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6 Responding to Need: A Comparison of Social Safety Nets in Canada and the United States

Rebecca M. Blank and Maria J. Hanratty

6.1 Introduction

The United States and Canada share similar populations and similar macroeconomic environments. Yet each has chosen a different set of policies to address the problem of poverty. Canada has a tradition of universal non-means-tested programs that is almost entirely absent in the United States. In addition, Canada's means-tested programs maintain broader eligibility and more generous benefit payments than those of the United States. Preliminary evidence suggests that Canadian institutions have been more successful than U.S. institutions in eliminating poverty: although the United States has slightly higher average incomes than Canada, Canada has substantially lower poverty rates of families with children. In 1986, the poverty rate of single-parent families with children was 32.3 percent in Canada compared to 45.3 percent in the United States; the poverty rate of two-parent families with children was 5.2 percent in Canada and 6.8 percent in the United States.¹

This paper examines the extent to which the differences in social welfare institutions can explain the different poverty outcomes in the two countries. In particular, we ask what would be the impact of adopting Canadian antipoverty programs in the United States, and U.S. antipoverty programs in Canada.

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1. These are poverty rates for nonelderly families, based on the U.S. definition of poverty. See section 6.3.1 for details on their computation.

We simulate the potential impact of running Canadian transfer programs in the United States and vice versa by applying institutional rules on program eligibility and benefit levels to microdata from each country, allowing for a range of labor supply and participation responses. We also use these simulations to estimate participation rates among different population groups, and to document the extent of regional variation in program generosity. This paper focuses on program differences in 1986 between the United States and Canada; a description of comparative poverty rates over time between these two countries can be found in Hanratty and Blank (1992).

Our results indicate particularly dramatic differences in the impact of the two systems on the poverty rates of single parents with children. The poverty rate of single-parent families would decline from 43 percent to 16 percent if the United States adopted the “mean” Canadian program, assuming Canadian participation rates were duplicated in the United States. Assuming 100 percent participation rates, poverty among this group would nearly disappear. These results are not very sensitive to a range of assumed labor supply elasticities.

Not surprisingly, our results also suggest that transfer expenditures would increase substantially if the United States were to adopt the Canadian transfer system. Our estimates imply that total U.S. transfer expenditures would be two to three times higher under the Canadian transfer system, depending on the assumed labor supply elasticities and participation rates.

This paper is divided into four sections. The first section describes the key Canadian and U.S. social welfare programs. Because we were unable to find a detailed comparison of these programs elsewhere in the literature, we include a lengthy description here. The reader who is primarily interested in the simulation results may turn to table 6.1 for a quick summary of the transfer programs and then skip to section 6.3. Section 6.3 presents information on the demographic characteristics and income sources of families in the two countries. Section 6.4 presents the simulation results. Section 6.5 summarizes and concludes the paper.

6.2 Comparing Antipoverty Programs in the United States and Canada

6.2.1 Introduction

This paper is concerned with transfer programs for nonelderly, nondisabled individuals and families in the United States and Canada. Because of data availability, we focus on the year 1986.² The key programs that this paper

2. An extensive description of the legislative rules on eligibility and benefits by program and across provinces was not available in Canada until 1985, with an update for 1986. See Canada Department of National Health and Welfare (1986, 1988).

Table 6.1**Transfer Programs in 1986, Nonelderly, Nonhealth Related
(in 1986 U.S. dollars)**

A. Canadian Transfer Programs**Unemployment insurance (UI)**

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 percent of weekly earnings up to a maximum of \$396/week. Must have worked more than 14 weeks in past year and/or earned more than \$74/week.

Family Allowance (FA)

Available to all families with children under 18; no means testing. Provides \$303/child/year. Two provinces have variations.

Social Assistance (SA)

Available to low-income families and individuals. Eligibility and benefits determined and run by province; grant levels, deductions, and tax rates vary widely by province. Grant supplements often available "at discretion of local office." Work programs included in some provinces. (Three provinces—Nova Scotia, Ontario, and Manitoba—have a "two-tier" system in which the municipalities determine eligibility and benefit rules for particular groups of applicants.) Population-weighted average provincial grant for single nondisabled individual with no countable income on long-term assistance is \$266/month (lowest province is \$171; highest province is \$524). For a single parent with two children it is \$627/month (lowest province is \$594; highest province is \$922).

Child Tax Credit (CTC)

Available to lower-income families with children under 18. Maximum credit of \$363/year/child. Available to all families with \$18,800 or less income. Breakeven income level for a household with one child is \$26,064. Credit refundable to those without tax liabilities.

B. United States Transfer Programs**Unemployment Insurance (UI)**

Available to unemployed workers for up to 26 weeks. (At very high state unemployment levels, the federal extended benefit [EB] program supplements state programs 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 percent in 1986, with an average maximum benefit of \$184/week. (Lowest state is \$115; highest state is \$310.)

Aid to Families with Dependent Children (AFDC)

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 percent applies for the first four months of reciprocity and rises to 100 percent thereafter. The population-weighted state average benefit for a family of one adult and two children with no countable income is \$368/month. (Lowest state is \$118; highest state is \$740. This is an outlier; the next highest state pays \$583/month.)

Food stamps

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 (EITC)

Available to low-income families with children under age 18 and with earned income. Does not vary with family size. As earnings rise, credit increases to a maximum of \$550 between \$5,000 and \$6,500 in earned income, and then declines to zero at \$11,000. Credit refundable to those without tax liabilities.

deals with are outlined in table 6.1. A history of the relevant legislative changes in these programs from the mid-1960s to the mid-1980s is provided in appendix A.³

We do not include medical insurance programs in our analysis because there is no information in our microdata for either the United States or Canada on medical needs or insurance usage. The result of this omission is to consistently underestimate the extent of public assistance in Canada relative to the United States. Canada's national health insurance program covers the entire population. In the United States, insurance among the nonelderly is largely privately provided by employers. Public medical assistance is available to some low-income households through the Medicaid program, but 39.6 percent of poor families in the United States are uninsured in 1986.⁴

All dollar values are denominated in U.S. dollars. To convert Canadian dollars we use an index based on the 1985 OECD estimate of purchasing power parity for consumption goods.⁵ 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.

This paper uses data on the ten major Canadian provinces. In the United States, we include the fifty states and the District of Columbia.

6.2.2 The Programs

Unemployment Insurance

Both Canada and the United States operate unemployment insurance (UI) programs that offer payments to individuals who have involuntarily lost their jobs. In Canada, the UI program is a national program, available to most unemployed workers.⁶ The weekly UI benefit is set at 60 percent of the average weekly earnings during the weeks worked in the past twenty weeks, to a maximum of \$396 per week. The duration of UI payments varies with both the weeks worked in the previous year and the regional unemployment rate. In 1986, the maximum UI duration was fifty weeks in all provinces.

In the United States, the UI program is entirely state run, which means that program rules differ significantly across states. Most states have requirements

3. For a review of the existing literature on the economic and behavioral effects of transfer programs, see Ismael (1987) or Vaillancourt (1985) for Canada and Danziger and Weinberg (1986) for the United States. For a comparative discussion of historical poverty issues in both countries, see Leman (1980).

4. See Chollett (1988). The Medicaid program in 1986 primarily covered families or individuals who were eligible for Aid to Families with Dependent Children or Supplemental Security Income.

5. OECD (1987). This is adjusted to 1986 using the relative inflation rates based on the U.S. GNP implicit price deflator for consumption and the Canadian GDP implicit price deflator for consumption. This gives a conversion rate of 1.25 U.S. dollars per Canadian dollar in 1986.

6. Workers who have less than ten to fourteen weeks of insurable employment in the previous year, or who work less than fifteen hours/week, or who earn less than 20 percent of maximum weekly insurable earnings are not covered by the UI program.

(stricter than those in Canada) that an individual work either a minimum number of weeks or earn a minimum amount on the job to qualify for UI. UI payments on average are set at 64.2 percent of previous weekly earnings; the maximum state payment averages \$184/week. UI payments are available for only twenty-six weeks in most states, as opposed to fifty in Canada. As a result of these differences, a lower percentage of the unemployed receive UI in the United States than in Canada: in 1986, 59 percent of the unemployed received UI in Canada, while only 28 percent of the unemployed received UI in the United States.⁷

Public Assistance to the Poor

The primary means-tested assistance program in Canada is Social Assistance (SA), which provides cash assistance to low-income families and individuals. This program is funded jointly by the federal and provincial governments, but it is run almost entirely at the provincial level.⁸ Provinces set eligibility standards and benefit levels, which vary widely.⁹ Unlike the United States, this program does not exclude individuals from the program because of their family composition. However, benefit levels do vary by family composition: the maximum payment for single individuals is \$266/month, while it is \$627/month for a single parent with two children.¹⁰

In the United States, assistance to the poor is divided between two programs: Aid to Families with Dependent Children (AFDC) and food stamps. AFDC provides cash assistance to (primarily) single-parent families.¹¹ This program is run jointly by the states and the federal government. AFDC maximum benefits in the United States are substantially lower than SA maximum benefits for single-parent families in Canada. The population-weighted state average maximum benefit for a single parent with two children is \$368/month in 1986, less than 60 percent of Canada's level.

7. The U.S. figure is from Blank and Card (1991), while the Canadian figure is from Card and Riddell (chap. 5 in this volume).

8. Federal regulations for SA under the 1966 Canada Assistance Plan impose two requirements: provinces cannot impose residency requirements and eligibility must be based on a needs test (rather than an income test). Quebec has opted out of the Canada Assistance Plan and runs its own SA program, with special cost-sharing arrangements with the federal government.

9. In three "two-tier" provinces (Nova Scotia, Ontario, and Manitoba), SA benefits and eligibility are determined at the municipal level for certain categories of recipients. In Ontario, for example, municipal governments are responsible for all individuals who are determined to be employable, while the provincial government provides support to those unable to work. The benefit levels reported for municipally run programs refer to the largest city in the province.

10. We use the benefit levels provided by the Canada National Council of Welfare (1987). The levels we use assume that any single individual or two-parent family would be classified by the province as employable, while single-parent families would be considered unemployable (except in Alberta or British Columbia, where only single parents with extremely young children are considered unemployable).

11. In 1986, twenty-eight states allowed some two-parent families to receive AFDC, although eligibility standards were typically stricter. Over 90 percent of the AFDC caseload has always been female-headed families. In 1990, all states were required to provide AFDC to eligible two-parent households.

The food stamp program provides monthly vouchers redeemable for grocery items to low-income families and individuals. Food stamp benefits and eligibility are entirely set at the federal level, with uniform national benefits. In contrast to AFDC, food stamps are available to any household below a certain income level, regardless of household composition. Thus single individuals or two-parent households who cannot receive AFDC can receive food stamps. The maximum food stamp payment is \$80/month for a single individual and \$211/month for a family of three in 1986.

Tax Credits

In addition to cash and in-kind assistance, both countries also run tax credits for low-income households with children. The Canadian Child Tax Credit (CTC) is a refundable tax credit for families with children. The CTC provides \$363/year/child for households with annual incomes below \$18,800, declining to zero at \$26,064 in income.

The U.S. Earned Income Tax Credit (EITC) is a refundable tax credit available to working families with children. As earnings increase, the tax credit increases to a maximum of \$550 between \$5,000 and \$6,500 in earnings, and declines to zero at \$11,000. Unlike the CTC, the EITC is not prorated by the number of children. In addition, families must have earnings in order to receive the EITC.¹²

Universal Benefits

In Canada, there is one program that has no counterpart in the United States. This is a universal benefit program for all families with children under 18, called Family Allowance (FA). FA is paid by the federal government and provides \$303/child/year to all Canadian families, regardless of income level.¹³

6.2.3 Institutional Differences in Canadian and U.S. Antipoverty Programs

This section highlights some of the primary conceptual differences in the way the U.S. and Canadian antipoverty programs are designed.

Program Extensiveness

Canada's safety net is far more extensive than the U.S. system, both in population coverage and benefit levels. There are at least three dimensions of comparison.

12. Other tax differences between the countries also clearly affect the well-being of the poor, although these two tax credits are the primary piece of the tax system in each country designed to assist only low-income households. For a fuller discussion of tax differences see Kesselman (1992).

13. Quebec does not participate in the national FA program, but established its own system of FA levels, which increase as family size rises. Alberta also runs a slightly altered FA program.

First, there are differences in the extent of *means testing* between the two countries. In Canada, there is a tradition of universal social transfer programs, along the model prevalent in many European countries. Thus, Canada runs a universal health insurance program, a universal Old Age Security pension, and provides universal per-child payments (FA) to all households with children. Households receive similar benefits from these programs regardless of their other income. In the United States, there are no purely universal programs; means testing occurs in every public program to at least some extent.¹⁴ This tradition of universal programs gives a flavor to Canadian discussions of antipoverty policy that is not found in the United States.¹⁵

Second, due to differences in *categorical eligibility requirements*, a greater share of single individuals and two-parent families are eligible for transfers in Canada than in the United States. Although Canadian SA benefits and eligibility vary significantly across household types, most provinces provide some cash assistance to all households if they are poor enough. In contrast, cash assistance in the United States is largely limited to single-parent families.¹⁶

Third, Canada's programs generally have higher *benefit levels*. As table 6.1 indicates, both the average UI maximum weekly payment and the average SA maximum payment are substantially higher in Canada than in the United States. Even in the least-generous province in Canada, the SA benefit level for single-parent families exceeds the maximum low-income transfers (AFDC and food stamps) available in all states except Alaska.

Because of both the broader eligibility and greater generosity of the UI system in Canada, this program is much more important as an antipoverty program than in the United States. In Canada, most nonworking households with an employable family member will receive UI rather than SA, so that while the availability of SA to all household types suggests that this program would be used more broadly than AFDC, in reality SA recipients tend to look much more like AFDC recipients (women with small children or families with long-term employment problems) than the program rules suggest.

Program Control and Government Structure

Canada and the United States both have a federalist system of government, in which legislative authority is shared between the federal and state govern-

14. For instance, although most U.S. workers are eligible for Social Security after retirement, the amount received depends upon the level of earnings.

15. For instance, in the United States one of the proposals often made by welfare reform advocates is a minimum income program (negative income tax), which would provide similar levels of economic support to all households below a given income level. Such a program was supported in the recent U.S. Catholic Bishops' statement on economic justice. In contrast, the Canadian Bishops released their own statement in 1988 in which they explicitly rejected a minimum income program and called instead for full employment, coupled with improved social insurance and extended universal services. Means-tested programs were criticized as divisive, stigmatizing the poor (Canadian Conference of Catholic Bishops, 1988).

16. Some states provide very limited cash assistance to single individuals through a program known as General Assistance.

ments. There are notable differences in the decision-making structure for social assistance programs in the two countries, however. The UI system is entirely state-run in the United States, while it is a federal program in Canada. By contrast, the SA program is largely controlled by the provinces in Canada, while both states and the federal government determine AFDC rules in the United States. Both countries divide the costs of AFDC/SA programs between the federal and state/provincial governments. While the federal government establishes key categorical and financial eligibility criteria for the AFDC program in the United States, however, the Canadian federal government exerts almost no influence over eligibility rules or benefit criteria for the SA program.

Canada's SA program also allows more discretion to caseworkers than does the U.S. AFDC program. This occurs in part because little public information is available on eligibility and benefit rules in Canada. For example, a full description of provincial eligibility and benefit rules was not available in Canada until 1986, whereas the U.S. federal government has been publishing descriptions of state AFDC program rules for over two decades.¹⁷ It also occurs because SA program rules explicitly give greater discretion to the caseworker. For example, SA benefit levels often depend on a detailed itemization of a household's need for goods such as food, housing, or medical care. The SA caseworker is in charge of this needs assessment, and can provide quite different benefits to families of the same size in the same city, depending on such things as their housing situation and the ages of their children.

This difference between the two systems is striking. Discretionary benefits are almost inconceivable in the United States, where watchdog groups demand that publicly known, uniform regulations be applied to all applicants. In Canada, there appear to be greater trust in the decisions and competence of government employees and a willingness to grant decision-making authority to government caseworkers.¹⁸

Work Incentives

Both the United States and Canada currently offer only modest financial incentives for public assistance recipients to enter the work force. The U.S. AFDC program disregards 33 percent of earnings for the first four months on welfare, but taxes earnings at 100 percent afterwards. Many states allow deductions for transportation, child-care, or other work expenses, thus lowering the effective tax rate. The U.S. food stamp program disregards 24 percent of

17. In the United States, there has been an ongoing public debate over whether individuals who should receive assistance are being turned away and whether individuals who shouldn't receive assistance are being accepted. Concern over both of these issues (often by quite different groups) has created a demand for public information on AFDC regulations.

18. This is consistent with both Leman's (1980) and Lipset's (1990) argument that Canadians are more deferential to authority, giving political leaders greater independence than in the United States.

earnings, after a standard deduction of \$98/month plus deductions for child-care, shelter costs, and medical expenses.

In Canada, as in the United States, financial work incentives in the SA program are limited. In 1986, the provincial programs offered a mean earnings deduction of \$117/month plus a 12 percent disregard on any additional earnings. However, there is substantial variability in financial incentives across provinces. Earnings deductions vary from zero (Prince Edward Island) to \$224/month (Quebec). The additional tax rate on earnings ranges from 100 percent in five provinces to 70 percent (Manitoba).¹⁹

Both Canada and the United States have moved toward combining job programs with welfare as an alternate method of encouraging work.²⁰ However, the system of mandated work programs found in the United States is clearly not yet acceptable in Canada: recently, the federal government aborted an attempt by Alberta to mandate work for welfare. The federal government claimed this plan violated federal regulations requiring provinces to assist all families in need.

6.3 The Effect of Transfers on Poverty

6.3.1 The Data

This section uses microdata from the United States and Canada to investigate the role that transfer income plays in the economic well-being of various groups among the poor in each country. The U.S. data come from the March 1987 Current Population Survey (CPS), which provides information on income and work behavior for over 50,000 families during 1986. The Canadian data come from a very similar survey, the April 1987 Survey of Consumer Finances (SCF), which surveys over 30,000 families and asks about their income and labor market experiences in 1986.

We use data for all families that are headed by an individual between the ages of 18 and 60 who is neither retired, in school, or disabled. The resulting samples contain 44,568 family observations for the United States and 22,074 family observations for Canada. (Throughout this paper, we use the word *family* to refer to single individuals living alone as well as related individuals living together.)

In both countries, we use what Canada defines as "census families" rather than "economic families." An economic family consists of all related individuals who live in the same household. A census family consists of all married or single individuals and any unmarried children that live together. Thus, a three-generation household will contain two census families but only one eco-

19. For further discussion of this issue, see Banting (1987) or the Evans and McIntyre article in Ismael (1987).

20. See Gueron (1990) for a description of U.S. programs.

conomic family. We focus on census families because most transfer programs determine eligibility and benefit levels at the census family level. In addition, the formation of economic families is typically assumed to be endogenous to public assistance benefits; the lower are benefit levels, the more likely that multiple census families will live together and pool income.²¹

We compare income and poverty status across a variety of subpopulation groups in the tables discussed below. We distinguish between households with single and married heads, with and without children. We also distinguish between the poor, whose income falls below the official poverty line, the near poor, whose income is between one and two times the poverty line, and the upper income, whose income is over two times the poverty line. (Note that 70 percent of the population is included in the upper-income category for both countries.) In addition, we look separately at the white, black, and Hispanic populations in the United States and at the English- and French-speaking populations in Canada.²²

We calculate poverty rates using both the U.S. and Canadian definitions of poverty. 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. In contrast, the Canadian "low-income cutoff" measures the average income level at which a family spends more than 58.5 percent of their income on food, clothing, and shelter. It varies with family size and city size.²³ Appendix table 6B.1 presents the U.S. poverty thresholds and the Canadian low-income cutoffs for 1986 in U.S. dollars. The Canadian poverty thresholds lie uniformly above the U.S. thresholds. A family of four is considered poor in the United States at \$11,203, while the equivalent low-income cutoff in a large urban area in Canada is \$17,330.

Table 6.2 provides information on the comparative populations in the United States and Canada. The primary message of table 6.2 is that these two countries have similar populations with respect to demographic and household characteristics. In fact, within groups that have higher average incomes, there are almost no notable differences. There are three areas of difference, however, noticeable among lower-income households. First, Canadians have fewer female household heads. Only 47 percent of Canadian poor families

21. We experimented in some initial calculations with the economic family definition rather than the census family definition and found results that were largely comparable to those reported here; poverty counts were slightly lower in both countries, with the United States being more affected. In both countries, official poverty counts are based on economic families and thus will differ from our calculations.

22. The SCF in Canada has no information on racial or ethnic background. The English- and French-speaking populations are identified by a question that asks about the mother tongue of a family. Twelve percent of the Canadian population identifies a language other than English or French as their mother tongue. In the tabulations along this dimension, this group is excluded.

23. See Ruggles (1990) for a full description of how the U.S. poverty line has been calculated; see Wolfson and Evans (1989) for a description of how the Canadian low-income cutoffs are calculated.

Table 6.2 Population Comparisons, United States versus Canada, 1986

	Total Population		Poor ^a		Near Poor ^a		Upper Income ^a	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
Population (%)	100.0	100.0	13.5	11.8	16.7	18.2	69.8	70.0
Married (%)	55.3	61.8	21.9	28.2	46.7	51.3	64.0	70.2
Years of education ^b	13.0	12.5	11.3	11.4	12.0	11.8	13.6	12.9
Age of head	37.6	37.7	32.6	35.7	34.8	35.9	39.3	38.4
Working heads (%)	91.4	90.1	59.7	49.8	92.6	87.1	97.5	97.7
Female heads (%) ^c	29.5	21.1	62.0	46.7	36.5	29.0	21.4	14.8
Persons in household	3.0	2.9	3.5	2.8	3.3	3.0	2.9	2.8
Families in household	1.2	1.2	1.5	1.3	1.3	1.2	1.2	1.1

	Single, No Children		Single, Children		Married, No Children		Married, Children	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
Population (%)	32.5	32.5	12.2	7.3	21.1	18.8	34.2	41.4
Married (%)	—	—	—	—	100.0	100.0	100.0	100.0
Years of education ^b	13.2	12.7	12.0	12.0	13.0	12.4	13.1	12.5
Age of head	35.5	35.1	33.1	36.5	44.3	40.5	37.1	38.6
Working heads (%)	91.7	87.1	72.3	68.9	93.8	92.1	96.6	95.4
Female heads (%) ^c	46.8	45.4	88.2	86.9	7.7	0.0	5.6	0.0
Persons in household	1.9	1.8	3.6	2.9	2.5	2.1	4.2	4.0
Families in household	1.5	1.5	1.4	1.1	1.1	1.0	1.0	1.0

Note: Based on census families, heads aged 18–60.

^aBased on U.S. poverty lines.

^bThe Canadian data reports education only in discrete intervals. Shown are interpolated midpoints. In addition, Ontario requires thirteen years for high school graduation, which increases the difficulty of comparing years of education between Canada and the United States.

^cIn Canada, if a male adult is present, he is considered the household head, therefore no married couples are female-headed. In the United States, the household head is self-reported.

are female-headed, in contrast with 62 percent of U.S. poor families. Second, Canadians have fewer families per household and fewer persons per household, particularly among the poor and among single parents with children. This may reflect the lower levels of public assistance in the United States, which are likely to lead more nuclear (census) families to live together and pool income. Third, fewer Canadian households are working than in the United States, particularly in lower-income households. In part, this reflects a higher unemployment rate in Canada in 1986.²⁴ It may also reflect more generous transfer income payments, which allow families to survive without earnings.

24. Canada's unemployment rate for civilian workers was 9.5 percent in 1986, while the U.S. unemployment rate was 7.0 percent.

6.3.2 Income Sources and Poverty Rates in the United States and Canada

Table 6.3 shows how income sources and total incomes compare in the United States and Canada, by household composition and by income group. We highlight four major issues.

First, while Canada's average total income is lower than that of the United States,²⁵ disadvantaged groups have higher incomes in Canada than in the United States. Poor families have average total incomes of \$4,921 in Canada, while they have incomes of \$4,789 in the United States; income levels among the near poor are also very similar in each country. Single-parent families have higher incomes in Canada than in the United States. In analysis not shown here, we also verify that income among the French-speaking minority in Canada is only slightly lower than among the English-speaking majority. In contrast, income among nonwhites in the United States is far below that of whites.

Second, the principal reason for higher total income among disadvantaged groups in Canada is higher transfer income. Poor, near-poor, and single-parent family earnings are no higher in Canada, but transfers are substantially higher. In fact, all groups of Canadians receive more transfer income; on average Canadians receive 6.0 percent of their income from government transfers, while Americans receive only 2.4 percent.

Third, single-parent families have remarkably similar earnings levels in both countries. This finding is of interest since, as we shall verify below, these families are major users of public assistance in both countries. Thus, there seems to be little evidence in these initial tabulations to suggest that the more generous SA program in Canada has caused more single-parent families to drop out of the labor force. In fact, among the poor in each of the four household types shown at the bottom of table 6.3, it is poor single-parent families who are most similar in their work behavior in both countries.

Table 6.4 shows the percentage of poor, near poor, and upper income, using both the U.S. and the Canadian definitions of poverty for each population subgroup.²⁶ We also present a poverty gap measure based on the U.S. poverty line. The poverty gap is defined as the average difference between the income of the poor and the poverty line. Whereas the poverty rate measures the number of individuals below a fixed line, the poverty gap measures how far on

25. Note that these tables compare the pretax, posttransfer income levels of both countries. Since Canada has more extensive transfer payments on average, it also is likely to have higher taxes. Thus, if one were to compare the posttax and posttransfer income distributions, one would likely find even greater differences in average income.

26. In tabulating household income in tables 6.4 and 6.5, we include CTC income for Canadian households that report receiving it, but we exclude the EITC among U.S. households because we have no reported data on EITC receipt. Table 6.3 indicates that simulated EITC amounts (which assume 100 percent take-up) are extremely small. In the simulations that follow, the simulated EITC amounts are included in income for U.S. households.

Table 6.3 Income Sources, United States versus Canada, 1986 (in 1986 U.S. dollars)

	Total Population		Poor ^a		Near Poor ^a		Upper Income ^a	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
Earnings	28,292	23,884	2,592	1,950	11,655	9,880	37,237	31,432
Head	21,401	18,217	2,210	1,729	9,665	8,368	27,916	23,714
Spouse	5,445	4,874	259	177	1,535	1,236	7,383	6,657
Government transfers	730	1,622	1,818	2,731	912	2,349	477	1,236
AFDC/SA	172	358	987	1,824	195	538	10	51
FA	—	249	—	233	—	318	—	233
Food stamps	86	—	504	—	90	—	4	—
UI	241	730	125	389	288	1,056	252	707
Total income	30,978	26,877	4,789	4,921	13,370	12,989	40,251	34,398
Tax credit ^b	20	130	98	267	36	295	1	32

	Single, No Children		Single, Children		Married, No Children		Married, Children	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
Earnings	18,199	13,846	10,734	10,770	40,043	29,241	36,868	31,659
Head	17,066	13,846	9,857	9,343	25,720	19,580	26,960	22,604
Spouse	—	—	—	—	11,598	9,661	8,753	7,392
Government transfers	446	1,006	2,064	3,073	592	1,366	610	1,967
AFDC/SA	49	340	1,014	1,673	12	187	88	217
FA	—	2	—	418	—	2	—	525
Food stamps	27	—	447	—	9	—	59	—
UI	180	418	126	526	293	827	308	969
Total income	20,217	15,796	14,239	15,296	43,973	32,672	39,130	35,000
Tax credit ^b	—	—	98	389	—	—	23	246

Note: Based on census families, heads aged 18–60.

^aBased on U.S. poverty lines.

^bSince there is no information on EITC in the U.S. CPS, this is imputed assuming a 100 percent take-up rate. The Canadian CTC is based on reported data. Tax credits are not included in total income.

average most individuals are below that line, providing a measure of well-being among the poor.

Using the U.S. definition of income, table 6.4 indicates that the overall poverty count is 13.5 percent for the United States, while it is 11.8 percent in Canada. In Canada, however, the percentage that is near poor is greater than in the United States, so that the percentage of upper income is virtually identical in the two countries. The poor in Canada also have substantially smaller poverty gaps than in the United States among every group in table 6.4, implying that poverty is not only lower but that it is also less extreme in Canada.

Single individuals in Canada and married couples without children have

Table 6.4 Income Needs, U.S. versus Canada, 1986 (in 1986 U.S. dollars)

	Total Population		Canada—Language		U.S.—Race		
	U.S.	Canada	English	French	White	Black	Hispanic
U.S. poverty definition							
Poor (%)	13.5	11.8	10.8	14.2	9.9	30.2	25.3
Near poor (%)	16.7	18.2	17.6	19.2	14.8	22.4	28.1
Upper income (%)	69.8	70.0	71.5	66.6	75.3	47.3	46.6
Poverty gap ^a							
Poor	3,702	2,528	2,644	2,042	3,479	4,107	3,867
Canadian definition							
Poor (%)	20.6	18.3	16.5	21.8	15.7	41.2	40.2
Near poor (%)	26.2	30.0	29.2	31.1	25.4	28.2	31.8
Upper income (%)	53.2	51.7	54.3	47.1	58.8	30.7	28.0

	Single, No Children		Single, Children		Married, No Children		Married, Children	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
U.S. poverty definition								
Poor (%)	15.5	19.9	45.3	32.3	2.8	4.1	6.8	5.2
Near poor (%)	18.4	22.0	24.4	28.8	7.8	9.4	17.9	17.3
Upper income (%)	66.0	58.1	30.3	38.8	89.5	86.5	75.3	77.5
Poverty gap ^a								
Poor	3,017	2,341	4,172	2,519	3,374	2,430	4,152	3,142
Canadian definition								
Poor (%)	23.1	28.8	59.0	47.7	5.5	6.7	13.8	10.2
Near poor (%)	26.8	29.8	25.8	33.3	15.2	17.7	32.6	35.0
Upper income (%)	50.0	41.3	15.2	19.0	79.3	75.5	53.6	54.8

Notes: Based on census families, heads aged 18–60.

Poor is below poverty line; *near poor* is between one and two times poverty line; *upper income* is greater than two times poverty line.

^aThe poverty gap is defined as the average difference between the incomes of the poor and the poverty line. We report estimates based on the U.S. poverty line.

uniformly higher poverty and near-poverty counts than in the United States. Single parents, however, are much less likely to be poor in Canada; the poverty rate among this group is 32 percent in Canada, while it is 45 percent in the United States.

Table 6.5 investigates the extent to which government transfers move families out of poverty, by comparing poverty rates based on pretransfer family income with poverty rates based on total (posttransfer) family income. Of course, this only approximates the effect of transfers, since it assumes that transfers do not affect other sources of income. If transfers cause families to work less, table 6.5 will overestimate the extent of pretransfer poverty that would result in the absence of transfers.

Table 6.5 Pre- versus Posttransfer Poverty, Using U.S. Poverty Definitions, 1986 (in 1986 U.S. dollars)

	Total Population		Canada—Language		U.S.—Race			
	U.S.	Canada	English	French	White	Black	Hispanic	
Poor (%)								
Pretransfer	15.4	17.5	15.8	21.9	11.5	33.3	28.8	
Posttransfer	13.5	11.8	10.8	14.2	9.9	30.2	25.3	
Difference	1.9	5.7	5.0	7.7	1.6	3.1	3.5	
Poverty gap								
Pretransfer	5,255	4,825	4,774	4,975	4,627	6,376	5,886	
Posttransfer	3,702	2,528	2,644	2,042	3,479	4,107	3,867	
Difference	1,553	2,297	2,130	2,933	1,148	2,269	2,019	
	Single, No Children		Single, Children		Married, No Children		Married, Children	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
Poor (%)								
Pretransfer	17.4	26.1	50.5	46.6	3.7	7.5	8.2	10.2
Posttransfer	15.5	19.9	45.3	32.3	2.8	4.1	6.8	5.2
Difference	1.9	6.2	5.2	14.3	0.9	3.4	1.4	5.0
Poverty gap								
Pretransfer	3,561	3,817	6,953	6,584	3,802	4,227	5,342	5,619
Posttransfer	3,017	2,341	4,172	2,519	3,374	2,430	4,152	3,142
Difference	544	1,476	2,781	4,065	428	179	1,190	2,477

Note: Based on census families, heads aged 18–60.

Table 6.5 indicates that the Canadian transfer system is substantially more effective than the U.S. transfer system in raising people out of poverty. Canada's overall pretransfer poverty rate is about 2 percentage points higher than the United States', but its posttransfer poverty rate is 2 percentage points lower. This pattern is particularly strong for families with children: transfers reduce poverty rates of single-parent families by 14 points in Canada as opposed to 5 points in the United States, and they reduce poverty rates of two-parent families with children by 5.0 points in Canada as opposed to 1.4 points in the United States. Even more striking is the impact on poverty gaps: transfers reduce the poverty gap of single-parent families by 62 percent in Canada as opposed to 40 percent in the United States.

The results of this section indicate that Canadian families on average are worse off than U.S. families in terms of total income, but that the poverty rate and poverty income gap is lower in Canada, indicating that the poorest in Canada are better off than in the United States. Much of this difference is due to a more extensive government transfer system. Single individuals and married couples without children have both lower incomes and higher poverty

rates in Canada than in the United States; however, the more extensive Canadian transfer system substantially moderates these differences. Single parents with children are strikingly better off in Canada than in the United States. They start out with more income before transfers and receive extensive transfer assistance, leading to much lower poverty rates.

6.4 Simulating the Effects of Antipoverty Programs

Section 6.3 indicates that the Canadian transfer system is apparently more effective than the U.S. system in moving families out of poverty. However, it is possible that this difference results from differences in the pretransfer income distributions across the two countries rather than from differences in transfer program rules. For example, if the income levels of the pretransfer poor are closer to the poverty threshold in Canada than in the United States, then the same level of transfer payments could have a greater impact on poverty in Canada.

In this section, we measure the impact of the transfers more directly, by conducting simulations of the transfer systems in each country. We address three issues: First, what are the estimated take-up rates for each of the transfer programs in the two countries? Second, how does transfer-program generosity vary across states and provinces in each country? Third, what would be the impact on poverty rates and program costs of implementing Canadian anti-poverty programs in the United States and vice versa?

6.4.1 Simulation Methodology

To simulate the impact of Canadian and U.S. transfer programs, we apply state- and province-specific eligibility and benefit rules to microdata from each country to estimate transfer eligibility and benefits among a random sample of the population. We use the published sources listed in appendix C to determine program parameters. This appendix also includes a detailed description of our simulation methodology. Our microdata sources are the March CPS for 1987, and the April SCF for 1987, described above. As noted before, we restrict our sample to families that are headed by an individual between the age of 18 and 60 who is not retired, in school, or disabled.

The most difficult program to simulate with our data is the UI program. In both countries, UI benefits and eligibility depend upon the average weekly earnings and the duration of employment during a base period prior to the unemployment spell. Unfortunately, our data contain information about employment and earnings for only one year (1986) and not for the complete base period. In fact, if an individual began a spell of unemployment at the start of the calendar year, we would not observe any data from their base period. We proxy base period earnings and employment with reported weekly earnings and weekly hours of work while employed in 1986. This is at best a rough approximation, since, for many individuals whose unemployment spell oc-

curred early in 1986, this means using data from employment spells that occurred *after* the unemployment spell rather than before it.²⁷

A second area of concern is the accuracy of our simulated estimates for the SA program. As discussed above, eligibility and benefit levels in the SA program are not as standardized as in AFDC. This makes it difficult to duplicate the SA benefit and eligibility determination process faced by any particular family. We use provincial information on the benefits available to a typical family, which may be inaccurate for some households.

Appendix D contains a comparison of simulated and reported income sources for each of the transfer programs included in the simulation and a brief discussion of the accuracy of the simulation. This analysis shows a fairly high degree of consistency between reported and simulated benefits. For the UI programs in both countries, the simulation classifies between 85 and 95 percent of the cases correctly. For other programs, the range of correct estimates falls within the 90th percentile.

In sections 6.4.2 and 6.4.3, we present results from our base simulations, which assume 100 percent participation and zero labor supply responses. In sections 6.4.4 and 6.4.5, we present a range of estimates that allow for variation in participation rates and labor supply elasticities.

6.4.2 Estimated Take-up Rates in U.S. and Canadian Transfer Programs

In table 6.6, we present estimates of the take-up rates for each of the key transfer programs in both countries. The take-up rate is defined as the ratio of the number of families who reported positive transfer incomes to the number who had either simulated or reported transfer income greater than zero.²⁸ It is intended to measure the share of eligible families who participate in transfer programs. This number will be a biased estimate of the true participation rate of eligible families to the extent that transfers are underreported in our microdata and that our simulations inaccurately predict eligibility. Since the undercounts of both AFDC and SA income in our microdata are sizable,²⁹ the low

27. Average weekly earnings received after a spell of unemployment may tend to be lower than those reported in the base period, during which a worker was continuously employed on his or her previous job. This could lead us to underestimate UI eligibility and benefits levels. However, since we know nothing about the duration of previous employment and do not impose any restrictions on UI eligibility based on this duration, we may overestimate eligibility.

28. The take-up rates in table 6.7 are calculated as the ratio

$$\frac{(\text{Sim} > 0, \text{Actual} > 0) + (\text{Sim} = 0, \text{Actual} > 0)}{(\text{Sim} > 0, \text{Actual} > 0) + (\text{Sim} > 0, \text{Actual} = 0) + (\text{Sim} = 0, \text{Actual} > 0)}$$

where the numerator is the share of the population who report receiving transfers, and the denominator is the share of the population either simulated to be eligible or actually receiving transfers. Note that one could estimate an alternative take-up rate that excluded the "errors" in the simulation ($\text{Sim} = 0, \text{Actual} > 0$) from both numerator and denominator. These alternative take-up rates are slightly lower than those reported here, but the relative patterns across groups and programs are largely identical.

29. The SCF documentation for 1987 indicates that the undercount is fairly small for the CTC (4 percent) and the FA program (6 percent). It reports undercounts of 47 percent for SA and other

Table 6.6 Estimated Take-up Rates

	U.S.			Canada			
	Unemployment Insurance	Food Stamps	AFDC	Unemployment Insurance	Family Allowances	Social Assistance	Tax Credit
Total population	57.9	46.1	74.5	81.9	97.4	59.5	88.8
Single, no children	51.0	34.2	—	73.2	—	54.7	—
Single, children	45.0	60.3	71.6	79.0	97.6	71.1	88.8
Married, no children	62.5	30.9	—	82.6	—	74.1	—
Married, children	63.4	40.5	69.7	86.3	97.3	51.4	88.9
Poor ^a	37.9	45.6	72.5	74.3	95.9	58.4	94.9
Near poor ^a	51.2	41.6	81.6	80.3	97.2	54.2	89.5
Upper income ^a	65.4	—	—	83.6	97.5	—	87.7
White	60.0	39.6	72.1	—	—	—	—
Black	48.9	60.6	80.2	—	—	—	—
Hispanic	52.3	46.2	70.3	—	—	—	—
English	—	—	—	79.2	97.5	53.5	90.6
French	—	—	—	87.9	97.4	76.8	88.2

Note: Take-up rates calculated as the ratio of all those who receive income from a program, divided by all those who either are estimated as eligible and/or receive income from a program.

^aBased on U.S. poverty lines.

estimated take-up rates in both programs are at least partially explained by underreporting of transfer income.

The first point to notice in table 6.6 is that take-up rates in most programs are well below 100 percent. Estimated take-up rates for the United States range from a low of 46 percent for the food stamp program,³⁰ to 58 percent for the UI program,³¹ to 75 percent for the AFDC program.³² In Canada, the SA program has a low take-up rate of 60 percent, while the UI take-up rate is higher at 82 percent. Canada's CTC and FA program have high participation rates of 89 percent and 97 percent, respectively.

Second, it is evident from table 6.6 that there is no consistent pattern between program generosity and benefit levels. The take-up rate in Canada's UI program is 82 percent, while the take-up rate for the less-generous UI program

provincial assistance programs, and 22 percent for the UI program. In 1983, the U.S. CPS undercount was 24 percent for UI and 24 percent for AFDC (U.S. Bureau of the Census, *Current Population Reports, Series P-60*, no. 103).

30. Our estimated 46 percent participation rate in food stamps is not too far from the GAO estimate (U.S. General Accounting Office, 1988b, fig. 2.1) of 44 percent for 1986. Both of these estimates are lower than a variety of estimates derived from studies done in the late 1970s. For a summary of these, see U.S. General Accounting Office (1988a), table 2.2.

31. This estimate for the United States is below the estimated take-up rate for UI in 1986 of 67.3 percent by Blank and Card (1991) and probably reflects the less adequate data available for our eligibility imputations. We do not know of any existing estimate of Canadian UI take-up.

32. These take-up rates for AFDC are quite close to other estimates for earlier in the 1980s by Ruggles and Michel (1987), who estimate an AFDC participation rate of 78 percent for 1984.

in the United States is 58 percent. By contrast, the estimated take-up rate for SA is lower than the estimated take-up rate for AFDC, even though SA is a substantially more generous program than AFDC. This result is not surprising, since the correlation between take-up rates and benefit levels is determined by two conflicting relationships: as benefits increase, more individuals will participate in the program; however, as more individuals participate in the program, program administrators may cut back on benefits.

An alternative way of investigating the relationship between take-up rates and benefit levels is to look at the correlation across more and less generous states and provinces. In the United States, the correlation coefficient between the AFDC benefit level in a state and our estimated state take-up rate is 0.152.³³ The correlation between state maximum UI benefit levels and state-specific UI take-up rates is 0.359. In Canada, the correlation coefficient between the SA benefit level for single parents and the estimated provincial take-up rate for SA is -0.591 .³⁴ None of these results provide strong support for the theory that higher take-up rates occur in more generous programs.

6.4.3 Simulation Results for U.S. and Canadian Programs

Table 6.7 presents the results from our base simulations, which assume zero labor supply responses and 100 percent participation rates. For each simulation, table 6.7 reports total family income, the percentage of income received from government transfers, the share of families receiving each type of transfer, the estimated dollars received, and the resulting poverty count and poverty gap. The top of the table shows a series of simulations on U.S. data and the bottom shows a series of simulations on Canadian data.

Column 1 shows actual transfers reported in the CPS or the SCF. Column 2 shows simulated transfers, estimated using the mean (population-weighted) U.S. program parameters for U.S. microdata and mean Canadian parameters for Canadian microdata. These results are almost identical to simulations that apply the rules specific to each state or province. Thus, we do not present these latter simulations here.

For the United States, simulated average total income is \$31,134, with 2.8 percent from transfers. This is only slightly above the reported average income of \$30,998. The biggest effect of the simulation is to double the share of the population receiving food stamps, from 7.6 percent (reported) to 14.7

33. There is a lot of noise in the state estimates of take-up rates, because of small numbers of observations in low-population states. This would tend to reduce the correlation coefficient. The state sample ranges from 354 observations (Wyoming) to 4,077 (California), but a much smaller number in each state are estimated to be eligible for any of the programs. The province sample ranges from 596 observations (Prince Edward Island) to 4,128 (Ontario).

34. The negative relationship between benefit levels and participation rates in Canada may be related to program structure: in Canada's SA program, provinces can choose both eligibility rules and benefit levels. Thus, provinces may choose to restrict eligibility for SA, in order to give out more generous benefits. If we imperfectly simulate these eligibility restrictions in our microdata, we may report lower participation rates in the more generous provinces.

Table 6.7 Simulation Results, Total Population (in 1986 U.S. dollars)

	Actual (1)	U.S. Programs			Canadian Programs		
		Mean ^a (2)	High ^b (3)	Low ^c (4)	Mean ^a (5)	High ^b (6)	Low ^c (7)
		U.S. data					
Income (\$)	30,998	31,134	31,236	31,012	31,792	31,965	31,531
Government transfers (%)	2.4	2.8	3.2	2.5	4.9	5.4	4.1
Receiving (%)							
Food stamps/FA	7.6	14.7	14.4	14.7	46.4	46.4	46.4
AFDC/SA	5.1	4.5	6.8	3.4	13.2	14.4	9.9
UI	11.8	14.5	15.1	15.4	13.6	13.6	13.6
EITC/CTC	6.8	6.8	6.8	6.8	21.7	21.7	21.7
Received (\$)							
Food stamps/FA	1,132	1,260	902	1,495	554	554	554
AFDC/SA	3,356	3,663	5,123	1,321	4,586	5,414	3,463
UI	2,045	1,963	1,728	1,614	2,397	2,397	2,397
EITC/CTC	293	293	293	293	575	575	575
Poor, U.S. definition (%)	13.2	12.6	11.5	12.6	6.1	5.5	11.3
Poverty gap	3,683	2,767	1,957	3,411	1,618	1,567	2,301
		Canadian Programs			U.S. Programs		
	Actual	Mean ^a	High ^b	Low ^c	Mean ^a	High ^b	Low ^c
		Canadian data					
Income (\$)	26,877	27,069	27,198	26,833	26,318	26,270	26,206
Government transfers (%)	6.0	6.7	7.1	5.9	4.0	3.9	3.6
Receiving (%)							
FA/Food stamps	43.6	43.3	43.3	43.3	14.6	14.6	14.8
SA/AFDC	8.7	12.8	13.6	13.6	0.3	0.3	0.1
UI	23.8	20.5	20.5	20.5	21.6	22.2	22.2
CTC/EITC	23.6	18.7	18.7	18.7	5.5	5.5	5.5
Received (\$)							
FA/Food stamps	570	559	559	559	1,409	1,399	1,415
SA/AFDC	4,131	4,028	4,765	2,976	2,726	4,582	897
UI	3,070	3,270	3,270	3,270	2,545	2,234	1,991
CTC/EITC	553	526	522	526	289	289	289
Poor, U.S. definition (%)	11.8	8.8	8.3	12.9	13.4	13.4	13.6
Poverty gap	2,528	1,770	1,704	2,468	3,422	3,398	3,415

^aBased on population-weighted average state/province program rules.

^bBased on Vermont program rules for the United States and Saskatchewan rules for Canada.

^cBased on Alabama program rules for the United States and New Brunswick rules for Canada.

percent (simulated). This reflects the low estimated take-up rates for food stamps among eligible families. (Recall that these initial simulations assume 100 percent participation.) Because of the higher transfer income levels, the simulated poverty rate is 0.6 points lower than the reported poverty rate of 13.2, and the poverty gap is over \$900 smaller than the reported gap of \$3,683. In Canada, the results of using simulated rather than reported income are similar in magnitude: the share of government transfers rises from 6.0 to 6.7 percent, the poverty rate (U.S. definition) falls from 11.8 to 8.8 percent, and the poverty gap falls by about \$750.

To document the range of variation in transfer programs within each country, we apply the rules from the most generous state or province, and those from the least generous state or province to the entire country. These results are shown in columns 3 and 4. In the United States, we use the programs from Vermont (most generous) and Alabama (least generous),³⁵ while in Canada, we use Saskatchewan (most generous) and New Brunswick (least generous).³⁶

Of course, the results from these simulations cannot be interpreted literally as the expected results of such a legislative change, since the only variables that are allowed to change in the simulations are government transfer income. If individuals decrease their labor supply in response to an increase in transfers, these simulations will overstate the impact of moving to a more generous program. These simulations do, however, provide an indication of the magnitude of variation between antipoverty programs.

Our simulations suggest that, if the United States adopted the Vermont transfer system (and no other income sources changed), poverty would fall from 12.6 percent (as simulated on mean U.S. programs) to 11.5 percent and the poverty gap would fall by \$810. If it adopted the Alabama transfer system, poverty would remain at 12.6 percent, but the poverty gap would increase by \$644.

Similar simulations suggest that if Canada were to adopt its most generous provincial program, poverty rates would decrease from 8.8 to 8.3 percent and the poverty gap would decrease slightly. If it adopted its least generous provincial program, poverty would increase to 12.9 percent and the poverty gap would increase substantially. While the most generous Canadian program re-

35. We select these states on the basis of AFDC maximum benefit payments. Vermont is used as the most generous state, even though Alaska has a substantially higher AFDC benefit level, because Alaska's level is so far above all other states that it is perhaps best treated as an outlier. It is important to note that these are not the most and least generous states with respect to UI payments, although Vermont is among the more generous UI states and Alabama is among the least generous UI states. A clear ranking of UI generosity would be difficult to determine among U.S. states, since states set both eligibility criteria and benefit levels. In a number of states, broader eligibility is offset by lower maximum benefit limits or vice versa.

36. These provinces are ranked on the basis of payments to single parents. New Brunswick is also the least generous to married couples and is the second least generous to single individuals (Quebec pays less). Saskatchewan is also most generous for married couples but ranks in the middle with regard to generosity to single individuals.

sults in poverty counts in that country well below the U.S. poverty counts, the least generous provincial program results in Canadian poverty counts that are quite comparable to those in the United States.

These results suggest that program variation has a more dramatic impact on poverty rates in Canada than in the United States: there is a 4.6-point difference in poverty rates between the best and worst Canadian simulation, but only a 1.1-point difference between U.S. simulations. This is because Canada's most generous province has benefit levels high enough to bring a large share of the poor over the poverty line, while no U.S. states have benefit levels high enough to have a sizable impact on poverty. Thus, although AFDC benefit levels vary far more than Canadian SA benefit levels in percentage terms, variations in AFDC benefit levels have a much smaller impact on poverty.

Columns 5–7 investigate the effect of applying the mean Canadian program rules in the United States, and the mean U.S. program rules in Canada. Note that in comparing the impact of moving from one country's transfer system to the other's, the appropriate comparison is between the simulated impact of the new program and the simulated impact of the existing program. In both countries the effect is dramatic. In the United States, shifting from the mean U.S. plan to the mean Canadian plan would reduce the poverty rate from 12.6 percent to 6.1 percent and decrease the poverty gap from \$2,767 to \$1,618. Even the least generous provincial transfer system achieves a lower poverty rate than the most generous U.S. state transfer system, although the poverty gap would be somewhat higher. If the United States adopted Saskatchewan programs, poverty rates would plummet to 5.5 percent, and the poverty gap would fall to \$1,567. Thus, the Canadian provincial programs appear to provide substantially greater transfer income and have much stronger antipoverty effects than any existing U.S. state programs.

In Canada, application of U.S. programs has the opposite effect. Poverty rates rise and government transfers fall. The best U.S. transfer system, from Vermont, produces a poverty rate and poverty gap lower than in the least generous province, but well below the mean of Canadian programs.

Table 6.8 examines how these results vary among different subgroups in the United States; table 6.9 repeats this analysis for Canada. The most striking result in table 6.8 is the dramatic impact of Canadian programs on the poverty rates of single-parent families with children. This is of particular interest, given the enormous public concern in the United States with the high poverty rate of these families. As table 6.8 shows, under the mean U.S. program the simulated poverty rate for single-parent families is 43 percent and the poverty gap is \$2,628. Even if all states adopted the generous transfer programs of Vermont, the poverty rate would decrease to only 36 percent, although the poverty gap would fall to \$1,293. In contrast, the simulated effect of the Canadian programs on this group is astounding. The average Canadian transfer program would decrease poverty to 2.4 percent. If the generous Saskatchewan plan were implemented, poverty among single-parent families would almost

Table 6.8 Simulation Results, U.S. CPS Data (in 1986 U.S. dollars)

	Actual (1)	U.S. Programs			Canadian Programs		
		Mean ^a (2)	High ^b (3)	Low ^c (4)	Mean ^a (5)	High ^b (6)	Low ^c (7)
Poor (%)	13.2	12.6	11.5	12.6	6.1	5.5	11.3
Poverty gap	3,683	2,767	1,957	3,411	1,618	1,567	2,301
Single, no children							
Poor (%)	15.5	15.2	15.2	15.2	15.3	15.3	15.3
Poverty gap	3,017	2,597	2,586	2,571	1,710	1,591	2,513
Single, children							
Poor (%)	43.7	43.4	36.5	43.4	2.4	0.1	34.5
Poverty gap	4,197	2,628	1,293	4,197	691	811	1,859
Married, no children							
Poor (%)	2.8	2.4	2.4	2.4	2.6	2.6	2.6
Poverty gap	3,374	2,731	2,714	2,651	1,835	1,368	3,009
Married, children							
Poor (%)	6.5	5.4	4.7	5.4	0.9	0.0	4.5
Poverty gap	4,040	3,627	1,627	3,609	661	179	2,568
White							
Poor (%)	9.7	9.2	8.3	9.2	5.2	4.8	8.1
Poverty gap	3,457	2,647	1,967	3,070	1,600	1,548	2,256
Black							
Poor (%)	29.7	28.8	26.5	28.7	10.9	9.3	25.9
Poverty gap	4,101	2,933	1,988	3,971	1,745	1,678	2,377
Hispanic							
Poor (%)	24.7	23.5	21.9	23.4	8.9	7.2	21.8
Poverty gap	3,834	2,950	1,856	3,757	1,478	1,473	2,340

^aBased on population-weighted average state/province program rules.

^bBased on Vermont program rules for the United States and Saskatchewan rules for Canada.

^cBased on Alabama program rules for the United States and New Brunswick rules for Canada.

disappear, to less than 1 percent. This is because the Canadian transfers available to single women with children are large enough to bring these families up to the U.S. poverty line, assuming that all eligible persons participated.

Because participation rates on these programs are substantially below 100 percent, expected poverty rates among female-headed families may be higher, as the analysis in section 6.4.4 indicates. These simulations also do not include any labor supply responses; however, the analysis in section 6.4.4 indicates that these results hold for a wide range of assumed labor supply elasticities. Moreover, as our data in table 6.2 indicate, since the earnings of single-parent families in Canada are quite comparable to those of families in the United States, there is little evidence that transfer programs have induced large reductions in work effort in Canada.

Table 6.9 Simulation Results, Canadian SCF Data (in 1986 U.S. dollars)

	Canadian Programs				U.S. Programs		
	Actual (1)	Mean ^a (2)	High ^b (3)	Low ^c (4)	Mean ^a (5)	High ^b (6)	Low ^c (7)
Poor (%)	11.8	8.8	8.3	12.9	13.4	13.4	13.6
Poverty gap	2,528	1,770	1,704	2,468	3,422	3,398	3,415
Single, no children							
Poor (%)	19.9	21.3	21.3	21.3	21.3	21.4	21.4
Poverty gap	2,341	1,814	1,730	2,692	2,870	2,856	2,840
Single, children							
Poor (%)	32.3	3.1	2.8	33.0	40.2	38.8	40.4
Poverty gap	2,519	1,911	1,440	1,607	4,380	4,369	4,493
Married, no children							
Poor (%)	4.1	5.3	5.3	5.3	5.1	5.2	5.2
Poverty gap	2,430	2,083	1,658	3,402	3,098	3,074	3,038
Married, children							
Poor (%)	5.2	1.7	0.4	6.3	6.3	6.4	6.5
Poverty gap	3,142	828	1,186	2,317	3,926	3,894	3,854
English							
Poor (%)	10.8	7.4	7.1	11.4	12.1	12.0	12.2
Poverty gap	2,644	1,710	1,650	2,323	3,320	3,296	3,320
French							
Poor (%)	14.2	12.2	11.2	16.6	16.9	16.9	17.1
Poverty gap	2,042	1,846	1,771	2,623	3,594	3,570	3,571

^aBased on population-weighted average state/province program rules.

^bBased on Vermont program rules for the United States and Saskatchewan rules for Canada.

^cBased on Alabama program rules for the United States and New Brunswick rules for Canada.

Our simulations also indicate that Canada's programs would have a sizable impact on the poverty rates of two-parent families with children. Moving from the mean program in the United States to the mean program in Canada would decrease the two-parent family poverty rate from 5.4 points to 0.9 points, while the poverty gap would decrease from \$3,627 to \$661. Under Canada's best provincial plan, the poverty rate would decrease to 0.0 percent and the poverty gap would decline to \$179.

Note that, while there is a dramatic difference in the simulated impact of U.S. and Canadian programs on families with children, the differences for two-parent families without children and single individuals are fairly small. Moving from the mean U.S. to the mean Canadian program has a negligible impact on poverty rates for single individuals and two-parent families without children, although the poverty gap does decrease. This reflects the lower level of transfer assistance available to these groups in both countries.

The results in table 6.9, which are based on the Canadian population, gen-

erally mirror the effects discussed above. This is not surprising, given the similarities of the U.S. and the Canadian populations.

6.4.4 Adjusting for Labor Supply Responses and Program Participation

The above analysis assumes 100 percent participation rates and zero labor supply responses. In this section, we estimate the impact on the U.S. population of moving from the current U.S. programs to the mean Canadian program, allowing for a range of labor supply elasticities and for incomplete program participation. This enables us to test whether our results are robust to other behavioral assumptions.

We compare estimates of U.S. poverty rates and poverty gaps with Canadian programs, assuming 100 percent program participation and assuming lower participation rates. In the latter case, we use the estimated participation rates by family type for Canada shown in table 6.6 and assume these same participation rates would occur in the United States if the Canadian programs were adopted. As discussed above, observed participation rates should produce overestimates of poverty rates, due to underreporting of transfer income.

To simulate the potential changes in work effort that may result from adopting the average Canadian means-tested programs, we use a range of income and substitution elasticity estimates from the Seattle-Denver negative income tax experiments reported in Keeley (1981).³⁷ To simulate the impact of changes in the UI system, we rely on estimates from the UI duration literature.³⁸ We assume that the change in labor supply induced by the change in transfer systems is small enough that wages in the low-wage labor market remain relatively constant. Thus, we use the current wage as a measure of the wage that would prevail under the new transfer system. Our methodology for these labor supply and program participation adjustments is explained in more detail in appendix E.

The results, shown in table 6.10, indicate that our poverty rate estimates and poverty gap estimates are surprisingly robust to the impact of changing labor supply elasticities. For all family types, the impact of different labor supply elasticities is quite small. The participation rate assumptions appear to have a larger impact: using Canadian participation rates rather than assuming 100 percent participation increases the estimated U.S. poverty rate under the Canadian system from 6 percent to 9 percent for all families, and from 2 percent to 16 percent for single-parent families. Note, however, that the estimated reduction in poverty from adopting the Canadian system is still substantial: poverty rates of all families decline from 13 percent under the U.S. programs to 9 percent under the Canadian programs, while poverty rates for single-

37. The low-, medium-, and high-income and substitution elasticities for annual hours worked for male heads are (.04, -.14), (.12, -.21), and (.30, -.30); for wives they are (.18, -.14), (.24, -.24), and (.67, -.77); and for female heads they are (.07, -.13), (.17, -.24), and (.36, -.80). These elasticities are larger than those presented in Moffitt and Kehrer (1981).

38. We use estimates from Moffitt and Nicholson (1982) and Katz and Meyer (1990).

Table 6.10 Simulated Impact in the United States of Mean Canadian Program under Range of Labor Supply Elasticities and Participation Rates

Elasticities ^a	100% Participation		Estimated Take-up Rates ^b	
	Poverty Rate	Poverty Gap	Poverty Rate	Poverty Gap
All families				
Low	6.2	1,624	9.4	3,162
Medium	6.2	1,641	9.5	3,171
High	6.3	1,698	9.5	3,197
Single, no children				
Low	15.4	1,713	16.0	2,521
Medium	15.5	1,733	16.2	2,522
High	15.5	1,800	16.2	2,548
Single, children				
Low	2.4	702	15.8	3,911
Medium	2.5	693	15.9	3,952
High	2.5	701	16.2	3,989
Married, no children				
Low	2.6	1,862	2.7	3,767
Medium	2.5	1,912	2.8	3,756
High	2.8	1,978	2.8	3,731
Married, children				
Low	0.9	666	5.1	4,050
Medium	1.0	665	5.1	4,065
High	1.1	669	5.0	4,104

^aSee footnote 37 for assumed elasticities for high, medium, and low cases.

^bEstimated take-up rates are based on estimates for Canada reported in table 6.6.

parent families decline from 43 percent to 16 percent. The poverty rate of two-parent families decreases more moderately. This is in part because the greater generosity of the Canadian programs is offset by the lower participation rate in SA than in AFDC for this group.

6.4.5 Expenditures under U.S. and Canadian Transfer Systems

Given the substantial differences in the simulated impact of the U.S. and Canadian transfer systems on poverty, it is of interest to ask how program expenditures would differ under the two systems. While it is difficult to estimate the total increase in spending under each program since we have little information on administrative expenditures, we can calculate the total cost of transfer payments. As before, it is more appropriate to compare results from different simulations, rather than to compare simulated with actual expenditures. However, actual expenditures are included for the reader's interest.

Table 6.11 presents the total transfer spending under each of the simulations discussed above. For each simulation, we estimate spending assuming 100

Table 6.11 Change in U.S. Transfer Spending under Mean Canadian Program (in billions of dollars)

	100% Participation	Estimated Take-up Rates ^a
Reported U.S. expenditures = \$35.9 billion		
Simulated U.S. expenditures with U.S. programs	46.6	28.3
Simulated U.S. expenditures with mean Canadian programs ^b		
Zero elasticities	91.0	67.9
Low elasticities	97.5	75.0
Medium elasticities	102.6	79.7
High elasticities	109.6	81.1

^aTake-up rates for Canadian programs based on estimated Canadian participation rates reported in table 6.6. Take-up rates for U.S. programs based on actual participation, reported in the microdata.

^bSee footnote 37 for assumed elasticities for high, medium, and low cases.

percent take-up rates, and we recalculate spending using the take-up rates prevalent in each country, which are shown in table 6.6.³⁹ We present estimates for a range of labor supply responses to the change in welfare policy.

With full participation, the simulated cost of U.S. benefit payments for the U.S. population would be \$46.6 billion; Canadian transfer programs would cost from \$91.0 billion to \$109.6 billion, or about 2.0 to 2.4 times the cost of U.S. programs. At current take-up rates, in contrast, the cost of the Canadian programs would range from \$67.9 billion to \$81.1 billion, or about 2.4 to 2.9 times the cost of current U.S. programs.

In evaluating the impact of this increase in expenditures, two points are important. First, to evaluate the impact of these programs on family incomes, one must consider both the additional transfers and the additional taxes generated by the program. For example, the net impact of the FA program on most families may be minimal, since they will receive an increase both in taxes and in transfers as a result of the program. In table 6.12, we present some simple calculations that are illustrative of the change in the posttax, posttransfer income distribution that might result from moving to the Canadian programs. We assume that all non-UI programs are financed by a proportional increase in the federal income tax. We ignore any deadweight loss that may result from the additional taxes. We do not attempt here to examine the

39. Table 6.11 uses the estimated take-up rates for existing programs to estimate expected costs in new programs, even though the benefit and eligibility rules change across programs. This is clearly inaccurate, but unfortunately we have no information on how take-up rates might change as program parameters change. For this reason, looking at the relative cost differences between different simulations that assume a 100 percent take-up rate might be more informative.

Table 6.12 Change in U.S. Taxes and Transfers under Mean Canadian Program by Family Income Quintile

Quintile	Change in Transfers		Average Tax Rate	Change in Taxes (\$)	Change in Income (\$)
	UI (\$)	Non-UI (\$)			
1	225.5	1,731.4	0.000	0.0	1,956.9
2	105.9	316.8	0.035	91.4	331.3
3	78.9	164.2	0.067	273.4	- 30.3
4	46.0	108.9	0.090	511.2	- 356.3
5	32.5	68.2	0.156	1,512.9	- 1,412.2

Notes: This table provides an estimate of the change in taxes and transfers resulting from a change from the mean U.S. to the mean Canadian transfer program, assuming observed U.S. and Canadian participation rates and zero labor supply adjustments. We assume that all non-UI transfers are financed by a proportionate increase in the income tax, and we ignore any deadweight loss resulting from change in taxes or transfers. All dollar values presented in annual per capita basis. Quintiles represent ranking of pretransfer, pretax incomes divided by poverty level. Average tax rate information is drawn from U.S. House of Representatives (1990). This source gives average tax rates by posttransfer rather than pretransfer income distribution. However, in only 3 percent of the cases do families change rankings when moving from pretransfer to posttransfer definition. This source reports a negative tax rate for the bottom quintile, due to the EITC. We assume that the tax rate for this group is zero, because we have already accounted for the EITC in our simulations.

distribution of taxes resulting from the change in the UI program; the incidence of these taxes is beyond the scope of the current study.

Columns 1 and 2 of table 6.12 represent the increase in UI and non-UI transfers ranked by pretransfer family income quintiles.⁴⁰ Column 3 indicates average income tax rates by income quintile.⁴¹ Column 4 represents the change in taxes resulting from the program, and column 5 represents the change in income.

This table clearly shows that the net income gains from these programs are concentrated among the bottom quintile of families: the bottom two quintiles have increases in average posttax, posttransfer incomes of \$1,957 and \$331, respectively, while the top quintiles have net income declines. This table also suggests that the increase in UI expenditures is more evenly spread across the income distribution than the increase in the non-UI programs is.

The second point to consider in evaluating the impact of the additional expenditures is the efficiency costs of raising the additional tax revenue needed to finance the programs. In this case, the total rather than the net increase in

40. We divide pretransfer family incomes by the poverty level, to adjust for family size. These computations assume the observed participation rates by family type in the United States and Canada, and zero labor supply response.

41. The effective tax rates are reported in U.S. House of Representatives (1990), table 99 for the year 1985, and are based on the Congressional Budget Office Tax Simulation Model. They are based on posttransfer rather than pretransfer income quintiles. However, in our sample the pre- and posttransfer income quintiles are quite similar: only 3 percent of all families shifted quintiles as a result of transfers.

expenditures is the relevant metric, because this indicates the extent to which marginal tax rates will have to be altered to raise additional revenue. The excess burden can be substantial. For example, Ballard, Shoven, and Whalley (1985) estimate that the deadweight loss of raising an additional dollar of tax revenue can range from \$0.33 to \$0.48. This would imply an excess burden from the increased taxation of 0.3 percent to 0.7 percent of GNP, assuming estimated take-up rates.⁴²

6.5 Conclusions

This paper has demonstrated that the Canadian transfer system is far more extensive than the U.S. system. It offers both higher benefit levels and broader eligibility than the U.S. system. As a result, Canadian transfer programs offer far more protection against poverty. Our simulations suggest that the Canadian system would generate substantially lower poverty rates and lower poverty gaps in the United States than the current U.S. system.

The primary group that would benefit from the adoption of the Canadian antipoverty system is families with children. Our simulations suggest that poverty among both single-parent and two-parent families with children would decline dramatically if the United States adopted the average Canadian antipoverty transfer program. This result is striking, given the enormous public concern in the United States over the high poverty rates of children. Our simulations further indicate that this change would increase program expenditures: total U.S. transfer spending would increase by two to three times under the mean Canadian transfer program.

There are limits to the extent to which such cross-country comparisons provide useful policy information. The substantially more costly Canadian programs may be entirely infeasible in the U.S. political context. In addition, Canada has a *system* of antipoverty programs; transplanting only some parts of that system to another country may produce very different results. At a minimum, however, the results of this paper indicate that there is nothing inherently unchangeable in the current poverty rates among women and children in the United States. They are, at least in part, a result of the policy choices that we have made. Canada's different choices have produced different results.

The discussion in this paper has suggested a variety of avenues for further research. A primary question is why Canada and the United States have adopted such different transfer systems. The Canada-U.S. case is interesting, because it appears to contradict standard theories that hold that regional control of welfare programs should lead to underprovision of welfare benefits.⁴³

42. Note that, to compute the total excess burden of the program, one would also have to consider the impact of the additional transfer payments.

43. See Brown and Oates (1987) for a summary of this literature.

As noted above, this does not appear to be the case in Canada, since the Canadian SA program is both more decentralized and more generous than the U.S. AFDC program.

In addition, it would be of interest to exploit the variation in program rules across the two countries to study the behavioral effects of transfer programs. For example, while the AFDC program imposes the same tax rate across all U.S. states, tax rates vary substantially across provinces under the SA program. One could examine whether these different tax rates have caused different labor supply responses across Canadian provinces. Alternatively, one could test whether the different treatment of one- versus two-parent families in the two countries has had a significant effect on family formation. These studies would provide an interesting supplement to the wide variety of such studies in the United States focusing on AFDC.

Appendix A

Chronology of Selected Social Service Legislation

Canada

- 1966 Canada Assistance Plan. Created the current system of Social Assistance programs within the provinces.
Medical Care Act. Established national health insurance.
- 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 Unemployment Insurance Amendments. Reduced maximum unemployment insurance benefit to 66 percent of earnings.
- 1977 Amendments. Increased weeks of employment required to qualify for UI from 8 to between 10 and 14 weeks, depending on the regional unemployment rate. Maximum benefit duration decreased from 51 to 50 weeks.
- 1978 Unemployment Insurance Amendments. 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.

Child Tax Credit. Established refundable national income tax credit for families with children.

Family Allowance Amendment. Reduced monthly family allowance rate for 1979 to \$20 per child from \$25.68 in 1978. Retained annual escalation from 1979 onward.

- 1982 Family Allowance Amendment. Limited indexation of family allowances.
- 1986 Family Allowance Amendment. Further limited indexation of family allowances.

Source: Health and Welfare Canada 1987.

United States

- 1964 Food Stamp Act. Established national food stamp program, with optional state participation.
- 1965 Medicaid Act. Established public health insurance for AFDC recipients.
- 1967 Aid for Families with Dependent Children Amendments. States must disregard the first \$30 of earnings and one-third of the remainder in determining benefit levels.
- 1970 Unemployment Insurance Amendments. Provided a federal extended benefits program for workers who exhaust state unemployment insurance benefits in states with high insured unemployment rates. Expanded coverage of the unemployment insurance system.
- 1971 Food Stamp Amendments. Required benefits large enough to purchase nutritionally adequate diet. Established national eligibility standards.
- 1972 Supplemental Security Income Program. Replaced programs for federal/state old-age assistance, aid to the blind, and aid to the permanently and totally disabled.
- 1973 Food Stamp Amendments. Expanded food stamp program. Provided for semiannual adjustment of food stamp allotments. Broadened classes of people eligible.
- 1975 Earned Income Tax Credit. Established for working families with children.
- 1976 Unemployment Insurance Amendments. Extended unemployment insurance 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 Unemployment Insurance Amendments. Provided for federal taxation of unemployment insurance benefits.
- 1980 Food Stamp Amendments. Benefits updated on annual rather than semiannual basis. Restricted eligibility of students.
- 1981 Major Transfer Reductions. Limited \$30 and one-third income disregard under AFDC program to four months. Set eligibility cap on gross

income, at 150 percent of state-determined standard of need. Limited total assets to \$1,000.

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 supplemental security income 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.

1984 Aid to Families with Dependent Children Amendments. Gross income cap on eligibility raised to 185 percent of state standard of need. \$30 disregard extended from four to twelve months. States must disregard first \$50 of child-support collections per month.

1988 Family Support Act. Required all states to establish Aid to Families with Dependent Children programs for eligible two-parent families. Required all states to run education, training, and employment programs for work-eligible AFDC recipients, with mandatory participation.

Sources: U.S. House of Representatives 1990; U.S. Department of Health and Human Services 1988; U.S. Department of Labor 1986.

Appendix B

Table 6B.1 1986 U.S. Poverty Line and Canadian Low-Income Cutoff (in 1986 U.S. dollars)

Family Size	U.S. Poverty Line	Canadian Low-Income Cutoffs by Size of City				
		500+K	100-499K	30-99K	<30K	Rural
1	5,701	8,521	8,093	7,592	7,019	6,302
2	7,372	11,242	10,671	9,956	9,237	8,236
3	8,737	15,039	14,252	13,320	12,390	11,028
4	11,203	17,330	16,470	15,397	14,322	12,749
5	13,259	20,194	19,122	17,832	16,614	14,825
6	14,986	22,057	20,839	19,479	18,118	16,185
7	17,049	24,278	22,988	21,485	19,980	17,832

Notes: The U.S. CPS data do not contain information on city size. All calculations in this paper that apply the Canadian low-income cutoffs to U.S. data collapse the five-city size breakdowns into three categories. All U.S. individuals reporting that they live in an SMSA are given a low-income cutoff based on the mean of the two largest city size categories. All individuals reporting that they do not live in an SMSA but are not on a farm are given a low-income cutoff based on the mean of the third and fourth largest city size categories. All individuals on farms are given the rural low-income cutoff.

Appendix C

Calculating Simulated Government Transfers on U.S. and Canadian Data

Simulating U.S. Programs

Food Stamps. Rules for food stamp eligibility and benefit levels are taken from U.S. House of Representatives (1986), appendix G. Separate calculations are made for Alaska and Hawaii, where program rules vary.

AFDC. Rules for AFDC need standards and benefit maximums by family size by state, and state rules for payment of benefits are from the U.S. House of Representatives (1986), section 8. Eligibility is determined by whether total family income is less than 1.85 times the state need standard. AFDC for eligible two-parent households is calculated in the states that allow such payments. Benefit amounts are adjusted for child-support deductions (allowable up to \$600/year), based on reported child-support income. Benefits also adjusted by earnings deductions, including the deduction for work expenses of up to \$625/year and the standardized earnings deduction of \$30/month. Because we have no information on how long a recipient has been in the program, we use the 100 percent tax rate for earnings, which is effective after four months on the program.

Unemployment Insurance. Information on waiting periods, minimum and maximum earnings limits, and minimum and maximum benefit payments were provided by Blank and Card (1991), who collected this information from the U.S. Department of Labor, *Comparison of State Unemployment Insurance Laws* (various years). Maximum duration is set to twenty-six weeks except for Massachusetts and Washington, which have a duration of thirty weeks, and Alaska, which is on the federal extended benefits program and has a maximum of thirty-nine weeks. Replacement rates are calculated for each state as the average of the ratio of minimum benefits to minimum earnings and the ratio of maximum benefits to maximum earnings. Separate calculations on UI eligibility and benefits are made for both head and spouse (if present) for each household in the simulation.

EITC. Rules for the EITC taken from the U.S. House of Representatives (1986), section 10.

Simulating Canadian Programs

Family Allowance. Information on eligibility and benefit levels from Canada Department of National Health and Welfare (1986, 1988), chapter 3. Alter-

native calculations are made for Alberta and Quebec, where provincial variations in the program occur.

Social Assistance. Provincial rules for eligibility and benefit payment determination are from the Canada Department of National Health and Welfare (1986, 1988), chapter 4. Benefit levels for nondisabled single individuals (employable), nondisabled married couples with children (employable), and nondisabled single parents with children (nonemployable) were taken from Canada National Council of Welfare (1987), table 5. See that publication for the assumptions by which these benefit levels were developed. Benefit levels for other family sizes were interpolated as follows: We have information on benefits for a single individual ($B1$), a single parent with one preschool child ($B2$), and a married couple with two school-age children ($B3$). We assume benefits for single-parent families are equal to $B2 + (\text{Number of children} - 1) * (B3 - B2)/2$. We assume benefits for married families are equal to $B3 + (\text{Number of children} - 2) * (B3 - B2)/2$. These linear interpolations are probably least accurate for large families. The Work Income Supplement Program in Quebec is included as part of SA for the province, as is the Family Income Plan for Saskatchewan and the Child-Related Income Support Program for Ontario. The Work Incentive Program for Ontario is not included, since the 1985 data indicate less than 2 percent of the caseload participates in this program.

Unemployment Insurance. The eligibility, duration, and benefits information for UI in Canada is taken from the Canada Department of National Health and Welfare (1986, 1988), chapter 8. Durations by province are based on 1986 unemployment rates in each province. Separate calculations on UI eligibility and benefits are made for both head and spouse (if present) for each household in the simulation.

Child Tax Credit. Rules for calculating eligibility and tax credit amounts described in the Canada Department of National Health and Welfare (1986, 1988), chapter 3.

Appendix D

Comparing Simulated and Reported Transfer Income

Table 6D.1 compares our 1986 simulations with the reported income sources in our microdata. We report cases where our simulations agree with reported benefits (Sim > 0, Actual > 0; Sim = 0, Actual = 0) and cases where our simulations do not agree with reported benefits (Sim > 0, Actual = 0; Sim

Table 6D.1 Accuracy of Simulations

	U.S.	Canada
UI benefits		
Percentage (sim > 0, actual > 0)	6.0	15.3
Percentage (sim = 0, actual = 0)	79.6	70.9
Percentage (sim > 0, actual = 0)	8.6	5.2
Percentage (sim = 0, actual > 0)	5.8	8.5
Minimum percentage correct	85.6	86.2
Maximum percentage correct	94.2	91.4
Actual/simulation (sim > 0, actual > 0) (\$)	1.39	1.53
AFDC/SA benefits		
Percentage (sim > 0, actual > 0)	3.3	6.3
Percentage (sim = 0, actual = 0)	93.1	85.4
Percentage (sim > 0, actual = 0)	1.8	5.9
Percentage (sim = 0, actual > 0)	1.8	2.4
Minimum percentage correct	96.4	91.7
Maximum percentage correct	98.2	97.6
Actual/simulation (sim > 0, actual > 0) (\$)	1.24	2.09
Food stamps/FA benefits		
Percentage (sim > 0, actual > 0)	5.9	42.1
Percentage (sim > 0, actual > 0)	83.6	55.2
Percentage (sim > 0, actual = 0)	8.8	1.2
Percentage (sim = 0, actual > 0)	1.7	1.5
Minimum percentage correct	89.5	97.3
Maximum percentage correct	98.3	98.5
Actual/simulation (sim > 0, actual > 0) (\$)	1.04	.99
EITC/CTC		
Minimum percentage correct	n.a.*	89.0
Maximum percentage correct		92.0
Actual/simulation (sim > 0, actual > 0) (\$)		2.66

*The data contain no information on actual receipt of the EITC in the United States.

= 0, Actual > 0). We also report the ratio of reported to simulated benefits among the subgroup of individuals who have both nonzero simulated and non-zero reported transfers.

There are three reasons why our simulations might predict positive transfer payments while reported benefits are zero. First, the simulations may correctly predict eligibility, but the individual may choose not to participate in the program. Second, the individual may choose to participate in the program but not to report transfer income. Finally, the simulation may inaccurately predict eligibility. Thus, it is clear that the case (Sim > 0, Actual = 0) does not necessarily indicate an error in the simulation procedure. In contrast, the simulation is in error in all cases where it indicates that no eligibility occurs and the data indicate that the individual received the program (Sim = 0, Actual > 0). Table 6D.1 indicates a range for the number of correctly classified

individuals, where the minimum is the share of cases in which both the simulated and actual data agree, and the maximum is that share plus the share in which the simulation shows eligibility but the actual data shows no receipt.

The simulation accuracies shown in the table are quite good. For the UI programs in both countries, the simulation classifies between 85 and 95 percent of the cases correctly. For the other programs, the range of correct estimates falls almost entirely within the 90th percentile. Not surprisingly, the program with the lowest error in eligibility classification (and in benefit levels) is the Canadian FA program, which has the simplest set of national rules.

The simulated and reported benefit payment levels are very close for the food stamp program in the United States and for the FA program in Canada. For other programs, the simulation consistently underpredicts benefit payments. In the case of UI, there appears to be no particular pattern to this benefit underprediction across groups, and it probably reflects the fact that benefits are being estimated from wages reported during 1986, which, as noted above, are probably underestimates of base period wages. In the case of AFDC, the undercount is concentrated among married couples with children. This may in part be due to the fact that the reported AFDC income category in the CPS includes some other sources of public assistance income (such as foster-care payments) that are more likely to be received by married couples. SA benefits are most seriously underestimated, with reported benefits double the simulated benefits. Among single parents, the SA estimates are fairly accurate. The major errors arise in the estimated SA benefits among single individuals and married couples without children. We suspect that this may be because we incorrectly classify individuals as employable who in fact would be classified as unemployable.

In any case, the results in this table are generally reassuring. They indicate that the simulation results are reasonable and not too different from the reported data. The eligibility estimates appear to be quite good, while the benefit estimates somewhat underestimate actual receipt.

Appendix E

Adjusting for Labor Supply Changes and Program Participation

The following is a brief outline of the methodology used to adjust for labor supply changes and incomplete program participation, in simulating the impact of adopting the mean Canadian program in the United States. We present separate methods for the case where a family receives UI and for the case where they receive non-UI programs. A family is assumed to receive UI only when their total income from UI would exceed that available under SA or UI.

Non-UI Case

Determining Program Parameters

We use the simulation methodology described in appendix C to characterize the potential transfer income received by each household under both the U.S. and Canadian systems, in terms of the following equation:

$$B = G - tY,$$

where B is total transfer income, G is the guaranteed income at zero earnings, Y is total earnings, and t is the tax rate on earnings.

The values of B and t will vary depending on the family's earnings. For example, a family with income greater than the break-even income level of G/t will have a guarantee and a tax rate of zero.

For existing U.S. programs, we can use the observed earnings level of each family to determine which values of G and t apply to them. For Canadian programs, we compute possible values of G and t , both in the case where the family participates and where they do not participate in SA. We then use the procedure described next to determine which budget segment they will select.

Determining Program Participation

Opting-in Income. Some families who have incomes above the break-even level G/t under the more generous Canadian system may reduce their income in order to qualify for assistance. A family will choose to participate in the program as long as the additional nonwage income received from the transfer program is enough to compensate them for the loss in utility from the higher tax rate on earnings imposed by the transfer program. Ashenfelter (1978) has derived the income level at which families will decide to enter the program, by using a Taylor series approximation of the expenditure function for program participants around the nonparticipant equilibrium. We use these equations to determine the opting-in income level:

$$YOPT = \{G - tN\}/\{t(1 - .5te)\} \quad (\text{one worker}),$$

and

$$YOPT = \{G - tN\}/\{t(1 - .5t(e_{11}\Theta_1 + e_{22}\Theta_2))\} \quad (\text{two workers}),$$

where G is the guarantee; t is the tax rate; N is nonlabor, nonwelfare income; e , e_{11} , and e_{22} are compensated elasticities of substitution; and Θ_1 and Θ_2 are the shares of total wages received by the husband and wife in total family earnings. (We assume cross-elasticities are zero in this case.)

Adjustment for Incomplete Participation. To estimate the impact of U.S. programs under incomplete participation, we assume that a family is a program participant only if they report that they receive transfer income in the micro-

data. For the EITC, where we have no information available on participation in the microdata, we randomly assign a fraction of the population to participant status. We assume that the total participation rate for this program is the same as reported for the Canadian CTC in table 6.6.

To estimate the impact of implementing Canadian programs in the United States, we assume that the U.S. participation rate for each program will be the same as reported for Canada in table 6.6. In addition, we assume that families who indicate that they participate in U.S. programs will be more likely to participate in comparable Canadian programs. Thus, if a family reports that it participates in the U.S. UI program, we assume that it will also participate in the Canadian UI program. If it participates in the U.S. AFDC program or if it is a family without children and it participates in food stamps, we assume that it participates in SA. We then randomly assign some of the remaining families who are eligible for Canadian programs to participant status, in order to reconcile the U.S. participation rates with the participation rates reported for Canada in table 6.6.⁴⁴

Determining Labor Supply Response, Given Participation Status

Slutsky Equations. Above we derive the values of each family's guarantee level and tax rate under both the U.S. and the Canadian systems. We then compute the implied change in labor supply using the Slutsky decomposition:

$$\begin{aligned} \% \Delta \text{Hours} &= e (\% \Delta \text{Wage}) + b (\% \Delta \text{Income}) \\ &= e(t_1 - t_2)/(1 - t_1) + b\{H(t_1 - t_2)W + (G_2 - G_1)\}/Y, \end{aligned}$$

where e is the compensated elasticity of substitution; b is the income elasticity; t_1 and t_2 are the tax rates and guarantee under the U.S. and Canadian systems, respectively; G_1 and G_2 are the guarantees under the U.S. and Canadian systems; H , Y , and W are hours, total income, and the wage rate under the U.S. system. In the two-worker case this generalizes to

$$\begin{aligned} \% \Delta \text{Hours}_i &= e_i(t_1 - t_2)/(1 - t_1) + b_i\{H_h(t_1 - t_2)W_h + \\ &H_w(t_1 - t_2)W_w + (G_2 - G_1)\}/Y, \quad i = h, w, \end{aligned}$$

where h and w index the husband and wife. Note that we again assume cross-elasticities are zero.

Labor Supply Elasticities. We use a range of estimates of income and substitution elasticities from the Seattle-Denver negative income tax experiment. We use the minimum, mean and maximum income and substitution elasticities reported in Keeley (1981). For male heads, these elasticities are

44. For the case of married couples with children, the participation rate is actually higher for AFDC than for SA. Thus, we randomly assign a fraction of those who report AFDC income to nonparticipant status under the SA program.

(.04, -.14), (.12, -.21), and (.30, -.30); for wives they are (.18, -.14), (.24, -.24) and (.67, -.77); and for female heads they are (.07, -.13), (.17, -.24), and (.36, -.80).

UI Case

For the case where a family member is eligible for UI under either the U.S. or the Canadian program, we characterize their potential UI benefits in terms of the benefit replacement rate (weekly UI payment over the weekly wage) and the maximum weeks of UI payments. We then apply results from Katz and Meyer (1990) and from Moffitt and Nicholson (1982) that estimate the impact of these two parameters on the duration of unemployment.

Katz and Meyer estimate that a 10 percent increase in the benefit replacement rate will increase mean unemployment duration by 1.5 weeks, while Moffitt and Nicholson estimate an increase of 1.0 weeks for males and 0.8 weeks for females. The estimated impact of a 1-week increase in maximum duration of UI is 0.2 weeks for Katz and Meyer and 0.1 weeks for Moffitt and Nicholson. Note that this approach considers the impact of the UI program only on the duration of unemployment spells. It does not account for the impact of UI on the rate at which individuals enter unemployment, or for its impact on the rate at which individuals move from out of the labor force to employment.

This approach is not entirely satisfactory, since it does not integrate the UI program with other transfer programs. We also tried an approach that parameterized the UI program as a means-tested program with a guarantee equal to the UI payment, and a tax rate of 100 percent (on the unemployed worker), and then applied the methodology described for the non-UI case. This approach did not yield substantially different results, so we do not report them here.

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