

Paper for Copenhagen meeting of AAE
Adequacy Task Force, Social Security Sub Committee

- In general, older people in almost all Member States have been better protected against the impact of the ongoing recession than other age groups. This is detailed in the Pensions Adequacy Report 2015. However, there remain significant numbers living in, or at risk of falling into, poverty, and several Member States have yet to fully tackle the surrounding issues.
- A particular issue arises where there have been inadequate (or no) steps taken to re-align career patterns to match rising pensionable ages or meet changing contribution period requirements. This is notably the case for those at the margins of the labour market or those who may not have full careers due to care responsibilities, unemployment, or disability - *examples of so-called "vulnerable groups"* - to whom should be added the important group of young people, large numbers of whom have no regular (specifically pensionable) employment.
- There is also the potential difficulty, shared of course with other branches of social security, in distinguishing (and identifying the extent to which a social security scheme can address) "poverty", in the sense of a present status, and "vulnerability". In this perspective it is, perhaps, important to make a distinction between "vulnerability", in the sense of prospective loss of employment capacity, and post facto loss of capacity, which in many (but not all) contexts would be labelled as "poverty".

How did the “great recession” affect retirement resources?

- The crisis and austerity-related changes to pensions appear in several countries to have generated a climate of uncertainty and doubt regarding public pension schemes. Investigations have therefore been made with the objective of better understanding:
 - whether or how different groups are able to cope with the possible cutbacks in the generosity of pensions;
 - how the crisis affected preparedness in the aggregate;
 - whether there have been significant changes to the distribution - amongst different groups - of vulnerability;

Specific information provided by country:

The Netherlands:

The self-employed and the divorced stand out as vulnerable groups having, on average, relatively modest pension entitlements. The self-employed currently lack insurance in the second pillar (and are often poorly insured in the third), even though their position in the labour market resembles that of classic employees. It should be noted in addition that the numbers of the self-employed increased by over 25% over the last decade.

Recent studies have provided evidence that shocks to wealth do not only affect consumption today, but are incorporated into individuals' projections of future consumption. The studies showed that in the aggregate the Dutch are well prepared for retirement, although, if individuals had not revised their goals, around 50% would not be able to finance their consumption floors based on their pensions alone.

Greece:

According to recent research published by MetLife ⁽¹⁾ Greeks are very poorly prepared for their retirement period when compared with other Europeans. Specifically, among all employees who were interviewed, 29% had not started to save for retirement, 40% were not aware as to how to plan for their retirement period, and only 24% felt that they were “on track” in their preparation for retirement.

- Life expectation figures were compared across socioeconomic groups, showing disparities which in some cases have increased over time, with higher socioeconomic groups gaining more years in life expectancy than lower socioeconomic groups. To measure the impact of mortality differences on pension outcomes three indicators are proposed:

1. The *retirement ratio*, which measures the number of years spent working for each expected year in retirement on the basis of given the group-specific life expectation at retirement;
2. The *pension wealth ratio* which measures the expected present value of total pension income relative to the amount of retirement assets accumulated at retirement date;
3. The *purchasing power ratio*, which measures the purchasing power that individuals can expect, relative to that based on their last salary at retirement.

Specific information provided by country:

Hungary:

Retirement ratio calculations, for males and females respectively, based on 2015 data, show that:

- The retirement ratio for low income group males is more demanding by a factor of 1.07 than that for the average income group, while the average pension benefit is around 62.5% of that for the average income group.
- The retirement ratio for low income group females is 0.62 lower than the one for average income group while the average pension benefit is around 64% of the corresponding ratio for the average income group.

Finland:

Calculations of the retirement ratios for different socioeconomic groups indicate that the pension system has, to some degree, the capacity to diminish socioeconomic differences in retirement. The ratio of time spent in retirement to time spent working is virtually the same in the different socioeconomic groups – whether this assessment is based on overall average retirement periods¹, taking into account old-age retirement only, or together with those arising from pensions taken early. The retirement ratio figures clearly show the way in which the longer lifespans of women are reflected in the pension system, as set out in the table below, which is based on 2007 data:

¹ *The broader definition of the retirement period includes that arising from disability pensions and unemployment pensions, together with old-age pensions as such. (The data for 2007 includes unemployment pensions still payable in Finland; this category of benefit has now been abolished).*

Retirement ratio by socio economic group and gender, overall average retirement period taken into account

	Upper non-manual **	Lower non-manual **	Manual	Self-employed	All
Men	52%	53%	50%	48%	52%
Women	67%	66%	75%	67%	70%

Retirement ratio by socio economic group and gender, old-age retirement period only taken into account

	Upper non-manual **	Lower non-manual **	Manual	Self-employed	All
Men	48 %	46 %	38 %	41 %	43 %
Women	67 %	63 %	59 %	62 %	61 %

*****“upper” and “lower” refer to socioeconomic status***

The Netherlands:

A recent study showed that another important facet is that of wider patterns of savings in various asset categories such as savings accounts, security investments, housing wealth and public and occupational pensions; these are examined through the use of administrative data. Account is taken of "automatic" saving in public and occupational pensions, by using pension funds' best predictions of accrued entitlements at age 65, assuming continuation of status quo rules. Such administrative data measures assets more precisely than would be possible using survey data alone. It was found that broad wealth, notably as accumulated through public and occupational pensions, suffices for a majority of respondents to meet and exceed their own minimal and preferred expenditures.

It was also found that a static benchmark for savings sufficiency does fails to do justice to the extent to which individuals may adjust their expenditure goals in response to a changing environment. During the latest period of recession the Dutch have experienced relatively large, unanticipated wealth shocks.

On average, the projected average level of pensions in retirement, based on specific pension wealth and/or other types of wealth, fell by around 20% between 2008 and 2015. Had expenditure targets remained unchanged, this would have doubled the percentage of those whose pensions alone would not be sufficient to meet their minimum consumption requirements from 25% to 50%. This evidence indicates that shocks to wealth not only affect consumption today, but are incorporated into individuals' future expectations.

What is the cost of total pension provision?

- Despite the importance of occupational pensions, there exist few comparative studies of *total* pension provision and their costs. One recent study (Vidlund et al, 2016) which does seek to shed more light on this question suggests that, in order to grasp and analyse the fundamental purpose of pensions - that is, to alleviate poverty and to secure income - more attention should indeed be paid to the multidimensional pension landscape in cross-national comparisons. Otherwise, there is a risk of losing sight of essential parts of the pension puzzle.

The study by Vidlund et al for the Finnish Centre for Pensions compares pension contribution levels in nine European countries: Austria, Denmark, Finland, France, Germany, the Netherlands, Norway, Sweden and Switzerland. The findings include:

- The level of total pension contribution is roughly similar in all nine countries. The highest contribution levels were found in Denmark and Austria, at 16 and 15 per cent of GDP respectively, or 30 per cent of the level of employee compensation.

It is interesting to note that the pension systems are constructed quite differently in these two countries. The Danish system consists of a multi-pillar pension provision, whereas the Austrian system relies essentially on statutory pension provision alone. This suggests that there is no universally optimal division between the different tiers of the pension provision. Instead, the key is to reach a consensus based on negotiations within each country.

- The two countries with the lowest levels of pension contributions, in general, are Sweden and Germany, although this assessment varies somewhat depending on the indicator used. The contribution level amounted to around 13 per cent of GDP in both countries. The average level across the nine countries is around 14 per cent of GDP, corresponding to 28 per cent of employee compensation.

A decomposition of contributions reveals that employers' contributions tend to represent the greatest share of contributions, with the exception of Denmark where the share of tax revenues is dominant. That share is also significant in Austria and Germany.

Overall, the greater share of occupational pension provision is financed by the employer, in Sweden completely so. Employees contribute (relatively) the most in the Netherlands and Switzerland and the least in Denmark and Finland. As a rule, the contributions for both the statutory and the occupational pension schemes

may be treated as deductible allowances for calculating income tax, and thus the bill for both the employers and the employees is, in reality, somewhat less burdensome than it may appear.

- In all countries, tax revenues are used in pension financing, and, in some countries, the share of general tax revenues in the financing of statutory pension schemes is considerable. For instance, in Denmark the statutory pension scheme is, in practice, financed fully through tax revenues. The share of tax revenue in the total contribution income is also significant (around 30 per cent) in Austria and Germany

Replacement Ratios

- *Theoretical replacement ratios* (TRR) provide an important indicator of the extent to which social protection systems protect against the loss of income in retirement due to career breaks. It is the lens through which the 2015 PAR examines this issue, which is becoming increasingly important as the number of contributory years needed for a full pension is being extended in many Member States.
- *Retirement income replacement ratios* have been used largely for two purposes: as an indicator of welfare loss associated with retirement, and as a summary index of the private asset accumulation required to sustain consumption during retirement. When discussing adequacy in the perspectives of various actors, they are likely, therefore, to be seen in different lights.

As an indicator of welfare loss, adequacy is susceptible to *quantification* in an objective way. From the point of view of an individual scheme member, however, it is an important question as to whether the lifetime quantum of pension benefits matches the quantum of contributions made by or on behalf of that individual. This is an aspect that should shed light on the relationship between adequacy and sustainability and to which the ongoing work on the *internal rate of return* (IRR) is highly relevant.

In addition, the 2015 edition of the OECD Pensions Outlook examines the impact of shorter, more fragmented careers on the pension entitlements from mandatory schemes, taking into account all pension components including pension credits and other redistributive mechanisms in pension systems as a whole.

An analysis focused on delayed labour market entry and career interruptions - related specifically to childcare and unemployment - showed a reduction of slightly more than 1% in old-age pension benefit for every year without a job, on average. In the absence of any redistribution, the corresponding pension benefit would be expected to fall by 2-2.5% per year of lost membership, and it is concluded that pension systems play a key role in offsetting the potential, resulting losses in retirement income. Pension credits and other redistributive components of pension systems, while not being able to fully offset the contribution gaps related to delayed or interrupted employment, are nevertheless effective instruments to boost earnings-related pensions. The outcomes vary widely across countries and depend on the periods covered, the pensionable earnings bases used during these periods, and the interaction with other redistributive elements in pension systems. The results also highlight that pension systems are not, typically, designed to offset the full range of income shocks which affect individual life courses. The increasing diversity of work paths requires an approach to the challenges faced by individuals through more

comprehensive, integrated and effective labour market, education, family and pension policies.

- An analysis of the way in which Retirement Income Replacement Ratios^{2*} reflect the range of theoretical life-course scenarios suggests that systems achieve a reasonably high level of consistency of outcomes.

However it appears in at least some circumstances that actual pension awards, taking into account the actual contributory service, pensionable age, etc , vary significantly from the "idealized" TRRs.. While, for some countries, the actual replacement ratio (RR) figures are found to be close to the "theoretical" ones, e.g., Sweden, for others the "actual" figures are much lower than the "theoretical", e.g., Bulgaria.

It seems that the modelled profiles of vulnerable groups may differ significantly from those assumed for the purposes of calculating the Theoretical RRs.

- Care must be taken with the interpretation of the replacement ratio statistics. In particular, it is the case that in some countries, the salaries of a significant proportion of those close to retirement are considerably lower than earlier in their careers, with the result that the apparent replacement ratio when measured against final salary can materially exceed 100%. .

Specific information provided by country:

Poland:

Analysis of actual replacement rates indicate that for a significant percentage of the population, this statistic has a value of over 150%, reflecting the fact that their last salaries were low compared to their overall career experience. Thus this figure cannot be taken directly to indicate generosity of pension provision, and should not be the only measure of the adequacy of a pension system.

Greece:

An approach to measuring the extent of *actuarial fairness* in relation to the principle components of individuals' pensions has been through the "*group funding ratio*" Index^{3**}. The writer's calculations showed that average replacement ratios relating to

² treated as indicators of welfare loss

³ Group Funding Ratio (GFR) is calculated as the current total value of all future pension payments (present value) of the average pension of the group divided by the value of all past contributions on average (accumulated value) as at retirement age. The GFR indicator is calculated for groups having similar characteristics.

actual careers are generally no higher than 60%, and in most cases below that level. An exceptional group, however, is that of the self-employed participating in ETAA (the unified fund for such independent professionals as doctors, lawyers and engineers), for whom the replacement ratio is typically much higher than 60%. In addition, calculations to assess actuarial fairness among the main Greek funds, on the basis of Group Funding Ratio, suggest that, even after the reforms, significant overfunding continues.

Belgium:

Years credited, in respect of unemployment, disability or other factors, are taken into account for the pension calculation. To that extent, employees who may not have full careers due to care responsibilities, unemployment, or disability are not, in principle, penalised by the lack of years needed for a full pension as at normal retirement age. The target Replacement Ratio for the employees who work in the Private Sector is 60% on the basis of a full career of 45 working years. However, relatively few employees are in fact able to complete 45 years of contributory service before normal retirement age. In addition, the typical pattern of salaries, which are usually low at the beginning of the career, and while evolving at a rate higher than inflation are capped for pension purposes, results in pension awards to the vast majority of Belgian private sector employees representing significantly less than 60% of their last salaries.

Some support in case of inadequate pension amounts is available through GRAPA, which is a (means-tested) social assistance scheme available to all retirees. In practice, this is mainly accessed by retirees from the categories of wage earners and the self-employed, as their pension benefits tend on average to be lower than those of civil servants. A guaranteed minimum pension is payable on condition that the beneficiary has completed 30 years of contributory membership; otherwise the scheme pension payable is calculated by a formula which makes reference to the fraction which the contributory period represents of the full career period (45 years). If the calculated pension amount is less than the minimum specified under GRAPA, her or his retirement pension qualifies for supplementation.

Finland:

The earnings-related pension system sets no formal target replacement rate. Instead, pensions accrue throughout working life, and the calculation of the level of starting pensions reflects the development of life expectation statistics

It is anticipated that the overall average pension/wage ratio will decline in the future, because the real growth in pensions will be slower than the real growth in wages. It is unclear at this stage, however, whether the effect of this development will be more

significant than that of potentially insufficient indexation of national and guaranteed pensions.

Hungary:

An analysis has been carried out of new male old age pensioners, assessed in relation to their (gross) salary levels, and aiming to differentiate and characterize career patterns in relation to relative income wealth and stability. The analysis also took account of geographical distribution, finding that: pensioners receiving benefits at the highest rates tend to be located in the capital, Budapest, whereas in most counties pensions are typically paid at lower rates.

Theoretical Replacement Ratios and vulnerable groups

The Italian INAIL⁴ data permits analysis of the experience of workers receiving employment injury pensions (Marcelloni, 2017).

This was carried out by way of calculations of TRRs, assessing the pension income for a hypothetical worker in the private (industrial) sector who retired in 2013, relative to her/his earnings at the moment of retirement. The data related to 29 549 individuals qualifying during 2013 to receive annuities commencing at December 31, 2013. The career paths assessed were based on assumed contributions for 40 years up to age 65 or to SPA⁵, as appropriate.

The emerging results showed that the social security system in Italy seems to work well, providing levels of benefit to those receiving work injury pensions comparable with those for normal pensioners, hence providing a reasonable level of protection against this aspect of vulnerability. Disability benefits of this type have a significant impact on the overall average TRRs, although the differential effect of taxes is significant. The INAIL benefits are generally exempt from taxation, and TRRs calculated on the basis of pensions and salaries net of tax exceed those for the same groups calculated on a gross basis, in some cases exceeding 100%. For females, however, in the scenario of increased SPA, there is a notable disparity. This is because women have shorter careers (the impact of which is heightened in the increased SPA case), and women's salaries are lower than those of men.

Alternative Indicators

⁴ INAIL is the National Institute for insurance against accidents at work.

⁵ SPA (for private sector employees) is taken to be 66 for males and 62 for females

- The Task Force proposes a number of measures which may improve the assessment of pension adequacy:

1. The weighted average replacement ratio:

This indicator is constructed taking into account the total of a contributor's annual salary amounts during the overall contribution period, each year's figure being adjusted by a factor representing inflation (cost of living increase) up to retirement, and the average found by dividing by the number of contribution years. The *weighted average replacement ratio* is then the ratio of the annual rate of pension as from normal retirement age divided by the average weighted salary. This ratio can be calculated for different salary development scenarios or different groups of beneficiaries.

2. *The population-related average replacement ratio:*

This indicator is calculated as the average pension of the pensioner population as a whole, divided by the average salary of the population contributing. It should be noted, however, that this average is influenced by a number of factors that may differ significantly between generations or countries, Specific instances in which the interpretation of this indicator requires special care relate to:

- the proportion of part time workers and the average fraction which their work represents in relation to full time work;
- the imposition of a salary ceiling for the purposes of calculating social security contributions and benefits; in this case care is needed to ensure that the indicator is calculated on the basis of salaries limited to the contribution ceiling.

The calculation of the average pension should be based on normal personal pensions only, excluding (reduced) contingent pensions payable, in particular, to widows, widowers, spouses.

3. The *average population salary replacement ratio*: this indicator is very similar in principle to that described above (the Population Related Average Replacement ratio), but is calculated as the ratio of the average individual pension to the average salary/earnings amongst the working population as a whole. This indicator assesses the adequacy of a pension, not in relation to the individual beneficiary in isolation, but taking into account the earnings level of the current active population; it has the advantage that it can be used to assess both the

existing (or non-existing) intergenerational balance and any 'inter-category balance'..

On the basis of 2015 OECD data:

Projected⁶ replacement rates⁶ may be calculated taking into account the latest pension changes in each country, on alternative bases as follows:

- *gross/net replacement rate*, calculated as pension at retirement as a proportion of last salary (each element gross or net of tax, respectively);
- *relative pension level*: calculated as pension at retirement as a proportion of average salary across the active population. As noted earlier, the net replacement rate for those having low incomes tends to be much higher than the relative pension level while the opposite is the case for those having high incomes.

Intergenerational Fairness

- Current pressures from several directions have prompted pension experts to examine the increasing strains on the "intergenerational contract": These include the arrival of the large post-war "Baby Boomer" cohort at retirement age, the associated (and dramatic) improvement in the pension income of many, relative to the restricted income of those of working age; and the severe fiscal stringency imposed on non-pensioner benefits since 2010, at a time when pensioners' entitlements have been largely protected.
- Intergenerational fairness has been the subject of major and ongoing debate amongst pension professionals. Among others, the specific issues discussed include the role of responsible investment in maintaining intergenerational fairness, together with the adjustment of the traditional approach to taxation in pension systems to better reflect inter-generational transfers.

Specific information provided by country:

The Internal Rate of Return, IRR, is judged to be a particularly useful indicator to assess intergenerational fairness.

⁶ This data allows the calculation of RRs for a hypothetical employee entering the labour market in 2014 at the age of 20 and retiring after a full career.

A paper with this objective (Bogataj, 2016) presents the use of the IRR as a measure of the adequacy of pension benefits, and proposes as a criterion for adequacy that. In this paper is proposed that the real internal rate of return of the pension system should not fall below zero. As the author points out, this is especially important in maintaining a favourable public perception regarding public pension systems, specifically that pensions represent a safe investment, and that the pension system has the capacity to protect the value of pension contributions.

Finland:

Lifetime pension contributions and benefits under the private sector earnings-related pension system have been studied by analysing the outcomes for cohorts born between 1940 and 2000, disaggregated by birth year and gender. The study (Risku, 2016) is based on a combination of historical statistics (years 1962 to 2013) and the results of long-term projections carried out by the Finnish Centre for Pensions.

The study finds that:

- The real internal rate of return on the earnings-related pension contribution of those born in 1940 is estimated to be 6.5 per cent. The figures for generations older than this are even higher.
- Comparison of the internal rates of return for calculated for specific, selected sub-groups shows estimates for women to be slightly below 8 per cent and for men slightly below 6 per cent.
- The internal rate of return will decline evenly for successive generations up to those born in the 1970s and then stabilise at 2.3 per cent. The most important reason for the declining internal rate of return is the rising level of the earnings-related pension contribution rate. The gender gap in the internal rate of return is due to women's higher life expectancy and the fact that most pensions for surviving spouses are paid to women
- The earnings-related pensions of the cohorts born in the 1940s have been set at levels that are relatively generous as compared to those of later generations
- The birth cohorts born after the 1940s will receive a more-or-less equitable level of pension relative to their earnings. The lifetime pension contributions relative to the earnings, on the other hand, will increase for the later generations, up to those born in the 1990s.
- The lifetime net present values offered by the pension system will be positive for those born at the beginning of the 1950s and earlier. For younger generations, the net present values may be negative.

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