



**Presentation at the Pensions, benefits and social security colloquium,  
Getting the balance of state and private provisions right  
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Edinburgh, UK, 26 September 2011**

Good afternoon, thank you for inviting me here today to speak about the balance between state and private pension plans.

**Mandatory / voluntary aspects of retirement income systems (Slide 1)**

I would like to start by discussing the mandatory and voluntary aspects in a retirement income system. How much paternalism is needed in a retirement system? On one hand, forced savings could be inappropriate to apply to all individuals. On the other hand, voluntary savings are not always sufficient and timely. In many cases, retirement savings start too late in life. Then I would like to discuss how pension risks could be shared between stakeholders, and how Tier 2 could be used as a tool to hedge pension risks. Lastly, I will conclude with a discussion on how the highest achievement of modern society in the last century – people living much, much longer – affects retirement systems.

**What is society expecting from its retirement system? (Slide 2)**

Society needs a strong retirement system that offers a balanced mix of public and private, as well as voluntary and mandatory plans. The three key principles forming the foundation of a successful retirement system are intergenerational equity, solidarity and responsibility. Intergenerational equity is fairness between generations such that each generation pays fair contribution rates to sustain the plan over the long term. Intergenerational equity ensures that successive generations do not face significantly higher rates than current generations.

The principle of solidarity refers to society protecting all individuals by collectively ensuring a basic level of assistance or standard of living for low-income retirees. Solidarity should supplement, but not take the place of individual responsibility, for retirement income.

Retirement income security is a shared responsibility between the government, the society, the employers and the individuals. Individuals must save for retirement and employers should help their employees to do so. The role of the governments is to implement the required systems to support public and employer-sponsored pension plans and personal savings plans.

Based on these principles, the system should also provide incentives for workers to remain longer in the labour force, especially in the context of an aging population.



**Three-tiered retirement income system concept includes public and private schemes (Slide 3)**

In many countries a three-tiered retirement system consists of two mandatory (or quasi-mandatory) tiers and one voluntary. As the chart shows, the second tier offers a wide choice of retirement plans' designs, such as defined benefit plan, defined contribution plan, notional defined contribution plan, as well as a choice between public and private routes.

**In a majority of countries public pensions represent a significant part of mandatory pensions (Slide 4)**

Public Tier 1 schemes provide a safety net for the most vulnerable elderly people. Tier 1 also serves as a buffer that could mitigate fluctuations in higher tiers' retirement income caused by economic and/or demographic shocks.

The chart also illustrates the shift that occurs in Tier 2 pensions from public mandatory schemes to private mandatory or quasi-mandatory schemes (the ones that have near-universal coverage). These private Tier 2 schemes are mostly defined contribution schemes with some exceptions (e.g. Iceland, the Netherlands and Switzerland).

**Voluntary private pensions' importance depends on the structure of the mandatory pension package (Slide 5)**

Countries that enjoy significant replacement rate from mandatory schemes (both public and private) often do not have and, probably do not need, well developed system of private voluntary pension schemes. For example, the gross replacement rate for an average earner in France is close to 50%, and only 4% of the working age population is covered by voluntary private arrangements. On the other hand, in Canada, the gross replacement rate for an average earner is 39%. At the same time, the private pension plans (both DB and DC) cover approximately 34% of the working age population.

**Society's role in providing retirement income (Slide 6)**

So what is society's role in providing retirement income? It is reasonable to expect that society will provide a minimum level of retirement income to all, that some income redistribution will happen, and that a basic level of financial education on the need to plan and save for retirement will be provided. What it is not reasonable to expect, however, is that society should be fully responsible for ensuring a sizeable pension for everyone.

The ILO social security staircase concept illustrates that while people with lowest income (and possibly with no significant employment attachment) are expected to rely mostly on Tier 1 benefits, people with higher income need to contribute to earnings-related pension schemes and/or individual retirement savings schemes.

**Pension risks sharing (*Slide 7*)**

The next topic that I would like to address is pension risks sharing between schemes sponsors and individuals, as well as between retirement income system's tiers.

**Pension risks do not affect retirement income tiers the same way (*Slide 8*)**

There are many risks facing retirement income security, including those listed here. Some risks present more of a challenge to certain retirement income tiers than others. However, a robust and diverse retirement system should be able to mitigate these risks through various forms of hedging and other proactive measures.

**Failure of Tiers 2 and 3 to produce adequate retirement income puts pressure on Tier 1 (*Slide 9*)**

The failure of higher retirement income tiers to produce an adequate retirement income could result in higher benefits that would be paid from Tier 1. For example bad investment experience could diminish the defined contribution income, and as a result minimum pension would be paid to more individuals. In this case, even if Tier 1 is financed from general revenues, and, therefore, do not have a direct exposure to investment risk, it is affected by this risk through its interaction with higher retirement income system tiers.

To protect the society from increasing cost of Tier 1, the design of the retirement income system should aim at the increased coverage by earnings-related schemes, both public and private, at the diversification of designs, and at risks pooling.

**More pension systems share longevity risk among stakeholders (*Slide 10*)**

Longevity risk is quickly becoming one of the top pension risks. The mechanisms allowing for the sharing of the cost of people living longer between individuals and plan sponsors, be it an employer or a society, should be incorporated in system's design. Besides increasing of pensionable age, one of the ways to share longevity improvements is to automatically link pension benefits to life expectancy. It could be done through either introducing traditional or notional defined contribution plans, or through linking DB benefits or qualifying conditions to life expectancy.

When the majority of longevity risk is transferred to individuals, like in DC plans, it is important to provide individuals with tools that could mitigate this risk. An annuitization of DC account can be mandated either at retirement, or periodically during a period leading to retirement. The later solution also helps to mitigate other risks such as adverse investment returns just before annuitization, or increase in annuities prices due to falling interest rates.

**Different retirement systems transfer different amount of longevity risk to beneficiaries (*Slide 11*)**

This chart illustrates a percentage of pension entitlement linked to life expectancy in OECD countries. In this model, a pure defined contribution benchmark shows a link

of 100%, while a pure defined benefit scheme shows no link at all. The left-hand panel shows countries with a link to life-expectancy among the mandatory or quasi-mandatory parts of their retirement income systems. Fully 100% of the pension rights of an average earner are linked to life expectancy in three countries. But this is achieved through different means: an adjustment in the defined-benefit scheme in Portugal, a defined-contribution plan in Chile and a mix of notional accounts and two defined-contribution plans in Sweden.

**Retirement risk could be hedged by removing incentives to retire early**  
*(Slide 12)*

Increase in pensionable age could be an efficient way to encourage people to retire later only if it is combined with mechanisms that allow keeping older people in the labour market. The two sides of the equations are willingness of older workers to continue to work, and opportunities for them either to retain or to find an employment. The first could be handled partially through pension schemes design by rewarding working longer. The second depends on broader labour market and social policies.

**Uncertainty of future investment returns and market shocks could hurt pension levels** *(Slide 13)*

The impact of investment risk on retirement income depends on the degree of exposure to this risk. As it is shown, some countries, such as Chile and Australia, have a significant share of retirement income coming from DC plans, and as a result a higher degree of uncertainty associated with the level of retirement income. This illustrates the necessity to diversify funding approaches within retirement income systems.

**Tier 2: a tool to hedge risks** *(Slide 14)*

Next, I would like to talk about the role that Tier 2 could play in stabilizing retirement income systems.

**Funding of pension arrangements – do not put all your eggs in the same basket!**  
*(Slide 15)*

In the times of uncertain demographic, economic and financial outlooks the diversification of the funding approaches within the retirement income system is of paramount importance. Tier 2 is a flexible tool that allows moving the whole system to a bigger or smaller degree of pre-funding depending on country's economic, demographic, financial and cultural characteristics.

**Canada Pension Plan (Tier 2): Partial funding mitigates economic, demographic and investment impacts** *(Slide 16)*

Next two slides illustrate, using the Canada Pension Plan as an example, how pay-as-you-go, partial funding and full funding contribution rates are impacted by

different economic, demographic and investment environments. The current legislated contribution rate for the CPP is 9.9%, the 75 years average pay-as-you-go rate is 10.7%, and the average full funding rate is 6.2%.

Under the assumption of a prolonged slowdown of economy, the average increase in contribution rate over 75 years under pay-as-you-go financing is 0.9% as compared to 0.5% under partial funding. At the same time, the full funding contribution rate decreases by 0.4%.

However, full funded plans are much more affected by investment volatility. Under a market shock scenario (equity return of -20%), the contribution rate under full funding increases by 4.2% if the losses are amortized over the period of 15 years, or by 2.4% if the losses are amortized over 30 years. Both increases are for the duration of the amortization period. At the same time, under partial funding approach the increase in contributions is only 0.2% over the next 75 years.

**Canada Pension Plan (Tier 2): Partial funding mitigates economic, demographic and investment impacts (cont'd) (Slide 17)**

The decrease in total fertility rate to 1.4 per woman will not affect the full funding contribution rate. However, pay-as-you-go and partial funding rates will increase by 0.7% and 0.4%, respectively. Unsurprisingly, the increase in life expectancy will impact contribution rates under all three approaches.

The partial funding contribution rate displays lower volatility as compared to the pay-as-you-go rate for all presented examples. Furthermore, the partial funding contribution rate sensitivity to market shocks is much lower as compared to the full funding contribution rate.

**Retirement is expensive and will become even more expensive in the future (Slide 18)**

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**If we live longer, does it mean we should work longer? (Slide 19)**

No matter if it is a fully funded or a PayGo 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.

Modifying schemes designs to take into account the increases in longevity could be challenging due to a high degree of uncertainty regarding future mortality improvements. While stochastic techniques could be used to quantify such uncertainty, they are far from perfect and should be used with caution. Different mortality patterns for different countries, and differences in mortality within the same country, complicate the matter further.

**Risk management for private DB plans could be used to contain plans' cost**  
*(Slide 20)*

Increasing longevity, low interest rate environment, and investment markets volatility drive up the cost for private defined benefit plans. If the DB plans are to survive, modified designs sharing risks with participants as well as containing plans' costs are necessary. Plans sponsors should also pay increased attention to risks management and risks hedging.

**OECD: work longer, help the most vulnerable, and save more** *(Slide 21)*

The current uncertain times force countries to re-examine existing pension systems and to search for new solutions. Pension reviews, debates and reforms are occurring around the world. Very often proposed solutions are not politically easy to implement.

I would like to conclude with a quote from the executive summary of OECD's Pensions at a Glance 2011, with which I heartily agree.

“Taking the long view, a *diversified* pension system – mixing public and private provision, and pay-as-you-go and pre-funding as sources of finances – is not only the most realistic prospect but the best policy.”

Thank you for your attention and I will be happy to answer your questions.