DOWN AND OUT IN NORTH AMERICA:
RECENT TRENDS IN POVERTY RATES IN THE U.S. AND CANADA

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ABSTRACT

This paper documents the striking difference in U.S. and Canadian
poverty trends from 1970 to 1986. While U.S. poverty has shown no consistent
trend since 1970, Canadian poverty decreased by 60%. This paper examines why
U.S. and Canadian poverty trends differed during two periods: 1970-1979 and
1979-1986. During the 1970s, we find that the principle reason for declining
Canadian poverty rates is higher economic growth. During the 1980s, we find
that differences in government transfers are the main cause of relative
poverty change in the two countries. Virtually all of the 3.5 difference in
U.S. and Canadian poverty changes from 1979 to 1986 can be attributed to
differences in the proportion of families moved out of poverty by transfers.
This may reflect both the expansion in social assistance levels in Canada,
and the retrenchment in assistance levels in the U.S.

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I. INTRODUCTION

Over the past two decades, Canada and the U.S. have been influenced by
many of the same economic and demographic forces, including the decline in
two-parent families, the entry of the baby-boom generation into the labor
force, and the shift of employment from manufacturing to service industries.
Despite these common trends, Canada's poverty rate has declined steadily
since 1970, while U.S. poverty has shown no consistent trend. This paper
addresses the question of why Canada has succeeded in bringing down its
poverty rate, while the U.S. has not.

This paper analyzes the trends in U.S. and Canadian poverty during two
periods: 1970-1979 and 1979-1986. During the 1970s, Canada's poverty rate
declined sharply while the U.S. poverty rate remained constant. During the
1980s, poverty initially increased in both countries but then decreased only
slightly in the U.S., while it fell to below its earlier levels in Canada.
The net result is that the Canadian poverty rate moved from 6.9 points above
the U.S. poverty rate in 1970 to 4.5 points below by 1986.[1]

The comparison of the trends in these two countries in the 1970s
highlights the importance of economic growth in reducing poverty. The 1970s
were a period of high economic growth in Canada, as Canada's per capita GNP
converged to U.S. levels. During this period, Canada's poverty rate
converged to and then fell below the U.S. poverty rate. Canada's experience

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[1] Using the U.S. definition of poverty, poverty rates for non-elderly
families fell in Canada from 17.0 percent in 1970 to 7.8 percent in 1980,
and decreased to 7.1 percent in 1986. In the U.S., the rate fell from 10.1
percent in 1970 to 9.0 percent in 1979, but stood at 11.6 percent in 1986.
Details on how these rates are calculated are provided below.

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during the 1970s mirrors that of the U.S. during the 1960s, when the U.S. experienced both rapid declines in poverty and high economic growth rates.

During the 1980s, the cross country comparison offers a vehicle for learning about the impact of transfers on poverty during an economic downturn. On the eve of the recession of the 1980s, both the US and Canada had similar per capita GDP and employment rates. Both economies traded extensively with each other, so the transmission of economic shocks was likely to be large. However, Canada and the U.S. differed critically in their transfer responses: while Canadian transfers expanded throughout the 1980s, U.S. transfer programs retrenched. This offers a possible test of how of the generosity of the transfer system affects poverty.

Our methods of analysis include detailed decompositions of micro-data as well as multi-variate analysis of state and provincial panel data. The results from this latter panel analysis assign a smaller role to transfer policy than our micro-data analysis suggests. We suspect that this reflects the substantial measurement error in our aggregate transfer variables.

The results from our micro-data decompositions suggest three general conclusions. First, demographic factors play a relatively small role in explaining the difference in U.S. and Canadian poverty changes during both the 1970s and the 1980s. If Canada had the same age, sex, and family size composition as the U.S. in each year, its poverty trends between 1970-1979 and between 1979-1986 would be largely unchanged. Second, the steep decline in Canadian poverty relative to U.S. poverty during the 1970s is primarily attributable to a greater decline in Canada's pre-transfer poverty rate.

This appears to reflect the higher economic growth rate of Canada during the 1970s which raised incomes across the income distribution.

Finally, the analysis suggests that changes in the impact of transfers are the main source of the increase in U.S. poverty relative to Canada in the 1980s. Virtually all of the 3.3 point difference in the change in Canadian and U.S. poverty rates from 1979 to 1986 is attributable to changes in the number of families moved out of poverty by transfers. Among single-parent households, the group most affected by changes in low-income assistance, the effect of transfers is even more dramatic. Over 90 percent of the sizeable 12.1 point divergence in the poverty rates of single-parent families in U.S. and Canada from 1979 to 1986 is attributable to changes in the impact of transfers.

II. MEASURING POVERTY IN THE U.S. AND CANADA

This study focusses on the trends in poverty among non-elderly families in the U.S. and Canada. This is the group of most concern in the current poverty policy debate. We omit the elderly and non-elderly single individuals. Poverty among these two groups is influenced by a different set of factors, and warrants separate analysis.[2]

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[2] For instance, elderly poverty in the U.S. over the past two decades has been greatly affected by changes in pension laws and changes in Social Security programs, but these two issues have had little effect on the well-being of the non-elderly. Non-elderly single individuals in both countries receive few transfers, and thus their poverty rates are largely unaffected by transfer policy.

We consider a family to be any group of two or more individuals living in the same residence who are related by blood, marriage or adoption.[3] This definition is intended to include all individuals in a household who are likely to pool resources and expenditures.

All dollar amounts reported in this paper are in 1986 U.S. dollars. To convert Canadian dollars we use an index based on the 1985 OECD estimate of purchasing power parity for consumption goods, which stood at 1.23 for that year (OECD, 1987). This measures the ratio of the number of Canadian dollars to U.S. dollars required to buy the same market basket of goods in each country. We extrapolate this measure to other years by multiplying it by relative inflation rates in each country.[4]

To calculate comparable poverty rates in the U.S. and Canada, we compute the fraction of the population in each country with incomes below a fixed real income threshold. There are two poverty thresholds used in this paper: the U.S. poverty line and the Canadian 1969 low-income cutoff. The U.S. poverty line is based on a 1964 calculation of need that uses the cost of a minimally adequate food budget as its basis. It varies with family size and age of the family head (elderly/non-elderly).[5] The Canadian 1969 low-income cutoff measures the average income level at which a family spends

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[3] This is the equivalent of the Canadian "economic family" concept, and is the definition used in both the U.S. and Canada.

[4] Our inflation indicators are the U.S. GNP implicit price deflator for consumption and the Canadian GDP implicit price deflator for consumption.

[5] See Ruggles (1990) for a full description of how the U.S. poverty line is defined.

more than 62 percent of their income on food, clothing, and shelter.[6]   It

varies with family size and city size.

Table 1 compares the U.S. poverty level and the Canadian low-income

poverty threshold in 1986 U.S. dollars. In general, the U.S. poverty

thresholds are above the Canadian low-income cutoff for rural families, but

below the Canadian lines for families in cities of 30,000 or more. The

average Canadian threshold for a family of four is $13,133 evaluated at U.S.

1980 population weights, while the U.S. poverty threshold is $11,203.

III. TRENDS IN POVERTY IN THE U.S. AND CANADA

A. Data sources

In this section, we present information on the annual trend in poverty

rates in the U.S. and Canada over the past two decades.   Because we want to

compare equivalent poverty definitions in the U.S. and Canada, we must

recompute poverty in one country, based on the other's poverty line. To do

this, we use micro-data from the U.S. March Current Population Survey (CPS)

for the income years 1964-1987.[7] This is an annual survey of over 56,000

individuals conducted in March of each year which contains detailed

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[6] Wolfson and Evans (1989) discuss how the low-income cutoffs are
calculated in Canada.

[7] We use the Mare-Winship uniform extracts of the March CPS for all
years from 1964 to 1984, and the I.C.P.S.R. versions of the March CPS for
the years 1985-1987.

information on income, labor force activity, and family characteristics.[8]

We use this data to compute U.S. poverty rates based on the 1969 Canadian

low-income cutoff.[9]

The Canadian poverty rate data in this section comes from published

sources.[10] For 1969, 1971, and 1973 onward, these are based on data from

the Survey of Consumer Finances (SCF), described further in the next

section. The 1970 published data is based on the Canadian Census (taken in

1971), but uses the same poverty and family definitions. The 1972 data is

an interpolation.[11]

B. Poverty Trends

This section compares the trends in family poverty in Canada and the

U.S. from 1970 to 1986. Although there is an extensive literature on trends

in poverty within each country[12], few authors have explicitly compared U.S.

and Canadian poverty trends. One exception is Dooley (1989), who compares

poverty rates of families with and without children from 1973 to 1986, using

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[8] Unfortunately, the CPS does not have information on population of
city of residence, thus we use the weighted average Canadian poverty level
for each family size, based on U.S. population weights from the 1980 census.
The 1969 low-income cutoff is adjusted over time with the Canadian Consumer
Price Index.

[9] For all calculations with the March Current Population Survey as well
as the Canadian Survey of Consumer Finances, we use sample weights in the
computation of poverty rates.

[10] Data for 1971-1987 come from Statistics Canada (1972-1988). Data for
1970 comes from Statistics Canada (1977). The estimate for 1960 is from
Vaillaincourt (1985).

[11] The only published poverty data for 1972 is based on a low-income
cutoff defined in 1961, rather than the 1969 low-income cutoff.

[12] See Sawhill (1988) for a review of the U.S. literature, and Perron
and Vaillaincourt (1988) for a discussion of Canadian trends.

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the U.S. poverty definition. He finds that poverty rates of families with children have declined in Canada from 1973 to 1986, while they increased substantially in the U.S. Poverty rates of families without children declined in both countries during this period, but they declined more rapidly in Canada. McWatters and Beach (1990) find that the share of the bottom quintile of the family income distribution has increased since 1971 in Canada, while it has declined in the U.S.

Figure 1-A illustrates the trends in family poverty in Canada and the U.S. from 1969 to 1987. This figure indicates that during the 1970s, the Canadian family poverty rate decreased markedly from 17.7 percent in 1969 to 9.8 percent in 1979, while the U.S. poverty rate increased from 10.5 percent to 11.9 percent. During the recession of the early 1980s, poverty increased in both Canada and the U.S. While the Canadian poverty rate ultimately returned to its 1979 level, however, the U.S. poverty rate in 1987 remained nearly three points above its pre-recession level.

The poverty rates used in this section are based on cash income. One might argue that this will favor Canada, since a larger share of U.S. transfers are in-kind benefits. To test how much the exclusion of in-kind benefits affects the U.S. poverty count, we use the results of a recent Bureau of the Census study to impute the U.S. poverty rate after including in-kind benefits for housing, Food Stamps and energy assistance.[13] This comparison will overstate the welfare of U.S. families relative to Canadian

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[13] For each year from 1979 to 1986 we multiply the cash income poverty rate in the U.S. (based on the Canadian poverty definition) by the ratio of the percent of families who are poor in the Census data when non-medical in-kind benefits are counted, divided by the percent who are poor when only cash income is included. These data are from U.S. Bureau of the Census (1987).

families, since it ignores medical care benefits. In Canada, health care is available to all low-income families through the Canadian national health insurance program, while in the U.S. only a limited number of poor families receive health care.[14] The results, shown in the solid line in Figure 1-A, suggest that even after including in-kind benefits the U.S. poverty rate of 12.8 percent is well above Canada's rate of 9.4 percent. This adjustment does not appear to change the trends in poverty during the 1980s.

Figure 1-B extends the trends in U.S. and Canadian poverty back to the 1960s. Both the U.S. estimate in 1960 and the Canadian estimate in 1961 are based on an interpolation.[15] The other numbers are derived as described above. The figure shows that the Canadian poverty decline in the 1970s is similar in magnitude to the decline in poverty in the U.S. that occurred during the 1960s. The fall in U.S. poverty in the 1960s is typically ascribed to strong economic growth; we shall argue below that the decline in poverty in Canada in the 1970s is similarly attributable to high rates of economic growth in that country over the decade.

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[14] Medicaid, the national medical care program for low income families in the U.S., is largely limited to either disabled or elderly households receiving Supplemental Security Income, or to single-parent families receiving Aid to Families with Dependent Children. Chollett (1988) estimates that 38.6 percent of U.S. poor families are uninsured in 1986; the number is higher in earlier years before Medicaid expanded.

[15] The Canadian 1961 estimate comes from published data based on a 1961 low-income cutoff. It is adjusted by the ratio of the 1973 poverty rate based on the 1961 versus the 1969 low-income cutoff. The U.S. 1960 data is based on published data using the official U.S. poverty rate, and is adjusted by the ratio of the U.S. poverty rate in 1966, based on the Canadian 1969 low-income cutoff, to the official U.S. poverty rate in that year.

Figures 2-A and 2-B depict the trends in poverty by sex of family head in the two countries.[16] Two patterns are clear from these figures. First, the declines in Canadian poverty during the 1970s is more pronounced among male-headed than among female-headed families. This is what one would expect if the poverty decline during the 1970s were fueled by economic growth, since men are typically more able to take advantage of expanded work opportunities.[17] This story is also consistent with the fact (not shown here) that the declines were strongest among families with heads in their prime earning years.

Second, the increase in U.S. poverty relative to Canadian poverty in the 1980s is more pronounced among female-headed families. This trend is also more apparent among families with young children. These are precisely the families who might have been most adversely affected by the cutbacks in transfer programs in the U.S. and most positively affected by the transfer expansions in Canada during the 1980s.

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[16] Note that Figures 2-A and 2-B are not entirely comparable to Figure 1-A because they include elderly families. Unfortunately, the Canadian published data does not provide separate poverty rates for non-elderly families by sex of head. The U.S. rates in Figures 2-A and 2-B also include elderly families, in order to provide comparability. Disaggregate data indicate that the trends in poverty among the elderly are not the same as the trends among the non-elderly. However, the data in Figures 2-A and 2-B are dominated by the non-elderly trends.

[17] For example, see Blank (1989).

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IV. ANALYZING THE TRENDS IN POVERTY RATES

This section investigates the extent to which the different trends in

poverty in the U.S. and Canada appear to be due to differences in

demographic composition, differences in the macroeconomy, or differences in

the public transfer systems of the two countries. In this section we

analyze each of these areas separately. The next section measures their

joint effects through multivariate analysis.

A. Data Sources

In this section, we turn from a discussion of annual trends to a more

in-depth analysis of changes across decades, using micro-data from both the

U.S. and Canada for 1970, 1973, 1979 and 1986. The U.S. data for these

years comes from the March CPS, described above. The Canadian data for

1973, 1979 and 1986 are drawn from the Canadian Survey of Consumer Finances

(SCF), a survey of over 32,000 families conducted in April of each year and

containing information on income over the past year. It is similar in

content to the CPS. The 1970 data comes from the 1971 Canadian Census.

This data is largely comparable, but unfortunately it uses a slightly

different family definition.[18]   Thus in the tables that follow, we show

data for both 1973 (which is fully comparable to 1979 data) and for 1970.

In most cases there are no substantive differences.

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[18] The public use micro-data file from the 1970 Canadian Census defines
a family to include only parents and their single children, rather than all
related individuals in the same household. We have repeated most of the
analysis in this section using a subset of the data on which we can get
fully consistent data across all years (parents and related children with no
related subfamilies living in the same household), and found little
substantive difference in the results.

We use the U.S. definition of poverty to calculate poverty rates for
both the U.S. and Canada in this section. This is because, as noted above,
we cannot accurately calculate the Canadian low-income cutoff in the U.S.
micro-data because we do not have population size of resident city available
from the CPS. We can, however, accurately apply the U.S. poverty line to the
Canadian micro-data.[19]

Both the SCF and the CPS undercount transfer income, which means that
we may be overestimating poverty and underestimating the impact of
transfers. In 1986, the SCF undercount of transfers ranged from a low of 4%
for the child tax credit to a high of 47% for Social Assistance and other
provincial income supplements. In 1983, the latest year for which
information is available in the U.S., the undercount was estimated at 24%
for both AFDC and Unemployment Insurance. In both countries, the
estimated undercount has declined moderately since the 1970s, and thus our
estimated poverty trends may be somewhat overstated.[20]

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[19] We define the U.S. poverty line as the 1986 level, adjusted backward
to prior years using the GNP deflator for consumption expenditures. This is
not quite the same as the official U.S. poverty line, which is annually
adjusted on the basis of the U.S. Consumer Price Index. There is agreement,
however, that the U.S. CPI was "overindexed" in the late 1970s, resulting in
higher inflation rates than were reported by more reliable measures. It is
reasonable to use the same inflation measure for the poverty line that we
use for income and the exchange rate.

[20] The SCF documentation for the micro-data tapes for 1973, 1979 and
1986 income years provide the following estimates for the undercount by
program:

	1973	1979	1986
Child Tax Credit	NA	NA	4%
Family Allowances	9%	6%	6%
Unemployment Insurance	34%	25%	22%
Other (Social Assistance, Provincial Tax Credits)	53%	46%	47%

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Both the CPS and the SCF changed procedures for imputing the income of non-respondents in the mid-1970s. The SCF started imputing income for non-respondents in the 1977 income year. In 1976, the CPS expanded the list of variables used in the imputation procedure to include factors such as education. We do not enough information available in the SCF to adjust for these changes. However, these changes are unlikely to have markedly changed our estimated poverty trends since, as Figure 1-A illustrates, there were not marked discontinuities in the poverty estimates at the time the imputation procedures changed.[21]

Because the previous section relied on published data, it primarily used cash income as a measure of family resources. The micro-data used in this section allows us to be more accurate. Our estimates of family income for the U.S. include both cash income and Food Stamps starting in 1979, and an imputed amount for the refundable Earned Income Tax Credit (EITC).[22]

The estimated undercounts for the CPS are shown below. These estimates are found in U.S. Bureau of the Census, Current Population Reports, Series P-60, numbers 160, 132, 97, and 85.

	1971	1973	1979	1983
Unemployment Insurance	NA	NA	31%	24%
AFDC and Other Public Assistance	29%	26%	23%	24%

[21] The Bureau of the Census estimated that the change in imputation procedures changed the estimated number of poor families by 3.7% for 1974 (U.S. Bureau of the Census, Current Population Reports, Series P-60, no. 103.)

[22] There is no data in the CPS on Food Stamps receipt in 1970 or 1973. Food Stamps were a much smaller program in these earlier years (many counties did not offer the program), expanding from a $550 million dollar program in 1970 to a $10.6 billion program in 1980.

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Canadian income includes cash income and (in 1986) the refundable Child Tax Credit.[23]

B. The Role of Demographic Change

Differences in demographic structure and its change over time may be one potential source of divergence between U.S. and Canadian poverty rates. If Canada had slower growth in poverty prone populations, such as single-parent families or young families, its aggregate poverty rate would decrease relative to the U.S., even if relative poverty rates within demographic groups did not change.

To determine the effect of demographic change on U.S. and Canadian poverty rates, we compute separate Canadian poverty rates for 75 different groups based on age of head (18-24, 25-34, 35-44, 45-54, and 55+), family type (two-parent, male single-parent, female single-parent), and family size (2, 3, 4, 5, or 6+ members). We then compute a demographically adjusted Canadian poverty rate in each year by weighting the within group poverty rates from Canada by their U.S. population weight. This measure should reflect the level of poverty that would occur in Canada if that country had the same demographic structure as the U.S.

Table 2 presents the results of this analysis. The top part of the table reports estimates which use weights from all U.S. families, whereas

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[23]Only in 1986 do we have data on the Child Tax Credit, which was implemented in 1979.

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the bottom part of the table uses weights from U.S. whites families only.[24]
The first two rows present the unadjusted poverty rates in the U.S. and
Canada. The third through sixth rows provide estimates of the Canadian
poverty rate adjusted for U.S. demographic composition. The final row
indicates the net effect of this adjustment on Canada's poverty rate.

There are three general conclusions from the results in Table 2.
First, Canada's demographic factors decrease its poverty rate relative to
the U.S. In 1970, Canada's poverty rate was 2.1 points lower because of
different demographic composition. In 1986, Canada's poverty rate was 3.2
points lower because of demographic composition. Canada has more two-parent
families and fewer female single-parent families throughout these two
decades; adjusting for this raises its poverty rate substantially. While
both countries show an increase in female-headed families over time, the
U.S. share grows more rapidly.

Second, within-group poverty rates are converging between the U.S. and
Canada over this time period. In 1970, Canada's poverty rate was 9 points
higher than the U.S. after adjusting for demographic composition, implying
that within-group poverty rates were higher. By 1986, poverty rates within
demographic groups in both countries are much more similar. If Canada had
the same proportion of families in each age, family size and family type
category as the U.S., its poverty rate would be 10.3 percent in 1986, very

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[24] Because Canada has a very small black population, it may be more
appropriate to use the demographic composition of the U.S. white population.
(The Canadian SCF does not identify race of family, so we cannot estimate
separate black and white poverty rates in Canada.) Canada does have a
minority population, however, particularly including Native Americans.
Thus, using the white population weights probably provides a conservative
minimum estimate of equivalent Canadian poverty.

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close to the U.S. level of 11.6 percent. If it had the demographic
characteristics of U.S. white families, Canada's poverty rate of 8.9 percent
would be nearly identical to the U.S. white poverty rate of 9.2 percent.

Third, because changes in relative demographic composition are not
substantial, the trends in poverty between the U.S. and Canada remain
largely unchanged even after demographic adjustment. If Canada had
identical demographic characteristics as the U.S. in each year, its poverty
rate would have declined by 8.0 points rather than 9.2 points from 1970 to
1979, and it would have declined 0.8 points rather than by 0.7 points
between 1979 to 1986. In short, demographic adjustment does little to
explain relative poverty trends between these two countries; instead, we
must explain changes in poverty rates within demographic groups in Canada
and the U.S.

C. The Economic Environment

One potential cause of different U.S. and Canadian poverty trends could
be differences in economic growth rates. Economic growth has been widely
cited as a major determinant of declining poverty.   If employment growth
and real income growth are spread throughout the population, the income
distribution will shift outward, which will decrease the fraction of the
population with incomes below a fixed poverty line. Note, however, that if
economic growth causes an increase in the dispersion as well as an increase
in the mean of the income distribution, it can cause poverty to increase.
While the relationship between poverty and economic growth is theoretically
ambiguous, the empirical literature has consistently found a strong negative

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correlation between economic growth and poverty.[25]   Thus, all else

constant, one would expect higher economic growth rates in Canada to result

in greater poverty declines.

Figures 3-A and 3-B demonstrate the strong negative correlation

between poverty rates and median family income levels in both countries.[26]

Both the marked decline in U.S. poverty from 1960 to 1968 and the steep

decline in Canadian poverty from 1967 to 1978 correspond to periods of rapid

growth in median family income.[27]   In each country the rapid declines in

poverty abated when median income stabilized. As shown, the economic growth

rate was substantially higher in Canada than in the U.S. during the 1970s,

with median family income increasing by 4.4% per year in Canada from 1969 to

1979 as opposed to 0.9% in the U.S. During the 1980s, however, growth rates

were quite similar, averaging 0.4% per year in both countries from 1979 to

1988.   Figures 4-A and 4-B plot the full distribution of pre-transfer

income in 1970 and 1979.[28]   Income is expressed as a fraction of the U.S.

poverty level to normalize for family size. These graphs clearly

demonstrate that the decline in Canadian poverty in the 1970s resulted from

growth across the entire income distribution, rather than from improvements

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[25] See for example Blank and Blinder (1986), Perron and Vaillaincourt
(1988), or Blank (1989).

[26] Figure 3 returns to the annual poverty rate data from the previous
section and is based on the 1969 Canadian low-income cutoff. Because we
cannot separate median income for elderly and non-elderly families over this
time period, the figure includes elderly families in the data for both
median income and poverty rates.

[27] The correlation coefficient between real median family income and
family poverty rates is -0.986 in Canada, and -0.842 in the U.S.

[28] Each graph is based on 100 1-percent increments in the income distribution.

that were localized at the lower tail. From 1970 to 1979, the increase in median income among the bottom quartile in Canada was 47.6%--quite close to the increase in the overall median of 48.8%. The shift outwards in the Canadian adjusted family income distribution was also more sizeable than that of the U.S. distribution, which increased at the median by 14.4% from 1970 to 1979.

While differences in economic conditions may explain why U.S. and Canadian poverty trends differed in the 1970s, they provide fewer clues as to why poverty increased by more in the U.S. than in Canada during the 1980s. As mentioned earlier, the growth rate of family income was quite close in both countries between 1979 to 1986. In terms of unemployment, the recession in the mid-1980s was more severe and more protracted in Canada than in the U.S. From 1970 to 1979, the unemployment rate increased by 2.2 points in Canada as opposed to 1.2 points in the U.S. In 1986, the Canadian unemployment rate of 9.6 points was well above the U.S. unemployment rate of 7.0 points. All else constant, this increase in unemployment should increase Canadian poverty relative to the U.S.[29]

One factor which may contribute to an increase in U.S. poverty relative to Canadian poverty in the 1980s is an increase in wage inequality in the U.S. relative to Canada. Freeman and Needles (1990) have found that low skilled workers have experienced greater wage declines and that skill differentials have widened more in the U.S. than in Canada in the 1980s. Moreover, Blackburn and Bloom (1990) have found that the variability of the unexplained component of wages has also increased more in the U.S. than in

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[29] Both Blank and Blinder (1986) and Perron and Vaillaincourt (1988) find a positive relationship between family poverty rates and unemployment.

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Canada in the 1980s. Freeman and Needles attribute this rise in wage

inequality to a number of factors, including the relative decline in U.S.

union density, the decline in U.S. manufacturing industries relative to

Canada, and the increase in the relative supply of skilled labor in Canada.

We will return to these factors in the final section of this paper.

A final potential source of the difference in U.S. and Canadian poverty

rate changes may be the growing labor force participation of wives. The

share of families with a wife in the paid labor force increased more rapidly

in Canada than in the U.S.: it increased from 47.4% in 1970 to 60.8% in 1986

in Canada, while it increased from 48.0% in 1970 to 56.4% in the U.S. Since

increases in women's earnings increase family income[30], this should

contribute to a reduction in poverty in Canada relative to the U.S.

To test for the impact of wives' earnings on family poverty rates, we

compute pre-transfer poverty rates with and without wives' earnings. The

difference between these two estimates represents the total impact of wives'

earnings on pre-transfer poverty. The results, shown in Table 3, indicate

that wives' earnings had a similar impact in the U.S. throughout the 1970s,

decreasing poverty by 3.0 points in 1970 and 3.1 points in 1979. By

contrast the effect of wives' earnings increased in Canada, decreasing

poverty by 1.4 points in 1970 and 3.7 points in 1979. Thus, wives' earnings

contributed 2.3 points to the total 7.9 point decline in Canadian pre-

transfer poverty in the 1970s.

The effect of wives' earnings on the poverty rate continued to grow in

Canada, decreasing poverty by 6 percent in 1986. The effect of wives'

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[30] Unless the labor supply responses of other family members are large
enough to outweigh the increase in female income.

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earnings also increased in the U.S. in the 1980s, but by a lesser amount.
By 1986, pre-transfer poverty rates excluding wives' earnings were quite
similar in both countries. Lower actual pre-transfer poverty rates in
Canada were due to the greater impact of wives' earnings on poverty in that
country. In part, this reflects the fact that there are fewer female-headed
families in Canada, and thus more low-income families contain wives.

D. Transfer Policy

Transfer policy influences both U.S. and Canadian poverty rates.
Surprisingly, despite expansions to both the U.S. and Canadian transfer
system in the 1970s, transfers appear to have played a minor role in
explaining relative U.S. and Canadian poverty trends during this decade. We
find evidence, however, that transfers played a substantial role in
explaining the difference in poverty trends in the 1980s between these two
countries.

1. U.S. and Canadian Transfer Policy in the 1970s and 1980s

Appendix I briefly describes the primary non-elderly, non-medical
transfer programs available to low-income families in Canada and the U.S. in
1986. These programs are described in more detail in Blank and Hanratty
(1990). In Canada, the key transfer programs include Unemployment Insurance
(UI), a federal program available to unemployed workers for up to a year
after losing their job; Family Allowances, a per-child payment available to
all families with children under age 18 (not limited to low-income
families); and Social Assistance, a provincially-run program providing
income supplements to low-income families. Social Assistance payments

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differ significantly across provinces; most provinces have different
eligibility and benefit rules for different types of families and
individuals. Canada also has a refundable Child Tax Credit that varies with
number of children.

In the U.S., the major transfer programs for the non-elderly non-
disabled include Unemployment Insurance (UI), Aid to Families with Dependent
Children (AFDC), Food Stamps, and the Earned Income Tax Credit (EITC).
Unlike Canada, UI is a state-run program in the U.S., with substantial
variability in eligibility and benefit rules across states. UI eligibility
is also more restricted in the U.S. than in Canada, and benefits are
typically available for only 26 weeks.[31] AFDC is a state-run program that
provides cash assistance to low-income families. This program typically is
restricted to single-parent families, although about half the states in 1986
allow two-parent families to receive AFDC under stricter eligibility
requirements. Food Stamps is a federally-run program that provides coupons
redeemable for food to low-income families and individuals. Finally, the
EITC provides a tax credit for low-income working families. It has been
refundable since the mid-1980s.

Appendix II indicates the major changes that occurred in these programs
between the mid-1960s and the mid-1980s. During the late 1960s and early
1970s, both Canada and the U.S. expanded non-elderly transfer programs. In
Canada these changes included establishing the current form of Social
Assistance in 1966, substantially expanding the UI program in 1971,
establishing Family Allowances in 1973, and establishing the Child Tax

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[31] Unless the worker is eligible for Federal extended or supplemental
benefit programs.

Credit in 1979. In the U.S., the federal government made major extensions

in AFDC in 1967, extended coverage and eligibility of UI in 1970,

implemented various supplemental and extended UI benefit programs in the

1970s, expanded Food Stamps in 1971, and established the EITC in 1975.

During the late 1970s and early 1980s, both countries restricted

eligibility and benefits for transfer programs, although the U.S. cutbacks

were more severe. Canada tightened UI eligibility rules in Canada in 1977-

78. The U.S. implemented major legislation in 1981, which reduced the

eligibility of the working poor for AFDC and food-stamps. In addition,

U.S. federal extended and supplemental UI benefits were more limited during

the recession of the early 1980s than they had been during the 1970s.

Table 4 shows the utilization of UI and Social Assistance/AFDC in 1970,

1979 and 1986, across income class. Since UI is the only program that is

not limited to low-income households, transfers received by upper-income

families must predominantly reflect UI payments.[32] This table clearly

shows the impact of the Canadian expansion of UI in 1971. From 1970 to 1979,

the share of families receiving either Unemployment Insurance or Social

Assistance increased from 18 percent to 32 percent. This increase occurred

across all income levels: the participation rate rose from 37 percent to 65

percent among poor families, but also rose from 12 to 25 percent among

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[32] We do not separate these programs in Table 4 largely because we
cannot separate UI payments from Social Assistance payments in the 1970
Canadian data. In the 1970 U.S. data, income categories are aggregated and
the data includes not only UI and AFDC, but also state and Federal
disability payments and Workers' Compensation payments to disabled workers.
These are small programs, however, compared to UI and AFDC.

families with incomes more than twice the poverty line.[33] Because so many

more families are in the upper-income category, most of these additional

transfer dollars did not benefit the poor. Of the $3 billion increase in

Canadian UI and Social Assistance payments to non-elderly families between

1970 and 1979, only 24% was received by the poor. Expansion of transfer

assistance in the U.S. is much more moderate between 1970 and 1979. The

proportion of families receiving UI or AFDC increased slightly, while real

average transfer payments actually declined.

During the 1980s, Canadian participation rates and real payment levels

continued to rise, but not as rapidly as in the 1970s. Substantially higher

unemployment rates in 1986 were also responsible for greater UI eligibility

in all income groups. In contrast, U.S. low-income transfer programs were

cut back substantially in the 1980s, as Table 4 documents. Transfer

participation rates fell between 1979 and 1986, and average payment levels

declined. It is interesting to note that average payments to families with

higher incomes do not decline over the 1980s in the U.S. in Table 4, but do

decline among lower income households. This indicates differences in

payment levels for UI (which were not declining) versus AFDC.

Further information on transfer program generosity can be seen in Table

5, which presents maximum monthly transfer payments for a family of four

receiving either UI or low-income transfers. In the U.S., low-income

transfers are a population-weighted average of the maximum allowable payment

for a family of four from AFDC and Food Stamps across states. In Canada,

low-income transfers are a population-weighted average of the maximum Social

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[33] Note that by participation rates, we mean the fraction of all
families receiving transfers within the given year. We are not estimating
the fraction of the eligible population receiving benefits.

Assistance payment, plus the Child Tax Credit and Family Allowance for a family of four across provinces.[34] Unemployment Insurance transfer payments in the U.S. represent the population-weighted average of UI maximums across state UI programs plus any additional Food Stamps for which a family of four would be eligible. In Canada, Unemployment Insurance payments represent the maximum payment under the federal UI program plus the Child Tax Credit and Family Allowances.

As Table 5 indicates, average maximum low-income transfer benefits declined 6.4% between 1979 to 1986 in the U.S., while UI benefits increased 4.4%. In contrast, maximum real low-income transfer benefits increased by 9.6% in Canada from 1979 to 1986, and maximum real UI benefits and child benefits rose by 16.8%.

The net result of these changes is that transfer programs became substantially more generous in Canada relative to the U.S. While average low-income transfer maximums were 26 percent higher in Canada in 1979, they were 47 percent above U.S. levels in 1986. Virtually none of the U.S.

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[34] Low-income transfer benefit maximums for Canada must be interpreted with caution. There are no publicly available sources which provide consistent data on benefit maximums by province over this time period; our information is taken from a different source in each year. It is likely that there are inconsistencies across the years. For example, since each province itemizes a number of special benefits which are given to families contingent on their needs, the computed benefit level will depend on which special items are included.

Several other facts support our claim that real grant levels have increased in Canada from 1979 to 1986, however. First, real administrative payments per recipient under provincial general assistance programs increased by 10 percent from 1979 to 1986. (Health and Welfare Canada, 1989). Second, a consistent data series for the province of Ontario shows an increase in real grant levels from 1979 to 1986 of roughly 24 percent (National Council of Welfare, 1987). Finally, a consistent data series across provinces indicates an increase of 2.4 percent in the population-weighted average real social assistance levels for a family of 4 from 1982 to 1985 (Social Planning Council of Metropolitan Toronto, 1986.)

states offered maximum transfer benefit levels which reached the U.S. poverty level in 1986, while fully 5 out of 11 Canadian provinces had maximum low-income transfer benefit levels which exceeded the U.S. poverty level.

Since U.S. AFDC assistance is largely restricted to single-parent families, the deterioration in the real value of U.S. low-income transfers should fall disproportionately on single-parent families. This is verified in Table 6, which presents average transfer payments and fraction of recipients among different family types. As shown, the average real transfer payment to single-parent families in the U.S. declined by 10 percent from 1979 to 1986, from $4479 to $4008, while average payments to other families remained relatively constant. In Canada, average payments increased for all family types from 1979 to 1986.

Table 6 also indicates that participation rates in transfer programs fell moderately among all family types in the U.S. Canadian participation rates in all programs are hard to decipher, since they include Family Allowances, which are available to all families with children. However, participation in both UI and Social Assistance appeared to rise between 1979 and 1986 among all family types in Canada.

2. The Effect of Transfers on Poverty

In order to measure the effect of transfers, we would like to know the level of poverty that would prevail in the absence of the transfer system. Unfortunately, this is not easily calculated, since the presence of transfers may affect other sources of income. In particular, there is evidence that increased transfers reduce labor supply and decrease earnings.

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If these effects are small, however, the difference between observed pre- and post-transfer poverty will be a close measure of the effect of transfers.

We decompose the change in poverty into changes in pre-transfer poverty rates and changes in the gap between pre- and post-transfer poverty rates:

$$POST_t - POST_{t-}1 = (PRE_t - PRE_{t-}1) + [(POST_t - PRE_t) - (POST_{t-}1 - PRE_{t-}1)]$$

The change in the pre-transfer poverty rate reflects changes in nontransfer income, primarily changes in family earnings. Changes in the gap between pre- and post-transfer poverty rates measure changes in the effectiveness of the transfer system in moving people out of poverty.

Table 7 compares pre- and post-transfer poverty rates among non-elderly families in the U.S. and Canada. Note that the 1979 data does not contain information on the Child Tax Credit in Canada, therefore the pre/post difference between 1979 and 1986 for Canada will somewhat overstate the effect of transfers. [35]

Table 7 suggests that the main source of the decline in Canadian poverty relative to U.S. poverty in the 1970s was a decline in pre-transfer poverty. From 1970 to 1979, the Canadian pre-transfer poverty rate decreased by 8.0 points, whereas the post-transfer poverty decreased by 9.2 points. Thus, 87 percent of the change in Canadian poverty during the 1970s resulted from changes in pre-transfer poverty.

While this result is consistent with earlier evidence on strong economic growth in Canada during the 1970s, it may still seem surprising. Given the expansion in the Canadian unemployment insurance program in the 1970s, one might have expected transfers to play a more important role in

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[35] The Child Tax Credit was implemented in 1979.

explaining the trends in the 1970s. As noted above, however, most of the increase in transfer dollars in Canada from 1970 to 1979 went to those with incomes above the poverty line. Thus, the expansion in Canadian transfer programs in the early 1970s had a relatively small measured effect on poverty.

The 1980s tell a different story. The pre-transfer poverty rate increased by 1.9 points in Canada from 1979 to 1986, while the U.S. pre-transfer poverty rate increased by 1.7 points. Over the same period, the gap between pre- and post-transfer poverty _increased_ in Canada by 2.5 points, as transfers became more generous, whereas it _decreased_ by 0.9 points in the U.S., where transfers declined. Thus, in an accounting sense, virtually all of the 3.3 point difference between the poverty trends in the U.S. and Canada in the 1980s may be explained by changes in the impact of transfers.

Table 8 shows how these trends differed among different types of families between 1979 and 1986. Single-parent families appear to be particularly hard hit by the decline in U.S. transfers. From 1979 to 1986, the pre-transfer poverty rate remained relatively constant for single-parent families in both countries, increasing from 47.0 to 48.1 in the U.S., and from 42.0 to 42.2 in Canada. However, the post-transfer poverty rate for these families increased by 6.5 points in the U.S., whereas it declined by 5.6 points in Canada. In short, over 90 percent of the substantial 12.1 point divergence in U.S. and Canadian poverty trends between 1979 and 1986 may be explained by differences in transfer payments.

3. What is the Effect of Work Disincentives on these Results?

As noted above, the foregoing analysis does not adjust for the effect of transfers on pre-transfer poverty. If an increase in transfers causes a reduction in work effort, then pre-transfer poverty will fall and the observed change in the gap between pre-and post-transfer poverty rates will overstate the effect of changes in transfers.

To test whether the relative increase in transfer payments in Canada versus the U.S. over the 1980s caused a relative decrease in work effort in Canada, Table 9 compares the weeks worked of three types of families in 1979 and 1986. As Table 9 indicates, despite a 16 percent increase in the relative value of transfer payments to single-parent families in Canada versus the U.S., the weeks worked of single parent families increased in Canada relative to the U.S. Since this was the group most affected by the change in low-income transfer levels, these results imply that the work disincentive impact of transfers cannot have been large.

Husbands in two-parent families showed a moderate decline in labor supply in both the U.S. and Canada over this time period, with husbands in Canada decreasing their labor supply more than in the U.S. This may partly reflect the moderate increase in UI generosity in Canada relative to the U.S. However, other research indicates that changes in UI generosity are not likely to explain a large part of the increase in Canadian unemployment relative to the U.S. during the 1980s.[36]

Wives in both the U.S. and Canada showed a strong increase in both the propensity to work and the propensity to work full-time over the 1980s.

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[36] See Keil and Symons (1989), Ashenfelter and Card (1987), and McCallum (1987) for a discussion of this issue.

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This increase in married women's labor supply is typically ascribed to a wide variety of social and economic changes, including expanding job opportunities for women. It is doubtful that it has been much influenced by transfer policy.

While the simple data tabulations in Table 9 do not provide any definitive estimate of the magnitude of labor supply effects due to the expanding Canadian transfer system versus the contracting U.S. transfer system over the 1980s, these results do seem to imply that any labor supply effects that did occur were small, and (at least among female-headed families) were swamped by other factors. This provides reassurance that the comparison of pre- and post-transfer poverty rates in the above analysis is not strongly biased by work disincentive effects.

V. EVIDENCE FROM A PANEL OF STATES AND PROVINCES

A. Estimating Determinants of Pre- and Post-Transfer Poverty

The above analysis investigates separately the potential impact of demographic factors, macroeconomic factors, and transfer policy on relative poverty rates in the U.S. and Canada. This section measures their combined effects in a multivariate regression context using panel data from U.S. states and Canadian provinces for the years 1970, 1973, 1975, 1979 and 1986. This analysis investigates the relationship at an aggregate level between demographics, economic factors, and transfers and poverty rates.

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We estimate two equations:

(1) $PRE = X*a_1 + e$

(2) $POST = PRE*b_1 + X*b_2 + u$

where "POST" is the post-transfer poverty rate, "PRE" is the pre-transfer poverty rate, X is a vector of macroeconomic, demographic and program variables, and e and u are random errors.

The first equation measures the effect of the control variables on the pre-transfer poverty rate. If transfers induce behavioral responses which increase pre-transfer poverty, we should find significant positive coefficients on the transfer variables in this equation. The second equation measures the further effect of the control variables on post-transfer poverty, holding constant pre-transfer poverty.

Our control variables include three transfer variables: the log of the maximum low-income transfers for a family of 4, the log of the maximum UI payment, and the log of the maximum weeks of UI coverage. These are at best rough proxies for the generosity of transfer programs. The low-income transfer variable in particular is likely to be measured with substantial measurement error due to the lack of consistent data on social assistance benefits in Canada over time.[37] The impact of the UI variables may be difficult to identify due to their lack of variation: the UI variables do not vary across provinces in Canada since the UI program is a national program in Canada. The maximum weeks variable exhibits little time-series variation in Canada and little cross-sectional variability in the U.S. in

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[37] See foot-note 34 for a discussion of this issue.

1986.[38] As a result of these problems, we believe that the coefficients on

the transfer variables must be interpreted with caution. It is difficult to

use state and province-level data to uncover the effects of transfers on

income change.

    To control for demographic change we include four variables: the

percent of families that are two-parent families, the average family size,

the percent of families with a head under age 30, and the percent of

families with a head age 51 to 60. To measure the impact of economic growth

and the business cycle, we include the log of real median family income and

the unemployment rate. To control for factors which may affect wage

dispersion, we include union coverage[39], the percent of employment in the

manufacturing industry, the share of family heads with greater than ten

years of education[40], and the share of family heads with a university

degree. Finally, we include the share of families with two or more earners

to control for the impact of the growth in wives' labor supply. These

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    [38] In 1986, maximum weeks of UI eligibility was 26 weeks in all but two
states.

    [39] For the U.S. our measure is the proportion of employees covered by a
collective agreement. For Canada, our unionization measure is the total
number of union members divided by non-agricultural employment. We use
membership rather than union coverage as our union measure for Canada, in
order to obtain a consistent series over time. However, this is unlikely to
bias our results since these two measures are quite close in Canada: in
1986, 35.4% of all workers were union members, while 39.9% were covered by a
collective agreement (Coates, et.al., 1989).

    [40] This is the closest measure to high school graduation that we could
identify consistently from the Canadian data, which indicates only whether
an individual attended between 11 and 13 years of school in 1975 and 1979.
For 1973, we estimate the fraction attending 11 -13 years of school using
1973 data on fraction attending 9-13 years and 1975 data on the ratio of
those attending 11-13 years to those attending 9-13 years of school.

variables are described more fully in Table 10, which also includes their
means and standard deviations.[41]

Since we are trying to explain the aggregate trends in poverty at a
national level in both countries, we want to fit a regression line through
the population-weighted means of the data. In addition, we want to give
each country equal weight in the regression. Thus, we weight each
observation by the population in each state or province divided by that
country's population.[42]

The estimated coefficients for equations 1 and 2 are presented in Table
11. Columns 1 through 3 show the results from different specifications for
pre-transfer poverty (equation 1). Not surprisingly, the macroeconomic
variables have a strong effect on pre-transfer poverty. As median family

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[41] All data unless otherwise specified are estimated from the micro-
data tapes of the CPS in the U.S., and from the SCF and the 1971 Census in
Canada. Both the Canadian 1971 Census and the Canadian 1975 SCF data use
the "census family" rather than the "economic family" concept, described
earlier.
Variables drawn from other sources include:
Transfer Variables: See Table 5 footnotes for sources.
Unemployment Rate: U.S. data drawn from Data Resources Incorporated, U.S.
Regional Data Bank. Canadian data are from Statistics Canada, CANSIM data-
bank.
Unionization: Canadian data are drawn from various annual publications of
Statistics Canada, Corporations and Labour Unions Returns Act, Part II,
Catalogue number 71-202. U.S. data for 1970, 1973, and 1979 are based on
Kokkelenberg and Sockell, "Union Membership in the U.S." Industrial and
Labor Relations Review 38(4), 1986, Table 5. 1986 data is from unpublished
tabulations provided by Alan Krueger, which match the Kokkelenberg and
Sockell tabulations quite well in overlapping years.
Manufacturing Employment: Canadian estimates based on Statistics Canada,
Estimates of Employees by Province and Industry, Catalogue 72-008 for the
1970s and Statistics Canada, Employment, Earnings and Hours, Catalogue 72-
002, for the 1980s. We use data from both publications on March 1983
employment levels, to adjust for changes in methodologies between these two
publications. U.S. data are drawn from various issues of U.S. Bureau of
the Census, Statistical Abstract of the United States.

[42] Estimates done on unweighted data are very similar to those shown here.

income rises, pre-transfer poverty falls. As unemployment rises, pre-transfer poverty rises. When state/province effects are included in the regression, unemployment becomes insignificant, indicating that most of its impact comes from cross-sectional variation. Finally, the share of families with two earners is significant and negative in the first two models, suggesting that the growth in women's labor supply may have a negative impact on poverty.

Among our controls for factors expected to affect wage dispersion, only the manufacturing share is significant, with the anticipated negative sign. The two education variables and the percent union are either insignificant or have an unanticipated positive sign. Among the demographic variables, the percent of two-parent families and family size have the strongest impact. They show a consistent relationship across specifications: as the share of two-parent families increases the poverty rate decreases; an increase in family size has the opposite effect. The two age measures, percent age 18-30 and percent age 51-60 are insignificant in the levels specification and have unanticipated negative effects in the state and year effects model (model 3).

The transfer variables are largely insignificant in the pre-transfer poverty equations, although the low-income transfer variable is negative and significant when state and year effects are included (equation 3). This failure to find a positive relationship between transfers and pre-transfer poverty is consistent with our argument above that transfer generosity has not had large work disincentive effects. However, these variables may be biased by simultaneity between grant levels and pre-transfer poverty rates. In particular, if states or provinces decrease maximum transfer payments as

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the number of poor families increases, the coefficients on transfers will be
negatively biased. We have tried several instruments for the maximum
transfers, and found that the transfer variables remained negative or
insignificant.[43]

The estimated coefficients on post-transfer poverty (equation 2) are
shown in columns 4 through 6 of Table 11, and control for the effect of pre-
transfer poverty. Not surprisingly, pre-transfer poverty is the strongest
variable in these regressions and explains a substantial amount of the
variation in post-transfer poverty. (Note, however, that the coefficient is
not 1; only about four-fifths of the change in pre-transfer poverty
translates through to a change in post-transfer poverty.) The coefficients
are generally robust to the inclusion or exclusion of state/province fixed
effects.

Once pre-transfer poverty is controlled for, median family income has
little additional effect on post-transfer poverty. Surprisingly, however,
the unemployment rate shows a significant negative effect, indicating that
post-transfer poverty declines when unemployment increases. We suspect this
effect may be due to two factors. First, as unemployment rises, the
composition of the poor change may shift towards the unemployed temporarily
poor. These families may have pre-transfer incomes which are closer to the
poverty line than the long-term poor, so small amounts of transfers can move
them over the poverty line. In addition, they are more likely to have
access to UI, which is a relatively generous income replacement program.

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[43] These include the state/province dollar contributions per dollar of
Federal contributions for low-income assistance programs, the lag of the
state/province real budget deficit, and the proportion voting for the
conservative candidate in the Canadian parliamentary elections or the U.S.
presidential elections.

Second, the unemployment rate may pick up some variation in UI benefits not captured by our UI variables. In both the U.S. and Canada, the duration of UI benefits increases with the unemployment rate.[44] This effect may not be fully reflected in our maximum weeks variable, which only measures maximum possible durations.

We also find a negative and significant relationship between post-transfer poverty and the union coverage variable. This may indicate that workers in highly unionized settings are more likely to utilize UI, since the union facilitates their access to the UI system.

The low-income transfer maximum has a strong and negative impact on post-transfer poverty, as expected. Interestingly, interacting this variable with a Canadian dummy variable adds no additional information to the model, implying that the effect of low-income transfers on post-transfer poverty is identical in both countries once other variables are controlled for. The UI maximum payment variable is negative and weakly significant in the levels model (model 4) and is not significant in the other two equations. Finally, the UI duration variable has an unanticipated positive effect in equations 4 and 5, and is insignificant in equation 6.

Overall the regression results in Table 11 are quite robust across specifications. They verify the importance of macroeconomic, demographic, and transfer program effects on post-transfer poverty, although the influence of demographic and macroeconomic effects occurs primarily through the pre-transfer poverty rate.

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[44] This is a permanent part of the Canadian UI program. In the U.S., special supplemental or extended UI benefit programs have been run throughout the 1970s and 1980s and depend on state unemployment rates.

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B. Simulating the Determinants of Poverty Rate Changes

In this section, we present simulations to explain what our regression results imply regarding the determinants of change in U.S. and Canadian poverty rates. In each year we compute simulated poverty rates for each country, by multiplying population-weighted means of the independent variables for the U.S. and Canada by the regression coefficients from the year effect and the state and year effect models in Table 11. The changes in estimated poverty rates are then decomposed into the amount due to changes in demographic variables, changes in economic variables, and changes in transfers.[45] These results are shown in Tables 12-A and 12-B. Table 12-A uses the regression coefficients from the model including year effects (Table 11, columns 2 and 5), while Table 12-B uses the regression coefficients from the model including year and region effects (Table 11, columns 3 and 6).

The first four rows of both 12-A and 12-B indicate the contribution of each factor to the change in poverty within each country. As shown, year effects are sizeable in both models, indicating that a substantial proportion of the change in poverty trends is not captured by our control variables. Both models indicate that changes in economic conditions yield substantial predicted declines in Canadian poverty from 1970 to 1979,

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[45] Transfer variables include the log of the low-income transfer maximum, the log UI maximum payment, and the log UI maximum weeks. Demographic variables include the percent two-parent families, the percent age 18-30, the percent age 51-60 and the average family size. Economic variables include all remaining variables except year and region effects listed in Table 11.

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largely due to the impact of the decline in median family income.[46] This

supports our earlier claim that the Canadian poverty decline in the 1970s

was driven by economic growth.   Changes in demographic characteristics

yielded fairly large predicted declines in poverty in both the U.S. and

Canada in the 1970s, largely due to the declines in family size, while in

the 1980s demographic factors had a moderate effect on poverty. Finally,

changes in transfer maximums appeared to decrease Canadian poverty but had a

zero or positive effect on U.S. poverty.

     The final two lines of each table investigate the "change in changes"

or the difference in poverty changes in the U.S. and Canada from 1970-1979

and 1979-1986. As shown, the simulations overpredict the Canadian decline

in poverty relative to the U.S. in the 1970s, but underpredict the decline

in the 1980s. For the period 1970 to 1979, both models suggest that

economic conditions play the dominant role in explaining the difference in

Canadian and U.S. poverty changes, explaining 82% of the predicted

difference in the year effects model and 88% of the predicted difference in

the year-region effects model. Both models predict that demographics and

transfers each contribute a modest amount to the 1970's relative change in

poverty rates. For the period 1979 to 1986, the year effects model suggests

that the decline in Canadian poverty relative to the U.S. was driven by

changes in demographic and economic conditions; the region and year effects

model also assigns a small role to transfers.

     These results generally support our earlier conclusions about the

relative importance of demographic and economic factors in explaining U.S.

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[46] The decline in median family income yielded a predicted decline in
Canadian poverty of 8.6 points in the year effects model and 14.4 points in
the region and year effects model.

and Canadian poverty trends in the 1970s and 1980s. They do, however, assign a smaller role to transfers in the 1980s than predicted earlier. However, as discussed earlier, we suspect that this may reflect measurement problems in our state and provincial transfer variables that make it difficult for them to adequately capture the impact of transfers.

V. CONCLUSION

Our analysis documents the striking difference in U.S. and Canadian poverty trends from 1970 to 1986. While the U.S. has experienced constant or increasing poverty since 1970, Canada's poverty rate has decreased by 60%. During the period from 1970 to 1979, Canada's poverty rate declined sharply, while U.S. poverty remained constant. During the period from 1979 to 1986, Canadian poverty decreased slightly while U.S. poverty increased.

Our analysis suggests that the major source of the decline in Canadian poverty during the 1970s was economic growth. Most of the decline in Canadian poverty during the 1970s is attributable to a decline in pre-transfer poverty rather than to changes in the impact of transfers. This decline in pre-transfer poverty coincided with a general increase in income across all levels of the family income distribution. Finally, simulations based on our panel regressions suggest that most of the decline in Canadian poverty from 1970 to 1979 is attributable to growth in the level of median family income. This finding is consistent with other research which has

shown that historically economic growth has been the main source of poverty reduction in the U.S.

Our research further suggests that transfers can have a substantial impact on poverty during periods of slow economic growth. Both the U.S. and Canada experienced low economic growth rates and increases in unemployment during the 1980s. However, Canada's poverty rate decreased by 0.9 points from 1979 to 1986, while the U.S. poverty rate increased by 2.6 points. Virtually all of this divergence in U.S. and Canadian poverty rates may be explained by differences in the share of families who were moved out of poverty by transfers. Two features of the U.S. and Canadian transfer systems may explain this difference in the impact of transfers. First, since Canadian transfer levels are substantially higher than U.S. transfer levels, they may operate more effectively as a safety net during economic down-turns. Second, the U.S. implemented substantial cutbacks in its transfer programs in the 1980s, while Canadian transfer programs expanded somewhat.

While our estimates of the impact of transfers may be over-stated, because they do not adjust for labor supply reductions induced by transfers, it is unlikely these distortions are large enough to substantially change our results. Among single-parent families, the group most affected by the relative increase in Canadian low-income benefit levels, the number of weeks worked increased more in Canada than in the U.S. from 1979 to 1986. Moreover, the results from our panel regression do not indicate a significant relationship between transfer benefit maximums and pre-transfer poverty.

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offs, Methodological Concerns and Possibilities." Unpublished manuscript.

APPENDIX TABLE I
NON-ELDERLY, NON-HEALTH RELATED TRANSFER PROGRAMS IN 1986

A. CANADA

Unemployment Insurance

o   Available to unemployed workers for at least 42 weeks. As
    provincial unemployment rises, weeks rise to a maximum of 50
    (received by most workers in 1986). Federal government determines
    all eligibility rules and benefits. Replaces 60% of weekly
    earnings up to a maximum of $495/week ($396 US). Must have worked
    more than 14 weeks in past year and/or earned more than $92/week
    ($74 US).

Family Allowances

o   Available to all families with children under 18; no means
    testing. Provides $379/child/year ($303 US). Two provinces have
    variations.

Social Assistance

o   Available to low-income families and individuals. Eligibility and
    benefits for short-term assistance (4-6 months) typically
    determined and run by municipal offices. Long-term assistance run
    by provincial offices, with rules and benefits varying widely
    across provinces.   Programs differ between families and
    individuals. Eligibility based on income, earnings, and assets.
    Grant levels, deductions, and tax rates vary by province. Grant
    supplements often available "at discretion of local office." Work
    programs included in some provinces. Population-weighted average
    provincial grant for single individual with no countable income on
    long-term assistance is $317/month ($254 US); for a single parent
    with two children it is $872/month ($698 US). (Note, this is for
    non-disabled individuals or families; disabled recipients have
    different grant levels in most provinces.)

Child Tax Credit

o   Available to lower-income families with children under 18.
    Maximum credit of $454/year/child ($363 US). Breakeven income
    level for a household with one child is $32580 ($26064 US).

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B. UNITED STATES

Unemployment Insurance

o   Available to unemployed workers for up to 26 weeks. (At very high
      state unemployment levels, the Federal Extended Benefit program
      supplements the state program with additional weeks of benefits;
      only one state received EB in 1986.) Eligibility requirements as
      well as benefit levels are set by the states and vary
      significantly. Most states have either minimum weeks or minimum
      earnings requirements for eligibility. The population-weighted
      state average replacement rate is 64.2% in 1986, with a maximum
      benefit of $184/week.

Aid to Families with Dependent Children

o   Primarily available to single-parent households, although some
      states allow two-parent households to receive AFDC, typically with
      stricter eligibility requirements. States set some eligibility
      rules and set benefit levels. The Federal government determines
      other eligibility rules and sets the tax rate. A tax rate on
      earnings of 66% applies for the first four months of recipiency
      and rises to 100% thereafter. The population-weighted state
      average benefit for a family of one adult and two children with no
      countable income is $368/month.

Food Stamps

o   An in-kind program that provides "coupons" that can be used to
      purchase food. Generally agreed to be the equivalent of a cash
      grant for most recipient families. Eligibility and benefits set
      at the Federal level. Maximum Food Stamps available to a family
      of three with no countable income is $211/month.

Earned Income Tax Credit

o   Available to low-income families with children under age 18. Does
      not vary with family size. Breakeven income level is $11,000,
      with a maximum credit of $550/year.

APPENDIX II.
CHRONOLOGY OF SELECTED SOCIAL SERVICE LEGISLATION

A. CANADA

1966 CANADA ASSISTANCE PLAN
     Established the current system of Social Assistance programs within the
     provinces.

1971 UNEMPLOYMENT INSURANCE ACT
     Extended coverage from 80 to 96 percent of the labor force. Reduced
     required weeks of covered employment for eligibility. Increased maximum
     benefits from 50 to 75 percent of average earnings for persons with
     dependents and from 40 to 66 percent for persons without dependents.

1973 FAMILY ALLOWANCE ACT
     Replaced previous family assistance program and youth allowance act,
     and created the Family Allowance program. Set monthly payments at $12
     per child in 1973 and $20 per child in 1974. Provided for indexation of
     family allowance benefit to inflation using the CPI.

1975 Reduced maximum unemployment insurance benefit to 66 percent of
     earnings.

1977 Increased weeks of employment required to qualify for UI from 8 to
     between 10 and 14 weeks, depending on the regional unemployment rate.
     Decreased maximum benefit duration from 51 to 50 weeks.

1978 Required 20 weeks of employment in prior year for new entrants to labor
     force. Required higher entrance requirement for repeaters (one
     additional week of covered employment for each week of benefits
     received up to a maximum of 20 weeks). Maximum benefits reduced from
     66 to 60 percent.

1979 CHILD TAX CREDIT
     Established national refundable child tax credit.

1979 Reduced monthly family allowance rate for 1979 to $20 per child from
     $25.68 in 1978. Retained annual escalation from 1979 onwards.

1986 Limited increases in the annual indexation of family allowances to the
     amount by which inflation exceeds 3 percent.

B. UNITED STATES

1964 FOOD STAMP ACT
Food Stamp Program started, with optional state participation.

1967 Amendments to AFDC Program
States must disregard the first $30 of earnings and one-third of the
remainder in determining AFDC benefit levels.

1970 Employment Security Amendments
Provided a Federal Extended Benefits Program for workers who exhaust
state UI benefits in states with high insured unemployed rates.
Expanded coverage of the UI system.

1971 Food Stamp Amendments
Required benefits large enough to purchase nutritionally adequate diet.
Established national eligibility standards.

1972 SSI PROGRAM ESTABLISHED
Replaced Federal/state Old-Age Assistance, Aid to the Blind, and Aid to
the Permanently and Totally Disabled programs, effective January 1974.

1973 Food Stamp Amendments
Expanded food stamp program. Provided for semiannual adjustment of food
stamp allotments. Broadened classes of people eligible.

1974 Emergency Unemployment Compensation Act
Provided temporary supplemental benefits for to regular UI claimants
who had exhausted state benefits in high unemployment areas.

1975 EARNED INCOME TAX CREDIT
EITC established for working families with children.

1976 Unemployment Compensation Amendments
Extended UI coverage to state, local, and nonprofit employees.

1977 Food Stamp Amendments
Eliminated purchase requirement, so families received only bonus
portion of coupon at no cost. Eligibility standards tightened.

1978 Revenue Act of 1978
Provided for Federal taxation of UI benefits.

1980 Food Stamp Amendments
Benefits up-dated on annual rather than semi-annual basis. Restricted
eligibility of students.

1981 OMNIBUS RECONCILIATION ACT OF 1981
Limited $30 and 1/3 income disregard under AFDC program to 4 months.
Set eligibility cap on gross income, at 150 percent of state-determined
standard of need. Limited total assets to $1000.

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Gross income eligibility limit established for Food Stamp program.
Earnings deduction lowered to 18 percent.   Postponed increases in
benefit levels until October 1982.

Decreased income deductions for SSI program, from $60 of earned and
unearned income and $195 of earned income to $20 and $65 respectively.

Eliminated the national trigger in the extended benefits program of
unemployment insurance. Prohibited payment of extended benefits to an
individual with fewer than 20 weeks of work in base period.

1982 Tax Equity and Fiscal Responsibility Act
Established Federal Supplemental Compensation program. Provided
supplemental benefits for workers exhausting state UI benefits,
depending on state insured unemployment rate.

1984 Deficit Reduction Act
Gross income cap on AFDC eligibility raised to 185 percent of state
standard of need. $30 disregard extended from 4 to 12 months. States
must disregard first $50 of child support collections per month.

Sources: U.S. Department of Health and Human Services, Social Security
Administration, Social Security Bulletin, Annual Statistical Supplement,
1988
U.S. Department of Labor, Unemployment Insurance Service   Occasional Paper
86-5,   Fifty Years of Unemployment Insurance--A Legislative History: 1935-
1985

FIGURE 1−A. CANADIAN & U.S. POVERTY RATES

Families With Head Under Age 65
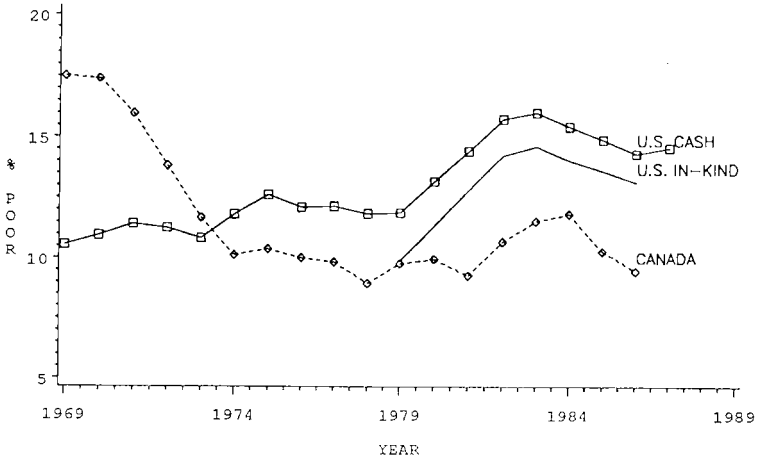Using Canadian 1969 Low−Income Cutoff
1969−1987

FIGURE 1−B. CANADIAN & U.S. POVERTY RATES

Families With Head Under Age 65
Using Canadian 1969 Low−Income Cutoff
1960−1987

FIGURE 2−A. FEMALE−HEADED FAMILY POVERTY RATE

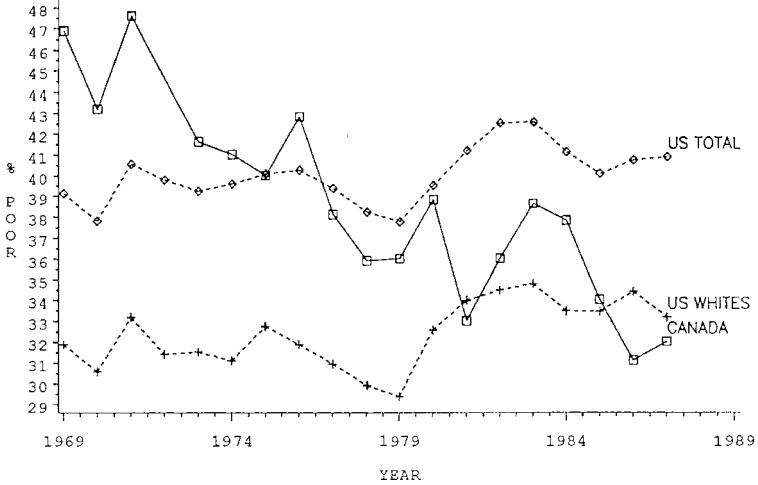Using Canadian 1969 Low-Income Cutoff
1969-1987

FIGURE 2−B. MALE−HEADED FAMILY POVERTY RATE
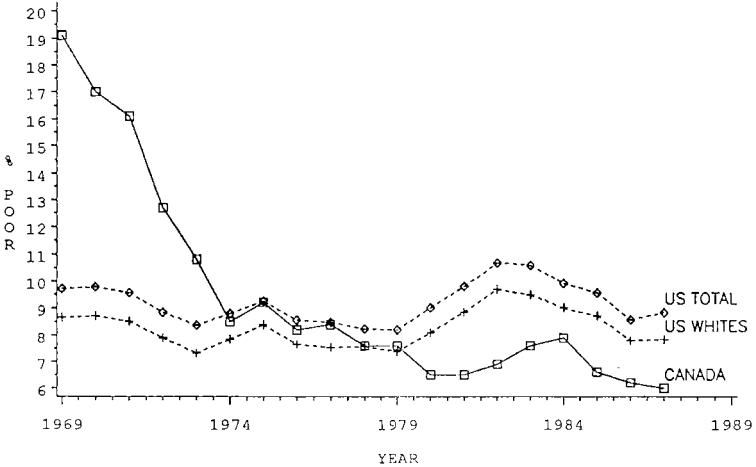
Using Canadian 1969 Low-Income Cutoff
1969-1987

FIGURE 3−A. CANADIAN FAMILY POVERTY RATE & MEDIAN INCOME
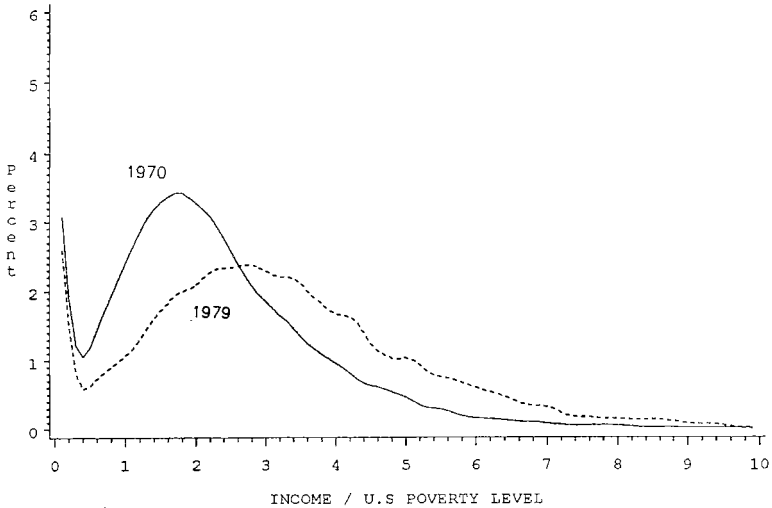Using 1969 Canadian Low-Income Cutoff
1965-1987
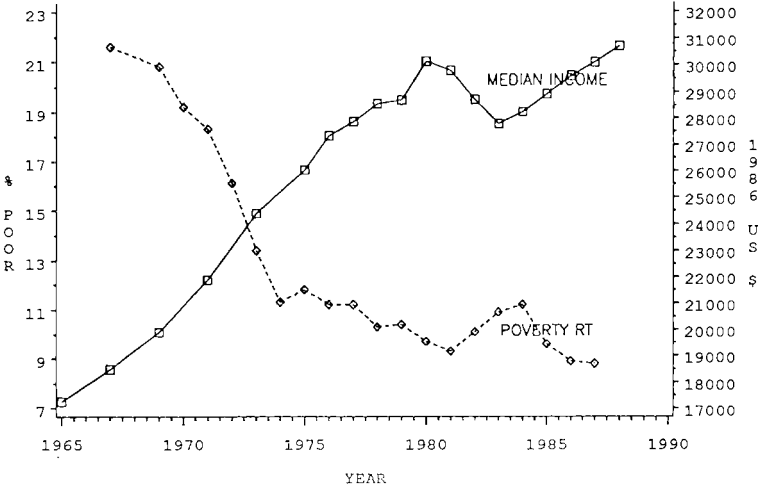
FIGURE 3−B. U.S. FAMILY POVERTY RATE & MEDIAN INCOME
Using 1969 Canadian Low-Income Cutoff
1960-1987
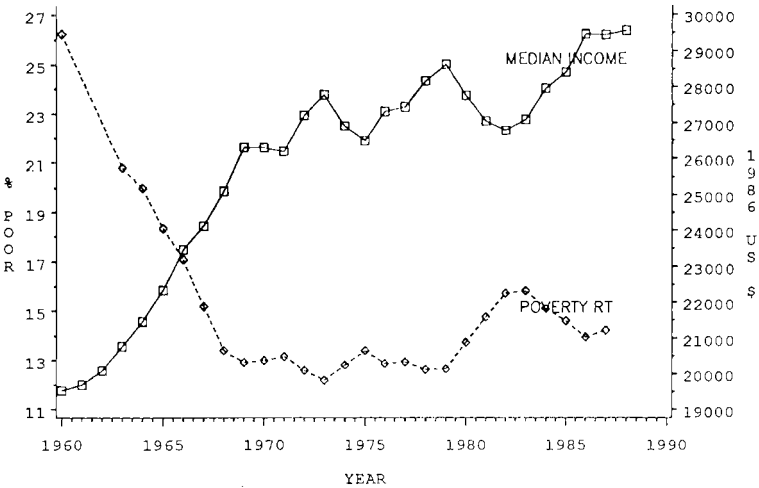
4−A. CANADIAN PRE−TRANSFER INCOME DISTRIBUTION
1970 and 1979
All Census Families Living Alone, Head Age 18-60

INCOME / U.S POVERTY LEVEL

4−B. U.S. PRE−TRANSFER INCOME DISTRIBUTION
1970 and 1979
All Census Families Living Alone, Head Age 18-60
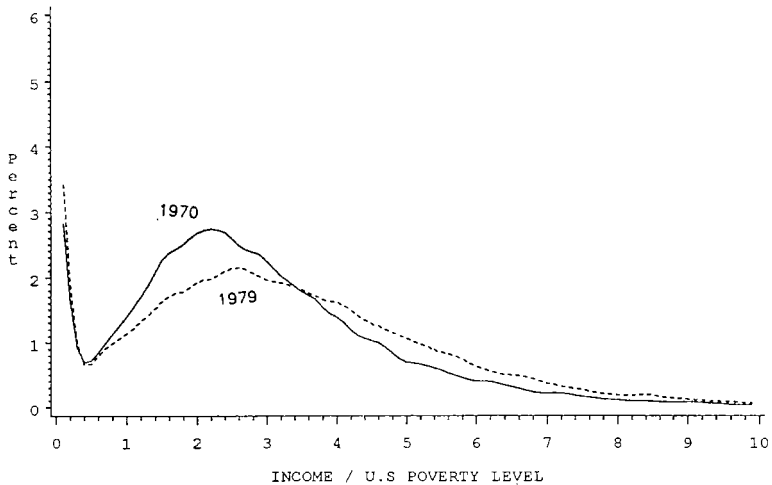

INCOME / U.S POVERTY LEVEL

TABLE 1.

POVERTY LINES IN THE U.S. AND CANADA
1986 U.S. DOLLARS

FAMILY SIZE	US POVERTY LINE	CANADIAN POVERTY LINE BY POPULATION OF CITY*						CANADIAN AVERAGE**
		500+ K	100-499 K	30-99 K	< 30 K	RURAL		
1 UNDER 65	5701	6946	6502	6315	5807	5047		5969
1 65+	5255	6946	6502	6315	5807	5047		5969
2 UNDER 65	7372	10067	9427	9154	8419	7324		8656
2 65+	6630	10067	9427	9154	8419	7324		8656
3	8737	12846	12031	11678	10747	9344		11045
4	11203	15278	14306	13886	12778	11108		13133
5	13259	17078	15988	15525	14287	12422		14684
6	14986	18748	17555	17045	15682	13634		16118
7	17049	20558	19242	18686	17188	14948		17670

* 1969 Low-Income Cutoffs, adjusted for inflation with the Canadian consumer price index.
** Population weighted average based on population weights from the U.S. 1980 Census.

TABLE 2.

RECALCULATING THE CANADIAN POVERTY RATE WITH
U.S. DEMOGRAPHIC COMPOSITION
Using U.S. Poverty Levels
Families with Head Age 18-60

A. ALL FAMILIES

	1970	1973	1979	1986	TREND 1970-1979	TREND 1979-1986
U.S. Actual	10.1	9.5	9.0	11.6	-1.1	2.6
Canada Actual	17.0	10.6	7.8	7.1	-9.2	-0.7
Adjusting Canada for Demographic Composition of U.S. Families:						
by Family Size	16.7	10.3	7.9	7.2	-8.8	-0.7
by Age of Head	17.0	10.6	7.9	7.2	-9.1	-0.7
by Family Type	18.5	12.4	10.0	9.3	-8.5	-0.7
by Family Size, Age of Head, Family Type	19.1	12.9	11.1	10.3	-8.0	-0.8
Effect of U.S. Demographics on Canadian Poverty:						
(Row 6 - Row 2)	2.1	2.3	3.3	3.2	1.2	-0.1

B. WHITE FAMILIES

	1970	1973	1979	1986	TREND 1970-1979	TREND 1979-1986
U.S. Whites Actual	7.8	7.1	6.8	9.2	-1.0	2.4
Canada Actual	17.0	10.6	7.8	7.1	-9.2	-0.7
Adjusting Canada for Demographic Composition of U.S. White Families:						
by Family Size	16.6	10.1	7.9	7.2	-8.7	-0.7
by Age of Head	17.0	10.5	7.9	7.1	-9.1	-0.8
by Family Type	17.6	11.4	9.0	8.4	-8.6	-0.6
by Family Type, Age of Head, Family Type	17.7	11.5	9.4	8.9	-8.3	-0.5
Effect of U.S. White Demographics on Canadian Poverty:						
(Row 6 - Row 2)	0.7	0.9	1.6	1.8	0.9	0.2

See text for sources. Canadian 1970 estimates are not strictly comparable to other years because they rely on a different family definition. 1973-1979 changes using comparable data show similar results. Family Size varies by 2,3,4,5 or 6+ members; Age of Head varies by 18-24,25-34,35-44,45-54 or 55-64; Family Type varies by two-parent, male single-parent or female single-parent.

Table 3.

IMPACT OF WIVES' EARNINGS ON PRE-TRANSFER POVERTY RATES

Families With Head Age 18-60
U.S. Poverty Level

	1970	1979	1986	1970-79	1979-86
US POVERTY RATE					
Excluding Wives' Earnings	15.5	16.1	19.1	0.6	3.0
Including Wives' Earnings	12.5	13.0	14.7	0.5	1.7
Impact of Wives' Earnings on Poverty Rate (row 2 - row 1)	-3.0	-3.1	-4.4	-0.1	-1.3
CANADIAN POVERTY RATE					
Excluding Wives' Earnings	20.6	15.0	19.2	-5.6	4.3
Including Wives' Earnings	19.2	11.3	13.2	-7.9	2.0
Impact of Wives' Earnings on Poverty Rate (row 5 - row 4)	-1.4	-3.7	-6.0	-2.3	-2.3

Table 4.

SOCIAL ASSISTANCE/AFDC AND UNEMPLOYMENT INSURANCE PAYMENTS
AND RECEIPT, BY FAMILY INCOME

Families With Head Age 18-60
Using U.S. Poverty Levels, 1986 U.S. Dollars

		CANADA			UNITED STATES		
	RECIPIENCY RATE	AVERAGE PAYMENT	TOTAL PAYMENTS bil $ (% total)		RECIPIENCY RATE	AVERAGE PAYMENT	TOTAL PAYMENTS bil $ (% total)
ALL FAMILIES 1970	18.2%	$2486	$1.89 (100.0%)		20.5%	$3633	$30.35 (100.0%)
1979	31.9	3126	4.93 (100.0)		23.0	2872	30.74 (100.0)
1986	52.4	2932	8.52 (100.0)		20.8	2871	30.51 (100.0)
POOR FAMILIES 1970	37.1	3631	1.09 (57.6)		47.2	5355	12.88 (42.4)
1979	64.7	5033	1.81 (36.8)		53.7	4427	14.39 (46.8)
1986	84.2	5465	3.37 (39.6)		52.5	3910	15.44 (50.6)
NEAR-POOR FAMILIES 1970	16.5	1849	0.41 (21.7)		21.7	3072	6.01 (19.8)
1979	38.4	3221	1.08 (21.8)		26.0	2683	5.29 (17.2)
1986	64.2	3004	1.73 (20.3)		24.1	2555	4.87 (15.9)
UPPER-INCOME FAMILIES 1970	11.8	1638	0.39 (20.6)		15.0	2871	11.46 (37.7)
1979	25.1	2312	2.04 (41.4)		16.7	2018	11.07 (36.0)
1986	45.4	1994	3.54 (41.6)		13.4	2137	10.21 (33.5)

See text for data sources. Recipiency Rate represents percent of families in income class receiving Social
Assistance/AFDC or UI. Average Payment indicates average payment among recipients. Total payments
represents total Social Assistance/AFDC and UI payments received by income group. % Total represents
percent of program expenditures received by family income class. Near-poor families are families with
incomes between one and two times the poverty line. Upper Income families are families with incomes above
two times the poverty line.

Table 5.

MAXIMUM MONTHLY TRANSFER PAYMENTS IN THE U.S. AND CANADA
Family of 2 Adults and 2 Children
1986 U.S. Dollars

	1970	1973	1975	1979	1986	% Change 1970-79	% Change 1979-86
CANADA							
1) Low-Income Transfers	$627	$726	$658	$810	$888	29.2%	9.6%
2) Unemployment Insurance and Child Benefits	457	1001	964	951	1111	108.1%	16.8
UNITED STATES							
3) Low-Income Transfers	601	672	700	642	601	6.8	-6.4
4) Unemployment Insurance and Food Stamps	828	957	866	777	811	-6.2	4.4

Notes: 1) Population weighted average across 10 provinces. Includes Social Assistance, Family
Allowances and Child Tax Credit for family of 4 with no other countable income.
2) Maximum UI payment to individual with dependents. Includes Family Allowances and
Child Tax Credit.
3) Population weighted average across 50 states. Includes AFDC and Food Stamps (1973,1975,
1979 and 1986) for family of 4 without other countable income.
4) Population weighted average across 50 states. Includes maximum UI payment to individual
with dependents and Food Stamps.

Source: 1) Advisory Commission on Intergovernmental Relations (1971), Lalonde (1973), Federal-Provincial
Working Party on Income Maintenance (1975), Ross (1983), National Council of Welfare (1987).
2) Statistics Canada (1983), Health and Welfare Canada (1988), Health and Welfare Canada (1987)
3) U.S. Dpt. of Health and Human Services (1986a), Joint Economic Committee(1974), Clarkson (1975),
U.S. Dpt. of Health and Human Services (1986b)
4) U.S. Dpt. of Labor (1986) and references in line 3.

TABLE 6.

A. CANADIAN AVERAGE TRANSFER PAYMENTS AND FRACTION OF TRANSFER RECIPIENTS

	AVERAGE PAYMENT/RECIPIENT				RECIPIENTS/POPULATION			
	ALL PROGRAMS	UI	SOCIAL ASSISTANCE	CHILD BENEFITS	ALL PROGRAMS	UI	SOCIAL ASSISTANCE	CHILD BENEFITS
TWO ADULTS W/CHILDREN								
1979	$1661	$2621	$3289	$672	98.1%	25.1%	3.9%	96.6%
1986	2467	3293	3849	1380	99.0	29.2	6.3	97.7
TWO ADULTS, NO CHILDREN								
1979	2993	2427	3437	NA	34.7	23.7	3.9	NA
1986	2968	3150	3287	NA	54.0	29.1	6.3	NA
SINGLE ADULT W/CHILDREN								
1979	3117	2567	4698	564	92.3	18.5	31.0	82.1
1986	3922	2946	4966	1471	94.8	19.6	34.8	80.6

B. U.S. AVERAGE TRANSFER PAYMENTS AND FRACTION OF TRANSFER RECIPIENTS

	AVERAGE PAYMENT/RECIPIENT				RECIPIENTS/POPULATION			
	ALL PROGRAMS	UI	AFDC	FOOD STAMPS	TOTAL	UI	AFDC	FOOD STAMPS
TWO ADULTS W/CHILDREN								
1979	$2958	$2216	$3417	$1331	30.2%	17.2%	3.3%	5.6%
1986	3223	2502	3494	1291	26.2	15.7	3.3	5.4
TWO ADULTS, NO CHILDREN								
1979	3692	2546	NA	802	26.7	19.4	NA	1.5
1986	3683	2412	NA	739	22.2	15.0	NA	1.5
SINGLE ADULT W/CHILDREN								
1979	4479	2016	4240	1591	73.3	11.7	32.0	34.5
1986	4008	2062	3611	1459	64.0	9.2	30.7	34.9

All payments in 1986 U.S. dollars. Includes families with heads age 18-60. Canadian Child Benefits include Family Allowances in 1979 and Child Tax Credit in 1986.

Table 7.

U.S. AND CANADA PRE-TRANSFER AND POST-TRANSFER POVERTY RATES

Families with Head Age 18-60
U.S. Poverty Definition

	1970	1973	1979	1986	1970-79	1979-86
UNITED STATES						
Pre-Transfer Poverty	12.5%	12.4%	13.0%	14.7%	0.5%	1.7%
Post-Transfer Poverty	10.1	9.5	9.0	11.6	-1.1	2.6
Transfer Impact (Post-Pre)	-2.4	-2.9	-4.0	-3.1	-1.6	0.9
CANADA						
Pre-Transfer Poverty	19.3	13.8	11.3	13.2	-8.0	1.9
Post-Transfer Poverty	17.0	10.6	7.8	7.1	-9.2	-0.7
Transfer Impact (Post-Pre)	-2.3	-3.2	-3.5	-6.1	-1.2	-2.6

Canadian 1970 estimates are not strictly comparable because they rely on a different family definition. 1973-1979 changes based on comparable data show similar effects. Canadian calculations include Child Tax Credit in 1986 but not in previous years. Since this program began in January 1979, the estimates for Canadian post-transfer poverty in 1979 will be overestimated. We estimate that excluding the Child Tax Credit would increase post-transfer poverty by 0.8 points in Canada in 1986.

Table 8.

PRE- AND POST-TRANFER POVERTY RATES, BY
FAMILY CHARACTERISTICS

	PRE-TRANSFER POVERTY		POST-TRANSFER POVERTY		TRANSFER IMPACT (POST-PRE)	
	1979	1986	1979	1986	1979	1986
UNITED STATES						
Two Adults W/Children	8.1%	9.4%	5.7%	7.2%	-2.4%	-2.2%
Two Adults, No Children	4.7	4.9	2.8	3.2	-1.9	-1.7
Single Adult W/Children	47.0	48.1	34.0	40.5	-13.0	-7.6
CANADA						
Two Adults W/Children	8.6	10.6	5.9	5.2	-2.7	-5.4
Two Adults, No Children	5.3	6.4	3.4	3.2	-1.9	-3.2
Single Adult, W/Children	42.0	42.2	31.5	25.9	-10.5	-16.3

1986 U.S. Dollars. Includes Families with heads aged 18-60. Based on U.S. Poverty Lines. Canadian
calculations include the child tax credit in 1986 but not in 1979, because data is not available on
the child tax credit in 1979. Excluding the child tax credit in 1986 would increase the poverty
rate of families with children by 1 to 3 points.

Table 9.

DISTRIBUTION OF WEEKS WORKED AMONG FAMILY HEADS IN U.S. AND CANADA,
1979 AND 1986

Families With Head Age 18-60

	CANADA			U.S.		
	1979	1986	1986-1979	1979	1986	1986-1979
HUSBANDS						
0	3.1%	4.8%	1.7%	6.1%	6.9%	0.8%
1-30	5.6	8.2	2.6	4.1	5.6	1.5
30-49	9.9	8.6	-1.3	11.6	10.2	-1.4
50+	81.4	78.4	-3.0	78.2	77.3	-0.9
WIVES						
0	37.8	28.9	-8.9	34.0	27.8	-6.2
1-30	14.3	13.4	-0.9	15.3	13.4	-1.9
30-49	8.6	9.3	0.7	14.5	12.6	-1.9
50+	39.3	48.4	9.1	36.2	46.3	10.1
MALE SINGLE PARENT						
0	7.6	10.3	2.8	11.1	9.6	-1.5
1-30	9.5	12.0	2.5	8.9	8.9	0.1
30-49	11.1	10.3	-0.7	13.8	14.5	0.7
50+	71.9	67.4	-4.6	66.3	67.0	0.7
FEMALE SINGLE PARENT						
0	35.3	32.2	-3.1	27.0	28.5	1.5
1-30	14.6	15.3	0.5	12.9	11.3	-1.6
30-49	9.4	7.9	-1.6	13.3	11.4	-1.9
50+	40.5	44.7	4.2	46.7	48.8	2.1

Table 10.

MEANS, STANDARD DEVIATIONS, AND VARIABLE DEFINITIONS
FOR PANEL OF STATE AND PROVINCES

VARIABLE	MEAN	STD DEV	DEFINITION
POST-TRANSFER POVERTY	11.14	5.01	Percent of families* with total income below U.S. poverty level. Includes cash income and Food Stamps.
PRE-TRANSFER POVERTY	15.09	6.18	Percent of families* with pre-transfer income below U.S. poverty level.
LOG LOW INCOME TRANSFER MAXIMUM	6.44	0.23	Log of maximum monthly Food Stamps and AFDC benefits for family of 4 in U.S. Log of maximum monthly Social Assistance, Child Allowance, Child Tax Credit and other provincial assistance for family of 4 in Canada.
LOG UNEMPLOYMENT INSURANCE MAXIMUM	6.58	0.24	Log of maximum weekly UI payment multiplied by 4.2 in U.S. 1986 $.
LOG MAXIMUM WEEKS UNEMPLOYMENT INSURANCE	3.50	0.31	Maximum weeks of UI coverage. Includes both state program and Federal Extended Benefit and Supplemental Benefits programs in U.S., and federal program in Canada.
LOG MEDIAN FAMILY INCOME	10.25	0.17	Log of median family income* in U.S. 1986 $.
UNEMPLOYMENT RATE	6.59	2.69	Unemployment rate of civilian labor force.
FAMILY SIZE	3.59	0.26	Average number persons per family*.
% TWO-PARENT FAMILY	84.20	4.82	Percent of families* with two-parents present.
% AGE 18-30	24.96	3.57	Percent of family heads* age 18-30.
% AGE 51-60	21.23	2.85	Percent of family heads* age 51-60.
% UNION	25.01	10.94	Percent of employed workers covered by collective bargaining agreement in U.S. Union membership as a percent of non-agriculture employment in Canada.
% MANUFACTURING	20.64	8.37	Percent of non-agriculture employment in manufacturing industry.
% TWO EARNERS	63.84	6.84	Percent of families* with two earners present.
% GRADE 11+	74.31	0.16	Percent of family heads* who attended 11 or more years of school.
% COLLEGE GRADUATE	17.36	6.31	Percent of family heads* who graduated from college.

* Universe is all families of size greater than one with head age 18-60.

Table 11.

REGRESSION RESULTS FROM PANEL OF STATE AND PROVINCES
Families with Head Age 18-60, Using U.S. Poverty Line

	Dependent Variable: PRE-TRANSFER POVERTY			Dependent Variable: POST-TRANSFER POVERTY		
	(1)	(2)	(3)	(4)	(5)	(6)
LOG LOW-INCOME TRANSFER MAXIMUM	-1.85 (1.54)	-2.02 (1.25)	-2.92* (1.21)	-0.98 (0.63)	-1.76* (0.65)	-2.02* (0.77)
LOG UNEMPLOYMENT INSURANCE MAXIMUM	0.51 (0.93)	2.91 (3.23)	3.06 (3.78)	-2.86* (0.38)	-1.50 (1.66)	-2.33 (2.35)
LOG MAXIMUM WEEKS UNEMPLOYMENT INSURANCE	-0.42 (2.79)	1.11 (2.44)	-0.06 (4.40)	5.89* (1.14)	6.46* (1.25)	2.11 (2.72)
PRE-TRANSFER POVERTY				0.80* (0.03)	0.76* (0.04)	0.82* (0.06)
LOG MEDIAN FAMILY INCOME	-29.29* (2.91)	-29.57* (3.54)	-44.76* (3.96)	1.79 (1.50)	-1.44 (2.17)	-3.93 (3.65)
UNEMPLOYMENT RATE	0.63* (0.10)	0.24* (0.09)	-0.12 (0.12)	-0.56* (0.05)	-0.57* (0.05)	-0.52* (0.07)
% TWO-PARENT FAMILY	-0.43* (0.11)	-0.31* (0.11)	-0.44* (0.12)	-0.06 (0.05)	0.06 (0.06)	0.18* (0.08)
% AGE 18-30	-0.10 (0.09)	-0.18* (0.09)	-0.23* (0.09)	-0.22* (0.04)	-0.15* (0.05)	-0.06 (0.06)
% AGE 51-60	-0.08 (0.12)	-0.09 (0.10)	-0.31* (0.11)	0.04 (0.05)	0.01 (0.05)	0.12 (0.07)
FAMILY SIZE	9.29* (1.38)	14.39* (1.22)	7.54* (1.77)	1.48* (0.63)	1.65* (0.65)	3.27* (1.18)
% UNION	0.003 (0.04)	-0.04 (0.03)	0.12* (0.05)	-0.08* (0.02)	-0.09* (0.02)	-0.18* (0.03)
% MANUFACTURING	-0.20* (0.04)	-0.10* (0.03)	-0.71* (0.12)	-0.01 (0.02)	0.01 (0.02)	-0.04 (0.09)
% TWO EARNERS	-0.10* (0.04)	-0.21* (0.04)	0.10 (0.09)	-0.15* (0.02)	-0.18* (0.02)	-0.01 (0.06)
% GRADE 11+	0.08 (0.05)	0.13* (0.05)	0.10 (0.09)	0.06* (0.02)	0.09* (0.03)	0.08 (0.06)
% COLLEGE GRADUATE	-0.04 (0.13)	-0.19 (0.10)	-0.14 (0.11)	0.05 (0.05)	0.06* (0.05)	0.002 (0.07)
ADJ. R-SQUARE	93.5	96.1	97.6	98.5	98.6	98.7
STATE EFFECTS	No	No	Yes	No	No	Yes
YEAR EFFECTS	No	Yes	Yes	No	Yes	Yes

* Significantly different from zero at 5% confidence level. Panel includes 9 provinces in 1970 and 10 provinces in 1973, 1975, 1979, and 1986. Includes 10 states in 1970, 12 states in 1973 and 1975, and 50 states in 1979 and 1966 (N = 182).
All regressions also include an intercept term.

Table 12.

SIMULATED CHANGE IN POVERTY RATES

A. YEAR EFFECTS MODEL

	ACTUAL	PREDICTED	DEMOGRAPHIC	ECONOMIC	TRANSFERS	YEAR EFFECTS
CHANGE IN POVERTY RATE						
Canada 1970-1979	-9.35	-11.52	-3.92	-10.25	-0.62	3.27
Canada 1979-1986	-0.82	-0.11	-1.15	-1.90	-0.22	3.16
U.S. 1970-1979	-1.13	-1.57	-3.31	-2.09	0.55	3.27
U.S. 1979-1986	2.54	2.49	0.05	0.08	-0.80	3.16
DIFFERENCE IN U.S. CANADIAN POVERTY CHANGES						
1970-1979	-8.22	-9.95	-0.61	-8.16	-1.17	0.00
1979-1986	-3.36	-2.60	-1.20	-1.98	0.58	0.00

B. REGION AND YEAR EFFECTS MODEL

	ACTUAL	PREDICTED	DEMOGRAPHIC	ECONOMIC	TRANSFERS	YEAR EFFECTS
CHANGE IN POVERTY RATE						
Canada 1970-1979	-9.35	-10.08	-2.68	-11.16	-1.09	4.84
Canada 1979-1986	-0.82	0.02	-0.75	1.42	-0.41	-0.24
U.S. 1970-1979	-1.13	1.64	-2.13	-0.82	-0.24	4.84
U.S. 1979-1986	2.54	2.08	0.39	1.94	-0.01	-0.24
DIFFERENCE IN U.S. CANADIAN POVERTY CHANGES						
1970-1979	-8.22	-11.73	-0.55	-10.34	-0.85	0.00
1979-1986	-3.36	-2.06	-1.14	-0.52	-0.40	0.00

The simulation in Table 12-A uses the coefficients from the year effect model presented in Table 11, columns 2 and 4 while the simulation in Table 12-B uses coefficients from the region (state and province) and year effects model in Table 11, columns 3 and 6. Both tables evaluate the changes at the population weighted means across states / provinces.