

# World Social Security Forum

31st ISSA General Assembly

Doha, 10 – 15 November 2013

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## **Proactive and preventive approaches in social security – Supporting sustainability**

Intergenerational equity: a condition for sustainable social security?

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## **Intergenerational equity: a condition for sustainable social security?**

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## **1. Introduction and scope**

This report summarizes work conducted by technical commissions on Statistical, Actuarial and Financial Studies and on Old-Age, Invalidity and Survivors Insurance on the project “Promoting a fair intergenerational balance”. The report presents findings from an analysis of country case studies prepared by social security institutions in Canada, Denmark, France, Saudi Arabia and Uruguay, as well as the International Actuarial Association contribution from Japan.

Countries that participated in this project represent various demographics and have chosen different approaches in providing old-age benefits to their citizens. As such, they often face different challenges. At the same time, the question of intergenerational balance is relevant to all project’s participants, as well as to a majority of countries around the world.

Pension systems tie generations together and create an intergenerational interdependency. In principle this social contract is a *perpetuum mobile* – the young and active forego some of their production surplus in order to cater for the old in the expectation that future generations will do the same when they themselves are old.

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The foundation of the social contract is social equity – a notion that all generations benefit and contribute to the contract at more or less the same rates, and in such a way that benefits and sacrifices match one another (with the possible amendment that the old may be allowed to share welfare gains in the overall economy). But as it is the case for any long-term contract, the intergenerational contract needs to be equitable in order to be sustainable. The sustainability of social contracts cannot be taken for granted if fairness between generations is not properly monitored and assessed.

In many countries around the world population is ageing, longevity and survival rates into old age are increasing rapidly, and fertility rates are decreasing. The average duration of the pension payout phase and the value of a given pension promise have been continually and substantially increasing during the second half of the 20th century. In other words, the “equity balance” shifts quite dramatically in favour of the old. If left unmitigated, pension costs will put a substantial strain on public finances. It could eventually limit the welfare development potentials for younger generations, thereby opening up intergenerational conflicts.

If a society does not have a formal pension system, caring for seniors occurs at the informal family and community level that mostly redistribute from younger to older. In that case intergenerational equity and the general well-being of the elderly become informal and highly dependent on family structures and their strength.

Section 2 of the report addresses how the intergenerational equity could be defined and measured. Section 3 summarizes policy implications, and section 4 presents conclusions of the project.

## 2. Intergenerational equities: definitions and measures

The definitions and measures of the intergenerational sustainability and equity vary by country, system design and goals, financing approach, etc.

Should workers pay the same contribution rate or receive the same benefits? Should pensioners retire at the same age, receive pension over the same number of years or should a ratio “time at work/time at pension” be stable over generations? Should the level of pensions be the same or poverty rates of elderly be the same (those two objectives are not necessarily contradictory)? Each country chooses a definition that is consistent with its own situation, history and cultural and behavioural traditions.

The interpretation of pension system equitability depends strongly on how its objectives are defined. The degree of **intended** intergenerational transfer also depends on these objectives and on the level of benefits prefunding. Pure pay-as-you-go system is based on the principle of a fair intergenerational transfer. On another extreme is a pure fully funded defined contribution (DC) system that does not only presume any transfer, but, in addition, removes transfers within one generation. The intergenerational fairness is violated when intergenerational transfer becomes **unintended**. Since almost no country in the world has a “pure” retirement income system, it is important in assessing intergenerational sustainability of the system to consider interaction between pillars with different objectives and different levels of **intended** intergenerational transfer.

In general, tax-financed first pillar pensions provide minimum benefit and are usually based on principles of intra- and intergenerational solidarity. Its objectives are often policy-driven and are aimed at poverty reduction. Such systems may be considered intergenerationally sustainable as long as a society perceives them as fair. Still, they are not exempted from

intergenerational conflicts. If a price tag is judged to be too high by a society, reforms may be needed. Some of the suggested indicators of the intergenerational equity for this type of programs are the size and stability of the elderly poverty level, and the evolution of the program's expenditures as a percentage of the gross domestic product (GDP).

Pay-as-you-go or partially-funded second pillar pension schemes are usually funded through employer and/or employee contribution, as well as investment earnings and possibly State subsidies. A clear relationship between contributions and benefits is a desirable feature of such systems, but it does not always exist. The evolution of external parameters such as a rate of economic growth, durations of contributions and payment periods, demographic dependency ratios, financial market returns, etc., frequently produces shifts in the intergenerational equilibrium of systems.

In some countries – e.g. Denmark, Sweden, and the Netherlands – second pillar pensions (or some parts of the second pillar) are set up as fully funded supplementary pension schemes. This can be done either through insurance companies (Denmark) or through pension funds (Netherlands). In the former cases the system is designed as the defined contributions, and there is a direct link between contributions and benefits. As a result, intergenerational transfers generally do not occur. In the latter case, the system is designed as defined benefits and the links between contributions and benefits are less clear and certainly do not exist on the individual level. As such, intergenerational transfers may be embedded in scheme's design.

In some instances, goals of the programme may be judged more important than the intergenerational equity and the intergenerational balance can be distorted intentionally. Such situations are described in both Canadian and French studies. In both countries, at the inception of earnings-related pay-as-you-go schemes, one of the design principles was that the first generations of pensioners were to be provided with meaningful benefits, e.g. first generations of beneficiaries enjoyed a shorter eligibility period for the full benefit. Such provisions result in a scheme being “more profitable” for the older generations than for the younger ones. The main question is, does the system have a build-up mechanism that facilitates the “return to normal” when the system matures? If such mechanism is not present, or the problem is not addressed, then the system may become intergenerationally unsustainable over the long term.

Various mutually complementary measures may be used to evaluate intergenerational equity of the second pillar systems. Some of the measures discussed in country case studies are listed below:

- **Ratio of present value of benefits to present value of contributions over the life-time.** This measure is called the recuperation rate in France, and benefit/contribution ratio in Japan. The downside of this measure is that it depends, in particular, on the choice of the discount rate to determine present values.
- The recuperation period is **the ratio of present value of total contributions to annual value of the pension.** Based on the amount of the pension, it represents the time needed for an insured person to recuperate the full value of the contributions paid. Once again, this measure depends heavily on the choice of the discount rate.
- **The internal rate of return (IRR)** – The rate which balances out the present value of total contributions and the present value of total benefits – is analysed by France, Canada, and Uruguay. This rate represents the interest rate on contributions, taking pensions into account. The IRR of a cohort is not known till its last member passes away, but could be estimated based on actuarial assumptions.

- **Stability and affordability of the contribution rate** for future generations. Canada and Japan consider it to be an important indicator of the intergenerational sustainability.
- **Full solvency** – Comparing the point in time value of the liabilities calculated using a market rate yield curve and a realistic set of longevity data and the value of available assets.

The listed measures are not exhaustive. They are also not perfect, but each of them enables policymakers to address different aspects of the intergenerational equity puzzle.

The third pillar pension arrangements are usually expected to be fully funded, indeed, in many countries they are required to be always fully funded. Even if the full funding of third pillar's programs implies that each cohort is paying for its own benefits, external environments can impact the value of benefits for different cohorts within the same arrangement. The economic and financial crisis of the 2008-2009 serves as a good example. For all participants of DC plans, account balances and, therefore, future benefits were eroded. However, the magnitude of this erosion was much higher and much more important for people nearing retirement. As a result, different cohorts contributing the same amount will receive different benefits. While there is no direct intergenerational transfer within a DC plan, the indirect transfer can occur if increasing longevity and insufficient market returns result in inadequate DC benefits. In this case, it could be expected that affected cohorts will rely more heavily on first pillars of the retirement income system.

The last observation highlights two aspects of the overall pension system design. Firstly, more often than not, the role of first pillar pensions is complex and reaches beyond that of providing a basic minimum pension. It also provides a sort of protection if other sources of pension income fail due to, for example, unanticipated longevity, investment losses, etc. Secondly, the different elements in a given pension system need to be examined in relation to each other – an adequate pillar 1 design may rely heavily on designs chosen for pillars 2 and 3 (and vice versa).

For defined benefit (DB) plans, external shocks as well as on-going factors such as a low interest rates environment and increasing longevity can lead to funding shortfalls and thus the necessity to cover those shortfalls (excess of accrued pension liabilities over the existing pension assets). In the short term, the question is how this shortfall burden could be shared between employer, current contributors and current beneficiaries so the intergenerational balance of a DB plan is not distorted. In the longer term, harder design decisions may be needed: how to recalibrate the accrual practice in order to strengthen financial sustainability and avoid unintended transfers between generations. This last very unpleasant question is extremely important as failing to address it may compromise system legitimacy and trust.

### 3. Policy implications

Based on country studies, this section summarizes either existing or contemplated policies aimed at restoring and maintaining the intergenerational equity.

#### Diversification

Some countries, such as Denmark, Canada and Uruguay, consider the addition of different financing approaches as well as different systems designs as a way to improve the financial situation and adequacy of systems and therefore the intergenerational equity. In both countries a multi pillar structure is used to diversify risk and to divide pension responsibilities between the state, employers/employees and individual households.

In Canada, one of the steps aimed at restoring the intergenerational sustainability of the Canada Pension Plan (CPP) in mid-1990s was to replace its pay-as-you-go financing by partial funding. In Denmark, the Labour Market Supplementary Pensions Institution (*Arbejdsmarkedets Tillaegspension* (ATP)) scheme (part of pillar 1), as well as pillar 2 labour market pensions, are not only fully funded, but are also designed as hybrid defined contributions schemes with well-defined individual rights. It is argued that in such way the probability of the excessive intergenerational transfer for Danish system is minimized.

The diversification route taken by Uruguay in mid-1990s differed from the approach taken by many South American countries at that time. While, for example, Chile has closed its first pillar pension scheme and fully replaced it with second pillar individual accounts, Uruguay opted for a combination of a more modest than before first pillar along with a fully pre-funded defined contribution second pillar. By choosing this approach, Uruguay aimed at reducing intergenerational transfers while continuing to protect its citizens from poverty.

On the other hand, France prefers to maintain mainly pay-as-you-go schemes and chooses different ways to address intergenerational equity issues. **If people live longer they should work longer.**

The conclusion that was common for all project reports is that if people live longer they should work longer. Longer work period leads to a longer contribution period. At the same time, due to the increases in longevity, payment periods would not be necessarily reduced as compared to payment periods of older cohorts. Almost all measures discussed in the previous section are affected by longer work life.

Persuading people to stay longer in the labour market as well as to ask for their benefits at a later date is not a trivial undertaking. Several policies aimed at changing retirement behaviour were suggested by countries reports.

## Limiting early retirement incentives

Several countries are looking at the availability and generosity of existing early retirement programs. Good example of the recently reformed plan is a voluntary early retirement (VER) scheme in Denmark. As stated in the Danish report, rather than inviting workers almost regardless of their socio-economic status to retire early, the present version:

- strongly incentivizes longer work lives;
- dis-incentivizes receipt of early retirement benefits;
- singles out a separate VER contribution;
- has a much higher level of participant payment;
- requires a much longer contribution record;
- decreases benefit duration from seven to five years (it will decrease further to three years);
- increases the minimum age for activating private pensions in line with the minimum VER-age.

Another way to discourage early retirement is to introduce higher early retirement penalties, as it was recently done for the CPP. The penalties for early retirement were increased from 0.5 per cent per month to 0.6 per cent per month, resulting in the increase in reduction from 30 to 36 per cent (0,5/0,6x12x3) for retirement at age sixty (i.e. 8.5 per cent decrease in benefit). It should be noted, that while encouraging people to ask for benefits at a later date and making actuarial reduction factors neutral for the plan, the CPP opted-out for leaving the flexibility of choosing when to retire.

Early retirement schemes present a problem not only in aging countries, but also in young countries such as Saudi Arabia. While in 2002, only 11 per cent of retirees were taking early retirement, the number has grown to 30 per cent by 2011. As such, early retirement provisions are identified as a major threat to the financial and intergenerational health of Saudi Arabian pension scheme, and the flow of early retirements is closely monitored.

## **Provide sufficient reward for postponed retirement**

It should be to the advantage of pension programme participants to ask later for benefits. However, it is not always the case. The report from Saudi Arabia states that its scheme seems to lack sufficient motivation for postponed retirement. The similar conclusion was reached in the case of Uruguay. Even if the Uruguayan system provides additional higher accrual rate for additional years of service over 30 years, the performed analysis confirms that these incentives are insufficient.

Recently introduced measures in Canada include the increase in late retirement adjustment factors for the CPP resulting in an upward adjustment of 42 per cent to benefits taken at age 70 (compared to an adjustment of 30 per cent prior to changes), as well as the possibility to defer the first tier pension for up to five years and to receive an actuarially adjusted amount. Since these changes are quite recent, it remains to be seen if such rewards for longer work will be considered sufficient by future retirees.

## **Strengthen eligibility requirements for benefits**

The most widespread approach to increase working lives duration is to increase retirement age and/or to increase the duration of eligibility period necessary to receive a full and/or reduced pension. This route in its different variations is followed by Denmark, France, Canada and Uruguay, as well as many other countries around the world. However, while a majority of countries establish a fixed schedule of increases in retirement age, Denmark went a step further by introducing indexing the early retirement age and the pensionable age to longevity. In France, a decision to increase the eligibility age came after the attempts to rise effective retirement age through increasing the length of eligibility period in line with changes in life expectancy, was proven insufficient.

## **Increase labour force participation for older age groups**

As stated in the French report, policies enabling older people to find and retain employment, as well as policies encouraging employers to adapt workplaces to an aging workforce are essential in promoting longer work life.

**“Lump of labour” is a fallacy, but measures to increase employment rate of younger workers should be taken.**

It is often perceived that increasing the pensionable age and thereby keeping older workers longer in the labour force results in fewer jobs for youth – so called “lump of labour”.

While this is intuitively persuasive, there is no empirical evidence that this is correct. As stated in the Organisation for Economic Co-operation and Development (OECD), Economic Surveys, Denmark 2012: “[In Denmark a] voluntary early retirement scheme (VERP, ‘Efterlønnen’) was introduced in 1979 at a time of high unemployment, especially amongst youth. Its purpose was to change the composition of the work force, with the idea that it would allow older people to

retire in order for younger people to take their place. In fact, it led to a decrease in overall employment rates, as in many other OECD countries with similar policies”.

At the same time high youth unemployment rates may provoke intergenerational tensions if senior workers receive preferential hiring treatment. Therefore, policies aimed at increased labour force participation for older workers should be combined with policies that address youth employment rates.

## **Share financial burden among younger and older generations of participants**

When the pension system is financially unsustainable, the common dilemma is should contribution rate be increased and/or should benefits be reduced. This brings up a question of how a financial burden should be shared between current contributors and current pensioners. This question applies to schemes with different degrees of prefunding – from pay-as-you-go to fully funded schemes.

One of the ways, however, to achieve a degree of sharing is through conditional indexation mechanisms. For example, the second and third pillars Danish benefits are based on nominal promises and they are indexed only if the financial position of scheme allows it. Similar developments are started to be seen in respect to the third pillar pensions in Canada. It should be noted that the conditional indexation provisions are often accompanied by an increase in contributions.

Social security schemes of several countries have embedded automatic balancing mechanisms that affect contributors and beneficiaries. For example, in Japan, this is accomplished through modified indexation. In Canada, CPP contribution rate may be increased and benefits indexation may be frozen simultaneously, if required.

## **Remedy should not aggravate disease**

As an example, an important argument in favour of choosing the increase in retirement age versus reducing benefits as a mean of restoring intergenerational equity is given by the report from Uruguay. It is noted that reduction in the replacement rate may cause the level of benefit to become inadequate. As such, people may seek employment in the informal sector thus creating contribution evasion for the pay-as-you-go system, and exacerbating further financial problems.

## **Regularly monitor financial and intergenerational sustainability of pension systems**

In order to maintain intergenerational equity, pension schemes need to be regularly evaluated and assessed. The review process should be transparent, realistic assumptions should be used, and results should be timely and clearly communicated to stakeholders.

As stated in the “Survey on actuarial and financial reporting for social security schemes and its legal implications: summary of findings and conclusions” presented at the 17<sup>th</sup> International Conference of Social Security Actuaries and Statisticians: “A well-defined reporting process is a vital part of good governance for social security programmes. Actuarial and financial reports based on sound data and appropriate assumptions and methodology contribute to the financial sustainability of programmes. Information presented in such reports can send early warning signals if a programme is experiencing difficulties and help identify short-term and long-term trends that have a potential to make the programme unsustainable. In turn reporting can

trigger public and stakeholder consultations regarding programme sustainability. In such a way, proper reporting supports good governance principles of participation, predictability and dynamism.”

## 4. Conclusions

No matter if it is a fully funded or a pay-as-you-go plan, no matter if it is a DB or a DC solution, no matter if it is a national public scheme or a private pension plan, the fact is that increased longevity will continue to put pressure on the financing of pension plans. If this issue is left unaddressed, it will affect intergenerational balances and eventually it may compromise system legitimacy and trust. The management of the risks associated with living longer requires resolving sometimes conflicting objectives: protecting seniors from poverty, preserving the sustainability of social security systems and avoiding substantial unintended intergenerational transfers. To that extent, reducing poverty of both seniors and young families should be addressed in parallel.

Intergenerational equity and sustainability discussion cannot be limited to pension systems only. It needs to be considered within a broader framework encompassing spending on education and health, the national debt that will be left to future generations, quality of environment, as well as many other factors. This framework leads to a more general concept of the intergenerational justice meaning that coexisting generations are all treated equally by a society.