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**The Pension System in Canada:** *What are its components? How it is treated in the Canadian System of National Accounts? How does this relate to the implementation of the SNA93 Update? A proposal for a Pension Satellite Account.*

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## Introduction:

This paper examines the attributes of all of these types of retirement funding schemes and outlines their treatment in Canadian System of National Accounts. The discussion will focus on a revision to the treatment of unfunded employer sponsored defined benefit schemes in the year 2000 which lines up with the proposed treatment of such schemes in the SNA93 rev.1 update. The discussion will relate the problems of the previous treatment in relation to economic analysis of household saving/consumption behaviour and demonstrate the benefits of the new treatment – both from an economic and an economic accounting perspective. The paper will also outline some issues with fully implementing the proposed treatment in SNA93 rev.1, including questions on the borderline between employer-sponsored and social security schemes and the full set of stock and flow transactions between the sectors. Options are explored for the treatment of the pension scheme investment income flows to the household sector as opposed to the currently suggested addenda item of pension fund equity (the famous D8 adjustment). The paper will also explore of the treatment of large contributions (or withdrawals) by employers to meet actuarial obligations of employer-sponsored funds (compensation of employees versus capital transfers). Finally, the paper will argue that although the new SNA treatment provides a fully consistent treatment of pension schemes, much more detail is needed in the articulation of flows and stocks to meet users needs to analyse the situation that currently exists in many countries of an aging population and serious questions around the capacity of the retirement fund schemes to meet the needs of the future. Since pension flows in and out of big pensions schemes are largely reflected in net saving of the household sector, there is a need to articulate the gross flows in and out to explain the consumption/saving behaviour of that sector as the retirement age group becomes the dominant population group in the economy. It will present some work currently underway at Statistics Canada to prepare a “Pension Satellite Account” which presents, in matrix form, the stock and flow entries of the whole range of pension and social security schemes.

## 1. The Pension System in Canada

In Canada there is a range of savings vehicles and social programs designed to provide funds to retired or aged citizens – including individual plans, employer-sponsored plans and social security schemes. Individual schemes are tax-sheltered saving plans that are designed to encourage citizens to accumulate assets earmarked for use as primary or secondary sources of retirement funds. Employer-sponsored plans cover a variety of arrangements, including retirement defined-benefit and defined-contribution plans in both the public and private sectors. Social security encompasses both employee/employer funded government-sponsored saving plans and non-saving plans where disbursements are financed out of current tax revenue.

Employer sponsored schemes hold a large proportion of assets while the benefit payments are more evenly distributed. This distribution will change quite dramatically as the baby-boomer cohort moves into retirement age between the years 2010 and 2020.

**Table 1: Distribution of pension assets and benefits by type of scheme**

	% of pension assets (2004)	% of pension benefit payments (2004)
Employer Sponsored Plans	64%	29%
Individual Savings Plans	30%	10%
CPP and QPP	6%	31%
Old Age Security	0%	30%

For the most part, the pension system as it exists today, is a function of post-war developments in the economy. In Canada, the union movements of the 1950s saw the establishment of large employer sponsored defined benefit plans. In the 1960s a large pay-as-you-go plan managed by the federal government was established to provide a pension plan for employees across the labour market. In the 1970s provisions were made in the income tax legislation to create individual tax sheltered pension savings vehicles. As the large employer sponsored pensions began to accumulate large pools of funds, and legal issues arose as to “ownership” of the funds, pension legislation was introduced to regulate large pension plans (some time in the late 1970s and early 1980s). The legislation involved regulation on nomination of trustees, required levels of funding and actuarial evaluation. Subsequently, large pension plans previously in place changed structurally as a result of the legislative environment – including migration of many previously “unfunded” plans to a fully funded status. Finally, a pure social security program has existed throughout the last 50 years funded out of general tax revenues. While the “old age security” program is universal, there is a “claw back” provision in the income tax system above certain income thresholds and an income supplement for lower income individuals.

## **Individual retirement plans**

There are a number of different vehicles for retirement saving by individuals in Canada, but by far the most important is the registered retirement savings plan. Based on a percentage of their earned income in a year, Canadians are allotted an amount up to which they can contribute into their registered retirement savings plan in the subsequent year. These allotted contributions are linked to the large employer-sponsored plans such that the total allotment includes those contribution made to the large employer-sponsored funds and these individuals have less “room” to contribute to individual savings plans than those who do not participate in larger registered schemes. This contribution reduces their taxable income in the subsequent year and contributors receive a refund of tax based on the size of the contribution and their marginal tax rate. Taxpayers who do not make this contribution can carry forward their allotment to subsequent years. In 2004, 38% of eligible tax filers made contributions. Withdrawals represent taxable income.

Contributions to individual savings plans relative to employee contributions to employer sponsored plans have increased dramatically over the past 10 years. This change has been impacted by the migration of employers to defined contribution plans where contributions are smaller as well as well as increased levels of contribution to individual plans by Canada’s aging population.

## **Employer-sponsored plans**

Employer-sponsored plans are typically group plans, and are funded (based on the invested assets criterion) to a very large extent. As noted above, these cover both public and private sector plans.

### **General points**

Employer-sponsored plans in Canada are established by either employers or unions to provide retirement income to employees. Employer sponsored plans in Canada are established by either employers or unions or in rare cases are co-sponsored to provide retirement income to employees. These plans are registered with the federal tax department and usually a regulatory

authority. Autonomous trustee pension plans, representing employees in both the private and public sectors, hold the majority of the assets in these plans in Canada<sup>1</sup>.

The large defined benefit plans fall under legislation which require that the fund is managed by an independent trustee and actuarial evaluations are done every five years. If the pension is sponsored by the employer, actuarial surpluses are generally run down by contribution holidays for the employer while deficits are made up by large lump sum contributions to the plan. All contributions by employees are income tax deductible and no tax accrues on the pension plan investment income or capital gains. The tax accrues only when pension benefits are paid.

Defined benefit plans hold 97% of the assets of Canadian employer sponsored plans but only 84% of employees who participate in pension plans are members of these plans. The defined benefit plans are actuarially evaluated and surpluses (over-funded plans) or deficits (under-funded plans) are identified and recorded. Recently the valuations of these plans, impacted by stock market fluctuations, have identified significant deficits. In order to restore these plans to sound financial positions, employer's additional/special contributions (which are fall under government regulation) have increased dramatically in some cases. These special contributions have notable impact on corporate cash reserves and, as a result, there has been a significant migration by employers towards defined contribution plans in recent years<sup>2</sup>. Defined contribution plans hold only 3% of the assets of Canadian employer sponsored plans but 16% of employees who participate in pension plans are members of these plans<sup>3</sup>.

### **Government unfunded-employer-sponsored plans**

SNA93 considers unfunded plans as those with no invested assets and are typically viewed as *pay-as-you-go* (PAYG) plans. Such plans may or may not record liabilities, but if they do SNA93 recommends that these (and the corresponding household sector assets) be treated as a memo item. CSNA goes beyond SNA93 in this regard, and has opted for one general approach for all employer-sponsored plans. The basic justification for this approach is that the obligations of the employers are the same under funded and unfunded plans, and that the economic behaviour of households is largely invariant to whether their employer-sponsored plans are funded or unfunded.

Legislation permits unfunded pension plans only in the government sector in Canada. These plans are viewed as non-autonomous, and cover the federal government as well as certain provincial government administrations<sup>4</sup>. Non-autonomous government plans record a pension liability (typically, at both accumulated and actuarial value) and, book interest on these liabilities. As a result, it is felt that unfunded may not be the best term to describe these plans. Over time, a number of government plans have been converted from unfunded non-autonomous plans to funded autonomous plans.

## **Social Security**

### **Canada and Quebec Pension Plans**

The Canada Pension Plan (CPP) and the Quebec Pension Plan (QPP) are government-sponsored pension plans, and comprise one component of social security in Canada. Employers

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<sup>1</sup> Insurance companies' contracts account for the bulk of the remainder.

<sup>2</sup> This way employers can avoid the risk related to actuarial evaluations of their employer-sponsored pension plans.

<sup>3</sup> Policy analysts within the Canadian government have identified the migration towards these plans as a significant risk to the financial preparedness of Canadians for retirement if the level of funding of these plans remains at their current levels.

<sup>4</sup> Except for one province, these plans are all defined-benefit schemes.

and employees contribute to these plans, initiated in the late 1960's as a social policy initiative. CPP and QPP are defined benefit plans in nature, however, employers do not bear risks related to the ensuring the availability of funds for withdrawals under these plans. These government-established plans are based on a relationship between the workforce and the government, and the intention is to provide workers and their families with limited retirement earnings as well as some protection against disability and death.

Since the late 1990's, when concern was expressed about declining balances in these funds, contribution rates have been increased and more funds have been set aside in these funds which operate at arm's length from government consolidated accounts. As a result of this, and combined with increased investments in marketable securities and real estate, a significant reserve has been built up. However, these funds still do not provide for the benefits and administration of the account in its entirety and component of these plans continue to operate on a pay as you go basis.

### **Old Age Security**

Old age security is the second component to social security programs in Canada. Unlike the CPP and QPP programs described above, it has no connection to employment. There are no contributions made into the plan and no reserves set aside, and benefits payments are charged to federal government expenditure. In this sense it is a pure PAYG plan. Payments under this program begin after pensioners reach the age of 65 and the program is meant to guarantee a minimal level of income.

## **2. The treatment of pensions in the Canadian System of National Accounts**

The challenge in the Canadian System of National Accounts (CSNA) has been to provide a consistent treatment of saving, net lending and net worth of the institutional sectors over time as the pension saving system evolved. While most of the changes in the pension system overtime have either represented incentives to save for retirement or mandatory participation in a pension saving plan, some of the changes that have been regulatory in nature were only intended to protect previous and future investments not alter saving behaviour. It has been more difficult in these cases to determine the most appropriate treatment in the CSNA with respect to the SNA standard and international comparability.

### **Individual plans**

In the CSNA contributions to individual plans are made out of current gross income, with the bulk arising from wages and salaries. Contributions are not explicitly recorded in the system as part of current outlays<sup>5</sup>, so that they are implicitly included in estimates of personal saving. Investment income on these plans earned in the current period also contributes to personal saving. This reconciles well with the *Financial Account*, where contributions and income earned on are included in financial asset investment flows of households. Withdrawals (after tax) that are spent are also only a *Financial Account* item, and are sources of funds for expenditure. Withdrawals that are used as a source of funds for personal consumption expenditure are reflected in that expenditure for that period, and thus serve to reduce personal saving in that period (i.e., represent dis-saving). Total withdrawals are taxable and drive a bit of a wedge between taxes

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<sup>5</sup> In contrast, individual saving plan contributions are typically treated as current outlays in household income and expenditure survey.

paid and national accounts' income<sup>6</sup>. Household *Balance Sheet Account* estimates include both the accumulated net inflows (contributions less withdrawals plus investment income) as well as the capital gains on the investments.

## Employer-sponsored plans

Tax-deductible employee contributions to employer-sponsored plans are implicit, but are included in wages and salaries<sup>7</sup>. Employer contributions are treated as a labour cost and included in supplementary labour income of households. Autonomous pension plans are treated as collective investment schemes that are consolidated in the current account items of household sector. As a consequence, total contributions remain in the sector and investment income booked on the assets is counted in household income, and both are reflected in personal saving<sup>8</sup>. Withdrawals, while taxable<sup>9</sup>, are not treated as income but rather as financial flows that are mirrored in personal saving. In the *Financial account* and *Balance sheet Account*, the net asset flows and positions are included in a net pension asset of households. The autonomous funds themselves are included in the financial institutions' sectors, where the invested assets' detail is articulated. The net liability of the autonomous plans is the corresponding net pension asset of households<sup>10</sup>. Household *Balance Sheet Account* estimates include both the accumulated net inflows (contributions less withdrawals plus investment income) as well as the capital gains on the investments.

For defined-benefit plans, actuarial deficits are recorded as liabilities of employers<sup>11</sup>. Special employer contributions to eradicate actuarial deficits are not expensed by business. Rather they are adjustments to an off-balance sheet account. However, these are currently treated as supplementary labour income of households, and a business expense must be imputed (and corporate surplus lowered) when these occur<sup>12</sup>. Employer actuarial deficit liabilities are treated as "other liabilities" of businesses and as "other assets" of households; these are subsequently allocated to pension asset of households, when the actual funds are disbursed to the autonomous plans<sup>13</sup>.

The federal government unfunded employer-sponsored pension plan has been running a surplus for some time. The treatment in this case is different that in funded autonomous plans. Essentially, there is no contribution holiday booked, but the surplus is reduced in each period by way of a special adjustment. This special adjustment (i.e., the repatriation of the surplus) is treated as a capital transfer from households to government. This approach has a certain amount of appeal.

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<sup>6</sup> This is seen by some as an anomaly. However, it must be understood that income arising from production does not tie in fully with tax payments/receipt flows. Of course, this is the similar issue for some as with the SNA treatment of taxable capital gains.

<sup>7</sup> Not all employer-sponsored plans require employee contributions.

<sup>8</sup> This avoids the SNA93 D8 adjustment that is required for saving rate analysis as well as for continuity of household income-saving with the *Financial Account* and *Balance Sheet Account*.

<sup>9</sup> Like with withdrawals on individual plans (discussed above) this also drive a bit of a wedge between taxes paid and national accounts' income

<sup>10</sup> This is seen by some as an anomaly. However, it must be understood that income arising from production does not tie in fully with tax payments/receipt flows. Of course, this is the similar issue for some as with the SNA treatment of taxable capital gains.

<sup>11</sup> Actuarial surpluses are treated as "other assets" of employers, and are eliminated by taking contribution holidays.

<sup>12</sup> This is not the case for actuarial surpluses, where employers take contribution holidays by reducing their regular contributions. The current CSNA treatment for actuarial deficits and surpluses is reasonably consistent.

<sup>13</sup> Employer actuarial surplus assets actually decrease household sector "other assets".

## Social Security

For the CPP and QPP, employee contributions are reflected in wages and salaries and employer contributions in supplementary labour income of households. However, these do not figure into personal saving as both employee and employer contributions are remitted to government as part of current transfers to government from households. Investment income on the plans is part of government revenue, and the plans contribute to overall government saving and surplus/deficit. Benefit payments are treated as part of current transfers from government to households. Financial transactions and positions related to plan assets are articulated in the government sector *Financial Account* and *Balance Sheet Accounts*, respectively.

For the Old Age Security plan, benefit payments are treated as current transfers from government to households. There are no other explicit entries.

## 3. Implementation of the SNA93 update recommendation

### Experience with government unfunded employer-sponsored pension plans

The recommendation proposed in the current SNA update largely clarifies one of the most difficult issues with respect to treatment of employer sponsored schemes that was the asymmetry between the treatment of funded and unfunded schemes. In 2000, Canada altered its treatment of government unfunded employer-sponsored pension plans, so as to align these with other employer-sponsored plans and to improve measures of personal saving and wealth as well as of government surplus/deficit and debt. . This change was considered for some time, and was evaluated for feasibility and justified on the basis of relevance.

#### **Rationale for the change in treatment of unfunded employer-sponsored pensions**

##### ***Recognition of pension obligations***

In the CSNA, prior to the afore-mentioned revision, pension amounts were included only if any liabilities were backed by invested assets. In general, this is an application of the rule that for each liability there must be a corresponding asset, and vice-versa. For government unfunded pension plans there were two basic characteristics: First, no income-generating assets existed by which to meet future pension obligations of retiring employees, with the result that pension payments are met out of current revenue (often referred to as “pay as you go” plans); second, plans were non-autonomous in nature, remaining largely the responsibility of the employer to oversee and administer. However, recognition of pension obligations became an important factor. In the case of “pay as you go” plans in Canada it was felt that the treatment in official government accounts resembled more a funded scheme than an unfunded one. Given that governments recognized the liability<sup>14</sup> and booked interest at a determined rate on a nominal bond it could be argued that these plans were accounted for “as if” they were funded and, as a result, were not materially different from funded plans.

##### ***Obligation and ability to pay***

Employers have always had a legal and moral obligation to meet employee pension obligations. Recognition of pension liabilities in government official financial accounts in Canada provided clear evidence of this obligation as well as an indication of the intent on the part of governments to meet these obligations. Further, government ability to raise tax revenue suggested that ability to pay would not be compromised and might not be a pivotal factor. In the case of Canadian governments the likelihood of default was considered to be negligible, even without considering

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<sup>14</sup> Including top up due to periodically assessed actuarial deficits, or reclaiming of surpluses.

the improvements in fiscal positions at the federal and provincial levels in recent times. In fact, it was argued by certain analysts that the unfunded pension liabilities, especially at the federal level, were “as good as” the funded pension liabilities in autonomous plans. Certainly, there was stability in these government plans, compared to the recent losses incurred by funded pension plans on their equity investments.

### ***Harmonization of government accounting systems***

There is general agreement that measures of government financial position should be harmonized, to the extent possible, in order to enhance clarity and interpretability. At that time, international guidelines were not in line<sup>15</sup>. This can give rise to differences internationally. Further, within countries, it is desirable to have official financial accounts of governments as well as data compiled from those accounts (e.g., SNA government sector estimates) on the same basis. Prior to the 2000 revision both the public accounts and the Government Finance Statistics (GFS) recognized unfunded government pension liabilities, but the CSNA did not<sup>16</sup>. This led to confusion among users with respect to the interpretation of the resulting different measures of government gross and net debt as well as surplus/deficit. It was felt that this situation should be addressed. As work progressed leading up to the 1997 historical revision, one objective became to achieve improved harmonization between government financial information and national accounts statistics<sup>17</sup>. One task in the historical revision to the CSNA was to standardize the classification of unfunded pension plans across governments, and this implied recognizing all forms of such liabilities. This was accomplished in 1997 in the GFS<sup>18</sup>. A second task was harmonization of GFS and CSNA measures, and this implied inclusion of all government unfunded pension liabilities in the CSNA. This was accomplished in 2000.

### ***Relevant measure of government sector debt***

Closely related to government accounting systems was the issue of the appropriate measure of government debt. Given that government financial positions play an important role in macroeconomic analysis, providing the most accurate and consistent measure of government liabilities was a priority. It is fair to say that government sector unfunded pension plans do give rise to clear obligations to make future payments and, as such, should be included in total liabilities. In fact, it was argued by some users that omission of a full accounting for pension liabilities, given their size, amounted to a misrepresentation of government gross and net debt in the CSNA. Further, given that governments themselves reported unfunded pension amounts in their public accounts, it seemed appropriate that these liabilities also be included in CSNA government balance sheets.

### ***Evolution of government employer sponsored plans and statistical breaks***

In Canada there has been a clear movement, in government employee pension plans, towards funding. Over the last 15 years, a number of provincial plans have been converted from non-

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<sup>15</sup> The IMF Government Finance Statistics manual recommends the recording of government unfunded pension liabilities, while The 1993 SNA recommends a memorandum item treatment.

<sup>16</sup> Government debt information in Canada is available from three main sources: The audited public accounts of the federal and provincial governments; the Statistics Canada Government Finance Statistics (GFS); and, the balance sheet accounts of the CSNA.

<sup>17</sup> In the audited public accounts of Canadian federal and provincial governments, UPL typically made up part of government debt. Notably, government accounting practice and valuation rules for pension liabilities varied somewhat. Pension amounts were typically shown at accrued (contributions + investment income) and at actuarial values (accrued +/- actuarial adjustment). Pension liabilities were always disclosed, but not always recognized in the financial statements, but rather were on sometimes relegated to footnotes. To the extent that the liabilities were recognized, interest was booked on the amounts, typically using an average of current bond rates.

<sup>18</sup> Statistics Canada's GFS presented revenue, expenditure, assets and liabilities for levels of government. One of the objectives of the public accounts' based GFS was to integrate government data so as to be better able to compare provincial governments. Notably, however, GFS reflected some of the public accounts' differences across the governments with respect to UPL.



autonomous unfunded schemes to autonomous funded schemes<sup>1920</sup>. A full accounting for pension obligations, however, ensures that total government liabilities do not spuriously increase when plans are converted from unfunded to funded schemes. In this case unfunded pension liability amounts included in government liabilities are converted to either non-marketable or marketable bond debt when funding occurs. Each time such a conversion took place, the accompanying issue of bonds to an autonomous pension fund sharply increased government debt and personal sector assets in the CSNA. In addition, these conversions also resulted in significant breaks in CSNA flows. However, from the point of view of employee entitlements, nothing had changed. There was a desire to eliminate unnecessary breaks in series.

### ***Overriding importance of relevant measures of household pension saving and wealth***

The issues surrounding the treatment of unfunded pension schemes in government liabilities are important considerations. However, there is another significant dimension to this issue on the other side of the ledger – pension assets and saving. If there is no reason to believe that contributing employees covered under unfunded pension plans behave differently than those covered under funded employer-sponsored plans, then there is little rationale for having a separate treatment of these two schemes. Therefore, a key consideration in this revision was also to have a complete, consistent and analytically meaningful set of CSNA statistics on personal saving (and net worth), in particular with respect to the growing amounts in various forms of pension saving. Having differences in treatment for employer-sponsored plans, or between individual retirement schemes and employer-sponsored schemes, did not seem desirable. Seen from this perspective of pension saving and assets, the distinction between funded and unfunded employer-sponsored pension plans seems somewhat artificial. This was a deciding factor with respect to the CSNA change in the treatment of unfunded pension schemes.

### ***Other Considerations***

While The 1993 SNA did not recommend that unfunded obligations be added to government liabilities, it did recognize the potential significance of UPL by recommending that a memorandum item treatment for these amounts -- the net equity of households in employer-sponsored unfunded pension plans – be adopted and shown on the balance sheets of both households (asset) and governments (liability). The revision to the CSNA is viewed as an extension of current international standards on national accounts, as embodied in The 1993 SNA.

Once it had been decided that current measures of assets-liabilities, saving and surplus-deficits had to be revised to better reflect economic reality and enhance economic analysis, international comparability played a secondary role – affecting more the timing than the decision. With respect to timing, the U.S. Bureau of Economic Analysis revised its treatment of government unfunded pensions in 1999, altering saving in both the personal and government sectors. Given the importance of Canada-U.S. comparisons, this was no small matter in terms of the timing of the Canadian revision. Statistics Canada followed suit in 2000, further encouraged by the establishment of a new federal funded plan on April 1, 2000.

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<sup>19</sup> The transition of the plans from being unfunded to holding income-earning assets can take place in three basic ways; and, if we assume that the UPL are initially not recognized (as was the case in the CSNA prior to the revision), then the impact on government debt is clear in each case. First, governments can decide to issue marketable bonds to the general public and then use the proceeds to fund the plan. In this instance, the plans would receive an inflow of funds and could invest in marketable securities. Alternatively, governments can issue non-marketable bonds to the plan, and retire a specific amount in each year for a specified period of time. In this instance, the plans assets would move from non-marketable government bonds into marketable securities over the specified period of time. In both of these cases, government bond debt would jump by the amount of the pension liability on the day the plan is funded. Lastly, governments can choose to phase in the funding. They can issue bonds to the public in specified amounts over a period of time in order to supply funds to the plans for investment purposes. In this instance, the plans would have a funded and an unfunded portion. In all three cases, government bond debt increase.

<sup>20</sup> Most recently, in April of 2000, the federal government created a funded portion to its employee pension plan.

## **Impact of the 2000 change in treatment of unfunded employer-sponsored pensions**

### ***Coverage of liabilities***

Unfunded pension liabilities now included in the CSNA covered both recognized and unrecognized amounts as per public accounts. In addition, under-funded portions (actuarial liabilities) of both funded and unfunded government pension plans were also included. Liabilities were valued at the higher of actuarial or accrued values. This broad approach harmonized the treatment of unfunded employer plans across the national and provincial governments in both the GFS and CSNA systems. In addition, the recognition of actuarial liabilities ensured that public sector employers followed a similar accounting to those in the private sector.

### ***CSNA stocks and flows***

A prominent result of this change in treatment was a significant upward revision to government liabilities. Correspondingly, financial assets in the personal sector were also revised upwards, with the addition of an asset for “equity in unfunded pension plans”. Sector estimates of net worth were likewise affected.

With respect to the flows, imputed transactions were largely eliminated. Employer and employee contributions to pension funds remained part of the wages, salaries, and supplementary labour income of the personal sector in both previous and current treatments. However, the income of the pension funds was now counted as the investment income of persons rather than of government. Public service pension benefits payments disappeared from personal income and were subsequently treated as a reduction in personal assets. On the outlay side of the personal sector the employer and employee contributions to pension funds were no longer transferred to government as part of contributions to social insurance plans. The net effect was increased personal saving resulting from higher personal income and reduced personal outlays. These changes were entirely offset in the government sector, resulting in decreased government saving. Personal saving, for example, in 1999 increased by \$11 billion, saving rate increased from 1.9% to 3.6% and of course, government saving and balance<sup>21</sup> decreased by \$11 billion.

Financial accounts recorded the transactions-based increases in the unfunded pension liabilities of government. Actuarial deficiencies arose as “other changes in assets”, until offset by contribution flows.

While the above describes in large part a change in treatment which reflects the recommendation to recognise all employer sponsored pensions, recent work in the CSNA to build a satellite account which articulates all pension scheme flows and stocks has uncovered some anomalies with respect to full implementation of the recommendation and several questions around treatment of flows between sectors.

## **Secondary Implementation Issues**

### **Adherence to actuarial valuation principle of employer-sponsored pensions**

Regulation of large defined benefit schemes requires periodic evaluation by an actuary, every five years. In the case of a funded plan, if the accumulated net value of the plan assets is above the actuarial valuation, the employer takes a contribution holiday and labour compensation is reduced. In the case of a government employer-sponsored unfunded plan surplus is also repatriated, but

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<sup>21</sup> One drawback of the change was a step away from the cash requirements surplus/deficit. However, given the transparent nature of this revision, pre-revision totals can easily be re-constructed.

as a capital transfer as opposed to a contribution holiday such that labour compensation is unaffected. In both cases, if the accumulated value is less than the actuarial requirement, then employer makes large lump sum contributions to the plan over a three to five year period to eradicate the deficit; and, labour compensation reflects these special payments, despite the fact that they are not treated as a labour cost by employers.

This gives rise to asset-liability values issues. The Canadian treatment has been to all of the contribution flows as these are booked by the pension plans. The result is that the value of employer-sponsored pension assets on the household balance sheet is the current accumulated net asset value, and the difference between that and the actuarial value is reflected in “other assets”. This amount is the asset equivalent to actuarial deficit “other” liabilities of the corporate sector to the household sector for the funded plans. For the unfunded government plans, the valuation of the liability and corresponding household asset is the actuarial value, except in the case of a surplus. In this case, the pension liability and asset reflects the accumulated value, until the surplus is eradicated and the accumulated value has converged with the actuarial value. In both cases, the valuation of pension liability/asset can fluctuate around the actuarial value over the time period relating to the valuation by the actuary and the time period for corrective transactions.

This also gives rise to flows and labour compensation issues, related to asymmetries in the treatment of the contribution flows in both funded and unfunded plans. When a corporation or government sponsor of a fully funded plan takes a contribution holiday due to an actuarial surplus, compensation of employees (supplementary labour income) is lowered by the amount of the contribution reduction. In the case of government, this lowers the value of government output; and, in the case of corporations, the distribution of value added between compensation of employees and operating surplus is affected. On the other hand, actuarial deficits give rise to large lump sum payments which create unexpected increases in compensation of employees (supplementary labour income). This treatment results in a re-allocation between operating surplus and compensation of employees after the fact. In fact, some of the lump-sum payments may be payment for labour services to employees who have retired within the 5 year time period. Corporations do not typically record these special payments as a labour cost; rather, they treat these as a running down of a provision for a pension liability, giving rise only to financial transactions.

In the cases of unfunded schemes, the actuarial surpluses are withdrawn through the capital account of the governments and treated as capital transfers from households to government. Whereas actuarial deficits are made up by lump sum payments recorded on the current account as compensation of employees, as with funded plans.

If the goal of the SNA recommendation is to maintain an actuarial value of the plans, a number of adjustments will need to be made to the current treatment. Two possible approaches are being considered. These approaches can be characterized as either a transactions based approach and a modelled approach.

#### ***The transactions’ approach***

This would involve finding consistent treatment between funded and unfunded schemes with respect to contribution holidays versus lump sum payments or withdrawals. The current thinking is that run down of actuarial surpluses could be consistently treated as contribution holidays and lower current cost of compensation of employees; while lump sum top up payments (after the fact) to make up actuarial deficits could be treated on the capital account as capital transfers. It would also include collecting data on the portion of “other liabilities” carried by pension sponsors and re-allocating them to pension assets of the household sector, as opposed to being buried in the “other assets” where they are currently unidentifiable. This approach has the disadvantage that labour compensation would be differently affected in the face of surpluses and deficits, and it

could be argued that current period labour compensation has little to do with changes in actuarial values of the plans<sup>22</sup>.

### ***The modelled approach***

This would involve collecting data on the actuarial assumptions of the pension plans and modelling<sup>23</sup> the contributions based on them. This would smooth out the contributions over time and keep the pensions values on track with the actuarial line. It is somewhat akin to the proposed treatment for property and casualty insurance whereby the valuation of output is based on expected investment income and expected claims. The approach tries to identify the underlying value of insurance services irrespective of unexpected fluctuations in premiums, claims and investment income on short term reserves. In the case of pensions, which are forms of insurance against out-living the use of funds from other assets set aside for retirement, the approach would be to identify the current contributions necessary to maintain an actuarial valuation of future benefit accruals based on the return of the fund at any point in time. This would require a series of imputed transactions such as flowing excess of “expected” investment income to the sponsor and a portion of it back as a contribution in order to stay on the actuarial valuation path.

### **Treatment of Canada/Quebec Pension Plans (CPP/QPP): Borderline Social Security Plan**

Another issue that arises in considering the recommendation of the SNA93 update is how to treat partially funded social security schemes. The CPP and QPP were designed as a social security plan to transfer income in the current period, and which started largely as a PAYG plan. However, these contributory plans started to accumulate a modest amount of assets from inception. Changes in recent years to contribution rates and asset composition clearly give the plans partially funded status, and were intended to offset some of impact of an aging population – specifically, when the retired population out-numbers the working population as the baby boomers generation ages.

As seen in Table 1, the accumulated assets of the CPP/QPP have become substantial, accounting for 6% of pension assets in 2004, or \$80 billion. Currently these assets sit on the books of the general government sector, in a sub-sector of CPP/QPP and reduce the net debt position of general government. In addition, the federal government occasionally makes extra contributions to the fund out of general tax revenue when surpluses permit (\$1 billion in 2005/6 fiscal year).

The fund is there to offset future liabilities that have not been booked. Given the general social security nature of the plan, how should this fund be treated? Three possibilities exist:

- maintain current treatment, with its mitigating effect on government net debt;
- recognize a liability to the household equivalent to the accumulated assets at market value; or,
- recognize a full actuarial liability of future benefits streams.

The second option appears to be the best way to characterize the economic substance of the plan as it now stands.

### **The D8 adjustment: The change in pension liabilities and household saving**

In the Canadian national accounts, the large employer-sponsored pension plans have always been treated as flow through entities – essentially, as collective investment schemes that are consolidated in the household sector. This means that the contributions to the plans remained in the household sector and that the interest and dividends of the plans were accrued to the

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<sup>22</sup> Especially when some of these actuarial changes may have to do with the impact of fluctuations in equity markets on plan assets.

<sup>23</sup> Another option is to collect from employers both regular contributions and special contributions, and equate labour compensation to regular contributions.

household sector, matching the counterpart entry on the *Financial Account*<sup>24</sup>. The consolidation of such plans in the household sector avoids the necessity of the SNA93 D8 adjustment; however, this is not the recommended treatment in SNA93 or in the forthcoming update in SNA93 Rev.1.

The pros and cons of the current Canadian treatment are being re-considered. Since the invested assets of the employer sponsored defined benefit plans are huge, the investment income accruing to them dominate the investment income accruing to the household sector but it is consistent with the treatment of investment income accruing to other forms of insurance funds. The current thinking is to split the investment income accruing on the secondary distribution of income account into components – those due to pension savings, those due to insurance and the rest. This is being worked on in conjunction with development of an interest and dividends flow matrix which articulates interest and dividends by instrument type and institutional sector. The Canadian view is still that it is preferable to flow pension investment income directly on the secondary distribution of income account to the household sector than through an adjustment to net saving.

## 4. The Pension Satellite Account

In the 1990s, interest has shifted from government debt issues to household saving and wealth issues. Since pension flows in and out of pension schemes (especially the big ones) are largely reflected in net saving of the household sector, there is a need to articulate these flows to explain the consumption/saving behaviour of the sector. This is especially important as the retirement age group becomes the dominant population group in the economy.

In Canada, it had been recognized since mid-1990s that there would be an eventual need for a Pension Satellite Account due to the emerging impact of the following factors:

- Demographic effects – in particular, the economic and social effects of and aging post-war baby-boom generation, low fertility rates and Increased life expectancy
- Effects of financial market fluctuations on companies' pension plans
- Effects of a declining personal saving rate

Statistics Canada has initiated and allocated two years funding to undertake the development work of the satellite account.

### Structure of the pension satellite account (PSA)

While pension flows and stocks are fully accounted for within the CSNA, they are not fully articulated. This detail is at the heart of the pension satellite account project, and the objectives of the PSA project is to set up a pension account that explicitly identifies how pension monies are treated in the CSNA; and to expand the CSNA databases to add specific detail on certain types of retirement saving instruments.

Many aspects of pension schemes are incorporated in the framework of the PSA, such as wealth change, contributions, investment income and withdrawals, and realized and unrealized gains and losses. The PSA is an integrated conventional stock-flow matrix framework with data on both a book and market value basis. It dovetails well with the existing CSNA sequence of economic accounts.

### Table 2: Basic structure of the Pension Satellite Account (condensed version)

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<sup>24</sup> Since a full "Other changes in assets account" has only been published occasionally, the capital gains and losses appear implicitly in the household sector via the *Balance Sheet Account* where the market values of the pension assets are recorded.

	Opening wealth position	Inflows: contributions, Investment-income	Outlays: Withdrawals, Administration-cost	Other changes: Capital gains/losses	Closing wealth position
Individual saving plans					
Employer-sponsored saving plans					
Social security plans					

The PSA examines the whole universe of the pension system in Canada. It reflects the diverse structure of retirement schemes such as private and public employer-sponsored plans, individual savings plans and social security schemes. These schemes generally all have institutional investors-investments dimensions to them, with the net assets of pension wealth and saving belonging in the personal sector while also representing both investments and liabilities in the other sectors of the economy.

## Uses of the pension satellite account (PSA)

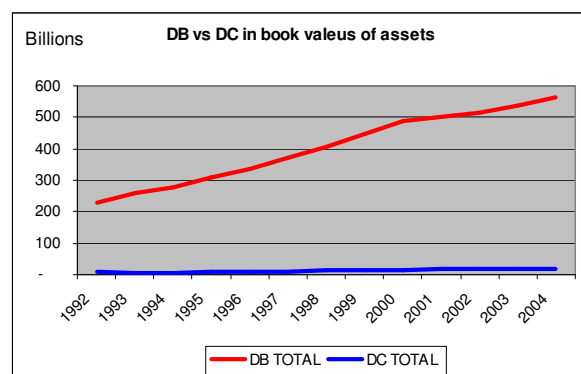
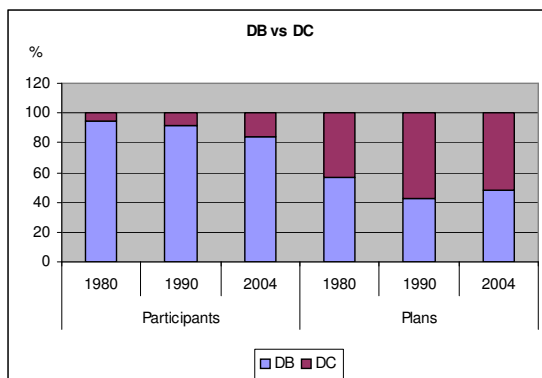
### Enhanced understanding of the evolution of the pension system

One clear advantage of implementing the PSA is that one could easily see the complete picture of the pension system of the nation.

The total assets of the pension programs in Canada account for \$1.35 trillion at year-end 2004, among which, 6% is in social securities; 64% is of employer-sponsored plans; and 30% is of individual saving plans.

The evolution of pension obligations from government to employers and then to individuals is pronounced in Canadian data in terms of the size of the total assets. Between 1980 and 2004 the social security portion has dropped from 25% of assets to 6% in 2004 while both the employer sponsored and individual plans have made up the difference as their asset pools have grown.

The trend of employers in Canada switching from defined benefit (DB) plans towards defined contribution plans (DC) reflects a world-wide trend. Nevertheless, defined benefit plans still dominate the employer-sponsored pension plan market in Canada, accounting for about 97% of the total assets of autonomous pension funds.



### **Improved economic analysis and forecasting**

The personal saving rate is a key economic indicator. The PSA would allow for detailed disaggregations of personal saving, thus improving economic analysis and clarifying any perceived anomalies. It would also allow for alternative measures of personal saving that would tie into household survey data estimates, key for certain types of analysis.

National accounts' data are used extensively for economic forecasting purposes. As the proportion of pension income grows in coming years, forecasting of key variables will be dependent on a high quality accounting system for pension inflows, outflows and assets. For example, forecasts of personal expenditure will have to take into account growing sources of funds from pension dis-saving (retirement income). Once completed, the PSA could form part of a new supplementary table of sources of funds to the personal sector, including pension income arising from production, pension benefits payments/withdrawals, and capital gains and losses.

### **Broader understanding of the financial position of households**

There has been renewed interest in recent years on the financial health of the household sector as well as in government social programs linked to household financial positions. Particularly, the factors that affect financial positions and the potential implications of a deterioration in financial positions are of interest. Central to this issue is the large and increasing amounts of household wealth concentrated in pension assets, is it sufficient? The risk associated with these investments, what are the investments and who is providing the investment function?

The PSA would supplement the estimates of household wealth by providing a complete accounting of pension assets, including those assets in social securities. This would allow analysts to understand pension saving (e.g., how much is being set aside for retirement) pension dis-saving (e.g., the rate at which pension assets are being drawn down) and gains/losses associated with this accumulated saving. The last item would provide a key indication of the risk associated with pension assets in various vehicles. This is essential to understand, given the strong fluctuations in stock markets and the ongoing trend towards more relaxed regulatory requirements with respect to institutional investment. All of this would substantially add to the current analysis of pension wealth and provide an important perspective on the sustainability of pension saving.

### **Broader assessment of government financial positions**

The clear articulation of the stock and flows of the pension plans in public sector would shed additional light on government debt. The funded and unfunded positions, assets and liabilities would be explicitly indicated in the PSA.

### **Future challenges**

The establishment of the PSA in 2007 will likely lead to additional research and expansion in certain areas, relevant to the user community. In particular, it seems that links to household survey data would be analytically useful. This would allow for an analysis of the age-structure and income distribution of the Canadian population with respect to pension benefit payments, saving and other types of wealth accumulation patterns. This could lead to the development of a Social Accounting Matrix for pension saving of the household sector.

The analysis of financial "soundness" of employer-sponsored defined-benefit pension as well as other forms of pension savings is of keen interest to policy makers and further articulation of the balance sheet in this regard will be extremely important. This could include an examination of the foreign content of investments of the various plans, as well as international flows from pension schemes would also likely be on the agenda. Lastly, an articulation of the sources of funds

available for household expenditures would greatly enhance modellers' capabilities to forecast household expenditures as the dominant source of funds shifts to a run down of pension assets.

## **5. Summary and Conclusions**

Pension saving in Canada spans the full range of individual savings to large pooled pension plans. While Canada had moved in the year 2000 to treat funded and unfunded employer-sponsored plans on a consistent basis, the full implementation of the recommendations of SNA93 update process implies some further modifications to the current Canadian treatment. Full actuarial valuation requires either reclassification of some transactions recorded by employers or modelling of implied transactions. The preferred treatment in Canada will be to treat regular contribution streams on the current account (primary and secondary distribution of income accounts) and to treat occasional large payments or withdrawals to correct actuarial valuations as capital transfers.

Canada fully supports the proposed new treatment in the SNA update, as it better reflects the savings, spending and wealth accumulation decisions of the institutional sectors and enhances the analytic usefulness of the SNA database. Coordination of implementation experiences will be important for international comparability due to the complexity of pension systems and accounting practices.