The Assets and Debts of Canadians

Focus on private pension savings

Canada

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Income Statistics Division

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The following standard symbols are used in Statistics Canada publications:

..   figures not available.

...   figures not appropriate or not applicable.

-     nil or zero.

--   amount too small to be expressed.

x   confidential to meet secrecy requirements of the Statistics Act.

Acronyms

CPP   -   Canada Pension Plan
DPSP -   Deferred Profit Sharing Plan
EPP   -   Employer Pension Plan (same as RPP)
GIS   -   Guaranteed Income Supplement
LICO -   Low-income cutoffs
LIF   -   Life Income Fund
LIRA -   Locked-In Retirement Account
LOC   -   Line of credit
LRIF -   Locked-In Retirement Income Fund
OAS   -   Old Age Security
QPP   -   Quebec Pension Plan
RESP -   Registered Education Savings Plan
RPP   -   Registered Pension Plan (same as EPP)
RRIF -   Registered Retirement Income Fund
RRSP -   Registered Retirement Savings Plan
SFS   -   Survey of Financial Security

Table of Contents

1. Introduction

In March, 2001 Statistics Canada released, for the first time in fifteen years, a picture of the net worth of Canadians. One important component of net worth was not included in that picture: the value of employer pension plan (EPP) benefits. Although not an asset in the sense that it can be sold and used for another purpose, it is nonetheless a very important part of the wealth of Canadians, as it will provide many with at least a portion of the income needed in retirement. Estimating the value of employer pension plan benefits is a complex process that had not previously been done.

The focus of this report is on EPP assets together with other pension assets such as RRSPs. However, it also presents the first comprehensive estimate of net worth, including the value of employer pension plan benefits.

The information used to produce this report was collected, in 1999, by the Survey of Financial Security (SFS). This survey asked a sample of Canadian families and unattached individuals about the value of their assets and the amount of their debts. The total value of the assets, less the debts, is referred to in this report as net worth.

TOTAL ASSETS	less:	TOTAL DEBTS	equals	NET WORTH
Private pension assets - RRSPs, RRIFs - Employer pension plans - Other pension assets Financial assets (other than pension) - Deposits - Stocks, bonds, mutual funds - Other financial assets Non-financial assets - Principal residence - Other real estate - Vehicles - Contents of residence, valuables Equity in business		Mortgages on: - Principal residence - Other real estate Credit card debt Line of credit debt Vehicle loans Student loans Other loans and debts		

Because it is necessary to make a number of assumptions when generating the value of EPPs, and because this had not previously been done by Statistics Canada, it was particularly important to get feedback from potential users of the data on the valuation process. A consultation paper, proposing a method to value employer pension plan benefits, was released in February 2001 and comments on the methodology were requested. As a result of that consultation the methodology was amended. The estimation process used is described in a report entitled *Survey of Financial Security: Methodology for estimating the value of employer pension plan benefits.* It is available free of charge on the Statistics Canada website *(**www.statcan.ca**)*. A brief description of this process also appears in Appendix A.

In this report, employer pension plan assets have been valued on a termination basis, meaning that the value is based on plan membership up to the time of the survey and does not assume any future salary increases. Because there are alternative methods for valuing these benefits, the going concern value has also been produced and is available to users on request. These two valuation methods are further explained in Appendix A, section 7.

Much can be written on this subject. This report will serve to introduce the data to readers and to highlight some of the important findings. However, this information can be used to shed light on many different issues relating to the financial security of Canadian individuals and families; additional research and analysis will therefore follow.

NOTE

Information on assets and debts was collected for the **family unit** and not for each individual in the family. Family units are divided into two broad categories:

- Families of two or more, which are referred to as **economic families** and defined as a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption. In 1999, they accounted for approximately 68% of all family units.
- **Unattached individuals**, defined as persons living either alone or with others to whom they are unrelated, such as roommates or lodgers. They represented the other 32% of family units.

Families are classified based on the characteristics of the major income recipient, that is, the person with the highest pre-tax income.

Amounts included in this report have been rounded to the nearest $100.

2. Highlights

Most comprehensive picture of the net worth of Canadians

In March 2001, Statistics Canada released the first statistical portrait of the net worth of Canadians since 1984. The 1999 Survey of Financial Security collected information on both the value of the financial and non-financial assets owned by each family unit and on the amount of their debt.

One important component of net worth was not included in that picture: the value of employer pension plan benefits. These benefits are an important part of the net worth of Canadians, as they provide many with at least a portion of their income in retirement. This report provides the first statistical portrait of the net worth of Canadians that includes the value of employer pension plan (EPP) benefits. It also looks at the importance of these benefits in relation to total private pension savings.

Private pension assets second most valuable asset

Private pension savings are a major component of the overall assets of Canadian families. In 1999, they accounted for about 29% of the value of all assets. However, these savings still rank in second place to the most valuable asset, the principal residence, which accounted for about 32% of total assets.

Private pension assets totaled well over $1 trillion in 1999. These assets consisted of an estimated $604 billion in employer pension plans, as well as $408 billion saved in registered retirement savings plans (RRSPs) and registered retirement income funds (RRIFs).

Over 70% of family units had pension savings

About 8.7 million family units, or 71% of the total of 12.2 million, had some form of pension assets in 1999, whether they were employer pension plans, RRSPs or RRIFs.

In 1999, the median value of the private pension assets of all family units that had them was $50,000. Pension assets peaked for family units with a major income recipient aged between 55 and 64. In 1999, these family units, who would have been approaching retirement or just recently retired, had median pension assets of $160,300.

Nearly 60% of family units had RRSPs or RRIFs in 1999, with a median value of $20,000. Although fewer family units had assets in employer pension plans, the median value of those assets was a much larger $49,300.

Family units who didn't have pension savings

The SFS estimated that 3.5 million family units, almost 29% of the 12.2 million total, had no private pension assets. More than half (57%) of family units with no private pension assets had a major income recipient aged younger than 45.

However, the major income recipient in the remaining 43% of family units with no private pension assets was at least 45 years of age. There were over 1.5 milllion such families, one-quarter of all family units in that age group. For these family units the income provided by OAS/GIS and CPP/QPP is now, or will be, essential.

Family units that may not have saved enough

With the results of the survey it was possible to assess whether Canadians have saved enough for retirement. Saving enough, for the purposes of this analysis, means that the individual or family will be able to replace a certain percentage of their pre-retirement earnings or will be able to generate an income that is likely to be above the level of the low income cutoffs (LICO). This analysis could only be done by making a number of assumptions, which are described in the report.

It is estimated that 33% of the family units with a major income recipient aged 45 to 64 may not, given their current asset situation, have saved enough to replace two-thirds of their earnings, or to generate an income in retirement that is likely to be above the level of the LICO. This increases to 44% if four-fifths of the pre-retirement earnings are to be replaced. The proportion is much higher for unattached individuals, because of the number that may not be able to generate an income above the LICO.

The amount of income that a family must replace from private sources increases with their pre-retirement earnings. It is therefore not surprising that the percentage of family units with high employment incomes (of $75,000 or more) that might not be able to replace two-thirds of their earnings is relatively high, at 41%. A lower proportion (just under one-quarter) of those with employment incomes of between $20,000 and $40,000 may not be able to replace two-thirds of their earnings. The income this group will receive from the public pension programs (OAS/GIS and CPP/QPP) will help most of them to maintain a similar standard of living in retirement.

In this analysis, one-half of the equity in the home is considered an asset from which income can be generated in retirement. Just 15% of family units who own their home without a mortgage do not appear to have saved enough for retirement, compared with 34% of those who own their home with a mortgage. However, a very significant 59% of those who do not own their home might not have saved enough to replace two-thirds of their earnings or to generate an income that would keep them above the approximate level of the LICO.

Adding EPP benefits increases estimate of net worth by 35%

Adding the value of employer pension plan benefits to family assets increases the median net worth of Canada's 12.2 million family units about 35%, from an estimated $81,000 to $109,200. Net worth is the sum of all assets less all debts.

3. Private pension savings: a key asset of Canadians

What are private pension assets?

As defined by the Survey of Financial Security, private pension assets include:

a) individual savings in registered retirement savings plans (RRSPs) and in registered retirement income funds (RRIFs)[1];
b) the value of the pension plans benefits "earned" through participation in an employer pension plan (EPP)[2];
c) other pension savings held in vehicles such as annuities and deferred profit sharing plans.

Together, they are referred to as **private** pension savings, to indicate that they do not include the value of the income people will receive from the Old Age Security/Guaranteed Income Supplement (OAS/GIS) program and the Canada and Quebec Pension Plans (CPP/QPP). These government pension programs constitute a very important part of the retirement income picture of Canadians and will be taken into consideration in this report from an income perspective.

Private pension assets are a major component of the assets of Canadian family units, accounting for close to 29% of the value of all assets. Despite the size and importance of these assets, they are still second to the most valuable asset: the home. It too must be considered in any discussion of readiness for retirement, as it can also serve a very important role in providing for a more financially secure future.

The total estimated value of private pension assets is just over $1 trillion. This money will be essential in providing a large part of the income of seniors. It also, however, plays a very important role in the current financial markets, as this money constitutes one of the largest pools of investment capital in the country.

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[1] It also includes money transferred to these plans from employer pension plans on termination of employment. These are called Locked-in Retirement Accounts (LIRAs).
[2] This value can be thought of as the total amount of money required to pay the pension earned up to the time of the survey. It is not the monthly or annual amount of the benefit that is or will be received.

Chart 3.1 Private pension assets and homes major assets for most Canadians

% of total assets (y-axis, 0 to 35)

- Financial assets, non-pension: 12
- Pension assets: 29
- Home: 32
- Other non-financial assets: 17
- Business equity: 10

Assets
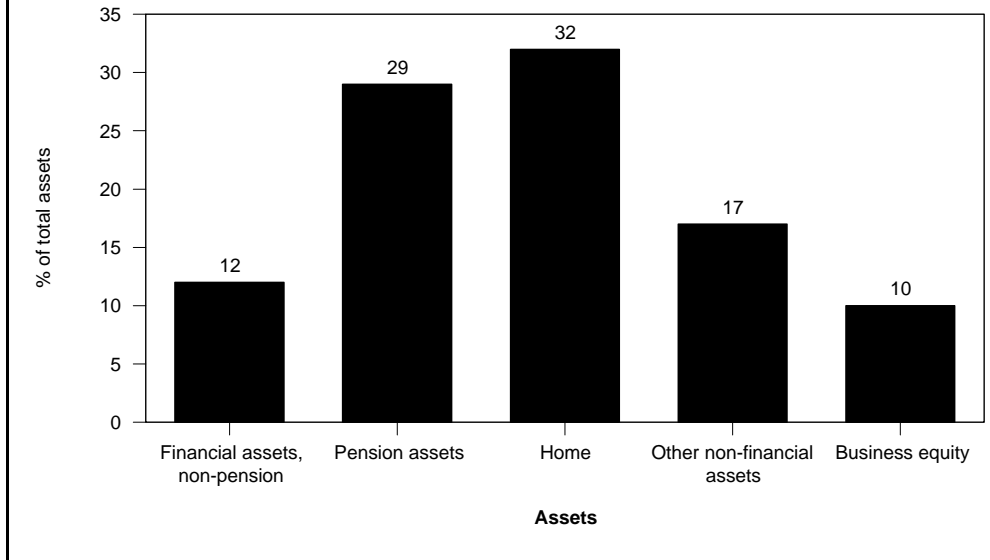
The value of the benefits to be paid from employer pension plans is well over half of the total amount in private pension savings: $604 billion. This is considerably more than the amount that has been saved in RRSPs and RRIFs ($408 billion). Close to 60% of family units have RRSPs or RRIFs; the median value is $20,000. Although fewer family units have EPP assets (47%), the median value of this asset is much larger ($49,300).

The value of employer pension plan benefits includes that of current plan members as well as those receiving this income. The benefits have been valued on a termination basis. A more detailed description of the manner in which this value was estimated can be found in Appendix A.

Chart 3.2 Employer pension plans account for the largest amount of private pension assets

$,000,000,000 (y-axis, 0 to 700)

- EPPs: 604
- RRSPs, RRIFs: 408
- Other pension assets: 13
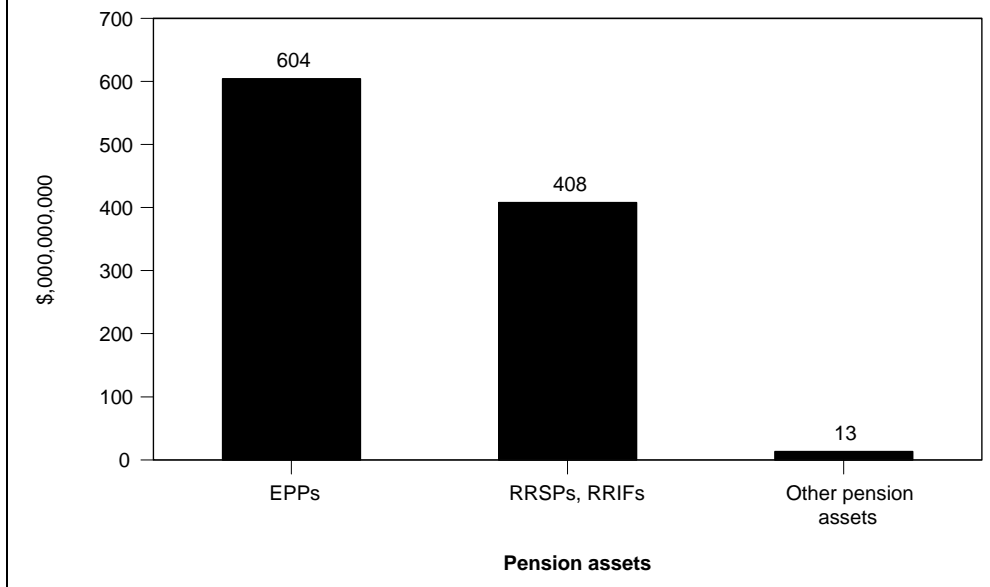
Pension assets

4. Who has private pension savings?

In 1999, the median value of the private pension assets of all family units in Canada that had them was estimated at $50,000. However, like many assets, this value is affected by a number of things, most notably age, income and occupation. This section looks at the influence of these factors on private pension savings.

Family units in pre-retirement or early retirement years have the highest amount in private pension assets

The amount held by family units as private pension assets increased significantly with the age of the individual or, in the case of families, the person with the highest pre-tax income. Pension assets peaked for family units with a major income recipient between 55 and 64 years of age. These family units, who would have been approaching retirement or just recently retired, had median pension assets of $160,300. It is not surprising that these families led the way in terms of pension holdings, given that the value of employer pension plan benefits increases with the number of years of membership in the plan. As well, these people had a longer period in which to accumulate RRSP assets.

Senior family units (those in which the person with the highest pre-tax income was 65 years and older) also had significant private pension assets, second only to those with a major income recipient aged 55 to 64. Median pension assets for these family units was about $115,700. Most of the major income recipients in these families were retired and would already have been drawing on these assets, reducing the amount from a pre-retirement peak.

Chart 4.1 Median private pension assets greatest for those 55 to 64

Median private penison assets $

Less than 25	1,900
25-34	11,500
35-44	36,700
45-54	89,100
55-64	160,300
65 and older	115,700

Age (for families, of major income recipient)
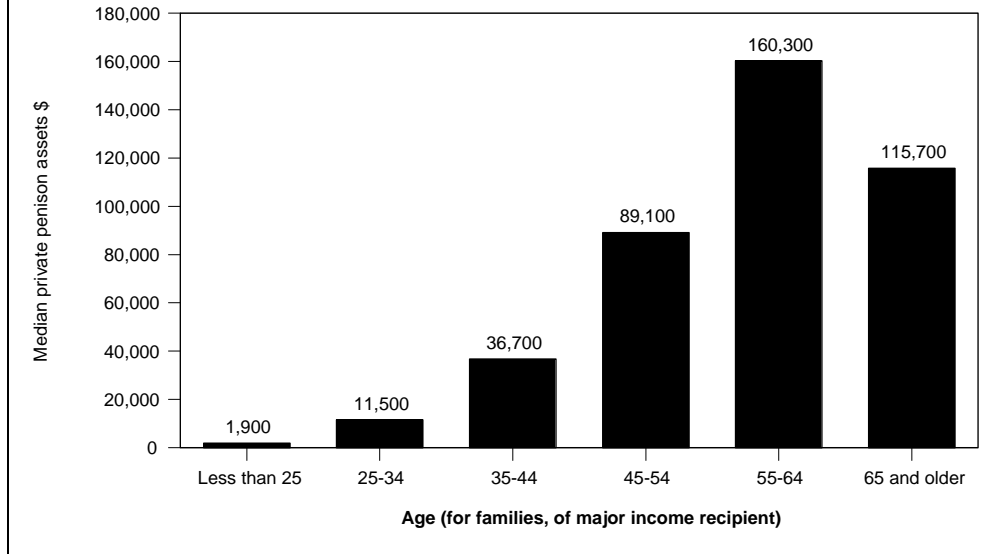
As the age of the major income recipient increased, private pension assets also became a much larger proportion of total assets. For family units with a major income recipient aged 55 to 64, pension assets were by far the most significant component of total assets (40%). On the other hand, pension assets represented only about 20% of the assets of family units with a major income recipient between 35 and 44; for these families the home was the most valuable asset (38% of total assets). Financial assets held outside of private pension plans were a more important asset for the older age groups; for those family units with a major income recipient 65 years and older, these assets accounted for 20% of the total. These financial assets are important, as they generate income for this age group.

Chart 4.2 Private pension assets largest percentage of assets for those 55 to 64

% of total assets

Age (for families, of major income recipient)

─┼─ Financial assets, non-pension ─◆─ Private pension assets ─●─ Home
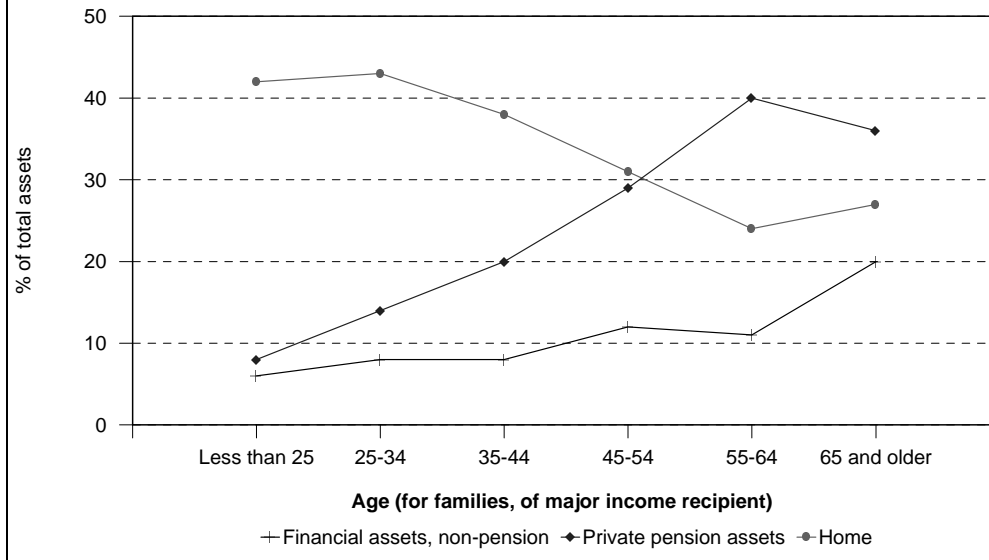
As one can see from Chart 4.3, over 75% of family units in the age groups from 35 to 64 had some form of private pension assets. The percent with RRSPs or RRIFs exceeded the percent with employer pension plan assets, in large part because the latter are available only to those who work for an employer that offers such a plan. RRSPs, on the other hand, are available to all those with employment earnings, if they are able to contribute.

Chart 4.3 Over three-quarters of those 35 to 64 have private pension assets

% with assets

Age (for families, of major income recipient)

─┼─ RRSPs, RRIFs ─◆─ Employer Pension Plans ─●─ Total private pension assets
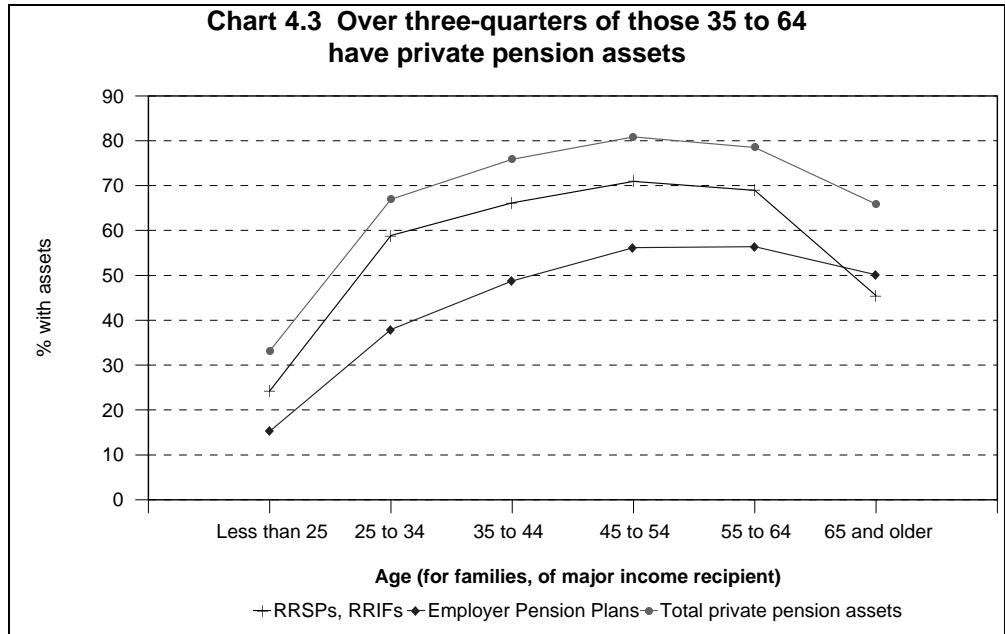
There is a significant drop in the proportion with pension assets for family units with a major income recipient 65 and older. Because EPP membership did not peak until the early 1990s, at the same time that RRSPs became increasingly popular, older family units were less likely to have participated in these programs.

Because EPPs and RRSPs/RRIFs are only available to paid workers and those with employment income, few family units with a major income recipient less than 25 had these assets. Many of these families include people who may not yet have entered the workforce.

Despite the fact that, for most age groups, RRSP assets were more common than employer pension plan (EPP) assets, the median value of EPP benefits was greater for all age groups over 35. One of the reasons is that EPPs require that regular contributions be made to the plan (by the employer and most often also by the employee), while contributions to RRSPs can vary significantly in amount from year to year and are not mandatory. The difference was most significant for family units with a major income recipient aged 55 to 64. For that age group, the median value of EPP benefits was more than three times the median value of RRSPs and RRIFs ($151,900 compared with $50,000). The difference between these two medians was much lower for younger families.

Table 4.1   Private pension assets by age of major income recipient

	Total (RRSPs, RRIFs, EPPs, other)	RRSPs, RRIFs	EPPs	Other pension assets
	Percentage of family units with:			
Less than 25	33	24	15	1
25-34	67	59	38	4
35-44	76	66	49	5
45-54	81	71	56	4
55-64	79	69	56	3
65 or older	66	46	50	3
Total	**71**	**60**	**47**	**4**
	% of total assets			
Less than 25	8	4	4	--
25-34	14	9	5	--
35-44	20	10	9	--
45-54	29	12	17	--
55-64	40	14	26	--
65 or older	36	12	23	--
Total	**29**	**12**	**17**	**--**
	Median[1] $			
Less than 25	1,900	2,200	700	3,000
25-34	11,500	8,000	6,800	3,000
35-44	36,700	17,000	28,000	7,500
45-54	89,100	30,000	77,900	8,000
55-64	160,300	50,000	151,900	11,200
65 or older	115,700	46,000	107,400	16,800
Total	**50,000**	**20,000**	**49,300**	**8,000**

[1]   *Median for those with that asset.*

Family units with higher incomes also had more substantial private pension assets

As a family's income increases, so does the amount held in private pension assets. This is mainly a reflection of two factors: (a) a family's ability to save through RRSPs, and (b) that for most members of employer pension plans, benefits are defined as a proportion of their earnings. Almost all family units with after-tax family income of $40,000 or more had some pension assets.

Table 4.2   Private pension assets by after-tax income

After-tax family income	Total (RRSPs,RRIFs, EPPs, other)	RRSPs, RRIFs	EPPs	Other pension assets
	Percentage of family units with:			
Less than $10,000	23	18	7	--
$10,000 to $19,999	39	26	21	1
$20,000 to $39,999	73	57	45	3
$40,000 or more	94	85	69	7
Total	**71**	**60**	**47**	**4**
	% of total assets			
Less than $10,000	14	11	2	1
$10,000 to $19,999	22	9	12	--
$20,000 to $39,999	29	10	19	--
$40,000 or more	31	13	18	--
Total	**29**	**12**	**17**	**--**
	Median $[1]			
Less than $10,000	5,600	5,000	4,000	15,000
$10,000 to $19,999	20,000	10,000	29,800	10,200
$20,000 to $39,999	30,000	14,000	40,500	5,000
$40,000 or more	80,600	30,000	59,600	9,600
Total	**50,000**	**20,000**	**49,300**	**8,000**

[1]   *Median for those with that asset.*

Public sector workers had the highest median private pension assets

Family units with a major income recipient employed in the public sector (with the government or in an education-related occupation) were not only among the most likely to have private pension assets (91%), they also had the highest median pension value ($84,400). Almost all public sector employers offer an employer pension plan to their employees. As well, most of these plans provide relatively generous benefits.

Family units with a major income recipient whose occupation was classified as "management" also had relatively large private pension assets; the median value was $74,300. In addition, this group had the highest median RRSP/RRIF holdings ($35,000). This is likely a reflection of the fact that they had the highest median after-tax family income ($56,100) and therefore were in a better position to save.

Chart 4.4 Those employed in government, education and health most likely to have private pension assets
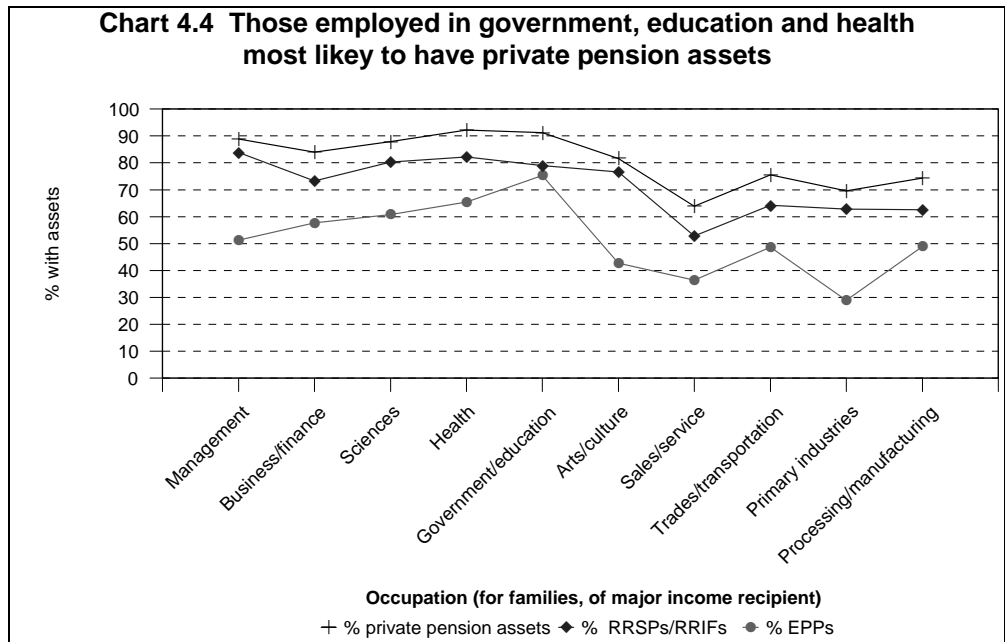
Those employed in certain occupations in the private sector were not only less likely to have pension assets, they also had assets with a lower median value. Some of these occupations account for a large proportion of the labour force. For example, 13% of the individuals or major income recipients were employed in sales and service. A much lower proportion of the family units in this occupation had pension assets (64%) and the median value of those assets ($20,000) was lower than for any other occupation. Family units with a major income recipient in that occupation also had the lowest median after-tax family income, providing them with less opportunity to contribute to RRSPs.

Chart 4.5 Those employed in government and education have highest median private pension assets

Median private pension assets $

Occupation (for families, of major income recipient)

Categories: Management, Business/finance, Sciences, Health, Government/education, Arts/culture, Sales/service, Trades/transportation, Primary industries, Processing/manufacturing
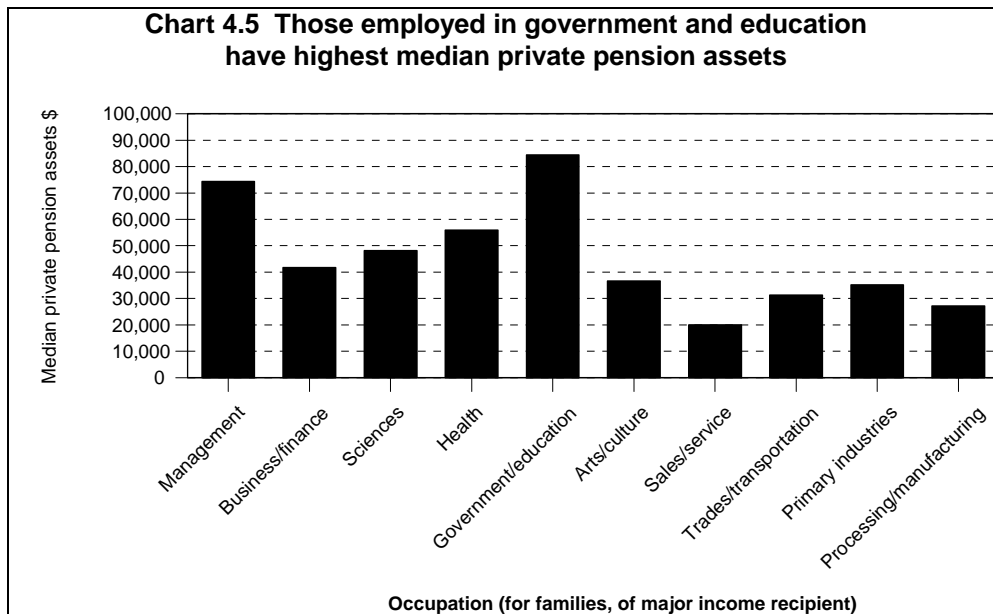
Family units with both EPP and RRSP/RRIF assets had highest private pension assets

Family units with both employer pension plan assets and RRSP/RRIF assets had significantly higher pension assets than those holding only one or the other. The 36% of families with both types of pension assets had a median pension value of $102,900 compared with $33,300 for those with only EPP assets and $15,000 for those with only RRSP/RRIF assets. Interestingly, people who belong to EPPs tend to contribute more to their RRSP than those who do not.[3] This is to a large extent related to income: half of the family units that had EPP and RRSP assets had after-tax family incomes of $40,000 or more, compared with 17% of those family units that had only EPP assets.

Chart 4.6: Largest median private pension assets held by family units with both EPPs and RRSPs/RRIFs

$,000

%

Type of pension asset

☐ Median private pension assets ($) ◆ % of family units

Categories: EPP and RRSP/RRIF, EPP only, RRSP/RRIF only, Neither

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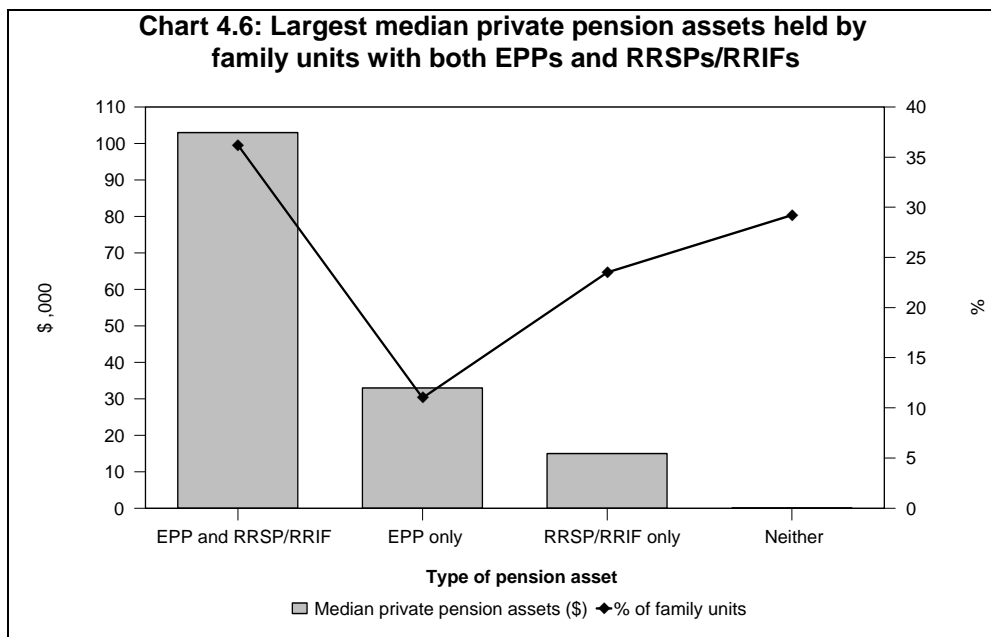
3   *Retirement Savings through RPPs and RRSPs, 1999*, Statistics Canada catalogue 74F0002, page 30.

Significantly more family units had only RRSP assets than had only EPP assets (24% compared with 11%). This is largely explained by the fact that RRSPs are more widely available. Any person who had earned income (largely employment income) could have contributed to an RRSP, while only those who worked for an employer who provided a pension plan would have EPP assets.

Family units holding only EPP assets had much higher median pension assets than those with only RRSP/RRIF assets. Again, this is because EPPs require that regular contributions be made, while RRSPs do not.

Distribution of private pension assets

Private pension assets were concentrated in a relatively small percent of family units. The 25% of family units with $100,000 or more in private pension savings held 84% of these assets. About half of these (13% of family units) had at least $200,000 in pension assets – this group alone held close to two thirds (64%) of the total. However, almost 29% of all family units did not have any private pension assets in 1999. The next section of this report will look more closely at the characteristics of those families.

Close to half (49%) of the 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 (21%). A much smaller percentage (36%) of family units in which the major income recipient was likely to be retired (being 65 years of age and older) had pension assets of $100,000 or more. Many of these family units would already have been drawing on their pension assets, thereby reducing the amount held.

Notably, 34% of the family units with a major income recipient 65 years of age and older had no pension assets. These families may not necessarily be less well off than in their pre-retirement years, as their income from government programs (OAS/GIS and CPP/QPP) may be sufficient to maintain their former standard of living. However, the pre-retirement earnings of this group are not known.
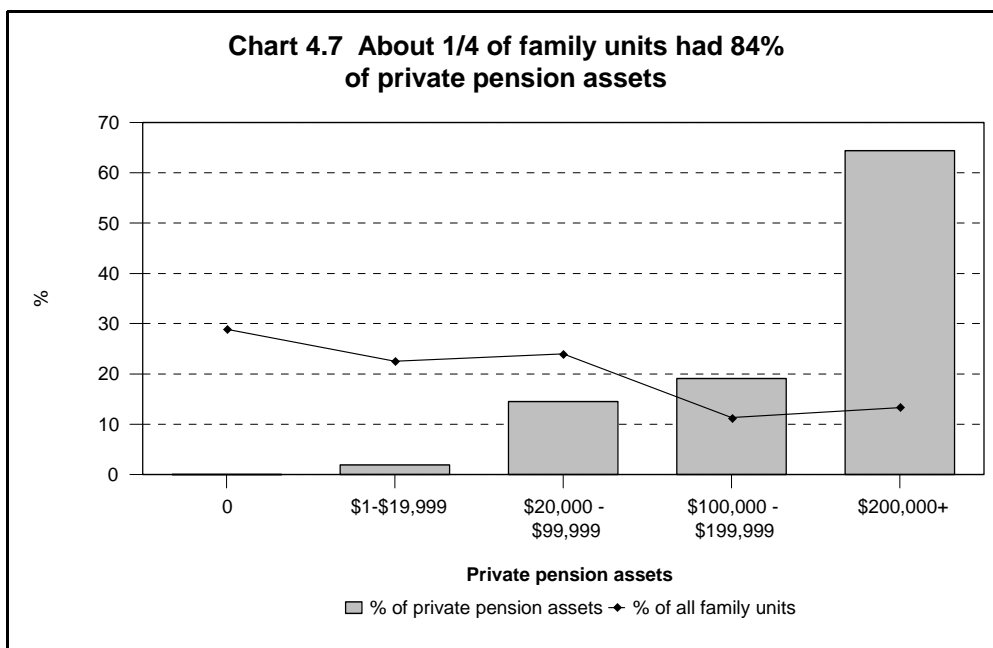

Chart 4.7 About 1/4 of family units had 84% of private pension assets

□ % of private pension assets ◆ % of all family units

Table 4.3: Value of private pension assets by age of major income recipient

	Total family units	Value of private pension assets				
		0	$1 to $19,999	$20,000 to $99,999	$100,000 to $199,999	$200,000 plus
Number of family units (,000)						
All family units	12,216	3,535	2,748	2,928	1,381	1,625
Less than 25	724	484	224	x	x	x
25-34	2,388	789	1,042	456	x	x
35-44	3,017	728	801	1,020	331	138
45-54	2,395	458	366	659	431	481
55-64	1,459	314	144	292	207	503
65 and older	2,232	762	171	493	336	470
Percentage of family units						
All family units	100	29	22	24	11	13
Less than 25	6	67	31	x	x	x
25-34	20	33	44	19	x	x
35-44	25	24	27	34	11	5
45-54	20	19	15	27	18	20
55-64	12	21	10	20	14	34
65 and older	18	34	8	22	15	21
Number of economic families (,000)						
Economic families	8,288	1,780	1,830	2,200	1,081	1,397
Less than 25	259	138	106	x	x	x
25-34	1,581	468	659	355	x	x
35-44	2,350	479	612	834	297	129
45-54	1,889	295	274	526	356	437
55-64	1,029	138	89	202	155	445
65 and older	1,180	262	90	275	199	354
Percentage of family units						
Economic families	68	22	22	27	13	17
Less than 25	2	53	6	x	x	x
25-34	13	30	36	22	x	x
35-44	19	20	33	35	13	5
45-54	15	16	15	28	19	23
55-64	8	13	5	20	15	43
65 and older	10	22	5	23	17	30
Number of unattached individuals (,000)						
Unattached individuals	3,927	1,755	918	728	300	227
Less than 25	465	347	117	x	x	x
25-34	807	321	383	101	x	x
35-44	667	249	189	186	33	10
45-54	506	163	92	132	76	44
55-64	430	175	55	90	53	58
65 and older	1,052	500	81	218	137	115
Percentage of family units						
Unattached individuals	32	45	23	19	8	6
Less than 25	4	75	25	x	x	x
25-34	7	40	48	12	x	x
35-44	5	37	28	28	5	1
45-54	4	32	18	26	15	9
55-64	4	41	13	21	12	13
65 and older	9	48	8	21	13	11

5. Who doesn't have pension savings

As mentioned earlier, 3.5 million Canadian family units (29% of all family units) had no private pension assets in 1999[4]. This proportion was somewhat lower for economic families (21%) but substantially higher for unattached individuals; almost half (45%) of the latter had no pension assets.

Those with no private pension assets tend to have low family employment income

The large majority of family units with no private pension assets had lower incomes from employment. Considering only those family units with a major income recipient between 25 and 64 years of age[5], just over 70% of the families of two or more with no pension savings had employment incomes (i.e., earnings) of less than $30,000. Approximately 78% of the unattached individuals had earnings of under $20,000. Even though these families and individuals have little saved privately, current public plans such as the Old Age Security/ Guaranteed Income Supplement program (OAS/GIS) and the Canada and Quebec Pension Plans (CPP/QPP) will provide them with a minimum income in retirement; this income would replace a substantial portion of their pre-retirement earnings. Using 1998 rates, to compare with the reference period for the income information from this survey, a single person with no other income would receive, from OAS/GIS, an annual income of just under $11,000 at 65; a couple, both 65, would get about $17,800.

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[4] From an EPP, an RRSP or RRIF or from other sources. The latter includes things such as deferred profit sharing plans (DPSPs) and annuities and constitute less than .5% of total private pension assets.
[5] Those less than 25 and over 64 years of age have not been considered here as the focus is on employment income; many in those age groups have not yet entered the labour market or have retired.

Chart 5.1 Most family units aged 25 to 64 with no private pension assets had earnings of less than $30,000

% of family unit with no private pension assets

	All family units	Economic families	Unattached individual
Less than $10,000	45	37	58
$10,000 - $19,999	20	19	20
$20,000 - $29,999	14	15	13
$30,000 - $39,999	8	10	4
$40,000 and more	13	19	5

Family employment income

■ All family units □ Economic families ▨ Unattached individual

Those with no private pension assets tend to be younger

As well, most of those with no private pension assets were relatively young. This puts them further from retirement and means they still have a number of years in which to accumulate assets. More than half (57%) of family units with no private pension assets had a major income recipient younger than 45 years of age[6].

Chart 5.2 The majority of family units with no private pension assets were under 45

% of family units with no private pension assets

Age	%
Less than 25	14
25-34	22
35-44	21
45-54	13
55-64	9
65 and older	22

Age (for families, of major income recipient)

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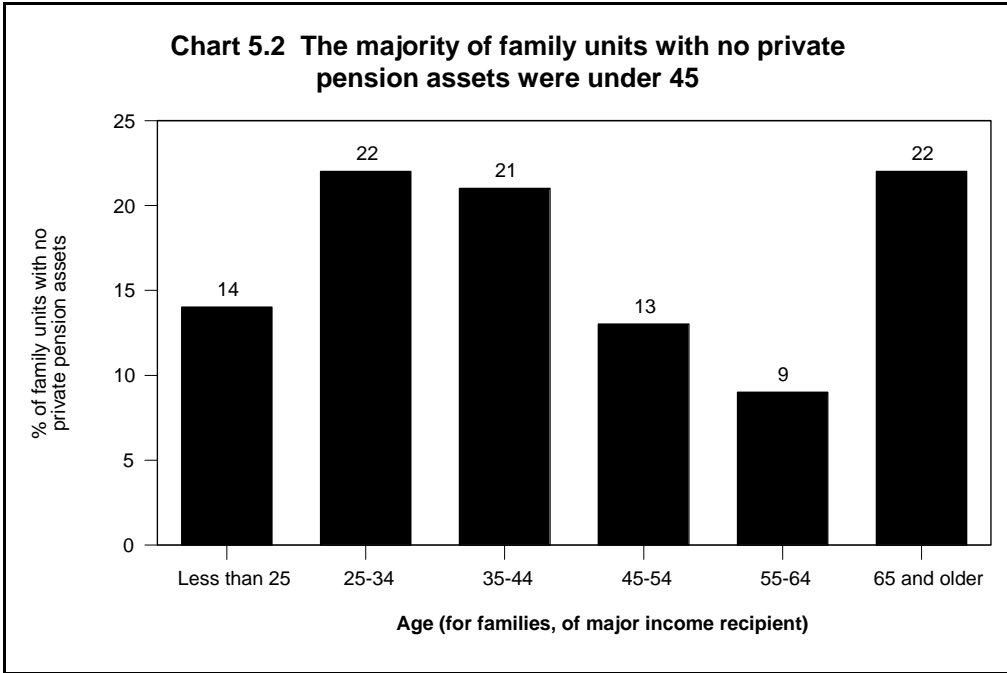
[6] The relatively low percentage of family units under 25 with no private pension savings is due to the fact that the major income recipient (whose age is used) is living with parents, many of whom have pension savings.

However, the remaining 43% of family units (1.5 million in total) without private pension assets had a major income recipient 45 years of age or older. For these family units, the government-sponsored programs (OAS/GIS and CPP/QPP) will, or do now, constitute an essential source of income in retirement.

Of all family units 65 years and older, 34% had no private pension savings; this percentage however was twice as high for women (48%) as for men (24%).

Age and income need to be considered together

To get a better picture of the potential implications for a family unit of having no private pension assets, it is necessary to consider both age and employment income. Those with higher incomes who have no private pension assets are not likely to be at risk of being unable to replace the income from their earnings after they retire if they are younger and still have many years to save. Similarly, older people/families with no private pension savings and lower incomes may be able to replace most or all of their earnings with the income from the government-sponsored programs (OAS/GIS and CPP/QPP).

Chart 5.3 Over 25% of those 45 to 54 with no private pension assets have employment incomes of $30,000 and more
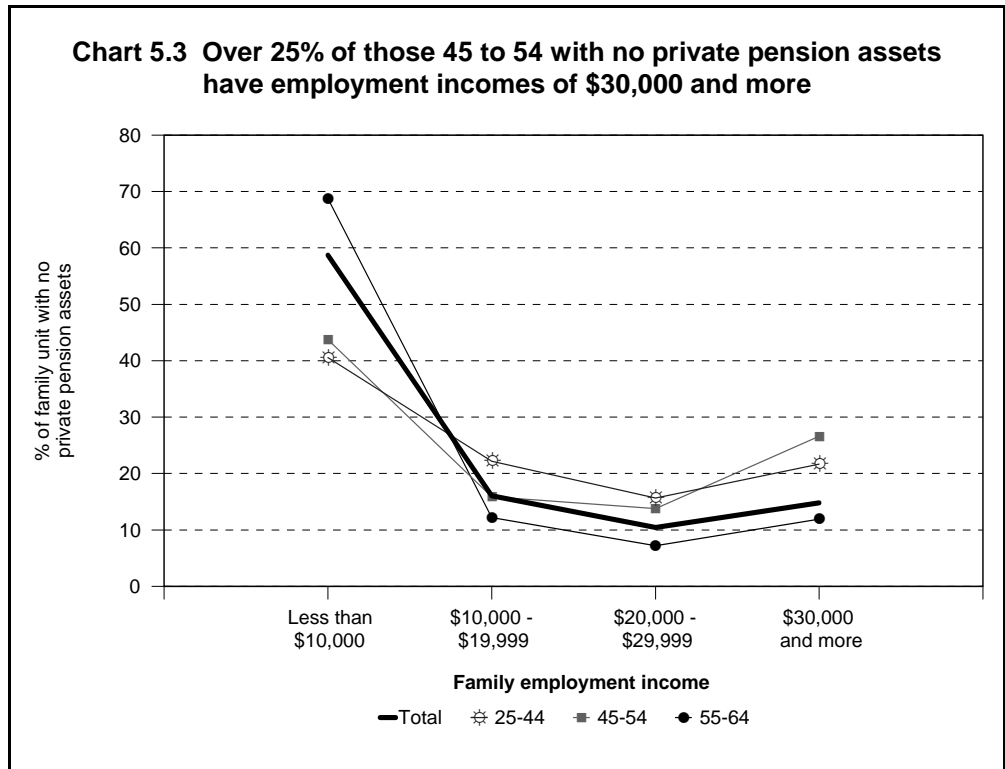
There are in total close to 160,000 family units between the ages of 45 and 64 with employment incomes of $30,000 and over with no private pension assets. Unless they are able - or have used other methods - to save for their retirement, they face a substantial drop in their income when they retire.

Table 5.1 Characteristics of family units with no private pension assets

	Total family units	Family units with no private pension assets	% of those with no pension assets[1]	% of total family units[2]
	,000	,000		
All family units	12,216	3,535	100	29
Economic families	8,288	1,780	50	21
Elderly families	1,180	262	7	22
Non-elderly families	7,109	1,518	43	21
Couple only	1,852	277	8	15
Couple, children under 18	3,137	615	17	20
Lone parent families	626	336	10	54
Other non-elderly families	1,493	291	8	19
Unattached individuals	3,927	1,755	50	45
Age[3]				
Less than 25	724	484	14	67
25-34	2,388	789	22	57
35-44	3,017	728	21	24
45-54	2,395	458	13	19
55-64	1,459	314	9	21
65 and older	2,232	762	22	34
Employment income for the family				
Less than $10,000	4,059	2,075	59	51
$10,000 - $19,999	1,156	568	16	49
$20,000 - $29,999	1,122	369	10	33
$30,000 - $39,999	1,062	197	6	19
$40,000 - $49,999	1,052	141	4	13
$50,000 - $74,999	1,857	126	4	7
$75,000+	1,908	58	2	3
Occupation[3]				
None	3,901	1,802	51	46
Management	992	110	3	11
Business, Finance, Administration	1,250	201	6	16
Sciences, Natural and Applied	747	90	3	12
Health	430	33	1	8
Social Sciences, Education, Government	642	56	2	9
Arts, Culture, Recreation	189	35	1	18
Sales and Service	1,607	580	16	36
Trades, Transportation and Equip. Operators	1,425	348	10	24
Primary Industry	276	84	2	30
Processing, Manufacturing and Utilities	757	194	5	26
Education[3]				
Less than high school	3,291	1,486	42	45
Graduated high school	2,858	883	25	31
Non-university certificate	3,458	801	23	23
University certificate/bachelor's degree	1,773	283	8	16
Master's or certificate above Bachelor's	648	61	2	9
Degree in medicine, dentistry, etc.	79	13	--	16
Doctorate	110	8	--	7
Province				
Newfoundland	199	85	2	43
Prince Edward Island	54	20	1	37
Nova Scotia	376	118	3	31
New Brunswick	300	115	3	38
Québec	3,115	999	28	32
Ontario	4,480	1,131	32	25
Manitoba	446	119	3	27
Saskatchewan	402	107	3	27
Alberta	1,157	326	9	28
British Columbia	1,686	515	15	31

[1] This percentage was calculated by dividing the number of family units in each category by the total number of family units with no private pension assets.

[2] This percentage was calculated by dividing the number of family units with no private pension assets by the total number of family units with that characteristic.

[3] For families, of major income recipient.

Family units in eastern provinces and those without a university education less likely to have private pension assets

Because those with no private pension assets are likely to have lower incomes they are also more likely to have characteristics associated with that group. For example, the provinces with the lowest median after-tax family incomes also have the largest percentage of family units with no pension assets: Newfoundland (43%), New Brunswick (38%) and Prince Edward Island (37%). The province with the smallest proportion of such family units was Ontario (25%); the family units in that province also had the highest median income.

As well, 45% of those who had not graduated high school had no private pension savings, compared with 14% of those with at least a university degree.

Most family units with no private pension assets also don't own their home

It is important to recognize that EPP and RRSP assets are not the only means through which families and individuals save for retirement. Many families will rely on the equity they have built up in their home and business to provide an income after retirement. However, 7 out of 10 families with no pension assets also didn't own their home.

Chart 5.4 Almost 70% of families with no private pension assets do not own their home
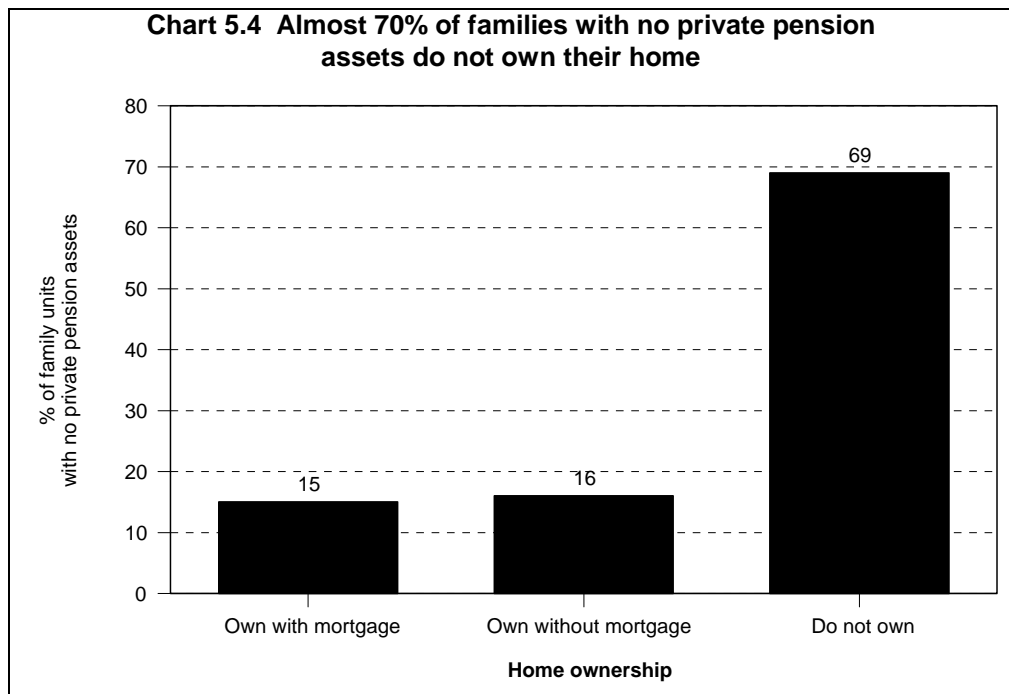
The analysis above looks at those family units that do not have any private pension assets. As indicated, this may not necessarily indicate that their lifestyle will be affected when they retire; this depends on the age and the income of the individual or family. The next section of this report looks more specifically at those family units that, given the savings they have accumulated to date, may face a drop in their incomes after retirement.

6.   Have Canadians saved enough for their retirement?

Canada's public pension system is designed to provide Canadians with a minimum income in retirement. The Old Age Security (OAS) program provides a basic flat-rate monthly pension to Canadians 65 years and older, while the Canada and Québec Pension Plans (CPP/QPP) pay a benefit to those who have contributed to the plan through their employment. The Guaranteed Income Supplement (GIS) provides an additional amount to those with little or no other income. (Canada's public pension system is described more fully in Appendix A.9.)

However, for many working Canadian families and individuals, the income provided by the public plans may not be sufficient to provide them with a standard of living similar to the one they had prior to retirement. Private pension assets (most notably from employer pension plans and RRSPs) and other private savings will be required by many families to generate sufficient retirement income to avoid a disruption in their current lifestyle, or to keep them at a level that is likely to be above the low-income cutoffs (LICO).

Have Canadians saved enough for retirement? This analysis attempts to answer that question. It is, however, not an easy one and the analysis can only be done by making a number of assumptions about things such as the age at which retirement will take place, the income required, the assets available to generate that income and the expected earnings on those assets. These assumptions, and the methodology used, are described briefly below and more fully in Appendix A.8.

Saving enough, for the purposes of this analysis, means that the individual or family will be able to replace a certain percentage of their pre-retirement earnings or will be able to generate an income that is likely to be above the low income cutoffs.

How much income does a family require in retirement? Because certain work-related expenses (e.g., contributions to the CPP/QPP, Employment Insurance, and employer pension plans) cease at retirement, it is not necessary to have the same gross income after retirement in order to be left with the same net income. Also, because expenditures for consumer goods often decrease, at the same time that mortgage payments and child-rearing costs are eliminated or reduced, it is possible to maintain a similar standard of living after retirement with less net income than was earned through employment.

The following analysis uses two "reasonable" scenarios to assess income levels in retirement:

- The first is that income in retirement will be two-thirds of pre-retirement earnings. Two-thirds was selected on the assumption that it would be sufficient to maintain a similar standard of living. The publication *Saving for Retirement: A Guide to Tax Legislation and Regulations* states that "an appropriate limit for tax-assisted retirement saving ... permits the build-up of a pension of 60% to 70% of pre-retirement earnings. For most individuals, such a pension will replace sufficient

earnings to avoid any significant drop in living standards upon retirement". [7]

- The second is that income in retirement will be four-fifths of pre-retirement earnings. Given the deductions that cease at retirement, and the anticipated reduction in income taxes, an 80% earnings replacement should result in close to the same net income.

The earnings used for this analysis are the 1998 earnings reported by the respondents to the survey. Both of these scenarios include, in the calculation of retirement income, an estimate of the income expected from OAS/GIS and CPP/QPP.

In reality, the income replacement rate required in retirement likely varies with pre-retirement earnings: those with lower earnings could be affected by even a small drop in net income, while those with high earnings might be able to withstand a more substantial drop in income. The analysis does not attempt to assess the adequacy of the anticipated retirement income, rather it uses pre-retirement earnings (together with the LICO) as a basis for determining whether the individual or family is likely to be able to maintain a similar lifestyle.

For this analysis, limits have been placed on the gross retirement income that must be generated. The upper limit is $60,000 for an individual and $100,000 for a family. These limits were selected in order to focus the analysis on those whose standard of living would be most seriously affected if they were not able to replace a sufficient proportion of their pre-retirement earnings.

The lower limit on the income that must be generated in retirement is the before-tax low income cutoffs (LICO). For some this may provide an income higher than their pre-retirement earnings; this minimum was used on the assumption that this income would be required to maintain a basic standard of living.

This analysis focuses on the situation of those nearing retirement, i.e. those family units in which the person with the highest pre-tax income is between 45 and 64, if the major income recipient was still employed at the time of the survey. Because this analysis looks at potential retirement income in relation to pre-retirement earnings, family units in which the major income recipient was not receiving employment income cannot be included, because they had no earnings. Many of these major income recipients, at least those who were 55 years and older, would already have been retired. As indicated in Table 6.1, there were about 927,000 family units in which the major income recipient was 45 to 64 and not working; this analysis is based on the remaining 2.9 million family units aged 45 to 64.

Because employer pension plans and RRSPs are not the only means available to save for retirement, the assets considered for this analysis will also include: one-half of the equity in the home, equity in any other real estate, other non-pension financial assets and business equity, if applicable. The home is the most valuable asset for most families that own one, and can be used as an alternative method of saving for retirement. It is therefore important to take it into consideration in an analysis of this type. To either include the full equity in the home or exclude it completely has drawbacks, therefore the mid-point was selected and one-half of the equity in the home was used for this analysis.

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[7] Finance Canada, 1989.

The following table shows the distribution of these assets. Overall, private pension assets account for the largest percentage (44%) of the "retirement assets" of the family units included in this analysis.

Table 6.1: Retirement assets[1] by employment status for family units with a major income recipient 45 to 64

Person with the highest pre-tax income is:	# family units	Aggregate retirement assets	1/2 home equity	Equity in other real estate	Private pension assets	Business equity	Non-pension financial assets
	,000	$000,000		% of aggregate			
Paid worker, self-employed or not employed	3,854	1,187,882	15	7	47	14	16
Paid worker or self-employed	2,928	919,553	16	8	44	17	15
Not employed	927	268,328	13	6	56	4	20

[1] *"Retirement assets " for this purpose are the ones included in this table; they are the assets that could potentially be used to generate retirement income.*

It is assumed that retirement takes place at 65. Because the major income recipient in these family units is not yet 65, they still have time to save for retirement. This analysis assumes they will do that, based on information about the retirement savings behaviour of different age groups.[8] For that reason an adjustment has been made to allow for further asset accumulation until age 65.

One-third of family units 45 to 64 may not have saved enough

It is estimated that 33% of the family units with a major income recipient aged 45 to 64 may not, given their current asset situation, have saved enough to replace two-thirds of their earnings, or to generate an income in retirement that is likely to be above the LICO. This increases to 44% if four-fifths of the pre-retirement earnings are to be replaced. The proportion is much higher for unattached individuals, because of the number that may not be able to generate an income above the LICO.

[8] Information from *Retirement Savings through RPPs and RRSPs, 1999,* Statistics Canada catalogue 74F0002 indicates that the percentage saving through RRSPs increases with age, peaking for those 55 to 64 years of age.

Chart 6.1 One-third of family units 45 to 64 may not have sufficient retirement savings[1]

Y-axis: % of family units 45 - 64

X-axis (Family unit): All family units, Economic families, Unattached individuals

- All family units: 2/3 replacement = 33, 4/5 replacement = 44
- Economic families: 2/3 replacement = 30, 4/5 replacement = 42
- Unattached individuals: 2/3 replacement = 46, 4/5 replacement = 53

Legend: ■ 2/3 replacement □ 4/5 replacement
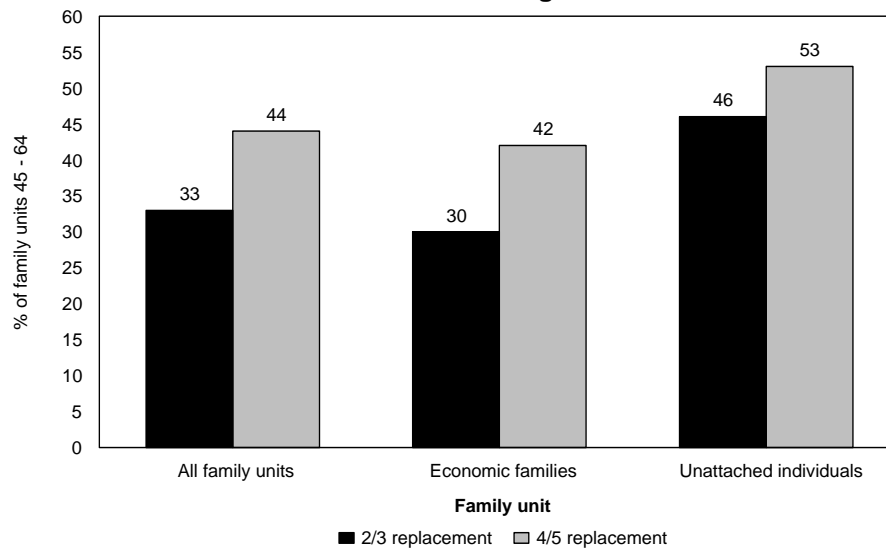
[1] Have insufficent savings to replace two-thirds of their pre-retirement earnings or to have an income in retirement above the low income cutoffs, whichever is the highest.

Proportion that may not have saved enough highest for those with low and high incomes

The amount of income that a family must replace from private sources increases with their pre-retirement earnings. It is therefore not surprising that the percentage of family units with high employment incomes (of $75,000 or more) that might not be able to replace two-thirds of their earnings is relatively high, at 41%. Family units earning at least $75,000 represent over one-third of all family units that might not have saved enough; their median net worth was $235,300. By comparison, those with earnings of $75,000 or more that appear to have sufficient savings had a median net worth of $628,400.

A lower proportion (just under one-quarter) of those with employment incomes of between $20,000 and $40,000 may not be able to replace two-thirds of their earnings. The income this group will receive from the public pension programs (OAS/GIS and CPP/QPP) will help most of them to maintain a similar standard of living in retirement.

Just over 35% of those with employment incomes under $10,000 may not have saved enough to generate an income in retirement sufficient to put them over the low income cutoffs. For many in this group it may not mean a drop in standard of living but a continuation of one that is restricted.

Chart 6.2 Family units with lower and higher employment incomes least likely to have saved enough
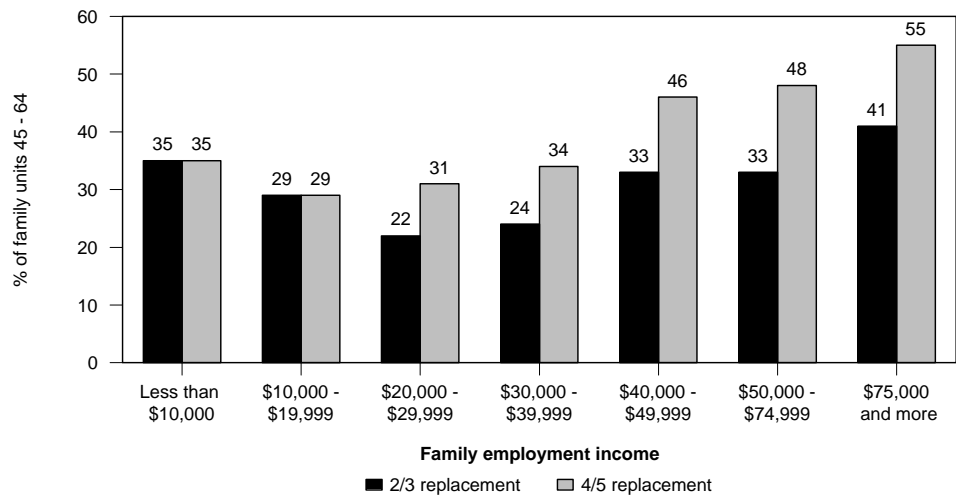
% of family units 45 - 64

Family employment income	2/3 replacement	4/5 replacement
Less than $10,000	35	35
$10,000 - $19,999	29	29
$20,000 - $29,999	22	31
$30,000 - $39,999	24	34
$40,000 - $49,999	33	46
$50,000 - $74,999	33	48
$75,000 and more	41	55

■ 2/3 replacement □ 4/5 replacement

Chart 6.3 Paid workers more likely to have difficulty replacing two-thirds or more of their earnings in retirement

% of family units 45 - 64

Employment status (for families, of major income recipient)	2/3 replacement	4/5 replacement
Paid worker	36	49
Self-employed	21	26

■ 2/3 replacement □ 4/5 replacement
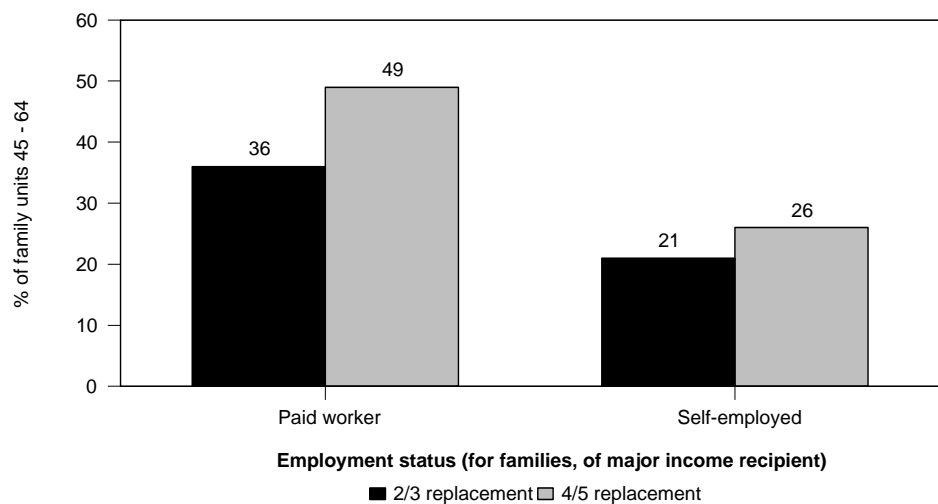
Paid workers are much more likely than the self-employed to face a drop in income of more than one-third of their employment earnings when they retire. Just over 36% of the family units in which the person with the highest pre-tax income was a paid-worker might not be able to achieve a two-thirds earnings replacement in retirement; this compares with 21% for their self-employed counterparts. This increases to 49% and 26% respectively if a four-fifths income replacement rate is used. For this analysis, business equity is considered an asset that can potentially be turned into a source of income in retirement; for that reason the self-employed appear to be better able to replace at least two-thirds of their income when they retire.

Owning your own home - mortgage-free - makes a difference

For most Canadians, the principal residence is the most valuable asset. It is therefore not surprising that those who do not own their home, or who own it with a mortgage, are in a more precarious situation when it comes to generating sufficient retirement income to replace two-thirds or more of their earnings or to remain above the LICO. In this analysis, one-half of the equity in the home is considered an asset from which income can be generated in retirement. Just 15% of family units who own their home without a mortgage do not appear to have saved enough for retirement. In comparison, 34% of those who own their home with a mortgage may not have sufficient savings.

The importance of home ownership can be seen in the fact that a very significant 59% of those who do not own their home might not have saved enough to replace two-thirds of their earnings or remain above the LICO. This increases even further, to 67%, if the assumption is that four-fifths of earnings are to be replaced. This could affect at least 385,000 family units.

Chart 6.4 Those who don't own their home are much less likely to have saved enough
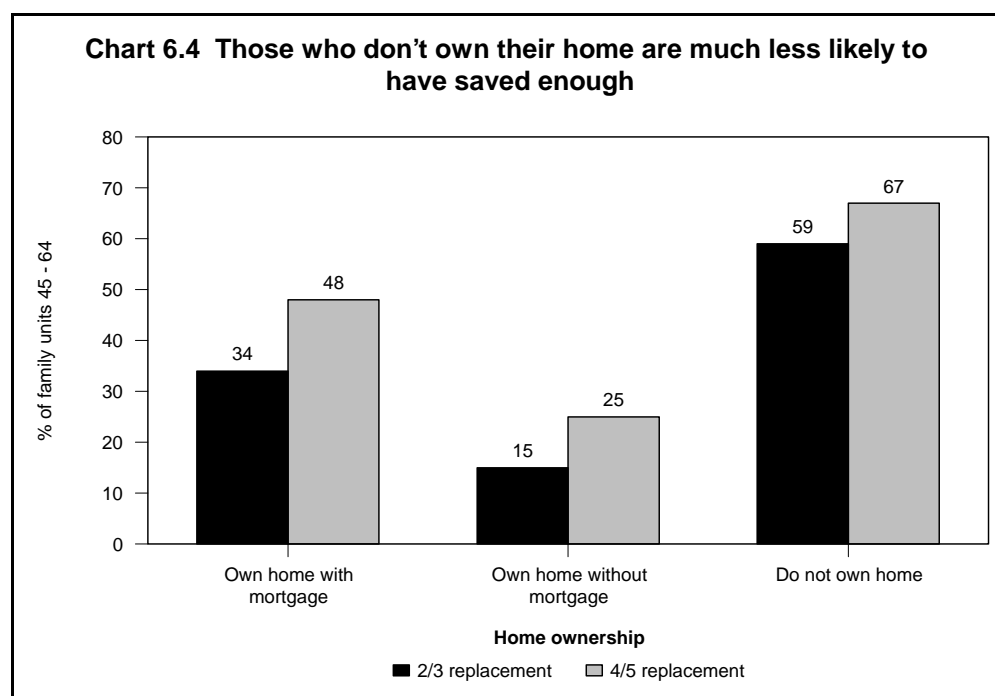
Public sector employees better able to replace income in retirement

Family units with a major income recipient employed in the public sector - with some level of government or in an education-related occupation - were most likely to have saved enough for retirement. A relatively small 19% of this group did not appear to have sufficient assets. That occupation also had the largest proportion of family units with both employer pension plan assets and RRSPs (63%). Only 9% of this group had no savings in either of these private pension programs.

The family units that may have the most difficulty replacing two-thirds of their income when they retire have major income recipients working in occupations associated with processing and manufacturing (46%). About 26% did not have any assets in employer pension plans or RRSPs.

For almost all occupations, those family units that may not have saved enough had higher median employment incomes than those that should be able to replace two-thirds of their income.

Chart 6.5 Those working in manufacturing and processing more likely to have difficulty replacing at least two-thirds of their earnings in retirement

% of family units 45-64

Management	33
Business/finance	32
Government/education	19
Sales/service	39
Trades/transportation	39
Processing/manufacturing	46
Other	25

Occupation (for families, of major income recipient)
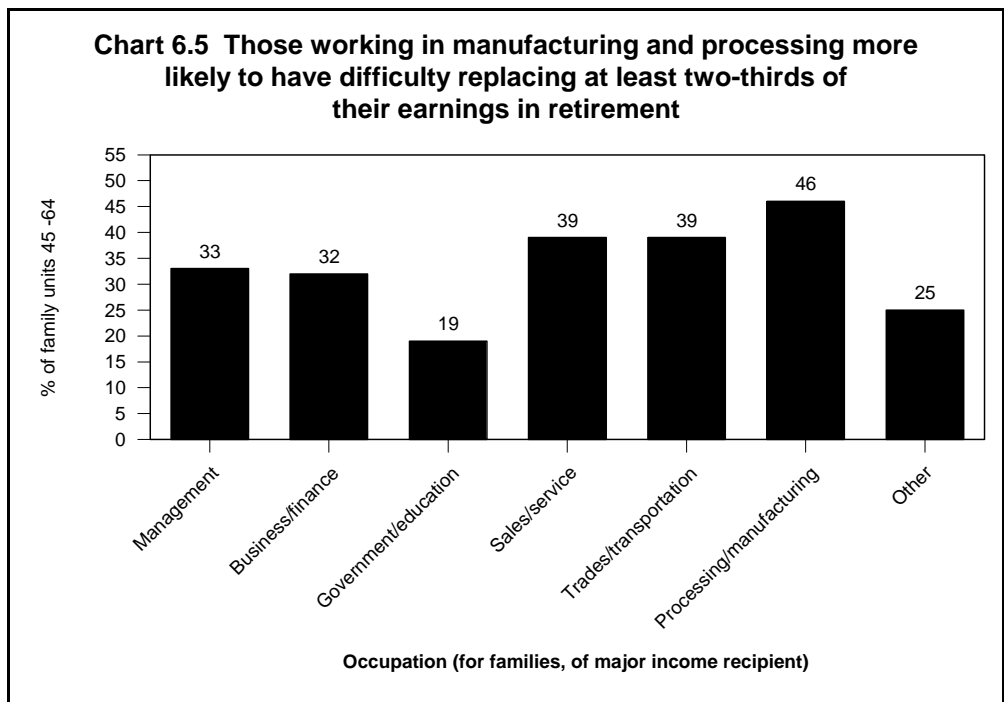
Alberta and Ontario have highest proportion of family units that may not be able to replace two-thirds of their earnings

Alberta and Ontario had the largest proportion of family units aged 45 to 64 that may not have saved enough to replace two-thirds of their earnings in retirement (just over 35%). This is true despite the fact that the median net worth of all family units 45 to 64 in Alberta and Ontario was higher than in any other province except British Columbia ($255,000 in Alberta and $267,000 in Ontario). However, median employment income for this same population was also among the highest in these provinces and, as was seen earlier, the proportion who may have difficulty replacing their earnings when they retire rises with income.

The Atlantic provinces and Saskatchewan had lower proportions of family units that might not have saved enough. For the most part these provinces have lower median employment income; income from OAS/GIS and the CPP/QPP will help many family units in these provinces to maintain their standard of living when they retire.

Chart 6.6 Percent that may not be able to replace at least two-thirds of their earnings in retirement highest in Alberta and Ontario

% of family units 45 - 64

Province	Value
Newfoundland	26
Prince Edward Island	26
Nova Scotia	25
New Brunswick	26
Quebec	33
Ontario	36
Manitoba	34
Saskatchewan	27
Alberta	35
British Columbia	30
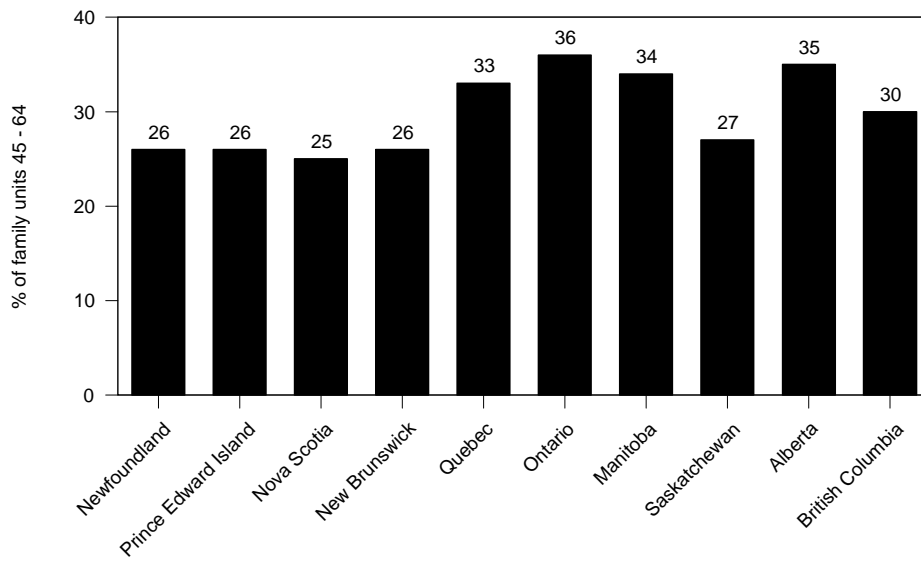
Provinces

Note: Data for the Atlantic provinces, Manitoba and Saskatchewan should be used with caution because of smaller sample size those jurisdictions

Table 6.2a Characteristics of all family units with a major income recipient aged 45 to 64 (excluding those not employed)

	Total family units	% of family units	Median net worth	Median private pension assets	Median retirement assets[1]	Median family employment income
	(,000)	%	$	$	$	$
All family units	2,928	100	239,000	100,000	173,000	53,800
Economic families	2,371	81	278,000	111,700	198,500	60,400
Unattached individuals	557	19	100,300	59,000	78,300	30,000
Employment income						
Less than $10,000	195	7	88,500	41,500	64,700	5,500
$10,000 - $19,999	239	8	86,900	34,900	58,800	14,600
$20,000 - $29,999	302	10	94,600	20,900	70,000	24,700
$30,000 - $39,999	305	10	150,000	60,000	107,200	35,000
$40,000 - $49,999	322	11	162,200	67,500	117,000	44,900
$50,000 - $74,999	684	23	262,000	102,200	191,900	61,600
$75,000+	880	30	438,100	191,300	334,500	100,200
Low-income cutoff						
Below	176	6	51,000	25,000	37,100	9,400
Above	2,752	94	249,300	102,900	181,000	56,600
Employment status[2]						
Paid worker	2,387	82	223,800	104,200	165,900	56,500
Self employed	540	18	318,000	70,000	232,600	39,700
Occupation[2]						
Management	418	14	393,600	135,800	290,400	79,400
Business, Finance, Administration	444	15	195,900	86,400	155,500	46,800
Social Sciences, Education, Government	277	9	410,300	204,300	322,600	68,300
Sales and Service	508	17	134,200	61,700	95,000	34,000
Trades, Transportation and Equip. Operators	513	18	184,200	72,000	132,400	51,900
Processing, Manufacturing and Utilities	235	8	159,200	52,400	100,500	55,300
Other[3]	532	18	297,800	120,700	215,100	56,903
Home ownership status						
Own with mortgage	1,276	44	235,600	100,400	169,400	62,200
Own without mortgage	997	34	420,400	149,500	304,800	58,100
Do not own	654	22	37,100	40,000	32,800	33,700
Province						
Newfoundland	38	1	123,300	61,200	89,300	37,600
Prince Edward Island	13	0	198,300	100,000	169,100	43,000
Nova Scotia	90	3	192,900	97,000	158,300	50,300
New Brunswick	68	2	174,600	98,000	117,300	43,400
Québec	704	24	186,000	100,000	146,200	46,700
Ontario	1,113	38	267,000	100,000	187,400	59,600
Manitoba	100	3	199,800	85,000	141,000	50,000
Saskatchewan	89	3	245,600	94,000	178,900	41,900
Alberta	293	10	255,000	100,000	184,300	56,000
British Columbia	420	14	308,000	109,000	205,600	57,700

[1] "Retirement assets" for this purpose are the ones included in Table 6.1; they are the assets that could potentially be used to generate retirement income.

[2] For families, of major income recipient.

[3] Includes health, sciences (natural and applied), arts, culture and primary industries.

Table 6.2b Characteristics of all family units with a major income recipient aged 45 to 64 (excluding those not employed) who may not have saved enough[1]

	% of all family units (from 6.2a)	% of family units who have not saved	Median net worth	Median private pension assets	Median retirement assets[2]	Median family employment income
	%	%	$	$	$	$
All family units	33	100	87,200	48,000	61,600	62,200
Economic families	30	74	126,600	53,600	85,400	73,300
Unattached individuals	46	26	21,500	21,000	15,100	30,700
Employment income						
Less than $10,000	35	7	9,300	4,200	4,800	5,200
$10,000 - $19,999	29	7	6,200	10,000	2,600	13,200
$20,000 - $29,999	22	7	7,100	5,000	5,700	24,700
$30,000 - $39,999	24	7	18,700	10,000	11,600	35,400
$40,000 - $49,999	33	11	51,600	23,000	37,100	45,000
$50,000 - $74,999	33	23	99,900	40,000	68,900	62,200
$75,000+	41	37	235,300	91,800	166,000	101,700
Low-income cutoff						
Below	46	8	8,600	4,200	1,500	9,600
Above	33	92	100,200	49,800	70,600	65,800
Employment status[3]						
Paid worker	36	88	90,200	49,000	62,300	61,700
Self employed	21	12	71,600	40,200	42,000	66,500
Occupation[4]						
Management	33	14	204,900	76,200	148,300	91,400
Business, Finance, Administration	32	14	59,600	38,300	46,200	49,100
Social Sciences, Education, Government	19	5	135,500	62,800	104,300	62,400
Sales and Service	39	20	35,700	23,400	22,700	44,200
Trades, Transportation and Equip. Operators	39	21	91,400	43,500	59,800	63,600
Processing, Maunfacturing and Utilities	46	11	102,000	46,300	72,400	68,300
Other[4]	25	14	122,400	60,200	99,500	72,600
Home ownership status						
Own with mortgage	34	45	136,100	59,800	91,400	77,700
Own without mortgage	15	16	265,200	69,500	158,000	84,900
Do not own	59	40	15,700	20,000	10,200	35,800
Province						
Newfoundland	26	1	132,900	73,300	96,300	62,700
Prince Edward Island	26	0	86,800	26,200	32,000	49,100
Nova Scotia	25	2	122,500	50,300	84,300	65,500
New Brunswick	26	2	91,600	31,000	46,700	59,800
Quebec	33	24	59,600	49,600	41,500	48,300
Ontario	36	41	106,400	50,600	75,000	68,200
Manitoba	34	4	84,900	40,000	58,100	59,000
Saskatchewan	27	2	112,500	53,000	67,400	59,900
Alberta	35	11	87,600	31,900	49,800	63,600
British Columbia	30	13	90,200	44,400	59,500	63,600

[1] *Saved enough to replace two-thirds of their earnings or generate an income above the LICO.*

[2] *"Retirement assets" for this purpose are the ones included in Table 6.1; they are the assets that could potentially be used to generate retirement income.*

[3] *For families, of major income recipient.*

[4] *Includes health, sciences (natural and applied), arts, culture and primary industries.*

Table 6.2c   Characteristics of all family units with a major income recipient aged 45 to 64 (excluding those not employed) who have saved enough[1]

	% of all family units (from 6.2a)	% of family units who have saved	Median net worth	Median private pension assets	Median retirement assets[2]	Median family employment income
	%	%	$	$	$	$
All family units	67	100	337,700	140,000	256,000	50,000
Economic families	70	84	379,300	154,000	282,300	55,100
Unattached individuals	54	16	219,700	89,100	165,500	30,000
Employment income						
Less than $10,000	65	6	216,300	59,900	150,900	5,600
$10,000 - $19,999	71	9	162,900	44,600	110,000	15,300
$20,000 - $29,999	78	12	137,100	29,800	83,800	24,500
$30,000 - $39,999	76	12	188,500	80,000	138,000	35,000
$40,000 - $49,999	67	11	278,200	107,600	197,000	44,700
$50,000 - $74,999	67	23	351,500	150,500	262,700	61,000
$75,000+	59	26	628,400	290,800	495,100	98,200
Low-income cutoff						
Below	54	5	219,700	32,200	140,000	9,000
Above	67	95	351,700	145,100	264,700	52,100
Employment status[3]						
Paid worker	64	78	323,300	150,000	243,200	54,100
Self employed	79	22	420,400	89,500	333,700	33,900
Occupation[3]						
Management	67	14	497,000	185,400	378,000	71,200
Business, Finance, Administration	68	15	285,800	124,400	228,500	44,200
Social Sciences, Education, Government	81	11	505,000	252,500	408,300	70,100
Sales and Service	61	16	238,800	100,000	168,300	32,900
Trades, Transportation and Equip. Operators	61	16	282,300	100,000	197,000	45,400
Processing, Maunfacturing and Utilities	54	6	248,400	74,500	153,800	46,200
Other[4]	75	20	391,000	143,700	308,000	48,900
Home ownership status						
Own with mortgage	66	43	310,300	140,000	231,900	54,600
Own without mortgage	85	43	459,900	171,000	342,900	53,300
Do not own	41	14	131,100	78,200	115,200	31,100
Province						
Newfoundland	74	1	120,200	50,000	78,800	31,900
Prince Edward Island	74	0	330,100	100,100	241,000	41,500
Nova Scotia	75	3	230,500	127,100	176,300	43,900
New Brunswick	74	3	231,200	150,000	164,600	37,800
Quebec	67	24	277,500	137,400	204,900	46,000
Ontario	64	37	379,200	138,900	273,700	55,300
Manitoba	66	3	326,100	140,000	257,300	45,400
Saskatchewan	73	3	366,300	114,000	299,200	35,100
Alberta	65	10	388,200	150,000	301,000	51,800
British Columbia	70	15	415,500	160,000	299,800	55,300

[1]   *Saved enough to replace two-thirds of their earnings or generate an income above the LICO.*

[2]   *"Retirement assets" for this purpose are the ones included in Table 6.1; they are the assets that could potentially be used to generate retirement income.*

[3]   *For families, of major income recipient.*

[4]   *Includes health, sciences (natural and applied), arts, culture and primary industries.*

7. The net worth picture, including private pension savings

In March of 2001 Statistics Canada reported that the net worth of Canadians, without the inclusion of the value of employer pension plan benefits, was about $81,000. Including the value of EPP benefits increases that estimate by almost 35%, to approximately $109,200. This is an indication of the importance of taking these retirement "savings" into consideration when examining the financial situation of Canadians. Although they are not savings in the sense that they can be withdrawn and used for other purposes prior to retirement, they nevertheless constitute an essential part of the financial picture of Canadians, as they provide an important source of income in retirement.

Chart 7.1 Median net worth increases 35% when value of employer pension plans (EPPs) is included
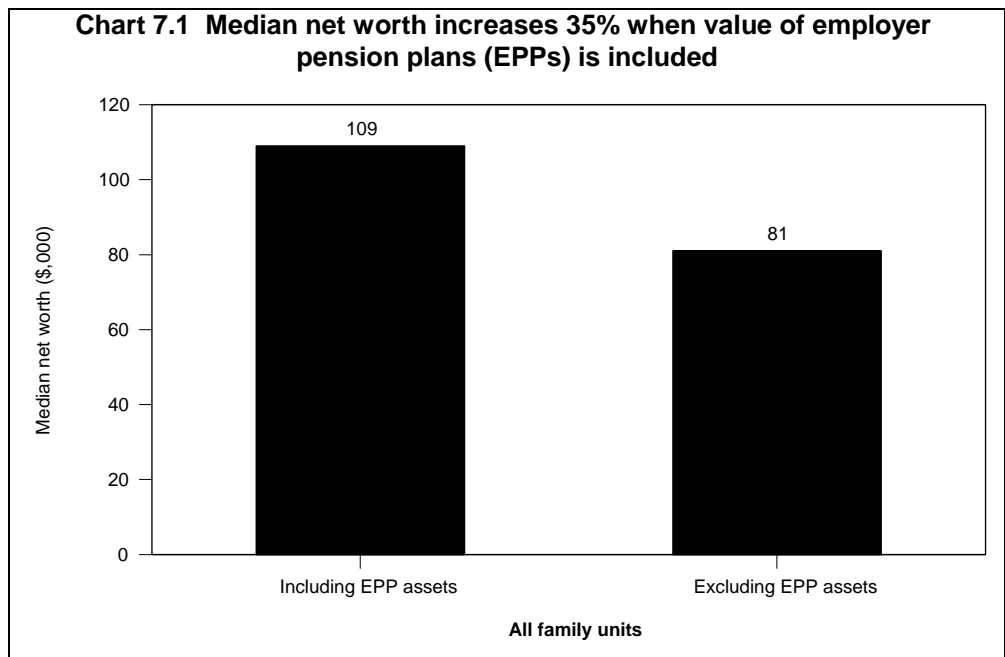

This chapter presents an updated picture of the net worth of different groups, highlighting some of the more significant impacts of including the value of EPP benefits as one of the assets.[9]

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[9]   For information on the debts of Canadians, consult the report published in March, 2001 entitled *The Assets and Debts of Canadians: An Overview of the Results of the Survey of Financial Security*, catalogue 13-595, available on the Statistics Canada website (www.statcan.ca).

The distribution of net worth remains relatively unchanged

Including the value of employer pension plan benefits in the net worth of Canadians changed the distribution of net worth only very slightly. Because a relatively large proportion of Canadians belong to employer pension plans (47% of family units had at least one member who belonged to an EPP), it might be expected that adding the value of the EPP benefit would result in a more even distribution of net worth. However, using the estimate of net worth including the value of EPP benefits, the wealthiest 20% of family units continued to hold the largest percentage of personal wealth: 68%. This is down slightly from 70% without the value of the EPP included in the net worth estimate. The share of net worth held by those in the middle and fourth net worth quintiles was up correspondingly, from 27% to 29%. There was, however, no change in the proportion of the net worth held by the 40% of Canadians with the lowest personal wealth.

Chart 7.2 Distribution of net worth with and without the value of the employer pension plan benefit
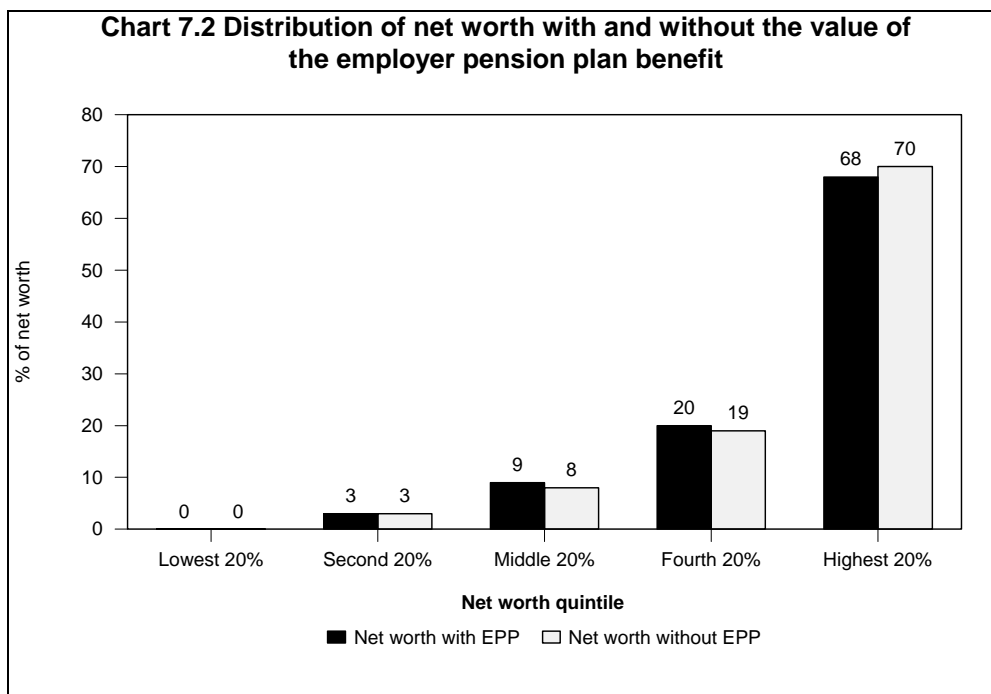
Senior family units had the highest net worth; lone-parent families the lowest

In this report family units are divided into two broad categories:

- families of two or more (referred to as economic families), which accounted for approximately 68% of all family units in 1999;
- unattached individuals, who represented the other 32% of family units.

Families are classified based on the characteristics of the major income recipient**.**

Table 7.1   Aggregate, average and median net worth by type of family unit, 1999

	Family units	% of family units	Aggregate net worth	Average net worth	Median net worth
	,000		$000,000	$	$
All family units[1]	**12,215**	**100**	**3,045,134**	**249,000**	**109,200**
Economic families	**8,288**	**68**	**2,559,676**	**308,800**	**159,000**
Elderly families	1,180	10	518,396	439,400	302,900
Non-elderly families	7,109	58	2,041,280	287,100	138,600
Couple only[2]	1,852	15	653,702	352,900	170,700
Couple, children under 18	3,137	26	803,977	256,300	129,000
Lone parent families	626	5	57,036	91,100	17,900
Other non-elderly families	1,493	12	526,565	352,600	211,800
Unattached individuals	**3,927**	**32**	**485,458**	**123,600**	**31,800**
Males	1,902	15	216,985	114,100	21,800
- under 65	1,635	13	143,925	88,000	15,600
- 65 and over	267	2	73,060	273,800	170,800
Females	2,026	16	268,473	132,540	43,500
- under 65	1,240	10	117,738	94,900	14,200
- 65 and over	785	6	150,735	192,000	108,600

[1] Total of economic families and unattached individuals
[2] No children at home.

The median net worth of all families of two or more was estimated at $159,000. There were large differences, however, in the net worth of the two types of families with children under 18 years of age and living at home. Lone-parent families[10] had the lowest median net worth ($17,900); the median net worth of couples with children under 18 was much higher ($129,000). Income explains some of these differences. Lone-parent families had a median after-tax income in 1998 of $21,800, compared with $48,400 for two-parent families with children under 18.

Senior families (in which the major income recipient was 65 and older) had the highest estimated net worth of any type of family unit ($302,900), in part because many live in their own mortgage-free home. This should not be interpreted to mean that all elderly families have relatively high income. The relationship between income and net worth does not hold for those over 65. The median after-tax income of elderly families was in fact lower than for most other families of two or more. Their net worth is a reflection of previous income and purchases rather than of current income.

The median net worth of unattached individuals ($31,800) was considerably lower than that of families of two or more. The unattached can be separated into two very different groups. The unattached elderly (those 65 years of age and older) were much better off than the younger unattached. Elderly men had the highest median net worth of the unattached ($170,800) and unattached women under 65 the lowest ($14,200).

Net worth increases with income

For the most part, there was a strong relationship between income and net worth. Family units who reported after-tax family incomes of $75,000 or more in 1998 had a median net worth of $441,700. On the other hand, family units whose after-tax income was less than $10,000 had a median net worth of $1,700**.**

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[10]   By definition lone-parent families have children under eighteen living at home.

Median net worth highest for those 55 to 64

Families and individuals generally acquire their assets over their lifetime so it is not surprising that the survey results show that net worth increases with age. Median net worth was highest for those families of two or more in which the major income recipient was 55 to 64 years of age ($397,000). It dropped for those over 65, to $302,800. This is to be expected, as elderly families in many cases may be required to use some of their assets to generate, or supplement, their income.

The net worth of unattached individuals was well below that of economic families, for every age group. Although there was an increase in net worth with age for the unattached, the median net worth of all age groups under 65 was substantially lower than for those 65 and older. Many of the unattached 65 years and older may have spent a large part of their lives as part of a family; their higher net worth may be a reflection of this.
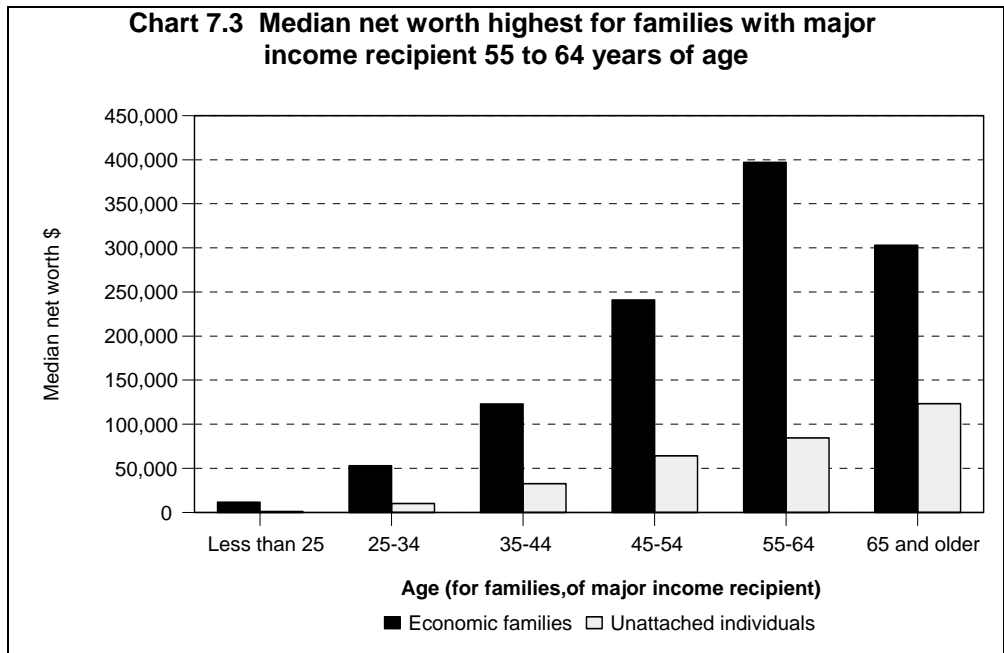
Those under 25, who had less time to accumulate savings and purchase assets, had the lowest median net worth. Unattached persons under 25 had a median net worth of $1,000. Families in which the major income recipient was under 25 had a median net worth of $11,400.

Table 7.2 Aggregate, average and median net worth by age and income, 1999

	Family units	% of family units	Aggregate Net Worth	Average net worth	Median net worth
	,000		$000,000	$	$
All family units[1]	12,215	100	3,045,134	249,000	109,200
Age[2]					
Less than 65	9,984	82	2,302,944	230,700	89,600
Less than 25	724	6	29,373	40,600	2,000
25-34	2,388	20	210,849	88,300	32,300
35-44	3,017	25	587,168	194,600	99,500
45-54	2,395	20	811,369	338,700	192,900
55-64	1,459	12	664,185	455,100	272,200
65 and older	2,232	18	742,191	332,600	211,500
Family income after tax					
Less than $10,000	1,037	8	59,140	57,000	1.750
$10,000 - $19,999	2,171	18	197,215	90,900	19,300
$20,000 - $29,999	2,183	18	319,268	146,000	65,600
$30,000 - $39,999	19,144	157	412,299	215,000	114,200
$40,000 - $49,999	1,515	12	395,578	261,100	147,100
$50,000 - $74,999	2,144	18	775,301	361,600	215,000
$75,000+	1,251	10	886,334	708,300	441,700

[1]   *Family unit includes ecnomic families and unattached individuals.*

[2]   *In the case of families, refers to major income recipient.*

Chart 7.3 Median net worth highest for families with major income recipient 55 to 64 years of age

Median net worth $

(chart: Economic families ■, Unattached individuals ☐)

Age (for families, of major income recipient)

■ Economic families ☐ Unattached individuals

Median net worth of self-employed higher than paid workers

Adding the value of employer pension plan benefits to net worth increased the median net worth of the paid workers by 33%, compared with 7% for the self-employed. Despite this, the median net worth of family units in which the major income recipient was self-employed was still almost two and one-half times greater than if that person was a paid worker ($231,100 compared with $95,200). This is because of the impact of business equity on the net worth of the self-employed; for that group business equity represented 31% of total assets, compared with 6% for paid workers.

The net worth of those not working and at least 65 years of age also increased substantially (to $198,300) with the addition of the value of employer pension plan benefits. Many in that group were retired and collecting pensions from previous employment. The net worth of those not working and under 65 also increased 22%, because of the number in that group who were receiving pensions or had employer pension plan assets from previous employment.

Chart 7.4 Increase in net worth with addition of value of EPP greatest for paid workers

Median net worth $

Employment status (for families, of major income recipient)

■ Net worth with EPP ☐ Net worth without EPP
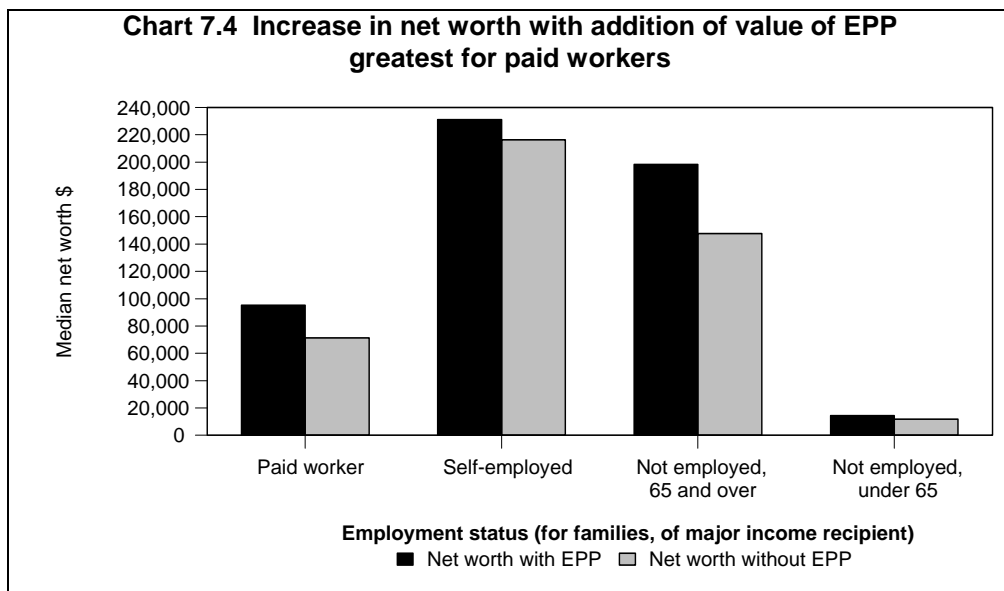
Education has an impact

The highest level of education of the individual, or the major income recipient in the case of families, makes a significant difference to the financial situation of the family unit. It is one of the most important determinants of net worth, as it has an impact on both income and occupation. Median net worth rose from $79,600 for family units in which the individual or major income recipient in the family had not graduated from high school to $419,600 if that person had a professional degree in law, medicine, dentistry, veterinary medicine or optometry.

Adding the value of employer pension plan benefits to the net worth estimate had the largest impact on the median net worth of those with Doctorates. That group had the largest percentage of family units with EPP assets (71%). Although those with a professional degree in law, medicine, dentistry, veterinary medicine or optometry had the highest median net worth, they were less affected by the addition of the value of EPP benefits as a much smaller percentage of family units in that group belonged to EPPs (37%). Many in this group are self-employed and would therefore not be eligible to participate in an EPP. This group would depend more heavily on RRSPs as a means of saving for retirement.
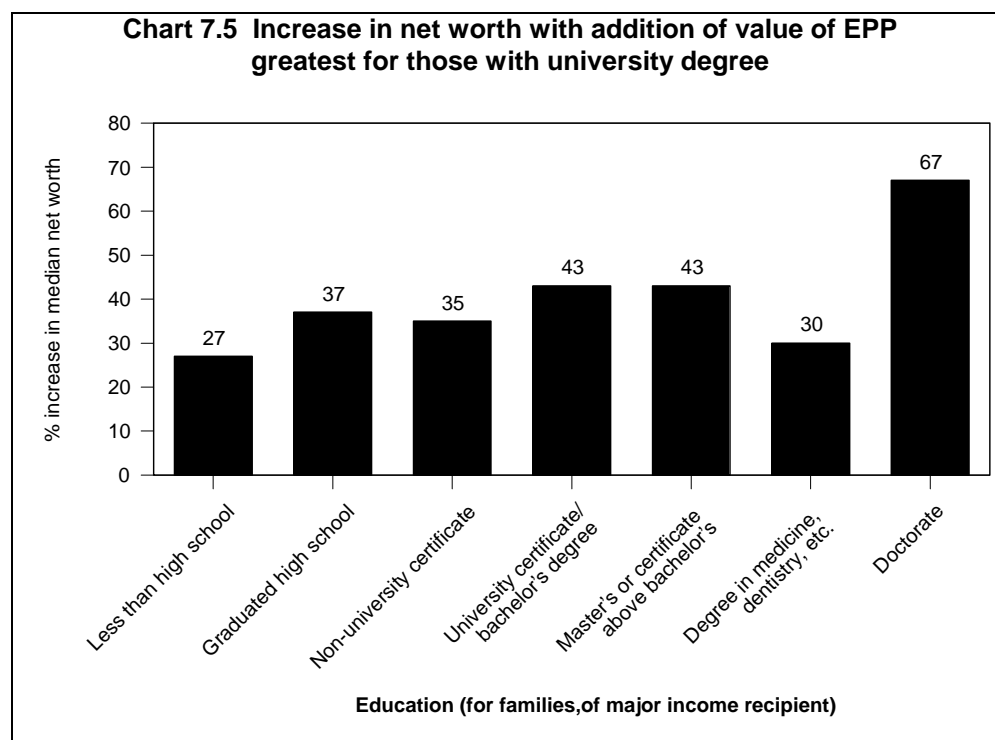
Chart 7.5 Increase in net worth with addition of value of EPP greatest for those with university degree

Table 7.3 Aggregate, average and median net worth by selected family characteristics, 1999

	Family units	% of family units	Aggregate net worth	Average net worth	Median net worth
	,000		$000,000	$	$
All family units[1]	12,215	100	3,045,134	249,000	109,200
Employment status[2]					
Paid worker	7,132	58	1,443,940	202,500	95,200
Self-employed	1,183	10	612,180	517,700	231,100
Unpaid or not employed	3,901	32	989,014	253,500	113,000
- Not employed,Elderly	2,078	17	626,280	301,400	198,300
- Not employed, Non-elderly	1,823	15	362,734	199,000	14,400
Education[2]					
Less than high school	3,291	27	594,447	180,600	79,600
Graduated high school	2,858	23	645,840	226,000	93,000
Non-university certificate	3,458	28	736,217	213,000	106,100
University certificate/bachelor's degree	1,773	15	619,369	349,400	168,000
Master's or certificate above bachelor's	648	5	321,167	496,000	260,000
Degree in medicine, dentistry, etc	79	1	60,298	767,000	420,000
Doctorate	110	1	67,797	617,000	397,000
Occupation[2]					
No occupation	3,901	32	989,014	253,500	113,000
Management	992	8	472,576	476,300	235,800
Business, finance, administrative	1,250	10	289,211	231,300	107,900
Sciences, natural and applied	747	6	188,803	252,700	124,400
Health	430	4	144,776	334,500	158,600
Social sciences, education,	642	5	211,546	329,700	176,700
Arts, culture, recreation	189	2	36,962	195,500	72,000
Sales and service	1,607	13	251,614	156,600	50,300
Trades, transport, equipment operators	1,425	12	250,088	175,500	100,000
Primary industry	276	2	105,794	383,700	172,500
Processing, manufacturing & utilities	757	6	105,751	139,700	83,600
Home ownership status					
Own with mortgage	3,993	33	992,476	248,600	147,600
Own without mortgage	3,382	28	1,773,746	524,400	351,000
Do not own	4,841	40	278,912	57,600	10,400
Province					
Newfoundland	199	2	24,905	125,400	65,300
Prince Edward Island	54	--	11,622	214,400	90,500
Nova Scotia	376	3	68,547	182,200	100,300
New Brunswick	300	2	53,848	179,400	84,900
Quebec	3,115	26	639,155	205,200	79,500
Ontario	4,480	37	1,237,594	276,200	132,900
Manitoba	446	4	94,645	212,100	106,500
Saskatchewan	402	3	97,494	242,700	131,400
Alberta	1,157	9	314,891	272,100	122,000
British Columbia	1,686	14	502,434	298,100	127,200

[1] Family unit includes economic families and unattached individuals.
[2] In the case of families, refers to major income recipient.

8. Concluding remarks

The value of employer pension plan benefits is an important component of the net worth of Canadians, accounting for 17% of the value of all assets. The addition of this asset affects some groups only and some much more than others. However, any picture of the net worth of Canadians is incomplete without it. It forms a major part of private pension savings, together with RRSPs and RRIFs. With information on these assets, it is possible to better assess the impact of retirement on the income of Canadians.

Employer pension plan benefits can be valued only by making a number of assumptions about, for example, inflation, interest and mortality rates. The ones used for this survey are documented in *Survey of Financial Security: Methodology for estimating the value of employer pension plan benefits,* available free of charge on the Statistics Canada website (www.statcan.ca). The use of other rates and assumptions could lead to somewhat different values. The data will be available to users in such a way that they can apply their own assumptions.

Additional research on the assets and debts of Canadians, and specifically on private pension assets, is now underway. The results of these analyses will be made available in the coming months.

Appendix A - Sources and Methods

A.1 The Survey Universe

The 1999 Survey of Financial Security was carried out in all ten provinces, the territories were not included. Those living on Indian reserves and crown lands and official representatives of foreign countries living in Canada and their families were also excluded from the survey. Members of religious and other communal colonies, members of the Canadian Forces living in military camps and people living in residences for senior citizens were excluded, as were people living full time in institutions, for example, inmates of penal institutions and chronic care patients living in hospitals and nursing homes. The survey covers about 98% of the population in the ten provinces.

Information was not gathered from persons temporarily living away from their families (for example, students at university) because it would be gathered from their families if selected. In this way, double counting of such individuals was avoided.

A.2 Survey Content and Reference Period

With a few exceptions, the reference period for the information was the time of data collection (May to July 1999). For the asset and debt information respondents were asked to provide an estimate of the value or amount as close to the survey date as possible, recognizing that their most recent statement may have been as of the end of the previous calendar year, or for the last financial quarter.

Some of the information was collected for each person in the family 15 years of age and over. The assets and debts, however, were collected for the family as a whole, because they often cannot easily be assigned to one person in the family. Specifically, the following information was collected:

From each family member 15 years of age and over:

- demographics (age, sex, marital status);
- ethno-cultural characteristics;
- education;
- current employment;
- income, for the calendar year 1998.

For the family unit as a whole:

- financial and non-financial assets;
- equity in business;
- debt in the form of mortgages, vehicle loans, credit card and line of credit debt, student loans and other debt.

A detailed list of the asset and debt items can be found in Concepts and definitions.

A.3 The Sample

The total sample for the 1999 Survey of Financial Security was approximately 23,000 dwellings; it was drawn from two sources.

The main sample, drawn from an area frame, consisted of approximately 21,000 dwellings. This area sample was a stratified, multi-stage sample selected from the Labour Force Survey (LFS) sampling frame. Dwellings selected for this survey had not previously participated in a labour force or financial survey conducted by Statistics Canada. Sample selection comprised three steps: the selection of clusters (small geographic areas) from the LFS frame, field listing of all addresses within each selected cluster, and the selection of dwellings within these selected clusters. At the time that the SFS sample was selected the LFS frame was using 1991 Census geography.[1]

The second portion of the sample, approximately 2,000 households, was drawn from geographic areas in which a large proportion of households had what was defined as "high-income". This sample was included to improve the quality of the estimates of net worth, as a disproportionate share of net worth is held by higher-income family units. For purposes of this sample the income cutoff was total family income of at least $200,000 or investment income of at least $50,000. The latter was used to take into account those family units that may not have high income from employment but have substantial assets that generate investment income.

A.4 Data Collection

The 1999 Survey of Financial Security was conducted from May to July 1999. Data were collected during a personal interview using a paper questionnaire. A copy of this questionnaire can be found in a research paper entitled Survey of Financial Security, Interview questionnaire on the Statistics Canada website (www.statcan.ca).

For families, the interview was held with the family member with most knowledge of the family's financial situation. If necessary, follow-up was done with other family members. Proxy response was accepted. This allowed one family member to answer questions on behalf of any or all other members of the family, provided he or she was willing and able to do so.

To reduce response burden, for the questions on 1998 income, respondents could give Statistics Canada permission to use the income information from their T1 tax return. Close to 85% of survey respondents gave their consent to use these administrative records.

A.5 Data Processing and Quality Control

Data entry and automated editing for the 1999 Survey of Financial Security took place in Statistics Canada. Quality control tests were done at the time of data entry and, if necessary, information re-entered. Then, data passed through an automated edit system to identify inconsistencies and potential errors in the data.

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[1] A detailed description of the Labour Force Survey sampling frame can be found in *Methodology of the Canadian Labour Force Survey*, Statistics Canada, catalogue No. 71-526-XPB.

Imputation of Missing Data

Missing responses were imputed for all key fields in the questionnaire. Where possible, information was imputed deterministically, using other information reported by the respondent. For example, when the respondent could not estimate the value of their vehicle, the reported make, model and year was used to impute a value. This value was determined by consulting a reference book. When deterministic imputation was not possible, hotdeck imputation methods were used in most cases, and for all components of income and net worth, nearest neighbour techniques were employed. These methods involve identifying another individual or family with similar characteristics to become the "donor" and provide the imputed value. Income data obtained from tax returns are considered complete and thus do not require imputation

The following table indicates the percentage of the value of each asset and debt item that was determined through imputation.

	Assets or debts (after imputation)[1]	Imputed[1]
ASSETS	100	24
Pension assets	29	63
RRSPs, RRIFs	12	10
Employer pension plans	17	100[2]
Other pension assets	-	20
Financial assets, non-pension	12	17
Deposits in financial institutions	5	14
Mutual/investment funds	2	13
Stocks	3	25
Bonds (savings and other)	1	17
Other financial assets	2	17
Non-financial assets	48	4
Principal residence	32	4
Other real estate	7	6
Vehicles	4	5
Other non-financial assets	7	4
Equity in business	10	9
DEBTS	100	4
Mortgages	78	4
Principal residence	66	4
Other real estate	11	5
Line of credit	6	5
Credit card and instalment debt	3	3
Student loans	3	3
Vehicle loans	6	4
Other debt	4	3
NET WORTH		27

[1] *This means, for example, that the principal residence (the home) constituted 32 % of total assets and that 4% of the total amount for principal residence was imputed.*

[2] *The percent imputed is 100% because all values for employer pension plans were estimated. See section A.7 in this Appendix. This affects the imputation rate for total assets and for net worth.*

<u>Weighting</u>

The estimation of population characteristics from a survey is based on the premise that each sampled unit represents, in addition to itself, a certain number of unsampled units in the population. A basic survey weight is attached to each sample record to indicate the number of units in the population that it represents. Two types of adjustment are then applied to the basic survey weights in order to improve the reliability of the estimates. The basic weights are first inflated to compensate for non-response. This adjustment was applied within groups of sample units that are geographically close and the two samples were adjusted separately. The non-response adjusted weights are then further adjusted to ensure that estimates of relevant population characteristics would respect known population totals from sources external to the survey. The population totals used for the SFS were based on Statistics Canada's Demography Division population counts for different province - age - sex groups. The weights were also adjusted to ensure that the number of 1-person and 2-person households, and the number of 1-person and 2-person family units agreed with known totals by province.

<u>Response rates</u>

The overall response rate for the 1999 Survey of Financial Security was 75.7%. The following table gives a breakdown by province for the area sample and the high-income sample.

	Area sample response rate	High-income sample response rate	Overall response rate
All provinces	77.3	59.9	75.7
Newfoundland	84.3	57.8	82.9
Prince Edward Island	84.1	66.7	83.1
Nova Scotia	81.0	63.2	79.8
New Brunswick	75.7	68.3	75.3
Quebec	77.5	59.6	75.9
Ontario	70.5	58.1	69.1
Manitoba	86.7	66.7	85.4
Saskatchewan	81.8	80.9	81.8
Alberta	81.3	64.9	79.7
British Columbia	75.0	52.0	72.3

A.6 Data Quality

<u>Sampling Error</u>

Sampling errors are important because inferences about the entire population are based on information obtained from only a sample of the population. Sample estimates usually differ from those that would be obtained if information were collected from the whole population. Errors due to the extension of conclusions based on the sample to the entire population are known as sampling errors. The sample design, the variability of the population characteristics measured by the survey, and the sample size determine the magnitude of the sampling error. In addition, for a given sample design, different methods of estimation will affect the levels of sampling error.

Standard Error and Coefficient of Variation

A common measure of sampling error is the standard error (SE). The standard error measures the degree of variation introduced in estimates by selecting one particular sample rather than another of the same size and design. The standard error may also be used to calculate confidence intervals associated with an estimate *(Y)*. Confidence intervals are used to express the precision of the estimate. It has been demonstrated mathematically that, if the sampling were repeated many times, the true population value would lie within the *Y +/- 2SE* confidence interval 95 times out of 100 and within the narrower confidence interval defined by *Y +/- SE,* 68 times out of 100. Another important measure of sampling error is given by the coefficient of variation, which is computed as the estimated standard error as a percentage of the estimate *Y* (i.e. 100 x SE / Y).

To illustrate the relationship between the standard error, the confidence intervals and the coefficient of variation, let us take the following example. Suppose that the estimated median net worth from a given source is $10,000, and that its corresponding standard error is $200. The coefficient of variation is therefore equal to 2%. The 95% confidence interval estimated from this sample ranges from $9,600 to $10,400, i.e. $10,000 +/- $400. This means that with a 95% degree of confidence, it can be asserted that the median net worth of the target population is between $9,600 and $10,400.

The bootstrap approach, a pseudo-replication technique, is used for the calculation of the standard errors of the estimates presented in this publication. For more information on standard errors and coefficients of variation, refer to the Statistics Canada publication (Catalogue 71-526-XPB), *Methodology of the Canadian Labour Force Survey*.

Standard errors and coefficients of variation of the estimates presented in this publication are available on request.

Data Suppression

Data reliability of the survey estimates has been assessed based on the calculated coefficients of variation. Estimates with a coefficient of variation less than 33% are considered reliable for general use. Estimates with coefficients of variation greater than 33% are deemed to be unreliable. For estimates of net worth in this survey, CVs greater then 33% generally occur when the sample size contributing to an estimate is less than 100. Consequently, data are suppressed based on these limits. This affects the level of detail in published tables and, in particular, limits the availability of provincial statistics.

Non-Sampling Errors

Non-sampling errors occur because certain factors make it difficult to obtain accurate responses or responses that retain their accuracy throughout processing. Unlike sampling error, non-sampling error is not readily quantified. Four sources of non-sampling error can be identified: coverage error, response error, non-response error, and processing error.

a. Coverage Errors

Coverage errors results from inadequate representation of the intended population. Such errors may occur during sample design or selection, or during data collection and processing.

b. Response Errors

Response errors may be due to many factors, such as faulty questionnaire design, interviewers' or respondents' misinterpretation of questions, or respondents' faulty reporting. Great effort is invested in the SFS to reduce the occurrence of response error. Measures undertaken to minimize response errors include the use of highly-skilled and well-trained interviewers, and supervision of interviewers to detect misinterpretation of instructions or problems with the questionnaire design. Response error can also be brought about by respondents who, willingly or not, provide inaccurate responses.

Questions about the value of assets and the amount of debt can be particularly prone to misreporting, as they are very sensitive questions and the respondents may not be able or willing to provide an answer. As well, because proxy response was accepted, one family member may have provided information for another family member, believing that information to be accurate; that may not always have been the case. When providing information for the survey, respondents were encouraged to consult financial records, or other family members, as often as required.

c. Non-Response Errors

Non-response error occurs in sample surveys because not all potential respondents cooperate fully. The extent of non-response varies from partial non-response to total non-response.

Total non-response occurs when the interviewer was either unable to contact the respondent, no member of the economic family was able to provide information, or the respondent refused to participate in the survey. Total non-response is handled by adjusting the basic survey weights for responding economic families to compensate for non-responding economic families. For the 1999 Survey of Financial Security the overall response rate was 75.7%.

In most cases, partial non-response occurred when the respondent did not understand or misinterpreted a question, refused to answer a question, or could not recall the requested information. Imputing missing values compensates for this partial non-response.

The importance of the non-response error is unknown but in general this error is significant when non-respondents differ significantly from respondents with respect to particular characteristics that are important determinants of survey results.

d. Processing Errors

Processing errors may occur in any of the data processing stages, for example, during data entry, coding, editing, imputation, weighting, and tabulation. To minimize errors, diagnostic tests are carried out periodically to ensure that expected results have been obtained.

Treatment of Large Values

For any sample, estimates can be affected disproportionately by the presence or absence of extreme values from the population. In an asset and debt survey, a few extreme values are expected in the sample, as valid extreme values do exist in the population. Values outside defined bounds were identified and reviewed in relation to other information reported for that respondent. If the value was judged to be the result of a reporting or processing error, it was adjusted. Otherwise, it was retained.

Impact of sampling and non-sampling errors on SFS estimates

Due to the combined effect of these errors, the quality of net worth data is judged to be lower than the quality of income data. This is largely because records of the current value of assets and the outstanding amount of debt are not as readily available as records of income. For example, respondents with numerous bank accounts and investments may receive several different statements, with different reference periods. Compiling this information can be difficult; most income information, on the other hand, would be available in one document, if the respondent had completed an income tax return for the year in question.

Direct comparisons with outside sources, such as the Financial and Wealth Accounts of the System of National Accounts, are difficult to make due to definitional, coverage and treatment differences. However, based on rough comparisons the following general conclusions can be drawn:

(a)   SFS appears to underestimate some net worth components, particularly financial assets and consumer debt.
(b)   The quality of estimates of real assets (e.g., owner-occupied homes, vehicles) is much better than that of financial assets.

A.7 Valuing employer pension plan benefits

An estimate of the value of employer pension plan benefits has been done for the following groups:

(a) persons who belonged to an EPP at the time of the survey (referred to as current plan members);

(b) persons who had previously belonged to an EPP and either left the money in the plan or transferred it to a new plan[2];

(c) persons who are receiving EPP benefits.

The value that has been estimated is not the amount that would be received (either monthly or annually), it is the estimated amount of money that would be required to pay for the benefit earned up to the time of the survey throughout the person's retirement. Estimating the value of these benefits is a complex process and had not previously been done by a Canadian asset and debt survey. Because of the large number of people for whom estimates were made and the large variation in RPP provisions, it was important to simplify the process as much as possible. Despite this, the estimate for each person takes into account their earnings, length of membership in the plan, age (where appropriate) and "simplified" plan provisions. For that reason it is felt that the estimate is a fair reflection of the value of their benefit.

The value that has been estimated is that of the individual's EPP benefit and does not include the value of their Canada or Quebec Pension Plan benefits. In this report the benefits that are, or will be, received from these government plans have been taken into consideration from the perspective of income rather than assets.

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[2] *These are referred to as deferred pensions. Estimates do not have to be made for persons who took the money out of the plan as this amount would either be part of their current assets or it would have been spent.*

The methodology for estimating the value of the benefit was proposed by Hubert Frenken and Michael Cohen. The former has many years of experience with Statistics Canada working with data on employer pension plans; the latter is a principal with the actuarial consulting firm William M. Mercer. The proposed methodology was described in a discussion paper that was released in February 2001. This paper presented and sought feedback on the proposed methodology for estimating the value of these benefits. It was sent to approximately 60 people and was also made available though the Statistics Canada Daily. Suggestions for modifications to the methodology were received from a few organizations. Changes to the methodology were made as a result of these suggestions.

A detailed description of the methodology that was used to value RPP benefits can be found in *Survey of Financial Security – Methodology for estimating the value of employer pension plan benefits.* It can be found on the Statistics Canada website (www.statcan.ca).

There are two commonly used approaches to valuing RPP assets: the going concern and the termination approach. The main differences between the two valuation methods are:

(a)   Although future service is not considered in either type of valuation, in a going concern valuation assumptions are made about future salary increases. As many RPPs base the amount of the pension on average earnings close to the time of retirement, assuming salary increases up to that time will obviously increase the value of the benefit. In a termination valuation, salary increases are not considered.

(b)   Interest rates for a termination valuation are assumed based on current market rates. For a going concern valuation longer term interest rates are assumed.

(c)   The going concern valuation method is applicable only for current members of certain types of RPPs. Those with deferred pensions (people who had previously belonged to an RPP) and those receiving benefits are no longer members of the plan so future salary increases need not be considered.

The analysis in this report uses the termination valuation approach. That approach is more consistent with the basis on which other assets are valued, in that future expectations are not taken into consideration and current market conditions are used to estimate the value. The termination approach, however, can underestimate the value of the benefit earned (accrued) as of the time of the survey because many employees will continue to participate in the plan, and therefore receive a pension based on their salary closer to the time of retirement. In order to allow users the option of selecting the value of the RPP that is most appropriate for their type of analysis both values have been produced and are available.

In valuing benefits for those respondents who belonged to a pension plan at the time of the survey, only plan membership up to the time of the survey has been considered. Therefore, in the case of a person who was 45 at the time of the survey and who had participated in an employer pension for 10 years, the pension would be valued for the 10 years of known service.

The quality of the estimates produced on employer pension plans by SFS appears to be very good, when comparing them with other benchmark information available. The total accrued value of EPP benefits produced by the survey was $604 billion (termination value). The money actually held in employer pension plans in 1999 was $644 billion. The SFS estimated the number of people belonging to employer pension

plans in 1999 at 4.8 million. Information available from tax records indicates that the number of members of EPPs and DPSPs in 1999 was 4.9 million.[3]

A.8 Methodology for determining whether Canadians have saved enough for retirement

Using the information from the Survey of Financial Security, it has been possible to estimate the proportion of Canadians that may not have sufficient assets to replace a certain percentage of their pre-retirement earnings. This analysis does not attempt to assess the adequacy of the anticipated retirement income, rather it uses their pre-retirement earnings as a basis for determining whether the individual or family is likely to be able to maintain the same lifestyle.

Several points should be made about the methodology on which the analysis is based:

(a) The population used for this analysis is that nearing retirement, i.e., those family units in which the person with the highest pre-tax income is between 45 and 64, if the major income recipient was still employed at the time of the survey. Those with no employment income were excluded as the analysis used employment earnings as the basis for assessing the impact of a drop in income at retirement. Family units with a major income recipient less than 45 were also excluded, because they are still relatively far from retirement and their asset situation could change significantly.

(b) It is assumed that retirement takes place at 65, because the Old Age Security/Guaranteed Income Supplement and the Canada and Quebec Pension Plans are both payable at that age. Because the major income recipient in the family units included in the analysis is not yet 65, they still have time to save for retirement. This analysis assumes that they do, based on information about the retirement savings behaviour.[4] An adjustment has therefore been made to allow for further asset accumulation until age 65.

(c) Two scenarios have been used in this analysis. The first is that family units must have sufficient assets to replace at least two-thirds of their pre-retirement earnings, taking into account the income they will receive from OAS/GIS and CPP/QPP[5]. The second scenario uses an 80% replacement rate. Because of the salary deductions that cease at retirement, 80% will provide close to full replacement of net pre-retirement earnings. The calculation was done independently for single adults and couples, to take into account the different amounts available from the OAS/GIS and the CPP/QPP. A lone-parent was considered a single adult.

(d) For this analysis, an upper limit **has been placed on the gross retirement income that must be generated: $60,000 for an individual and $100,000 for a family.** This means the limit for pre-retirement earnings, with a two-thirds income replacement rate, was set at about $90,000 for an individual and about $150,000 for a family. These limits were selected in order to focus the analysis on those whose standard of living would be most seriously affected if they were not able to replace a

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[3] Information on the assets held by EPPs can be found in *Trusteed Pension Funds: Financial Statistics, 1999* (Statistics Canada catalogue 74-201). Information from Canada Customs and Revenue Agency on members of EPPs is available in *Retirement savings through RPPs and RRSPs, 1999* (Statistics Canada catalogue 74F0002). Both publications are available by calling 1-800-267-6677 or at:: www.statcan.ca.

[4] Information from *Retirement Savings through RPPs and RRSPs, 1999,* Statistics Canada catalogue 74F0002, indicates that the percentage of those with employment income who save through RRSPs increases with age, peaking for those 55 to 64 years of age.

[5] In *Saving for Retirement: A Guide to Tax Legislation and Regulations* it states that "a pension (of 60% to 70% of pre-retirement earnings) will replace sufficient earnings to avoid any significant drop in living standards upon retirement". Finance Canada, 1989.

sufficient proportion of their pre-retirement earnings. The limit for an individual was set at $60,000 because this is the approximate amount of the pension that can be generated with tax-assisted retirement savings. The limit of $100,000 was selected as it is about 1.65 times the amount for an individual; this is in line with the difference between the maximum OAS/GIS payment for a single person compared with a couple.

A lower limit was also set on the income that must be replaced in retirement; that limit is the before-tax low income cutoff (LICO). The 1998 LICO was used, to correspond with the reference period for the income data. The LICO used depends on both the size of the area where the family unit lived and differs for single adults and couples. The LICOs used are:

	Rural	Urban			
		Less the 30,000	**30,000 to 99,999**	**100,000 to 499,999**	**500,000 and over**
One adult	12,142	13,924	14,965	15,070	17,571
Couple	15,178	17,405	18,706	18,837	21,962

(e) The assets considered for this analysis are not only those saved through employer pension plans and RRSPs but also half of the equity in the home, equity in any other real estate owned, other non-pension financial assets and business equity, if applicable. Given that the home is the most valuable asset for most families, and can be used as an alternative method of saving for retirement, it is important to take it into consideration in an analysis of this type. To either include the full equity in the home or exclude it completely has drawbacks, therefore the mid-point was selected and one-half of the equity in the home was used for this analysis.

(f) The calculation is based on earnings, OAS, GIS, CPP/QPP rates and LICOs for 1998, assuming these are the amounts that would apply at the time of retirement.

The methodology used to assess whether the assets of the family unit are sufficient to generate retirement income of at least two-thirds (or 80%) of their pre-retirement earnings is illustrated below, with an example. The characteristics of the family unit used in this example are:

-    the family unit is a couple;
-    the age of the person with the highest pre-tax income is 55;
-    employment income for the couple (in 1998) was $55,000 (median total family income in 1998).

In this example, the income required in retirement is two-thirds of the pre-retirement income. The process for calculating an 80% income replacement differs only in that is uses .8 instead of .667 in the calculation. The steps in the process are:

1	Calculate two-thirds of pre-retirement earnings. Limits apply, as described in point (d) above.	$55,000 times .667	$36,685
2	Estimate the anticipated income from OAS\GIS and CPP\QPP based on 1998 rates, the same time period as the reported income data (See note 1.)	OAS: $9,800 for a couple; $4,900 for a single person CPP/QPP: 20% of employment income to a maximum of $14,760 for a couple and $7,380 for a single person GIS: $7,600 for couple and $5,800 for single less half of CPP/QPP	OAS: $9,800 C P P / Q P P : $11,000 GIS: $2,100 Total: $22,900
3	Calculate the income to be replaced at retirement as two-thirds of pre-retirement income (from step 1) less the income expected from OAS/GIS and CPP/QPP.	$36,685 less $22,900	$13,785
4	Estimate the total amount needed at 65 to generate the annual income calculated in step 3, from age 65 to death.	$13,785 times F F is a factor set at: 14.25 for a couple 13.28 for a single person	$196,436
5	Discount the amount calculated in step 4 to the age of the person with the highest pre-tax income, to account for anticipated investment earnings.	$196,436 /(1+DF)65-A DF is the discount factor (always .0214) A is the age of the family member with highest income	$158,951
6	On the assumption that the amount needed at 65 is accumulated over 40 years (at 25% each decade or 2.5% each year), discount the amount in step 5 once again, by 2.5% for each year the person with the highest pre-tax income is less than 65. The result is the estimated amount needed to generate the required income at retirement. (See note 2.)	.$158,951 less (($158,951 times 2.5% times (65 - A) years)) A is the age of the family member with the largest income.	$119,213
7	Calculate the total value of the assets available to generate the required income in retirement. For this analysis, these assets include: - one-half of the equity in the home; - equity in other real estate; - business equity; - private pension assets (primarily EPPs and RRSPs); - other financial assets.	1/2 home equity = $75,000 Equity in other real estate = none Business equity = none EPP= none RRSPs = $25,000 Other financial assets = $8,000	$108,000
8	Deduct the value of the assets available (calculated in step 7) from the amount needed (calculated in step 6). The result, if positive, indicates that the person/family may not have sufficient assets to generate the required income in retirement.	$119,213 less $108,000	$11,213

Note 1: The maximum CPP/QPP benefit is 25% of the average earnings ($36,900 in 1998). This methodology calculates CPP/QPP as 20%, as few people receive the maximum benefit.

Note 2: An accumulation rate of 2.5% per year may underestimate the accumulation that takes place in the years closer to retirement. Information from *Retirement Savings through RPPs and RRSPs, 1999* (Statistics Canada catalogue 74F0002) indicates that saving through RRSPs increases with age, both in terms of the percent contributing and the amount contributed.

A.9 Canada's public pension programs

Canada's public (that is, government-sponsored) pension programs include the Old Age Security and Guaranteed Income Supplement program and the Canada and Quebec Pension Plans. These programs are briefly described below.

Old Age Security / Guaranteed Income Supplement / Spouse's Allowance (OAS/GIS/SPA)

This program guarantees a minimum income to all persons 65 years or older. It provides a basic flat-rate benefit (the OAS portion) to all persons with net income below a specified limit. The benefit is reduced if income exceeds that limit and is eliminated altogether when net income reaches about $85,000. A supplementary benefit (the GIS portion) is paid to those with little or no other income and an allowance (SPA) is provided to spouses of OAS pensioners and widow(er)s aged 60 to 64 with limited income. As of January 1998, a 65 year-old single person with no other income received about $890 a month; a married couple, both at least 65, received $1,445.

Canada and Quebec Pension Plans (CPP/QPP)

These plans cover almost all workers in Canada and are compulsory for those 18 years or over. Contributions are made, on earnings up to a maximum, by both employees and employers (the self-employed pay both). The maximum benefit provided is approximately 25% of average earnings as measured by Statistics Canada. In 1998, the maximum contribution for the employee was $1068.80; the maximum benefit, $744.79 a month.

In addition to these two programs, a number of programs sponsored by provincial governments provide income supplements to low income seniors. The income from these programs has not been considered in the methodology described in Appendix A.8.

Appendix B - Concepts and Definitions

B.1 Net worth

The net worth (sometimes referred to as wealth) of a family unit is defined as the difference between the value of its total asset holdings and the amount of total indebtedness[1].

Respondents were asked to provide the value of the asset or the amount of the debt at a time as close as possible to the date of the interview. Assets and debts were reported for the family unit as a whole and not for each person in the family. The assets and debts included in the survey are identified below.

B.2 Assets

Respondents were asked to report the market value of the asset, that, is the amount they would receive if they had sold the asset at the time of the survey. If available, respondents were encouraged to consult financial records. When the value could not be determined through an independent source, the respondent was asked to estimate the value. This is in itself prone to error. In the case of vehicles, respondents were asked to provide the make, model and year in addition to the estimated value. This information was used to impute for non-response and also to identify potential reporting errors. Values provided by respondents were not adjusted unless they were judged to be an error, resulting, for example, from data entry. If the respondent either over or underestimated the value of an asset by a relatively small proportion, this would not be readily apparent. However, extreme values were reviewed and adjusted if necessary.

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[1] Excluded from the concept of net worth in this report is the value of work-related pension plans and/or entitlements to future social security provided by the government in the form of Canada or Quebec Pension Plan or Old Age Security payments. Also excluded is the family's human capital measured in terms of the value of the discounted flow of future earnings for all family members.

The assets included in this report are categorized as follows:

```
Assets

    Private pension assets
        RRSPs and RRIFs
        Employer pension plans
        Other private pension assets

    Financial assets, non-pension
        Deposits in financial institutions
        Mutual/investment funds
        Stocks
        Bonds (savings and other)
        Other financial assets

    Non-financial assets
        Principal residence
        Other real estate
        Vehicles
        Other non-financial assets

    Equity in business
```

The value of all invested assets was to include accrued earnings or interest. Respondents were asked to estimate the actual value, at the time of the survey. In one case, for the value of the contents of the principal residence, the respondent was able to select one of 16 ranges.

The assets items identified above include:

Assets: Total value of all financial assets, non-financial assets and equity in business.

Bonds: Total value, including earnings, of federal and provincial savings bonds and other bonds issued by governments and corporations. Includes investment in foreign bonds but excludes the amount held within registered plans.

Deposits: The total amount, including interest, of all chequing and savings accounts with a non-zero balance and of other deposits such as term deposits and Guaranteed Investment Certificates. These amounts would generally be held in financial institutions such as chartered banks, trust companies, co-ops and caisses populaires. This item includes only the amount held outside of registered plans.

Employer pension plans (EPPs): Also referred to as a registered pension plan (RPP). An EPP is an employer-sponsored plan registered with Canada Customs and Revenue Agency and most commonly also with one of the pension regulatory authorities. The purpose of such plans is to provide employees with a regular income at retirement.

Equity in business: The estimated amount the respondent would receive if the business were sold, after deducting any outstanding debts to be paid.

Financial assets, non-pension: Includes deposits in financial institutions and other invested assets that are not held in a pension program such as an RRSP or RRIF.

Financial assets, other: Includes less commonly held financial assets such as treasury bills, mortgage-backed securities, money held in trust, annuities, money owed to the respondent and other miscellaneous financial assets. It also includes shares of privately held companies and financial assets held in registered plans other than RRSPs and RRIFs (e.g. RESPs).

Locked-in Retirement Account (LIRA): An RRSP in which the money is locked-in until the person reaches a specified age. Included in the category RRSPs and RRIFs. This money would have been transferred from an employer pension plan after the individual terminated employment. For the most part, LIRAs came into use in the late 1980s, when revisions to pension regulatory legislation provided for enhanced portability of pension accruals on termination of employment.

Mutual/investment funds: The total value, including investment earnings, of all holdings in mutual and investment funds. Excludes the amount held within registered plans.

Non-financial assets: Total value of the respondent's principal residence (home), other real estate, vehicles and other non-financial assets.

Non-financial assets, other: Includes the value of the contents of the respondent's principal residence (e.g., major appliances, furniture, electronic equipment), valuables and collectibles (e.g. antiques, jewellery, coin collections), copyrights, patents, etc.. The contents of the respondent's home was the only item for which a specific value was not requested. Because of the difficulty in estimating this value, respondents were asked to select from 16 ranges. The low point in that range is used in the estimate of net worth.

Principal residence (home): Market value, as estimated by the respondent, of the residence where the respondent lives. If the respondent has two residences, this would be the one where they most often live. If the respondent shares ownership of the home with someone outside the family, only the family's share is included. If the property is a farm, the estimated value of the farmhouse is included; the value of the farmland would be included either with business equity or with other real estate, if no business were reported.

Private pension assets: Includes money invested in RRSPs and RRIFs, the value of employer pension plan benefits and other pension generating assets such as deferred profit sharing plans and annuities.

Private pension assets, other: Includes money held in other pension-generating assets such as deferred profit sharing plans and annuities.

Real estate, other: Estimated market value of real estate other than the respondent's home. Included would be second homes, vacation homes, timeshares, rental property (residential or non-residential) or vacant lots. Includes property in Canada or outside.

Registered pension plan: See employer pension plan.

Registered Retirement Savings Plans (RRSP): The value of all amounts held in RRSPs. This would also include the amount in self-directed plans. The RRSP could be held in deposits, mutual funds, stocks or bonds. A breakdown of the investments within the RRSP was not requested for SFS. As well, this includes the amount held in Locked-in retirement accounts (LIRAs); see definition above.

Registered retirement income funds (RRIFs): A fund intended to provide a regular income in retirement. Monies in RRSPs must be transferred to a RRIF before the end of the year in which the owner of the RRSP turns 69. Payments from an RRIF may be varied, but a minimum amount must be withdrawn annually. Also includes monies in locked-in retirement income funds (LRIFs) and life income funds (LIFs); these plans are intended to receive amounts transferred from an employer pension plan.

Stock: Total value, including earnings, of all publicly-traded common and preferred shares. Includes foreign stock but excludes the amount held within registered plans.

Vehicles: Estimated value of cars, trucks, vans, sport utility vehicles as well as motorcycles, mobile homes, boats and snowmobiles. Excludes vehicles owned by the respondent's business and vehicles that are leased.

B.3 Debts

Debts are categorized as follows in this report:

```
Debts

        Mortgages
                Principal residence
                Other real estate

        Line of credit
        Credit card and instalment debt
        Student loans
        Vehicle loans
        Other debt
```

The amount reported for debts is not intended to include interest owing, as this would most often not be known.

Debt items listed above include:

Credit card and instalment debt: For credit cards, the amount owing on the last bill, excluding any new purchases. Includes major credit cards (VISA, Mastercard, American Express, Diners Club/en Route) and retail store cards, gasoline station cards, etc.. Instalment debt is the total amount owing on deferred payment or instalment plans where the purchased item is to be paid for over a period of time.

Debt other: Includes the amount owing on other loans from financial institutions, unpaid bills, etc..

Line of credit (LOC): Total amount owing on both a home equity line of credit and a regular line of credit. This does not refer to the credit limit on the LOC.

Mortgage, on principal residence: Outstanding amount owing on the respondent's principal residence. If the respondent shares ownership of the home with someone outside the family, only the family's share of the mortgage is included. If the property is a farm, the mortgage owing on the farmhouse is included; the mortgage on the remainder of the farm would implicitly be included with business equity or would be included with mortgage owing on other real estate, if no business were reported.

Mortgages, on other real estate: Respondent's share of the mortgage owing on second homes, vacation homes, timeshares, rental property (residential or non-residential) or vacant lots.

Mortgages: Total amount owing on all mortgages, both for the respondent's principal residence and any other real estate they may own.

Student loans: Amount owing on loans taken out to attend a post secondary education program. These loans are most often taken through the Canada Student Loan Program or one of the provincial student loan programs. This item also includes amounts owing on loans taken directly from a financial institution to attend school.

Vehicle loans: Amount owing on loans for those vehicles listed under assets.

B.4 Family type

In this report, family types are categorized as follows:

All family units

Economic families of two or more

Elderly families
Non-elderly families
  Couples only, no children at home
  Couples with children under 18
  Couples with other relatives
  Lone-parent families, female parent
  Lone-parent families, male parent
  Other non-elderly families

Unattached individuals
Elderly male
Elderly female
Non-elderly female

Within this classification, the following definitions apply:

Couples: Couples include legally married, common-law and same-sex relationships*.*

Couples with children: Couples living with a child or children (by birth, adopted, step, or foster) under age 18. Children aged 18 or over are considered to be "other relatives". Other relatives may also be in the family.

Couples with other relatives: Couples (including the major income recipient, with no children under 18 living at home) who are living with a child or children over 18 or with other persons to whom the major income recipient is related by blood, marriage, adoption or common-law.

Economic family: An economic family is defined as a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption.

Elderly/elderly families: Person aged 65 and over. In the case of elderly families, the major income recipient is aged 65 and over.

Family units: Includes economic families of two or more and unattached individuals.

Lone-parent families: One parent living with at least one child under age 18. Families where the parent is 65 years and older are excluded.

Other non-elderly families: Other related persons living together (e.g., siblings, cousins).

Unattached individual: An unattached individual is a person living either alone or with others to whom he or she is unrelated, such as roommates or a lodger. In some tables in this report some of the above categories are grouped together, for example, non-elderly couples with other relatives and other non-elderly couples.

B.5 Other concepts

Average (mean)

The average or mean is computed as the total or "aggregate" divided by the number of units in the population. The drawback to the use of the average is that because everyone's value is counted, the mean is sensitive to extreme values: unusually high values will have a large impact on the estimate of the average, while unusually low ones, i.e. highly negative values, will drive it down.

Current dollars versus constant dollars

"Current dollars" are what we usually mean when we refer to a currency in the current time period. The term "constant dollars" refers to dollars of several years expressed in terms of their value ("purchasing power") in a single year, called the base year. This type of adjustment is done to eliminate the impact of widespread price changes. Current dollars are converted to constant dollars using an index of price movements. The most widely used index for household or family incomes, provided that no specific uses of the income are identified, is the Consumer Price Index (CPI), which reflects average spending patterns by consumers in Canada.

To convert current dollars of any year to constant dollars, divide them by the index of that year and multiply them by the index of the base year you have chosen. (The numerator must contain the index value of the year you want to move to.)

For this report, it was necessary to convert current 1984 dollars to constant 1999 dollars. Using the CPI, $10,000 in 1984 would be $15,326 in 1999 constant dollars ($10,000 X 110.5/72.1 = $15,326).

        Consumer Price Index, annual rates, 1992=100
            1984   72.1
            1999   110.5

Debt/asset ratio

Relationship between total debts and total assets, calculated by dividing total debts by total assets. If debts are lower than assets, the number will be less than one; if they are higher the number will be greater than one. For example if a family has debt of $2,000 and assets of $20,000 the debt-to-asset ratio will be $2,000/$20,000 or 0.1.

Low income cutoff (LICO)

Low income cutoffs (LICOs) are established using data from the Family Expenditure Survey, now known as the Survey of Household Spending. They convey the income level at which a family may be in straitened circumstances because it has to spend a greater proportion of its income on necessities than the average family of similar size. Specifically, the threshold is defined as the income below which a family is likely to spend 20 percentage points more of its income on food, shelter and clothing than the average family. There are separate cutoffs for seven sizes of family - from unattached individuals to families of seven or more persons - and for five community sizes - from rural areas to urban areas with a population of more than 500,000.

Major income recipient

For each family, the major income recipient is the person with the highest income before tax. For persons with negative total income before tax, the absolute value of their income is used, to reflect the fact that negative incomes generally arise from losses "earned" in the market-place and are not meant to be sustained. In the rare situations where two persons have exactly the same income, the older person is the major income recipient.

Median

The median is the value at which half of the units in the population have lower values and half have higher. In this report median is most often used as a measure of net worth; it can be used with other values as well, for example, income. To derive the median value of net worth, units are ranked from lowest to highest according to their net worth and then separated into two equal-sized groups. The value that separates these groups is the median net worth. It corresponds to the 50th percentile.

Because the median corresponds exactly to the mid-point of the net worth distribution, it is not, contrary to the mean, affected by extreme net worth values.

Since net worth distributions are typically skewed to the left - that is, concentrated at the low end of the scale - median net worth is usually lower than average net worth.

Quintiles and deciles

Net worth quintiles are a convenient way of categorizing units of a given population from lowest net worth to highest net worth for the purposes of drawing conclusions about the *relative* situation of people at either end or in the middle of the scale. Rather than using fixed ranges, as in a typical distribution, it is the size of each population group that is fixed.

First, all the units of the population, whether unattached individuals or families, are ranked from lowest to highest by the value of their net worth. Then the ranked population is divided into five groups each containing an equal numbers of units; each group is called a quintile. Analogously, dividing the population ranked by net worth into ten groups, each comprising the same number of units, produces deciles.

Quintiles and deciles can also be calculated for other values, such as income. In this case, unattached individuals or families are ranked from lowest to highest by the value of their income.