

## **Paper for Copenhagen meeting of AAE**

### **Adequacy Task Force, Social Security Sub Committee**

- As mentioned in the 2015 Pension Adequacy Report (PAR), despite the fact that, in almost all Member States, older people have been better protected against the social impact of the recession than other age groups, several Member States still need to tackle the issues relating to significant numbers either living in, or at risk of falling into, poverty.
- A particular issue which is identified is where career patterns fail to match rising pensionable ages or meet contribution period requirements. This is the case for those at the margins of the labour market or those who may not have full careers due to care responsibilities, unemployment, disability - *the so called "vulnerable groups"* - and now in particular young people, many of whom are unemployed.
- 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" being the risk of potential poverty in the future. 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 absence of 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 doubts regarding public pension schemes. Investigations thus took place in order to find out  
If / or how people are able to cope with the possible cutbacks in the generosity of pensions.  
How the crisis affected preparedness in the aggregate  
Whether it changed which groups are vulnerable

#### *Specific information provided by country:*

In the Netherlands:

The self-employed and the divorced stand out as vulnerable groups with relatively modest pension entitlements. The self-employed is currently not insured in the second pillar (and often not well 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 self-employed increased by over 25% over the last decade.

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

In Greece

According to a recent MetLife research <sup>(1)</sup> Greeks are very less prepared for their retirement period when compared with other Europeans. In specific among all employees who were interviewed the 29% has not even started to save for retirement, 40% is not aware how to plan about the retirement period and only 24% feels that is fully on the right pattern in being prepared for retirement.

- Life expectancies were examined across socioeconomic groups and it came out that there are differences which may increase 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 used:
  1. The retirement ratio; It measures the number of years spent working for each expected year in retirement given life expectancy at retirement.
  2. The pension wealth ratio; It measures the expected present value of total pension income relative to the amount of retirement assets accumulated.
  3. The purchasing power ratio; it measures the purchasing power that individuals can expect to have relative to their last salary at retirement.

*Specific information provided by country:*

In Hungary

Retirement ratio calculations based on 2015 data with a distinction between males and females showed that:

The Retirement ratio for low income group males is 1.07 lower than the one for average income group while the average pension benefit is around 62.5% of the corresponding one of 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 one of the average income group

In the Netherlands

A recent study showed that another important facet is the use of administrative data on various asset categories such as savings, investments, housing wealth and public and occupational pensions. Taking into account "automatic" saving in public and occupational pensions, by using pension funds' best predictions of accrued

entitlements at age 65 under continuation of the status quo. Such administrative data measure assets more precisely than would be possible using survey data alone. It was shown that wealth, especially 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 showed that a static benchmark for savings sufficiency does not do justice to the response of expenditure goals to a changing environment. During the great recession the Dutch experienced large, unanticipated wealth shocks. On average the predicted annuity in retirement, based on pension and/or other types of wealth, fell by around 20% between 2008 and 2015. Had expenditure targets remained unchanged, this would have doubled the fraction for those where pensions alone are not sufficient to meet their minimum consumption requirement from 25% to 50%. Evidence was provided that shocks to wealth do not only affect consumption today, but are incorporated into individuals' projections of future

#### **What is the cost of total pension provision?**

- Despite the importance of occupational pensions, there exist few studies of total pension provision and their costs. According to a recent study that sheds more light on this topic, to grasp and analyse the initial idea of pensions, that is, to alleviate poverty and to secure income, more attention should be paid to the multidimensional pension landscape in cross-national comparisons. Otherwise, there is a risk of losing essential parts of the pension puzzle.

*The comparison of the pension contribution levels in nine European countries: Austria, Denmark, Finland, France, Germany, the Netherlands, Norway, Sweden and Switzerland showed that:*

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

Interestingly enough, 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 is basically totally constructed on statutory pension provision. This suggests that no optimal size of the different tiers of the pension provision exist. Instead, it is based on negotiations and consensus within a country.

The two countries with the lowest pension contributions are Sweden and Germany, even though their position varies somewhat depending on the indicator. The contribution level amounted close to 13 per cent of GDP in both countries. The average level is around 14 per cent of GDP, corresponding to 28 per cent of the 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. The tax revenues' share of the premium income is significant also in Austria and Germany. Employees contribute the most in the Netherlands and Switzerland and the least in Denmark and Finland

Overall, occupational pension provision is mainly financed by the employer, in Sweden completely so. Employees contribute 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 at least in part be deducted in taxation. Thus the bill for the employers and the employees is, in reality, somewhat less burdensome. 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 tax revenues' share of the contribution income is significant (approx. 30 per cent) also in Austria and Germany

## **Replacement Ratios**

- As it is clearly written in the 2015 PAR it is important to study with Theoretical Replacement Ratios (TRR) to what extent social protection systems protect the current loss of income due to career breaks since this issue 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. So it matters from whose perspective they are seen when discussing adequacy. As an indicator of welfare loss, adequacy is susceptible to *quantification* in an objective way.  
From the point of view of an individual member though, 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 the individual. This is an aspect that should shed light on the relationship between adequacy and sustainability and on which the work on IRR is expected to answer.
- 2015 Pensions Outlook by the OECD assesses as well 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.  
An analysis focused on delayed labour market entry and career interruptions related to childcare and unemployment showed that with slightly more than a 1% drop in old-age pension benefit for every year without a job on average, pension systems play a

key role in offsetting the potential losses in retirement income due to delayed or interrupted employment. In the absence of any redistribution, the pension benefit would fall by 2-2.5%. 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 therefore effective instrument to boost earnings-related pensions. The effects vary widely across countries and depend on the periods covered, the pensionable earnings used during these periods, and the provision of other redistributive tools in pension systems. The results also highlight that pension systems are not typically designed to offset all kinds of income shocks which affect individual life courses. The increasing diversity of work paths requires a more comprehensive and integrated approach to the challenges faced by individuals through effective labour market, education, family and pension policies.

- Retirement Income Replacement Ratios\* evolution under theoretical scenarios is quite smooth.

However if we take into account the actual contributory service, pensionable age, etc then, the TRRs might differ than the ones computed under actual data. For some countries, the "actual" Replacement Ratios (RR) figures are closed to the "theoretical" ones, e.g., Sweden, but for others the "actual" figures are much lower than the "theoretical", e.g., Bulgaria.

More importantly, the actual profile of vulnerable groups could be much more different than the one assumed for the purposes of calculating the Theoretical RRs.

- As in some countries salaries of people close to retirement are materially lower than before the replacement ratio can exceed 100% materially when state pension is measured against final salary.

*Specific information provided by country:*

In Poland

Real replacement rates were studied and it turned out that a significant percentage of the population had real replacement rates of over 150%, not because the pension benefits were so generous, but because their last salaries were low compared to the overall career. So simple real replacement rates should be analysed very carefully and should not be the only measure of the adequacy of a pension system.

\* when they are seen as indicators of welfare loss

In Greece

Calculations on the basis of 2014 data were performed.

The writer's calculations showed that average Replacement ratios concerning real careers are on average lower than 60% with some exceptions where RR is around 60%.

As also noticed only the RRs for the self-employed of ETAA (the unified fund for independent professionals as doctors, lawyers, engineers) is much higher than 60%. However when measuring Actuarial Fairness among the main Greek Funds on the basis of Group Funding Ratio, it seems that some even after the reforms are still overfunded.

In Belgium

Years of unemployment, disability or time credit are taken into account for the pension calculation. To that extent the employees who may not have full careers due to care responsibilities, unemployment, disability do not face the lack of years needed for a full pension as at normal retirement age.

The target Replacement Ratio for the employees who work for the Private Sector is 60% given that the number of working years is 45. The number of years though needed for a full pension, 45, is most times more than the number of years till the Normal retirement age.

Salaries are usually low at the beginning of the career and then evolve at a rate higher than inflation; in addition, pensionable salary is capped.

So the vast majority of Belgian private sector employees get a pension lower than 60% of their last salary.

There is a social assistance scheme which is available to all retirees; GRAPA. In practice, mostly retirees from the wage earners and self-employed schemes benefit from this as their pension benefit is in average lower than that of civil servants. i.e. It is in essence this is a means-tested assistance scheme.

On the career condition for the minimum pension it is considered the 30 years as the minimum career duration i.e. If someone cannot prove 30 years of career, then there is no application of the minimum pension. Otherwise, then he/she is acquired the right to the application of the minimum pension which is calculated based on his/ her earnings over his career and is compared with the guaranteed minimum pension times the number of years divided by 45\*. If the calculated pension amount is less than the GRAPA, the person will receive his pension amount as retirement benefit the supplement needed to reach the GRAPA amount. If the calculated pension amount is less than the GRAPA, then a supplement is provided to reach the GRAPA amount.

*\* 45 is the number of years required for a full career.*

In Finland

In earnings related pension system there is no formal target replacement rate. Instead, pensions accrue throughout working life, and the development of life-expectancy affects the level of starting pensions.

It is expected that pension/wage ratio will decline in the future, because the real growth in pensions will be slower than the real growth in wages. It should be clarified though which would be more significant: the reduction of general pension levels or the insufficient indexation of national and guarantee pensions.

In Hungary

An analysis of typical career paths according to gross salary of new male old age pensioners took place aiming to identify individual career patterns and characterize according to relative position and stability. In this analysis geographical distribution was also considered, showing that: highest number of cases of highest pensions occurs in the capital, Budapest, and that in most counties the lower pensions have higher rate

- *Theoretical Replacement Ratios and vulnerable groups*

The Italian experience on injured workers based on the INAIL\* data:

Calculations of TRRs took place, describing the pension income for a hypothetical private worker of industrial sector who retired in 2013, relative to his earnings at the moment of retirement. The focus placed on 29.549 2013's annuitants ageing 65 a) Base Case I, 40 years up to age 65 and those ones having the SPA\*\* b) Base Case II 40 years up to age 65, Increased SPA from age 25 to SPA; both at the date of December 31, 2013.

The coming out results showed that the social security system in Italy seems to work well without making differences between injured and not injured workers despite the fact that an injured worker belongs to a vulnerable group. The inability benefits have a significant impact on the TRRs: it is "less" evident in terms of Gross values, but it becomes more important if looking at the Net values, where, sometimes, it even exceeds 100%. This is clearly the effect of the exempt from taxation of the INAIL benefits. Only for females, under the Increased SPA case, there is a notable disparity. This is because women have shorter careers (especially in the increased SPA TRRs case) and women's salaries are lower than that of men.

\* INAIL: National Institute for insurance against accidents at work

\* \*\*SPA considered (private sector): 66 for males and 62 for females

- As better methods in measuring adequacy there are proposed:
  1. The Weighted average replacement ratio: According to this method the annual salary during total contribution period is adjusted by inflation (cost of living increase) up to retirement; all these weighted salaries are summed up. To get the average this sum is then divided by the number of contribution years. The weighted average replacement ratio is the ratio of pension at normal retirement age divided by the average weighted salary. This individual ratio can then be calculated for different salary development scenarios or different individuals.
  2. The population related average replacement ratio: According to this method the average pension of pensioner population divided by average salary of population contributing to the state pension system. It should be noted though that this average is influenced by some factors that may differ between generations or countries which makes a comparison difficult. In specific:
    - Portion of part time workers and their average part time percentage
    - A social security contribution ceiling which means that contributions and pensions are only paid for salaries below this contribution ceiling; i.e. the salaries included in the average should also be limited to the contribution ceiling.
    - The average pension should only include personal pensions, not reduced pensions to related persons (widows, widowers, spouses).
  3. The average population salary replacement ratio: This method, very similar to the above (the population related average replacement ratio), analyses each individual's pension versus the average working population's salary. The adequacy of the pension is no longer linked to the individual itself, but takes into account the situation of the current active population, and shows both the intergenerational balance and 'inter-category balance' existing (or non-existing) .

*On the basis of 2015 OECD data:*

Two different future projected\* replacement rates are calculated taking into account the latest pension changes in each country.

- Gross/Net replacement rate: Pension at retirement vs last salary
- Relative Pension Level: Pension at retirement vs average active population's salaries

As it has been observed the Net replacement rate for the low incomes is much higher than the relative pension level while the opposite takes place for the high incomes.

*\* The RRs refer to an employee who entered in labour market in 2014 at the age of 20 and retired after a full career.*



## Intergenerational Fairness

- A number of immediate pressures prompted pension experts to examine the increasing strains on the intergenerational contract: The arrival of the large post-war Baby Boomer cohort in retirement age; the associated dramatic improvement in pension income relative to those of working age; and the severe fiscal stringency imposed on non-pensioner benefits since 2010 at a time when pensioner entitlements have been largely protected.
- Intergenerational fairness has been the subject of major and ongoing debate within pensions. Among others there are discussed: The role of responsible investment in maintaining intergenerational fairness as well as the adjustment of the traditional approach to pension tax for inter-generational risk.

### *Specific information provided by country:*

The Internal Rate of Return, IRR, was considered as a useful indicator to approach intergenerational fairness.

In the paper titled "The real internal rate of return in pension systems as a measure of adequacy of pension benefits" the internal rate of return is presented as a measure for adequacy of pension benefits. In this paper is proposed that the real internal rate of return of pension system should not fall below zero. As the author points out, this is especially important in keeping the public perception regarding public pension system: "pensions are safe investment and pension system is protecting value of pension contributions."

In Finland:

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

According to the study results:

- 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 return of generations older than this is even higher.
- Women's rate of return will be slightly below 8 per cent and men's slightly below 6 per cent.
- The internal rate of return will decline evenly per generation 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 surviving spouse's pensions are paid to women*

- The earnings-related pensions of the cohorts born in the 1940s have been determined more generously compared to those of later generations
- The birth cohorts born after the 1940s will receive a more-or-less equal amount of pensions relative to their earnings. The lifetime pension contributions relative to the earnings, on the other hand, will increase up until the generations born in the 1990s.
- The net present value will be positive for those born at the beginning of the 1950s and earlier. For younger generations, the net present values will be negative.

## References

The 2015 Pension Adequacy Report: Current and future income adequacy in old age in the EU, European Commission, Directorate-General for Employment, Social Affairs and Inclusion Social Protection Committee

Pensions at a Glance 2015, OECD and G20 indicators

Analysis of typical career paths according to gross salary of new male old age pensioners in 2010, Császár, Gyula – Marosi, Judit: Central Administration of National Pension Insurance, Budapest 2012

Can the Dutch Meet their Own Retirement Expenditure Goals? Jochem de Bresser and Marike Knoef, Netspar Discussion papers, October 2014

Cohort and Gender Specific Measures of Lifetime Pension Benefits and Contributions in Finland, Ismo Risku, July 2016

Mortality Differences across Socioeconomic groups and their implications for pension outcomes, Working Party on Private Pensions, Directorate for Financial and Enterprise Affairs Insurance and Private Pensions Committee, 2016

Retirement Ratio Calculations according to Socio economic groups, Tibor Parniczky, April 2017

Theoretical Replacement Rates and Vulnerable groups: The Italian Experience on Injured Workers, Raffaello Marcelloni, May 2017

The real internal rate of return in pension systems as a measure of adequacy of pension benefits, David Bogataj, December 2016

The role of responsible investment in maintaining intergenerational fairness, Janice Turner, Intergenerational Fairness Bulletin, Institute and Faculty of Actuaries, May 2017

Trends and Projections in income Replacement during Retirement, James P. Smith, Journal of Labour Economics, 2003, vol21, no 4

Unlocking a state pension that is as fair as possible for all generations, Frank Field, Intergenerational Fairness Bulletin, Institute and Faculty of Actuaries, May 2017

Updating the Taxation of retirement savings, Tim Keogh, Intergenerational Fairness Bulletin, Institute and Faculty of Actuaries, May 2017

What is the cost of total pension provision and who pays the bill? Cross-national comparison of pension contributions, Mika Vidlund, Marja Kiviniemi, Antti Mielonen, Niko Vaananen Finnish Centre for Pensions, 2016

Specific Information quoted in the text:

*Information provided by country*

Anna Kwiecinska, Polskie Stowarzyszenie Aktuariuszy: Case study for Poland

Catherine Cencier, Institut des Actuairens en Belgique/Instituut van Actuarissen en Belgie (IA|BE): Case study for Belgium

Ismo Risku, Suomen Aktuaariyhdistys: Comments on Finnish pension system

Jeroen Van den Bosch, Het Koninklijk Actuarieel Genootschap, Dutch Experience in facing recession

Maitane Mancebo, Instituto de Actuarios Españoles, Future Expected Replacement Rates

Marianna Papamichail, Hellenic Actuarial Society: Case study for Greece

Tibor Parniczky, Magyar Aktuárius Társaság: Case study for Hungary.

Yves Brys, Institut des Actuairens en Belgique/Instituut van Actuarissen en Belgie (IA|BE), Case study for Belgium

*Proposed methods in measuring Adequacy, Stefan Oecking, Deutsche Aktuarvereinigung*

(1) Met Life Research has been published in the Greek Newspaper Ekathimerini on June 11 2017, <http://www.kathimerini.gr/913325/article/oikonomia/ellhnikh-oikonomia/kerdizei-edafos-h-omadikh-asfalish>