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A Micro-based Measurement Framework for Canadian Pensions

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Abstract

Employer-sponsored private pension plans are a key element of the financial security of Canadians, and the institutional environment surrounding retirement savings is evolving rapidly in the face of globalization and an ageing population. The potential erosion of Canada's defined-benefit employer pension system is a primary issue of public policy concern, and a preoccupation of provincial regulatory authorities, the Canadian central bank, the federal finance department and other stake-holders. The evolution of Canada's retirement income system has wide-reaching implications for wealth accumulation and portfolio composition, and potentially important impacts on federal tax policy and the stability of the Canadian financial system. Understanding the distributional effects of this evolution on individuals and families as well as employers can only increase in importance as the population ages.

Micro-based statistics on the Canadian pension system include a suite of sources, among them information from provincial regulatory authorities, surveys of pension fund trustees and household surveys of income, consumption and wealth. The paper will explore the dimensions of micro-based pension statistics in Canada and how they can serve as a framework to complement macro measures. Particular emphasis will be given to the wealth value of employer-sponsored pension plans assigned at the household level in the Survey of Financial Security, based on a linkage to regulatory information on the terms and conditions of registered pension plans. In addition, an analysis of new micro-data on the funded status of employer pension plans and the assumptions used in valuing actuarial liabilities will be presented. This information is reported on a triennial basis to Canadian pension supervisory authorities.

Acknowledgements

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I. Introduction

Understanding the nature and evolution of Canada's retirement income system is becoming increasingly important as the population ages, and pension reform has gained prominence on the public policy agenda. Relevant and timely statistics describing the key features of the Canadian pension system will be essential to understanding household and firm behaviour as it evolves in response to global economic forces and mounting domestic pressures for institutional change.

How well do existing micro measures for employer pensions equip us for understanding current and future developments? What can we learn from available Canadian data that can serve to elucidate issues related to both firm behaviour and the future economic security of households? What are the issues, limitations and gaps in micro measures requiring further development to adequately examine key research and policy questions?

This paper aims to describe the suite of micro measures currently available for Canadian employer pensions. It demonstrates how, along with serving as the foundation for macro measures they provide essential context to understand key issues of national concern. An appreciation of the breadth and appropriate interpretation of these measures, as well as their measurement challenges and gaps, will be essential in the implementation of appropriate collection strategies going forward.

The paper begins with an overview of Canadian retirement income system and the current policy context, then briefly reviews macro measures in the Canadian System of National Accounts, existing and in development. It goes on to describe micro measures in greater detail, focusing primarily on collection activities where pensions are a primary feature. Measurement issues, limitations and gaps are described, as are activities in course at Statistics Canada to address them.

Finally, two analytical examples are explored in greater detail. The first pertains to analysis of regulatory data on the funded status of pension plans and the actuarial assumptions associated with their valuation on a going concern basis. The second examines the wealth value of employer pensions, imputed at the household level on the Canadian Survey of Financial Security.

The paper concludes by suggesting features of an ideal micro-based measurement framework for Canadian pensions, and by flagging some critical areas of future statistical development both to elucidate macro measures and enable a richer understanding of the role of pensions in social research applications.

II. The dimensions of Canada's pension system

As in many other countries, there are essentially three pillars that make up Canada's retirement income system. The first includes government income support in the form of social security programs, along with publicly-managed contributory plans. The second includes privately managed registered employer pension plans, regulated by provincial and federal supervisory authorities. The third consists of tax-deferred savings plans, in which individual participation is discretionary.

Government administered plans

The Old Age Security/Guaranteed Income Supplement social security program guarantees a minimum income to all Canadians 65 or older. It provides a basic benefit to all persons with net income below a specified amount, gradually reduced to zero as income increases. There are allowances for a spouse/partner and to widows with limited income approaching retirement age. The OAS/GIS are essentially income-based social security benefits; no contributions are required and benefits are paid from the federal government's consolidated revenue fund¹.

Canada and Quebec Pension Plans are contributory state administered pension plans directed at the employed. They cover virtually all paid workers in Canada and are compulsory for employees aged 18 years and over. Contributions are made at a fixed rate of earnings by both employees and employers. The maximum pension payable amounts to approximately \$10,000 per year, about one fifth of Canada's median annual income. The CPP fund is accounted for separately in the government accounting system and assets earn investment income to help finance future entitlements.

Together government-administered retirement income programs are intended to provide a very modest base income. By design, they do not aim to replace pre-retirement income for the majority of the population. It is well-recognized they must be supplemented with other forms of retirement saving in order to ensure acceptable living standards at the time of retirement.

Employer sponsored pension plans

By far the bulk of pension wealth in Canada is accumulated via registered pension plans. With few exceptions, these plans must be registered with a provincial or federal supervisory authority and are subject to regulations which vary according to the jurisdiction responsible. Employers are not required by law to sponsor private pension plans; they are provided as part of a compensation package.

Registered pension plans are established by employers (private or public sector) or unions on behalf of plan members and can have a variety of terms and conditions. Approximately 38% of paid workers in Canada were covered by a registered pension

¹ In 2006, a pensioner with a total income greater than \$62,144 must repay part or all of the OAS/GIS benefit through the tax system.

plan in Canada in 2006. The vast majority of pension plan membership (80%) continues to be concentrated in defined-benefit plans, but there has been a gradual decline in coverage rates since 1999 and a non-negligible shift towards defined-contribution arrangements, particularly for new hires in the private sector.

In most cases, employees belonging to a registered pension plan who terminate employment are entitled to transfer the amount they have accrued in the plan to another employer pension plan or a Locked-In Registered Retirement Savings Plan, but the funds must normally be used to provide income in retirement.

In general, provincial legislation and regulations impose documentation and disclosure standards, minimum benefit requirements, minimum funding requirements and investment standards for registered pension plans. In addition, the federal Income Tax Act contains provisions regulating the type and magnitude of permissible benefits, the maximum tax-deductible contributions, the transfer of tax-sheltered benefits among employer pensions and retirement savings plans and the taxation of pension benefits. There are also Income Tax Act restrictions on over-funding of defined pension plans, limiting the amount of actuarial surplus that can be accumulated.

In addition to registered pension plans, employer sponsored plans can take other forms, such as group registered retirement savings plans, deferred profit sharing plans and retirement compensation arrangements, which provide additional compensation on retirement to supplement what can be provided via a standard registered pension plan.

Individual retirement savings plans

Registered retirement savings plans offer individuals a tax incentive to save for retirement. Income tax is not paid on contributions within certain limits.² Contributions are voluntary and are deducted from taxable income. Investment income earned on savings is not subject to tax.

Although the intention of the program is to accumulate savings for retirement, lump sum amounts can be withdrawn at any time, and are simply treated as taxable income at that time.³ Amounts held in registered retirement savings plans must be converted to a payout vehicle, most commonly a registered retirement income fund (RRIF) but possibly an annuity, at age 71.

² The maximum allowable contribution limit to an RRSP for 2007 is \$19,000. The allowable RRSP contribution is the lower of the following: 18% of one's earned income from the previous year, the maximum annual contribution limit for the taxation year, or the remaining limit after any employer-sponsored pension plan contributions plus unused "room" from previous years.

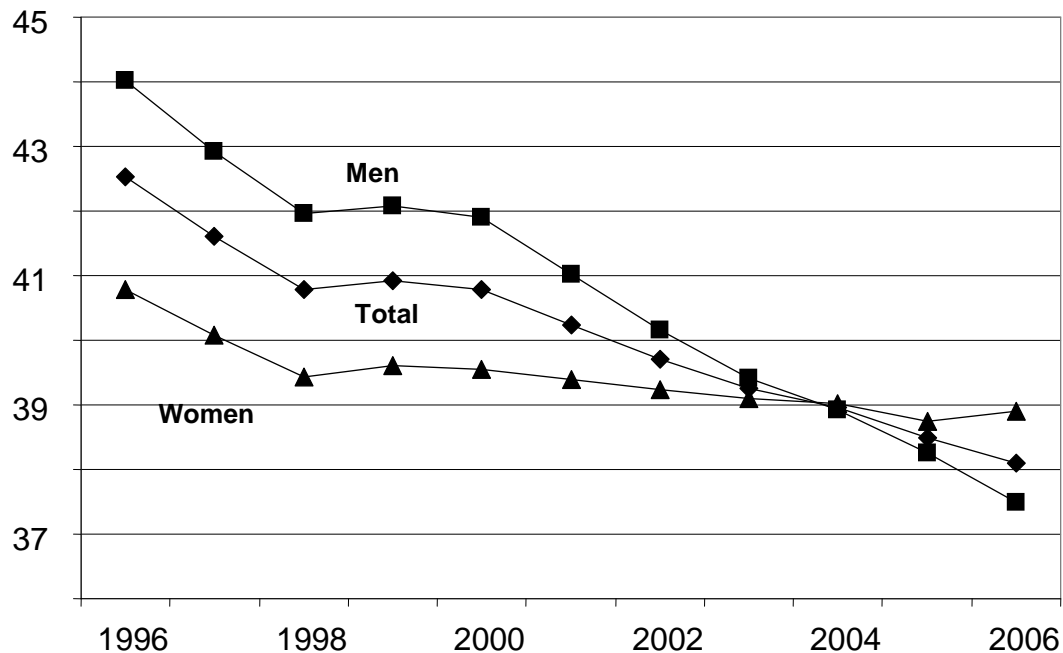
³ While one would normally pay income tax on any RRSP withdrawal, there is an important exception to the rule. First-time home-buyers may withdraw up to 20,000 (40,000 per couple) under the Home Buyers' Plan to use as a down payment for a home. Amounts withdrawn must be repaid within 15 years and repayments are not tax deductible.

Recent developments and policy context

While membership in employer registered pension plans has increased steadily in absolute terms since the mid 1970s, it has recently not kept pace with paid employment growth, resulting in declining coverage rates. The composition of private pension plan membership has also shifted significantly. Coverage rates for women have increased in tandem with their growing labour force participation.

Figure 1: Coverage rates

Percentage of paid workers covered by a registered pension plan



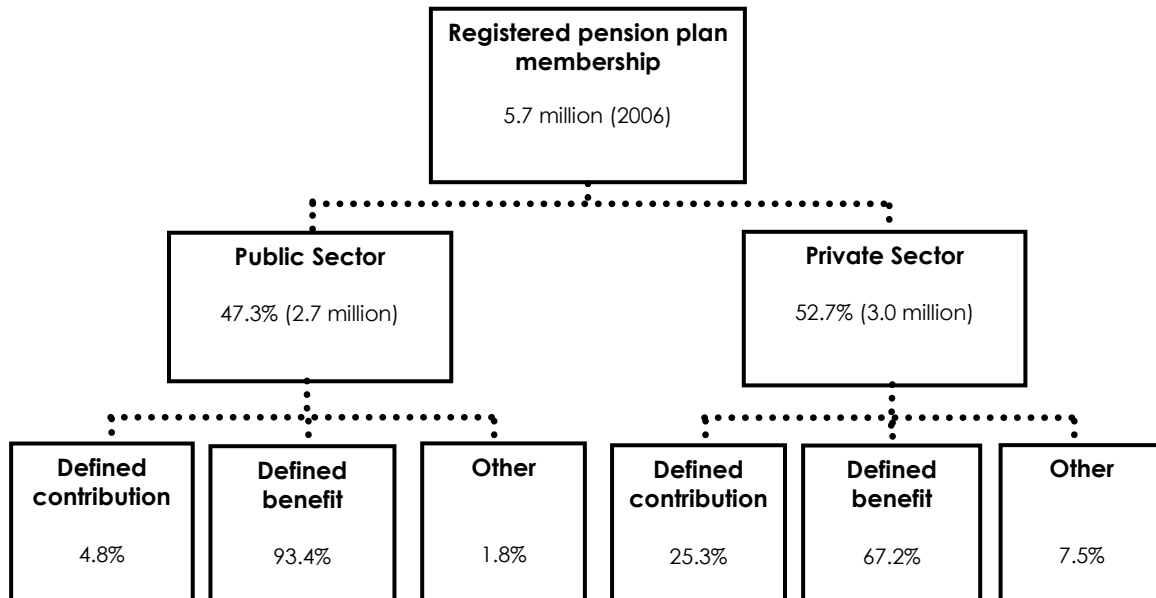
Private sector pension coverage has eroded in relation to the public sector.

As can be seen from Figure 2, while the public sector accounts for roughly 20% of paid employment in Canada, it accounts for approximately half of membership in employer-sponsored registered pension plans. Pension plans tend to be larger in the public sector, and terms and conditions are heavily-weighted towards defined-benefit arrangements, which account for more than 90% of members. The DB share in private sector membership was about 70% in 2006.

Differential pension coverage and the terms and conditions of employer pension plans have a very significant impact on the Canadian wealth distribution. Recent studies of long term trends in pension coverage and retirement savings have shown that, while women's

increases in pension coverage for women have partially offset declines for men at the family level, Canadian families' preparedness for retirement, which was fairly unequal in the mid-1980s, has become even more unequal over the past two decades.⁴ This finding has important implications for the future income distribution of seniors.

Figure 2: Registered pension plan membership



Available measures indicate that, unlike in the US and other jurisdictions, the recent shift from defined benefit to defined contribution or other arrangements has thus far proceeded very slowly in Canada. Nonetheless, recent developments have prompted calls for pension reform in Canada. The gradual decline in pension coverage rates and a shift towards defined contribution arrangements for new hires, particularly in the private sector, have raised concerns in many quarters about the erosion of the Canadian defined benefit pension system.

Most importantly, defined contribution arrangements and individual savings plans put the onus on the individual to save appropriately and to manage their own investment portfolio to generate an optimal return to finance their retirement. Evidence suggests that lay-investors with little financial expertise often make less than optimal choices that have important impacts on their future financial security.

In discussions around the recent pension reform debate, a range of factors have been cited as contributing to disincentives for employers to offer defined benefit pension arrangements in Canada.⁵ Pressures from globalization, economic restructuring and the changing face of the Canadian workforce contribute to increased labour mobility and

⁴ See Morissette and Ostrovsky (2005).

⁵ Ontario Expert Commission on Pensions, *Reviewing Ontario's Pension System: What are the Issues?* Discussion paper available at <http://www.pensionreview.on.ca> March 2007

hence the need to accommodate more varied contribution patterns and to facilitate the portability of pension savings from one workplace to another.

Table 1: Pension plan membership by type of plan

	2000	2001	2002	2003	2004	2005	2006
Total defined benefit	4,569,808	4,534,941	4,541,312	4,557,331	4,605,601	4,600,581	4,590,805
Total defined contribution plans	768,781	796,088	835,826	876,559	885,840	893,403	899,540
Hybrid plans(1)	4,838	49,241	49,125	49,407	15,461	11,351	11,337
Composite or combination plans(2)	58,012	63,427	53,012	64,812	96,781	92,265	140,862
Defined benefit and contribution plans(3)					17,583	40,057	79,760
Other	30,139	27,020	43,288	41,690	49,418	52,923	45,976
Total	5,431,578	5,470,717	5,522,563	5,589,799	5,670,684	5,690,580	5,768,280

1. Hybrid plans are plan where the pension benefit is the better of that provided by defined benefit or defined contribution provisions.

2. In composite or combination plans, the pension has both defined benefit and defined contribution characteristics.

3. These plans may be for different classes of employees or one benefit type may be for current employees and the other for new employees.

In addition, the financial context changed dramatically in the early 2000s, when after years of actuarial surpluses, many defined benefit plans began to experience a serious deterioration in their financial position. The swing to actuarial deficits has been attributed to a range of factors, among them changing business conditions, volatility in the stock market, a decline in long-term interest rates and contribution holidays taken by employers as surpluses accumulated.

The ownership of pension surplus has been a subject of particular controversy in the Canadian pension policy debate. While workers feel entitled to a share of healthy returns on fund assets when pension surpluses accumulate, employers must shoulder pension benefit obligations irrespective of any subsequent deterioration, and bear the downside risk. As an added complication, Income Tax Act restrictions limit the amount of pension surplus that can be accumulated by employers as a cushion against unanticipated shortfalls. The perceived “asymmetric risk” has been cited by many as a reason to terminate defined benefit plans or to move towards defined contribution arrangements. This perception is further reinforced by recent court decisions based on trust law that have awarded in favour of employees on this issue.

The Canadian Association of Pension Supervisory Authorities (CAPSA) continues to lobby provincial and federal ministers for the protection of the defined benefit system, citing the need to resolve the ownership of surplus issue, to simplify the regulatory

framework by harmonizing regulations across provincial jurisdictions and to amend the federal Income Tax Act.⁶

In a number of public statements, the Bank of Canada has described Canada's defined benefit system as key not only to protecting the future economic security of individuals, but also to a well-functioning and efficient financial system, where the pooled retirement savings in pension funds are a vital source of long-term risk capital essential to economic growth. The Canadian central bank cites a number of tax and regulatory factors that create disincentives for employers to offer defined benefit plans and called for improvements in the operation of the pension system to create a more favourable environment for offering defined benefit plans.⁷

In the province of Ontario, the largest province and most important regulatory authority for registered pension plans, an Expert Commission on Pension Reform was appointed by the provincial Minister of Finance to "examine the legislation that governs the funding of defined benefit plans in Ontario, the rules relating to pension deficits and surpluses and other issues relating to the security, viability and sustainability of the pension system in Ontario." The Commission is studying a range of issues and will propose reforms to maintain the defined benefit pension system while "supporting a competitive economy, safeguarding benefits and balancing the rights and obligations of employers, plan members and pensioners." The commission is expected to report recommendations in the summer of 2008.

Others counter this position with the observation that the international trend towards DC arrangements is an inevitable response to changing global economic conditions and policy makers should de-emphasize attachment to the "ailing" DB system consider alternative forms more suited to the current economic reality⁸.

Lively public debate heightens the demand for information to shed light on the discussion on the future of retirement income policy in Canada. Statistics on the state of health of the Canadian employer pension system, the evolution of its features, including the terms and conditions of plans, their funded status and the asset allocation of the associated funds will be critical moving forward. Ideally, these characteristics would be linked to the financial position of the sponsoring entities, to understand how pension issues tie in to decisions at the firm-level.

The Canadian Accounting Standards Board is proposing to amend recommendations relating to employee future benefits, contained in section 3461 of the Canadian Institute of Chartered Accountants (CICA) handbook. The proposals will improve financial reporting by recognizing the funded status of a defined benefit plan in corporate balance sheets. In current standards, only net liability to pension funds must be accounted for, and pension assets and benefit obligations may optionally be included in notes to the financial statements. These new standards, proposed

⁶ Baldwin, Bob and Moore, William T (2005).

⁷ Dodge, David (2007).

⁸ Laidler, David and Robson, William B.P (2007).

to come into effect in 2010 will undoubtedly shed light on the relationship of pensions to the firm's financial position.

In addition, statistics on pension wealth at the household level, its relative importance in the context of the overall net worth portfolio, its incidence among various population groups and family types, the forms in which it is held and the manner in which it is invested are all critical dimensions to inform appropriate policy development, and to monitor shifts in consumption, saving and wealth accumulation in response to new and evolving institutional forms.

III. Macro measures in the Canadian System of National Accounts

The Canadian System of National Accounts houses a fully-integrated set of institutional sector accounts, including financial and wealth accounts. Household wealth is accounted for in the Persons and Unincorporated Sector, and estimates are published on a quarterly basis approximately 75 days after the reference period. Personal sector assets in the National Balance Sheet Accounts include the net asset value of employer sponsored pension plans in Canada. They exclude assets held in the C/QPP government-administered funds; these are accounted for in the government sector.

In the Canadian wealth accounts, the asset distribution of pension funds is articulated in the insurance and trustee pension fund sub sector of the financial corporations sector. Pension funds are essentially treated as flow-through entities with their net asset value belonging to the persons and unincorporated business sector.

In Canada, certain public administration pension plans are subject to a different regulatory regime and have taken the form of *pay-as-you-go* plans with no invested assets. In some cases, plans book liabilities associated with future pension obligations, while in other cases they do not. There has been a recent evolution away from these types of arrangements, and the Canadian SNA has opted to include the same general approach for these plans as for all employer-sponsored plans, and a pension liability is included on the part of the government sector and a corresponding asset in the personal sector. This treatment is generally consistent with the way liabilities are accounted for in public accounts.

The basic rationale for this treatment is that obligations of employers are the same under funded and unfunded plans, and that the economic behaviour of households is largely invariant to this distinction.⁹ The change in treatment was broadly discussed at the time of its implementation in 2000 and it was deemed to improve the relevance of personal saving and wealth measures and more appropriately characterize government surpluses or deficits and debt. It is in line with recommendations in SNA93 Rev. 1.

As per SNA guidelines, estimates in the core Canadian national accounts record accrued pension income as the employer and employee contributions and investment income at the time they are earned. The payment of pension benefits is considered a withdrawal from savings. In the case of defined benefit pension plans, employer contributions include special payments to account for actuarial deficiencies.¹⁰ Special payments are accounted for in labour compensation when paid, and in recent years they have been quite significant. This complicates the interpretation of SNA labour costs, which can be subject to large variations as a result of the timing of these large cash outlays. It also may result in imbalances in the macro-accounting system if pension expense is reflected

⁹ Dong, Lauren, O'Hagan, Patrick, Wilkinson, Joe and Wilson, Karen, *The Pension System in Canada*, Prepared for the Conference of the International Association for Research on Income and Wealth, Joensuu, Finland, August 20-26, 2006. Available at <http://www.iariw.org>

¹⁰ Canadian registered pension plans are required to report funded status to pension supervisory authorities on a triennial basis, more frequently if a solvency issue is identified.

differently in source data for estimates of corporate surplus. A new approach to measuring labour cost, which takes into account information on pension expense from corporate financial surveys, is under consideration for a future historical revision.

Pension Satellite Account

Since the mid-1990s, increasing consumer debt and declining personal saving rates have underscored the need to better articulate pension flows in the Canadian System of National Accounts. The need for a Pension Satellite Account (PSA) was identified to shed light on the economic and social effects of aging population, the effects of market fluctuations on occupational pension plans, and to take an alternative view on declining personal savings rates. While pension flows and stocks are fully accounted for within the Canadian SNA, they are not fully articulated.

The PSA takes the form of an integrated stock-flow matrix which dovetails within the standard Canadian SNA sequence of economic accounts. It encompasses all the elements of the retirement income system, including private and public employer pension plans, individual saving plans and social security schemes.

The basic structure of the PSA is illustrated below:

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

Provisional estimates of asset stock values (indicated with the shaded areas above) were recently disseminated as an extension to the National Balance Sheet Accounts,¹¹ and associated inflows, outflows, revaluations and other volume changes are in development for subsequent release.

¹¹ Website link: www.statcan.ca/english/freepub/13-605-XIE/13-605-XIE2008002.htm

IV. Pension information sources at the micro level

A variety of sources exist at the micro level, some of which serve primarily as feeder systems to macro estimates, while others have different analytical objectives as their primary focus. This section will provide a brief overview of available sources, and then go into more detail to describe statistical programs on employer-sponsored plans and funds. A number of measurement challenges and gaps will be highlighted, along with recent initiatives to address them.

The following table presents an overview of the principal data sources available.

Table 2 – Pension information available at Statistics Canada

Survey/Program	Content	Explanatory notes
Pension Plans in Canada (PPIC), Statistics Canada	<p><u>Unit of analysis:</u> Registered pension plan</p> <p>Terms and conditions of registered pension plans</p> <p>Number of members, contribution amounts, assets, actuarial valuation reports.</p>	Information on all registered pension plans, reported annually to pension supervisory authorities.
Employer-sponsored plans (ESP), Canada Revenue Agency (CRA)	<p><u>Unit of analysis:</u> Pension plan</p> <p>Type of plan, funding, members, contributions and assets reported for tax purposes.</p>	Annual administrative file.
Trusteed Pension Funds (TPF), Statistics Canada	<p><u>Unit of analysis:</u> Trust/fund</p> <p>Income, expenditure and assets by type of investment.</p>	Direct survey of sponsors or administrators of Trusteed Pension Funds. Quarterly collection for the largest funds, (comprising about 85% of total assets) and biennial collection for the full universe.
Retirement compensation arrangements (RCA), Canada Revenue Agency (CRA)	<p><u>Unit of analysis:</u> Trust/fund</p> <p>Information on contributions, distributions and assets.</p>	Annual administrative file.
Quarterly Survey of Financial Statements, Statistics Canada	<p><u>Unit of analysis:</u> Enterprise</p> <p>Pension information from firm income statements and balance sheets.</p> <p>Information amounts held in RRSPs in several types of financial institutions (e.g., trust companies, credit unions).</p>	Collection of pension information commenced with the second quarter of 2007. Quality evaluation underway.
Survey of Financial Security	<p><u>Unit of analysis:</u> Economic family</p> <p>Net worth (assets and debts) of Canadian families, including pension wealth valuation and pension plan</p>	Periodic wealth survey most recently collected in 2005 on a sample of 9,000 families (area sample: 7,500 and high income sample: 1,500). Previous reference year available is

	characteristics. Family composition and labour force characteristics, income sources.	1999.
Survey of Labour and Income Dynamics (SLID), Statistics Canada	<u>Unit of analysis:</u> Person and economic family Annual income, including sources of pension income (OAS/GIS/ALL, C/QPP and income from employer and individual pension programs). Labour dynamics, individual and family characteristics.	Annual sample survey of approximately 15,000 households and 30,000 individuals. Overlapping 6-year panels. Income accessed from tax records with respondent permission.
Longitudinal Analysis Database (LAD), Statistics Canada	<u>Unit of analysis:</u> Person Sources of pension income including OAS/GIS/ C/QPP, income from employer and individual pension programs. Pension saving including pension adjustment for tax purposes, contributions to C/QPP and registered retirement savings plans.	Individual income tax (T1) returns, linked longitudinally from 1982.
Workplace and Employee Survey	<u>Unit of analysis:</u> Enterprise/Employer and employees Issues relating to employers and employees, e.g., competitiveness, technology use, training, earnings.	Establishes link between employee and workplace. Last conducted in 2005, sample of approximately 6,700 employers and 24,000 employees.

Statistical programs on employer-sponsored plans and funds

The statistical program in ISD comprises two independent sets of information on the employer pension system in Canada. The first, the *Pension Plans in Canada* program, focuses on pension plan characteristics, terms and conditions and is based on regulatory information provided by provincial and federal supervisory authorities. The second focuses on financial information on pension funds and consists of direct surveys of fund trustees undertaken by Statistics Canada.

The Pension Plans in Canada (PPIC) program is an annual census of all registered pension plans (RPPs) in Canada. It houses information on pension plan characteristics, such as the number of members, the terms and conditions of the plan including eligibility, contribution rates, benefit rates and special retirement, contributions made by and on behalf of members, and the jurisdiction of plan registration.

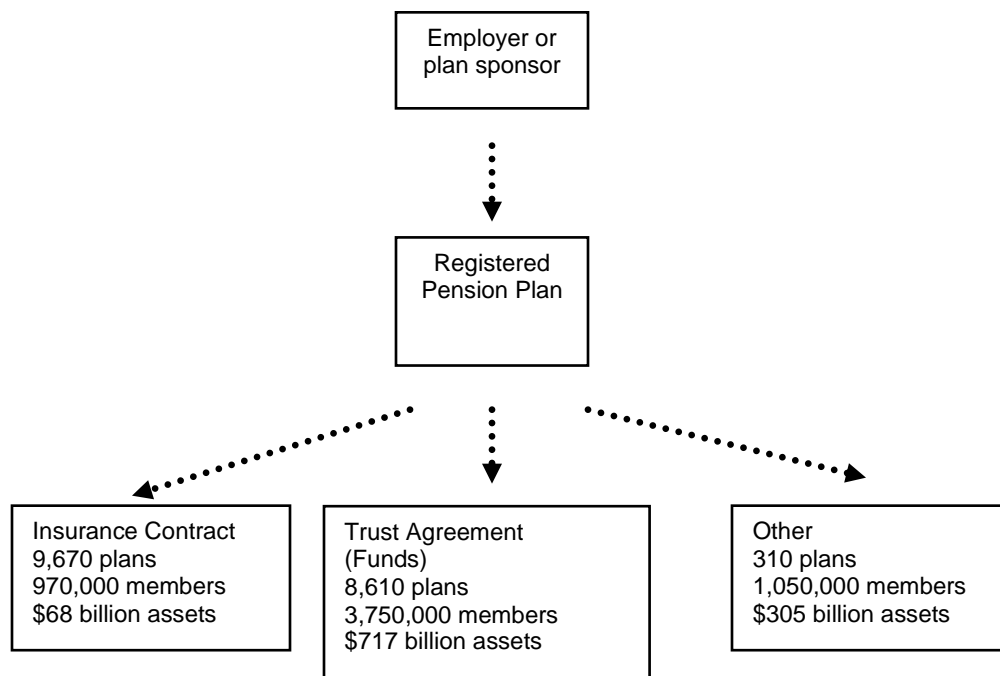
At the time of the program's inception, estimates were based on direct surveys conducted by Statistics Canada. Since the 1970s, administrative data provided by regulatory authorities have gradually replaced direct survey information. The program is now derived largely from information provided by 10 pension supervisory authorities (nine provincial, one federal). The provision of data is governed by a co-operative statistical program established by the authorities and Statistics Canada. Along with the Canada Revenue Agency and Finance Canada, representatives from ISD enjoy ex-officio membership in the Canadian Association of Pension

Supervisory Authorities (CAPSA), attend regular meetings and lead a statistics sub-committee for the association.

An important recent development in the PPIC program is the dissemination of information on the funded status of defined benefit plans, tracked through triennial actuarial valuations and supporting information required for regulatory purposes.

Trusted Pension Fund Surveys gather financial information on trusted pension funds, representing about 40% of all registered pension plans in Canada and covering about 70% of members. The surveys measure the investment mix of assets over time (book and market values), rates of return and sources of income and expenditure. The Trusted program includes a quarterly survey of the largest funds, representing 85% of fund assets, and a biennial Census, where more detailed information is sought of the full universe of all trusted funds. Respondents to the quarterly survey and biennial Census are generally the fund trustee, often an actuary or an investment management firm, who has been formally designated the responsibility of administering the fund.

Figure 3: Registered pension plans by funding instrument, as of January 1, 2007



V. Measurement challenges for employer pensions

Challenges in accurately depicting the characteristics of Canadian pension plans and funds and their implications for households and firms fall into a range of areas. A primary challenge relates to adapting information reported for regulatory purposes to statistical objectives, in the context of a complex and decentralized Canadian regulatory framework. Additional issues relate to the accurate depiction of new and emerging developments in the pensions area, in terms of both coverage and classification. Integrating data from different reporting units also comes with a range of complexities. Finally, finding the appropriate mechanism to fill important data gaps, particularly in the area of individual registered retirement savings plans, is an important future priority.

A . Reporting issues

There are known quality issues with the reporting of regulatory information from provincial pension supervisory authorities, particularly with obtaining consistent and timely information on new plans and amendments to the terms and conditions of existing plans. The jurisdictions collect this information for regulatory purposes and, while they have entered a cooperative data-sharing agreement with Statistics Canada, statistical objectives are generally a second-order priority. Statistics Canada must often undertake extensive quality control when records are inconsistent or incomplete, and certain large jurisdictions still do not track changes systematically in an electronic database. Efforts to offer assistance in developing electronic infrastructure have not been successful.

Some of the smaller jurisdictions are willing to allow access to information if Statistics Canada sends a delegate to review their records, but often claim to be too resource-constrained to undertake the necessary work themselves. A recent strategic review of data quality issues and areas for new development in Statistics Canada's pensions surveys indicated that inconsistent reporting of new plans and plan amendments risks mischaracterizing the extent and speed of change in terms and conditions available to members, particularly in the private sector, given the recent pace of developments in pension funding.

While it has not been possible to undertake a systematic assessment of the nature and scope of the problem, procedures are being put in place to flag potential issues for immediate follow-up with the jurisdictions in the future. An important element is to ensure that electronic databases are set up to enable the longitudinal linking of individual plans from one reporting year to the next. Recent efforts to redesign production systems for the Pension Plans in Canada (PPIC) statistical program are aimed, among other things, at ensuring this capability. In addition to yielding potential benefits in terms of data quality, the longitudinal linking of pension plans has important analytical value to track developments as the Canadian pension system evolves. This will be demonstrated later in the paper.

In addition, mechanisms have been established to stay in contact with staff in the provincial supervisory authorities, share findings and increase awareness of quality

concerns. One such mechanism is a Statistics Sub-Committee of the Canadian Association of Pension Supervisory Authorities (CAPSA). This committee is chaired by Statistics Canada and includes representatives of the largest reporting jurisdictions, along with the Canada Revenue Agency. The sub-committee reports to CAPSA, the national network of pension regulatory authorities. It recently served an important consultative role in the development of new statistics from the Triennial Return on the funded status of Canadian defined-benefit plans.

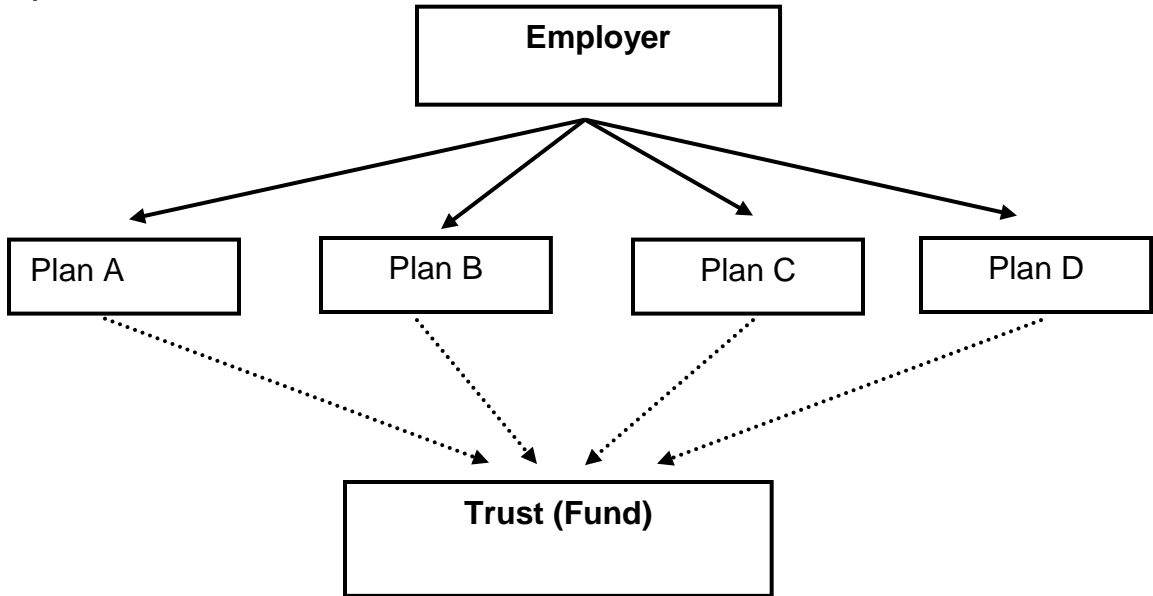
Maintaining regular and open communication with the reporting jurisdictions also allows Statistics Canada to keep abreast of developments in the regulatory or legal framework surrounding registered pensions. This is critical to enable data capture and classification mechanisms to adapt to new and evolving forms of pension coverage at the provincial level, so these developments are adequately reflected in statistics. For example, in an effort to provide flexible options to employers to offer pension plans, the regulatory authority in the province of Québec recently allowed “member-funded defined benefit plans”, where employers contribute a set amount and employers are required to contribute additional amounts for any actuarial shortfall. While the take-up on this option is not expected to be significant, it clearly has different implications for the financial security of the employee than would a traditional DB plan. For this reason it should be flagged separately in statistics by plan type.

B. Linking units of analysis: employers, plans and funds

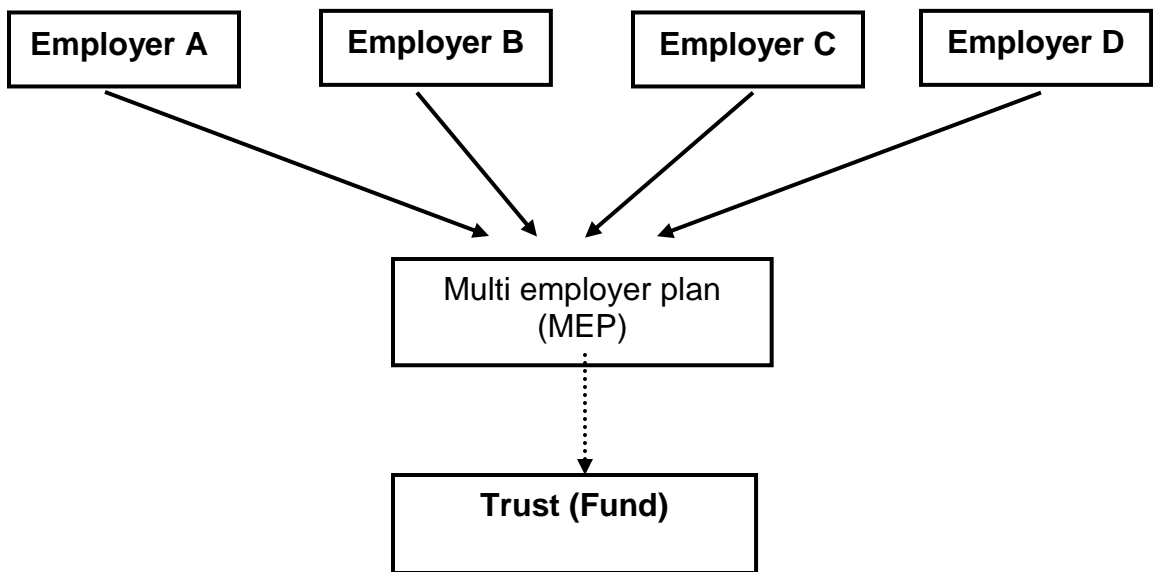
As noted previously, information compiled for Canadian registered pension plans and that collected on surveys of Trusteed Pension Funds (TPF) originates from different sources, and the reporting units are not the same. There can be, for example, more than one pension plan pooling assets in the same pension fund. These plans can be from the same employer (as per the example below), or different employer entities can choose to pool pension plan assets in the same fund. Pension plan sponsors are most often employers, but can also be unions in certain cases. An example is the *Commission de la Construction du Québec*, a multi-employer plan set up by union negotiation in the construction industry. Non-affiliated employers in the industry participate along with the union and designated trustees in the plan’s governance and administration.

Figure 4: Examples of relationship between units: employers, plans and funds

Example A: Master Trust



Example B: Multi-employer Plan



Given current available data, drawing the links between employers, plans and funds is complex and has not been undertaken systematically in the past. Information identifying registered pension plans covered by a “master trust” is collected on the biennial Census of Trusteed Pension Funds, but poor reporting of this field has inhibited integrated analysis up to now. With the most recent Census of Trusteed Funds for 2006, follow-up efforts were stepped up to insure complete and accurate reporting of this field. This will enable better integration of the two statistical programs via record linkage. Such a linkage not only serves to enhance data quality by assuring the coherence of information reported from each source, but also has important analytical value.

Enhancing data quality for pension plans and funds

Coherence issues in aggregate data have been observed by the System of National Accounts and the research community. For example, information on pension contributions by employers is part of both the PPIC database and the quarterly survey of Trusteed pension funds. At present, these data feed directly into estimates of supplementary labour income in income-based Gross Domestic Product (GDP).

In theory, the quarterly survey covers the largest funds, and the PPIC program covers all registered pension plans. The SNA uses pension contributions data from the quarterly trusteed program in projections for current quarterly estimates, and then later revises the data to benchmark to the more comprehensive annual PPIC figures when they become available. This benchmarking process has revealed inconsistencies between the two sources at an aggregate level which are sometimes considerable and are difficult to resolve. Extensive efforts have been made in the past to identify the source of incoherence and it has been attributed, for example, to the timing of special payments reported in the two sources or, in the case of public sector plans, to fiscal/calendar year conversion issues. Inconsistencies in the recording of special payments in the two sources have resulted in substantial revisions to GDP (for example, in the order of \$1 billion for the year 2003). Drawing systematic links between pension plans and funds would be the logical starting point to evaluate potential quality concerns.

Expanding analytical potential

An important research topic to the pension reform debate is the degree to which changing plan characteristics impact the investment distribution of pension fund assets. These two elements have up to now been tracked in separate statistical programs. Examples of relevant questions include:

- Are assets in defined benefit plans, where the benefit is predetermined according to specific terms and conditions, invested differently than defined contribution plans, where benefits are not predetermined and investment options are offered to members?
- What are the implications for the Canadian economy if the erosion of the private-sector defined-benefit system continues as anticipated? What are the implications for the financial security of pension plan members?

- Do province-specific policies result in different investment outcomes for pension funds (for example, pension benefit guarantee insurance available for defined benefit plans in Ontario)?

Results of initial record linkage of pension plans and funds

An initial record linkage was carried out between the Pension Plans in Canada regulatory database and the Census of Trusteed Pension Funds for the year 2004. Because reporting of the necessary linking fields was inconsistent on the 2004 Census, a substantial amount of manual matching was required. A revised linkage is in course for the year 2006, and it is hoped that the linkage rate will improve with increased follow-up efforts in the most recent collection round.

These issues notwithstanding, it was possible to link 86% of Trusteed pension fund with their associated plan or plans for 2004. All the large, significant funds were successfully matched, and the vast majority (more than 85%) of assets and members are accounted for in the linked units.

**Table 3: Record linkage results for pension funds and plans
Census of Trusteed Pension Funds and PPIC, 2004**

	Trusteed Funds		Pension Plans	
	Number	%	Number	%
Linked	3,203	86.2%	4,033	68.1%
Not linked	513	13.8%	1,889	31.9%
Total	3,716	100%	5,922	100%

Looking at linked units from the point of view of plans, only units designating a trust as the funding instrument on the PPIC database are in scope for analysis, and those funded via insurance contracts or other mechanisms are excluded. Nearly 70% of these plans were matched with a fund, via plan identifiers reported on the Trusteed Pension Fund database. The majority of unlinked plans are very small. Possible reasons for the failure to establish a link in these cases include timing issues in the reporting of units on either dataset, or a misclassification or recent change in the funding instrument for the plan that was not identified in data provided by the regulatory jurisdiction.

Out of the 4033 linked plans, approximately three quarters were designated as “single-fund”, meaning there should be a one-to-one correspondence with an associated pension fund. The remainder were designated as belonging to a “master trust”, where a number of plans pool assets in the same pension fund. Some inconsistencies were observed in the designation of single fund/master trust across the two data sources, but were within a reasonable range.

In addition to linking units, a preliminary assessment of the coherence of similar data elements in the two datasets was undertaken. Examples of overlapping variables include the private vs. public designation, plan type (including the DB/DC distinction) and funding agreement. While perfect coherence was not achieved in any case, discrepancies

were explainable in many cases and were generally not large enough to be cause for concern.

Future implications

Further work is underway to understand the nature and importance of the unlinked units, including additional follow-up with respondents to the 2006 Census of Trusteed Pension Funds.

While initial findings have already led to improvements in the integration of processes behind the two data programs, it is hoped that it will eventually result in recommendations for a restructured, integrated data collection process for information on Canadian pension plans and funds.

The analytical value of the link dataset has already begun to bear fruit. The initial record linkage was used to study the effect of the Ontario pension benefit guarantee on the investment distribution of pension fund assets. Since Ontario is unique among the Canadian provinces in offering insurance to guarantee pension benefits in the case of plan failure or insolvency, it serves as a test case to understand whether this results in different investment behaviour for pension funds. The research demonstrates the value of the linked database for similar research applications linking pension plan characteristics to fund assets.¹²

Other data users with similar research objectives include the Bank of Canada, who is particularly interested in understanding the expected impact of a potential shift to defined contribution plans on the stability of the Canadian financial system. The linkage would enable the joint analysis of plan characteristics and the asset distribution of pension funds, shedding further light on this important question from the Bank's point of view.

The Ontario Expert Commission on Pensions is also keenly interested in the relationship between pension plan design and fund investment strategy, and implications for both the security of the individual and the solvency or viability of the fund. The overall economic impacts of policy recommendations can be better understood via an enhanced understanding of this relationship.

C. Classification by industry and sector

In addition to concerns about coherence between the characteristics of pension plans and the asset distribution of their associated funds, the classification of these units by industry and into private and public sector categories is not without challenges. It is currently undertaken at the overall level of the plan or fund, and as such results are not consistent with other economic data feeding into the SNA. A more relevant and coherent classification of active members and pension contributions would be linked to the payment of wages and salaries in a given industry or sector.

¹²See Jametti and Crossley (2008).

Understanding the extent and nature of pension coverage is a key objective of the Pension Plans in Canada program. Traditionally, indicators of pension coverage based on PPIC membership and aggregate paid employment have been published by province for the public and private sectors. Significant differences in provincial coverage rates and their trends over time are evident in the data. These might be explained by industry composition, and its evolution at the provincial level.

While registered pension plans reported in the PPIC program are classified by industry using information collected from the regulatory authority, this classification is problematic in a number of respects. It is not used by the SNA for employer contributions, since it has been found to be inconsistent with the industry classification of labour income. Attempts at developing pension coverage indicators by industry with PPIC membership in relation to Labour force survey (LFS) employment have revealed similar inconsistencies, and the issue has been flagged by the research community.

Presently, registered pension plans and their associated characteristics are classified at the level of the entire plan according to the nature of business, or sometimes according to the name of the principal employer participating in the plan, as reported to the regulatory authority. In the case of a multi-employer plan, this is clearly problematic.

Analysis could be envisaged to profile Canadian pension plans and funds via a record linkage to the Canada Revenue Agency's T4 administrative database of remuneration and benefits and Statistics Canada's Business Register, the sampling frame for economic surveys. If a systematic link could be drawn between plans and employers it may be possible to develop a classification at the employing establishment which is more analytically relevant and more coherent with other economic indicators. Currently, the industry classification does not fully exploit the infrastructure in place for economic surveys at Statistics Canada. The same is true for the public/private sector distinction, which is based on categories reported on the questionnaire. This would ensure consistency in industry and sector coding with other available economic data and lead to an enhanced understanding of pension coverage rates.

Pending the availability of resources to develop an appropriate strategy and undertake the necessary analysis, improving the industry and sector classification of pension plans and funds could be the subject of future study.

D. Data gaps: Individual savings plans (Registered Retirement Savings Plans), and group RRSP arrangements

Control total for RRSP asset value:

Other than occasional estimates available from the Survey of Financial Security, there is limited information collected from households on assets held in the form of RRSPs. Selected components of RRSP holdings are available from diverse sources of varying quality, but the SNA is unable to construct a comprehensive estimate from supply-side sources in the financial industry. While some information is available from the banking

system via sample surveys of enterprises, data is particularly lacking on self-directed registered retirement savings plans, often administered through private investment dealers. The quality of available private sector data sources is suspect and the extent of overlap in coverage with other measures is difficult to assess.

For this reason, an annual estimate of wealth holdings in RRSPs has been requested from the demand side, to be potentially collected on the redesigned Survey of Household Spending.

Group RRSP arrangements:

Group RRSP arrangements (where an employer contributes to an RRSP on behalf of an employee) are an alternative to traditional employer-sponsored pension plans, and can be viewed as another form of employer pension coverage. Statistics Canada does not collect regular information on these types of arrangements, either on their overall asset value or the level of participation in such schemes to supplement coverage in registered pension plans.

The Canada Revenue Agency identifies “specimen plans” in group RRSPs as a supplementary schedule to the T3 (Trust) return. This information was found to be out-of-line. While findings remain to be confirmed with CRA, it appears that “specimen plans” may not represent true group RRSP arrangements (where employers contribute), but may be a mechanism for reporting any specific RRSP arrangement reported by a financial institution. In addition, a number of important quality issues were discovered with the file (missing or erroneous fields, incorrect aggregation, etc) which had not been cleaned up prior to tabulation. Further work with the CRA file could be undertaken to develop edit and imputation procedures to clean up the file and assess its usefulness, but efforts may not be fruitful if the required information is not identifiable in any case.

Barring a solution using administrative data, surveys of employers may be the best vehicle for regular collection information on group RRSP coverage. The incidence of this type of arrangement was collected periodically on the Workplace and Employer Survey (WES).

VI. Understanding the funding of Canadian registered pension plans

A Triennial returns

As part of regulatory requirements in Canada, defined benefit registered pension plans must report information on funded status to a provincial supervisory authority at least once every three years. Information reported generally includes assets and liabilities on both a solvency and going concern valuation basis, as well as the actuarial assumptions behind these valuations. Actuarial assumptions include, for example, the valuation method for liabilities, mortality tables employed, and assumptions regarding the interest rate, salary increase rate and indexation rate.

This report, also called the Triennial Return, is used to assess the financial position of a plan on a specific date to determine whether the plan's assets are sufficient to cover its financial commitments. If the plan is in a precarious financial position, the supervising jurisdiction may require a second or third valuation within the three-year period.

Statistics Canada has access to information from the Triennial Return in a cooperative arrangement with the regulatory authorities via the Pension Plans in Canada program. We began collecting and compiling the data for public release on a going concern basis starting with the year 2003. Since a minimum of three years of actuarial reports are required for a full picture of Canadian pension plan funding, first release of this information occurred July of this year.¹³

Given the recent interest in funding issues and the solvency of defined-benefit registered pension plans, actuarial liabilities reported on a solvency valuation basis would also be of interest. While the jurisdictions have confirmed they can provide this information going forward, they cannot all provide it retrospectively. Collection of funded status on a solvency valuation basis will start in the next reporting round, pertaining to 2006. Since pension plan sponsors are required to report on a triennial basis, actuarial data for a full universe of plans will be collected by 2010.

Because actuarial information is reported to regulatory authorities triennially, the resulting database does not contain a full universe of plans for any given valuation year. This can only be obtained for valuation years spanning a three year cycle. This complicates the use of the information in economic accounts, since it is not possible to have an annual time series representing each valuation year. The data nonetheless shed light on important issues regarding the funded status of Canadian pension plans, and serve as a complement to measures from corporate financial statistics.

The following table summarizes the number of plans reporting for each year, their aggregate assets and liabilities, and going concern funded ratios. Bearing in mind that a different complement of plans reports each year, findings appear to indicate a gradual improvement in overall funded status over this three year period.

¹³ A more detailed analysis of Triennial returns will be published later in the year. It will contain analysis of actuarial information by size and type of plan, along with a variety of other characteristics.

More recent data from the Pension Plans in Canada show that as of 2006, the aggregate funded ratio (the ratio of aggregate assets to liabilities on a going concern basis) climbed from 98% to 100% for plans reporting over the three year cycle. The number of under-funded plans reporting dropped considerably over this period, from 57% in 2005 to 45% in 2006.

Table 4: Funded status of pension plans

Year of valuation	# of plans	Assets	Liabilities	Going Concern Funded Ratios
		\$Billion		
2004	990	223.5	225.7	0.990
2005	811	130.8	132.7	0.986
2006	1,416	249.0	245.4	1.015
Total	3,217	603.3	603.8	.999

While more detailed analysis is forthcoming, preliminary findings generally do not indicate a wide variation in aggregate funded ratios when reported across a number of plan characteristics when assets and liabilities are reported on a going concern valuation basis. When valuations on a solvency (termination) basis become available this is likely to be even more true, since there is less flexibility in actuarial standards that can be applied.

Prior to Statistics Canada's release from the Pension Plans in Canada program, no comprehensive information was available on the overall funded status of Canadian defined benefit plans. Some provincial regulatory authorities released selected statistics pertaining to their own jurisdiction, and investment firms involved in fund management sometimes released public reports with conclusions based on the plans managed in their own portfolios. This led to conflicting reports in the public domain based on only partial views, and risked to obscure the public debate on the state of health of the Canadian pension system.

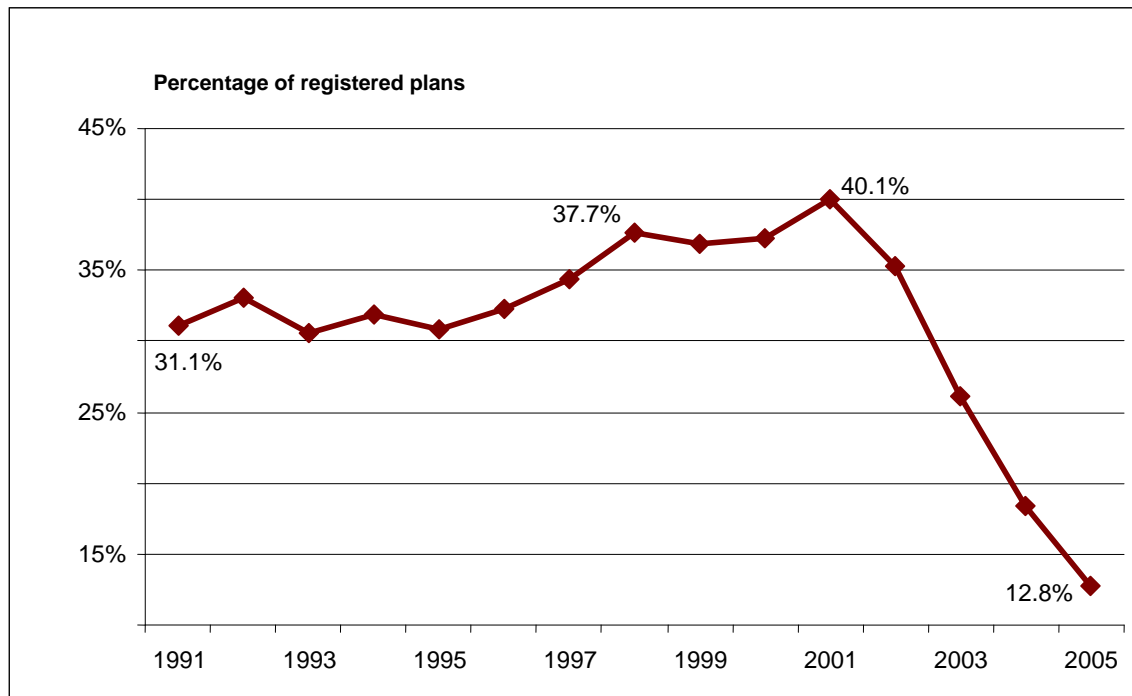
Data from the triennial return would be more interesting and analytically valuable if they could be linked to firm financial statistics of the sponsoring industries. This would also allow for the identification of any coherence issues with economic data feeding into the national accounts, and a deeper understanding of how firms account for pension obligations in their own accounting statements and how this relates to regulatory data. Such a data linkage could be achievable via information on the T4 Statement of remuneration and benefits, and it is targeted as a topic for future study.

B. Contribution holidays and special payments

Throughout the nineties, many employers experienced an accumulation of pension surplus, precipitated by high investment yields and increasing interest rates on long-term bonds. Income

Tax Act restrictions limit the amount of surplus that can be accumulated in a pension fund. As a result, many employers reduced pension contributions, stop contributing to pension plans for a period of time or increased benefits through negotiations with employees. The following figure shows the proportion of plans taking partial or full contribution holidays since 1990, according to the Pension Plans in Canada database.

Figure 5 – Percentage of plans taking contribution holidays



In the wake of a downturn in the stock market and declining interest rates, the situation changed rapidly in the early 2000s. The gap between actual yields on assets and rates of return assumed in actuarial valuations increased, and as a result, many plans found themselves in under-funded situations, requiring employers to make special payments to meet future pension obligations. After reaching a peak of 40.1% in 2000, the proportion of Canadian pension plans taking partial or complete pension holidays had declined to a low of 12.8% by 2005.

With the recent release of information on the funded status of pension funds, this preliminary analysis could be extended to understand the relationship of pension holidays to funded ratios on a going concern and, eventually, on a solvency basis. It could be further enriched via a longitudinal linking of pension plans to better understand dynamics over time and by a record linkage to the sponsoring entities to understand impacts on the employer's financial position. This has been flagged as a topic for further study.

VII. Measuring pension wealth at the household level in Canada

A . The Canadian Survey of Financial Security, 1999 and 2005

The Survey of Financial Security (SFS) is an occasional wealth survey of Canadian households undertaken by Statistics Canada. The sample size for the 1999 survey was 23,000 dwellings, with a dual frame design. Roughly 21,000 was drawn from an area frame, while the remaining 2,000 was drawn from geographic areas in which a large proportion of households were high-income, defined as at least 200,000 total income or investment income of at least 50,000. Among the significant developments since the previous assets and debt survey in 1984 was significant growth in the use of tax-sheltered individual pension savings vehicles in the form of Registered Retirement Savings Plans (RRSPs).

Subsequent to the initial release of the 1999 SFS, an innovation was introduced into Canadian wealth measurement in the form of a new methodology to estimate the wealth value of employer pension plans. This marked the first time a comprehensive picture of the financial security of Canadians was available.

A second release of the 1999 results focusing on private pension savings demonstrated that employer pensions were the most important component of financial wealth for many Canadians, increasing median net worth by 35%. It provided important new insights on the characteristics of those who held wealth in this form and those who did not. The wealth value took the form of a net present value of expected future benefits to which the pension member is entitled. The methodology was the object of an extensive consultation process prior to its publication with associated analysis in December 2001.¹⁴ While pension wealth values were estimated on both a termination and a going concern basis, the termination valuation was featured in aggregate net worth.

A repeat of the Survey of Financial Security was undertaken in 2005, with the results released in December, 2006.¹⁵ For this most recent iteration, due to budgetary restrictions, the sample was reduced to 9,000 dwellings. The dual frame approach was again employed, with 7,500 dwellings drawn from a standard area frame and 1,500 from high income areas.

For this most recent release, the wealth value of occupational pensions, according to the methodology developed for the 1999 survey, was included in the official net worth aggregates featured in analyses for public release. This more complete picture is deemed to represent a more accurate portrayal of the financial security of Canadians and provide additional insights into the preparedness for retirement of families and individuals as the population ages. To increase the analytical value of the SFS micro file, selected characteristics of registered pension plans were added to the database via a link to administrative data on registered pension plans from the Pension Plans in Canada (PPIC) program.

¹⁴ See Cohen, Frenken and Maser (2001).

¹⁵ See Statistics Canada (2006).

Pension assets included in SFS net worth cover private registered pension plans and individual savings plans only, and do not include a wealth value of entitlements for government-sponsored plans (the Canada and Quebec Pension Plans). Including such a value was considered for the 2005 SFS, particularly to improve understanding the financial security of the lower end of the wealth distribution. It remains a possibility for future research.

As noted above, in Canada, government-managed pension plans are quite small in overall magnitude compared to privately-managed registered pension plans. To give an idea of their relative size, assets accumulated in government-managed employer pension plans (C/QPP) were approximately 120 billion, while accumulated assets in employer-sponsored Registered Pension Plans amounted to just over one trillion dollars, about 9 times the amount.

Looking towards the future, Statistics Canada is actively pursuing strategies to finance the collection of distributional wealth data on a regular recurring cycle. This data collection may not take the form of stand-alone wealth survey like the SFS, however. Internal financing has been secured for a redesign of Statistics Canada's annual consumption survey, the Survey of Household Spending, which has a sample size of approximately 21,000 households. A specialized wealth module is envisaged as a future option for the survey, and would allow for picture of income, consumption and wealth at the micro-level on a periodic recurring basis. This complete cross-sectional view of household finances is expected to have enormous analytical value. Precise time frames for the wealth module have yet to be determined and funding to be secured, and in all likelihood it will not be undertaken before the year 2011.

In addition, a rethinking of longitudinal surveys, in particular, the Survey of Labour and Income Dynamics is under consideration. Funding has been secured for a pilot general panel survey, the Canadian Household Panel Survey and a test survey will go into the field in 2008. Collecting wealth information on this new general panel survey is proposed as a means to understand the dynamics of wealth accumulation in the Canadian context.

B. Recent findings from the Survey of Financial Security

This section highlights recent developments in the wealth of Canadian families from the Survey of Financial Security, with a focus on the wealth value of employer pension plans and how it fits into the larger net worth picture.

Total net worth of Canadians reached 4.9 trillion in 2005, a 41.7% increase from 1999. Favourable economic conditions, a strong real estate market, and a rebound in the Canadian stock market contributed to this increase. Median net worth of all family types increased 23.2% over the period.

The total value of assets increased 42.4% between 1999 and 2005. The increase in the market value of real estate was the major contributor to the growth, accounting for just over half (50.5%) of the increase. The second largest contributor to the increase was private pension assets, accounting for 28.7% of the increase. Gains in this area were concentrated in registered pension plans, which increased 52.8% in value over the period.

The most important non-financial asset was the principal residence, accounting for 33.4% of total assets, while the single most important financial asset for Canadians in 2005 was the wealth value of employer-sponsored registered pension plans, accounting for 18.5% of total assets. Investments in mutual funds, stocks and bonds outside of registered plans represented only 4.8% of total assets, while deposits in financial institutions represented 4.2%.

Table 5: Canadian asset distribution, Survey of Financial Security

	All Family Units			
	2005		1999	
	billions	%	billions	%
Assets	5,622,674		3,947,765	
Private pension assets	1,631,894	29%	1,151,606	29%
RRSPs / LIRAs / RRIFs / other	593,209	11%	471,735	12%
Employer Pension Plans	1,038,685	18%	679,872	17%
Financial assets, non pension:	584,588	10%	487,304	12%
Deposits in financial institutions	237,325	4%	182,336	5%
Mutual funds / investment funds / income trusts	133,753	2%	90,669	2%
Stocks	103,063	2%	103,698	3%
Bonds (saving and other)	34,619	1%	29,172	1%
Other financial assets	75,828	1%	81,428	2%
Non-financial assets	2,816,366	50%	1,914,119	48%
Principal residence	1,879,657	33%	1,247,857	32%
Other real estate	480,828	9%	266,340	7%
Vehicles	171,205	3%	141,886	4%
Other non-financial assets	284,675	5%	258,036	7%
Equity in business	589,827	10%	394,735	10%
Debts	760,188		515,417	
Mortgages	572,147	75%	398,863	77%
Principal residence	486,071	64%	341,316	66%
Other real estate	86,076	11%	57,547	11%
Line of credit	68,131	9%	29,213	6%
Credit card and instalment debt	25,775	3%	16,275	3%
Student loans	19,974	3%	17,256	3%
Vehicle loans	46,105	6%	32,620	6%
Other debt	28,055	4%	21,191	4%
Net Worth (Assets less debts)	4,862,486		3,432,347	

Nearly 71% of family units had pension assets in 2005, up slightly from 1999. The percentage of family units holding a registered pension plan has grown, and there was a slight decrease in the percentage of family units holding assets in registered retirement savings plans, such as RRSPs, RRIFs, LIRAs.

The value of pension assets increased over the period, more from the value of the employer pension plans than from individual retirement savings plans. Both types of pension assets grew at a slower pace than that observed among other asset types.

Private pension assets

Approximately the same proportion of family units had some form of pension assets between 1999 and 2005. However, the proportion of family units holding pension plans grew mostly for family units where the major income recipient was aged 55 and over and decreased slightly among other age groups. For family units where the major income recipient is under the age of 35 in particular, there was a large decrease in the number holding RRSPs in 2005.

Family units with both registered pension plan (RPP) assets and self-managed retirement savings plans (RRSP/RRIF/LIRA) assets had significantly higher pension assets than those holding only one or the other. About 36% of families had both types of pension assets and for those; the median pension value was \$158,800.

About 13% of family units had only an employer pension plan and for those, the median asset value was \$43,600. A larger proportion had RRSP assets only (21.8%) and for those, the median value was only \$20,000.

Private pension assets were concentrated in nearly one-third of family units. About 31% of family units with \$100,000 or more in private pension savings held 90.3% of the value of these assets.

Table 6: Proportion of family units holding private pension assets by age of major income recipient

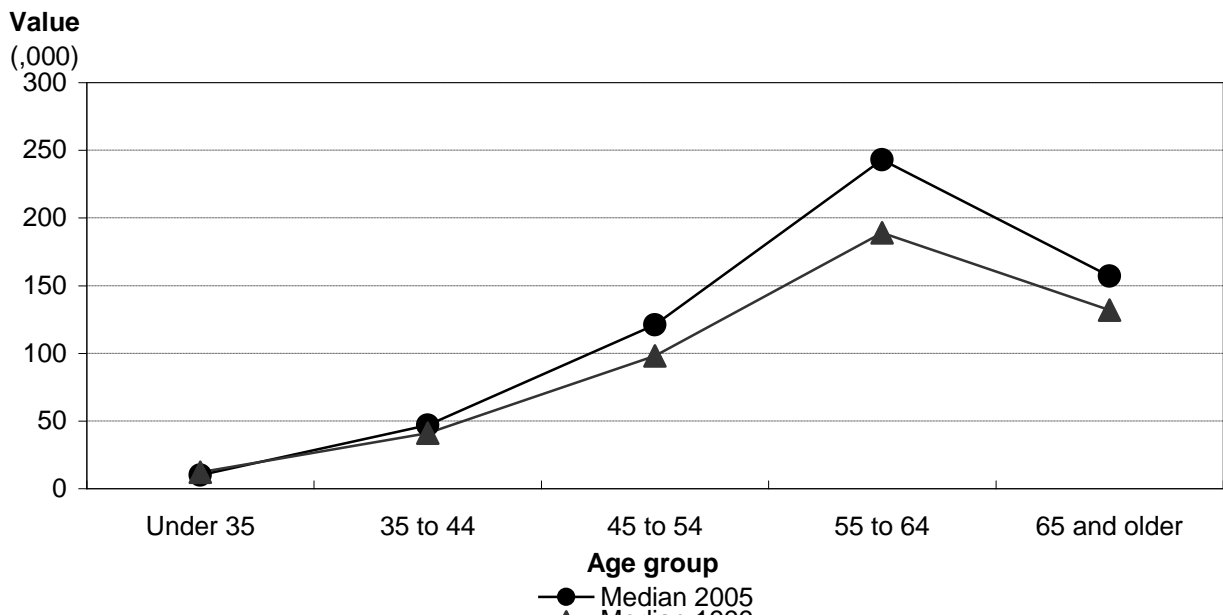
	Total pension assets	Individual savings plans (RRSPs, RRIFs, LIRAs, other)	Registered Pension Plans	Total pension assets	Individual savings plans (RRSPs, RRIFs, LIRAs, other)	Registered Pension Plans
	2005			1999		
All family units	70.6	58.0	48.6	69.7	58.9	45.9
Under 35	55.3	43.5	33.9	57.6	49.6	31.7
35 to 44	72.9	63.3	48.0	74.4	65.3	47.2
45 to 54	76.7	68.1	51.6	79.0	69.9	53.9
55 to 64	81.9	69.4	60.1	76.8	67.5	54.7
65 and older	72.5	51.2	57.2	65.5	46.2	49.9

As can be expected, the value of pension assets increases with age, as more years in the workplace allow the accumulation of a larger asset. The median value of pension assets held by all family units grew 18.1% compared to 1999. This growth was concentrated among family units with a major income recipient between 55 and 64 years of age, where the median value grew 28.6%. It is mainly due to an increase in the value of registered pension plans, as opposed to an increase in the incidence of the asset.

About 60% of family units where the major income recipient was between the ages of 55 and 64 had at least \$100,000 in private pension assets. This age group also had the lowest percentage of family units with no pension assets (18.1%). For family units where the major income recipient was 65 years or older (and likely to be retired), a smaller percentage (46%) had pension assets of \$100,000 or more. Many of these would have begun drawing down their pension assets, reducing the amount held.

Notably, 27.5% of family units with the major income recipient 65 years of age and older had no pension assets. The pre-retirement earnings of this group are not known.

Figure 6: Value of pension assets by age group



In Canada, pension assets account for 29% of total assets in 2005 (RRSPs/RRIFs for 10.6% and employer pension plans for 18.5%). The wealth value of defined benefit plans accounts for a significant portion of the overall value.

Pension assets have an important impact on the Canadian wealth distribution. Table 7 shows the distribution of net worth by decile, including and excluding the wealth value of employer pension plans for the years 1999 and 2005.¹⁶

¹⁶ This analysis is drawn from Morissette and Zhang (2006).

Table 7: Shares of net worth held by each decile, 1999 and 2005

	Net worth excluding employer pension plans	Total net worth	Net worth excluding employer pension plans	Total net worth
All family units	1999		2005	
Deciles	%	%	%	%
1st	-0.6	-0.3	-0.6	-0.3
2nd	0	0.2	0	0.1
3rd	0.4	0.7	0.2	0.6
4th	1.3	1.9	1.1	1.7
5th	2.8	3.4	2.5	3.2
6th	4.7	5.5	4.4	5.2
7th	7.4	8.1	6.9	8.1
8th	11	12	10.5	12.2
9th	17.4	18.9	16.8	18.3
10th	55.7	49.6	58.2	50.9

The table clearly indicates that the Canadian wealth distribution is more skewed when the value of employer pension plans is excluded. In 2005, for example, 58.2% of net worth in Canada was held by the highest families in the highest decile, while the share was 50.2% when total net worth is considered.

Gini coefficients calculated on the same basis indicate, as might be expected, that employer pension plans have an equalizing effect on the wealth distribution in Canada, and could also influence trends in wealth inequality over time, as the Gini increases more slowly over the period under consideration when the wealth value of pension plans is excluded.

Table 8: Impact of employer pensions on Gini coefficients

Gini coefficients	1999	2005
SFS net worth	0.727	0.746
Net worth excluding EPPs	0.678	0.688

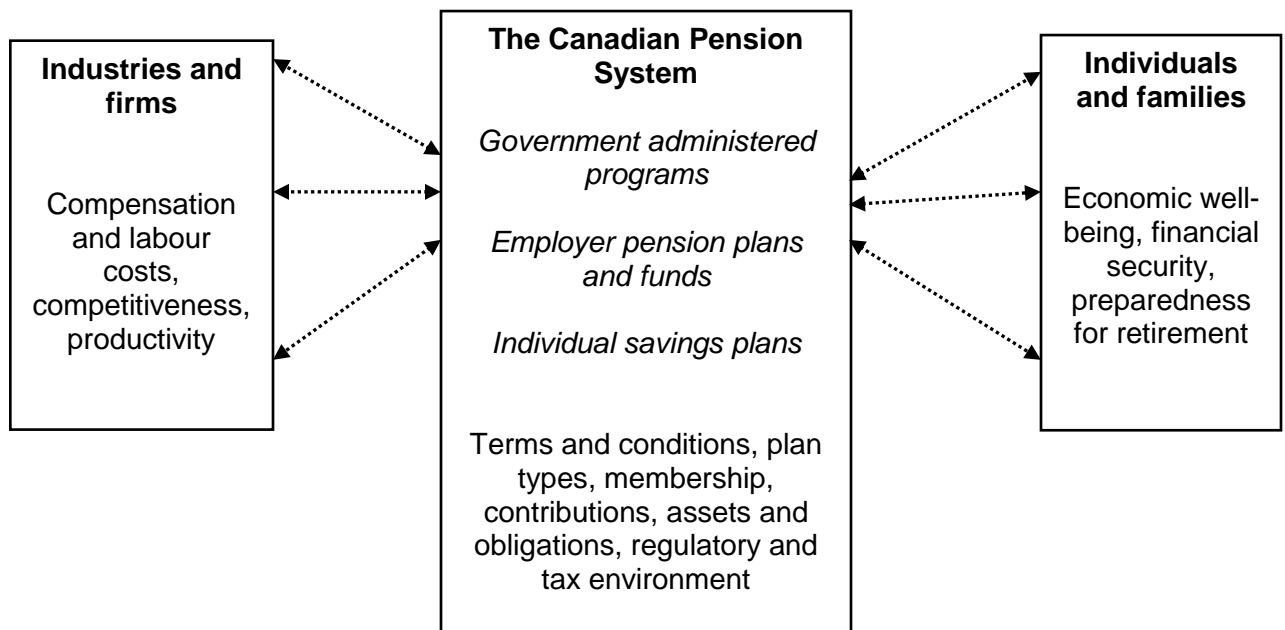
VIII. Towards a micro-based measurement framework

This paper has attempted to review many of the primary data sources on the Canadian pension system, highlighting measurement challenges and important data gaps. Existing sources were built independently in response to a variety of diverse analytical objectives, and each provides a partial view of the Canadian pension system's social and economic impact.

In the context of an ideal micro-based measurement framework, information would be available to describe the Canadian pension system over time in a number of dimensions, and would evolve in response to changes in the tax and regulatory environment. A suite of pension statistics would effectively draw links to issues impacting firms, as they relate to compensation and labour costs and impact firm competitiveness and productivity. It would also draw links to the well-being of individuals, families and socio-economic groups, tracking their economic security and preparedness for retirement as the population ages.

In addition to accurately depicting distributional effects with cross-sectional information, longitudinal data could shed light on dynamics from a variety of points of view, both within the pension system itself (the evolution of plans and funds), and in terms of its impacts on industries and on households.

Figure 7: Micro-based Framework



To appropriately serve as the foundation for macro-economic statistics in the System of National Accounts and enable macro-micro linkages, micro-based pension statistics must provide a basis for relevant and timely economic measures of labour compensation represented in aggregate productive activity. Industry and sector classifications must be coherent with other economic data used to build macro estimates, and data must enable the appropriate characterization of pension wealth stocks and their associated flows by institutional sector and asset type.

With recent focused attention on an ageing population and pension reform, it has become apparent that existing data sources are unable to address a number of important user requirements. Users include the System of National Accounts, along with researchers associated with the Ontario Pension Commission, the Bank of Canada, policy researchers in provincial and federal departments and the academic community. Some areas that are difficult to address with available statistics include:

- Linking pension characteristics to firm type, size and industry in order to study trends in DB and DC pension coverage.
- Analysis of pension plan closures, with a link to firm profitability, plan funded status, and foreign vs. domestic ownership.
- An analysis of pension fund assets in terms of foreign and domestic investments, and an improvement of asset categories to better distinguish the degree of risk.
- Information on the asset allocation of registered pension plans that are not covered by Trusteed arrangements (e.g. insurance contracts).
- Analysis of plan membership by type of plan against additional socio-demographic variables, such as age, race, gender and income to assess winners and losers as the pension system evolves.
- Information on pension benefits associated with job types (permanent, salaried, contract, part/full time).
- Classification of pension characteristics at the member level as opposed to the plan level (according to the majority principle). This will be important as members are offered different terms and conditions within the same plan.
- Analysis of non-active (in-pay or deferred) members and standardization of definitions across reporting jurisdictions.

Activities in course to further develop and integrate estimates and expand existing measures via data linkage are aimed at addressing the points outlined above. These include, in the case of regulatory data, sustained communication and engagement with

officials in the reporting provincial jurisdictions to understand and properly characterize developments in the statistics. In addition, regulatory information on the terms and conditions of pensions by plan type will be better integrated with financial data on the investment distribution of the associated pension funds via record linkage of the PPIC database to surveys of trustee funds. While there are considerable complexities in achieving the linkage of these different reporting units, there are important benefits to be realized.

Further coherence and analytical value will be achieved if a link can be established between pension plans, funds and the sponsoring employer entities via tax data and Statistics Canada's Business Register. This would also lead to more coherent and relevant industry and sector classifications of pension characteristics. Similar links have been established on the household side with the Survey of Financial Security, and could be further expanded to include pension characteristics on other socio-economic surveys.

Further work must be undertaken to address data gaps in the area of individual savings plans, both to have regular measures of overall asset values, but also to gauge coverage and participation in these plans as they are offered as a substitute for employer-sponsored registered pension plans. This may be achieved through further exploitation and analysis of tax data and supply-side information from financial institutions, but it is likely new collection activity will be required.

In the case of pension wealth measures at the family level, household wealth surveys must be undertaken with more regularity, and it is hoped that increased content can be included on the redesigned Survey of Household Spending. Selected wealth components, such as assets in individual registered retirement savings plans, could be measured on an annual basis and a more complete measures of net worth at the household level, including a valuation of pension entitlements from employer sponsored plans could be measured on a recurring (perhaps 4-year) cycle.

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