

Unclassified

COM/STD/DAF(2010)18

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

19-Nov-2010

English - Or. English

**Directorate for Financial and Enterprise Affairs
Statistics Directorate**

**COM/STD/DAF(2010)18
Unclassified**

Working Party on Financial Statistics

CANADIAN SNA PENSION SATELLITE ACCOUNT

**To be held on 29 November - 1 December 2010
OECD Conference Centre
Beginning at 2:15 p.m. on the first day**

This document has been prepared by Allan Tomas (Statistics Canada) and will be presented under item 3 of the draft agenda (common day with WPNA)

JT03292790

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English - Or. English

CANADIAN SNA PENSION SATELLITE ACCOUNT

Introduction

1. There continues to be a great deal of policy interest in the topic of pensions, in the face of ageing populations in many OECD countries. Of particular interest to statisticians is how pensions are treated in countries' systems of national accounts, in relation to updated international business accounting standards and government public accounts. This underlines the need to better understand the impact of pension schemes on both economic behaviour and on the economy as a whole.

2. The sector accounts of the Canadian System of National Accounts are designed to articulate economic behaviour. The sector accounts include: the income and outlay account¹, the capital account, the financial account and the balance sheet account (including the implicit other changes in assets account). Not all pension stocks and flows are explicit in the Canadian sector accounts.

3. The *Pension Satellite Account* (PSA) is an articulation and extension of the stock-flow dimension to the sector accounts, as well as a means of including supplementary information on pension schemes. The PSA articulates, in matrix form, the stock and flow entries of the whole range of pension saving schemes in a Canadian context.

4. This paper outlines the three tiers of pension saving schemes in Canada and their treatment in the CSNA, and presents the structure as well as some results for the relatively new PSA². This note will also touch on some issues with fully implementing the proposed treatment of accounting for pension contributions and pension schemes in SNA 2008, as part of the upcoming historical revision to the CSNA.

Canadian pension system and treatment in the national accounts

5. For the most part, the pension system as it exists today in Canada is a function of post-war developments in the economy. There is a range of savings vehicles and social programs designed to specifically provide funds to retired or older citizens. They can be classified into one of three types of schemes – social security schemes, employer-based plans and individual registered retirement plans.

6. 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-based plans cover a variety of arrangements, including defined-benefit and defined-contribution retirement plans in both the public and private sectors. 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.

¹ The CSNA does not follow the exact structure of SNA2008. Sector incomes cover both primary and secondary income transactions (current transfers in), while sector outlays cover both use of income and secondary income transactions (current transfers out).

² This paper updates and extends the note presented at the WPFS in 2007. The PSA was conceived by national accountants in Canada in the mid-1990s.

Table 1: Distribution of pension assets by type of scheme

	% of pension assets (1990)	% of pension assets (2000)	% of pension assets (2009)
Employer Based Plans	58.8%	62.0%	56.3%
Individual Savings Plans	30.5%	33.3%	36.2%
Social Security	10.7%	4.7%	7.5%

Social security

Overview

7. Social security schemes are safety nets aiming to prevent poverty of the elderly. In Canada, this is comprised of Old Age Security, the Canada Pension Plan and the Quebec Pension Plan. Old Age Security/Guaranteed Income Supplement (OAS/GIS) program is a non-contributory plan and has no association with employment earnings. Benefit payments are paid out of government general revenue. It is income tested (reducing payments if a retiree receives income from other sources).

8. The Canada Pension Plan (CPP) and the Quebec Pension Plan (QPP) were established in 1966 and cover all people who have worked in Canada. They are publicly managed schemes with mandatory participation by all workers and contributions and benefits are earning related. The purpose of CPP and QPP is to provide workers and their families with basic retirement income as well as protection against disability and death. It falls under social security because it is the government who pays the benefit and employers have no obligations under these plans. The creation of the Canada Pension Plan Investment Board in 1997 and the diversification of investments to include marketable securities have been choices made by the Canada Pension Plan to attempt to maximize long-term investment returns without undue risk.

Summary treatment in national accounts

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

10. For the CPP and QPP, employee contributions are reflected in wages and salaries of households and employer contributions are included in the 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 from households to government. Benefit payments are treated as part of current transfers from government to households. Investment income earned on the plans' assets are part of government revenue, and the plans contribute to overall government saving and surplus/deficit. Financial transactions and positions related to plan assets are articulated in the government sector of the *Financial Account* and *Balance Sheet Account*, respectively.

Employer-based plans*Overview*

11. Employer-based pension plans³ are plans established by employers in both public and private sectors and are of basically two types: defined benefit or defined contribution. The plans under this category take the basic three forms: trustee pension funds, government arrangements, or insurance contracts. There are variations of employer-based plans, such as deferred profit sharing plans and other types of retirement compensation arrangements. All contributions by employees are income tax deductible. The tax is payable only when benefits are received.

Summary treatment in national accounts

12. Tax-deductible employee contributions to employer-based plans are implicitly included in wages and salaries⁴. 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 the 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 saving⁵. Withdrawals, while taxable, are not treated as current period income but rather as negative financial asset flows that are mirrored in personal saving. In the *Financial* and *Balance Sheet Accounts*, the net asset flows and positions are included in a net pension asset⁶ 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. 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.

13. For defined-benefit plans, actuarial deficits are recorded as liabilities of employers and are expensed on an accrual basis⁷. Special employer contribution cash payments to eradicate actuarial deficits are not expensed by business in the period they are made. However, given that these are currently treated as supplementary labour income of households, a business expense must be imputed in the corporate sector (and corporate surplus lowered) when these occur. 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 plans⁹.

³ As of 2009, 6 million Canadians were members in more than 19,200 registered pension plans. (from "Pension plans in Canada", Statistics Canada, The Daily, May 25, 2010).

⁴ Not all employer-based plans require employee contributions.

⁵ 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*. At the same time, this method obscures some pension flows.

⁶ This is the SNA 2008 asset category A.AF63 Pension entitlements

⁷ Actuarial surpluses are treated as "other assets" of employers.

⁸ The federal government unfunded employer-based pension plan has been running a surplus for some time. The accounting treatment in this case is different from 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 in the federal government Public Accounts. This special adjustment (i.e., the repatriation of the surplus) is treated as a capital transfer from households to government in the CSNA.

⁹ Employer actuarial surplus assets actually decrease household sector "other assets" in the CSNA.

Individual saving plans

Overview

14. In Canada, these plans were set up to encourage people to save for retirement. Registered retirement saving plans (RRSPs) were introduced in 1957 with tax incentives. Contributions to RRSPs are tax-sheltered with a limit and are on a voluntary basis. Contributions to individual retirement plans are made out of current income and/or financial transactions (e.g., drawing down deposit assets or borrowing). Withdrawals are allowed but subject to income tax at the time of withdrawal. The amount is converted to a payout vehicle such as registered retirement income fund (RRIF) or an annuity when the owner turns age 71.

Summary treatment in national accounts

15. Contributions are not explicitly recorded in the system as part of current outlays¹⁰, rather they are implicitly included in estimates of personal saving. Investment income earned on these plans also contributes to personal saving. This reconciles well with the *Financial Account*, where contributions and income earned are included in financial flows of households. Withdrawals (after tax) are 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. 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.

The Pension Satellite Account – Structure and potential uses

Description and structure

16. The Pension Satellite Account (PSA) supplements the CSNA by providing additional detail on aspects of pension schemes. It presents pension stocks and flows in an integrated stock-flow matrix that parallels the framework of the CSNA, and therefore provides a unique and comprehensive picture of the Canadian pension system. The concepts, definitions and accounting rules used in the PSA are consistent with and follow the conventions of the CSNA. This makes for coherent data and allows national accountants and analysts to easily integrate the PSA data with that of the CSNA in conducting analysis.

17. The PSA structure incorporates aspects of pension schemes, such as contributions, investment income and withdrawals, and realized and unrealized gains and losses which contribute to change in wealth. The PSA stock-flow structure includes wealth positions (stocks of assets) at market values, inflows and outlays of funds, and other changes in wealth position. More specifically, the components of wealth change are:

¹⁰ In contrast, individual saving plan contributions are typically treated as current spending in household income and expenditure surveys.

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

	Opening wealth position	Inflows: contributions, Investment-income	Outlays: Withdrawals,	Other changes in assets: Capital gains/losses; volume changes	Closing wealth position
Individual saving plans					
Employer-based saving plans					
Social security plans					

18. By definition, in a closed stock-flow matrix, the revaluations and other changes in assets comprise all changes in the wealth position not explained by contributions, investment income and withdrawals. This includes capital gains and losses and other volume changes, including those arising from exchange rate adjustments.

19. For practical purposes, the institutional dimension of the PSA presentation¹¹ has been mainly defined by data availability. The breakdown of the three tiers into further detail was provided where data supported it and reflects a mixture of detail by program and by institutional dimension. In the current format, social security is broken down into CPP, QPP and OAS/GIS. Employer-based pension plans are presented as trustee plans (private and public sectors), unfunded government plans, and other plans.

20. The detail available for individual RSPs includes deposit-type registered retirement saving plans (RRSP) in banks and life insurance products, RRSP investments in mutual funds and segregated funds, and other. This last category includes monies in locked-in retirement accounts (LIRA), locked-in life income funds (LRIF), life income funds (LIF), registered retirement income funds (RRIF), payout annuities from life insurance companies and self-directed RRSPs not included elsewhere. The data available for the development of flow estimates did not support an equivalent breakdown of individual RSPs and therefore only total flows for the third tier level are provided.

21. It should be clear that the PSA is a work-in-progress. While quite comprehensive today, new initiatives are underway to deal with data gaps. The PSA project first released estimates in June 2008 for the level (or stock) of pension assets. The first full matrix PSA release in 2009 covered the level of pension assets for the period 1990 to 2008 and the pension flows for the period 1990 to 2007.

Usefulness of the satellite account

22. The effectiveness of pension-related debate, research and analysis, and ultimately the policy-making process, relies heavily on the availability of good quality data on pension stocks and flows. While Canadian pension assets and flows are accounted for within the Canadian System of National Accounts (CSNA), they are not fully articulated within this framework.

¹¹ See Appendix 1 for 2007 to 2009 PSA data.

Personal saving and wealth evolution

23. The PSA provides users with an additional analytical dataset required to better analyze household consumption and saving behaviour in light of a significant shift in the source of funds from current income to dis-saving of accumulated assets. Dis-saving takes the form of the payment of pension benefits (from employer-based plans) or withdrawals from pension assets (individual plans). It will allow a deeper understanding of personal wealth and its distribution.

24. The personal saving rate has been declining over the last few decades in Canada. Up to 1990, the decline was considered a return to a normal level, after having peaked at over 20% in 1981. Thereafter, the decline, which continued through the 1990s and into the current decade, has generated more interest. Despite the downward trend in personal saving since 1990, household wealth has continued to accumulate by essentially replacing saving out of current income with capital gains (price appreciation of assets). Pension saving has also been growing, taking up a sharply increasing share of the downward trending personal saving. Concurrently, pension wealth has been a significant contributor to the growth in household net worth. The impact of the increasing pension payments/withdrawals, going forward in time, on household financial positions may be significant.

Forecasting the economy

25. Personal expenditure accounts for about 60% of GDP. The ability to estimate its future growth is essential for central banks, policy-makers and analysts. As Canada's population ages, there are increasing sources of funds available to households other than from income arising from production and transfers. Pension benefit payments and individual retirement saving plan withdrawals – dis-saving – will soon be key variables to any forecasts of personal expenditure. The PSA indicates that the propensity to spend is quite high out of retirement dis-saving.

Projecting tax revenue

26. Increasingly, taxes will be generated out of pension benefit payments and individual retirement plan withdrawals. The need to project tax revenues from pension dis-saving for fiscal planning purposes is clear, and the federal finance department has expressed interest in this detail of the PSA.

Impact on capital markets

27. The accumulated investments in employer-based pension plans (ESPP), social security and individual saving plans are a significant part of economy-wide assets. As assets in these funds grew sharply beginning in the late 1980s and continuing into the 1990s, they have had a substantial influence on capital markets – with respect to both growth and fluctuations. However, as these funds are drawn down by retirees over the years to come, the impact on these markets and on the economy is unclear. The PSA will be able to shed some light on the impact of these trends on the economy.

Sustainability issues

28. This is the fundamental question of: Is there enough accumulated pension saving – by type, by composition – to meet the needs of an increasing number of retirees over the next several years? If not, there are clear implications for the standard of living and likely also for government fiscal balances. Notably, there is a need to understand the age-income class distributions of this accumulated pension saving in order to fully address this issue. The actuarial requirements of this analysis go beyond the present estimates of the CSNA but could be contained within (or based on) a satellite account structure of the PSA.

Pension system risks

29. There is a series of risks associated with the pension system that feedback on the sustainability question. The overall burden of pension saving has gradually shifted from government to employers and to individuals. For defined-benefit ESPP, there are financial risks for employers associated with fluctuating values for invested pension assets. A market correction implies increased business costs as any subsequent actuarial deficits must be eliminated. Clearly, significant market corrections, risky investments or sustained poor returns on pension investments can translate into an overall cost to the economy.

30. Partly to counteract these vulnerabilities, employers have been moving away from defined benefit schemes in favour of defined contribution schemes. This is a disadvantage for employees covered by these plans, as known benefit streams provide income security. A further risk to households' future income security relates to the significant amounts invested in individual retirement saving plans. Increasingly, these investments have shifted from fixed income into equities. If returns are not adequate or capital losses are registered, future incomes can be eroded. With the significant amount of funds invested in pensions, it could be argued that the financial position of households is considerably more sensitive to market risk (both asset price and interest rate fluctuations) now than it was years ago, with potential impacts on the economy. The PSA will help access this level of risk.

Analytical results from the PSA¹²

31. At the end of 2009, there were \$2.1 trillion in pension assets, up from \$1.8 trillion in 2008 but more than four times greater than the holdings of \$0.5 trillion in 1990. After a steep decline in 2008, the total value of pension assets rebounded in 2009, reflecting the strong performance of global equity markets that began in March 2009. This rebound (+15.5%) brought pension assets close to their 2007 level. The recovery in wealth accumulation during 2009 was relatively evenly distributed across the three pension tiers. Individual registered saving plans led the way, up 20.5% to \$750.9 billion. Social security and employer-based pension plans were up 13.3% and 12.8%, respectively.

32. The PSA gives a complete breakdown of the \$1.3 trillion growth in pension assets between 1990 and 2008 (the stock of pension assets are available to 2009, and the flows to 2008¹³). The \$1.1 trillion earned in investment income from pension assets accounted for the bulk of the increase. Contributions of \$1.5 trillion narrowly exceeded the \$1.4 trillion in withdrawals, for a net inflow of \$0.1 trillion. There was a net gain of \$0.1 trillion from the revaluation of asset values (which include capital gains and losses). 2008's financial market losses of nearly \$0.4 trillion erased almost all the capital gains earned in the previous 4 years combined.

Social Security

33. Social security assets nearly tripled from \$55 billion in 1990 to \$155 billion in 2009. The increase was dominated by investment income, which totalled \$93 billion from 1990 to 2008. Revaluation losses of \$33 billion in 2008 wiped out entirely all revaluation gains made by social security schemes between 1990 and 2007. Withdrawals exceeded contributions on balance by \$9 billion between 1990 and 2008. However, all of this outflow occurred in the 1990s. The net outflow of

¹² Estimates for the Canadian Pension Satellite Accounts have been produced by the Income and Expenditure Accounts Division at Statistics Canada, under the direction of Joe Wilkinson and Marlenna Ifrim.

¹³ While stock positions are available to year-end 2009, detailed 2009 flows by type of pension scheme and by category type (contributions, investment income, withdrawals, and revaluations) will become available with the next PSA annual release in the Fall of 2011 when the detailed administrative data files for 2009 become available.

withdrawals from social security was sharply reversed after an increase in contribution rates late in the 1990s, and contributions exceeded withdrawals by nearly \$46 billion since 2000.

34. The size of social security pension assets has fallen relative to assets held in employer-based and individual pension plans, reflecting the rapid growth in employer-based and individual plans. But in absolute terms there was a sharp increase in social security pension assets in the past decade after almost no growth in the 1990s. This was due to a hike in CPP and QPP contribution rates starting in 1997 to head off a looming shortfall. The CPP had until then had been a pay as you go program (pay as you go implies benefits to retirees were financed largely by contributions from younger cohorts). As well, the CPP was no longer restricted to just investing in government bonds, which boosted its rate of return on average over the past decade.

35. The overhaul of the Canada and Quebec Pension Plans starting in 1997 reversed a long-term decline in their assets and investment income. Between 1990 and 1999, annual investment income earned by these pension plans fell by 19%, reflecting both an erosion of their asset base as withdrawals exceeded contributions and a lower rate of return on bonds as the yield on long-term Canada bonds fell from 10.9% in 1990 to below 6% by the late 1990s. By 2001, contributions to the CPP and QPP exceeded withdrawals, reflecting the phase-in of higher contribution rates. Investment income has also risen steadily since 2003. The CPP and QPP have had different asset and investment income profiles over time. From 1990 to 1999, investment income fell 22% for the CPP and 44% in the QPP. The CPP's income then grew by 6% until 2008. The QPP's income rose by 72% between 1999 and 2008. Before 1999, the CPP had virtually no revaluation of its assets, reflecting its restriction to investing only in government bonds. Since 2000, the CPP has come to resemble more the QPP, which always has invested in other assets. According to reports published by the Chief Actuary of Canada, the expansion in overall assets held by the CPP put it on a more secure footing: at its current contribution rate, it is sustainable for the next 75 years.

Employer-based funds

36. Assets in employer-based pension plans rose over three-fold from \$303 billion in 1990 to \$1,167 billion in 2009, making them the largest part of Canada's pension system. They hold over seven times the amount of assets as in social security plans. Employer-based plans have relied on investment income for nearly all of their growth between 1990 and 2008, as withdrawals exceeded contributions and revaluations on balance between 1990 and 2008. ESPP's lost over \$207 billion in asset value in 2008 due to revaluations.

37. Their assets are dominated (76%) by trustee pension plans, both public and private. The fastest growing segment of trustee pension plans has been in the public sector. In 1990, public sector plans had assets of \$111.1 billion, versus \$88.3 billion in the private sector. By 2009, public sector assets had increased five-fold to \$592.1 billion, twice the size of the \$296.3 billion in trustee private sector plans.

38. There are a number of reasons why public sector pension plans have grown faster than private sector plans.

39. Contributions in the public sector totalled \$228.0 billion from 1990 to 2008, \$77 billion (or 51%) more than in the private sector. Some of this rapid growth reflected the creation of funds to finance pensions for public servants, which reduced the growth of the unfunded liabilities of governments. Conversely, the privatization of some public companies led to the reallocation of some public sector pension assets to the private sector. Meanwhile, withdrawals from public sector plans rose only \$46.4 billion more than in private plans, leaving net contributions to public plans \$30.6 billion more than in the private sector from 1990 to 2008. Investments by public sector funds yielded \$286.7 billion in income from 1990 to 2008, nearly double the private sector's \$145.9 billion (partly reflecting that assets in

the public sector were nearly twice as large). Finally, revaluations in the public sector from 1990 to 2008 added \$152.3 billion, more than twice the \$64.1 billion in the private sector.

40. One notable feature of both public and private sector trustee pension plans is that withdrawals often exceed contributions. Contributions to public sector pension plans fell between 1993 and 2002, in line with lower employment in governments. As well, contributions fell because of contribution holidays taken by employers during the stock market boom late in the 1990s, when funds were deemed to have more assets than required to meet future pay-outs. Contributions to public sector pension plans nearly tripled between 2002 and 2008, partly because of more employees as well as governments topping-up under-funded plans. The growth of withdrawals from public sector pension funds slowed slightly after the 1990s, partly as incentives for early retirement offered during government downsizing were withdrawn. Since 2005, contributions have exceeded withdrawals for public sector pension plans.

41. The growth of private sector trustee pension plan assets decelerated markedly in the past decade. After more than doubling from \$88.3 billion in assets in 1990 to \$196.8 billion in 2000, growth slowed to 26% in the period ending in 2009, when assets totalled \$249.1 billion.

42. The slowdown in asset growth in private sector pension plans in the past decade reflects the negative impact of revaluations on private pension plan assets since 1999. In the 1990s, these revaluations added an average of 5.5% a year to these assets (matching growth in public sector plans). Between 2001 and 2008, private sector pension plans lost a cumulative \$25.1 billion due to revaluations.

43. Revaluations during the stock market crash in 2001 and 2002 erased \$26.5 billion, nearly all the revaluation gains made during the 1998 to 2000 period, while losses in 2007 and 2008 (\$65.8 billion) wiped out most of the \$67.3 in revaluation growth from 2003 to 2006. A rise in revaluations due to financial market gains in 2009 implies a rebound in growth (implicit in the 2009 year end asset position).

44. Other flows were smaller and less volatile contributors to the slowdown in private pension assets growth in the 2000s. Withdrawals have been stable between 1991 and 2008 at an average annual rate of 5.9%. Contributions have increased sharply in recent years as private pensions strived to remain fully funded, rising from between \$5 and \$6 billion a year through most of the 1990s to an average of almost \$15 billion from 2006 through 2008. Despite the recent increase in contributions to private plans, they remained less than withdrawals (\$14.5 billion versus \$16.9 billion in 2008).

Individual registered retirement saving plans¹⁴

45. Individual registered retirement saving plans (RRSPs) grew from \$157 billion in 1990 to \$751 billion in 2009. They were the only major grouping of pensions where contributions exceeded withdrawals for the period 1990 through 2008, with a net inflow of \$168 billion, accounting for almost 30% of its total asset growth. Since 1991, pension assets in individual RRSPs have grown faster than private sector pension plans (9.0% versus 7.0% average yearly growth thru 2008).

46. Assets in these plans have grown significantly, starting in 1991, when higher contribution limits for registered retirement savings plans (RRSPs) led to a doubling of contributions between 1990 and 1995. Contributions have continued to rise in the 2000s, but not as fast as withdrawals, a reversal from the 1990s. After an increase of \$228 billion in revaluations in individual RRSP assets from 2003 to 2007, there were

¹⁴ Individual registered retirement saving plans include deposits in Registered Retirement Savings Plan (RRSP) accounts, mutual funds and segregated funds in RRSP accounts, Registered Retirement Income Funds (RRIF), Life Income Funds (LIF), Locked-in Retirement Income Funds (LRIF), Locked-in Retirement Accounts (LIRA), individual registered payout annuities from life insurance companies and self-directed RRSPs.

revaluation losses of \$139 billion in 2008. Annual investment income was 62% higher in 2008 compared to a decade earlier, mainly due to a larger asset base.

47. Canadians increased individual contributions from \$27 billion in 2002 to \$33 billion in 2008. However, contributions to individual RRSPs did not accelerate as much over the past decade as social security or employer-based pension plans. Contributions to individual RRSPs rose 17% between 1999 and 2008, while they more than doubled for social security and employer-based plans. This slower growth occurred despite a large increase in allowable contributions phased-in after 2002 (although unused contribution space for RRSPs can be carried forward indefinitely, reducing the urgency to contribute). This more recent increase in contribution limits (and the lifting of foreign investment restrictions in 2005) did not provoke the same surge in contributions seen after 1991.

48. Looking at contributions to individual RRSPs as a share of disposable income shows a rise from 2.5% in 1990 to 5.1% in 1996 and then a slow decline to 3.5% in 2008. This slowdown occurred despite the aging of the population over the last two decades. Some of the smaller response of contributions may reflect the large gains in revaluations as the stock market surged between 2003 and 2007. It will be interesting to examine contributions over the next few years as individuals try to recoup revaluation losses of \$139 billion in 2008 (wiping out most of the \$147 billion in revaluation gains from 2005 to 2007).

49. Contributions to individual RRSPs have consistently exceeded withdrawals. However, the gap between the two has narrowed, as annual withdrawals in 2008 were 88% higher than compared to 1999 (at the same time, annual contributions have grown only 17% between 1999 and 2008).

Impact of pension assets on balance sheets and saving

50. The large changes since 1990 in pension assets (excluding social security) held by households have led to several notable changes in household balance sheets. Before 1990, households had invested mostly in conventional deposits and bonds. Since then, their investment portfolio has shifted to pension and equity investments. The share of household pension assets (excluding social security) in total financial assets rose from 36.9% in 1990 to 47.2% in 2009.

51. Led by pension assets, total household financial assets have more than tripled from \$1.2 trillion in 1990 to just over \$4.0 trillion in 2009. Household holdings of financial assets remained slightly larger than investment in non-financial assets, notably housing. While the housing market has surged in recent years, this follows several years of sluggish conditions in the mid-1990s. Overall, households had \$7.3 trillion in total assets (financial and non-financial) at the end of 2009, with 38.5% in real estate and 26.2% in pension assets (excluding social security).

52. The shift in the composition of household wealth to real estate and pension assets has been encouraged by the tax-deferred or exempt status of many of these investments. The primary residence of households is tax exempt when sold, implying that most homes (the largest part of household assets) are sheltered from taxes. Meanwhile, since the early 1990s savings in pension plans more than accounted for all personal savings, and most do not pay tax until withdrawal. When excluding employer-based plan and individual registered retirement pension plan related saving, personal saving has been negative for the last two decades and has declined steadily over this period. This shift in savings to money held in pension plans may reflect a rational response to tax incentives. It also reflects the steady ageing of the population: since consumption by retirees is counted in personal expenditure, but part of the expenditure is financed by running down pension assets rather than financed out of current income, the ageing of the population inevitably leads to a lower or even negative saving rate. Income taxes paid by households also will rise

more than personal income from production would imply, as taxable withdrawals from pension assets increase.

Summary of PSA results

53. There have been several notable shifts since 1990 in the structure of pension assets in Canada. Assets have more than quadrupled, mostly due to higher investment income. Contributions and withdrawals have both rose steadily from 1990 to 2008. Revaluations accounted for about one-third of overall asset growth from 1990 to 2007 (\$487 billion). Large capital losses in 2008 (\$379 billion) wiped out close to 80% of the gains accumulated in pension assets in the two previous decades. Market rebounds in 2009 have helped pension schemes recoup some of the losses.

54. Social security has shown the fastest growth after its reform in the late 1990s, although it remains the smallest part of total pension assets. Employer-based pension plans were still the largest segment of pensions, sustained by rapid growth in public sector trustee pension plans. Individual RRSPs have grown faster than employer-based plans since 1990, and they accounted for over 36% of total pension assets at year end 2009.

SNA 2008 implementation – currently implemented

Government unfunded employer-based pension plans

55. SNA 2008 largely clarifies one of the most difficult issues with respect to treatment of employer sponsored schemes that was the asymmetry in SNA 1993 between the treatment of funded and unfunded schemes. Canada altered its treatment of government unfunded employer-based pension plans a number of years back, so as to align these with other employer-based plans and to improve measures of personal saving and wealth as well as of government surplus/deficit and debt.

Recognition of pension obligations

56. While pension payments were met out of current revenue (often referred to as “pay as you go”) and plans were non-autonomous in nature (remaining largely the responsibility of the employer government to oversee and administer) the recognition of pension obligations by governments in their official public accounts became an important factor. In fact the treatment of these plans in official government accounts resembled more a funded scheme than an unfunded one. Given that governments recognized the liability¹⁵ 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

57. Employers have a legal and moral obligation to meet employee pension obligations. Recognition of pension liabilities in government official public financial accounts in Canada provided clear evidence of these obligations as well as an indication of the intent on the part of governments to meet them. Further, government ability to raise tax revenue suggested that ability to pay would not be compromised and might not be a pivotal factor.

¹⁵ Including top up due to periodically assessed actuarial deficits, or reclaiming of surpluses.

Harmonization of government accounting systems

58. There is general agreement that within countries it is desirable to have official public financial accounts of governments as well as data compiled from those accounts (e.g., SNA government sector estimates) on the same basis. As work progressed leading up to the 1997 historical revision to the Canadian System of National Accounts, one theme was enhanced harmonization between government financial information and national accounts statistics.

RELEVANT MEASURE OF GOVERNMENT SECTOR DEBT

59. 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, complete and consistent measure of government liabilities is 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.

Avoidance of statistical breaks: Evolution of government employer sponsored plans

60. In Canada there has been a clear movement in government employee pension plans towards funding. Over the last 20 years, a number of provincial plans have been converted from non-autonomous unfunded schemes to autonomous funded schemes¹⁶. 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.

Relevant measures of household pension saving and wealth

61. 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-based plans, then there is little rationale for having a separate treatment of these two schemes.

Output of pension schemes

62. The SNA 2008 recognizes that there is a cost to administering any pension scheme including non-autonomous schemes and unfunded schemes. In principle, there should be a **value of output of the pension fund**. This is to be determined on the basis of **the sum of costs**, and by convention is deemed to be payable by the employees holding the pension entitlements. Canada follows this treatment.

SNA 2008 implementation – Outstanding items, TBD

63. There remain some challenges for full implementation of SNA 2008 in the CSNA relating mainly to the accounting of employer-based pension schemes. Leading up to the historical revision of the national accounts for 2012, we are in the process of debating and deciding on some of these issues. Therefore, it is too soon to pronounce on the issues noted below.

¹⁶ Most recently, in April of 2000, the federal government created a funded portion to its employee pension plan.

Actuarial valuation principle for employer-based defined benefit plans

64. SNA 2008 recommends the maintenance of an actuarial estimation of the liabilities of defined benefit schemes. In concert with this, SNA08 also recommends imputing a value for employer's pension contributions in the current period over and above their actual contributions.¹⁷

Contributions on an accrual basis

65. While we are looking at this issue, no decision to change treatment has been made yet. The current CSNA treatment has been to treat all contributions on a cash basis – that is, contributions flows as these are booked by the pension plans. This includes regular contributions plus special contributions arising from actuarial deficits and/or contribution holidays arising from actuarial surpluses. The cash basis flows lead to some degree of lumpiness in labour compensation. Furthermore, this is not consistent with standard accounting, as most employers 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. A re-design of the content of the enterprise survey has opened the door for an improved treatment for contributions¹⁸.

66. Actuarial liabilities

66. The result of the cash treatment for contributions is that the value of pension fund assets and the counterpart entry in the household balance sheet is the current accumulated net asset value adjusted for market fluctuations in the value of the pension funds' asset holdings with respect to employers in the corporate sector. However, there is more to this issue. Given that, in the case of a plan's actuarial deficit, the actuarial deficit is captured in the "other financial" liabilities of the corporate sector, then this actuarial value amount is reflected in "other financial assets" in the household sector. A re-design of the content of the enterprise survey has opened the door for more transparency in accounting for actuarial liabilities. In practice it seems that the actuarial liability should be a receivable of the pension funds and part of a pension asset in the household sector.

Treatment of Canada/Quebec Pension Plans

67. Another issue that arises in considering the recommendation of SNA 2008 is how to treat partially funded social security schemes. Changes in recent years to contribution rates and asset composition clearly give the plans partially funded status, and were intended to offset some of the impact of an ageing population – specifically, when the retired population out-numbers the working population as the baby boomers generation ages. In some sense, this tier of the pension system does not neatly fit the SNA 2008 mould.

68. 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 the current treatment, with its mitigating effect on government net debt; recognize a liability to the household sector equivalent to the accumulated assets at market value; or recognize a full actuarial liability of future benefits streams. It could be argued that the second option appears to be the best way to characterize the economic substance of the plan as it now stands.

¹⁷ The imputed value could be negative, which would have a dampening effect on actual contributions.

¹⁸ These approaches can be characterized as either a transactions based approach and a modelled approach. The latter approach would involve collecting data on the actuarial assumptions of the pension plans and modelling the contributions based on them. This would smooth out the contributions over time and keep the pensions values on track with the actuarial line. Another option is to collect from employers both regular contributions and special contributions, and equate labour compensation to regular contributions.

69. CSNA is unlikely to change the current treatment, where it is part of the government sector and there is no recorded liability. The articulation of entitlements as liabilities of the social security scheme remains possible through the PSA.

Presentational issues for employer-based pension funds

70. In the Canadian national accounts, the incomes and outlays for pension funds are consolidated in the household sector, and only the assets-liabilities and associated financial transactions are shown in the corporate sector as financial intermediaries. In other words, the large employer-based pension plans have always been treated as flow through entities – essentially, as collective investment schemes. This means that the contributions to the plans remained in the household sector and that the interest and dividends of the plans accrued to the household sector. The consolidation of such plans in the household sector avoids the necessity of the SNA93 D8 adjustment.

71. Pension Funds that administer the assets of most employer-based schemes are considered as institutional units in SNA08. Following SNA 2008 would mean establishing an income and outlay account for pension funds (included in the overall corporate financial sub-sector) and articulating their gross income-outlay flows with households. Canada is investigating implementation of this recommendation. In the meantime, such flows are visible in the PSA. 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 households as the retirement age group becomes the dominant population group in the economy.

72. Breaking out defined benefit schemes from defined contribution schemes remains a future possibility of the PSA.

Summary and comments

73. It is likely that parts of the PSA will shift to quarterly frequency, to enhance current analysis. . Certain further developments/extensions are also planned, in particular with respect to the development of standard supplementary SNA tables on pension incomes, saving and wealth, payments/withdrawals, taxes paid and estimates of personal expenditure from retirees. One area of interest is with respect to the market vulnerabilities of assets in defined benefit plans and the implications for employers. In addition, there are plans to link up with household micro data to expand the analytical capability of the PSA. Lastly, there will continue to be improvements in the accuracy of the data in the PSA matrix.

74. For a more detailed description of the sources and methods used to derive the stocks and flows estimates for the PSA, please see <http://www.statcan.gc.ca/pub/13-599-x/13-599-x2010002-eng.htm>

APPENDIX 1¹⁹

Detailed time-series presentation of the stock-flow matrix of the Pension Satellite Account
Market value estimates for financial asset positions are available for the period 1990-2009.
Estimates for financial flows are available for the period 1990-2008.
Figures are in Canadian \$millions

	2007	2008	2009
1. Social security			
Opening wealth position	145,490	157,804	136,607
<i>plus</i> : Inflows (contributions, investment income)	48,249	49,793	
Contributions	43,076	44,526	
Investment income	5,173	5,267	
<i>minus</i> : Outflows (withdrawals not including OAS/GIS payments)	35,650	37,631	
<i>plus</i> : Revaluations and other changes in assets	-285	-33,359	
Closing wealth position	157,804	136,607	154,716
<i>memo</i> : OAS/GIS payments	33,320	34,950	
1.1 Canada Pension Plan			
Opening wealth position	113,394	122,422	110,858
<i>plus</i> : Inflows (contributions, investment income)	38,508	38,761	
Contributions	34,483	34,663	
Investment income	4,025	4,098	
<i>minus</i> : Outflows (withdrawals)	26,994	28,487	
<i>plus</i> : Revaluations and other changes in assets	-2,486	-21,838	
Closing wealth position	122,422	110,858	126,082
1.2 Québec Pension Plan			
Opening wealth position	32,096	35,382	25,749
<i>plus</i> : Inflows (contributions, investment income)	9,741	11,032	
Contributions	8,593	9,863	
Investment income	1,148	1,169	
<i>minus</i> : Outflows (withdrawals)	8,656	9,144	
<i>plus</i> : Revaluations and other changes in assets	2,201	-11,521	
Closing wealth position	35,382	25,749	28,634

¹⁹ While stock positions are available to year-end 2009, detailed 2009 flows by type of pension scheme and by category type (contributions, investment income, withdrawals, and revaluations) will become available with the next PSA annual release in the Fall of 2011 when the detailed administrative data files for 2009 become available.

2. Employer-based pension plans

Opening wealth position	1,124,820	1,186,954	1,035,026
<i>plus</i> : Inflows (contributions, investment income)	112,298	110,504	
Contributions	55,663	55,512	
Investment income	56,635	54,992	
<i>minus</i> : Outflows (withdrawals)	54,341	55,276	
<i>plus</i> : Revaluations and other changes in assets	3,877	-207,155	
Closing wealth position	1,186,954	1,035,026	1,167,320
2.1 <u>Trusteed pension plans</u>			
Opening wealth position	870,822	921,400	773,472
<i>plus</i> : Inflows (contributions, investment income)	74,975	75,216	
Contributions	37,132	38,731	
Investment income	37,843	36,485	
<i>minus</i> : Outflows (withdrawals)	40,028	40,466	
<i>plus</i> : Revaluations and other changes in assets	15,632	-182,677	
Closing wealth position	921,400	773,472	888,410
2.1.1 <u>Trusteed pension plans - public sector</u>			
Opening wealth position	573,515	622,004	524,314
<i>plus</i> : Inflows (contributions, investment income)	47,869	49,704	
Contributions	22,994	24,255	
Investment income	24,875	25,449	
<i>minus</i> : Outflows (withdrawals)	21,979	23,599	
<i>plus</i> : Revaluations and other changes in assets	22,599	-123,795	
Closing wealth position	622,004	524,314	592,133
2.1.2 <u>Trusteed pension plans - private sector</u>			
Opening wealth position	297,306	299,396	249,159
<i>plus</i> : Inflows (contributions, investment income)	27,106	25,512	
Contributions	14,138	14,476	
Investment income	12,968	11,036	
<i>minus</i> : Outflows (withdrawals)	18,049	16,867	
<i>plus</i> : Revaluations and other changes in assets	-6,967	-58,882	
Closing wealth position	299,396	249,159	296,277
2.2 <u>Government consolidated revenue arrangements</u>			
Opening wealth position	193,738	199,990	205,123
<i>plus</i> : Inflows (contributions, investment income)	22,722	22,988	
Contributions	6,886	7,171	
Investment income	15,836	15,817	
<i>minus</i> : Outflows (withdrawals)	11,801	12,359	
<i>plus</i> : Revaluations and other changes in assets	-4,669	-5,496	
Closing wealth position	199,990	205,123	209,969

2.3 Other employer-based pension plans

Opening wealth position	60,260	65,564	56,431
<i>plus</i> : Inflows (contributions, investment income)	14,601	12,300	
Contributions	11,645	9,610	
Investment income	2,956	2,690	
<i>minus</i> : Outflows (withdrawals)	2,512	2,451	
<i>plus</i> : Revaluations and other changes in assets	-7,086	-18,982	
Closing wealth position	65,564	56,431	68,941

3. Individual registered retirement saving plans

Opening wealth position	652,242	736,151	623,249
<i>plus</i> : Inflows (contributions, investment income)	59,664	57,005	
Contributions	34,058	33,314	
Investment income	25,606	23,691	
<i>minus</i> : Outflows (withdrawals)	31,029	31,122	
<i>plus</i> : Revaluations and other changes in assets	55,274	-138,785	
Closing wealth position	736,151	623,249	750,929

Total plans

Opening wealth position	1,922,552	2,080,909	1,794,882
<i>plus</i> : Inflows (contributions, investment income)	220,210	217,301	
Contributions	132,797	133,352	
Investment income	87,413	83,949	
<i>minus</i> : Outflows (withdrawals)	121,020	124,029	
<i>plus</i> : Revaluations and other changes in assets	58,867	-379,298	
Closing wealth position	2,080,909	1,794,882	2,072,965

REFERENCES

- Cross, Philip and Joe Wilkinson. 2009. "What does the Pension Satellite Account tell about Canada's pension system?" *Canadian Economic Observer*. Vol. 22, no. 11. Statistics Canada, catalogue no. 11-010-XIE, <http://www.statcan.gc.ca/pub/11-010-x/2009011/part-partie3-eng.htm>
- Dong, Lauren, Patrick O'Hagan, Joe Wilkinson, and Karen Wilson. 2006. "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 implementation of the SNA93 Update? A proposal for a Pension Satellite Account". 29th General Conference of the International Association for Research in Income and Wealth, Joensuu, Finland. August 20-26, http://www.iariw.org/abstracts/2006/wilson_a.pdf
- O'Hagan, Patrick. 2005. *Trends in Saving and Net Lending in the National Accounts*. Statistics Canada Catalogue no.13-604-MIE. Ottawa, Ontario. 14 p. Income and Expenditure Accounts Technical Series, no. 49, <http://www.statcan.gc.ca/pub/13-604-m/13-604-m2005049-eng.pdf>
- . 2007. "Canadian SNA Pension Satellite Account". *Organisation for Economic Co-operation and Economic Development Working Party on National Accounts*, Paris. October 3. 30p. www.oecd.org/dataoecd/58/20/39449709.ppt
- Statistics Canada, Guide to the Pension Satellite Account, Catalogue no.13-599-X, <http://www.statcan.gc.ca/pub/13-599-x/13-599-x2010002-eng.htm>
- Wilkinson, Joe. 2009, The Pension Satellite Account in Canada, European Central Bank and Eurostat, Workshop on Pensions, 29-30 April 2009, p165-176