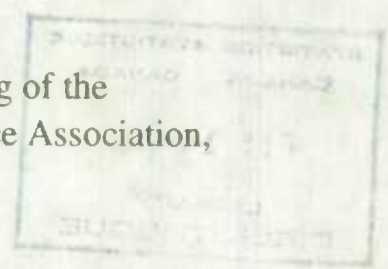# Kinder and Gentler

A Comparative Analysis of
Incomes of the Elderly
in Canada and the U.S.

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M.C.Wolfson and B.B.Murphy[*]
Analytical Studies Branch
Statistics Canada

A. Introduction

This paper provides recent basic information on the economic position of the elderly in Canada and the U.S. The conventional wisdom is that Americans are wealthier than Canadians. For example in the regularly published series by the OECD, Canadian GDP per capita (the most commonly used statistical indicator) was at 95% of the U.S. figure in 1988. Moreover, with a fully mature Social Security system, many analysts consider the U.S. to have a more generous system of public old age pensions. In aggregate, U.S. public pensions amounted to 7.2% of GDP in 1985 compared to 5.4% in Canada (OECD, 1988). On the other hand, a great deal of concern has been expressed in the context of the recently concluded Canada-U.S. Free Trade Agreement about U.S. firms being more competitive than their Canadian counterparts due to lower labour costs. If this concern is well founded, one explanation would be that American workers are not as well paid.

Not surprisingly, the picture is more complex than either of these conflicting descriptions. To show this, we have drawn upon recent and detailed data to paint a more careful picture of the comparative economic positions of the U.S. and Canadian elderly populations.

B. Data and Methods

The basic sources of data are the major income distribution surveys in the two countries -- Statistics Canada's Survey of Consumer Finances and the U.S. Census Bureau's March supplement to the Current Population Survey. In both cases we rely on the detailed microdata files containing the raw data for 1988. U.S dollar amounts have been converted to Canadian dollars using the 1988 purchasing power parity of 1.25. (OECD 1989)

The analysis is based on families (defined as individuals living in the same household who are related by blood, marriage or adoption; unattached individuals are included as one-person families). There were almost exactly ten times as many families in the U.S. -- 100.2 million compared to 10.16 million in Canada. Since families can be quite heterogeneous, most of the results for elderly families will focus on either unattached individuals or married couples without any other relatives in the household.

C. A Digression on Purchasing Power Parities

A crucial step in any international economic comparison is the method of converting from one national currency to the other. A convenient and frequently used method is simply to apply the exchange rate. However, this can be seriously misleading, as has been shown by the devel-

opment of purchasing power parities (PPPs). PPPs are, in effect, price indices designed for inter-country rather than inter-temporal comparisons. They are based on a commonly defined basket of goods priced in both countries. The Canada-U.S. exchange rate has fluctuated from a low of $.72 to a high of $.88 since the early 1980s (i.e. one U.S. dollar buying between $1.14 and $1.39 Canadian dollars), and in 1988 the U.S. dollar bought 1.231 Canadian dollars. The PPP, mean-while, has been relatively stable within a percentage point of 1.25 (Dryden et al., 1987).

The relative prices of different commodities that underlie PPPs provide an important back-drop to comparisons of incomes in the two countries, especially given recent media attention to the large numbers of Canadians crossing the border into the U.S. to shop for bargains (Ottawa Citizen, 1991; Montreal Gazette, 1991). The most recent systematic data are from 1985 and show that Canadian prices for dairy products, meat, alcoholic beverages, tobacco products, cloth-ing and footwear, and household equipment and operation have PPPs considerably higher than the overall 1.25 PPP; on the other hand, fuel and power related to housing, medical care and health services, and education, recreation and culture have PPPs that are significantly lower (by at least ten percentage points in each direction, respectively -- Dryden et al., 1987).

In addition to these differences in relative prices in the two countries, residents spend their incomes somewhat differently. U.S. residents spend more than their Canadian counterparts on clothing and footwear, medical care and health services, transport and communication, personal care, and restaurants. While private spending on education is about the same in the two coun-tries, Canadians spend more on publicly provided educational services.

Media headlines regarding relative prices in Canada and the U.S. single out tobacco prod-ucts, alcoholic beverages, gasoline, some clothing items and some appliances as being particular bargains. The far more rigorous PPP data show, however, that this is only a partial picture. Part of the U.S. price advantage has been a more competitive environment for consumer goods. Where Canada has significantly different prices, this is often the result of deliberate government policies such as farm price stabilization and support, "sin taxes" on alcohol and tobacco, high excises on transportation fuels, universal quality public education, and universal public health care insurance.

D. Are U.S. Families Richer?

Before considering the comparative position of the elderly in the two countries, it is impor-tant to examine the broader context of all families. Based on PPPs, average family before-tax

income (based on the two household surveys) was about 2.2% higher in the U.S. -- $38,900 compared to $38,000 -- in line with the conventional wisdom.[1] After-tax, the gap is slightly smaller -- $31,700 compared to $31,100.

However, median family income was lower in the U.S. -- by about 4.4% before-tax at $30,700 in the U.S. compared to $32,000 in Canada, and by about 1.0% in after-tax dollars. What can explain this apparent contradiction as to which country's families are better off? The short answer is that the U.S. has more poor families, and has middle class families with lower average incomes than their Canadian counterparts. But the wealthy in the U.S. are more numerous, and their high incomes bring the U.S. average family income above the corresponding Canadian average.

Consider the following scenario in the spirit of Jan Pen's (1973) "A Parade of Dwarfs (and a Few Giants)". Families in both countries line up in ascending order of their before-tax incomes. The queues on each side of the border are arranged so that they are exactly the same length. Thus, if a family p% along the way in one country looks over its shoulder to the corresponding family in the other country, that family will also be p% along in the queue. U.S. incomes are converted to Canadian dollars using the PPP; and each family's height is adjusted to be proportional to their income. The question is then at which parts of the two parallel queues will Canadian families find themselves taller or shorter than their U.S. counterparts.

Figure 1 graphs these comparative levels of income in the two countries while Table 1 gives the dollar amounts. Figure 1 shows that the first 60-65% of Canadian families have higher after-tax incomes than their U.S. counterparts, while the reverse is true for the top 35-40% of families. The bottom tenth of families in Canada have after-tax incomes more than 50% higher than the bottom tenth of U.S. families, while the top tenth of U.S. families have incomes that average 10 to 14% higher than the top tenth of Canadian families.[2] A purely relative analysis, using the conventional Lorenz curve, shows that U.S. income inequality is consistently higher.

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[1] This 2.2% difference in average family incomes is not quite as large as the 5% difference in per capita GDP converted using exchange rates noted earlier. A reconciliation of the two comparisons is given in the Appendix.

[2] This is an understatement due to the top-coding of very high income amounts on the U.S. microdata file; see the Appendix.
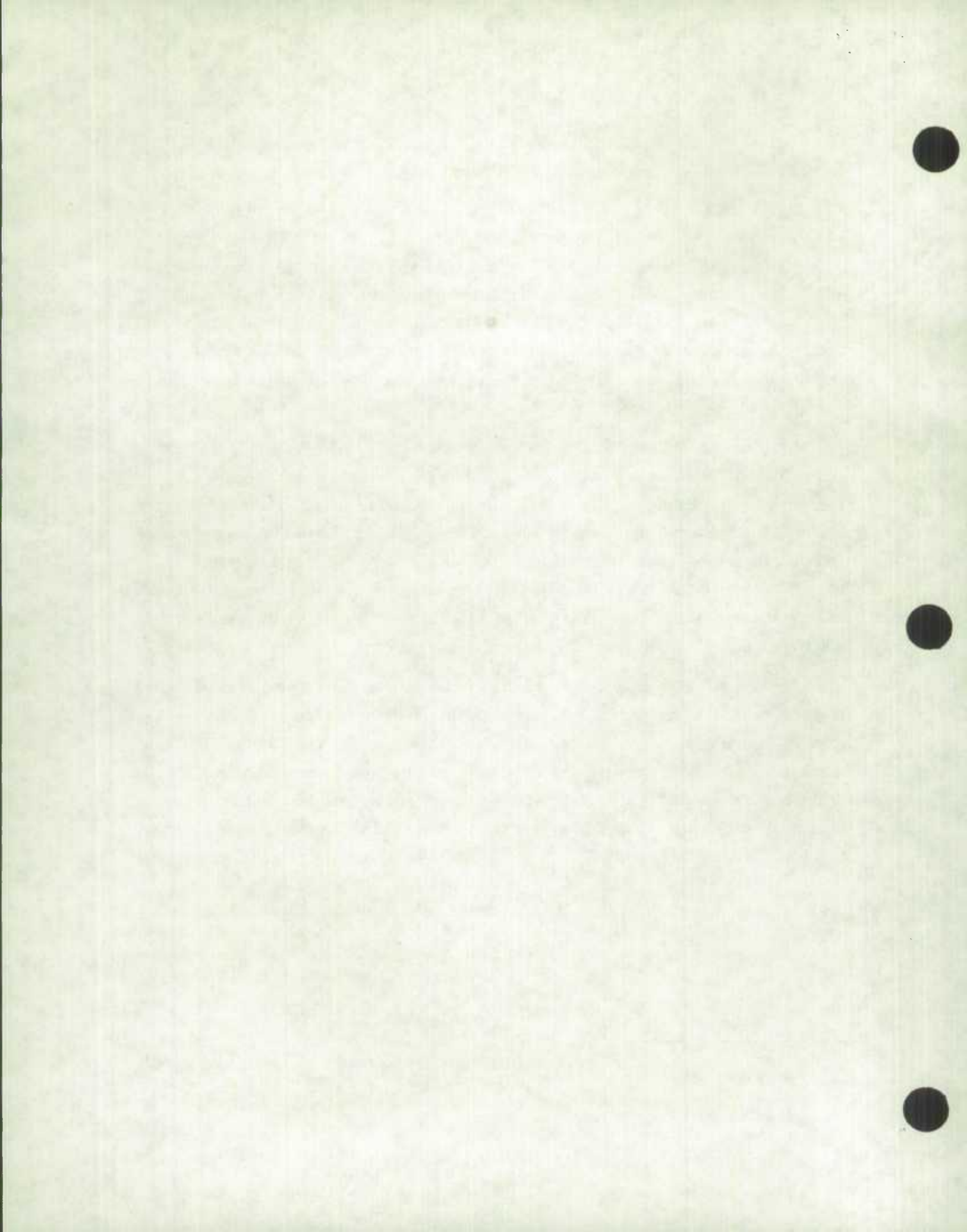
Table 1: Canadian and U.S. Families, 1988

Average Total Family Incomes by Percentile

| Percentile Group (Vingtiles) | Average Family Income ($000s Cdn) | | | | | |
| | Before-Tax | | | After-Tax | | |
	U.S.	Canada	Canada Less U.S.	U.S.	Canada	Canada Less U.S.
0-5	2.0	4.0	2.0	1.4	4.0	2.6
5-10	6.0	8.2	2.2	5.8	8.1	2.3
10-15	8.3	10.3	2.0	8.0	10.1	2.1
15-20	10.9	12.7	1.8	10.2	12.1	2.0
20-25	13.7	15.7	2.0	12.6	14.5	2.0
25-30	16.5	18.3	1.8	14.9	16.8	1.8
30-35	19.4	21.1	1.7	17.3	18.9	1.6
35-40	22.3	24.0	1.7	19.7	21.2	1.5
40-45	25.4	27.3	1.8	22.3	23.6	1.4
45-50	28.8	30.5	1.6	24.9	26.1	1.2
50-55	32.4	33.8	1.5	27.7	28.5	0.9
55-60	36.2	37.3	1.1	30.7	31.0	0.3
60-65	40.4	40.9	0.6	33.8	33.7	-0.1
65-70	45.0	44.9	-0.1	37.4	36.7	-0.7
70-75	50.0	49.4	-0.6	41.4	39.9	-1.5
75-80	56.1	54.1	-2.0	46.0	43.4	-2.7
80-85	63.7	60.2	-3.5	51.6	47.8	-3.8
85-90	73.7	68.1	-5.6	58.8	53.7	-5.1
90-95	89.7	80.0	-9.7	69.9	62.4	-7.5
95-100	137.0	119.8	-17.2	98.8	88.9	-9.9
Total	38.9	38.0	-0.9	31.7	31.1	-0.6

Canadian and US Families, Average After-Tax Incomes by Vingtile Group 1988
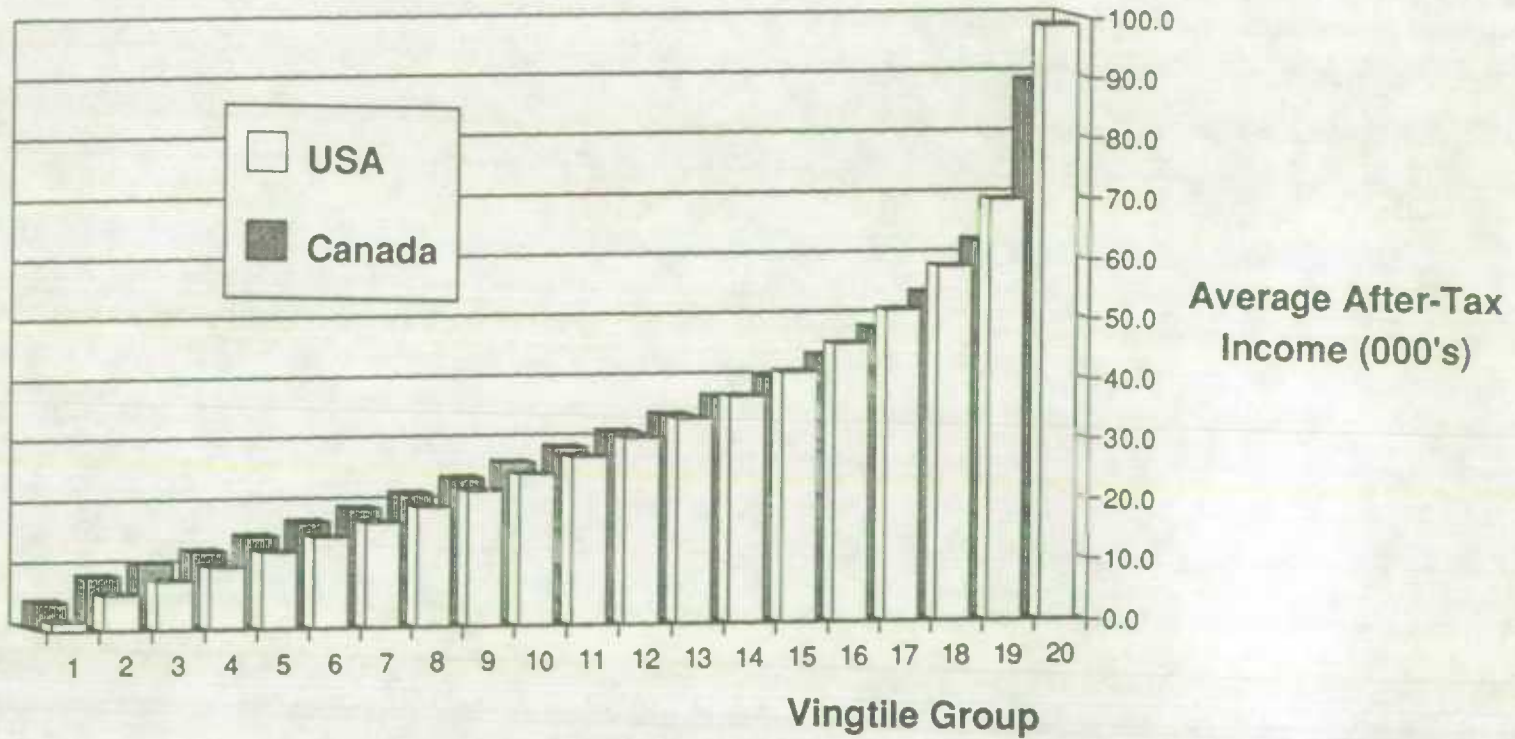
Some of these observed differences in income inequality might be attributable to differences in age structure, since the "baby boom" peak fertility rate was not quite as high in the U.S. and the subsequent "baby bust" fertility decline was not quite as pronounced. Differences in family size and composition might also be important, for example differing proportions of unattached individuals, lone parent families, and numbers of children per family. In fact, the two countries have a very similar breakdown of families by age of head, as shown in Table 2. The U.S. proportions of families are within about one percentage point of the Canadian proportions in each row. Average family sizes are also quite close. Average after-tax family incomes follow a very similar profile, peaking in the 45-54 age range. The U.S. figures are one to three thousand dollars higher within the over-45 age ranges, and about $700 lower in the under-25 age group. (Recall that all income amounts are in Canadian dollars.) The "older old" (age 75+) have considerably lower incomes than their immediate post-retirement counterparts (i.e. head's age 65-74) in both countries.

Table 2: Canadian and U.S. Families, 1988

Numbers, Average After-Tax Incomes, and Average Family
Size by Age of Family Head

Age of Head	Percent Distribution of Families		Average After-Tax Income ($000s Cdn)		Average Family Size	
	Canada	U.S.	Canada	U.S.	Canada	U.S.
0-24	6.8	7.7	16.5	15.8	1.55	1.69
25-44	45.2	44.6	33.0	33.3	2.88	2.79
45-54	15.5	14.5	41.0	42.2	3.01	2.80
55-64	13.9	13.1	33.8	35.9	2.29	2.19
65-74	10.3	10.7	23.6	26.4	1.83	1.81
75+	8.2	9.3	18.6	20.6	1.54	1.54
Total	100.0	100.0	31.1	31.7	2.51	2.41

There are, however, somewhat greater differences in the kinds of families in the two countries. The U.S. has slightly smaller families on average (2.4 versus 2.5 in Table 2) but a significantly larger proportion of lone parents, (12.5 versus 7.1 percent in Table 3). The U.S. also has

less than half the proportion of families containing more than one nuclear family (i.e. the "other" category -- e.g. adult siblings living together or parents living with married children -- 2.2 versus almost 5.7 percent in Canada). While these "other" types of families are relatively more numerous in Canada, they are smaller in size having on average 3.7 members compared to 4.9 in the U.S. Both countries are similar in that lone parents have the lowest average after-tax incomes, while couples with children over age 18 have the highest incomes.

Table 3: Canadian and U.S. Families, 1988

Numbers, Average After-Tax Incomes, and
Average Family Size by Family Type

Family Type	Percent Distribution of Families		Average After-Tax Income ($000s Cdn)		Average Family Size	
	Canada	U.S.	Canada	U.S.	Canada	U.S.
Unattached	30.7	34.2	16.3	18.0	1.00	1.00
Married No Children	21.3	20.4	33.3	37.4	2.00	2.00
Married kid<18	27.2	24.7	40.4	42.5	4.06	4.09
Married all kids>18	8.0	6.0	49.7	57.6	3.47	3.36
Lone Parent	7.1	12.5	23.5	24.1	2.57	2.69
Other	5.7	2.2	40.9	41.9	3.70	4.92

Further analysis, presented in the Appendix, suggests that the income inequality results and the conclusions from Figure 1 are not significantly affected if adjustments are in fact made to take account of the differences in family size and composition indicated in the last two tables. Thus, in summary, while the U.S. is richer on average, family incomes are more unequally distributed than in Canada. Moreover, taking account of differences in both the exchange rate and in purchasing power, the lower and middle classes in Canada had higher real incomes than their U.S. counterparts in 1988. (These higher real Canadian incomes in the lower and middle income ranges would be even higher than those of their U.S. counterparts if account were also taken of publicly provided health care and education.)

Another perspective on the comparative income distributions in the U.S. and Canada is given by looking at income ranges defined relatively in terms of each country's median family income, rather than dividing the population into percentiles as was done in Figure 1. Table 4

shows the distribution of families along the income spectrum classified this way -- with income adjusted for family size and composition[3]. This form of tabulation is convenient because it shows the extent of "poverty" (more precisely "low income") according to a widely used definition -- namely the proportion of families with adjusted incomes below half the adjusted median.[4] According to this common definition, the U.S. had about a 50% larger proportion of low income families (20.8% versus 13.5% in Canada). In other words, if the U.S. had Canada's proportion of low income families, there would be over seven million fewer U.S. families counted as poor by virtue of low income, a reduction of about one-third.

Table 4: Canadian and U.S. Families, 1988
Proportions and Average Family Size by Adjusted Income Ranges[a]

Income Ranges	Percent Distribution of Families		Average Family Size	
	Canada	U.S.	Canada	U.S.
"Poor"				
Under 50%	13.5	20.8	1.97	2.22
"Near Poor"				
50%-75%	18.8	14.7	2.28	2.39
"Middle Class"				
75%-100%	17.7	14.4	2.74	2.50
100%-125%	16.6	12.7	2.83	2.54
125%-150%	11.9	11.0	2.68	2.53
"Well Off" etc.				
150%-175%	8.6	8.3	2.61	2.47
175%-200%	5.0	5.7	2.52	2.42
200%-225%	4.8	6.6	2.52	2.42
225%-300%	1.7	3.0	2.41	2.36
300% and Over	1.4	2.8	2.25	2.10

a.   Income ranges are expressed as percentages of median adjusted after-tax family income. The median was adjusted using a .40/.30 equivalent adult unit scale.

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3   The adjustment is to divide each family's income by a scale factor based on family size and composition. This scale factor is computed as the sum of 1.0 for the first adult in the family, plus 0.4 for each subsequent adult, plus 0.3 for each child, plus 0.1 if it is a lone parent family (i.e. the first child in a lone parent family is treated like a second adult with a value of 0.4). These kinds of scale factors are known as equivalence scales. Based on these equivalence scale adjustments, median adjusted family after-tax incomes in Canadian dollars were $17,830 and $18,280 in Canada and the U.S. respectively. The Appendix provides further discussion regarding the slightly higher U.S. adjusted median figure.

4   This is not the official U.S. poverty definition. However, it is very similar to the proposed new "Low Income Measure" for Statistics Canada, and is often used in academic research.
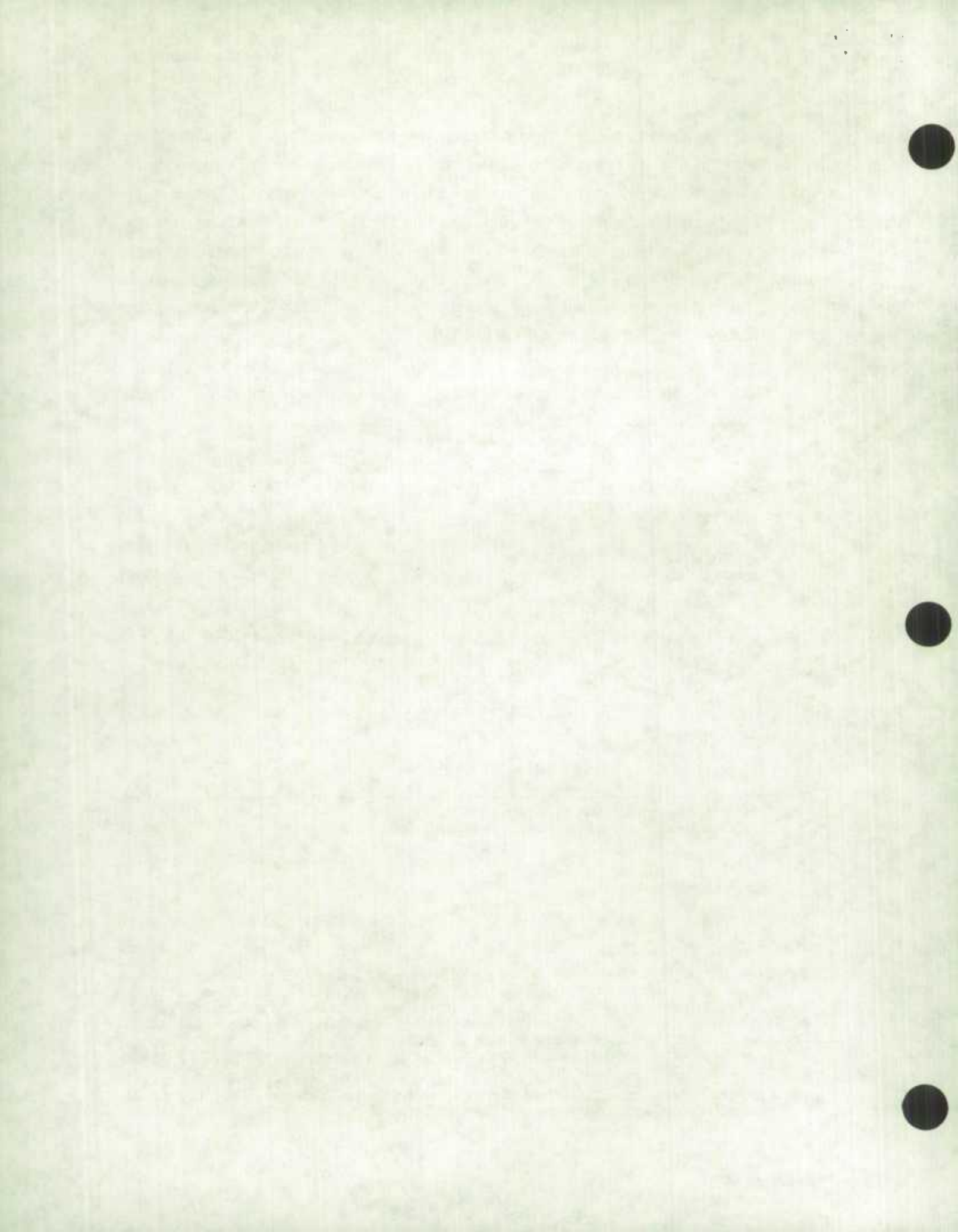
As well, U.S. low income families were further below the low income line than their Canadian counterparts -- with a "poverty gap" nearly one third again as large. On average, U.S. low income families were about $4,000 below their respective low income lines while Canadian low income families were about $3,100 below theirs (from tabulations not shown in this text). At the same time, Canada had relatively more "near poor" families with incomes just above the 50% adjusted median low income line -- 18.8 versus 14.7 percent with incomes between 50% and 75% of the median (all income figures adjusted for variations in family size). At the other end of the income spectrum, the U.S. had almost twice Canada's proportion in the highest income range. Almost 3 percent of U.S families had incomes over three times the family size-adjusted median (i.e. about $110,000 for a couple with two children), while the Canadian fraction was half that at 1.4 percent.

A different perspective on the distribution of income comes from the "disappearing middle class" debate. While it is not yet widely appreciated, this phenomenon of "polarization" is quite different from inequality as generally understood (Wolfson, 1989; Foster and Wolfson, 1991)[5]. One indicator of polarization, or equivalently the size of the middle class, is the share of the population with family incomes close to the median. Canada has a somewhat higher proportion of middle income families; about 46% of families have (adjusted) after-tax incomes between 75% and 150% of the median compared to 38% in the U.S. As a result, the U.S. distribution of family income is not only more unequal, it is also more polarized.

E. Elderly Singles and Couples

Most elderly and "near elderly" families are either single unattached individuals or married couples without any children or other relatives in their households. As shown in Table 5 for the three highest age ranges, the proportion of families that are either singles or couples rises from about 60% in the 55 to 64 age group in Canada to over 86% in the 75+ age group in both countries. The proportions of unattached individuals and couples within the higher age ranges are quite similar in the two countries. For this reason, and because these are homogeneous demographic groups, they are the focus in the comparison of incomes of the elderly.

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5 Conventional inequality measures like the Gini coefficient and any other measure consistent with Lorenz curve rankings of income distribution can be shown always to rank polarized (eg. bimodal) distributions as more equal. Hence, the two concepts are not equivalent. In fact, much of the confusion in the "disappearing middle" debate can be ascribed to a failure to use appropriate statistical measures.

Table 5: Canadian and U.S. Families, 1988

Proportions and Average After-Tax Incomes by Age and Family Type

Age of Head	Family Type	Percent Distribution of Families Within Age Group		Average After-Tax Income ($000s Cdn)	
		Canada	U.S.	Canada	U.S.
0-24	All	100.0	100.0	16.5	15.8
	Single	61.8	60.9	12.1	12.1
	Couples	16.8	10.0	26.8	28.1
	Others	21.5	29.1	21.0	19.3
25-44	All	100.0	100.0	33.0	33.3
	Single	25.2	29.7	19.0	21.5
	Couples	13.5	10.5	39.6	46.0
	Others	61.3	59.7	37.3	37.0
45-54	All	100.0	100.0	41.0	42.2
	Single	18.4	22.2	20.4	22.0
	Couples	16.0	18.2	40.1	43.5
	Others	65.6	59.6	46.9	49.3
55-64	All	100.0	100.0	33.8	35.9
	Single	25.9	28.1	16.3	18.6
	Couples	34.7	37.5	34.6	38.6
	Others	39.5	34.4	44.5	46.9
65-74	All	100.0	100.0	23.6	26.4
	Single	38.7	39.2	14.3	15.3
	Couples	41.6	42.3	26.3	31.2
	Others	19.7	18.5	36.3	39.1
+75	All	100.0	100.0	18.6	20.6
	Single	55.9	56.2	12.5	13.4
	Couples	30.4	30.2	23.8	27.9
	Others	13.7	13.7	32.3	34.3

Average Incomes of The Elderly

On average, U.S. unattached elderly individuals (ages 65-74 and 75+) have after-tax incomes about $1,000 higher than their Canadian counterparts, while U.S. elderly couples have incomes averaging as much as $5,000 higher ($31,200 versus $26,300 in the 65-74 age range). However, the similarities are as notable as the differences. In both countries, unattached individuals have much lower average incomes than couples, and the "older old" (age 75+, either single or couple) have lower average incomes than the "younger old" (age 65-74).

Another way to judge incomes of the elderly is in relation to incomes of pre-retirement families. Based on the figures in Table 5, Table 6 shows post-age 65 incomes as percentages of age 55-64 incomes. For example, U.S. age 65-74 couples' incomes average 80.8% of their immediate pre-retirement counterparts (i.e. age 55-64). Compared to this 19% drop, the corresponding 24% drop in income for couples in Canada is somewhat sharper. Similarly, U.S. age 75+ couples at 72.3% of 55-64 age couples show a somewhat smaller drop in after-tax incomes than their Canadian counterparts. Canadian elderly singles, on the other hand, have incomes that drop by smaller percentages than their U.S. counterparts.

Table 6: Canadian and U.S. Families, 1988

Average Incomes of Elderly Cohorts (ages 65-74 and 75+) as Percentages
of the Average Incomes of the Pre-Retirement Cohort (age 55-64)

Age of Head	Family Type	Canada	U.S.
65 - 74	single[a]	87.7	82.3
	single[b]	41.3	39.6
	couple	76.0	80.8
75+	single[a]	76.7	72.0
	single[b]	36.1	34.7
	couple	68.8	72.3

a. As a proportion of the corresponding 55-64 single average income

b. As a proportion of the corresponding 55-64 couple average income
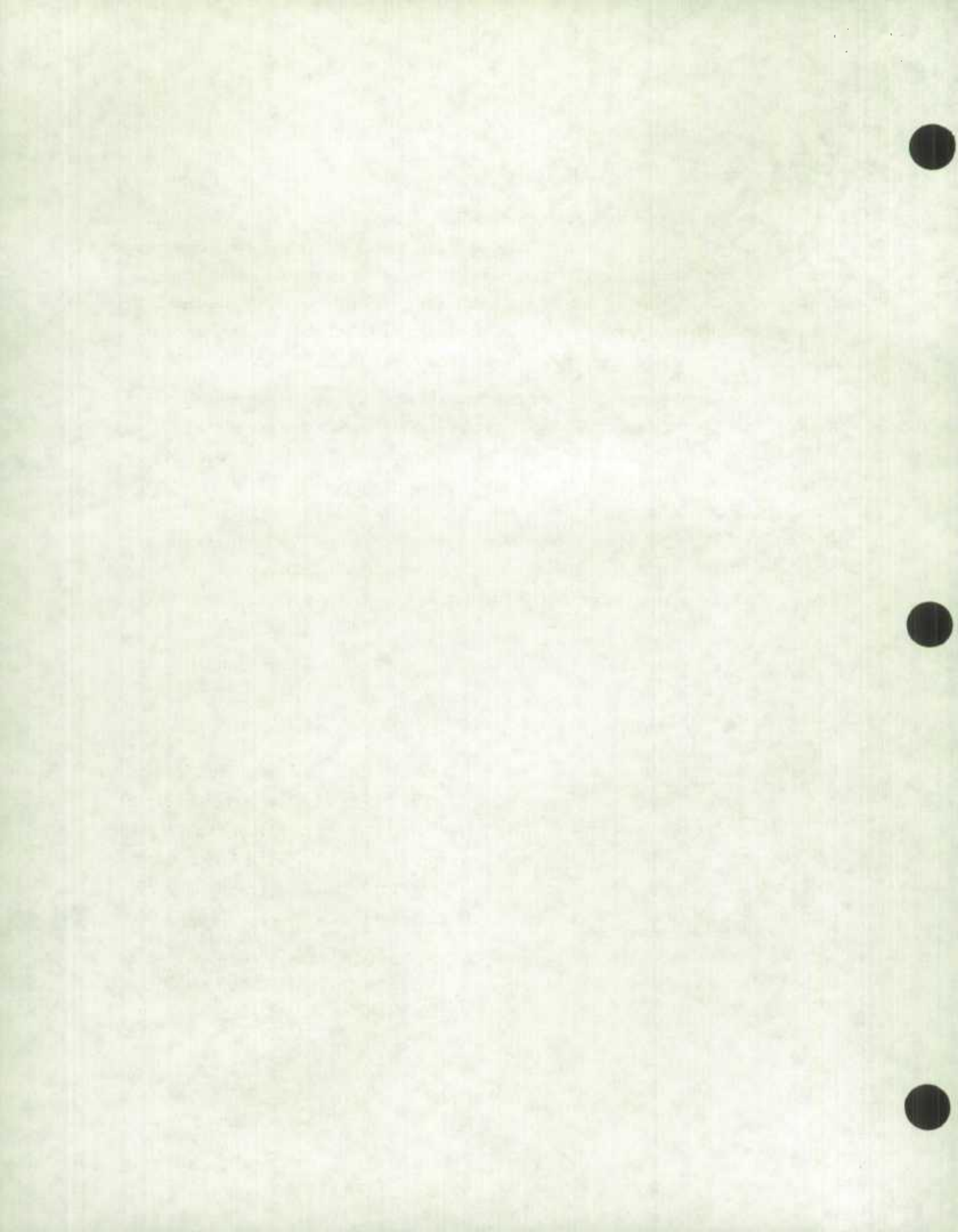
While these proportions are cross-sectional rather than longitudinal, they do give a rough indication of the average "replacement ratios" realized by the elderly in each country. The replacement ratio is important in indicating the extent of the drop in income the elderly can expect upon and during retirement. The ratios in Table 6 indicate that in both countries there is a 19 to 24% drop in relative income for couples upon retirement, and a further 7 or 8% drop as the couples age one decade. The sharpest declines, however, are for surviving spouses (most often women) of a couple. If these cross-sectional data are taken as indicative of the longitudinal realities, then a widow can expect an income after age 75 about one-third her pre-retirement couple's income in either country.

It is quite difficult to estimate proper longitudinal replacement ratios, particularly on a family rather than on an individual basis, and on a basis that takes account of all sources of income and taxation. Wolfson (1987) provides detailed estimates for Canada based on the following items:

Pre-Retirement	Post-Retirement
+ labour income	+ public pensions
+ interest and dividends	+ private pensions
+ government transfers	+ interest and dividends
+ imputed rent	+ imputed rent
- savings	+ other government transfers
- taxes	+ dis-saving
- work-related expenses	- taxes

Based on this definition of net replacement, Wolfson's (1987) analysis shows that the lowest quintile of the pre-retirement career average earnings distribution can expect very high net rates of replacement -- on the order of 100% or higher. The reason for this result is that federal public pension transfers dominate post-65 income guarantees, while provincial Social Assistance programs provide the basic "safety net" income guarantees at ages below 65. These latter benefit guarantees are lower than the federal public pension guarantees.

In the middle 60% of the pre-retirement career average earnings distribution, the picture shifts. On the order of one-third of the population can expect a net replacement rate of 85% or less. This latter result depends critically on the indexing assumption for the Old Age Security Pension and the Guaranteed Income supplement. a point to which we return later.
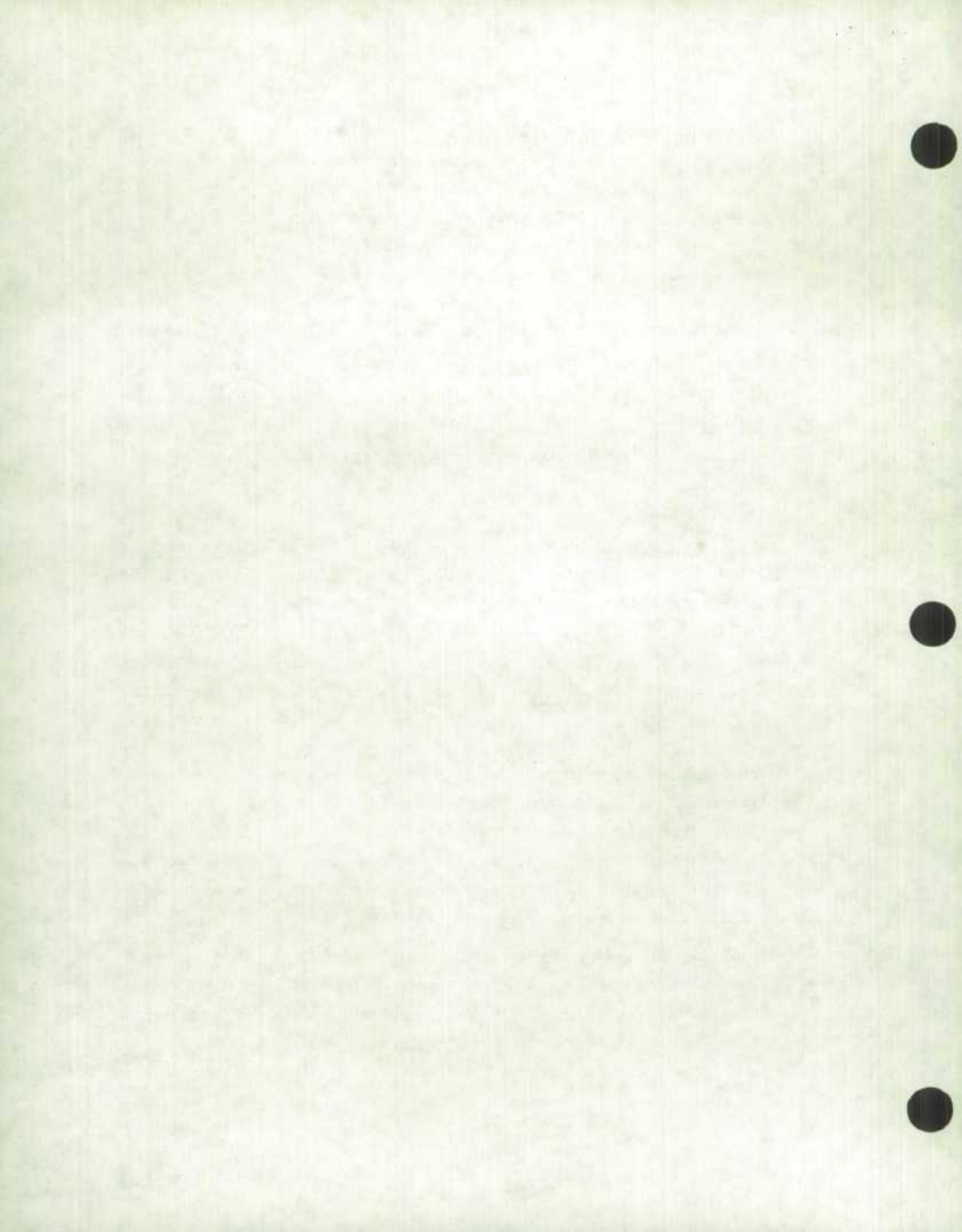
Similar estimates of U.S. net replacement ratios appear unavailable. The U.S Committee on Ways and Means (1988) provides replacement ratio estimates for Social Security; but these are for individuals only rather than for families; they do not take account of income or payroll taxes; nor do they take account of other sources of income such as private pensions, savings, and home ownership. These "gross" replacement ratios for an "average earner" are about 41% from Social Security (1988, page 14).

Sources of Income for the Elderly

The largest source of income of the elderly (ages 65+) in both countries is from public pensions. On average, government sources of income provide around one-half of total income, as shown in Table 7.

There is an apparent contradiction in Table 7 in the relative importance of public pensions in the two countries. Public pensions are a larger proportion of GDP in the U.S. than in Canada, so we might expect that average dollar levels per elderly family would also be higher. However, as shown in Table 7, the average level of public pension income for both elderly age groups (65-74 and 75+) and for both family types (singles and couples) is higher in Canada. The main factor that accounts for this apparent contradiction with the aggregate figures is that over one-third of U.S. OASDI benefits are paid to individuals under age 65 (Table 15, p29, U.S. Committee on Ways and Means, 1988). This is the dominant component of public pensions in the U.S.[6] In contrast, well over 90% of Canadian public pension payments are paid to seniors age 65 and over[7]. Moreover, the elderly are relatively more numerous in the U.S. -- 12.1 percent of the population is age 65+ compared to 10.7 percent in 1986; for the 75+ age groups the figures are 5.0 versus 4.1% respectively (OECD, 1988).[8]

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6   SSI, the next largest component, amounts to about 5% of aggregate OASDI, and about half of adult SSI beneficiaries are under age 65. (op cit p533))

7   Certain C/QPP benefits (orphans, survivors under 65, disability) as well as the Spouse's Allowance benefits are paid to persons under age 65. Person's age 60-64 have recently become able to commence their C/QPP retirement benefits before the normal age of 65, but this was negligable in 1988.

8   These population patterns are expected to reverse by the turn of the century with Canada projected to have a consistently higher percentage of its population age 65+ and 75+. The OECD projects Canada having a slightly lower share of GDP spent on public pensions even when Canada's elderly population is a larger fraction of the total population (OECD 1988c, Tables 3.1 and 3.2). This latter finding suggests that on per capita terms, the Canadian public pension system is less generous than that in the U.S. The key point is that a larger proportion of Canadian public pensions go to the elderly than in the U.S.

Table 7: Canadian and U.S. Elderly and Near Elderly Families, 1988

Numbers and Average Incomes ($000s Cdn) by Source, Family type and Age

Item	Country	Unattached Individuals			Married Couples		
		55-64	65-74	75+	55-64	65-74	75+
Families (Millions)	Canada	0.37	0.40	0.47	0.49	0.43	0.25
	U.S.	3.70	4.22	5.23	4.94	4.55	2.81
Source of Income							
Total Income	Canada	19.6	15.9	13.4	43.7	29.5	26.4
	U.S.	24.1	16.9	14.4	49.1	35.8	31.1
Labour Income	Canada	10.9	1.2	0.1	32.1	4.6	1.9
	U.S.	15.1	2.6	0.7	34.9	8.7	3.5
Investment Income	Canada	4.8	6.0	4.9	7.7	11.6	10.6
	U.S.	6.1	7.2	6.5	11.1	15.3	14.6
Government Income	Canada	3.5	8.5	8.3	3.1	12.9	13.6
	U.S.	2.4	7.0	7.1	2.9	11.6	12.8
Pensions	Canada	1.8	7.9	7.7	1.6	11.9	12.8
	U.S.	2.0	6.8	7.0	2.4	11.2	12.6
Other	Canada	1.7	0.6	0.6	1.5	1.0	0.7
	U.S.	0.4	0.2	0.1	0.5	0.4	0.2
Other Income	Canada	0.4	0.2	0.1	0.7	0.4	0.3
	U.S.	0.4	0.1	0.1	0.1	0.1	0.1
Income Taxes	Canada	3.3	1.6	0.9	9.1	3.2	2.6
	U.S.	5.4	1.6	1.0	10.4	4.6	3.2
Income After Tax	Canada	16.3	14.3	12.5	34.6	26.3	23.8
	U.S.	18.6	15.3	13.4	38.6	31.2	27.9

In contrast to the situation with public pensions, U.S. seniors have higher average incomes from private sources than Canadian Seniors. They have one to four thousand dollars more per year from working, and similarly larger average incomes from investments and private pensions. In turn, the higher incomes seniors receive from working might account for the lower average public pensions in the U.S. just noted, due to the workings of Social Security. We return to this point shortly.

Income Sources by Income Range

The adage "beware of the mean" is appropriate in these comparisons of income sources of seniors in the two countries. As we saw earlier, the U.S. distribution of income is generally more unequal and more polarized. More importantly, even though average incomes are higher in the U.S., the first 60 to 65% of Canadian families have higher (before- and after-tax) incomes than their U.S. counterparts.

In order to address these kinds of points for the elderly, Tables 8 and 9 expand on the figures given in Table 7 with further details by income range. As in Table 4, the income ranges are expressed as percentages of the median adjusted after-tax family income for all families (not just seniors). Even though U.S. seniors have higher average incomes, the U.S. has from 6 to 24 percentage points higher incidence of low income elderly families (depending on the age group and single versus couple). For example, 11.1% of U.S. married couples with family head age 65-74 had "low incomes", while the percentage for corresponding Canadian families was 5.4. The "poverty rate" for single individuals age 65-74 was much higher in the U.S. -- 37.8% compared to 16.6% in Canada.

Table 8 also shows that in Canada, the incidence of low income declines after age 65, while in the U.S. it increases. This is perhaps ironic, given the much more explicit debate in the U.S. compared to Canada over inter-generational equity. This in turn was fuelled in part by feelings that the U.S. elderly were quite well off compared to other priority social policy concerns, particularly child poverty (Myles and Quandango, 1991; Cook et al., 1991).

Table 8: Canadian and U.S. Elderly and Near Elderly Families, 1988

Numbers, Average Incomes, and Labour Force Status by Age, Family Type, and Adjusted Income

Age of Head	Family Type	Income Range[a]	Families (%) Canada	Families (%) U.S.	Average After-Tax Income ($000s Cdn) Canada	Average After-Tax Income ($000s Cdn) U.S.	Percent Working[b] Canada	Percent Working[b] U.S.
55-64	Single	0-50	33.0	32.4	5.9	5.2	22.4	21.8
		50-100	32.8	29.2	12.9	13.6	48.5	67.0
		100-150	18.4	18.5	21.2	22.5	70.6	78.1
		150+	15.8	19.8	39.3	44.5	85.5	87.6
		All	100.0	100.0	16.3	18.6	49.8	58.5
	Couple	0-50	9.4	8.9	7.4	7.2	27.0	38.5
		50-100	27.1	22.2	19.2	19.8	66.3	68.9
		100-150	29.5	26.2	30.5	31.9	84.4	84.2
		150+	34.0	42.7	58.0	59.0	96.8	93.4
		All	100.0	100.0	34.6	38.6	78.3	80.7
65-74	Single	0-50	16.6	37.8	7.4	6.4	1.6*	5.6
		50-100	63.4	33.6	12.1	13.2	5.7	21.5
		100-150	12.4	16.8	21.2	22.1	15.5	35.3
		150+	7.7	11.8	36.3	39.9	42.3	39.3
		All	100.0	100.0	14.3	15.3	9.0	19.9
	Couple	0-50	5.4	11.1	10.3	8.8	8.1*	14.4
		50-100	54.6	35.7	18.6	19.2	17.9	28.7
		100-150	25.1	27.1	30.3	31.5	32.3	42.0
		150+	14.9	26.0	53.6	56.8	55.8	53.5
		All	100.0	100.0	26.3	31.2	26.7	37.2
75+	Single	0-50	19.9	44.2	7.5	6.5	--	1.7*
		50-100	68.4	35.8	11.5	12.7	1.2*	4.9
		100-150	7.2	11.8	21.2	22.0	7.0*	10.1
		150+	4.6	8.3	35.0	41.1	6.5*	16.6
		All	100.0	100.0	12.5	13.4	1.6*	5.1
	Couple	0-50	3.4	17.4	9.6	9.5	--	4.2*
		50-100	69.2	41.8	18.0	18.8	3.7*	12.4
		100-150	16.9	20.9	30.3	31.2	13.2*	19.3
		150+	10.5	19.9	56.2	59.7	37.1*	35.7
		All	100.0	100.0	23.8	27.9	8.7	17.1

Notes:
- \-\-   No sample for working population.
- *   Sample size of working population very small.
- a.   After-tax income ranges expressed as percentages of median adjusted after-tax family income.
- b.   Fraction of family units with labour income accounting for more than $500 Cdn of after-tax income within age/family type/country/income range.
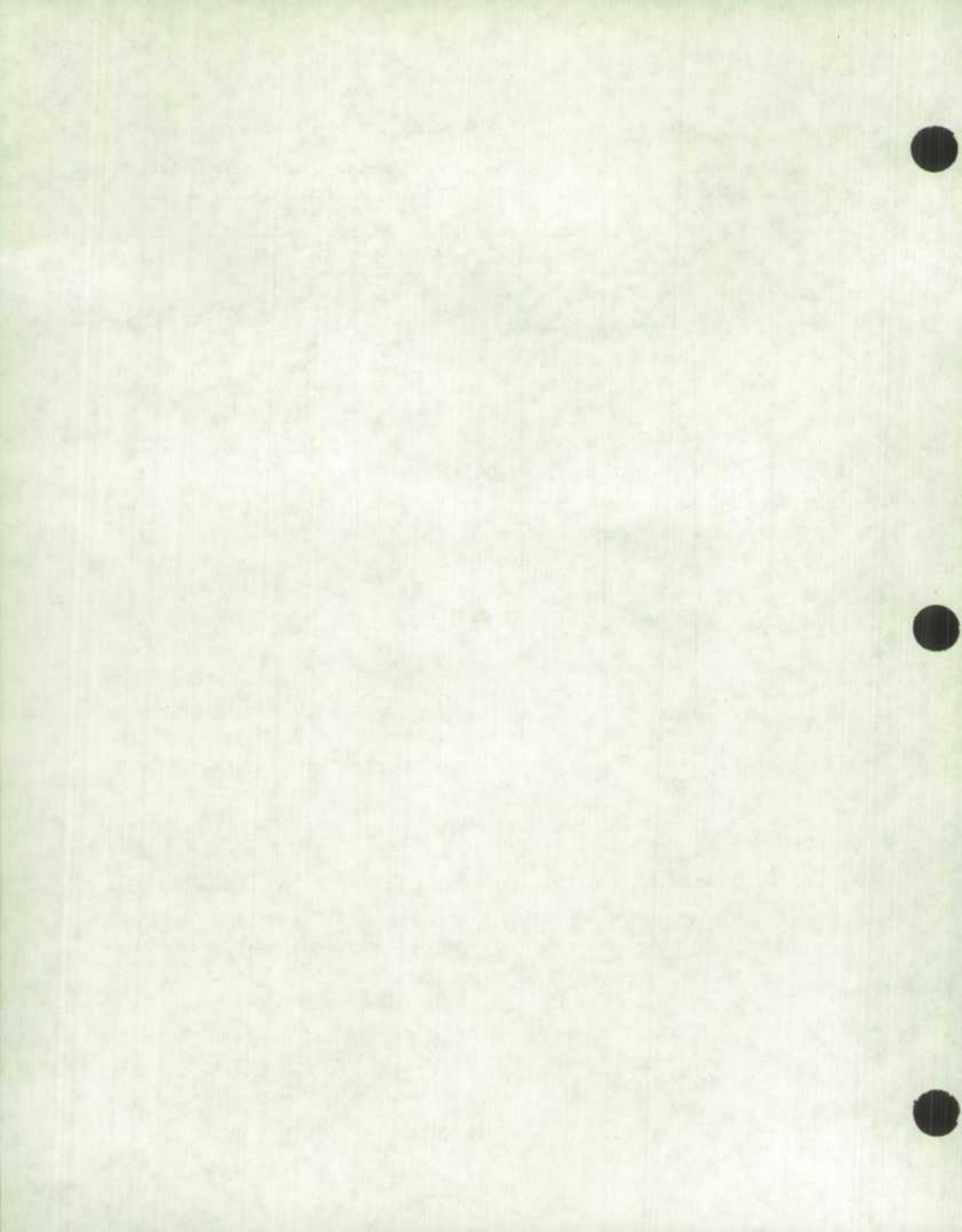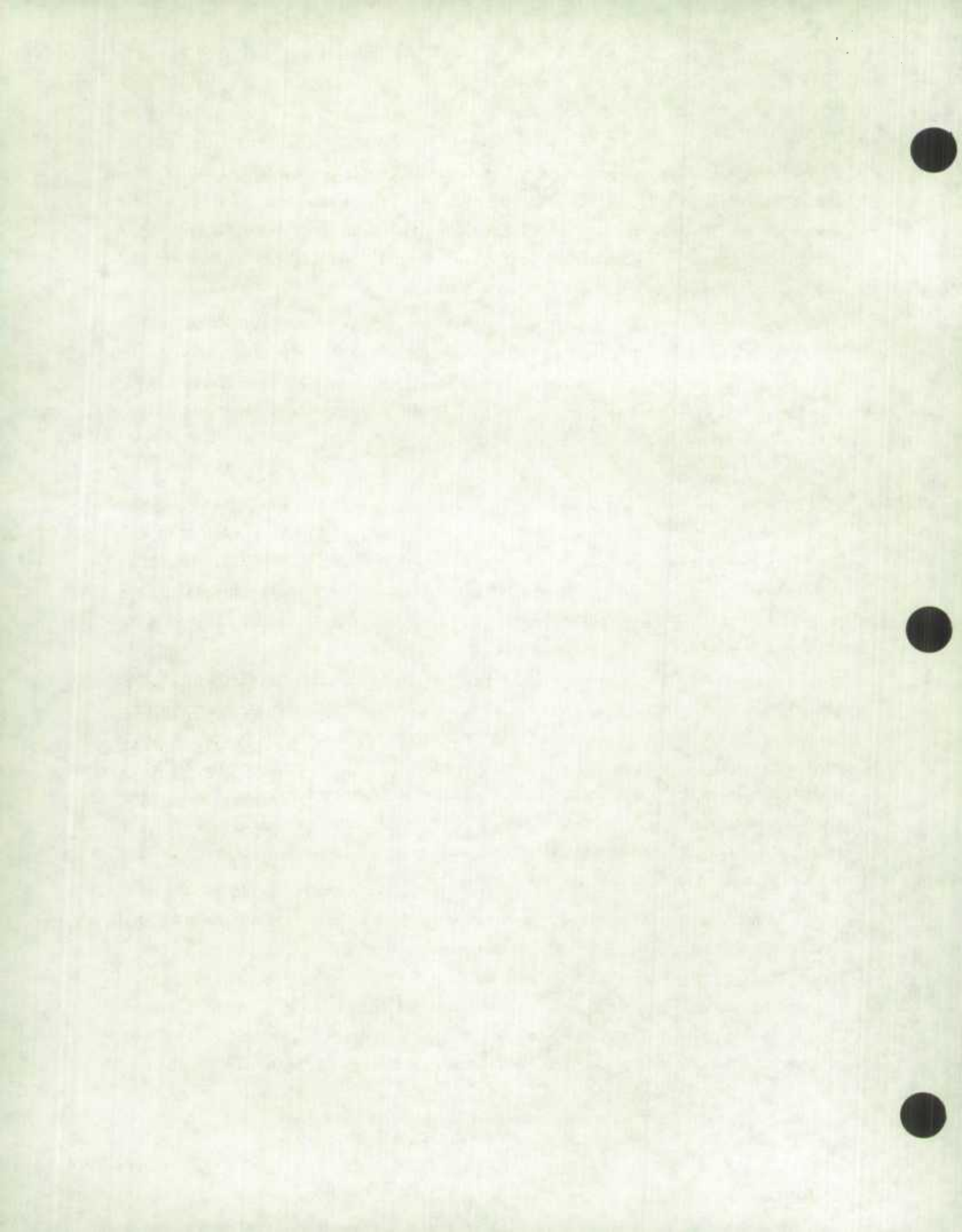
Not only is there a higher proportion of elderly families with low incomes in the U.S., the average depth of low income is up to $1,500 greater in the U.S. (average income $10,300 in Canada and $8,800 in the U.S.). At the same time, there are relatively more U.S. elderly families in the highest tabulated income range (over 1.5 times the adjusted all-family median). Thus the pattern of higher inequality and higher incidence of low income in the U.S. as compared to Canada applies in respect of the elderly as well as overall.

Table 8 also shows the percentages of families with non-trivial attachment to the labour force (indicated by receipt of more than $500 Cdn of labour income). Overall, Canadian senior unattached individuals and couples are considerably less likely to be working than their U.S. counterparts -- by about ten percentage points. This is in line with the higher average amounts of labour income among U.S. seniors shown in Table 7.

The greater incidence of low income amongst U.S. seniors is consistent with the view that the U.S. public pension system is not as generous as Canada's at the low end of the income spectrum. This is because the U.S. public pensions are dominated by benefits that are proportional to average pre-retirement earnings. Even though these earnings-related benefits are calculated according to a progressive formula of nominal replacement rates, very low average pre-retirement earnings will still result in very low public pensions. The U.S. benefit formula is 90% of average earnings up to an annual amount of $3,828, 32% of the next $19,236, and 15% of the next $4,662 for a maximum pension of $10,300 on maximum pensionable earnings of $27,726 in 1988 (U.S. dollars). Subject to an "earnings disregard", in 1988 Social Security benefits were reduced by 50% of employment income for recipients under age 70. In addition, subject to both an income and an asset test, elderly with minimal other sources of income are eligible for SSI which varies by state and amounts to at least $4,248 and $6,384 for individuals and couples living independently. Thus, in Canadian dollars, public pensions range from $5,310 (lowest SSI of an independent elderly individual) to $12,875 (maximum individual old age retirement pension assuming normal retirement age) to $19,313 for a couple.

The earnings-related Canada and Quebec Pension Plans (C/QPP) provide pensions with a lower nominal replacement rate and a lower maximum pension than with U.S. Social Security -- 25% of average pre-retirement earnings up to a maximum retirement pension of $6,517 on maximum pensionable earnings of $26,500. However, the C/QPP are accompanied by the Old Age Security (OAS) pension demogrant which provides $3,788 for every person age 65+ (except for adjustments for recent immigrants), and the Guaranteed Income Supplement (GIS) which pro-

vides maximum annual benefits of $4,501 and 5,863 for individuals and couples. The GIS, unlike SSI, has no means test, but is subject to a general 50 cent reduction for each dollar of other income (excluding OAS but including C/QPP). Unlike Social Security, in 1988 neither C/QPP or OAS were subject to reductions on account of earnings[9]. Thus, Canadian public pensions range from a minimum of $8,289 (maximum GIS plus OAS for an unattached individual) to $16,698 (couple with partial GIS, two OAS benefits, and one maximum C/QPP).

Even though a casual examination of the benefit formulae of the two countries' earnings-related public pensions would leave the impression that the U.S. system provides higher replacement rates in the middle pre-retirement income ranges, this is incorrect because it fails to take account of the OAS elderly demogrant in Canada. These characteristics of the public pension programs, in turn, account for the observation in Table 9 that average incomes from public pensions are quite similar in Canada and the U.S. within all age, family type and income ranges (often only a few hundred dollars difference)[10].

This trend is also apparent for the "non-working" population shown at the bottom of Table^9[11]. There is not a large difference in average public pensions between the two countries for those not working. There is some difference between the overall and the non-working population in terms of average income from public pensions, with the latter having public pensions averaging as much as $1,500 higher in both countries.

The similarities in the results are somewhat curious given the nominal incentive effects of the two countries' public pension systems with respect to contemporaneous earnings. Leaving aside personal income taxes, the only significant marginal tax on earnings in Canada comes vis the GIS at a 50% rate which applies to the first $10,000 of earnings (less any C/QPP benefits). In the U.S. system, a 100% rate is applied by SSI on earnings up to roughly $5000, and a 50% rate applies in Social Security on earnings over $8,400. Thus, throughout most of the lower-middle range of earnings, the U.S. public pension system in 1988 typically imposed equal or higher effective marginal tax rates than the Canadian system. Yet, U.S. elderly generally had higher incomes from working and from investments and private pensions in all income ranges.

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9   However, both OAS and C/QPP are fully included in income for tax purposes while only up to 50% of Social Security is Taxable. Also, starting in 1989, OAS benefits are reduced by 15% of income in excess of $50,000, while in 1990 the reduction rate for earnings under Social Security dropped from 50% to 33%.

10   Note that the income averages in Table 9 are lower than the minimum guarantees in Canada. This is due in part to: the 65-74 population includes couples where one spouse is under age 65; less than 100% of eligible families apply for benefits; and problems of under-reporting on the survey.

11   Some have negative labour income, due to losses on self-employment.

The implication is that culture and community norms, or perhaps fears regarding inadequate health insurance,[12] play a much greater role in determining labour force participation among seniors than the conventional price variables of mainstream economic theory.

Table 9:Canadian and U.S. Elderly and Near Elderly Families, 1988

Average Incomes ($000s Cdn) by Age Group, Family Type, and Adjusted Income[a]

Age of Head	Family Type	Income Range (%)	Canada					U.S.				
			Labour	Public Pensions	Other Transfers	Invest- ments	Income Taxes	Labour	Public Pensions	Other Transfers	Invest- ments	Income Taxes
55-64	Single	0-49	1.0	1.4	2.8	0.6	0.1	1.7	2.8	0.5	0.8	0.7
		50-99	5.7	2.5	1.7	4.4	1.7	9.3	2.1	0.4	3.6	2.0
		100-149	16.4	1.7	0.8	6.3	4.4	19.4	1.5	0.4	6.4	5.6
		150+	36.1	1.3	0.3	12.8	12.0	41.7	0.9	0.3	18.3	18.0
	Couple	0-49	1.7	2.0	2.9	0.9	0.1	3.3	3.3	0.3	1.6	1.5
		50-99	10.4	2.5	2.3	5.3	2.2	12.0	3.6	0.4	6.1	2.4
		100-149	24.9	1.6	1.3	8.0	6.0	25.6	2.8	0.6	8.6	5.7
		150+	64.2	0.7	0.8	11.3	19.8	59.1	1.4	0.5	17.2	19.4
65-74	Single	0-49	0.0	6.4	0.6	0.5	0.2	0.1	5.6	0.1	0.6	0.0
		50-99	0.4	8.3	0.6	3.4	0.6	1.6	7.4	0.1	4.4	0.4
		100-149	2.0	7.8	0.5	14.2	3.6	4.8	7.5	0.4	11.5	2.2
		150+	9.7	8.0	1.3	26.0	9.3	10.2	7.8	0.5	30.4	9.7
	Couple	0-49	0.1	7.1	1.8	1.4	0.1	2.2	7.5	0.2	1.6	2.7
		50-99	1.3	12.4	0.8	4.5	0.6	2.5	11.6	0.2	5.2	0.3
		100-149	4.3	11.8	1.2	16.3	3.8	6.7	11.9	0.5	14.4	2.0
		150+	18.7	12.0	1.1	33.3	12.8	22.0	11.6	0.8	36.1	14.1
75+	Single	0-49	0.0	6.9	0.3	0.3	0.1	0.0	5.8	0.1	0.5	0.0
		50-99	0.0	8.1	0.6	2.9	0.3	0.3	7.7	0.2	4.6	0.2
		100-149	0.4	6.9	1.1	16.0	3.5	1.2	8.2	0.2	13.6	1.5
		150+	1.5	6.6	0.5	36.5	10.9	4.7	8.7	0.2	36.4	9.2
	Couple	0-49	0.0	7.8	0.9	0.9	0.0	0.1	8.1	0.1	1.1	0.0
		50-99	0.1	13.1	0.7	4.2	0.3	0.8	12.7	0.1	5.4	0.2
		100-149	1.7	12.5	0.6	18.5	3.6	2.2	14.0	0.3	15.7	1.2
		150+	14.3	13.1	1.0	43.7	17.1	13.7	15.1	0.2	44.6	14.3
Labour Income < $500 Cdn												
65-74	Single	0-49	0.0	6.5	0.6	0.5	0.2	-0.1	5.7	0.1	0.7	0.0
		50-99	0.0	8.5	0.5	3.4	0.6	0.0	7.9	0.1	5.2	0.2
		100-149	0.0	8.0	0.6	15.9	3.6	0.0	8.4	0.4	14.6	1.5
		150+	0.0	8.3	1.4	35.3	9.3	-0.2	8.6	0.3	37.3	7.5
	Couple	0-49	-0.1	7.2	1.9	1.4	0.1	-0.3	7.7	0.2	1.4	0.0
		50-99	0.0	13.1	0.7	4.7	0.5	-0.1	12.8	0.2	6.1	0.1
		100-149	0.0	12.5	1.3	19.3	3.5	0.0	13.0	0.6	18.6	1.1
		150+	0.0	13.5	1.6	48.7	11.9	-0.1	14.0	1.2	46.0	8.6

a.   Income expressed as proportions of median adjusted after-tax family income

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[12] About half of the "somewhat poor" (our definitions) of the U.S. elderly are at risk because of incomplete health care insurance, which most then top up by private unsubsidized medigap insurance (Holden and Smeeding, 1990).

F. The Future

A major difference in the Canadian and U.S. public pension systems is their expected evolution. While the Canadian system may appear "kinder and gentler" in 1988, will it still be so when the baby boom generation reaches age 65 in about 2025? Unfortunately, this is not at all clear. The question turns critically on the ways pension benefits will be updated. Based on current legislation in the two countries, it can be expected that Canadian public pensions will decline relative to those in the U.S. The major U.S. public pension benefit is Social Security, which is closely tied to levels of earnings. Thus, if real per capita economic growth amounts to one percent per annum over the next 35 years (i.e. less than in the post World War II period, but higher than the 1980s), future U.S. pensioners will automatically share in the increased wealth, since their pensions are largely earnings-related. These provisions are longstanding and relatively stable parts of the U.S. legislation.

The situation in Canada is more complex, as several counteracting forces will be at work. Canada's public pension system is younger and is still in a process of maturation, particularly the earnings-related C/QPP. The C/QPP were introduced in 1966 and phased in over ten years. Thus, individuals in their late 80s in 1988 received no C/QPP benefits at all, whereas future seniors at all ages will receive benefits in relation to their pre-retirement earnings. Also, with the dramatic increases in female labour force participation, the numbers of elderly women receiving C/QPP retirement (not just survivor) benefits will also increase significantly. However, the C/QPP earnings-related pensions are not the most important part of the Canadian public pension system. The Old Age Security (OAS) demogrant and the Guaranteed Income Supplement (GIS) combined are 70% larger than C/QPP in aggregate dollar terms. (About 120% and 50% of C/QPP benefits respectively.)

Murphy and Wolfson (1991) provide a series of detailed projections of these pension programs, and examine factors such as the expected maturation of the C/QPP, increasing female labour force participation, population growth, and the indexing provisions of the OAS and GIS. These two major elements of the pension system are indexed to the CPI, so that any real economic growth will cause them to shrink relative to average wages and relative to the C/QPP. Taking a scenario where the current legislation remains unchanged through to 2036 (when the trailing edge of the Canadian baby boom attains age 65), and real per capita economic growth
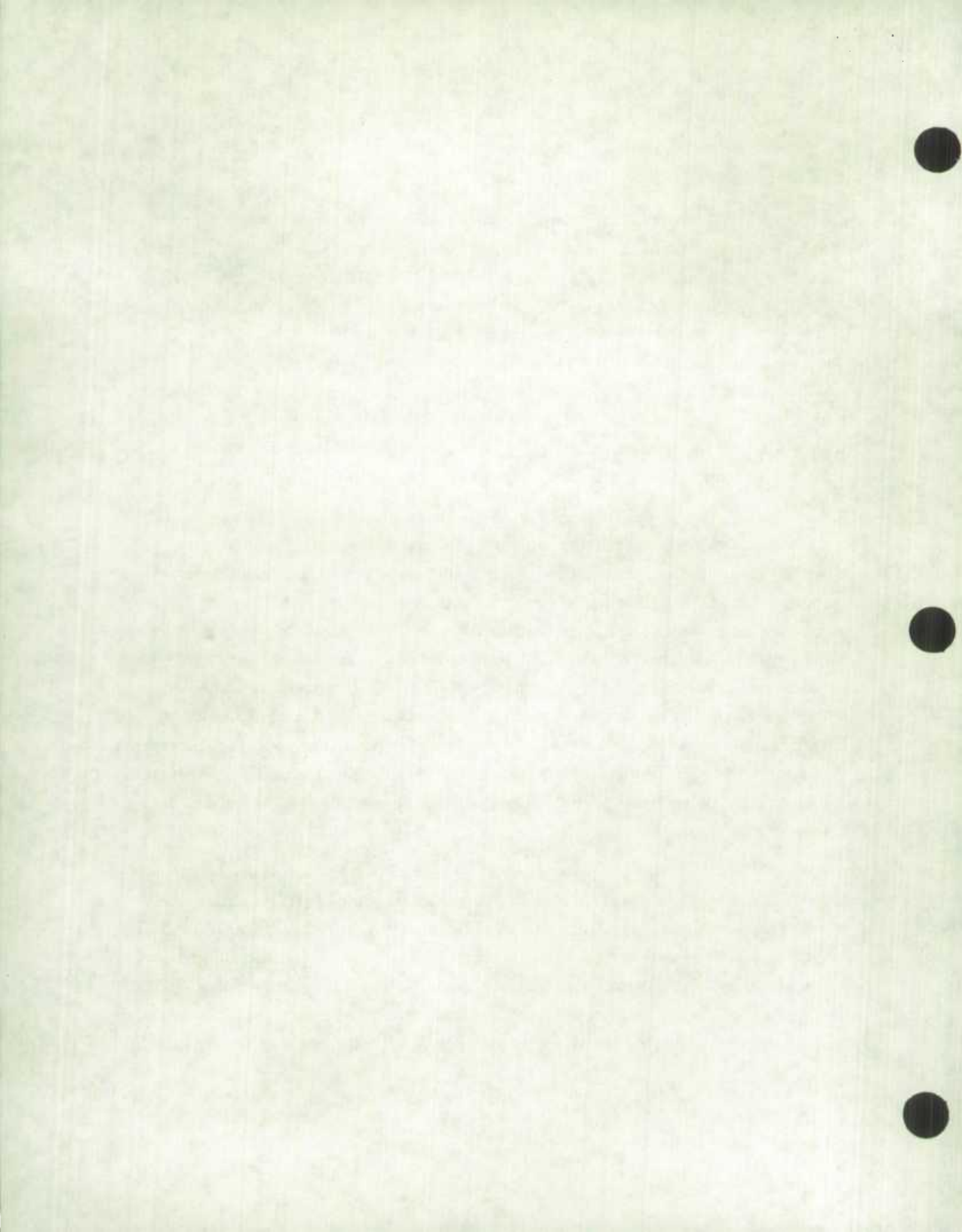
averages one percent per annum, the projections indicate that the proportion of the elderly with "low income" (defined exactly as earlier -- less than 50% of median adjusted income) will quadruple.

Such projections assume no policy response during the intervening years; and this may be considered unlikely. However, a key implication is that the currently legislated Canadian public pension system is "dynamically unstable", and perhaps moreso than the U.S. pension system. If U.S. legislation remains unamended, Social Security will continue to play roughly the same role for the elderly relative to their pre-retirement situation in the future as it does now. Of course, with an increasing proportion of elderly in the population, Social Security will increase as a percentage of the total economy, and this may emerge as an increasing source of pressure to reduce benefits (though this pressure is already offset to some extent by the legislated two year increase in the normal retirement age). In Canada, the pressures would most likely be in the opposite direction, to raise pension benefits significantly relative to existing legislation. Arguably, the latter pressures could be stronger, since increasing (relative) poverty amongst the elderly in Canada would be occurring in conjunction with real economic growth. This same kind of real economic growth in the U.S. would tend to mitigate concerns about the increasing share of the elderly in the total population, and hence Social Security in the economy.

G. Conclusions

The conventional wisdom is first that the U.S is generally a wealthier country than Canada. Second, the U.S. is seen as having a larger and more generous system of public pensions, with OECD aggregate figures showing U.S. public pensions one third again as large a share of GDP. This second point is reinforced by the fact that Social Security was instituted 30 years earlier than the Canada and Quebec Pension Plans and is more mature. However both of these impressions have been shown to be misleading by delving into the underlying data.

In fact, the first 60-65% of Canadian families have higher average after-tax incomes than their U.S. counterparts in 1988, after converting currencies using purchasing power parities. Canada's public pensions are also more generous for the poorest among the elderly, and also for those who had middle level incomes prior to retirement. U.S. family incomes are more unequally distributed; and there are relatively more families who are poor based on a commonly used measure of low income. In proportion to its population, the U.S. has a smaller middle class, but more well-to-do families.

U.S. society is at a different point on the presumed trade-off between the size of the pie, and the way it is divided. The majority of Canadian families are absolutely better off, while a minority of higher income U.S. families are better off than their Canadian counterparts -- both families generally and the elderly in particular.

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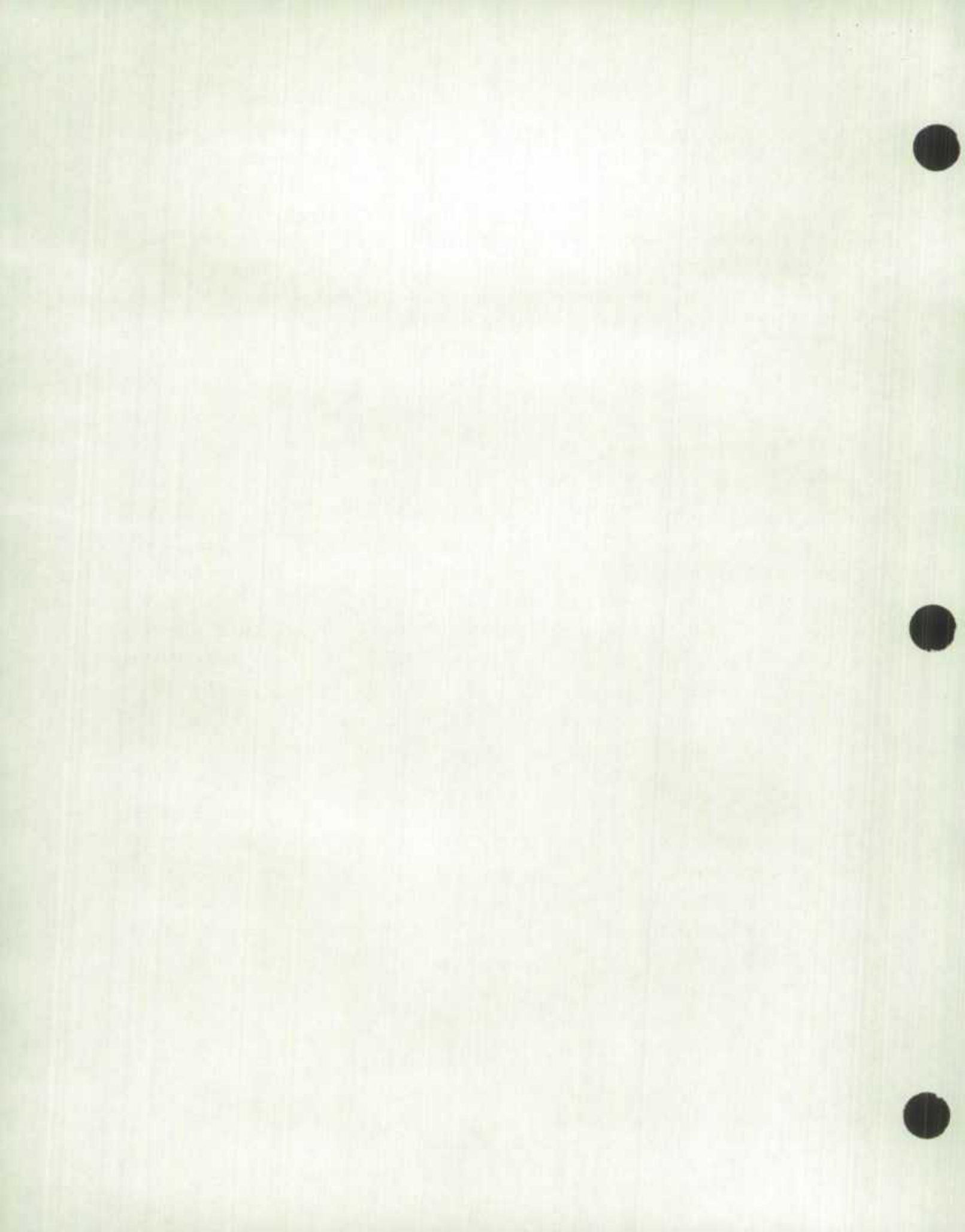
APPENDIX

The "parade of dwarfs (plus a few giants)" shown in Figure 1 is the basis for observing that the first 60-65% of Canadian families were better off than their U.S. counterparts. Since this result may be counter to the conventional wisdom, it is important to assess its quality.

The starting points in the discussion were first that GDP per capita valued at exchange rates in 1988 was 5% higher in the U.S., and that mean family income valued a PPPs was 2.2% higher in the U.S. Contrasting the 5% and 2.2% differences, several explanations are possible. One is the 2% difference between the exchange rate (1.231 Canadian dollars per U.S. dollar) and PPP (1.25) in 1988; another is the difference between household spending as a proportion of GDP between the two countries (individual final consumption at 65.2% of GDP in the U.S. compared to 56.5% in Canada in 1985; Schultz, 1991); while a third is the 4% larger average family size in Canada (2.51 versus 2.41 persons per "nuclear" family).

These factors can be applied as follows. First, U.S. GDP per capita would have been 7% rather than 5% higher had it been converted using PPP rather than the exchange rate. On the other hand, it is distributed among 4% more families than persons, so that GDP per family (rather than per capita) converted at PPP (rather than the exchange rate) would have been on the order of 3% higher in the U.S. than in Canada. Finally, taking the individual final consumption portion of GDP as a proxy for family income, this was about 15% higher as a share of GDP in the U.S. (mainly due to higher U.S. private spending on health care), so that "family" GDP per family converted at PPP would be on the order of 18% higher in the U.S. (In line with this last factor, U.S. labour income was about 10% higher as a share of GDP than in Canada -- 60% versus 55%.)

Clearly, this is far higher than the 2.2% difference observed from the household surveys. Other possible factors are differences in the survey universes (e.g. institutionalized population, military -- probably 1-2% at most), employer-paid costs of health insurance which should not be included from the household survey point of view, but are included in the GDP individual final consumption figures, differences in the overall PPP and the PPP for individual final consumption, top-coding of income sources over $200,000 on the public use microdata tape for the U.S., and differences in the extent and composition of under-reporting in the two surveys. This lack of agreement between two major sources of comparative data should be borne in mind in judging the figures presented in the main text.
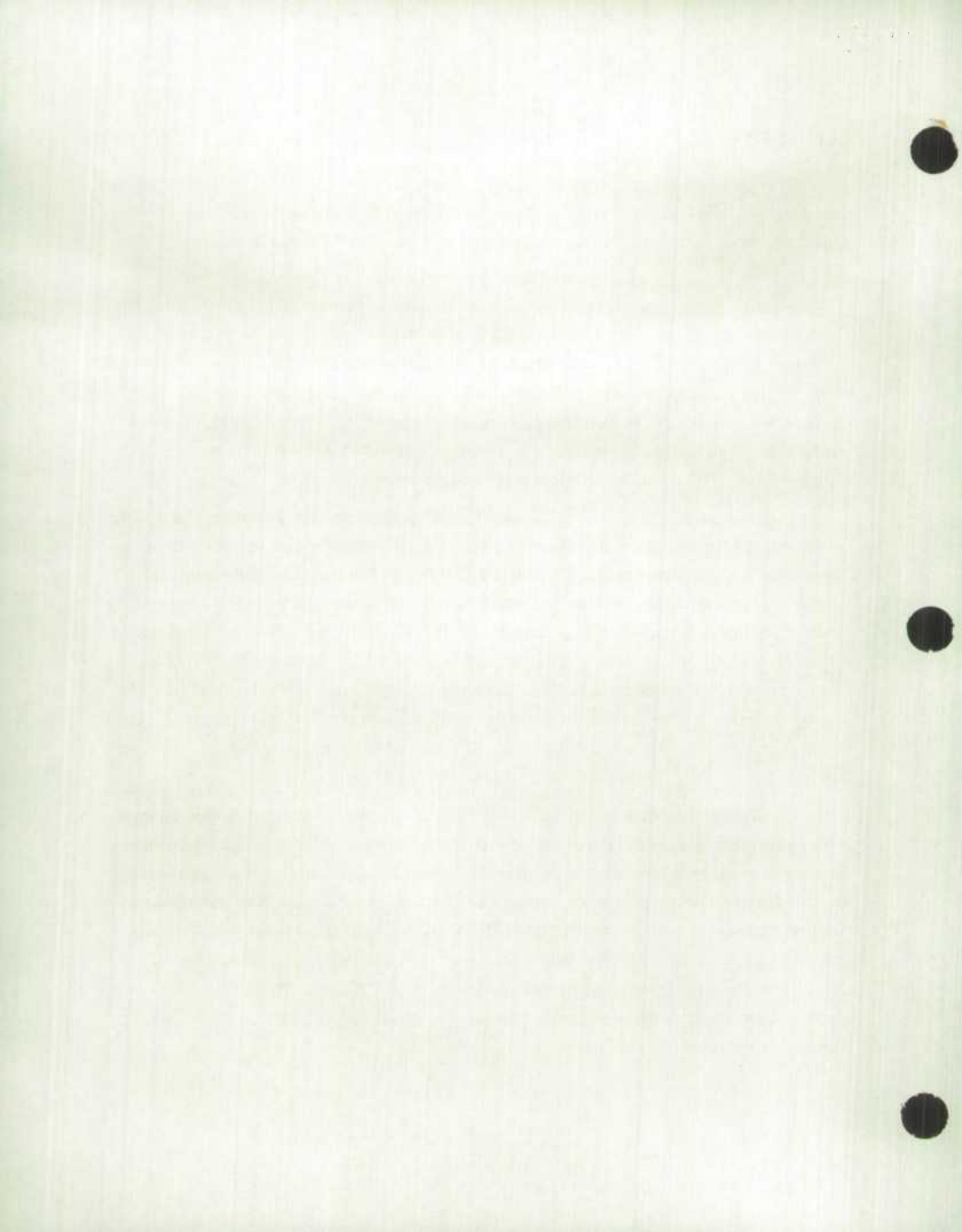
The second major contrast is within the household surveys of the two countries. While average family income was 2.2% higher in the U.S., median family income in the U.S. was 4.2% lower. This is clearly explained by the greater inequality, polarization, and incidence of poverty (as measured by low income) in the U.S.

However, these differences can be questioned from a welfare point of view. In particular, the higher average incomes in Canada in the first 60-65% of the income spectrum may be supporting larger families. Income per family may be a misleading measure if average family sizes differ, which they do overall by about 4.1% (2.51 persons per family in Canada versus 2.41 in the U.S.). Table A1 gives further details on this point. It shows not only the average before- and after-tax incomes in each vingtile (20th) of the income distribution, but also the average family size, the average adjusted family size (based on the .40/.30 equivalence scale), and the vingtile cut-points. At the lower end of the income spectrum (first 25 to 30%), Canada does have smaller families, both in absolute size and in terms of equivalent adult units, but larger families in the remaining 70 to 75% of the distribution. The difference in average family sizes, though, is attenuated by the equivalence scale adjustment -- average "adjusted" family size is 2.6% larger in Canada (1.54 versus 1.50) compared to 4.1% unadjusted. In any case, it is useful to construct a more welfare-oriented version of the "parade of dwarfs".

We do this in two steps. First, each family's income is divided by its equivalence scale - the number of equivalent adult units (EAUs) it contains. For example, the income of a two adult + two child family would be divided by 2.0 (= 1.0 + 0.4 + 0.3 + 0.3). Table A2 shows the results of reordering all families in the two countries by family income per EAU (both before- and after-tax), and then dividing them into vingtiles. Average "adjusted" before-tax incomes are now $24,100 in Canada and $25,800 in the U.S., compared to $38,000 and $38,900 unadjusted -- 6.5% lower rather than the 2.2% unadjusted average family income difference cited in the main text. The corresponding difference in after-tax incomes per EAU is 5.6% compared to 1.9% without adjustment. In addition, the crossover points where U.S. families appear better off has moved down to just below the half-way mark. Median after-tax incomes adjusted in this way were $17,800 in Canada compared to $18,300 in the U.S.

However from a welfare point of view, this is still not the whole story. Essentially, the figures in Table A2 are counting an unattached individual and a ten-person family equally -- they each contribute one observation to the income distribution parade. A better indication would be given if the unattached individual counted for one observation, but the ten-person family counted for ten observations. These ten observations would each be treated as if they had the benefit of

the whole of the family's EAU adjusted income, i.e. income adjusted for the number of equiva-lent adults in the family. Table A3 shows the results of this preferred calculation. With these adjustments, over half of all Canadian individuals are absolutely better off than their U.S. counterparts.

Table A1: Selected Statistics by Vingtile for U.S. and Canadian Families, 1988
Rankings based on Unadjusted Before- and After-Tax Incomes

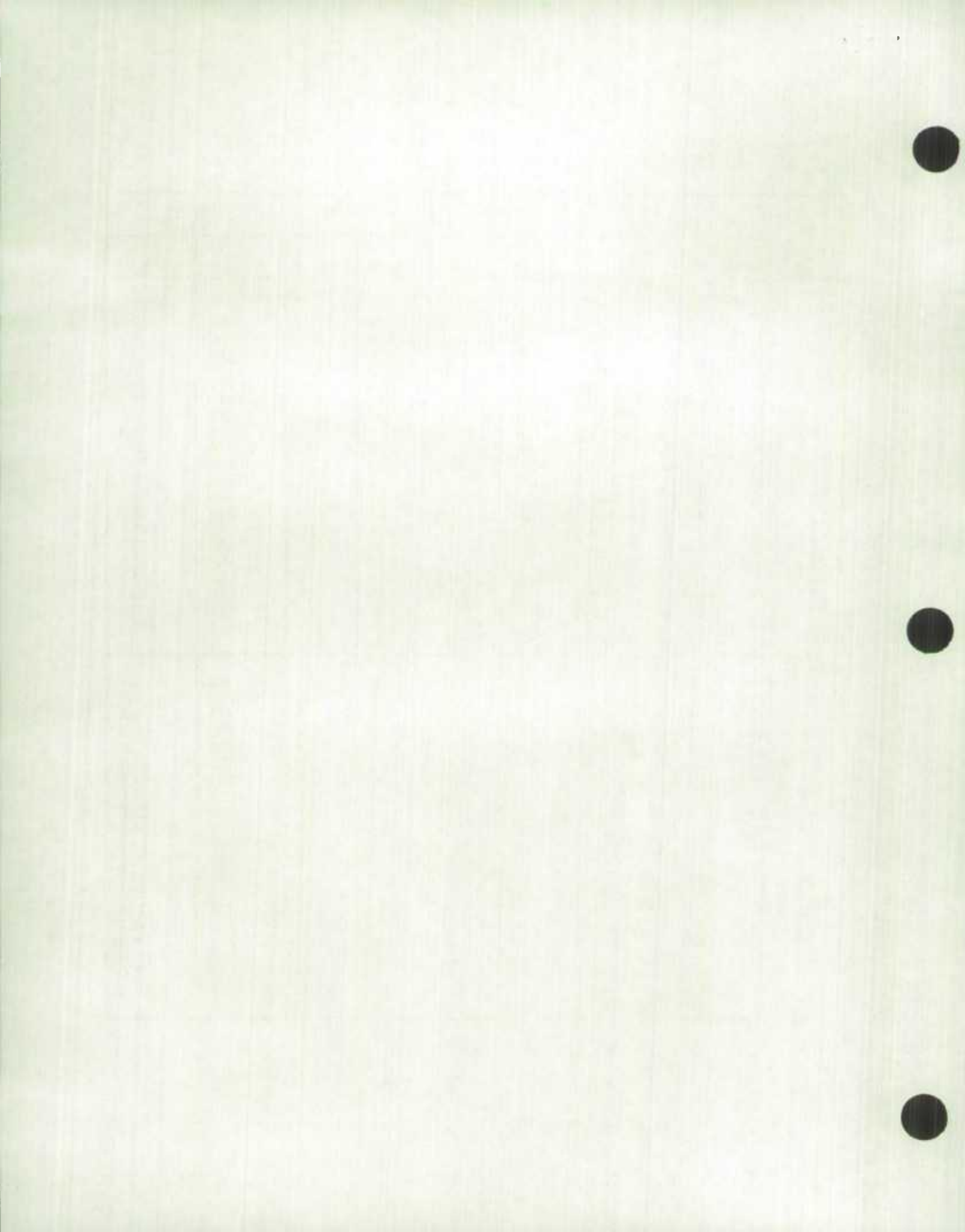| Vingtile Group	Average Income ($000's Cdn)		Average Family Size		Average EAU		Vingtile ($000's Cdn)	
	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.
Before Tax								
1	4.0	2.0	1.25	1.70	1.09	1.23	6.6	4.8
2	8.2	6.0	1.30	1.63	1.10	1.21	9.4	7.2
3	10.4	8.3	1.40	1.70	1.14	1.23	11.5	9.6
4	12.7	10.9	1.71	1.80	1.25	1.27	14.1	12.5
5	15.7	13.7	1.90	1.92	1.33	1.32	17.0	15.0
6	18.3	16.5	2.00	2.04	1.36	1.36	19.7	17.9
7	21.0	19.3	2.16	2.03	1.42	1.36	22.5	20.8
8	24.1	22.3	2.14	2.09	1.41	1.39	25.5	23.8
9	27.2	25.4	2.40	2.21	1.50	1.43	29.0	27.1
10	30.5	28.9	2.44	2.35	1.52	1.48	32.0	30.7
11	33.8	32.3	2.72	2.39	1.61	1.49	35.6	34.1
12	37.2	36.2	2.72	2.50	1.61	1.53	39.0	38.1
13	40.9	40.3	2.79	2.63	1.64	1.58	42.8	42.7
14	44.9	45.0	3.06	2.75	1.74	1.62	47.1	47.5
15	49.4	50.0	3.20	2.84	1.79	1.65	51.7	52.8
16	54.1	56.1	3.17	3.00	1.78	1.71	56.8	59.8
17	60.2	63.7	3.36	3.01	1.85	1.72	63.7	68.1
18	68.1	73.7	3.43	3.16	1.89	1.78	73.0	80.1
19	80.1	89.8	3.46	3.20	1.90	1.8	88.7	102.6
20	119.8	137.0	3.59	3.22	1.96	1.82	1200.0	552.5
All	38.0	38.9	2.51	2.41	1.54	1.50		
After Tax								
1	4.0	1.4	1.25	1.71	1.09	1.23	6.6	4.6
2	8.1	5.8	1.28	1.64	1.10	1.21	9.2	6.9
3	10.1	8.0	1.35	1.65	1.12	1.22	11.1	9.0
4	12.1	10.2	1.55	1.70	1.19	1.24	13.3	11.4
5	14.5	12.6	1.75	1.89	1.27	1.31	15.6	13.7
6	16.8	14.9	1.98	1.92	1.35	1.32	17.9	16.1
7	18.9	17.3	2.03	1.98	1.37	1.34	20.1	18.5
8	21.2	19.7	2.22	2.09	1.44	1.38	22.4	21.0
9	23.6	22.3	2.31	2.17	1.47	1.41	24.9	23.6
10	26.1	24.9	2.53	2.23	1.55	1.44	27.3	26.3
11	28.5	27.7	2.60	2.42	1.57	1.50	29.7	29.1
12	31.0	30.7	2.78	2.50	1.64	1.53	32.3	32.2
13	33.7	33.8	3.00	2.62	1.71	1.57	35.2	35.5
14	36.7	37.4	3.16	2.76	1.77	1.63	38.3	39.4
15	39.9	41.4	3.16	2.87	1.77	1.66	41.6	43.6
16	43.4	46.0	3.20	3.02	1.79	1.72	45.4	48.7
17	47.8	51.6	3.36	3.08	1.85	1.75	50.5	54.9
18	53.7	58.8	3.39	3.21	1.87	1.80	57.3	63.4
19	62.4	69.9	3.62	3.26	1.96	1.82	68.9	78.0
20	88.9	98.8	3.67	3.43	1.99	1.91	625.0	400.2
All	31.1	31.7	2.51	2.41	1.54	1.50		

Table A2:   Selected Statistics by Vingtile for U.S. and Canadian Families, 1988
Rankings based on Before- and After-Tax Incomes Adjusted for EAU

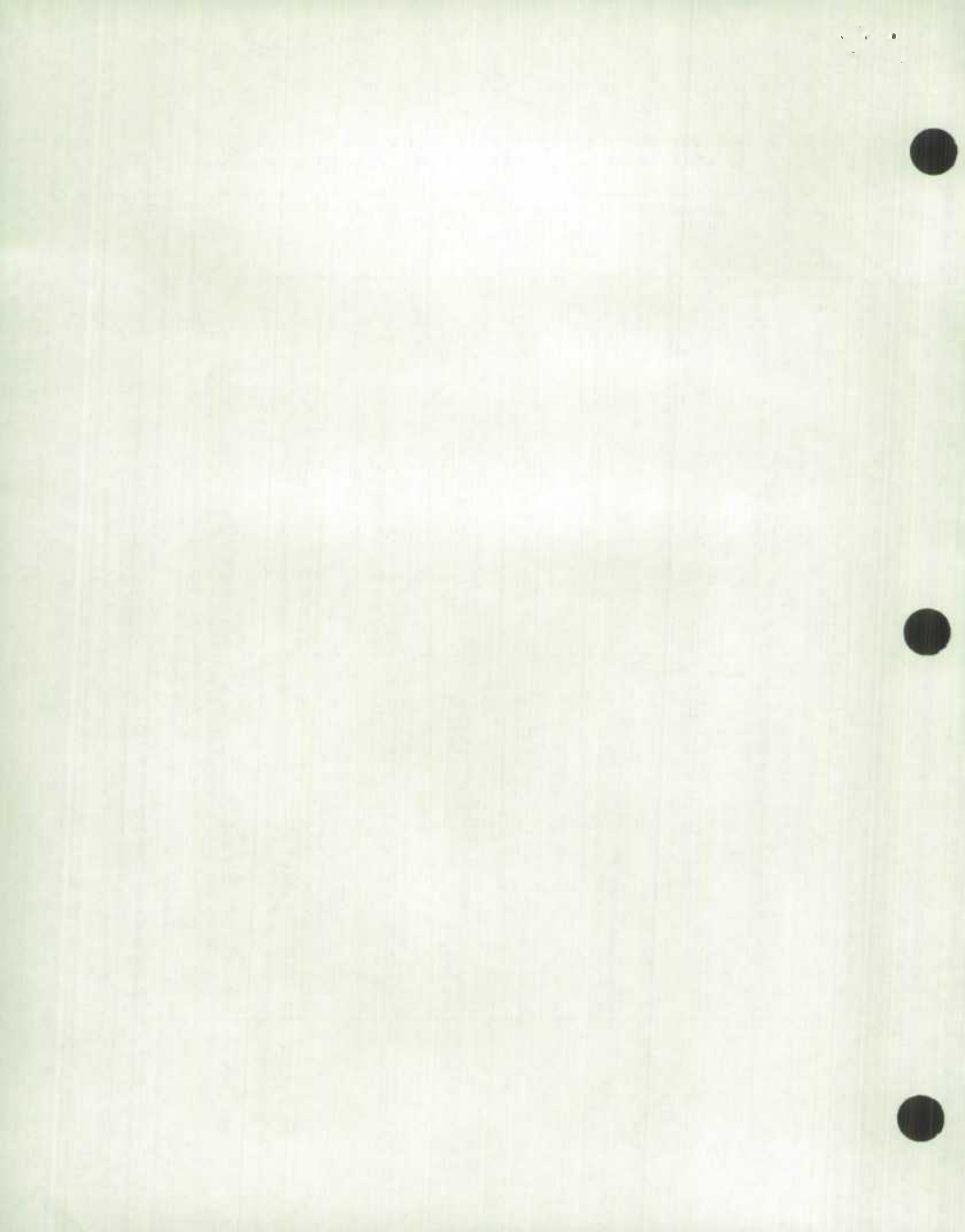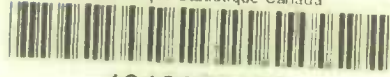| Vingtile Group	Average Income ($000's Cdn)		Average Family Size		Average EAU		Vingtile ($000's Cdn)	
	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.
Before Tax								
1	3.6	1.5	1.72	2.34	1.25	1.43	6.0	3.6
2	7.0	4.9	2.17	2.27	1.40	1.42	8.0	5.9
3	8.8	6.8	1.91	2.06	1.32	1.36	9.6	7.7
4	10.3	8.6	1.99	2.17	1.36	1.40	11.0	9.5
5	11.7	10.4	2.20	2.29	1.43	1.45	12.4	11.3
6	13.2	12.2	2.49	2.38	1.53	1.48	14.0	13.2
7	14.9	14.2	2.69	2.43	1.60	1.50	15.8	15.1
8	16.7	16.1	2.70	2.57	1.60	1.55	17.5	17.0
9	18.3	18.1	2.75	2.49	1.62	1.52	19.2	19.0
10	20.1	20.1	2.78	2.54	1.64	1.54	21.1	21.3
11	22.0	22.2	2.83	2.54	1.65	1.54	22.8	23.3
12	23.7	24.5	2.87	2.57	1.67	1.56	24.6	25.6
13	25.5	26.9	2.83	2.55	1.66	1.56	26.6	28.2
14	27.7	29.6	2.79	2.63	1.65	1.59	29.0	31.2
15	30.1	32.6	2.70	2.46	1.62	1.53	31.3	34.3
16	32.8	36.1	2.72	2.47	1.63	1.54	34.5	38.1
17	36.2	40.5	2.61	2.46	1.60	1.53	38.1	43.4
18	40.4	46.6	2.52	2.36	1.57	1.50	43.0	50.4
19	47.3	56.1	2.52	2.37	1.57	1.51	52.9	63.1
20	72.4	88.3	2.39	2.18	1.52	1.45	857.1	369.3
All	24.1	25.8	2.51	2.41	1.54	1.50		
After Tax								
1	3.6	1.1	1.73	2.34	1.25	1.43	6.0	3.4
2	6.9	4.7	2.17	2.32	1.40	1.44	7.9	5.7
3	8.6	6.5	2.04	2.12	1.36	1.38	9.3	7.4
4	9.9	8.1	2.01	2.12	1.36	1.38	10.5	8.9
5	11.1	9.7	2.26	2.30	1.45	1.45	11.7	10.4
6	12.3	11.2	2.47	2.41	1.52	1.49	12.8	12.0
7	13.4	12.8	2.68	2.43	1.60	1.50	14.0	13.5
8	14.6	14.3	2.68	2.51	1.60	1.53	15.2	15.1
9	15.8	15.9	2.78	2.50	1.63	1.53	16.5	16.7
10	17.2	17.5	2.76	2.47	1.63	1.52	17.8	18.3
11	18.4	19.1	2.89	2.55	1.68	1.55	19.0	20.0
12	19.6	20.9	2.87	2.52	1.67	1.54	20.4	21.8
13	21.1	22.8	2.76	2.53	1.63	1.55	21.8	23.7
14	22.6	24.7	2.72	2.54	1.63	1.55	23.4	25.7
15	24.3	26.9	2.68	2.51	1.61	1.54	25.2	28.1
16	26.3	29.4	2.64	2.46	1.61	1.53	27.5	30.8
17	28.6	32.4	2.57	2.45	1.58	1.54	29.9	34.3
18	31.5	36.5	2.60	2.45	1.60	1.54	33.3	39.0
19	36.5	42.7	2.52	2.41	1.57	1.53	40.2	47.4
20	52.9	61.5	2.38	2.20	1.52	1.46	446.4	260.6
All	19.8	20.9	2.51	2.41	1.54	1.50		

Table A3: Selected Statistics by Vingtile for U.S. and Canadian Families, 1988
Ordering Based on Before- and After-Tax Incomes Adjusted for EAU and weights adjusted for Family Size

Vingtile Group	Average Income ($000's Cdn)		Average Family Size		Average EAU		Vingtile ($000's Cdn)	
	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.
Before Tax								
1	4.6	1.9	2.74	3.61	1.59	1.84	6.7	3.7
2	7.9	5.0	3.11	3.54	1.71	1.84	8.9	6.1
3	9.9	7.1	2.91	3.21	1.67	1.75	10.8	8.1
4	11.7	9.1	3.09	3.32	1.73	1.79	12.4	10.0
5	13.2	11.0	3.36	3.38	1.82	1.81	14.1	12.0
6	14.9	12.9	3.55	3.31	1.89	1.79	15.7	13.9
7	16.5	14.9	3.53	3.47	1.88	1.85	17.3	15.8
8	18.1	16.7	3.54	3.47	1.89	1.85	18.8	17.6
9	19.7	18.6	3.57	3.43	1.91	1.84	20.6	19.6
10	21.3	20.6	3.55	3.32	1.90	1.81	22.1	21.6
11	22.9	22.6	3.60	3.40	1.93	1.84	23.7	23.6
12	24.4	24.7	3.67	3.35	1.95	1.83	25.3	25.8
13	26.1	27.2	3.47	3.31	1.88	1.82	27.2	28.2
14	28.2	29.6	3.49	3.34	1.89	1.83	29.3	31.0
15	30.3	32.4	3.32	3.21	1.84	1.79	31.5	34.0
16	33.0	35.7	3.36	3.16	1.86	1.78	34.5	37.6
17	36.2	39.9	3.22	3.11	1.82	1.76	38.0	42.6
18	40.2	45.8	3.17	3.02	1.80	1.74	42.8	49.5
19	46.8	54.8	3.07	2.95	1.77	1.72	52.2	61.6
20	70.1	83.3	2.92	2.72	1.71	1.64	857.1	369.3
All	24.8	25.7	3.31	3.28	1.82	1.79		
After Tax								
1	4.5	1.4	2.75	3.59	1.59	1.83	6.7	3.5
2	7.7	4.7	3.21	3.58	1.75	1.85	8.7	5.8
3	9.5	6.7	3.07	3.30	1.71	1.77	10.3	7.7
4	11.0	8.6	3.16	3.28	1.75	1.77	11.6	9.4
5	12.2	10.2	3.37	3.37	1.83	1.81	12.8	11.0
6	13.3	11.8	3.50	3.48	1.87	1.85	13.9	12.5
7	14.4	13.3	3.54	3.37	1.89	1.81	15.0	14.1
8	15.5	14.8	3.56	3.47	1.89	1.85	16.1	15.6
9	16.8	16.3	3.52	3.40	1.89	1.83	17.4	17.1
10	17.9	17.8	3.58	3.34	1.92	1.81	18.4	18.6
11	18.9	19.4	3.63	3.32	1.93	1.81	19.5	20.2
12	20.1	21.1	3.48	3.33	1.88	1.82	20.8	22.0
13	21.4	22.9	3.54	3.31	1.91	1.81	22.1	23.8
14	22.9	24.8	3.40	3.33	1.86	1.82	23.6	25.7
15	24.4	26.9	3.34	3.21	1.85	1.79	25.3	28.0
16	26.4	29.3	3.24	3.13	1.82	1.77	27.5	30.7
17	28.6	32.2	3.23	3.10	1.82	1.76	29.9	34.0
18	31.4	36.1	3.19	3.04	1.82	1.75	33.2	38.5
19	36.2	42.1	3.04	2.99	1.76	1.74	39.8	46.4
20	51.3	59.1	2.90	2.69	1.71	1.64	446.4	260.6
All	20.2	21.0	3.31	3.28	1.82	1.79		