pension schemes (Hoskins et al. 2009). Moreover, a likely impact on the effects of the minimum pension schemes is due to the indexation that in some countries (Belgium, Finland, Ireland, Spain and Portugal) was planned at a quicker pace in the years before the economic crisis (Whitehouse et al. 2009). A recent study of the UK system shows how the planned indexation to earnings growth will protect pensioners from an increasing risk of poverty over the next 20 years; with indexation to prices alone and other things remaining equal, the risk of poverty among those aged over 65 would rise by a quarter over the next 20 years (Sutherland et al. 2008). However, where minimum pension schemes are not adjusted for inflation (as it has been implemented as part of the austerity measures, see Callan et al., 2011) then their capacity to protect elderly people from poverty is diminished, not only in relative but also absolute terms.

Furthermore, from a European perspective, the empirical analysis of the effects of minimum pension schemes in Europe provides the starting point for any debate about the introduction of a universal basic pension for elderly in Europe (Schokkaert and Van Parijs, 2003; Goedemé and Van Lancker, 2009). Although a European minimum pension may appear far removed from current policy concerns, it is often argued that the European Union should set minimum standards for national policies as a natural development of the European social model, to be achieved by each country respecting the subsidiarity principle (Atkinson et al. 2002).

## References

- Atkinson A. B., Bourguignon, F., O'Donoghue, C., Sutherland, H. and F. Utili, 2002, Microsimulation of Social Policy in the European Union: Case Study of a European Minimum Pension, *Economica* 69: 229-243.
- Atkinson A. B., Cantillon, B., Marlier, E. and B. Nolan, 2005, *Taking Forward the EU Social Inclusion Process*. Luxembourg Presidency of the Council of the European Union.
- Brandolini A., Sierminska E., and T.M. Smeeding, 2007, *Cross-National Comparison of Income and Wealth Status in Retirement: First Results From the Luxembourg Wealth Study (LWS)*, Center for Retirement Research at Boston College Working Papers 2007-03.
- Callan T., Leventi C., Levy H., Matsaganis M., Paulus A., and H. Sutherland, 2011, *The distributional effects of austerity measures: a comparison of six EU countries*, Social Situation Observatory Research Note 02/2011.
- Dang T.-T., Immervoll, H., Mantovani D., Orsini K., and H. Sutherland, 2006, *An Age Perspective on Economic Well-being and Social Protection in Nine OECD Countries*, OECD Social, Employment and Migration Working Papers No. 34. Paris: OECD.
- Eckardt M., 2005, The open method of coordination on pensions: an economic analysis of its effects on pension reforms, *Journal of European Social Policy* 15(3): 247-267.
- European Commission, 2010a, *Europe 2020. A European strategy for "smart, sustainable and inclusive growth"*. Bruxelles: European Commission.
- European Commission, 2010b, *Green paper towards adequate, sustainable and safe European pension systems*. Bruxelles: European Commission.
- Fiorio C.V. and F. D'Amuri, 2006, Tax evasion in Italy: an analysis using a tax-benefit microsimulation model, *The IUP Journal of Public Finance* 4(2): 19–37.
- Goedemé T. and W. Van Lancker, 2009, A Universal Basic Pension for Europe's Elderly: Options and Pitfalls, *Basic Income Studies* 4(1): 1-26.
- Harding A., 1993, *Lifetime Income Distribution and redistribution: Applications of a Microsimulation Model*. Amsterdam: North-Holland.
- Hoskins D., M.A. Pearson and E.R. Whitehouse, 2009, Social Pensions in High-Income Countries, in R. Holzmann and N. Takayama (Eds.), *Closing the Coverage Gap: The Role of Social Pensions and Other Retirement Income Transfers*. Washington, D.C.: World Bank.
- Immergut E. M., Anderson K. M. and I. Schulze (Eds), 2007, *The Handbook of West European Pension Politics*. Oxford: Oxford University Press.
- Kenworthy L., 2011, *Progress for the Poor*. Oxford: Oxford University Press.

- Korpi W. and J. Palme, 1998, The paradox of redistribution and the strategy of equality: welfare state institutions, inequality and poverty in the western countries, *American Sociological Review* 63(5): 661–687.
- Lietz C. and D. Mantovani, 2007, A Short Introduction to EUROMOD: An Integrated European Tax-Benefit Model, in O. Bargain (Ed.), *Micro-simulation in action: Policy analysis in Europe using EUROMOD*, Research in Labor Economics, 25. Elsevier Ltd.
- Mantovani D. and H. Sutherland, 2003, *Social Indicators and other Income Statistics using the EUROMOD Baseline: a Comparison with Eurostat and National Statistics*, EUROMOD Working Paper EM1/03.
- Mantovani D., Papadopoulos F., Sutherland H. and P. Tsakloglou, 2007, Pension Incomes in the European Union: Policy Reform Strategies in Comparative Perspective, in O. Bargain (Ed.), *Micro-simulation in action: Policy analysis in Europe using EUROMOD*, Research in Labor Economics, 25. Elsevier Ltd.
- OECD, 2009, *Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries*. Paris: OECD.
- Pestieau P., 2006, *The welfare state in the European Union: economic and social perspectives*. Oxford: Oxford University Press.
- Schokkaert E. and P. Van Parijs, 2003, Debate on Social Justice and Pension Reform: Social Justice and the Reform of Europe's Pension Systems, *Journal of European Social Policy* 13(3): 245-263.
- Smeeding T. M., 2003, Income Maintenance in Old Age: Current Status and Future Prospects for Rich Countries, *Genus* LIX(1): 51-83.
- Smeeding T. M. and S. Sandstrom, 2005, Poverty and Income Maintenance in Old Age: A Cross-National View of Low Income Older Women, *Feminist Economics* 11(1): 163-197.
- Social Protection Committee, 2006, *Minimum income provision for older people and their contribution to adequacy in retirement*. Brussels: European Commission.
- Sutherland H., 2007, EUROMOD: the tax-benefit microsimulation model for the European Union in Gupta A. and A. Harding (Eds), *Modelling Our Future: population ageing, health and aged care*. International Symposia in Economic Theory and Econometrics Vol 16. Elsevier.
- Sutherland H., Hancock R., Hills J. and F. Zantomio, 2008, Keeping up or falling behind? The impact of benefit and tax uprating on incomes and poverty, *Fiscal Studies* 4(29): 467-498.

- Whiteford P. and E. Whitehouse, 2006, Pension Challenges and Pension Reforms in OECD Countries, *Oxford Review of Economic Policy* 22(1): 78-94.
- Whitehouse E., D'Addio A., Chomik R., Reilly A., and J. Seisdedos, 2009, *What are the prospects for the standard of living of retirees? The indexation of pensions in European Union and OECD countries*. ISSA, Technical Seminar on pensions.
- Zaidi A., 2010, *Poverty Risks for Older People in EU Countries – An Update*, Policy Brief N. II. Vienna: European Centre.
- Zaidi A. and A. Grech, 2007, Pension Policy in EU25 and its Impact on Pension Benefits, *Benefits – The Journal of Poverty and Social Justice* 15(3): 229 – 311.
- Zaidi A., Grech A. and M. Fuchs, 2006, *Pension Policy in EU25 and its Possible Impact on Elderly Poverty*, CASE 116, London School of Economics.
- .

**Table 1. EUROMOD (version D23) and tax-benefit system simulated**

Country		Dataset	Date of collection	Tax-Benefit System
BE	Belgium	Panel Survey on Belgian Households	2002	2003
DK	Denmark	European Community Household Panel	1995	2001
DE	Germany	German Socio-Economic Panel	2002	2003
EE	Estonia	Household Budget Survey	2005	2005
EL	Greece	Household Budget Survey	2004/5	2005
ES	Spain	EU-SILC	2005	2005
FR	France	Enquête sur les Budgets Familiaux (EBF)	2000/1	2001
IE	Ireland	Living in Ireland Survey	1994	2001
IT	Italy	Italian version of EUSILC	2004	2003
LU	Luxemburg	PSELL-2	2001	2003
HU	Hungary	EU-SILC	2005	2005
NL	Netherlands	Sociaal-economisch panelonderzoek	2000	2003
AT	Austria	Austrian version of ECHP	1999	2003
PL	Poland	Household Budget Survey	2005	2005
PT	Portugal	European Community Household Panel	2001	2003
SI	Slovenia	Household Budget Survey / Personal Income Tax database	2005	2005
FI	Finland	Income distribution survey	2001	2003
SE	Sweden	Income distribution survey	2001	2001
UK	United Kingdom	Family Resource Survey	2003/4	2005

Acknowledgment: EUROMOD data sources are the European Community Household Panel (ECHP) User Data Base and the EU Statistics in Incomes and Living Conditions (SILC) made available by Eurostat (under contract EU-SILC/2007/03); the Austrian version of the ECHP made available by the Interdisciplinary Centre for Comparative Research in the Social Sciences; the Panel Survey on Belgian Households (PSBH) made available by the University of Liège and the University of Antwerp; the Estonian Household Budget Survey (HBS) made available by Statistics Estonia; the Income Distribution Survey made available by Statistics Finland; the Enquête sur les Budgets Familiaux (EBF) made available by INSEE; the public use version of the German Socio Economic Panel Study (GSOEP) made available by the German Institute for Economic Research (DIW), Berlin; the Greek Household Budget Survey (HBS) made available by the National Statistical Service of Greece; the Living in Ireland Survey made available by the Economic and Social Research Institute; the Italian version of the EU-SILC made available by ISTAT; the Socio-Economic Panel for Luxembourg (PSELL-2) made available by CEPS/INSTEAD; the Socio-Economic Panel Survey (SEP) made available by Statistics Netherlands through the mediation of the Netherlands Organisation for Scientific Research - Scientific Statistical Agency; the Polish Household Budget Survey (HBS) made available by the Economic Department of Warsaw University; the Slovenian Household Budget Survey (HBS) and Personal Income Tax database made available by the Statistical Office of Slovenia; the Income Distribution Survey made available by Statistics Sweden; and the Family Resource Survey (FES), made available by the UK Office for National Statistics (ONS) through the Data Archive. Material from the FRS is Crown Copyright and is used by permission. Neither the ONS nor the Data Archive bear any responsibility for the analysis or interpretation of the data reported here. An equivalent disclaimer applies for all other data sources and their respective providers cited in this acknowledgement.

**Table 2. Minimum Pension Schemes in Europe**

Country	Basic pensions	Resource-tested pensions	Minimum contributory pensions
BE		Income Support for the elderly ( <i>Revenu garanti aux personnes âgées</i> )	
DK	Residence-based state pension ( <i>Folkepension – Grundbeløb</i> )	Pension supplement ( <i>Pensionstillæg</i> )	
EL		<i>ΟΓΑ</i> Basic Pension, Social Pension ( <i>Σύνταξη ανασφάλιστων υπερηλίκων</i> ), Social Solidarity Benefit ( <i>ΕΚΑΣ</i> )	
ES		Non-contributory pension ( <i>Pensión no contributiva de jubilación</i> ), Widow pension supplement ( <i>Complemento por mínimo de pension de viudedad</i> )	Guaranteed minimum contributory pension ( <i>Complemento por mínimo de pension de jubilación</i> ),
FR		Minimum old age pension ( <i>Minimum vieillesse</i> )	
IE	Old Age Contributory Benefits	Old Age Non-Contributory Benefits	
IT		Social Pension ( <i>Assegno sociale</i> )	
LU		Guaranteed Minimum Income ( <i>Revenu Minimum Garanti</i> )	
HU		Non-contributory old-age allowance ( <i>Időskorúak járadéka</i> )	
NL	Residence-based state pension ( <i>AOW</i> )		
AT		Minimum pension supplement ( <i>Ausgleichszulage</i> ), Minimum pension supplement for civil servants ( <i>Ergänzungszulage</i> )	
PL		Permanent social assistance ( <i>Zasiłek stały</i> ) Nursing supplement ( <i>Dodatek pielęgnacyjny</i> )	
PT		Old-age social pension ( <i>Pensão Social de Velhice</i> )	
FI	Residence-based national pension ( <i>Kansaneläke</i> ), Residence-based national pension increases ( <i>Kansa-neläkkeen lapsikorotus</i> )		
UK	Basic State Pension	Pension Credit	

Notes. See Table 1 for country acronyms. The classification of minimum pension schemes (when identifiable in the EUROMOD database) follows the one adopted in Social Protection Committee, 2006; Whiteford and Whitehouse, 2006; Goedemé and Van Lancker, 2009; OECD 2009). Only instruments identifiable in EUROMOD are reported in the Table and considered as “Minimum Pension Schemes” throughout the paper. Instruments not identifiable in EUROMOD, due to lack of information in the underlying data, are anyway included in the disposable income. Resource-tested pensions include Social Pensions, Social Assistance and means-tested supplements.

**Table 3. Distributional and budgetary impact of Minimum Pension Schemes. Poverty line at 60% of median.**

<i>Country</i>	<i>Poverty rate - 65+</i>			<i>Poverty rate - 75+</i>			<i>Expenditure saving as % of disposable income</i>	
	<i>Baseline</i>	<i>Static</i>	<i>Interactive</i>	<i>Baseline</i>	<i>Static</i>	<i>Interactive</i>	<i>Static</i>	<i>Interactive</i>
BE	17.33	29.33	18.84	21.73	32.34	23.72	1.83	1.01
DK	23.61	86.45	80.06	28.59	96.41	93.60	9.57	6.63
EL	24.97	41.09	40.85	28.88	44.66	44.34	4.39	4.19
ES	26.33	31.32	31.32	29.84	35.63	35.63	0.98	0.98
FR	13.47	16.11	15.96	14.59	17.53	17.30	0.28	0.14
IE	42.60	67.60	64.68	31.20	75.28	70.89	5.30	3.13
IT	18.83	21.20	21.15	19.21	21.71	21.64	0.55	0.54
LU	3.26	7.81	7.81	2.18	10.66	10.66	0.97	0.93
HU	5.63	5.71	5.71	5.56	5.62	5.62	0.02	0.02
NL	12.91	72.72	39.99	20.36	78.79	42.36	10.64	5.89
AT	19.51	22.20	21.76	23.31	27.07	26.49	1.28	0.96
PL	6.00	7.15	6.17	3.36	5.56	3.43	1.24	0.28
PT	34.27	34.91	34.91	39.94	40.71	40.71	0.24	0.18
FI	19.40	42.99	39.20	26.81	58.92	54.01	3.36	2.16
UK	19.49	63.95	38.57	23.39	68.92	39.76	6.37	3.06

Notes. See Table 1 for country acronyms. Poverty line equal to 60% of median equivalised household income in the Baseline scenario. In the Static scenario Minimum Pension Schemes are deducted from standard disposable income. In the Interactive scenario Minimum Pension Schemes are disregarded but other Social Assistance schemes may partly compensate for the reduction in household resources. The effects of taxation of Minimum Pension and Social Assistance Schemes (where applicable) are also taken into account. In Denmark, Finland and Ireland individuals no longer receiving a basic pension are allowed to receive Social Assistance. In France individuals aged 65 or older are allowed to receive Revenue Minimum d'Insertion. In Belgium males aged 65 or older and females aged 62 or older are allowed to receive Income Support (MINIMEX). Source: Own calculations using EUROMOD.

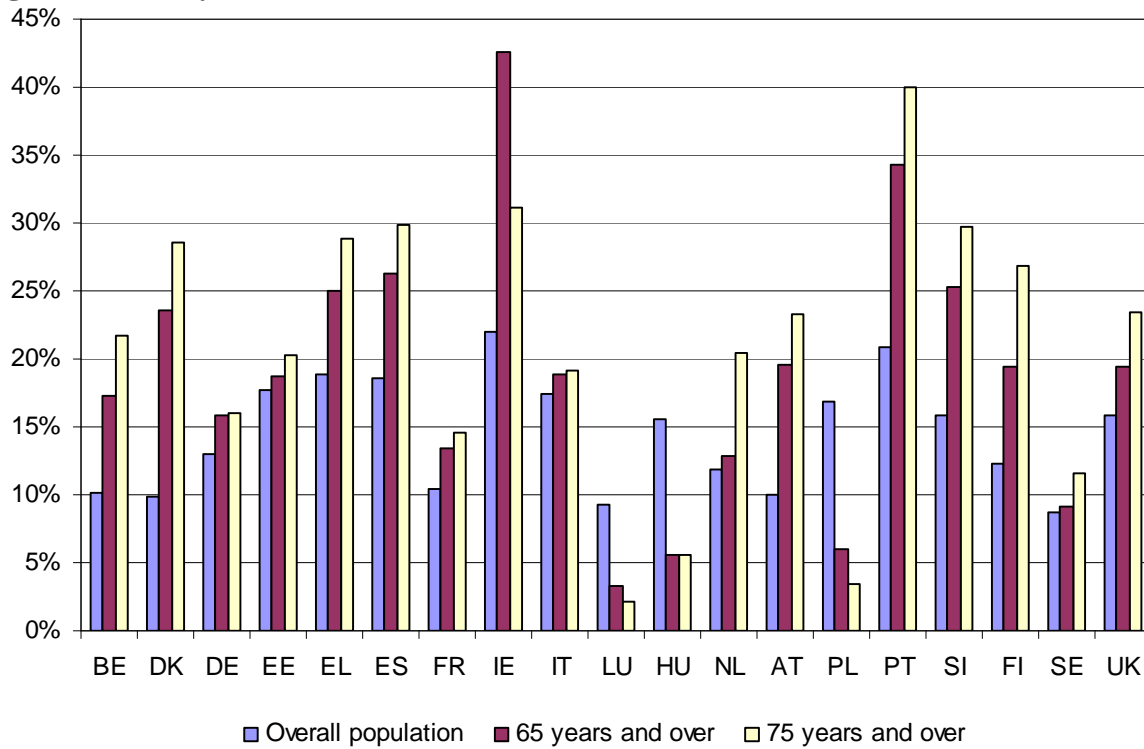


**Table 4. Distributional and budgetary impact of Minimum Pension Schemes. Poverty line at 40% of median.**

<i>Country</i>	<i>Poverty rate - 65+</i>			<i>Poverty rate - 75+</i>		
	<i>Baseline</i>	<i>Static</i>	<i>Interactive</i>	<i>Baseline</i>	<i>Static</i>	<i>Interactive</i>
BE	5.15	13.81	11.84	5.88	17.71	14.89
DK	0.40	79.93	65.56	0.32	94.45	83.68
EL	8.49	24.45	23.79	12.82	28.30	27.74
ES	5.83	10.63	10.63	6.16	11.50	11.50
FR	0.38	2.83	2.30	0.56	3.90	3.02
IE	9.41	55.97	41.80	8.78	65.56	43.27
IT	3.87	6.63	6.60	3.25	5.91	5.89
LU	0.00	0.76	0.76	0.00	0.47	0.47
HU	0.70	0.77	0.77	0.50	0.58	0.58
NL	0.00	60.78	28.61	0.00	67.82	32.36
AT	0.69	6.91	4.03	0.78	9.34	5.30
PL	1.21	1.61	1.40	1.13	1.73	1.33
PT	11.07	12.57	12.45	13.43	15.26	15.12
FI	0.40	23.33	13.12	0.66	34.72	19.89
UK	1.33	44.19	8.66	1.89	48.77	9.76

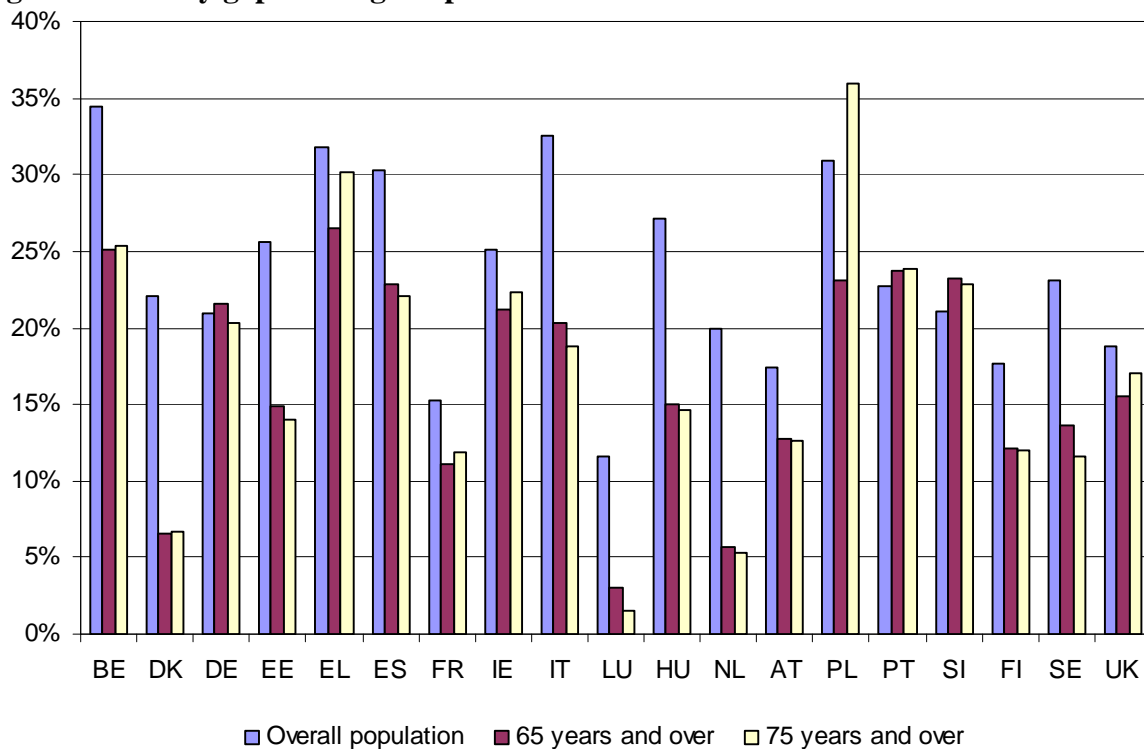
Notes. See Table 1 for country acronyms. Poverty line equal to 40% of median equivalised household income in the Baseline scenario. In the Static scenario Minimum Pension Schemes are deducted from standard disposable income. In the Interactive scenario Minimum Pension Schemes are disregarded but other Social Assistance schemes may partly compensate for the reduction in household resources. The effects of taxation of Minimum Pension and Social Assistance Schemes (where applicable) are also taken into account. In Denmark, Finland and Ireland individuals no longer receiving a basic pension are allowed to receive Social Assistance. In France individuals aged 65 or older are allowed to receive Revenue Minimum d'Insertion. In Belgium males aged 65 or older and females aged 62 or older are allowed to receive Income Support (MINIMEX). Source: Own calculations using EUROMOD.

**Figure 1. Poverty rates in the EU countries**



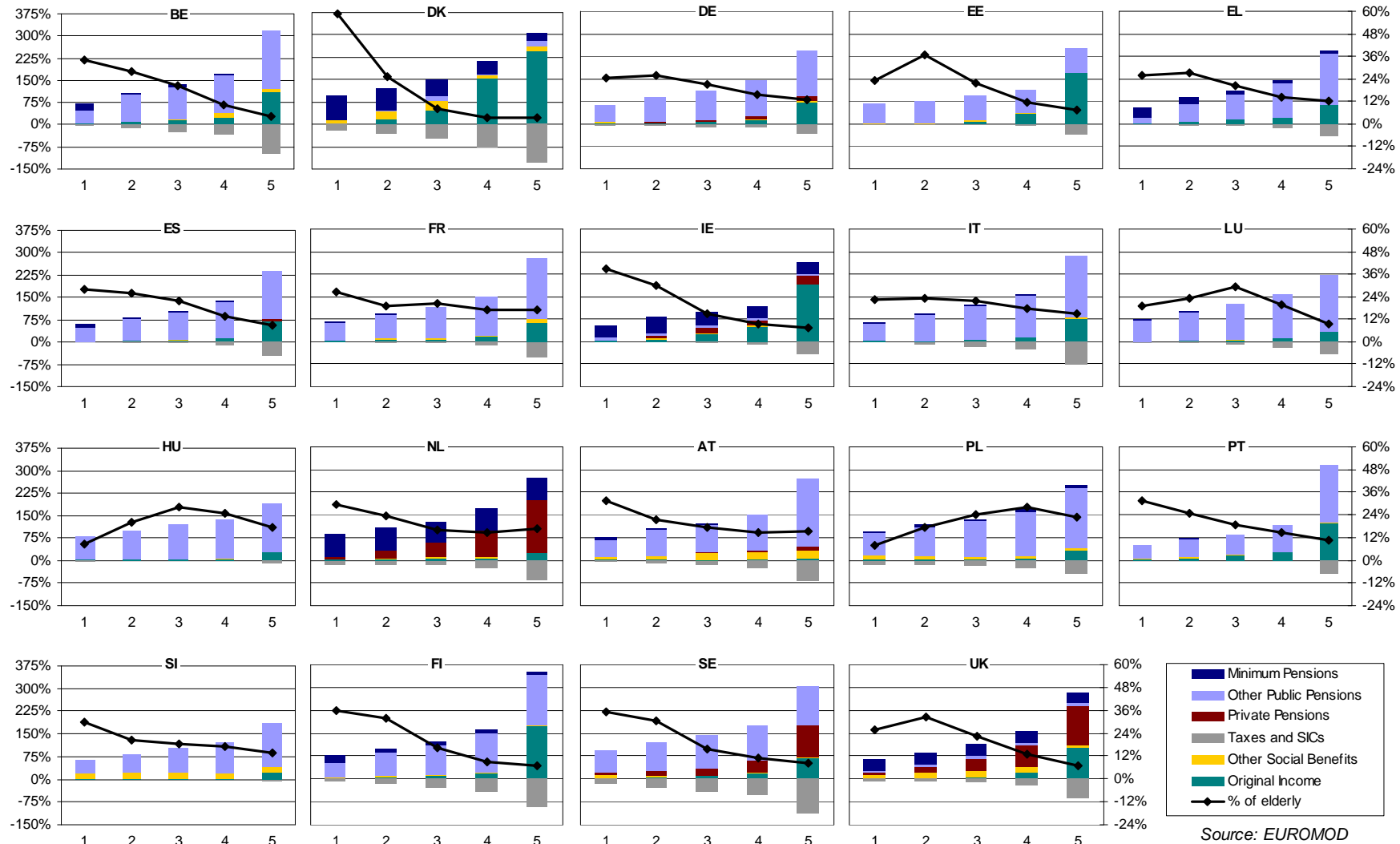
Notes. See Table 1 for country acronyms. Poverty line is equal to 60% of median equivalised household income. Source: Own calculations using EUROMOD.

**Figure 2. Poverty gaps among the poor in the EU countries**



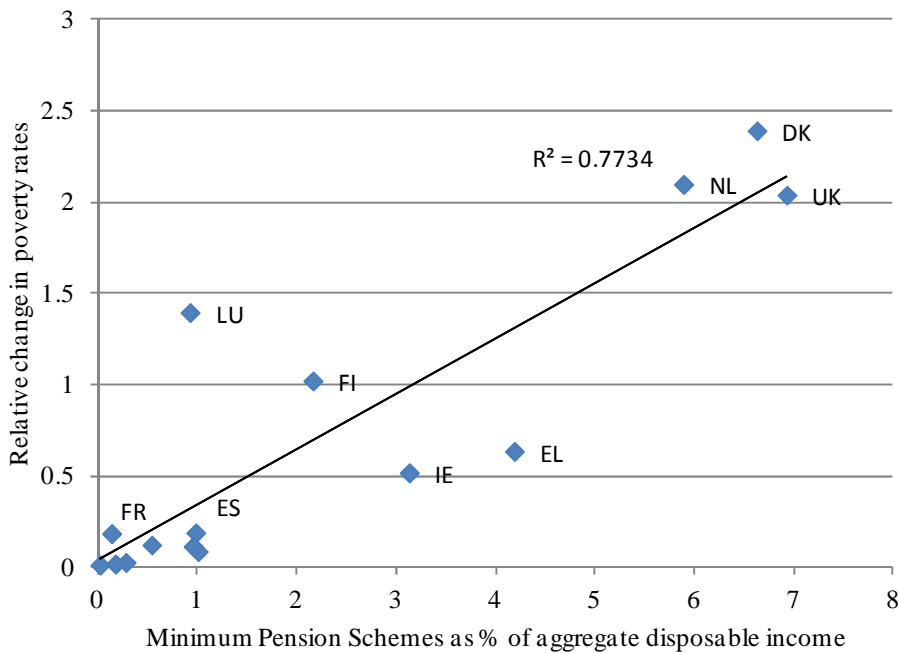
Notes. See Table 1 for country acronyms. Average normalised poverty gaps among the poor people. Poverty line is equal to 60% of median equivalised household income. Source: Own calculations using EUROMOD.

**Figure 3. Income source per elderly person (65+) as a % of per capita disposable income by quintile group**



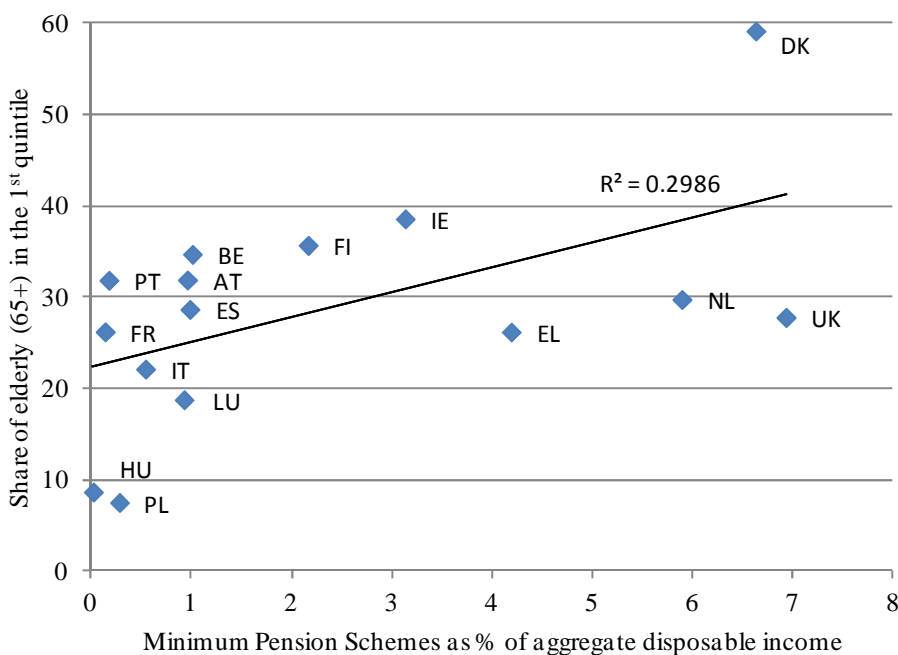
Notes. See Table 1 for a classification of Minimum Pension Schemes and country acronyms. Bars show income sources of elderly persons (65+) as a proportion of overall average per capita disposable income, by quintile. Quintiles have been constructed on the basis of equivalised household disposable income of the entire population. Share of elderly (65+) by quintile group on the right-hand axis. Source: Own calculations using EUROMOD.

**Figure 4. Correlation between the effect of Minimum Pension schemes on poverty and their generosity**



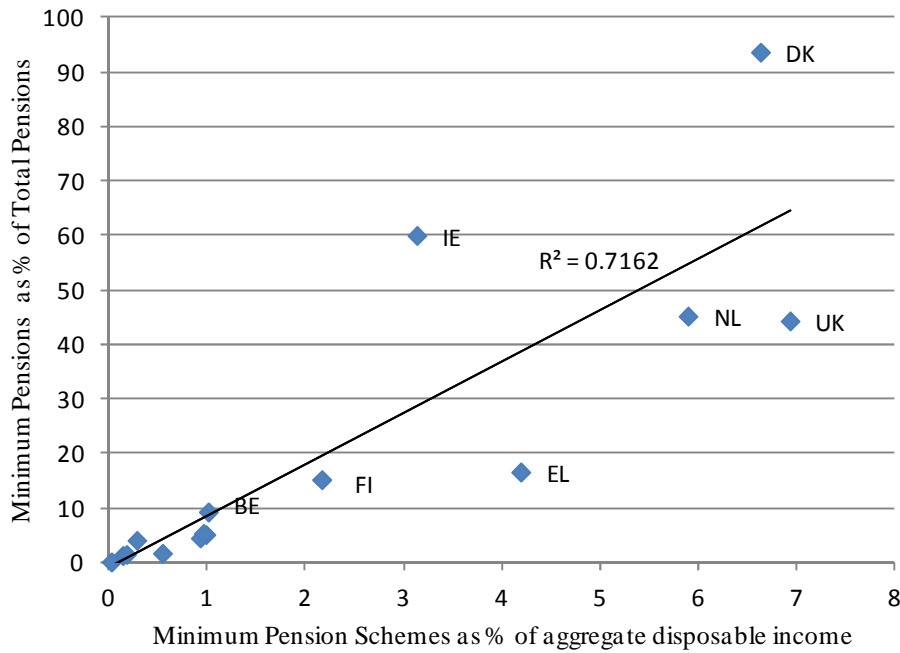
Notes. See Table 1 for country acronyms. Figure based on the values reported in Table 3, for the sample of elderly aged 65 and over. The relative change in poverty rates is based on poverty line equal to 60% of median equivalised household income in the baseline. Minimum Pension Schemes as % of aggregate disposable income measured as expenditure saving due to the abolition of minimum pension schemes in the interactive scenario. Correlation coefficient = 0.88; p-value = 0.000; No. of observations = 15. Source: Own calculations using EUROMOD.

**Figure 5. Correlation between the share of elderly in the first quintile of income distribution and the generosity of Minimum Pension schemes**



Notes. See Figure 4. Correlation coefficient = 0.55; p-value = 0.035; No. of observations = 15. Source: Own calculations using EUROMOD.

**Figure 6. Correlation between the relative share of Minimum Pension Schemes over Total Pensions and their generosity**



Notes. See Figure 4. On the vertical axis, "Total Pensions" include private pensions as well, without distinguishing between compulsory and non compulsory schemes (due to lack of information in the data). The figure is then a conservative estimate of the relative share of Minimum Pension Schemes over total compulsory pensions. Correlation coefficient = 0.91; p-value = 0.000; No. of observations = 15. Source: Own calculations using EUROMOD.