



***International Social Security Association Technical Seminar on Pensions:
“Which retirement systems and which reforms for which pension?”***

**International Survey on Self-Adjustment Mechanisms and the long-term
sustainability of Canada Pension Plan**

**Jean – Claude Ménard, Chief Actuary, Office of the Chief Actuary, Office of the
Superintendent of Financial Institutions**

Paris, October 1, 2009

Good afternoon, thank you for inviting me to speak here today.

Agenda (Slide 2)

My presentation will consist of two parts. First I will present the results of the International Survey on Self-Adjustment Mechanisms for Social Security Systems and Employer Sponsored Pension Plans.

The theme of this seminar is pension reforms. As such, I thought it will be appropriate to address the long-term sustainability of Canada Pension Plan which is a result of the 1997 reform.

Objectives of the survey (Slide 3)

The survey was prepared and conducted by the Office of the Chief Actuary of Canada. It was sent to 38 countries and, 26 countries completed the survey.

I would like to take this opportunity to thank all people involved from the 26 participating countries for their time and efforts.

The objectives of this Survey are:

- 1st to gain a better understanding of the existing or planned self-adjustment mechanisms for social security systems and employer provided pension plans,
- The 2nd objective is to share the practices existing around the world, with ISSA member organizations, and
- The 3rd objective is to raise awareness of the importance of self-adjusting mechanisms in pension systems; mechanisms which help ensure the solvency and sustainability of such systems.

It should be understood that the Survey did not seek detailed information about self-adjustment mechanisms, but was more oriented towards getting the general picture.

Moreover, it was not in the framework of the Survey to assess the efficiencies of the self-adjustment mechanism of the participating countries.



OSFI
BSIF

255 Albert Street
Ottawa, Canada
K1A 0H2

www.osfi-bsif.gc.ca

Canada 

Scope of the survey (Slide 4)

In the survey we define self-adjustment mechanism, as a selection of predetermined measures set by law to be applied either immediately as required by a set of predetermined indicators, or on a pre-determined schedule in order to restore the solvency or the financial sustainability of pension systems.

I would like to draw your attention to the importance of the words “set by law”. By including into laws, procedures aimed toward evaluating and restoring the solvency and sustainability of social security systems, it improves the governance of such systems.

It also increases the transparency and accountability of governing bodies responsible for social security systems. On the other hand, “set by law” doesn’t mean non-involvement of politicians in a decision process. The mechanism could be activated if politicians fail to act (as in Canada), or political approval could be needed for implementation of measures (as in, for example, Denmark).

Several countries have adopted *ad hoc* legislated measures, which are expected to be applied within a limited time frame. Even if such mechanisms do not fall under our definition of self-adjustment mechanism, we still think that the existence of such measures is an important step toward improving governance and ensuring the solvency and sustainability of public pensions.

In the rest of the presentations we will refer to such mechanisms as “temporary”.

Structure of the survey (Slide 5)

Regarding social security systems, our survey focused on 3 main feature points: adjustments to contribution base, adjustments to benefit amount and, adjustments for pre-funded systems.

It also addressed the sharing mechanism between contributors and beneficiaries.

Finally survey explores self-adjustment mechanisms for employer provided pension plans.

Adjustment to contribution base “Length of contributory period” (Slide 6)

The first section covered by the survey addresses mechanisms adjusting contribution base. Adjustments to contribution base that lengthen contribution period could also result in the reduction in benefits.

France is the only responding country that automatically increases the length of the contributory period necessary to obtain a full benefit. The underlying principle of France’s adjustment is that the ratio of contributory period and benefit payment period has to be constant. Starting in 2012, government will regularly establish a five year schedule of increases taking into account changes in life expectancy, financial status of the plan and employment situation.

Two countries (Czech Republic and Italy) have temporary mechanisms that change qualifying conditions for pensions. Czech Republic increases the length of contributory period, while Italy is gradually introducing age plus service qualifying conditions.

Adjustment to contribution base “Increase in retirement age” (Slide 7)

Among the surveyed countries, the increase in retirement age is one of the most widespread measures included in pension social security legislation.

Denmark is the only surveyed country that has provisions that allow for the indexing of the retirement age in line with the increases in life expectancy. The life expectancy review is supposed to be done every five years (starting from 2015), and the change in retirement age will come in effect after a notice period of 15 years. The Danish Parliament must approve every increase in the retirement age.

Eight surveyed countries have adopted scheduled legislated increase in the retirement age. These mechanisms are temporary. The increases occur under a variety of schedules, and the ultimate retirement age is over age 65 for the majority of countries.

Adjustment to contribution base “Increase in contribution rate” (Slide 8)

In general, both *ad hoc* and legislated increases in the contribution rate are always unpopular political measures. Therefore, only four surveyed countries have contribution rate increase mechanisms in place.

The mechanisms in Japan and Cyprus are temporary ones. The German system includes a provision that the contribution rate should be adjusted if the liquidity reserve is outside the specified range. The adjustment could result in a decrease in contribution rate.

In Canada, for the Canada Pension Plan, for the rate to be increased, two conditions should hold. First, the most recent triennial actuarial report of the Plan should show that a minimum contribution rate necessary for the Plan to remain sustainable is higher than the legislated rate. Secondly, the federal and provincial ministers - who are the joint stewards of the Canada Pension Plan – do not agree on how such situation should be rectified. Only then the self – adjustment mechanism is activated, and one of its elements is a gradual increase in the contribution rate.

Adjustment to benefit amount “NDC Accounts” and “Other Adjustments” (Slide 9)

The adjustments to benefit amounts could either affect only new beneficiaries, or both new and existing beneficiaries. The adjustments to benefits may increase the contribution base, since people may wish to work longer to compensate for reductions in benefits they would have incurred by retiring at the same age as previous cohorts.

One of the ways to address increases in life expectancy is through conversion factors for Notional Defined Contributions systems. Four surveyed countries - Italy, Norway (from 2011), Poland and Sweden - have a Notional Defined Contributions component in their social security pension systems and revise conversion factors to account for changes in the life expectancy. It is interesting to note that as a result of 2007 reform, Italy also takes into account employment sector in determining life expectancy.

Five countries with defined benefits systems– Brazil, Finland, Germany, Japan and Portugal – adjust initial pension benefits in relation to demographic factors such as life expectancy, retirement age and population structure.

In Sweden, in addition to the adjustment through Notional Defined Contributions conversion factors, the solvency status of the system affects the growth rate of the Notional Defined Contributions accounts, and therefore the amount of the initial benefit.

Adjustment to benefit amount “Indexation of benefits in pay” (Slide 10)

The change in the indexation of the benefits in pay is one of the ways to share the burden of the adjustment between the contributors and current beneficiaries.

The majority of surveyed countries indicated that the social security pension benefits are adjusted to preserve the standard of living of retirees. However, only six surveyed countries have the indexation linked to the changes in solvency/sustainability status of systems. As the slide shows, there is a wide range of indexation adjustments based on evolution of demographic factors (Japan, Germany), solvency position of the system (Sweden), economy growth (Portugal) and fund returns (Denmark). In Canada the temporary freeze in indexation of benefits is the second element of the mechanism described earlier.

Partially and fully funded social security systems (Slide 11)

All surveyed countries that answered the question regarding fully or partially funded social security systems stated that since the solvency position of the system depends on the fund size, the performance of the fund could trigger the application of the self-adjustment mechanisms.

In Sweden, the performance of the buffer fund affects the solvency position of the system and as a result impacts indexations and Notional Defined Contributions accounts growth.

In Canada, as long as the legislated contribution rate is higher than the minimum contribution rate necessary for the Canada Pension Plan to remain sustainable, the negative performance of the fund does not necessary trigger the application of the self-adjustment mechanism. Currently, the legislated rate is higher than the minimum contribution rate.

Denmark’s situation merits special attention. In ATP scheme, both indexation of benefits and the higher rate of accumulation of individual accounts depend on fund performance. Thus, positive fund performance results in positive adjustments to benefits.

Sharing of the adjustment between contributors and beneficiaries (Slide 12)

The ability of the self-adjustment mechanisms to share the financial burden or gain between contributors and beneficiaries is a desirable feature aimed toward improving the intergenerational equity within the pension system. It is interesting to point out, that for countries mentioned on this slide (except for Portugal), the applications of self-adjustment mechanisms for contributors and beneficiaries are interrelated.

Employer sponsored defined benefit plans (*Slide 13*)

Self-adjustment mechanisms are not common for employer sponsored defined benefit pension plans since most pension legislations were introduced to protect the minimum right of the participants. However there are some interesting trends.

Some public sector pension plans in UK specify risks that should be shared between employees and employers and the ways how the burden will be distributed.

In Norway, AFT plan sponsored by employers and government is considering to introduce adjustments for life expectancy.

In Canada, there are plans that link post-retirement indexation to fund performance. For example, a plan could guarantee an indexation equal to one half of cost-of-living increase, and grant the remaining one half if the fund performance allows it.

Conclusions on the results of the survey (*Slide 14*)

Monitoring the financial sustainability of social security systems is a continuous process for many countries. During this process, solutions appropriate for specific countries' situations are being examined. The survey is aimed to present an overview of the existing mechanisms, hoping it will help countries around the world to improve governance, sustainability and health of social security systems and to stimulate the development of new solutions.

Canadian Retirement Income Security System: Not all eggs in the same basket! (*Slide 15*)

I will start the second part of my presentation with a brief description of Canadian retirement income system. At retirement, most Canadians will receive an income from one or more of the following pension schemes. The Old Age Security (OAS) Program is financed on a pay-as-you-go basis, which means that there is no fund. The Canada Pension Plan (CPP), which is similar to the Québec Pension Plan, is financed through contributions paid in equal parts by the employer and employees. The contribution rate of 9.9% in 2009 and thereafter will provide Plan assets equal to approximately 25% of the Plan's liability in about 15 years. Finally, our retirement system allows employers and individuals to participate in occupational private pension plans and Registered Retirement Savings Plans, which are intended to be fully funded. Given these three main sources of income, it is reasonable to say that the Canadian system is expected to be funded at about 40% of future liabilities. A diversified funding approach allows Canada's retirement income system to be less vulnerable to changes in economic, market and demographic conditions than systems in countries that use a single funding approach. In addition, according to international organizations, the Canadian approach based on a mix of public and private pensions is an effective way to provide for retirement income needs.

Guiding principle of the 1997 CPP Reform: Contribution rate stability (*Slide 16*)

The partial funding financing approach for the CPP is a result of the 1997 CPP reform. Prior to 1998 the Canada Pension Plan was funded on a pay-as-you-go basis with a

contingency reserve. In the context of the aging Canadian population it was decided that the pay-as-you-go financing was no longer meeting the objectives of the Plan. Nine guiding principles for the reform were agreed by the federal and provincial Finance ministers in October 1996.

Guiding principle #4 addresses the partial funding and reads as follows: “The CPP must be affordable and sustainable for future generations. This requires fuller funding and a contribution rate no higher than the already legislated future rate of 10.1 per cent”. At that time the figure of 10.1% were expected to be applied in 2016 (as was shown in 13th actuarial report dated February 1992). I like to emphasize that this principle contains two important characteristics of the CPP reform: fuller funding and stability of contribution rate.

Optimal financing for the CPP (Slide 17)

In determining the degree of funding it is important to look at the current as well projected economic and demographic environments. This chart addresses the level of funding in relation to real total earnings growth and expected real fund returns.

In an economic environment where combined real wages and number of workers growths are expected to be higher than the future real rate of return on capital, the pay-as-you-go financing is more appropriate. On the other hand, in an environment of low or even negative growth in real total earnings, fuller funding becomes more appropriate in order to avoid escalating contribution rates in the future. In Canada, we believe that real rates of return on capital will be higher than the total real earnings growth. Based on the assumptions used in the latest actuarial analysis, we expect that the optimal funding level for the Canada Pension Plan should be around 20% - 30%.

CPP Assets should be equal to 25% of liabilities to stabilize the contribution rate (Slide 18)

The Asset/Expenditure ratio is an important measure of the Plan’s funding status – it is the ratio of assets at the end of one year to the expenditures of the next year.

From 2000 to 2019, the net cash flows of the Plan, that is contributions less expenditures, have been and will continue to be positive, resulting in a rapid increase in the Plan’s Asset/Expenditure ratio and funding status. These net cash flows are invested by the CPP Investment Board with a view to maximizing the rate of return without undue risk and further increasing the level of pre-funding of the Plan.

This graph demonstrates that with a minimum contribution rate of 9.82%, the Asset/Expenditure ratio is fairly stable at around 5.5. The minimum contribution rate, which is the lowest rate sufficient to sustain the Plan without further increase, is calculated by the actuary.

What is the impact of a particular demographic situation on partial funding rate? (assuming South Korea's Current Demography) (Slide 19)

The next slide shows how the demographic situation could impact the financial status of the Plan and how the Asset/Expenditure ratio would evolve using South Korea's current demography. This involves changing the total fertility rate to 1.3 births per woman and the net migration rate to 0%. Under the current legislated contribution rate of 9.9%, the Plan's assets would be depleted around 2048. A minimum contribution rate of 11.3% would be required to sustain the Plan. It should be noted that the Asset/Expenditure ratio is less stable than under the current CPP environment and that the pay-as-you-go rate never stabilizes over the projection period reaching 17.5% in 2075. In such environment, the increase in retirement age could be a better solution as compared to the pre-funding of the plan or to the increase in contribution rate. It is also important to emphasize that at retirement, the Canada Pension Plan replaces only 25% of pre-retirement earnings.

Financing method should be appropriate to the current and projected environments (Slide 20)

In conclusion, a social insurance scheme's contribution rate is sensitive to both the demographic and economic environments. Demographic and economic variables will influence the contribution rate in different ways and to different extents. However, these fluctuations can be managed by immunizing the scheme. Two such ways of doing so include moving to partial funding and/or a mixed system. In any case, the financing method chosen should be appropriate given the current and projected environments, and should be re-evaluated regularly.

Thank you for your attention.