Poverty among Senior Citizens: A Canadian Success Story

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As Patrick Grady's appreciation in this volume notes, throughout his career David Slater has balanced "a deep commitment to markets and the key role of the private sector with an equally deep commitment to social policies designed to create equality of opportunity and provide support for those who are disadvantaged". In recent years, his work (e.g., Slater, 1995) has especially emphasized the sustainability and design of Canada's retirement security system. As an appreciation of his work, this chapter therefore asks:

- What are the achievements of the retirement security system which his generation of policymakers built in Canada?
- What design elements are responsible for its successes?
- What problems are there for the future?

Although it may now be the case that Canadian economists take a social safety net for granted, David Slater's generation had the opportunity to observe what a society without social security really looks like. At the time when David was taking undergraduate economics at Queen's University, Paul Samuelson was writing the first version of his best-selling text, *Economics*, in which he welcomed the fact that within the United States

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> a more or less comprehensive social security system had been set up within the past decade ... which will provide more generously for the old age of the bulk of our people than individual savings and interest earnings ever were able to in the past. In fact, we shall see in our later discussion of social security that one of the crushing indictments of the capitalistic system has been the well-authenticated charge that the vast majority of citizens have been unable — even after a lifetime of effort — to provide adequately for their old age. (Samuelson, 1948, p. 76)

At the time, of course, Canada lagged well behind the United States in social policy. In 1947 in Canada a means-tested old age pension was available for the destitute at $30 per month (equivalent to about $289 per month at 2001 prices), but that was all.[1] Not until 1952 was it replaced by Old Age Security (OAS). OAS was a universal payment of $40 per month, worth about $274 per month at today's prices. With income support at this level, the result was widespread and acute poverty among Canadians over 65. Canada had to wait until 1967 for the introduction of the Guaranteed Income Supplement and Canada Pension Plan[2] (for details, see Perry, 1989, pp. 701-709).

The next section begins by describing the long-run trend in poverty among senior citizens (those aged 65 and over) in Canada, while the following section discusses some of the problems of poverty measurement that are peculiar to the over 65 population. The third section looks at the Canadian Old Age Security system in an international perspective. It examines the income changes of Canadian, American, Swedish and British households as they move into their retirement years, with particular emphasis on the income of poorer households. The final section concludes with some discussion of the challenges facing the design of retirement security in the new millennium.

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[1]The *Old Age Pension Act* of 1927 was legislated by the minority Liberal government of MacKenzie King, in order to obtain the support of the "Ginger Group" of United Farmer and Labour Members of Parliament (who later formed the nucleus of the CCF).

[2]The minority Liberal government of Lester Pearson needed the support of the New Democratic Party (who succeeded the CCF) at this time.

Poverty Reduction for Senior Citizens — A Major Canadian Achievement

In order to appreciate what the Canadian retirement security system has achieved in reducing poverty among senior citizens, historical context is essential. However, data on the recent past are much more easily available and easier to work with than data on the 1950s and 1960s. Since micro data which enable analysts to calculate the size of the poverty gap or to adjust money incomes to reflect the cost of living of families of different size only became available in the 1970s, data on earlier years are limited to that available in published tables.

Nevertheless, there can be no doubt that Canadian senior citizens were much more likely to be poor than the general population during the 1950s and 1960s. Table 1 is taken from the work of Podoluk (1968). A consistent theme in Statistics Canada publications has been the use of the term "low income" rather than the more easily understandable term "poverty", and Podoluk's work was instrumental in persuading Statistics Canada to adopt the Low Income Cut Off (LICO) methodology for assessing its extent. In this methodology, to be "low income" is to have "very little" left over after expenditure on items of basic necessity (food, clothing and shelter). Consequently, the 1968 LICO classified a family as low income if more than 70 per cent of pre-tax income would normally be spent on necessities.

Panel A of Table 1 presents the incidence of low income in 1961 among all Canadian families, those families with head aged 65 or over and unattached individuals. Among families whose head was aged 65 or more, the poverty rate was substantially greater (43.9 per cent) than among all Canadian families (25.3 per cent). Furthermore, the single elderly (mostly women) who survived their spouses were almost certain to be poor. The incidence of low income for unattached individuals 70 or more was an astonishing 72.5 per cent. As Panel B of Table 1 notes, older families were substantially overrepresented in the bottom ranges of the income distribution, with 36.2 per cent of families headed by someone aged 65 or more having an

Table 1

A

Incidence of Low Income* – 1961

		%
All Canadian Families		25.3
Families: Head ³ 65	43.9	
Unattached Individuals		
60 – 64	50.7	
65 – 69	64.1	
70+		72.5

B

Per cent of Families by Income Group – 1961 (converted to 2001 dollars)**

	£ 6,200	6,201-12,399	12,400-18,600	Median	Average
All Families	3.3	7.9	10.8	30,154	32,954
Head ³ 65	8.8	27.4	16.8	17,407	23,158

Notes: *Original "Low-Income" criterion: > 70 per cent income spent on food, clothing and shelter.
** Original income ranges = < 1,000, 1000–1,999, 2,000–2,999.
All items CPI (1992 base) 2001 = 115.9; 1961 = 18.7.
Source: Podoluk (1968, pp. 188, 194, 247, 257).

income less than $12,400 (in 2001 dollars), compared to 11.2 per cent of all Canadian families.[3]

[3]Today, analysts would typically make an assumption about the econo-mies of scale involved in household consumption, calculate an equivalence scale and examine the incidence and depth of low equivalent income among *individuals* of different ages. Older data are, however, presented in terms of the incidence of low income among families with a *head* of a given age, and no correction for family size. To retain comparability, we follow the older conventions. Appendix Table A1 demonstrates that these measurement conventions make little difference.

Although Americans received Social Security benefits beginning in 1935, Canadians had to wait until 1967 for the introduction of the Canada/Quebec Pension Plan (CPP/QPP) and the Guaranteed Income Supplement (GIS). Over time Canada Pension Plan benefits have increased in importance as individuals have been able to retire with longer histories of covered working years. Hence, as the CPP/QPP system matured in the 1970s, poverty among senior citizens fell dramatically. Table 2 examines poverty among all Canadians and among those in households headed by an individual aged more or less than 65 years.

Although the most commonly used statistic on poverty is the poverty rate, since Sen (1976) many authors have recognized that the poverty rate, by itself, is a poor index.[4] Simply counting the number of poor, as a percentage of all people, ignores any consideration of the depth of their poverty. As Myles and Picot (2000) have noted, some social policies transfer income to groups (such as single parents) whose incomes are well below the poverty line. *Because* their incomes are so far below the poverty line, policy changes which affect these groups may have large impacts on their well-being, but not show up in the poverty rate statistics if few individuals are actually moved over the poverty line.

On the other hand, an index such as the average poverty gap ratio, which looks only at the average percentage shortfall of income below the poverty line, has the defect that it ignores the issue of how many people are poor. This paper therefore uses the Sen-Shorrocks-Thon (SST) index of *poverty intensity*, which combines consideration of the poverty rate, average poverty gap ratio and inequality among the poor.[5] This paper also takes the view that poverty in Canada should be assessed in terms of *Canadian* social norms, and therefore calculates the poverty rate and poverty gap for each individual with reference to a Canada-wide norm of living standards.[6]

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[4]For surveys of the literature see Foster (1984); Hagenaars (1991); or Zheng (1997).

[5]The Sen-Shorrocks-Thon (SST) index of poverty intensity can be calculated as I = (rate)*(gap)*(1+G(x)) where "rate" is the percentage of the population with incomes below the poverty line (sometimes called the head count ratio), "gap" is the average percentage gap between the incomes of the poor and the poverty line and G(x) is the Gini index of inequality of the poverty gap among all people. For further details on the SST index, and its trends over time in Canada, see Osberg and Xu (1999) or Myles and Picot (2000). For international comparisons, see Osberg and Xu (1997, 2000).

[6]In the main body of the text, the poverty line norm adopted is one-half the median equivalent income of all Canadian individuals, since this concept of poverty has been widely

The top panel of Table 2 reports poverty intensity, the poverty rate and the average poverty gap ratio counting only income from labour market earnings and capital, before taxes and before government transfers. As one can note from the last three columns, there is really very little trend over time in the amount of income poverty among senior citizens in Canada *before government taxes and transfers*. For the entire quarter-century from 1973 to 1997 the poverty rate (before taxes and transfers) for seniors is stuck in the region of 60 per cent and the average poverty gap is about 70 per cent.

However, poverty outcomes among senior citizens *after* taxes and transfers are an entirely different story. Ideally, one would have comparable micro data from the period before the introduction of CPP/QPP and GIS, in order to assess the impact of the introduction of these programs. In reality, the first micro-data is available in 1973, and therefore misses the introduction effect of CPP/QPP and GIS in 1967. However, it is clear that the maturing of the CPP/QPP system has had a huge impact. Overall, poverty intensity for seniors in 1973 was 13.6. Poverty intensity declined by roughly an order of magnitude — to 1.7 — in the 24 years leading up to 1997. The decline in the poverty rate after taxes and transfers from 28.4 per cent in 1973 to 5.4 per cent in 1997 is more dramatic than the decline in the average poverty gap ratio (from 26.2 per cent to 15.8 per cent) — but either trend represents *very* substantial progress, and combined they represent a huge and lasting improvement.

To appreciate the progress in poverty reduction among senior citizens in Canada, one only has to contrast their outcomes with the rising intensity of poverty among younger households, particularly in the 1990s. Prior to 1989, adverse trends in the distribution of market income were reversed by the tax/transfer mechanism, so limiting the extent of poverty increases was a social achievement. However, there is no evidence among younger Canadians of the lasting decline in poverty observed among the elderly.

In 1973, poverty *intensity* on a pre-tax, pre-transfer basis among the under 65 households was 15.6, increasing to 17.8 in 1989 (i.e., by about 14 per cent). Since after-tax, after-transfer poverty intensity for the non-elderly

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used in the international literature and can therefore be compared to international data. A disadvantage of this approach is that it does not recognize the differences in the cost of living that accompany residence in urban and rural areas. Appendix Table A1 therefore presents the results obtained when the before-tax Statistics Canada Low Income Cut Off (LICO), which builds in city size and urban/rural cost of living differentials, is used as the poverty line. Unfortunately, the LICO methodology is unique to Canada and cannot be directly compared internationally.

actually declined until 1989 by about 17 per cent (from 7.8 to 6.5), it is clear that until the 1990s the operation of the Canadian tax/transfer system was quite successful in reversing a trend to greater poverty in market incomes. However, the 1990s were a different story. For those under 65, poverty intensity before taxes and transfers rose substantially from 17.8 in 1989 to 23.1 in 1997 — an increase of about 30 per cent. From 1989 to 1997, poverty intensity in post-tax, post-transfer income among those under 65 rose from 6.5 to 8.6 — an increase of slightly greater magnitude (32 per cent). As a result, the gains of the 1973 to 1989 period were erased and reversed.

Looking at the 1973 to 1997 period as a whole, the poverty *rate* in market income rose from 16.8 to 21 per cent and the average poverty *gap* rose from 49.1 per cent to 59.2 per cent, so the increase in poverty intensity in market income was large — about 48 per cent (from 15.6 to 23.1). After taxes and transfers for the period as a whole between 1973 and 1997, the increase in poverty intensity (from 7.8 to 8.6) was much less, about 10 per cent. However, the achievements of the tax/transfer mechanism in offsetting trends in market income were largely a phenomenon of the period before 1989, and it is useful to look separately at changes in the 1990s and before.

To provide a more intuitive idea of the magnitude of poverty reduction among senior citizens and in the general population, Figures 1 and 2 present the "Poverty Box" for seniors and non-seniors in 1973 and 1997. These figures make use of a theoretical decomposition, combined with an empirical generalization.

Theoretically, poverty intensity can be calculated as:

Poverty Intensity = (rate of poverty)*(average poverty gap)*(inequality of poverty)

where "rate" is the percentage of the population with incomes below the poverty line, "gap" is the average percentage gap between the incomes of the poor and the poverty line and "inequality of poverty" is measured by one plus the Gini index of inequality of the poverty gap among all people.

The empirical generalization is that the third term, measuring inequality of poverty gaps, is nearly constant. Empirically, it turns out that changes over time (or differences between countries or Canadian provinces) in the inequality of poverty gaps are very small, especially when compared to differences in the poverty rate and average poverty gap.[7] Since the inequality

[7] Across LIS countries the coefficient of variation of poverty rates is 0.493, and for average poverty gap ratios it is 0.185. However, the coefficient of variation of $(1+G(x))$ is only 0.014 (Osberg and Xu, 2000, p. 72). For Canadian provinces and U.S. states in 1997

of poverty gaps is nearly constant, the implication is that for practical purposes poverty intensity is proportional to the product of the poverty rate and the average poverty gap. Graphically, total poverty intensity can therefore be represented as the area of a Poverty Box — a rectangle whose base is the poverty rate and whose height is the average poverty gap ratio.

Figures 1 and 2 present the Poverty Box for Canadians under 65, and aged 65 or more. Each figure compares poverty intensity before taxes and transfers (the dashed lines, labelled "pre-fisc") to poverty intensity after taxes and transfers (solid lines, labelled "post-fisc"). Using these figures, one can easily see whether it is the impact of taxes and transfers on the poverty rate or the poverty gap that is driving over all poverty intensity trends.

Since it is often useful to see how much of the total poverty of the nation is contributed by poverty in different groups, in both Figure 1 and Figure 2 the double vertical line divides the total population into the proportion aged 65 or more and the fraction under 65. Graphically, if one wants to look only at poverty among younger Canadians, one can simply cover up the right hand side of the figure to visualize the impact of government (through taxes and transfers) on the poverty rate (horizontal axis) and average poverty gap (vertical axis) of Canadians under 65 years of age. On the other hand, if one wants to look just at poverty among senior citizens, one should cover up the left hand side of Figure 1 or 2 to see the impact of government on the poverty rate[8] and average poverty gap of Canadians 65 years of age and over.

The total amount of poverty in Canada is, of course, the sum of poverty among all Canadians, both senior citizens and those under 65. In Figures 1 and 2, total poverty intensity is proportional to the sum of the area of both Poverty Boxes — the Poverty Box for seniors plus the Poverty Box for younger Canadians. By adding the two boxes outlined with dashed lines, and comparing them to the total area of the two boxes outlined in solid lines, one

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the CV is 0.341 for the SST index, 0.384 for the poverty rate, 0.141 for the poverty gap ratio and 0.011 for (1+G(X)), see also Osberg and Xu (1999). The "common sense" verbal explanation for the unimportance of inequality among the poor in an aggregate measure of poverty intensity is that the differences in income among the poor are small when compared to income differences among the non-poor. The upper bound on the incomes of poor people is the poverty line. The lower bound (leaving aside measurement error), is subsistence. The dollar value of the difference is not large, particularly when compared to the dollar differences among the non-poor population. See Osberg and Xu (2000, p. 57) and Xu and Osberg (2000) for geometric proof.

[8]For each group, the poverty rate is expressed as a fraction of that group, for example, the poverty rate for seniors is a percentage of Canadians aged 65 or more.

can see how much total Canadian poverty is reduced by taxes and transfers — particularly for the those 65 and over.

Figure 1 illustrates how much stronger in 1973 the impact of taxes and transfers was on the poverty rate and the poverty gap among seniors than among non-seniors. Figure 2 presents the same poverty box analysis for 1997, and illustrates the quite dramatic impact which taxes and transfers had on poverty among senior citizens in Canada over the last quarter century. If one goes a little further back in time and compares the outcomes of 1997 with those of 1961, it is even clearer that poverty reduction among senior citizens has been one of the great success stories of Canadian social policy.

Problems in Poverty Measurement among Senior Citizens

Paradoxically, the success of Canada's retirement security system in putting a floor under the incomes of senior citizens has a flip side — an increased potential sensitivity of poverty measurement among seniors to "technical" measurement issues. Although there is little doubt as to the *trend* in poverty among senior citizens in Canada, assessment of the *level* of poverty in Canada is complicated a bit by the fact that many seniors now have much the *same* money income. Because analysts may draw the poverty line at slightly different income levels, small differences in the poverty line may imply large changes in the measured poverty rate.

Because they have retired from the labour force, often without private pensions or appreciable savings, in Canada (as in all the advanced countries) many of the elderly depend *entirely* on social transfers.[9] Their income determination process is therefore totally unlike that of the non-elderly, who mix transfers and earned income and have wages and hours of work which vary with different jobs and fluctuate over the course of a year. Precisely because the elderly typically have no earnings and the retirement security

[9]Luxembourg Income Study data indicate that in 1994, among households composed of seniors the percentage whose only income was government transfers was 21.6 per cent in Canada, 16.3 per cent in the United States, 22 per cent in Australia, 50.1 per cent in Germany, 52.9 per cent in Luxembourg, 18.2 per cent in France, and 14 per cent in the Netherlands.

system provides their income, many of them have much the same income because it is derived from the same source and calculated by the same benefit formula.

When that basic income is close to the poverty line, small variations in either the poverty line or the level of basic seniors' benefits has the potential to reclassify large numbers of people — either pushing them into, or out of, poverty. Up to this point, this paper has used the common practice, in the international literature, of drawing the poverty line at one-half the median equivalent after-tax/after-transfer income of individual Canadians (where household economies of scale are assumed to be captured by the LIS equivalence scale). This measurement choice implies a significantly lower poverty rate for Canada as a whole (11.57 per cent in 1994[10]) than the use of the Statistics Canada Low Income Cut Off (15.9 per cent in 1994). (The reason is that a relative poverty line, like half the median, may decline with a decrease in general living standards such as that which occurred in Canada in the early 1990s; the LICO, on the other hand, remains fixed in real terms.)

In the Appendix, Table A1 reports the poverty intensity, the poverty rate and poverty gap using as the poverty line the before-tax LICO of Statistics Canada. The debate on which poverty line is more appropriate clearly affects the perceived *level* of poverty for all groups, but for the non-elderly population there is little impact on *trends.* However, poverty among the 65 and over population is potentially more sensitive to measurement choices.

Because there is likely to be a "spike" in the income distribution of the elderly, which has the potential to affect poverty measurement, the empirical issue is whether different choices of the poverty line lie on opposite sides of that spike. Figures 3, 4 and 5 therefore use Luxembourg Income Study data to graph the income distribution of one- and two-person elderly and non-elderly households in Canada, the United States and Australia in 1994. In

[10]The poverty line used in this paper is conceptually similar to the Low Income Measure (LIM) of Statistics Canada, which sets the over-all 1994 poverty rate at 14.7 per cent (see Statistics Canada, 1999, p. 17) compared to the 11.8 per cent poverty rate for all ages reported in Table 2. The difference arises because the LIM uses pre-tax, post-transfer income (while we use after-tax, after-transfer income), calculates the median across families (we take the median across individuals, assuming that income is pooled within households) and does not exclude people with negative incomes (we do). The fact that such "technical" statistical choices produce variation in the poverty line, and the implied poverty rate, is a pointer to the ambiguity and imprecision surrounding exact statements about the level of poverty. In most cases, statements about poverty trends are little affected, but the reason why the "spike" in the incomes of seniors matters is that small variations in the poverty line have the potential to reclassify large numbers of people.

each graph, the frequency distribution of incomes in the modal interval is presented, as well as the frequency of observations of incomes lying above and below the mode. Australia has a very significant spike in the income distribution of elderly persons, with 50.6 per cent of one-person households in the $2,000 modal interval. In Canada, 30.1 per cent of one-person elderly households are in the same interval, while in the United States the spike is much less pronounced, with only 16.3 per cent in the modal interval.[11]

These national differences are easily explained by the structure of the retirement security systems in the three countries. Australia has historically had a flat rate, means-tested pension; the spike in the income distribution is simply the maximum pension benefit (which applies when the individual has no other source of money income). The Canadian system combines a flat rate federal OAS payment with income supplementation through the Guaranteed Income Supplement, but the general availability of CPP benefits tied to earlier earnings builds in some differentiation among those persons with an earnings history. In the United States, there is no universal component, and pension entitlement under Social Security replicates in old age more of the dispersion in incomes that occurred during the working years.

Figures 3, 4 and 5 illustrate, therefore, how much the income distribution of the elderly depends on the details of design of public pensions for the elderly. In Australia and Canada there is a spike in the income distribution of the elderly which is rather close to commonly used definitions of the poverty line. In Canada, the income distribution spike is above both the after-tax LICO and half-median equivalent disposable income conceptions of the poverty line, implying that conclusions about poverty trends are robust to these particular choices of poverty line. However, since the income distribution spike is close to the poverty line, it is fair to say that many seniors are "near-poor". As well, the more commonly used pre-tax Low Income Cut Off of Statistics Canada generates a significantly higher poverty rate than the after-tax LICO. Since Figures 3 to 5 are drawn in terms of after-tax income, it cannot be represented directly there, but it appears to lie very close to the income distribution spike.

In both Australia and the United States, the elderly are a group for whom small changes in money income or equivalence scale or the poverty line are more important. Because the official U.S. poverty line is so low, it is well below the income distribution spike. However, if the poverty line is set at the

[11] For persons under 65, the percentage in the comparably defined modal interval of the income distribution was in 1994: Canada, 9.4 per cent; United States, 8 per cent; Australia, 11.3 per cent.

international criterion of one-half median equivalent disposable income, or at the real value of the after-tax Canadian LICO, the U.S. income distribution mode for the single elderly is just below the poverty line. Because, in these countries, many of the elderly have incomes that are quite close to reasonable specifications of the poverty line, small changes in the definition or measurement of that poverty line can appear to have large poverty consequences.

The spike in the income distribution of the elderly is very pronounced in Australia, but not nearly as much in the United States. Canada (like most other countries) is an intermediate case. Hence, since comparisons over time or across countries are affected by this spike to differing degrees in different countries, for Canadian seniors the point to remember is the clustering of many people's retirement income in a fairly narrow range, which is above, but not very far above, reasonable definitions of the poverty line.

In thinking of the social context of income flows, of course, one must also consider the adequacy of the definition of "income" which is used as an indicator of economic well-being. Thus far, this paper has looked at income poverty and the concept of poverty used has been based on the calculation of equivalent family money income, which is based in turn on the Survey of Consumer Finance definition of measured family money income. This ignores the economic well-being entailed by the ownership of wealth, the receipt of in-kind income, the time cost of earning income and exposure to economic insecurity.

In the comparison of birth cohorts of Canadians, a particularly important issue is the imputed rent and capital gains arising from home ownership. The cohort of Canadians who were fortunate enough to purchase their homes during the era of low real interest rates and low housing prices (i.e., pre-1975) benefited significantly from capital gains in the housing market of the late 1970s and early 1980s. However, the stagnation of real housing prices since the early 1980s has meant that younger cohorts have not received comparable capital gains, meanwhile paying substantially higher real interest rates on their mortgage indebtedness. Although the realization of such capital gains is subject to significant transactions costs (in real estate fees and the loss of neighbourhood social ties) older cohorts who have retired their mortgage debt do benefit annually from a stream of housing services, which is not counted as part of money income. Since most of the members of younger cohorts are either paying rents or mortgage interest, inter-generational comparisons of money income may not accurately reflect well-being.

As well, cohorts differ in the type and amount of public services that they receive. Since senior citizens are at a stage in life when they are very likely to need medical care, they benefited disproportionately from the general increase

in economic security that came with the introduction of universal medicare in 1968–70 in Canada. In general, the perceived relative well-being of senior citizens is particularly affected by the value assigned to the medical and hospital services they receive from the public sector. However, despite the fact that household money income omits consideration of the value of these services, it does not seem appropriate to add their cost to money income, since one would not want to argue that the sick have more income than the healthy, just because they receive more medical services.[12] Hence, this paper makes no adjustment to money income to account for the value of in-kind services received.

The calculation of household money income also ignores the opportunity cost of the time supplied by households to the paid labour market in order to earn income. The retired population do not have these costs, but the population of working age do. Furthermore, the relative differential in costs has changed over time. Over the 1975 to 1994 period, married women substantially increased their labour force participation rates, implying that although working-age families have had more money income, they also have had less leisure, and less opportunity for home production. Comparison of the well-being of senior citizens and those under 65 is also affected by the increase in economic insecurity, which has been greatest among youth during the period 1975 to 1994 (see Osberg, Erksoy and Phipps, 1998). Retirees have graduated to a status that is no longer affected by the ups and downs of the labour market, but working-age Canadians still face labour market risk, although their exposure differs markedly. Those who entered the labour market during the 1960s and 1970s entered a labour market in which unemployment was relatively low and jobs with contractual guarantees of continued employment were relatively abundant. After 1971, the potential costs of unemployment were cushioned by a relatively generous unemployment insurance system. In the 1990s, however, double digit unemployment rates were common, jobs with employment security became rarer and unemployment insurance was drastically cut in benefits, coverage and eligibility. Many older Canadians have worked their way up the seniority ladder into positions of relative job security, but younger Canadians were highly exposed. For much of the 1990s, the combination of higher unemployment, decreased private sector guarantees of job security and

[12]If one calculated the total income of Canadians as their money income plus the value of in-kind services received, a resident of the intensive care ward would appear to have an extremely high total income, which would be greatest for those with the longest stays. This way of calculating "total income" would be a very poor guide to their well-being.

decreased income protection from unemployment insurance produced a pervasive sense of economic insecurity in the Canadian labour force.[13]

In successive cross-sectional samples from the population, such as the SCF, one cannot observe either the *ex post* realized fluctuations of money income over time or any *ex ante* anxieties about possible future income fluctuations. Nevertheless, risk averse individuals are willing to pay an insurance premium for greater income certainty, and rising levels of income uncertainty can be expected to have a utility cost, which this paper does not attempt to measure.

Important aspects of economic well-being which are unmeasured in this paper's calculation of poverty trends include implicit income from home ownership and public services, plus the greater relative benefit from freedom from the increasing time pressures and the greater economic insecurity that affect working-age Canadians. Although these are important issues, in a very real sense their omission from this paper only serves to strengthen the general message that the relative well-being of Canadian seniors has, on average, improved markedly over the last 30 years.

If the issue is trends in deprivation, however, averages can also be highly misleading, and particularly so when age cohorts are compared. In his article in this volume, Malcolm Hamilton compares average incomes of retirees and those of working age. He also notes that using the concept of "income" as an indicator of well-being excludes from consideration the utility derived from consumption which is enabled by depletion of capital. Since the elderly have, *on average*, substantial assets, they could *on average* consume from the disposition of those assets. However, the problem with that mode of analysis is that it ignores the inequality in incomes and the high and rising level of inequality in wealth ownership.

In general, there is more inequality in the wealth distribution than in the distribution of annual income; and the rich and poor differ in the type of assets they own, as well as in the amount of assets. In 1999, as in previous years, the basic picture was "30-60-10". The poorest 30 per cent of the population have essentially no assets (except perhaps automobiles, which are the most equally distributed type of asset) and that changes little over their lifetimes. For the 60 per cent who are "middle class", the key asset is the family home — as families gradually pay off the mortgage, their net worth

[13]Graves (2001) notes that in the late 1990s lower unemployment produced a substantial decline in survey measures of economic insecurity. The importance of macro-economic policy for such social outcomes is a lesson that I first learned in David Slater's course on Money and Banking at Queen's University in 1965–66.

increases and they gradually work their way up the distribution of wealth. As they age, they also acquire more consumer durables, and often some financial assets such as RRSPs.

However, although there has been some increase in the percentage of the population who own financial assets such as stocks, bonds and mutual funds, only a few people have major money. Most financial assets are owned by the top 10 per cent of households, who in total owned 55.7 per cent of total net worth in 1999, up significantly from 51.8 per cent in 1984 (Morissette, Zhang and Drolet, 2001).

The "bottom line" is that fungible wealth is very narrowly held in Canada. A substantial fraction of the population make the transition into retirement with essentially no marketable assets, while the main possession of the broad middle class is the family home, which is indivisible and illiquid. Hence, when it concerns those at risk of deprivation in old age — that is, the lower half of the income distribution — money income retains its importance.

The Transition to Retirement

What happens to people's incomes, particularly those at risk of poverty, as they age into retirement?

Since income and wealth in later life reflect the cumulative influence of many factors which can be strongly and mutually self-reinforcing (e.g., life events such as divorce or ill health, professional success or failure, ability to acquire and retain home ownership, etc.), trends in average incomes can be very misleading as a guide to trends in deprivation. As already noted, the details of the design of retirement security systems can have a major impact on the income distribution of seniors, and since countries differ significantly in the design of their retirement security systems, it is useful to examine comparative international evidence.

This section of the paper uses Luxembourg Income Study micro data to follow the fortunes of the birth cohort which moved into retirement as they aged from approximately 1979–81 to 1994–95. The data present point estimates[14] of income distribution trends over time for Canada (1981 and 1994), Sweden (1981 and 1995), United Kingdom (1979 and 1995), and the

[14] Although estimates of the confidence intervals surrounding these point estimates are not presented here, interested readers can find such estimates (for the population as a whole), as calculated using a bootstrap methodology, in Osberg and Xu (1997).

United States (1979 and 1994). Although the exact dates of the data for individual countries are determined by the availability of comparable micro data in LIS, the essential thing we want to make use of is the fact that the cohort born between 1915 and 1929 moved from pre-retirement to retirement over this period — someone born into this group was 51 to 65 in 1980 and 65 to 79 in 1994.

The focus is on the distribution of equivalent income among individuals, but the statistical starting point is the LIS definition of total household money income after tax (disposable income)[15] as the basis for calculation of the "equivalent income" of all individuals within households. We examine all national residents, as listed by LIS, excluding only those economic families or unattached individuals who reported a zero or negative before-tax money income.

Of course, comparing the experience of birth cohorts across different years in LIS data is not a substitute for actual panel data. The sample of people born 1915 to 1929 who responded to the Canadian Survey of Consumer Finance in 1981 are not, for example, the same people as the respondents in the survey of 1994 who were born in the same period. However, both samples are drawn from the same population of individuals (subject to the attrition of mortality and the impact of net migration), and both samples can be used to estimate characteristics of the distribution of income of that population. In the discussion that follows, the income of deciles of the income distribution will be compared over time. To the extent that individuals change their rank in the income distribution, these deciles of the income distribution will consist of different persons, but if one wants to assess trends in inequality, the issue is whether income mobility within cohorts has increased or decreased over time.[16]

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[15]Disposable income consists of the sum of gross wages and salaries, farm self-employment income, non-farm self-employment income, cash property income, sick pay, disability pay, social retirement benefits, child or family allowances, unemployment compensation, maternity pay, military/veteran/war benefits, other social insurance, means-tested cash benefits, near-cash benefits, private pensions, public sector pensions, alimony or child support, other regular private income, and other cash benefits; minus mandatory contributions for self-employed, mandatory employee contribution and income tax.

[16]In the United States, Mishel, Bernstein and Schmitt conclude that: "the rate of mobility appears to have declined since the late 1960s" (1999, p. 89). Dickens' conclusion for the United Kingdom is similar: "earnings mobility has fallen since the late 1970s" (1999, p. 223). On the other hand, Baker and Solon (1998) use income tax data to conclude that the year-to-year instability of income in Canada has risen over the period 1975 to 1993. Since trends in the average income of income deciles represent shifts in the pattern of ultimate

Over the period 1980 to 1995, the cohort born between 1915 and 1929 aged from being 51 to 66 to being 66 to 81. Although most households in this age bracket had a member in the paid labour force in 1980, almost all had retired by 1995. As earnings were replaced by pensions, the money incomes of most deciles of the income distribution in all countries fell. However, the structure of the income support system for the elderly matters a great deal. In some countries (especially Canada) the presence of a floor to old age security benefits which is higher than social assistance for the non-elderly has meant that the poorest decile are actually better off in their retirement years than in their working years.

Countries differ in the extent to which the old age security system emphasizes earnings-related pensions over flat rate, needs-based benefits. In the United States, there are broadly similar declines in the income of all but the poorest and richest deciles, as the Social Security system replicates for the pensions of the retired much of the inequality in earnings that they experienced as workers. This tendency is less marked in other countries. In both Canada and the United Kingdom the bottom quintile was better off in retirement than during their working years. Despite much media comment in the United States on the affluence of the elderly, it is notable that the decline in income of the cohort moving into retirement is significantly larger in the United States than it is for most other countries.

Figures 6 and 7 present the income distribution of the pre-retirement and retirement cohorts. In these figures, the average equivalent income (after-tax, after-transfer) of each decile of individuals in the income distribution is expressed relative to the poverty line for a single person. Figure 6 uses the relative concept that the poverty line is one-half the median equivalent income of all persons, while Figure 7 adopts the absolute poverty line methodology of the U.S. Social Security Administration (converted to national currencies using the OECD purchasing power parity calculations).

In terms of absolute poverty, the Canadian and Swedish systems clearly do much more for the worst off than the U.S. or U.K. systems. Just prior to retirement, in Canada the bottom tenth have incomes that are on average 73 per cent of the U.S. official poverty line in real terms, while in Sweden the

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economic rewards across individuals *given* the degree of individual mobility from year to year, and since there is some evidence of *decreased* mobility in the two countries that have demonstrated the greatest increase in income inequality, these trends in inequality of outcomes may understate tendencies to greater inequality of opportunity.

bottom decile have incomes that average 79 per cent of the U.S. poverty line. After retirement, the bottom 10 per cent of Swedes and Canadians are actually better off than in their pre-retirement years — Swedes are closer to the U.S. poverty line (at 89 per cent) while the bottom decile of Canadians are 12 per cent above the line. By contrast, in the United Kingdom the poorest tenth of the pre-retirement cohort are only marginally better off in their retirement years (moving from 74 per cent of the U.S. poverty line to 77.5 per cent). In the United States, the poorest decile are worse off when they retire. The bottom tenth of American 50 to 64 year olds had incomes in 1979 that were, on average, only 71 per cent of the U.S. official poverty line while in 1994, the poorest tenth of the retirement cohort of 65 to 79 year olds had even lower incomes, averaging only 68 per cent of the poverty line.

It is notable that although the United States is the richest nation in overall average income terms, the bottom decile of seniors are absolutely worse off in the United States than in any other country examined, and by a large margin, especially compared to Canada (expressing it in terms of the U.S. official Social Security poverty line, the difference between being at 112 per cent for worst-off seniors in Canada and being at 68 per cent in the United States is equal to about 44 per cent of the poverty line).

Canadian success in reducing the poverty of seniors is much the same if one uses a relative poverty line. Since drawing a poverty line at one-half the median equivalent income implies a higher poverty line in all countries than the real value of the U.S. official poverty line, and since that relative poverty line has changed over time (unlike the fixed absolute level of the SSA poverty line), Figure 6 is not quite the same as Figure 7, but the conclusion is similar.

Measuring poverty in relative terms, Canada clearly does the best job in pulling retirees up to the poverty line, since the bottom decile of 52–66 year olds in 1981 had incomes that averaged only 66 per cent of the poverty line, while the bottom tenth of 65 to 79 year olds in 1994 were at 96 per cent of the relative poverty line. In the other three countries, the bottom decile of the 1915 to 1929 cohort stayed in much the same place in relative poverty terms — marginally above the relative poverty line in Sweden (moving from 104 per cent to 107 per cent), somewhat below in the United Kingdom (84 per cent in 1979 compared to 83 per cent in 1995) and well below in the United States (55 per cent in 1979 and 58 per cent in 1994).

Conclusion and Implications

Canada has done a remarkable job in ensuring that senior citizens receive, in their retirement years, an income sufficient to prevent poverty. In comparison with outcomes in the past, or with those in other countries today, Canada's retirement security system has been relatively successful in protecting the elderly from deprivation. The contrast with the United States is particularly striking. Although the poorest Canadian seniors were much worse off than American seniors 40 years ago, they are now much better off.

Canadian transfer programs for those 65 and over have combined a universal demogrant (Old Age Security), a Negative Income Tax (the Guaranteed Income Supplement) and an earnings-related pension (CPP/QPP). The demogrant and NIT components serve to establish an income floor that is available to all, regardless of whether they have been in the paid labour force or not during their earlier years. Historically this feature has been especially important for women who have spent many years working in the home, without acquiring entitlements to an earnings-related pension in their own name. As time passes and the cohort of women who have been in the paid workforce more continuously ages into retirement, this feature can be expected to decrease in relative importance, but it will always be a necessary backstop for those with significant interruptions in their earnings histories.

The CPP/QPP system has the enormous advantages of complete coverage of the workforce, portability, low administration costs and indexation. However, it is not designed as a full income replacement scheme. In 1999, maximum benefits were $ 9,020 per year, for retirees aged 65 (with the possibility of enhancement or reduction for early or late retirement over the age range 60 to 70). Since benefits are designed to be a maximum of about 25 per cent of the average industrial wage, it is clear that the focus of the plan is preventing deprivation in old age, and it is equally clear from the data that the retirement security system has had major success in reaching that objective. The maintenance, for the population as a whole, of working-age consumption patterns during the retirement years is a different issue — one that Canadian policy leaves more to the savings decisions of individuals (albeit assisted by the tax treatment of RRSPs and Registered Pension Plans).

By contrast, the U.S. Social Security system replicates in old age much more of the inequality in earnings observed during the working years. The U.S. system aims at providing coverage for a significantly higher fraction of earnings, and in that sense is more clearly oriented to benefit a "middle class" constituency. Although the benefit formula is relatively advantageous to low-wage workers, they still, in the end, only receive a percentage of a low number as their retirement income. Samuelson's remark that "one of the crushing indictments of the capitalistic system has been the well-authenticated charge that the vast majority of citizens have been unable — even after a lifetime of effort — to provide adequately for their old age" is no longer true for the majority, but it remains true for a significant minority.

As Canada enters the twenty-first century and a higher fraction of the Canadian population ages into retirement, the policymakers of David Slater's generation have much to be proud of in Canada's retirement security system. The challenge for current policymakers will be how best to build upon the major success story of Canadian social policy in the twentieth century — the reduction of poverty among Canadian senior citizens.

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Appendix Table A1: Poverty Intensity and Components Using the Before-Tax LICO as Poverty Line (Canada)

	All			Those < 65 Years Old			Those 65 and Older		
	Poverty Intensity	Poverty Rate (%)	Poverty Gap (%)	Poverty Intensity	Poverty Rate (%)	Poverty Gap (%)	Poverty Intensity	Poverty Rate (%)	Poverty Gap (%)
	Money Income Before Taxes and Transfers								
1973	21.9	21.1	55.7	15.5	16.8	48.6	66.9	59.2	73.4
1997#	31.8	29.1	60.6	25.1	23.9	57	66.5	62.4	70
1997*	31.8	29.1	60.6	25.6	24.4	57.2	68.4	64.2	70.4
	Money Income After Taxes and Transfers								
1973	9.8	16.3	31.7	9.1	14.4	33	15.8	33.1	26.6
1997*	12.2	20.1	32.3	13.1	20.3	34.3	6.6	19.1	18.4
1997**	12.2	20.1	32.3	12.9	20.2	34.2	6.8	19.9	18.1

Notes: The Sen-Shorrocks-Thon (SST) index of poverty intensity is calculated as I = (rate)*(gap)*(1+G(x)) where "rate" is the percentage of the population with incomes below the poverty line (sometimes called the head count ratio), "gap" is the average percentage gap between the incomes of the poor and the poverty line and G(x) is the Gini index of inequality of the poverty gap among all people. Since the term (1+G(x)) is nearly constant, it is not presented explicitly.

In 1997, the actual number of people aged 65 years or more is available. In 1973, households are classified by the age of the household head.

* Maintains comparability with 1973.

** Weighted using the (actual number aged 65 years or more ** sample weight) for seniors and (actual number < 65 years ** sample weight) for those under 65.

Source: Author's calculations using the Survey of Consumer Finance, Economic Families.

Table 2: Poverty Intensity and its Components, Canada, 1973–1997

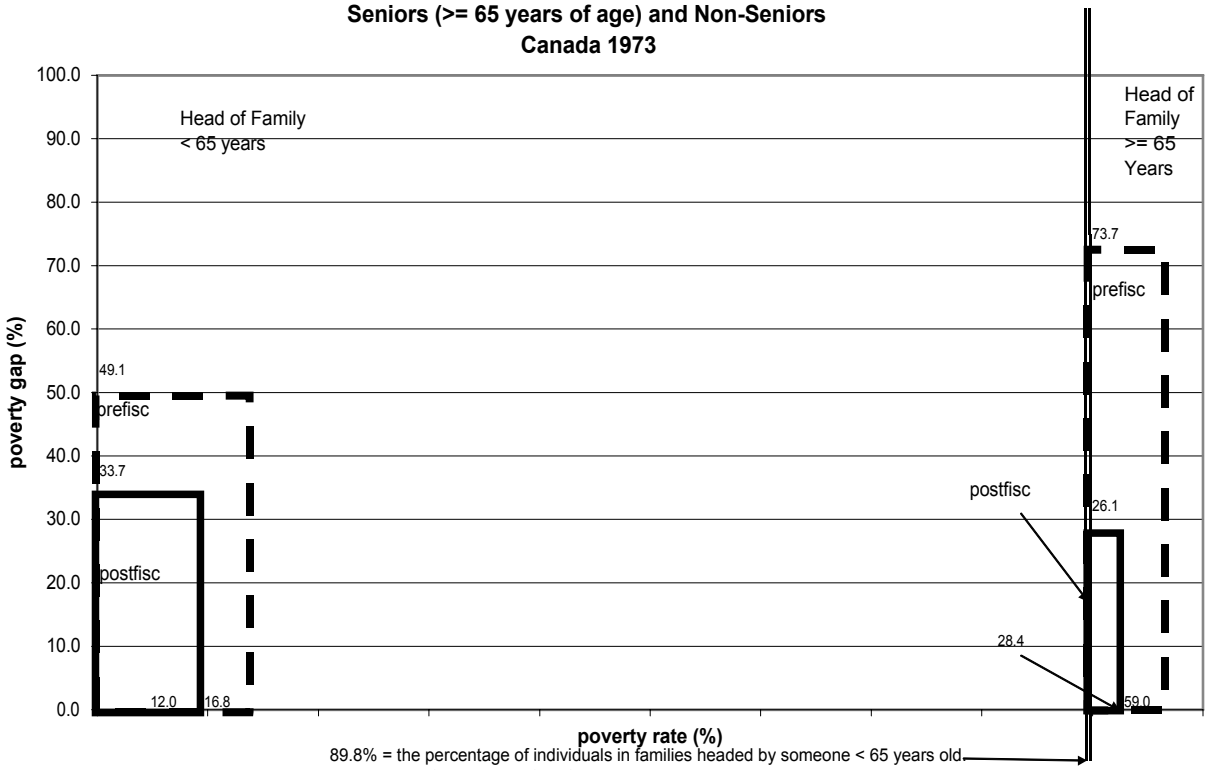
	All			Head of Family < 65			Head of Family >= 65		
	Poverty Intensity	Poverty Rate (%)	Poverty Gap (%)	Poverty Intensity	Poverty Rate (%)	Poverty Gap (%)	Poverty Intensity	Poverty Rate (%)	Poverty Gap (%)
				Money Income before Taxes and Transfers					
1973	22.1	21.1	56.1	15.6	16.8	49.1	67.0	59.0	73.7
1979	23.3	21.3	58.8	16.3	16.3	52.6	68.2	61.8	72.6
1989	24.5	22.8	58.3	17.8	17.8	53.1	61.7	56.6	69.3
1994	30.3	26.3	63.3	23.7	21.1	60.5	65.3	60.8	69.8
1997	29.7	26.2	62.3	23.1	21.0	59.2	64.3	59.8	69.2
				Money Income after Taxes and Transfers					
1973	8.4	13.6	32.1	7.8	12.0	33.7	13.6	28.4	26.2
1979	8.6	13.9	32.2	8.1	12.0	34.8	12.6	29.6	23.4
1989	6.1	11.0	28.4	6.5	11.0	30.5	3.2	11.4	14.7
1994	6.4	11.8	28.3	7.2	12.8	29	1.5	5.0	15.0
1997	7.6	12.5	31.8	8.6	13.6	32.7	1.7	5.4	15.8

Notes: The Sen-Shorrocks-Thon (SST) index of poverty intensity is calculated as I = (rate)*(gap)*(1+G(x)) where "rate" is the percentage of the population with incomes below the poverty line (sometimes called the head count ratio), "gap" is the average percentage gap between the incomes of the poor and the poverty line and G(x) is the Gini index of inequality of the poverty gap among all people. Since the term (1+G(x)) is nearly constant, it is not presented explicitly.

The poverty line used is one-half the median equivalent income where the equivalence scale is the square root of the total number of people in the family.

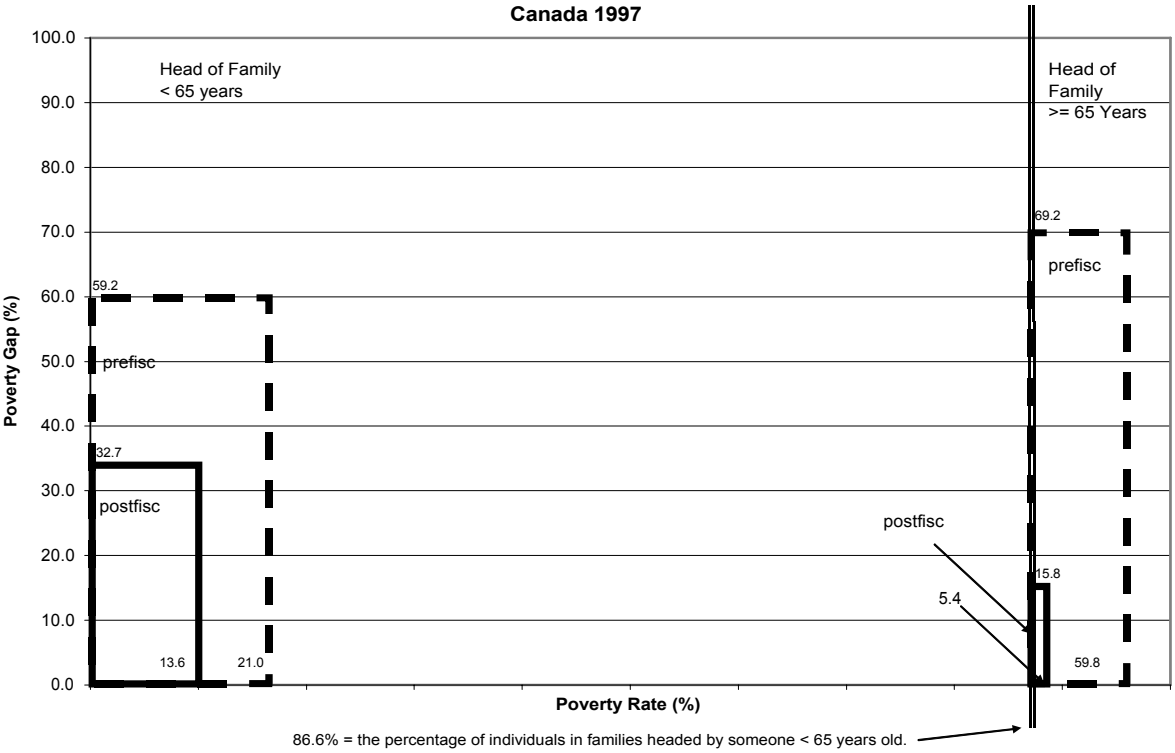
Source: Author's calculations using the Survey of Consumer Finance, Economic Families.

Figure 1
Poverty Box - Prefisc and Postfisc
Seniors (>= 65 years of age) and Non-Seniors
Canada 1973



note: The poverty line is 1/2 the median income (pre-fisc and post-fisc) for the entire country. The equivalence scale is the square root of the total numbers of persons in the family.

Figure 2
Poverty Box - Prefisc and Postfisc
Seniors (>= 65 years of age) and Non-Seniors
Canada 1997



note: The poverty line is 1/2 the median income (pre-fisc and post-fisc) for the entire country. The equivalence scale is the square root of the total numbers of persons in the family.

Figure 3
After Tax Income Distribution - $1000 Intervals
One and Two Person Households
Canada 1994

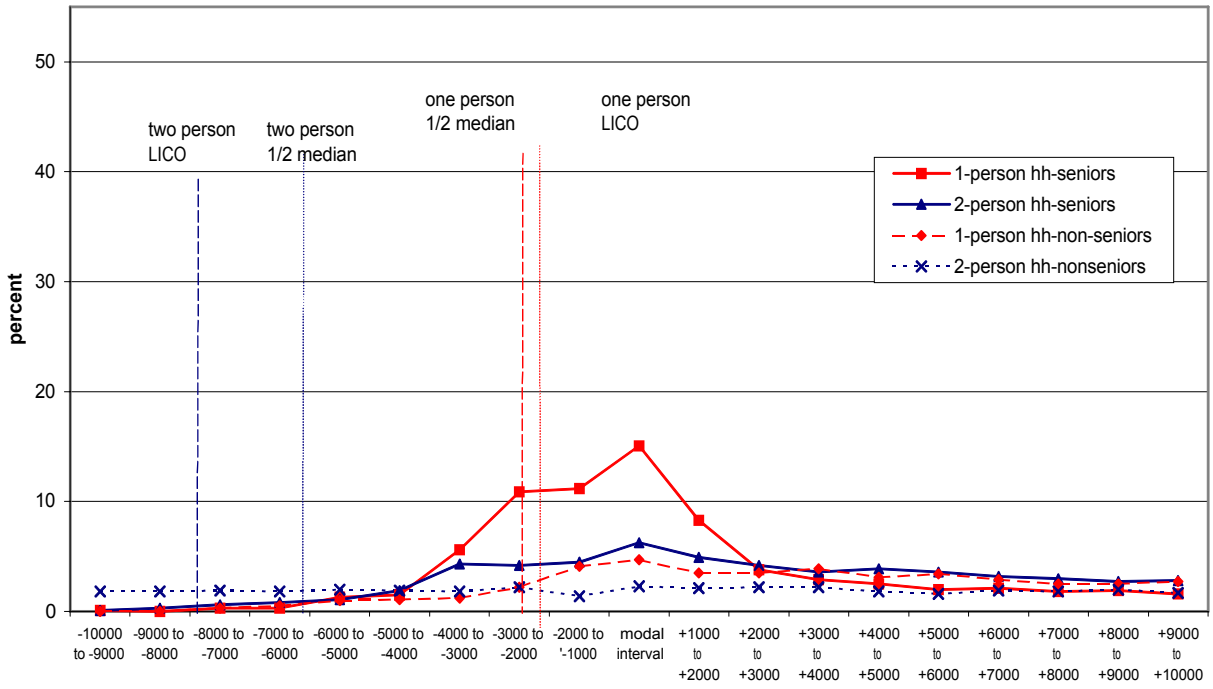
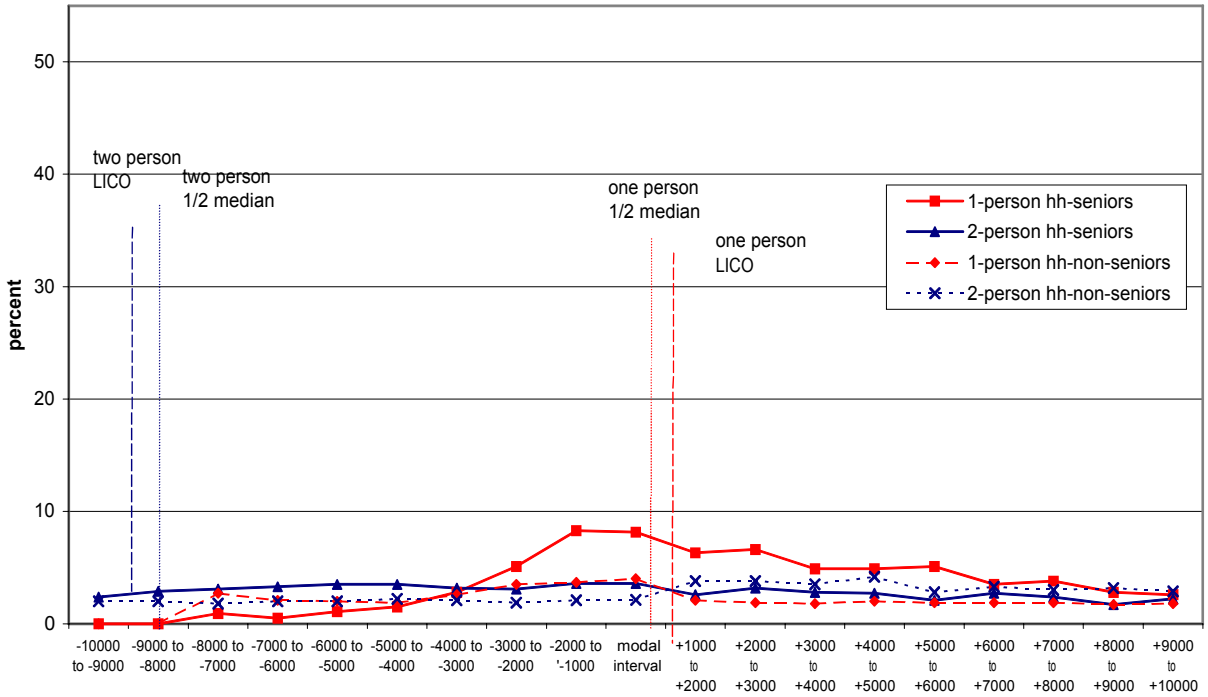
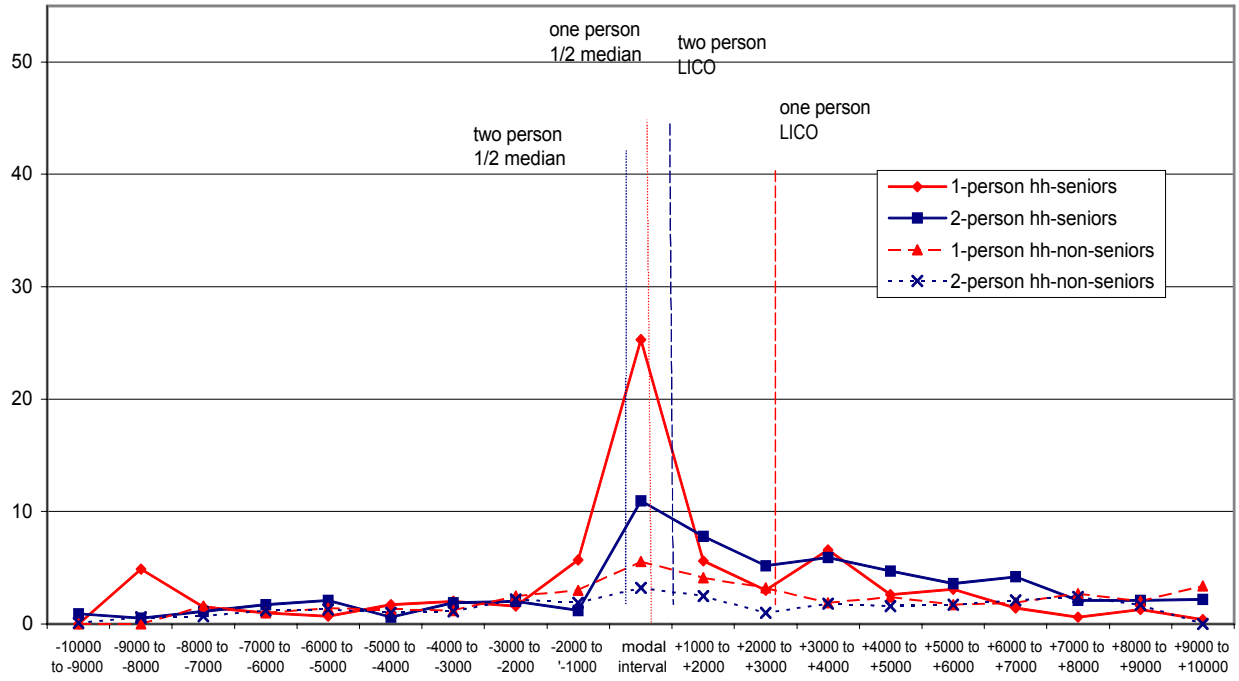


Figure 4
After Tax Income Distribution - $1000 Intervals
One and Two Person Households
United States 1994



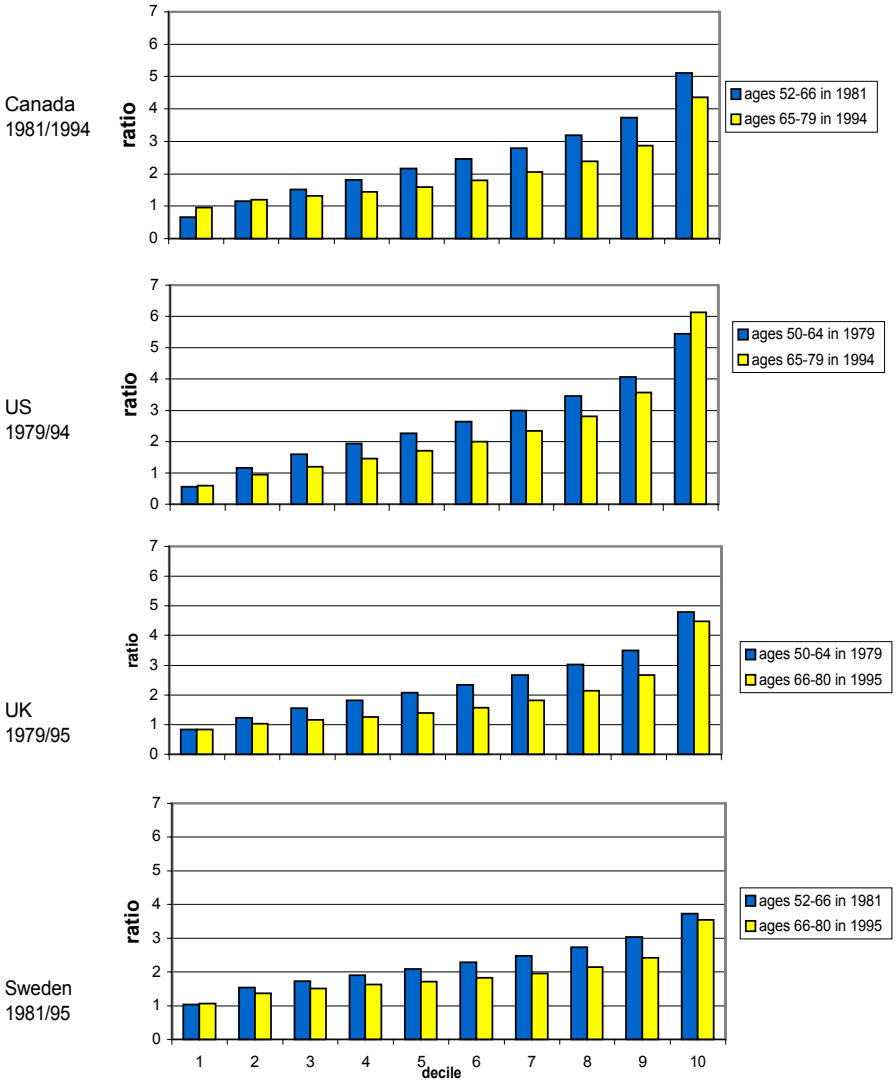
The LICOs are converted to US dollars using purchasing power parities (.79).

Figure 5
After Tax Income Distribution - $1000 Intervals
One and Two Person Households
Australia 1994



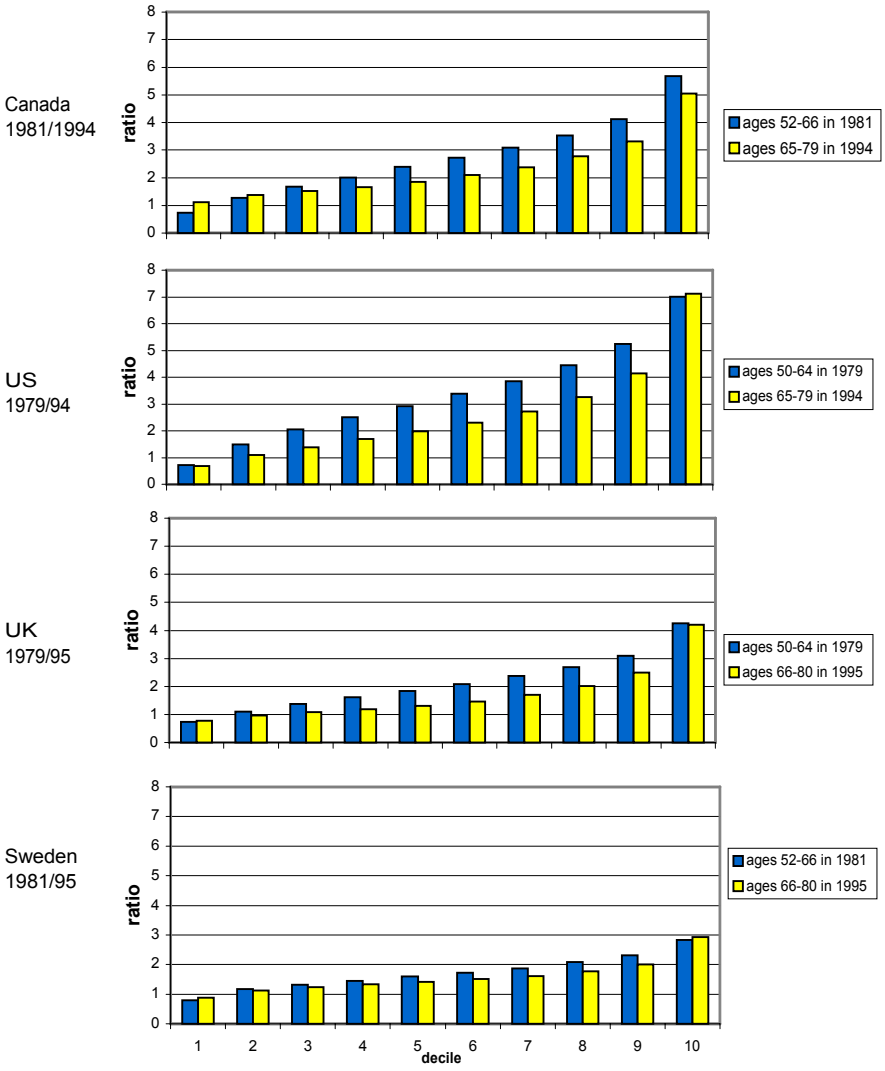
The LICOs are converted to Australian dollars using purchasing power parities (1.044).

FIGURE 6
Mean After-Tax Income by Decile / Poverty Line*



*note: The poverty line used is 1/2 the median equivalent after-tax income for each country. The equivalence scale used is the square root of the total number in the household.
Source: Author's calculations using The Luxembourg Income Study.

FIGURE 7
Mean After-Tax Income by Decile / Poverty Line*



*note: The poverty line is the Social Security Administration (US Official line - before tax) for a one person household.
Source: Author's calculations using the Luxembourg Income Study.