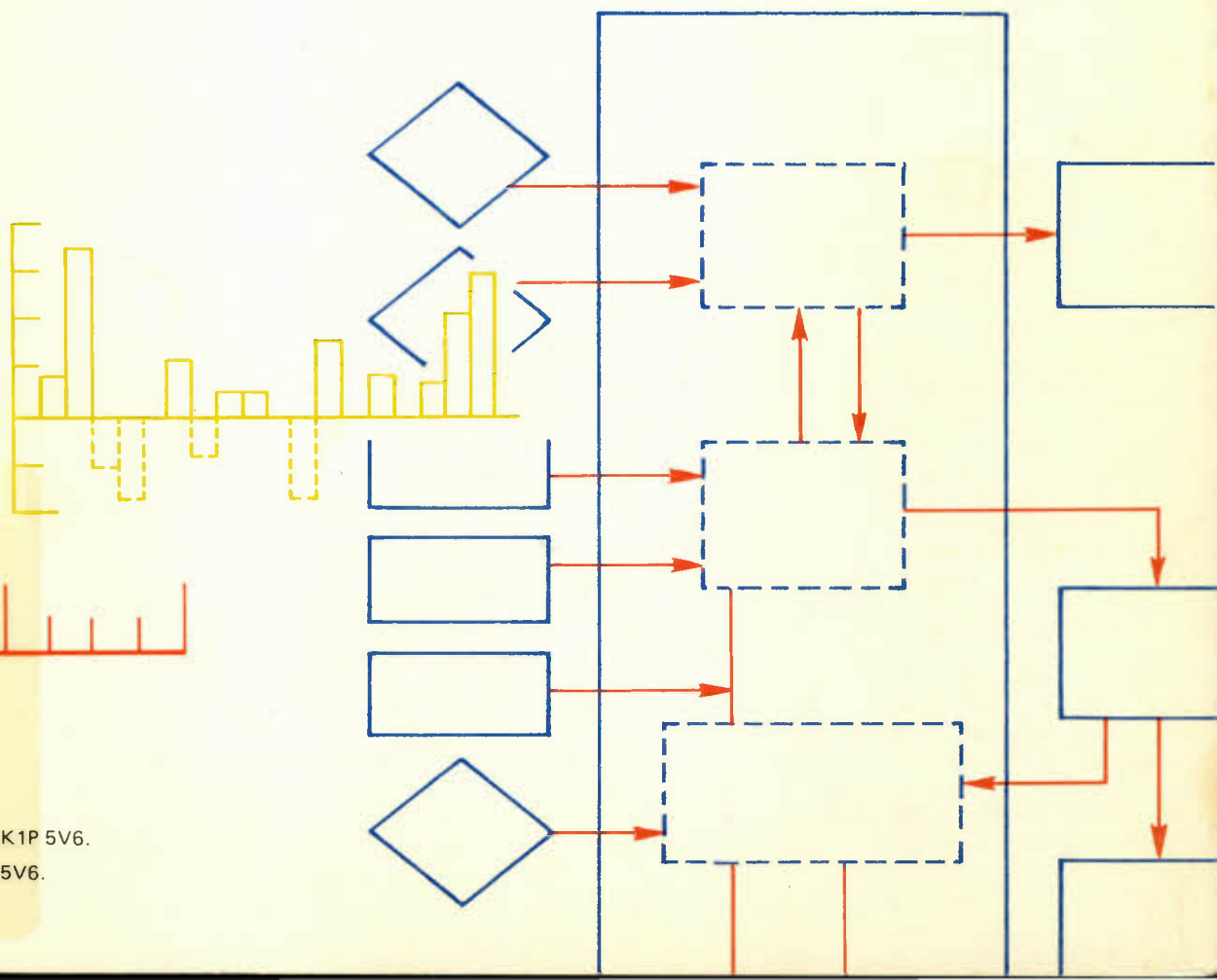


A paper prepared for the
Economic Council of Canada



Un document préparé pour le
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DISCUSSION PAPER NO. 164

Changes in Poverty in
Canadian Metropolitan Centres, 1967-76

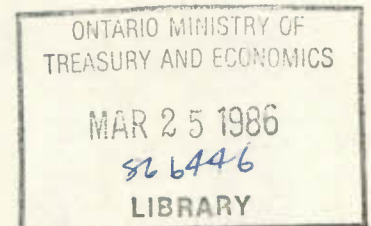
by Ludwig Auer and
Kathryn McMullen

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003521

March 1980

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RÉSUMÉ

Dans Vivre ensemble (1977)¹, étude des disparités régionales au Canada, il fut démontré que les revenus par habitant variaient beaucoup entre les diverses provinces et que, suivant la mesure employée, elles différaient de plus de 50 % entre les provinces à revenu élevé et les provinces à revenu faible. La même étude montrait qu'il existait de deux à trois fois plus de pauvreté dans certaines provinces que dans d'autres.

Dans le présent document, les auteurs cherchent à savoir si, et dans quelle mesure, la pauvreté a diminué au cours des années, et si le changement qui a pu se produire a été uniforme d'un bout à l'autre du pays.

L'analyse statistique qui suit englobe sept grands centres métropolitains : Halifax, Montréal, Ottawa, Toronto, Winnipeg, Edmonton et Vancouver. Ses résultats montrent que la pauvreté a effectivement diminué depuis quelques années, que cette diminution a été plus marquée dans les provinces à faible revenu de l'Est qu'en Ontario et dans l'Ouest, et que la proportion de la population qui vit en deçà du seuil de la pauvreté est devenue plus uniforme au pays.

Étant donné les limites imposées par l'échantillon et les données, l'analyse se borne aux principaux centres métropolitains. Elle est de nature exploratoire, et certains de ses résultats sont provisoires. Nous les présentons ici à titre de documentation de base pour les futures études sur les revenus dans les diverses provinces.

1 On trouvera les références bibliographiques à la fin du document.

ABSTRACT

In Living Together (1977),¹ a study of regional disparities in Canada, it was shown that incomes per capita varied greatly among the provinces and that, depending on the measure, they differed by as much as 50 per cent between the high- and low-income provinces. The same study showed that there was two to three times as much poverty in some of the provinces as in others.

The present study examines if and by how much poverty has diminished over the years and whether or not any change was uniform across the country.

The following statistical analysis covers seven major metropolitan centres: Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver. Results of the analysis show that, indeed, poverty has diminished over the years, that it diminished more in the low-income provinces of the East than in Ontario and the West, and that the proportion of the population living in poverty has become more uniform across the country.

Because of sample and data limitations the analysis is limited to major metropolitan centres. It is an exploratory analysis and some of the results are tentative. They are presented here to provide background material for future studies of provincial incomes.

1 Bibliographic references are listed at the end of this paper.

Acknowledgements

The authors are indebted to Mr. John Chadwick of the Consumer Income and Expenditure Division of Statistics Canada who estimated all regression equations and to Mrs. Alison Paoliello of the same Division who provided income distribution data based on Surveys of Consumer Finance. Many thanks go to Mrs. M. Rylski who carried out the data processing; to Dr. D. O. Sewell who read an earlier draft of this paper and made many helpful suggestions; and to Miss B. J. Gelineau who typed the manuscript.

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Introduction

Ever since the Great Depression and the Second World War the thrust of North American economic policy has been aimed at stable growth. This policy was based on the belief that continued economic growth would yield material benefits to everyone. It followed from the neoclassical view that greater output and greater productivity contributed to national economic wealth and that -- with built-in progressive taxation and expanding welfare services -- the benefits of economic growth would flow to all, rich and poor (Gonick, 1970).

By the mid-sixties, however, it became clear that continued economic expansion did not automatically overcome the problem of poverty. It appeared that the ranks of the "hard-core" poor were being enlarged by an increasing number of working poor who were by-passed by the mainstream of the economic system and did not share in the benefits of economic growth. At the time it came as a shock that poverty was far more extensive than many had thought.

In its Fifth Annual Review, published in 1968, the Economic Council expressed concern on this issue when it stated:

Poverty in Canada is real. Its numbers are not in the thousands, but in the millions. There is more of it than our society can tolerate, and far more than existing measures and efforts can cope with. Its persistence, at a time when the bulk of Canadians enjoy one of the highest standards of living in the world, is a disgrace. (Economic Council, 1968, p. 103)

The Council estimated that at least one Canadian in five suffered from poverty and went on to recommend that serious poverty should be eliminated and that, if Canadian society aspires to be a just society, this should be designated as a major national goal.

The Economic Council's assessment of the extent of poverty in Canada was published in 1968. It was based on a 1961 family expenditure survey. Since then additional expenditure surveys have been conducted and numerous estimates of the extent of poverty have been produced. The results vary over the years and differ among regions. Part of this variation stems from the fact that family incomes have improved over the years and that income levels vary from one location to another. Part of it also stems from the fact that different authors have used different assumptions, definitions and estimation procedures.

Objectives

The central purpose of this paper is to show whether there is more or less poverty in Canada today than there was in the 1960s and to examine how changes in poverty, if any, have varied among major metropolitan centres. The statistical analysis relates to the period 1967 to 1976 and covers the end years as well as some of the intervening years for which household expenditure survey data were available. To assure uniformity of approach the same poverty criterion and the same estimation procedures were applied to survey data of the same metropolitan centres. Nevertheless, it should be stated from the outset that both the conceptual approach to the measurement of poverty and its

empirical estimation bristle with problems and that, for this reason, the analysis can only be exploratory in nature.

The material is presented in the following order: first, some commonly used measures of poverty are described and compared. Then the data and estimation procedures used in this study are described. This is followed by the results of the empirical analysis with estimates of the extent of poverty of Canada's metropolitan populations for the years 1967, 1969, 1972, 1974 and 1976. The findings are summarized in the conclusion.

Definitions of Poverty

How much poverty exists in Canada today depends to a certain extent on how poverty is defined. With a variety of definitions on hand, a wide range of estimates can be obtained. "Relative-poverty" estimates tend towards the upper end of the poverty-income range while "absolute-poverty" estimates tend towards the lower end of it. People who are convinced that an unequal income distribution will always be an inequitable income distribution might argue, for example, that anyone living below the median-income level is poor. This would put the poverty-line income very high and automatically imply that one-half of the country's population would always be living in poverty no matter what the living standard. By this measure poverty could never be eliminated unless all people received identical incomes. Obviously, "relative" poverty-line estimates of this sort tend to maximize estimates of the number of people living in poverty.

By contrast, "absolute" measures of poverty put the poverty line at the lower end of the income range and reduce the incidence of measured poverty. They might be based, for example, on absolute minimum incomes required to meet the basic expenditures for everyday survival. Measured by that criterion, poverty in Canada has long been eliminated.

It is generally accepted, however, that realistic poverty criteria should fall somewhere between these two extremes. The problem of poverty, therefore, is increasingly viewed not as a sheer lack of essentials for survival but as "... an insufficient access to certain goods, services, and conditions of life which are available to everyone else and have come to be accepted as basic to a decent, minimum standard of living" (Economic Council, ibid., pp. 104-105). This is clearly reflected in some of the more common measures applied to Canadian conditions.

The authors of The Real Poverty Report, for example, chose to come down on the "relative side" of the poverty concept. They propose a poverty line drawn at one-half of the average living standard of Canadians where the average living standard is simply the average income adjusted for family size. The main advantage of this measure is that it ties the poverty line to the average income level and, as living standards rise, allows for an easy and continuous updating of poverty-line incomes. It follows from this definition that poverty will persist as long as some families have less than half as much income as the average family of the same size (Adams et al., 1971, pp. 11 ff.).

Much more widely used than this relative income approach is the budget approach, which leans a bit more to the "absolute side" of definitions of poverty. In this approach, poverty is defined in terms of some minimally adequate budget to cover items of need. This definition was first developed from food consumption surveys conducted by the U.S. Department of Agriculture in 1948 and 1955 (Orshansky, 1969). At the time, it was found that the average expenditure on food by all families was approximately one-third of annual income. It was assumed, therefore, that any family should be able to buy a nutritionally adequate diet at no more than one-third of annual income. Using official (caloric) guidelines, the cost of a minimum nutritionally adequate diet was estimated for 124 different types of families allowing for variations in sex of family head, number of children under 18 years of age, number of adults and whether a family lived in a rural or urban area. It was then assumed that a family whose income was less than three times the size of this minimum food allowance would be living in a state of poverty.

A major weakness of these early poverty lines is that they have not been revised nor updated (Podoluk, 1979); hence, their relevance to conditions currently prevalent in the United States is open to serious question.

The Canadian budget-type poverty line is more inclusive and less restrictive than its United States counterpart. Analysis of family expenditures in 1959 (Dominion Bureau of Statistics, 1959) showed that, on average, families of different sizes allocated approximately 50 per cent of their income to

expenditures on food, shelter and clothing. It was then assumed that where expenditures on these three necessities accounted for 70 per cent or more of family income, families would be living in straitened circumstances. They would have little or no "discretionary income" (Podoluk, 1968).

Both the relative income and the budget approaches to definitions of poverty are based on subjective judgments of what constitutes need. The situation is acknowledged by writers in the field. Fuchs, for example, openly states that the use of any selected fraction of the average (or median) income as a measure of poverty-line income would be an arbitrary decision and advocates that a generally acceptable income proportion be established through the political process and as a national value judgment (Fuchs, 1965). Similarly, budget-oriented poverty lines, as developed by Podoluk of Statistics Canada in the early 1960s and subsequently adopted by the Economic Council, have been criticized. In its report on Poverty in Canada the Senate Committee stated that "... the 70 percent is arbitrary, no more 'correct' than a 60-percent or 80-percent criterion" (Senate Committee, 1971, p. 206). Nevertheless, in the same Report the Committee agreed that the 70-per-cent criterion resulted in a "reasonable" poverty estimate of 25 per cent of Canada's population in 1961.

The Senate Committee objected, however, to maintaining the 70-per-cent criterion during a period of strong economic growth, rising incomes and rising expectations. To improve on this measure

it recommended that a more relevant "hardship criterion" -- the 20-percentage-point spread between the 70 per cent of income spent on necessities by the "poor" and the 50 per cent by average-income families in 1959 -- should be kept constant and not allowed to widen over the years. Statistics Canada followed this recommendation. In 1959 the average family spent 50 per cent of its income on food, shelter and clothing; in 1969 it spent only 42 per cent, a drop of 8 percentage points. By lowering its poverty line measure from 70 to 62 per cent, Statistics Canada maintained the 20-percentage point spread and accepted this updating procedure as a significant aspect of the definition of poverty.

The various approaches to poverty line measurement may represent philosophical differences in attitudes towards poverty but to some writers the differences in approach are much more than that. The authors of The Real Poverty Report, for example, criticize the Economic Council's selection of the 70-per-cent poverty line. They write that

... the deceptive air of technical objectivity about the ECC [Economic Council of Canada] poverty line, [is] designed, it seems, to hoodwink the misinformed. The Council has buried at a deep technical level what is really nothing more than an arbitrary decision on the part of some researcher to say that if a family were spending seventy percent of its income on basic essentials, it would be living in poverty. There is simply no logical or statistical evidence to support such a conclusion.

They go on to say:

Instead of the misleading measurements just described, we propose a poverty line drawn at one-half of the average living standard of Canadians ...

According to the authors of the Real Poverty Report, their own measure of poverty income has the advantage that everybody can understand it easily, that it ties the poverty-line income to the living standard enjoyed by the rest of society, and that the whole concept of inequality is emphasized in a relative poverty line (Adams et al., 1971, p. 11).

To gain a clearer perspective, various measures of poverty-line incomes are compared in Figure 1. The estimates are based on the year 1969, the only year for which comparable statistics are available for all of them. Depending on family size, poverty-line incomes range from roughly \$2,000 for unattached individuals to \$6,000 for six-person families. Over the range of family size, the estimates of the various authors form a band, bordered on the upper side by the 62-per-cent estimates of Statistics Canada and those of the Senate Committee, and bordered on the lower side by the 70-per-cent estimates of Statistics Canada. Converted to per-person estimates, the band narrows as the dollar variation attributable to larger family-size groups is reduced. It is noteworthy that Adams et al., who disagreed so vehemently with the 70-per-cent measure of Statistics Canada and the Economic Council, provide poverty-line estimates that fall midway between all others. The estimates of Adams et al. are actually lower than those of the Senate Committee from which they separated to pursue their own relative-income approach and prepare an independent statement (Figures 1 and 2).

Despite contention about the conceptual approach to measurement of poverty, there appears to be a surprising similarity among the various poverty-line estimates.

Figure 1

Poverty-Line Estimates of Several Authors,
by Family Size, Canada, 1969

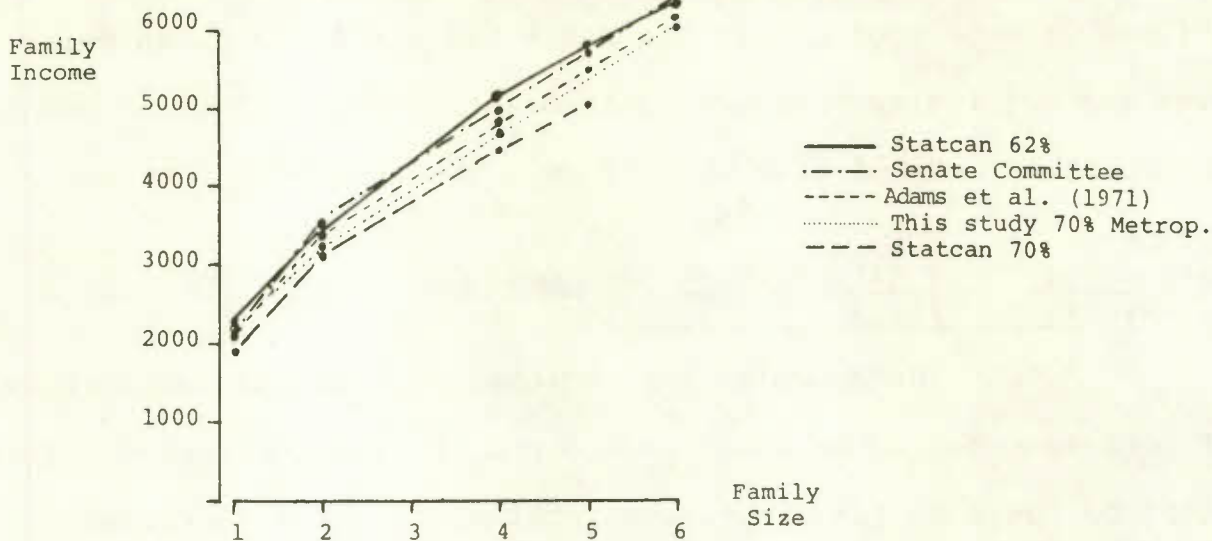
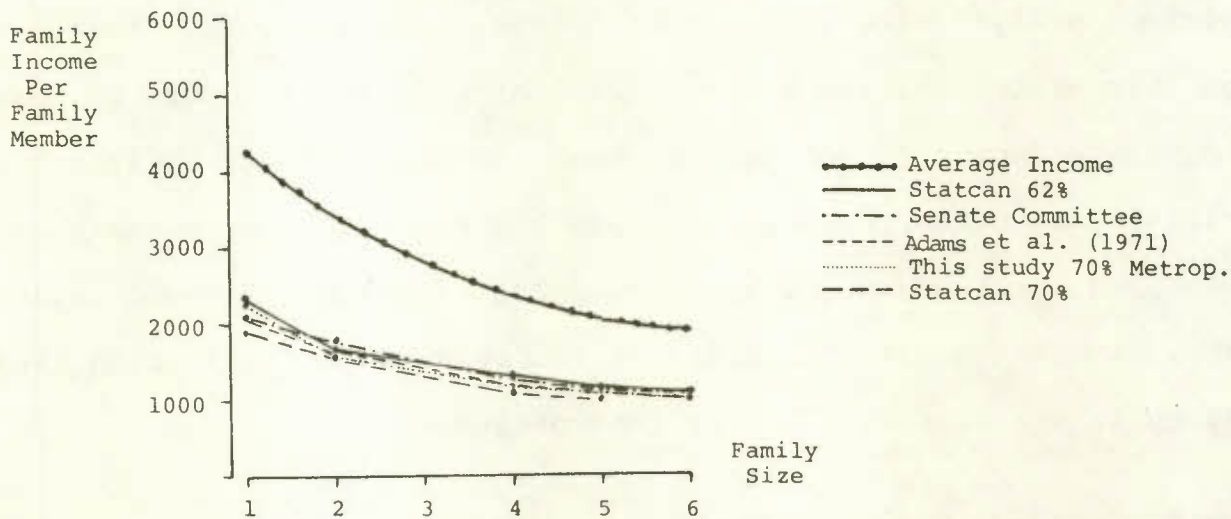


Figure 2

Per-Person Estimates of Poverty-Line Incomes and
Average Income, by Family Size, 1969



Sources: Statistics Canada, Revision of Low Income Cutoffs,
Research and Analysis Section, Consumer Income and
Expenditure Division, Ottawa, December 17, 1973; mimeo.
Special Senate Committee on Poverty, Poverty in Canada,
Ottawa: Queen's Printer, 1973, p. 212.
Adams, I., W. Cameron, B. Hill and P. Penz, The Real
Poverty Report, Edmonton: M.G. Hurtig Limited, 1971, p. 14.
This study. Estimates based on Table 2 below.
Statistics Canada, Statistics on Low Incomes in Canada,
1971, Cat. 13-553, Occasional, p. 7.

All of them allow for income adjustments to family size and all of them are in the neighbourhood of one-half of average incomes (Figure 2). Of course, all the estimates are for a given point in time and major disagreements could arise if they had been made for different periods of time or different geographic regions.

Methodology Used to Determine the Incidence of Poverty by City and Family Size

To be acceptable, any regional or temporal comparisons of poverty ought to be based on one and the same criterion. They might be based on the 70-per-cent criterion, the 62-per-cent criterion, the 20-per-cent hardship criterion,¹ the one-half average income criterion, or any other reasonable criterion. The choice is quite arbitrary because all the criteria listed are based on subjective judgments and subject to criticism. For the present analysis the 70-per-cent criterion is selected. Based on this criterion, the analysis will show if in 1976 more or less households spent 70 per cent of their income on food, shelter and clothing than ten years earlier and how the extent of poverty, so measured, varies among eight metropolitan centres. It will also show to what extent a lowering of the poverty line criterion from 70 to 62 per cent will affect the results.²

1 As defined above (p. 7).

2 As shown in Figure 2 the 1969 poverty lines of Statistics Canada, based alternatively on the 70- and 62-per-cent criteria, cover a range sufficiently wide to include the estimates derived by use of other criteria. Also, as shown in Figure 2, the 70-per-cent estimates of the present study are somewhat higher than those of Statistics Canada. This is so because ours relate to metropolitan centres and exclude the rural non-metropolitan centres where poverty lines are lower.

Although the methodology used in this paper to determine poverty-line incomes is similar to that of Statistics Canada, important differences exist. Over the years, Statistics Canada did not adhere to the same poverty criterion but lowered it in 1969 from 70 to 62 per cent (of income spent on food, shelter and clothing).¹ Since in this study the 70-per-cent criterion is maintained throughout, the results for 1969 and later years differ significantly from those of Statistics Canada.

A second important difference between the two estimation procedures relates to temporal changes in poverty line levels. Initially, Statistics Canada determined poverty lines by family size for 1961 based upon the 1959 consumer expenditure survey. The second and most recent year for which it determined them is 1969. Poverty-line incomes for 1962 to 1968 and from 1970 to the present were obtained by updating the 1961 and 1969 poverty lines by using the Consumer Price Index and thereby allowing for changes in the cost of food, shelter and clothing (Oja and Love, 1976). By contrast the poverty lines presented in this paper are estimated separately for each year in which a consumer expenditure survey was conducted; that is, for 1967, 1969, 1972, 1974 and 1976. Whereas Statistics Canada's assumption is that precisely the same "basket of goods" is consumed despite changes in relative prices, the approach taken here allows for

1 It could be argued that this adjustment is based on the 20-per-cent hardship criterion. If so the adjustments should be made gradually, e.g., annually, and not by step-wise procedure once a decade.

changes in price and quantity as reflected by changing expenditure patterns.

Furthermore, Statistics Canada's analysis is based upon Canadian average expenditure patterns and modified according to city size but not location of city. City variations in consumption patterns, that is in overall expenditures as well as expenditures on food, shelter and clothing, are not clearly recognized. The present study is based upon expenditure patterns derived from survey data, collected by Statistics Canada, for each of eight cities, in each of the five survey years. Therefore, city-to-city variations in consumption patterns, arising from different consumer preferences, different prices and quantity adjustments, are incorporated here.

Finally, the functional forms for estimating poverty lines differ somewhat. Where Statistics Canada applies linear expenditure functions the analysis here is based on quadratic functions.¹

Estimation of Poverty Lines: Following the budget approach the poverty line is defined here as that income level at which families, on average, spend a given percentage of their income, say 70 or 62 per cent, on food, shelter, and clothing. Family expenditures on each of these three items can be described as a function of family size and annual family income as in (1) and (2):

$$(1) \quad E_i = \alpha_i + \beta_i S + \gamma_i S^2 + \delta_i E + \eta_i E^2 + \epsilon_i$$

1 For some further notes on the specification of the function, see Appendix 1.

$$(2) \quad E = \alpha + \beta S + \gamma S^2 + \theta Y + \zeta Y^2 + \epsilon$$

where

E_i = expenditure on item i (food, shelter, or clothing)

S = family size (1, 2, 3, ...)

E = expenditures on all items, necessities and luxuries

Y = annual family income before tax, and

$\alpha, \beta, \gamma, \delta, \eta, \theta, \zeta$ are the respective coefficients (subscripts denoting coefficients of individual items), and ϵ is the usual error term. The regression coefficients in (1) and (2) are estimated for eight subsets of the consumer expenditure surveys corresponding to samples drawn from each of St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver, in each of the five survey years.

The expenditures on food, shelter and clothing estimated in this manner are summed to "total expenditures on necessities" and specified as a function of family size and income as in (3).

$$(3) \quad E_n = \alpha_n + \beta_n S + \gamma_n S^2 + \theta_n Y + \zeta_n Y^2 + \epsilon_n$$

The poverty line income is now estimated as in (4)

$$(4) \quad Y_{\text{pov}} = \frac{(\theta_n - p) \pm \{(\theta_n - p)^2 - 4\zeta_n (\alpha_n + \beta_n S + \gamma_n S^2)\}^{\frac{1}{2}}}{2\zeta_n}$$

which solves Equation (3) for Y_{pov} such that $\frac{E}{Y}$ or p in (4) equals .70 or .62 and satisfies the 70 or 62 per cent poverty line criterion, respectively.

To summarize, in this paper expenditures on three basic necessities, i.e., food, shelter and clothing, are taken to be a function of family size and annual income. Place of residence is also explicitly taken into account and its effect estimated by separate regression equations.

Estimation of the Incidence of Poverty: The incidence of poverty depends on the poverty line and the income distribution. Based on estimates of family incomes and expenditures, "Engel's curves" can be derived showing what proportion of family incomes is spent on necessities and luxuries. The Engel's curves in Figure 3a show, for example, what proportion of their incomes four-person families are estimated to have spent on food, shelter and clothing at various income levels, in Montreal and Toronto in 1976. These Engel's curves are derived from Equations (3) and (4) by setting the family-size variable S equal to 4.0, by letting the family income Y vary in Equation (3), and inserting the estimated expenditures E as a proportion of family income p in Equation (4). When the 70-per-cent criterion is applied, p assumes the value 0.70, and the poverty-line income of a family of four living in Montreal is estimated at \$7,684, while that of a family of four living in Toronto is estimated at \$6,426. According to these estimates, a family of four in Montreal managed on a budget of \$7,684 no better than a family

Figure 3a

Percentage of Income of Four-Person Families Spent on Food, Shelter and Clothing, Montreal and Toronto, 1976

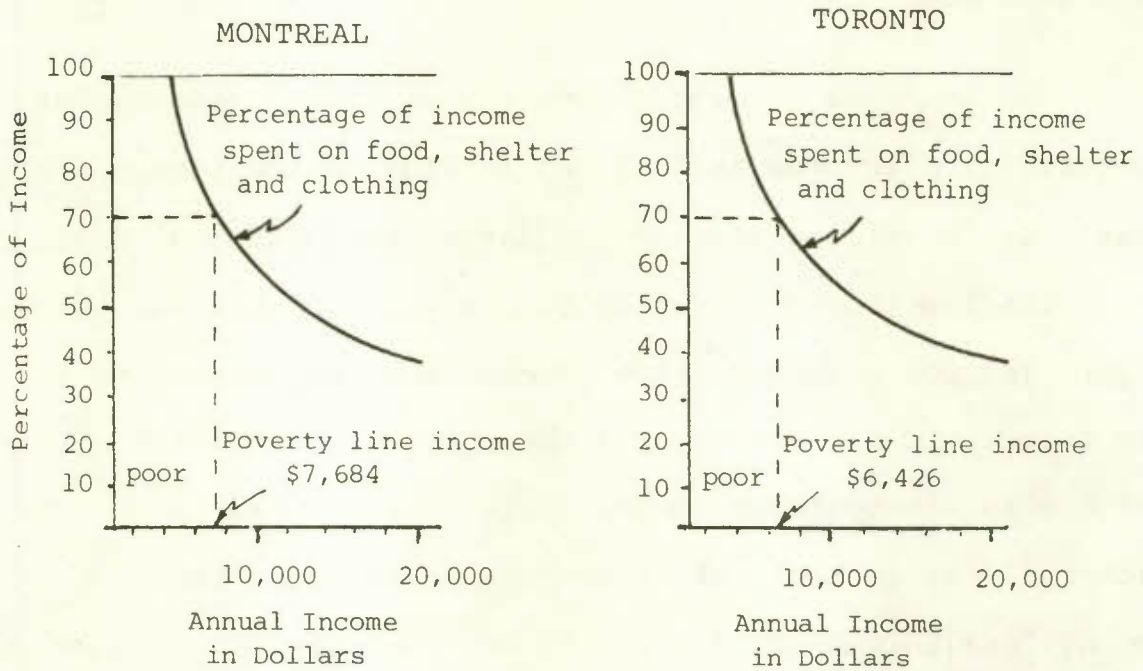
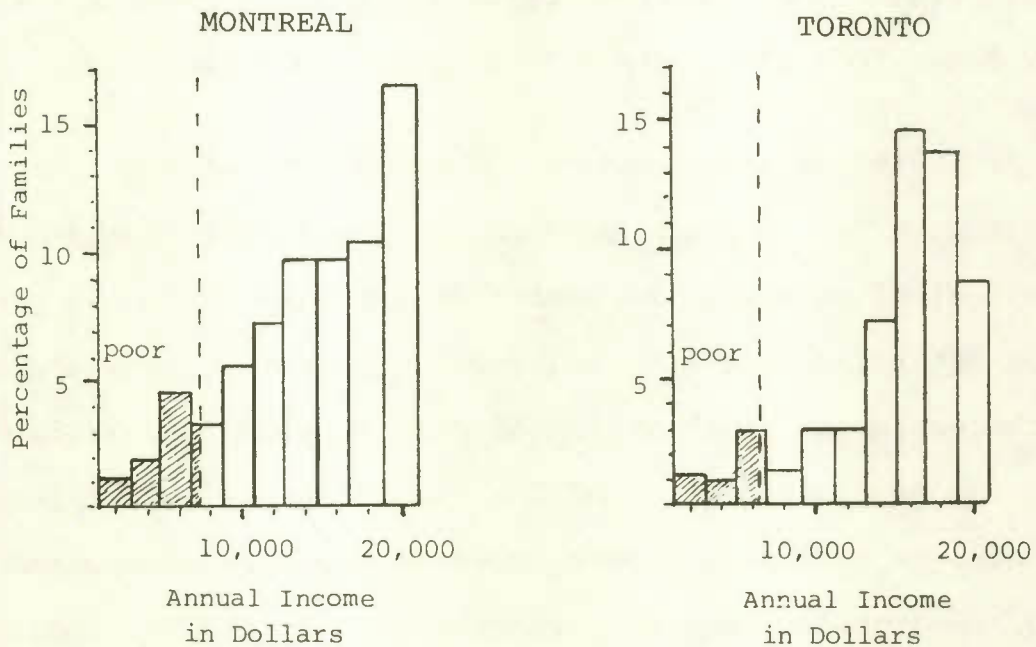


Figure 3b

Percentage Distribution of Four-Person Families, by Income Groups, Metropolitan Centres, 1976



Source: Based on unpublished data of Statistics Canada, Survey of Consumer Finances, 1977 for 1976.

of four in Toronto managed on a budget of \$6,426; both of them spent 70 per cent of their income on food, shelter and clothing (Figure 3b).¹

To estimate the incidence of poverty in these two cities the poverty-line incomes need to be related to the income distributions. It is evident that a much larger proportion of families falls in the low-income groups in Quebec than in Ontario. As shown in Figure 3b, the Quebec portion exceeds that of Ontario in all of the income groups earning less than \$15,000 per family. This difference in metropolitan income distribution is quite striking: in Quebec 33 per cent of all (four-person) families had an annual income of less than \$15,000 while in Ontario only 20 per cent had a corresponding income. Similarly, the Quebec proportion of metropolitan families with incomes below the poverty line exceeds the Ontario proportion. In Montreal (Quebec) an estimated 8.1 per cent of the four-person families lived below the poverty-line income while in Toronto (Ontario) only 5.1 per cent lived below this line.

Estimates of the incidence of poverty among four-person families accounts for only one part of the population. To estimate the full extent of poverty, the number of families living in poverty needs to be determined for all family-size groups. This was done by matching the estimated poverty-line incomes of each family-size group with income distributions of the same family size. Summing the number of persons living in poverty over family-size groups and dividing by the total number of persons living in the metropolitan

1 A summary of the underlying regression coefficients is provided in Appendix 1.

areas, yielded estimates of the incidence of poverty in the seven major metropolitan centres, described later in this text.

The Data: The determination of poverty lines by family size for each of the eight cities and five sample years is based on data from the Family Expenditure Surveys for 1967, 1969, 1972, 1974 and 1976.

For estimates of income distributions by family size for each of the metropolitan centres, it was necessary to use income distribution data of provincial metropolitan populations. In some cases, even these sample sizes were too small to be reliable; hence, regional metropolitan income distributions were applied to provincial metropolitan family-size distributions. This affected Halifax in 1969, 1972 and 1976 to which the Atlantic metropolitan income distribution was applied; Winnipeg in 1969, 1972 and 1974, and Edmonton in 1969, 1972 and 1976 to which the Prairie region metropolitan income distribution was applied linked with the Manitoba and Alberta distributions of family size, respectively. In two cases -- Winnipeg 1976 and Vancouver 1976 -- either income distribution or family-size distribution data were not available.¹

1 Because of data confidentiality the regression equations for the Engel's curves were estimated by Statistics Canada. The authors are indebted to Mr. John Chadwick of the Consumer Income and Expenditure Division who screened and estimated the regression coefficients for functions (1) and (2). The authors are also indebted to Mrs. A. Paoliello of the same Division for providing the necessary income distributions. They are based on Surveys of Consumer Finances 1968, 1970, 1973, 1975 and 1977 which give data for the years 1967, 1969, 1972, 1974 and 1976. Estimates given in this paper for the incidence of poverty among provincial metropolitan populations exclude St. John's since data on family-size distribution of the metropolitan populations were not available.

The Surveys of Family Expenditure tend to be small and vary in sample size through time (Table 1). As a result, some of the city differences in poverty lines and the incidence of poverty may not be statistically significant. The sample sizes for Toronto and Montreal, however, are larger and statements regarding poverty in these two major metropolitan centres are more conclusive. Because of these unfortunate sample-size limitations, estimates of variations in poverty among major metropolitan centres are tentative and should be interpreted with caution.

Table 1
Sample Size of Surveys of Consumer Expenditures,
1967-76

Metropolitan Centre	Year				
	1967	1969	1972	1974	1976
St. John's	102	305	205	351	285
Halifax	136	335	309	363	270
Montreal	358	1,093	723	982	821
Ottawa	218	212	230	348	278
Toronto	375	946	563	796	751
Winnipeg	228	549	481	487	462
Edmonton	159	373	541	514	289
Vancouver	219	691	488	614	492
Total	1,795	4,504	3,540	4,455	3,648

Source: Data provided by Consumer Income and Expenditure Division, Statistics Canada.

Poverty-Line Incomes of Canadian Metropolitan Centres

The estimation procedures previously applied to a single family size, one year, and two cities will now be extended to include families of different size groups, other cities and other survey years.

A complete summary of poverty-line incomes is presented in Table 2. The estimates range from a low of \$1,400 for a one-person unit in St. John's, Newfoundland in 1967 (upper left-hand corner of Table 2) to a high of \$10,900 for a six-person family in Vancouver, British Columbia in 1976 (lower right-hand corner of Table 2). It will be recalled that each poverty line represents that level of income where families spend 70 per cent of their budget on food, shelter and clothing.

Table 2 reveals three obvious facts about the poverty lines as calculated. First, poverty-line incomes for large families are much higher than poverty-line incomes for small families. In 1976, for example, the poverty-line income of a six-person family living in Toronto was estimated at roughly \$10,000 whereas that of a three-person family was estimated at \$5,000. Second, poverty-line incomes vary from one city to the next. Where in 1976 the poverty-line income of a three-person family living in Toronto was \$5,000, it was \$6,000 for the same size family in Vancouver. Third, poverty-line incomes have risen over the years. Regardless of family size and city, poverty-line incomes have nearly doubled in the time period studied. Where the poverty-line income of a family of three in Vancouver was estimated at \$3,100 in 1967, it was estimated at \$6,000 in 1976.

Table 2

Estimated Poverty-Line Incomes of Different-Sized Families,
Selected Cities, Canada, 1967, 1969, 1972, 1974 and 1976
(70% criterion)

		Poverty-Line Incomes by Family Size				
		1	2	3	4	6
		(in thousand dollars)				
1967	ST. JOHN'S	1.4	2.2	2.8	3.4	4.3
	HALIFAX	2.0	2.7	3.4	4.0	4.8
	MONTREAL	2.1	3.0	3.8	4.4	5.4
	OTTAWA	1.8	2.7	3.6	4.2	5.1
	TORONTO	1.8	2.6	3.4	4.1	5.5
	WINNIPEG	1.7	2.2	2.7	3.3	4.7
	EDMONTON	1.4	2.1	2.8	3.5	4.8
	VANCOUVER	2.1	2.5	3.1	3.7	5.3
7 - CITY AVERAGE ¹	1.9	2.7	3.5	4.1	5.3	
1969	ST. JOHN'S	1.4	2.3	3.1	3.8	5.0
	HALIFAX	2.1	2.7	3.3	4.0	5.4
	MONTREAL	2.3	3.1	3.9	4.5	5.7
	OTTAWA	1.9	2.7	3.4	4.3	6.1
	TORONTO	2.9	3.8	4.7	5.6	6.8
	WINNIPEG	1.8	2.5	3.2	3.8	4.9
	EDMONTON	2.2	3.1	3.9	4.6	5.4
	VANCOUVER	2.0	2.9	3.8	4.6	6.0
7 - CITY AVERAGE	2.3	3.2	4.0	4.7	6.1	
1972	ST. JOHN'S	2.2	2.9	3.7	4.4	5.9
	HALIFAX	2.2	3.3	4.3	5.3	6.7
	MONTREAL	2.5	3.6	4.5	5.4	6.7
	OTTAWA	2.4	3.3	4.1	5.0	6.5
	TORONTO	2.6	3.8	4.7	5.5	6.7
	WINNIPEG	2.3	3.2	4.0	4.7	5.7
	EDMONTON	2.6	3.3	4.1	4.9	6.4
	VANCOUVER	2.7	3.8	4.8	5.6	6.7
7 - CITY AVERAGE	2.3	3.5	4.4	5.2	6.5	
1974	ST. JOHN'S	2.7	3.8	4.9	5.9	7.8
	HALIFAX	3.0	4.1	5.2	6.2	8.1
	MONTREAL	3.2	4.4	5.5	6.6	8.8
	OTTAWA	3.8	4.7	5.8	7.0	10.0
	TORONTO	3.3	4.7	6.0	7.0	8.6
	WINNIPEG	3.2	3.9	4.6	5.4	6.8
	EDMONTON	3.4	4.0	4.7	5.6	7.7
	VANCOUVER	3.2	4.3	5.3	6.3	8.2
7 - CITY AVERAGE	3.4	4.5	5.7	6.7	8.9	
1976	ST. JOHN'S	3.2	4.6	5.8	7.0	8.8
	HALIFAX	3.3	5.0	6.5	7.8	9.8
	MONTREAL	3.9	5.1	6.4	7.7	10.5
	OTTAWA	3.8	5.2	6.5	7.9	10.8
	TORONTO	3.1	3.9	5.0	6.4	10.1
	WINNIPEG	3.4	4.7	5.8	6.7	8.2
	EDMONTON	4.1	5.1	6.1	7.1	9.3
	VANCOUVER	3.7	4.7	6.0	7.4	10.9
7 - CITY AVERAGE	3.6	4.7	5.9	7.3	10.3	

¹ The seven-city average is the population weighted sum of the seven metropolitan areas. It excludes St. John's because income distribution data, stratified by family size, are not available.

Source: Based on unpublished data of Statistics Canada from the Survey of Family Expenditures, 1967, 1969, 1972, 1974 and 1976 and estimated according to procedures described above.

Making Ends Meet, A Problem of Family Size

In larger-sized families, economies of scale allow for reductions in the budgetary cost per family member. This means that expenditures on necessities increase less than proportionately with family size. Partly this is because larger families do economize by stretching meals and by living closer together, and partly it is because larger families often have small children and the per-person requirements of the latter are smaller than those for adults. While this reduces the cost per family member -- and in this sense "it is cheaper by the dozen" -- the total cost for the family increases with each additional family member. Conversely, the cost for the family declines with reductions in family size but the cost per person and the minimum income requirements per person are highest for unattached individuals, the smallest-sized family unit.

Problems of making ends meet exist at both ends of the family-size scale. For the smallest units, the unattached individuals, the cost of shelter is the biggest item of expense, food ranks second, and clothing third, the latter trailing far behind the other two. For large, six-person families, the cost of food is the most important item, shelter ranks second, and clothing third but the latter's share in the budget is also quite large. Because of these differences in expenditure patterns, regional variations in price levels and inflation of consumer prices over the years do not affect all low-income families to the same extent.

Variations by City and Over the Years

In some cities the estimated poverty-line incomes are consistently lower than in others. Over the period 1967-76, estimated poverty-line incomes are lower in St. John's and Winnipeg and it seems that low-income families living there managed better (at the same income level) than in other cities. By contrast, low-income families in Montreal and Vancouver seem to have greater difficulty in making ends meet since poverty-line incomes in those two cities are well above those of others. It appears that these variations are related to regional differences in cost patterns. In St. John's, Newfoundland, for example, low-income families, small or large, spend less of their income on housing (shelter) than anywhere else (Table 3). Low-income families in Winnipeg also spend a smaller share of their income on housing. Why low-income families in Montreal and Vancouver should require higher incomes, however, is not obvious from their expenditure patterns.¹

Over the years, incomes of all families and individuals have increased. From 1967 to 1976, the average family income in metropolitan Canada has increased from \$7,200 to \$17,000.² Consumer price increases have eroded a large portion of this gain but nevertheless -- measured in terms of constant dollars -- there was a net gain in purchasing power of 37 per cent from 1967 to 1976. This means that between 1967 and 1976 the real income of Canadians increased at a rate of 4 per cent per year (before taxes).

1 These findings are tentative because of sample-size restrictions. They merit further investigation.

2 Estimates provided by the Consumer Income and Expenditure Division, Statistics Canada, based upon Surveys of Consumer Income conducted in 1968 and 1977.

Table 3
Estimated Proportions of Poverty-Line Incomes Spent on
Food, Shelter and Clothing by Small and Large Family Units,
Selected Cities, Canada 1967, 1969, 1972, 1974 and 1976

YEAR	CITY	Small Families ¹			Large Families ²		
		Food	Shelter	Clothing	Food	Shelter	Clothing
1967	ST. JOHN'S	33	31	5	37	20	14
	HALIFAX	31	33	6	35	23	12
	MONTREAL	29	36	5	38	21	12
	OTTAWA	27	41	2	35	23	12
	TORONTO	28	38	4	35	24	11
	WINNIPEG	33	33	4	36	24	11
	EDMONTON	27	36	7	35	23	13
	VANCOUVER	29	33	8	37	21	11
7 - CITY AVERAGE		<u>28</u>	<u>38</u>	<u>4</u>	<u>36</u>	<u>23</u>	<u>12</u>
1969	ST. JOHN'S	35	22	12	38	20	13
	HALIFAX	31	29	10	35	23	12
	MONTREAL	30	34	6	36	23	11
	OTTAWA	34	35	1	36	23	11
	TORONTO	26	36	8	33	24	13
	WINNIPEG	32	31	6	36	23	11
	EDMONTON	25	38	8	33	23	13
	VANCOUVER	29	36	4	34	24	12
7 - CITY AVERAGE		<u>30</u>	<u>35</u>	<u>5</u>	<u>35</u>	<u>23</u>	<u>12</u>
1972	ST. JOHN'S	35	30	5	37	19	14
	HALIFAX	32	34	4	33	25	12
	MONTREAL	31	36	3	38	20	12
	OTTAWA	24	45	1	32	27	11
	TORONTO	26	42	2	35	22	12
	WINNIPEG	31	34	5	37	19	14
	EDMONTON	28	35	7	34	24	13
	VANCOUVER	28	36	5	36	23	11
7 - CITY AVERAGE		<u>27</u>	<u>40</u>	<u>3</u>	<u>35</u>	<u>23</u>	<u>12</u>
1974	ST. JOHN'S	38	31	1	37	21	13
	HALIFAX	27	41	1	34	25	11
	MONTREAL	34	32	5	38	21	11
	OTTAWA	25	40	5	33	23	14
	TORONTO	30	34	6	38	22	10
	WINNIPEG	30	31	9	40	18	12
	EDMONTON	28	33	9	36	23	11
	VANCOUVER	31	35	4	36	22	11
7 - CITY AVERAGE		<u>29</u>	<u>35</u>	<u>5</u>	<u>36</u>	<u>22</u>	<u>12</u>
1976	ST. JOHN'S	32	36	2	41	16	12
	HALIFAX	27	39	4	31	25	13
	MONTREAL	31	34	5	40	19	11
	OTTAWA	29	41	1	37	21	12
	TORONTO	27	41	2	33	26	12
	WINNIPEG	29	33	10	38	21	12
	EDMONTON	29	34	7	40	19	11
	VANCOUVER	27	40	3	36	24	10
7 - CITY AVERAGE		<u>28</u>	<u>39</u>	<u>3</u>	<u>37</u>	<u>22</u>	<u>12</u>

1 Small families refers to one-person or unattached individuals.

2 Large families refers to families of six persons.

Source: Same as for Table 2.

Over the same period of years, poverty-line incomes, as estimated here, have also shifted upward. Little of this was a real gain because prices of food, shelter and clothing rose at the same time. Roughly, the rise in estimated poverty incomes compensated for the rise in prices. Because of differences in expenditure patterns, however, inflation did not affect all low-income families the same way. Since unattached individuals spent relatively more on housing, and large families relatively more on food, the sharp rise in the price of housing and food affected these two types of families more than others. As a result their poverty-line incomes were pushed up proportionately more than those of other groups.¹ Whether this also meant that more of them lived in poverty than before will be examined in the next section.

The Extent of Poverty in Canadian Metropolitan Centres

With the rise in family incomes over time, the income distribution has shifted upward. In the process, some provinces have done better than others. In 1967, only Ontario's income distribution exceeded the Canadian average percentages in the higher-income groups. By 1976, however, the high-income provinces of Alberta and British Columbia had joined Ontario in this respect. In contrast, the provinces of Newfoundland, Nova Scotia, and Quebec in the East as well as Manitoba in the West, lagged behind with relatively more people remaining in the lower-income groups (Table 4).

1 According to Table 2 the estimated poverty-line income of unattached individuals nearly doubled from \$1,900 in 1967 to \$3,600 in 1976, and that of six-person families from \$5,300 to \$10,300. That of other family-size groups increased at a slower rate.

Table 4

Percentage Distribution of Families and Unattached Individuals by
Income Groups, Metropolitan Areas, Canada and Selected Provinces,
1967-76

	Income Groups					
	0-4,000	5,000 9,999	10,000 14,999	15,000 19,999	20,000 24,999	25,000+
(Per cent)						
1967						
Newfoundland	42*	44	11	3	0	0
Nova Scotia	46*	40	10	3	0	1
Quebec	37*	43	14	4	1	1
Ontario	30	44	18*	5*	1	1
Manitoba	37*	45*	14	3	1	1
Alberta	33	48*	15	3	1	1
British Columbia	43*	39	14	3	1	1
Canada	35	44	16	4	1	1
1972						
Newfoundland	25	29*	30*	11	1	5
Nova Scotia	32*	29*	24	10	3	3
Quebec	29*	29*	24	10	4	4
Ontario	22	26	28*	13*	5*	5*
Manitoba	28*	28*	30*	10	3	2
Alberta	28*	25	27*	11	5*	5*
British Columbia	30*	28*	22	13*	5*	2
Canada	26	27	26	12	4	4
1976						
Newfoundland	10	28*	14	15	14*	19
Nova Scotia	12	23*	24*	18*	12	11
Quebec	16*	19*	18*	17	12	18
Ontario	14	18	17	17	14*	21*
Manitoba	17*	23*	13	19*	11	16
Alberta	14	16	17	15	14*	24*
British Columbia	15	16	16	16	14*	23*
Canada	15	18	17	17	13	20

*Provincial percentage exceeds Canadian average.

Source: Based on unpublished data of Statistics Canada from Surveys of Consumer Finances, 1968, 1973 and 1977 which give income distribution by family size for the years 1967, 1972 and 1976, respectively.

How much poverty exists depends on estimated poverty-line incomes and the distribution of incomes among all income groups. Summarized, by city and survey year, the estimates in Table 5 show that poverty in Canadian metropolitan centres has declined, from an estimated 12.7 per cent in 1967 to 9.6 per cent in 1976, a reduction of one-quarter. This reduction was not uniform across all cities. In the East, poverty declined in three out of four metropolitan centres, in the West, it declined in one out of three.

Table 5
Estimated Proportion of Population Living in Poverty,
Selected Cities, Canada, 1967-76
(70% criterion)

	Years				
	1967	1969	1972	1974	1976
	(Per cent)				
Halifax	21	20r	16r	14	11r
Montreal	18	15	16	15	12
Ottawa	11	9	9	13	10
Toronto	11	14	10	11	7
Winnipeg	9	19r	12r	11r	11r*
Edmonton	7	13r	14r	12	10r
Vancouver	15	12	13	10	10*
7 - City Average	12.7	12.4	11.5	12.5	9.6

*Denotes 1974 estimates.

'r' Denotes estimates based on city-specific poverty lines and on regional metropolitan income distributions of more than one province. In the case of Halifax, for example, the subscript r denotes use of the (family-size specific) income distribution of all metropolitan centres of the Atlantic region. Similarly, in the case of Winnipeg and Edmonton, it denotes use of the (family-size specific) income distribution of all metropolitan centres of the Prairie region. In each case, regional income distributions are substituted for provincial distributions because the provincial statistical sample was considered too small for the purpose at hand.

Source: With the exceptions noted above, all estimates are based on city-specific poverty lines and province-specific income distributions.

In those centres where poverty declined, the proportion of the poor dropped by at least one-third. In Montreal, for example, an estimated 18 per cent of the people lived in poverty in 1967; by 1976 the proportion was reduced to 12 per cent. Over the same period, the estimated proportion of the population living in poverty was reduced from 11 to 7 per cent in Toronto and from 15 to 10 per cent in Vancouver. By contrast, the percentage of the poor has remained at nearly the same levels over time in Ottawa, Winnipeg and, somewhat surprisingly, also in Edmonton. As a result of these trends, there was a convergence of the extent of poverty among cities towards the 10 per cent level, a reduction of one-quarter from earlier levels. The range was from a high of 12 per cent to a low of 7 per cent, with Toronto leading all others with the least poverty in 1976.

The results also show that higher average incomes do not automatically reduce poverty. It is quite possible that in a fast-growing city, e.g., Edmonton, prices for housing and other necessities rise faster than earnings of the low-income groups, and that poverty increases in spite of rapid economic growth and rising average incomes. But the finding that poverty, over the years, has been reduced substantially in Halifax, Montreal and Vancouver but very little, if any, in Ottawa, is puzzling. These findings are not directly linked to growth in incomes, changes in income distribution, differential rates of inflation or transfer payments. Even the difference in the incidence of poverty between Toronto and Montreal cannot be readily explained. It seems that low-income families somehow "manage better" in Toronto than in Montreal. Statistics on household

expenditures¹ reveal that low-income families in Toronto spend less on beef and restaurant meals, the luxury items in a food budget, than families elsewhere. Also new immigrant families, which are younger and tend to save more, are more numerous in Toronto than in Montreal. These are only tentative explanations, however. They are related to questions of regional variations in price and preference and deserve more attention in future studies.

Poverty and Family Size

Over the past decade the incidence of poverty has shifted towards the small family unit. Whereas during the 1960s poverty was extensive among small as well as large families, by 1976 it was highest among unattached individuals. As shown in Table 6, the proportion of the poor has diminished to 11 per cent or less in all family-size groups except unattached individuals. Among the latter, poverty remained high, with one out of three living below the poverty line. Most of this shift in the incidence of poverty has come from demographic changes. As families have "aged" and "undoubled" the proportion of large families has declined and that of unattached individuals increased.

It is not clear why poverty among unattached individuals has remained so high. Certainly the federal government has tried to alleviate the problem through a variety of programs and over the years government transfer payments to low-income families have increased in importance. Where in 1969 about 90 per cent of incomes

1 Urban Family Expenditures, 1974, Statistics Canada, Occasional, Catalogue No. 62-544.

Table 6

Estimated Proportion of Population Living in Poverty,
by Family Size, Selected Cities, Canada, 1967-76
(70% criterion)

		Poverty by Family Size				
		1	2	3	4	6
		(Per cent)				
1967	HALIFAX	37	24	15	13	21
	MONTREAL	39	19	13	12	19
	OTTAWA	28	12	7	7	10
	TORONTO	29	11	7	6	12
	WINNIPEG	32	7	5	4	10
	EDMONTON	21	7	3	4	7
	VANCOUVER	44	15	7	8	12
	7 - CITY AVERAGE ¹	32	16	8	8	13
1969	HALIFAX	44r	13r	13r	13r	23r
	MONTREAL	34	16	9	10	16
	OTTAWA	27	10	4	4	10
	TORONTO	39	6	9	8	13
	WINNIPEG	29r	10r	4r	9r	6r
	EDMONTON	35r	16r	8r	12r	8r
	VANCOUVER	30	14	15	5	8
	7 - CITY AVERAGE	33	10	8	7	12
1972	HALIFAX	44r	11r	19r	10r	15r
	MONTREAL	36	21	11	10	13
	OTTAWA	30	8	9	6	5
	TORONTO	32	11	10	7	5
	WINNIPEG	11r	4r	3r	2r	4r
	EDMONTON	17r	6r	5r	2r	7r
	VANCOUVER	38	14	12	4	9
	7 - CITY AVERAGE	29	11	9	6	7
1974	HALIFAX	57	14	12	10	11
	MONTREAL	39	14	10	9	14
	OTTAWA	36	12	9	6	13
	TORONTO	32	13	10	5	9
	WINNIPEG	36r	10r	9r	6r	7r
	EDMONTON	34	8	12	7	9
	VANCOUVER	32	9	8	5	5
	7 - CITY AVERAGE	28	9	10	6	11
1976	HALIFAX	25r	9r	12r	9r	10r
	MONTREAL	37	12	11	8	9
	OTTAWA	30	11	7	6	14
	TORONTO	21	6	5	5	5
	WINNIPEG	36r*	10r*	9r*	6r*	7r*
	EDMONTON	36r	9r	7r	4r	7r
	VANCOUVER	32*	9*	8*	5*	5*
	7 - CITY AVERAGE	29	11	7	6	9

1 The seven-city average is the population weighted sum of the seven metropolitan areas. It excludes St. John's because income distribution data, stratified by family size, are not available.

'r' Defined in Table 5.

*Denotes 1974 estimates.

Source: Same as in Table 5.

below the poverty line came from wages and salaries and less than 10 per cent from government transfer payments, by 1976 wages and salaries accounted for only about 30 per cent and government transfers for 60 per cent (Table 7). About two-thirds of the transfers to families living below the poverty line are in the form of Old Age Security, Government Income Supplements and Pension Plan payments.¹

Table 7

Sources of Income, Families and Individuals
Below and Above Poverty Line, by Region, Canada,
1969 and 1975

	Sources of Income ¹			
	Wages and Salaries		Government Transfers	
	1969	1975	1969	1975
	(Per cent)			
A. Below Poverty Line				
Atlantic	87	28	9	67
Quebec	93	32	5	60
Ontario	95	37	4	51
Prairie ²	98	37	4	67
British Columbia	94	26	6	65
B. Above Poverty Line				
Atlantic	91	75	6	17
Quebec	92	82	4	10
Ontario	94	80	3	8
Prairie	92	70	3	6
British Columbia	94	74	3	13

1 Wages and Salaries, Government Transfers and other payments add to 100. Government Transfers consist of Old Age Pensions, Government Income Supplements, Unemployment Insurance, Family Youth Allowance, and miscellaneous items. Other sources of income are self-employment, investment and annuities.

2 Wages and salaries, plus government transfers exceed 100 per cent since income from other sources was negative, possibly because of losses in farm income.

1 For supporting statistics, see Appendix Table 2.

Most of these payments go to elderly people who contributed to government tax revenues during their working years and who, without this government aid, would have to spend their final years in abject poverty. Yet, in spite of this aid, many unattached individuals continue to live in poverty.

How Poor is Poor?

Estimated poverty lines in this study represent the income level at which families, small or large, spend 70 per cent of their income on food, shelter and clothing. According to the results, poverty in Canadian metropolitan centres declined from 13 per cent in 1967 to 10 per cent in 1976, a reduction of one-third. If the underlying criterion of poverty is changed, different estimates are obtained. For example, if they are based on a 62-per-cent criterion, poverty declined from an estimated 26 per cent in 1967 to 13 per cent in 1976, a reduction of one-half. In either case the estimates suggest a substantial reduction in poverty. Both estimates also suggest that poverty has diminished more in the East than in the West and that there has been a convergence in the proportion of the population in various cities living in poverty (Table 8).

Very different results are obtained if the poverty criterion is linked to average or median income levels. Allowing for a 20-percentage-point spread between percentages of income spent on food, shelter and clothing by average-income and low-income families and thereby maintaining a constant "hardship criterion" -- as explained earlier in this paper -- is equivalent to switching from the 70-per-cent criterion in 1967 to the 62-per-cent criterion in 1976. By that measure, poverty would have

Table 8

Comparison of Three Estimates of Poverty,
Selected Cities, Canada, 1967-76

	Years ¹		
	1967	1972	1976
<u>I. Based on 70-per-cent criterion</u>			
HALIFAX	21	16r	11r
MONTREAL	18	16	12
OTTAWA	11	9	10
TORONTO	11	10	7
WINNIPEG	9	12r	11*r
EDMONTON	7	14r	10r
VANCOUVER	<u>15</u>	<u>13</u>	<u>10*</u>
7-CITY AVERAGE	13	12	10
<u>II. Based on 62-per-cent criterion</u>			
HALIFAX	34	22r	18r
MONTREAL	28	20	17r
OTTAWA	16	11	13
TORONTO	18	12	10
WINNIPEG	16	15r	14*r
EDMONTON	13	17r	13r
VANCOUVER	<u>21</u>	<u>16</u>	<u>14*</u>
7-CITY AVERAGE	26	14	13
<u>III. Based on 1/2 of median income criterion</u>			
HALIFAX	10	13r	13
MONTREAL	11	16	14
OTTAWA	11	12	14
TORONTO	11	12	14
WINNIPEG	9	15r	13r
EDMONTON	9	15r	13r
VANCOUVER	<u>14</u>	<u>13</u>	<u>14*</u>
7-CITY AVERAGE	11	13	14

1 For description of symbols see footnote of Table 5.

remained unchanged, at 13 per cent in 1967 and at 13 per cent in 1976. East or West, poverty would have remained about the same as before and there would have been less convergence among cities.

Finally if the poverty lines had been drawn at one-half the median income, unrealistic results would have been obtained. Because the poverty-line incomes were linked to the median incomes of each metropolitan centre,¹ the regional differences in poverty, so estimated, would have amounted to no more than one percentage point. Furthermore, over the years poverty would not have declined but increased, from 11 per cent in 1967 to 14 per cent in 1976 (Table 8).

Poverty lines drawn relative to median income levels are not sensitive to regional variations in prices of, and family expenditures on, necessities. This shortcoming could lead to doubtful policy conclusions. Proponents of a guaranteed income approach advocate that people receive compensatory government payments if their income does not reach a certain level, say one-half the median income. Because prices and expenditures do vary among metropolitan centres for families of the same characteristics, a minimum income, so estimated, would not accommodate their

1 In drawing the poverty lines at one-half the median income a very simplistic approach was taken here. Poverty-line income was defined as one-half the median income of each metropolitan centre by family size. Had the poverty-line income been defined as one-half the national median income, the estimates under criterion III in Table 8 would have come closer to those under I and II and shown greater variation in the extent of poverty among cities. Unlike the estimates under I and II, they would still show a rise in poverty between 1967 and 1976.

needs equally well. A budgetary approach, based on a percentage criterion of expenditures on necessities, would be superior.

Evidently the various estimates of poverty do not agree. According to one estimate poverty varies from one city to the next. According to another there is little difference. Over a period of years, the estimates range from a decline in poverty in one case to a substantial rise in another. At the same time household statistics show that poor families of today have more amenities and material possessions than ever before. In 1977, for example, 61 per cent of the poor families¹ had colour T.V., 71 per cent had recordplaying equipment, 93 per cent had a telephone and 96 per cent had bath facilities. Indeed compared to a decade ago more poor people have a colour T.V., a clothes washer and dryer today, than the average family had ten years earlier (Table 9).²

These statistics on household facilities contrast with the earlier finding -- based on the same 70-62 per cent poverty criterion as the low-income cutoff points of Statistics Canada -- that poverty has remained unchanged. They contrast even more with the finding -- based on the one-half median criterion -- that poverty should have increased. They are in line, however, with the finding of this study -- based on the 70-per-cent criterion --

1 As defined by income below the low-income cutoff point of Statistics Canada.

2 This follows from comparisons of columns 2 and 3 of Table 9. Wherever the percentage in column 2 exceeds that of column 3 more of the "poor" families (with incomes below the low-income cutoff point) had an item in 1977 than the "average" family (with incomes above the low-income cutoff) had in 1967.

Table 9

Household Facilities of Families and Unattached Individuals,
by Income Level, 1967-77¹

	<u>Below Low-</u> <u>Income Cutoff</u>		<u>Above Low-</u> <u>Income Cutoff</u>	
	<u>1967</u>	<u>1977</u>	<u>1967</u>	<u>1977</u>
	(Per cent)			
<u>Families</u>				
Television: colour	1	61	5	79
black/white	91	36	93	20
Radio	94	97	98	99
Recordplaying equipment	49	71	75	85
Car: one	56	50	68	59
two or more	6	9	18	30
Telephone	83	93	97	98
Home-owners	71	54	67	75
Bath facilities	75	96	95	99
Flush toilet	84	97	97	99
Clothes washer (automatic)	16	50	39	71
Clothes dryer	21	53	43	72
Automatic dishwasher	-	14	-	30
Freezer	35	42	32	57
Refrigerator	94	-	99	-
<u>Unattached Individuals</u>				
Television: colour	2	47	4	58
black/white	80	45	84	35
Radio	75	95	96	98
Recordplaying equipment	22	44	44	65
Car: one	19	26	48	55
two or more	1	2	2	3
Telephone	75	89	86	98
Home-owners	53	35	31	31
Bath facilities	78	95	91	98
Flush toilet	85	93	94	96
Clothes washer (automatic)	7	19	11	23
Clothes dryer	8	18	12	22
Automatic dishwasher	-	4	-	7
Freezer	7	16	7	16
Refrigerator	90	-	94	-

1 The data for 1967 and 1977 relate to household characteristics of families and individuals who maintained independent households in 1968 and 1978 respectively.

Source: Statistics Canada, Household Facilities by Income and Other Characteristics, Catalogue No. 13-540 and 13-567.

that the extent of poverty has diminished over the years. They are also in line with the finding that unattached individuals below the low-income cutoff lack access to certain amenities and are, on average, worse off than larger families.

The conclusion of this study, that poverty has diminished over the years, may be self-evident at this point. Based on acceptable estimation techniques it depends, nevertheless, on a subjective (70-per-cent) criterion of the poverty line. As shown earlier, use of a different criterion yields different results. Since one set of estimates implies that poverty continues to be a grave problem and the other set implies that the poverty problem has diminished over the years and will become less and less significant in future, the two sets of estimates lead to contradictory policy implications. They create a conundrum that can only be resolved if the conceptual underpinning of poverty analysis is strengthened.

Although development of conceptual tools for analysis of poverty is beyond the scope of this paper, some possibilities for improvement are quite apparent. From the findings of this study it is clear that there is a general agreement on what constitutes poverty at a given point in time (e.g., 1969) but little agreement on how it changes over time (e.g., 1967-76). To arrive at a more objective criterion of poverty, the concept could be linked more closely to variations in income elasticity. By definition, income elasticities measure how family expenditures and household amenities change with income. Cross-sectionally, they

tend to approach zero in case of absolute necessities (e.g., milk and bread) and exceed unity in case of luxuries (e.g., restaurant meals, second cars). Over time, they decline as luxuries tend to become necessities (e.g., poultry meat, colour T.V.). Taking into account this unique feature, poverty-line incomes could be updated by maintaining over the years a constant ratio of income elasticities, observed in the base year, between the average income level and the poverty-line income. This would make the approach more consistent with economic theory and have an advantage over the procedures currently in use. Unfortunately, data limitations and computer costs may hamper its application. An exploratory analysis, however, might well be justified.

Use of income elasticities as a criterion for setting poverty lines would have another advantage. It would make it possible to account not only for the current cash income but also for income derived from the nonvisible exchange of money. Homeownership is a prime example of an asset yielding a nonvisible income. Since homeownership, the asset value of a home, as well as savings and investments, are characterized by income elasticities, they could be incorporated in this overall approach.

One might go further and include human capital formation in the calculations. Obviously it does not make sense to consider a student as being really poor when he/she is in effect investing in an asset that could make him/her much better off in future years. Since educational attainment is known to be highly (parent)-income elastic, it too would fit into the overall framework. It would not

do, however, to estimate income elasticities without attaching appropriate weights to individual items. Ideally this should be done by taking the current income as well as the present value of future incomes into account. In practice it may be more expedient to opt for age-specific poverty-line estimates. Needless to say, all these extensions of poverty-income analysis would require a widening and strengthening of the data base.

SUMMARY

Over the period 1967 to 1976 poverty declined in Canadian metropolitan centres. The decline was not constant throughout the period, reflecting some irregular changes in income as well as living costs, such that gains made in one year were lost at some later year. Nevertheless, from 1967 to 1976, the incidence of poverty was reduced by roughly one-quarter from 13 to 10 per cent.

Over the years poverty has been reduced substantially in Halifax, Montreal and Vancouver but very little, if any, in Ottawa and some of the other centres. The reduction in poverty was not directly linked to growth in incomes, changes in income distribution, differential rates of inflation, or transfer payments.

Although some of the regional variations in poverty might be statistical errors arising from small sample size, it is striking that poverty in Montreal was more extensive than in Toronto, in each one of the survey years. In part this was because the income distribution in Toronto was more favourable for the poor than in Montreal. And in part it was because low-income families in

Toronto "managed" better (on the same income) than low-income families in Montreal.

The incidence of poverty converged among regions over time towards a level of 10 per cent of the population. In 1967 Halifax and Montreal registered the highest poverty rate -- 21 per cent and 18 per cent of the populations of these cities respectively. These cities also registered the highest rate of decline in poverty such that by 1976, 11 per cent of the population of Halifax and 12 per cent of the Montreal population were estimated to live below the poverty line. The other cities had less poverty at the beginning of the period, lower rates of decline and also converged to the 10 per cent level. Significant reductions in poverty have occurred precisely in those regions where the need was greatest.

Expenditures on food, shelter and clothing varied among poor families of different size. The cost of food accounted for a major portion of the budget of large families. The cost of housing was the main item in the budgets of unattached individuals.

The incidence of poverty has declined in all family-size groups. It declined very little among unattached individuals, however. The high incidence of poverty among the latter can be largely attributed to demographic changes. It is surprising, however, that in spite of government pensions and income supplements so many unattached individuals continue to live in poverty.

Different statistical estimation procedures yield different estimates of the population living in poverty. All the

preceding findings are based on a poverty criterion that puts the poverty line at a level at which a family (or unattached individual) spends 70 per cent or more of its income on food, shelter and clothing. If this criterion is lowered to 62 per cent the estimate of the population living in poverty is automatically raised. Also, the decline in poverty over the years is more pronounced. If at the beginning of the period, however, the poverty criterion is set at 70 per cent and at the end of the period at 62 per cent, the extent of poverty remains unchanged over the years. Or, if it is assumed that families who live on one-half (or less) of the median income are poor, poverty is estimated to have increased over the years. Statistics on household facilities, stratified by income, lend no support to the latter proposition.

The fact that poverty-line estimates -- based on a budgetary approach -- vary among metropolitan centres, makes a guaranteed income approach less workable. Because prices of food, shelter and clothing vary between cities the same guaranteed minimum income would not accommodate the needs of the low-income families equally well among the regions.

To arrive at more objective procedures of estimating poverty in Canadian metropolitan centres, it might be useful to align the poverty criteria in use today more closely with empirical (cross-sectional) estimates of income elasticities of items in family budgets.

Also the estimates of regional variations could be improved if the sample size of the metropolitan income and expenditure surveys were expanded in future.

Appendix 1

For estimating the relationship between family income, family size and family expenditures a variety of functional forms have been found useful. The simplest of these is a linear function. It specifies expenditures as a linear function of family size and income, and implies that expenditures on a particular item, say, food, shelter or clothing, will increase by equal amounts for each additional increment of family income or for each additional family member. If the estimated coefficient of the food-expenditure equation implies that an extra \$300 is spent on food as family income increases from \$3,000 to \$4,000, it automatically implies that food expenditures increase by the same \$300 as income increases from \$9,000 to \$10,000 or from \$30,000 to \$31,000. Since the additional income spent on food is known to decline at higher income levels, the linear function is not quite realistic.

A commonly used alternative function is linear in the logarithms. It implies that expenditures on, say, food shelter or clothing increase by a given proportion, but not necessarily by the same dollar amount, as family income goes up.

The quadratic function of the present study is free from these restrictive assumptions and allows for the fact that family expenditures on necessities do not increase indefinitely or proportionately as family income increases. Extensive testing performed on the present data base suggested that it delivered not only more realistic but also more stable results than the simple linear or log-linear functions.

Poverty-line estimates were derived from equations (1) to (4) as described in the text. They are repeated below.

$$(1) \quad E_i = \alpha_i + \beta_i S + \gamma_i S^2 + \delta_i E + \eta_i E^2 + \epsilon_i$$

$$(2) \quad E = \alpha + \beta S + \gamma S^2 + \theta Y + \zeta Y^2 + \epsilon$$

$$(3) \quad E_n = \alpha_n + \beta_n S + \gamma_n S^2 + \theta_n Y + \zeta_n Y^2 + \epsilon_n$$

$$(4) \quad Y_{\text{pov}} = \frac{(\theta_n - p) \pm \{(\theta_n - p)^2 - 4\zeta_n (\alpha_n + \beta_n S + \gamma_n S^2)\}^{\frac{1}{2}}}{2\zeta_n}$$

Equation (1) quantifies expenditures on item i , say food, shelter, or clothing, as a function of family size and total expenditures E . Equation (2) quantifies total expenditures E as a fraction of family size and income. By substituting (2) into (1), and adding, parameter estimates are obtained for (3). From (3), the poverty-line income is derived as in (4).

Appendix Table 1 lists the parameter estimates of equations (1) and (2) for Montreal and Toronto, in 1976.

Appendix Table 1

Regression Coefficients of Food, Shelter and Clothing Expenditures
on Family Size, Family Expenditures and Family Income,
Montreal and Toronto, 1976

	Regression Parameter ²	Estimated Regression Coefficients ¹			Total Expenditures
		Food	Shelter	Clothing	
<u>Montreal</u>					
Constant term	α	642.43**	722.95**	-145.36	-17.66
Coefficient of S	β	25.40	161.18*	156.45**	720.98**
Coefficient of S ²	γ	61.14**	-23.73*	-8.86	-63.44*
Coefficient of E	δ	.11**	.11**	.05**	
Coefficient of E ²	η	-5.3**	-7.5	8.0**	
Coefficient of Y	θ				.94**
Coefficient of Y ²	ζ				-20.17**
Multiple regression coefficient	R^2	.68**	.32**	.53**	.89**
Degrees of freedom	df	1,151	1,151	1,151	1,151
<u>Toronto</u>					
Constant term	α	82.11	971.74**	-146.33	333.36
Coefficient of S	β	488.64*	-172.43	9.54	-722.43*
Coefficient of S ²	γ	-19.45*	33.79*	15.26	121.54**
Coefficient of E	δ	.09**	.14**	.06**	
Coefficient of E ²	η	-3.7**	-5.9**	1.6	
Coefficient of Y	θ				1.10**
Coefficient of Y ²	ζ				-37.14**
Multiple regression coefficient	R^2	.63**	.45**	.51**	.86**
Degrees of freedom	df	1,141	1,141	1,141	1,141

1 *; ** denote statistical significance at the 1 or 5 per cent levels, respectively. The underlying standard errors of the regression coefficients were not adjusted for sample design and a small number of omitted observations. The results of this statistical analysis, as well as those presented in the text, should therefore be interpreted with caution. The estimated coefficients have been multiplied by 10⁷.

2 Symbols correspond to those of equations (1) to (4).

Source: Special data tabulation provided by the Consumer Income and Expenditure Division, Statistics Canada.

Appendix 2

As mentioned in the text, in 1969, about 90 per cent of the incomes below the poverty line came from wages and salaries and less than 10 per cent from government transfers. By 1976 these proportions had changed to 30 and 60 per cent respectively. As shown in Appendix Table 2 about two-thirds of the transfers to families living below the poverty line were in the form of Old Age Security (OAS), Guaranteed Income Supplements (GIS) and Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) payments.

Appendix Table 2

Percentage Composition of Transfer Payments Made to Families
and Individuals Living Above and Below the Poverty Line,
by Region, Canada 1969 and 1975

Region	Family Youth Allowance		OAS & GIS CPP/QPP		Other	
	1969	1975	1969	1975	1969	1975
A. Below Poverty Line						
Atlantic	8	7	56	59	36	35
Quebec	9	6	52	56	40	38
Ontario	5	5	68	68	26	27
Prairie	6	11	71	66	22	23
British Columbia	3	5	70	62	27	34
B. Above Poverty Line						
Atlantic	29	22	37	27	34	52
Quebec	42	29	30	24	28	47
Ontario	38	29	36	31	26	40
Prairie	37	40	34	33	29	27
British Columbia	28	21	44	29	28	50

1 These terms represent payments made to persons under the following programs: Old Age Security (OAS), Guaranteed Income Supplement (GIS), Canada Pension Plan (CPP), and Quebec Pension Plan (QPP).

Source: Unpublished data provided by Consumer Income and Expenditure Division, Statistics Canada, based on Surveys of Consumer Finances conducted in 1970 and 1976.

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