Small Differences that Matter: Differences in the social safety net and the implications for women and children

Hilary Hoynes
UC Berkeley and NBER
hoynes@berkeley.edu

Mark Stabile
INSEAD and NBER
Mark.stabile@insed.edu

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ABSTRACT

The past 15 years has been a period of active policy reform in the cash and near-cash social safety nets of both the United States and Canada. Perhaps more than any other area of social policy, programs in both countries aimed at low-income families and children have evolved from their pre- 1992 form. This paper examines this evolution across the two countries, both reviewing the existing evidence and providing additional analysis on how the programs have fared in achieving a broad set of goals.

We focus on the two largest programs over this period: the US EITC and the Canadian NCB/CCTB. The evolution of these programs in both countries represents a significant move away from what preceded them and the programs in the two countries now share many similarities. However, we also note "small differences" across these programs that may matter, the largest of which is the work requirements across the two countries.

In light of these changes, we examine trends in employment, poverty and family structure of the most affected families, across the two countries. We also review the existing evaluations of these policies and find that the programs in both countries have had significant benefits for children, increased employment for single mothers, and are associated with declines in poverty.

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I. Introduction:

The past 25 years has been a period of active policy reform in the social safety nets of both the United States and Canada. Perhaps more than any other area of social policy, programs in both countries aimed at low-income families and children have evolved from their pre-1990 form. In 1990 in the United States federal cash welfare was an entitlement, the Earned Income Tax Credit was a modest program, and there was no Child Tax Credit. Additionally, public health insurance among the nonelderly was starting to transition away from being limited to families receiving cash welfare. In Canada there was no National Child Benefit, Canada Child Tax Benefit, or Working Income Tax Benefit. Today, the US Earned Income Tax Credit and the Canadian National Child Benefit (and its successor the Canadian Child Benefit) provide the backbone of the social safety net in both countries. The programs evolved in ways that are similar to one another, and yet there are notable differences between programs that reflect distinctly different policy goals. The purpose of this paper is to examine this evolution across the two countries, and to provide and review evidence on how the programs have fared in achieving their goals.

This paper focuses on single women of working age with children and the social safety net that is provided to this group. We limit our focus to this group for several reasons. First, as we describe below, the major changes in the social safety net over the past 25 years have focused on providing benefits to low-income families with fewer resources available to single individuals. Second, a significant amount of research in the past two decades has focused on the relationship between these safety net programs and the labor market performance of women as well as the educational and health outcomes for children. Third, while many of the current programs and policies are aimed at children, independent

of family structure, we focus on single mothers because of their greater disadvantage. Finally, while these programs have increased in generosity over the past 25 years, a good deal of poverty in both countries remains concentrated among this group.

Overall we find that the introduction and evolution of the EITC and NCB have had positive effects on a variety of child outcomes, labor force attachment, and poverty. Our findings, coupled with a review of recent evidence on the two programs suggest that employment has increased over this period, particularly for single mothers, and that changes in the social safety net have contributed to this increase. Both the EITC and NCB have had positive effects on the educational and health outcomes of children. Our evidence also suggests that poverty rates, measured both using after taxes and transfer income and with private income, have declined with the introduction of the ETIC and NCB, suggesting that both increased labor supply and cash transfers have contributed to reductions in poverty, particularly for single mothers.

We note that while there are important differences in programs between the two countries, namely work requirements and benefit generosity, we do not find strikingly different effects of the evolving social safety nets. This could be because the similarities in the programs are more important than their differences, or because the many other changes in the labor market over this period may mask the effects of these differences.

The remainder of the paper proceeds as follows. In Section II we discuss the social safety nets in the two countries and document the major changes that have taken place over the past 25 years. In Section III we present trends for women with children based on tabulations from the Current Population Survey (for the U.S.) and the Survey of Labour and Income Dynamics (for Canada). In Section IV we review the evidence from the literature on

the effects of the social safety net on women and their children. In Section V, we examine the effects of the EITC and NCB on poverty. We conclude in Section VI.

II. Major changes in social safety net in the US and Canada over the past 25 years

Changes in the United States

Over the past twenty-five years, the social safety net for families with children in the U.S. has changed dramatically. The main changes in the cash or near-cash benefits include a reduction in cash welfare (welfare reform), the expansion of the Earned Income Tax Credit and the introduction and expansion of the Child Tax Credit.

Since 1935, a central feature in the U.S. safety net for families with children was a cash welfare program known as Aid to Families with Dependent Children (AFDC). The program was means-tested, requiring families to satisfy income and asset tests. The benefits were structured in a manner typical for income-support programs: If a family had no income, they received the maximum benefit (guarantee) and as earnings increased the benefit was reduced by the benefit reduction rate. States set the overall generosity of AFDC, by setting the maximum benefits. The benefit reduction rate was high—varying over time between 67 percent and 100 percent--providing strong disincentives for work (Moffitt, 1983). AFDC provided an income floor, though a fairly low one: on the eve of welfare reform the median state maximum benefit was 36 percent of poverty (U.S. House of Representatives, 1996).

Concerns about disincentive to work and form two-parent families led to the reform of the program. This began in the early 1990s, when about half of the states were granted waivers to modify their AFDC programs. Following this, the Personal Responsibility and

Work Opportunity Reconciliation Act (PRWORA) was enacted in 1996, eliminating AFDC and replacing it with Temporary Assistance for Needy Families (TANF). The key elements of PRWORA include work requirements, lifetime time limits on the duration of welfare receipt, financial sanctions for failing to adhere to the work requirements or other rules, and enhanced earnings disregards. The time limit (statutorily limited at 5 years but set as low as 2 years by some states) is an important provision in the law in that it eliminated the entitlement nature of the program. The federal funding also changed from an (uncapped) matching formula under AFDC to a (capped nominal) block grant under TANF. Under TANF, states have enormous flexibility in how and on whom the block grant is spent. In 2014, on average only 26 percent of the block grant is used for cash benefits with about 10 states spend less than 10 percent of the block grant on cash (compared to nearly 100% for AFDC). In 2014 only 26 of every 100 families with children in poverty receives cash benefits, down from 72 of every 100 in 1996 (Bitler and Hoynes 2016a).

At the same time that out of work assistance (welfare) was contracting, in work assistance through the Earned Income Tax Credit was expanding. The EITC began in 1975 as a modest program aimed at offsetting the social security payroll tax for low-income families with children. The EITC is refundable so that a taxpayer with no federal tax liability receives a tax refund from the government for the full amount of the credit. Taxpayers receive the EITC as an annual payment as part of their federal taxes. Receipt of the EITC requires earned income and at low levels of earnings the credit is a pure earnings subsidy. At higher levels of income, the credit is phased out. EITC generosity increases with

number of children (capped at three or more children)[1] and a very small credit exists for individuals with no children. In 2015, a family with two children has a phase-in rate (earnings subsidy) of 40% for earnings up to $13,870, beginning at $18,110 the credit is phased out at a rate of 21.06% percent. Maximum benefit is $5,548 and at $44,454 they earn enough to be ineligible for the credit (Tax Policy Center 2016a).[2] The EITC is based on joint income; married couples have the same phase-in rate, maximum benefit, and phase-out rate, but the phase-out region begins at a higher earnings level ($5,520 higher in 2015).

Significant expansions to the EITC have taken place since 1990. In 1990 the credit was expanded and in 1993 it was expanded more significantly. The 1993 law more than doubled the maximum credit for families with two or more children (from $1511 in 1992 to $3556 in 1996) and increased by 50 percent for families with one child ($1434 to $2152). The 1993 law also introduced a very small credit for taxpayers without children (in 2015, a maximum credit of $503 compared to $3,359 for those with one child). In 2009 as part of the American Recovery and Reinvestment Act, the separate schedule for families with three or more children was added. The EITC is received by 28 million tax filing units, almost 20 percent of all tax filers and 44 percent of filers with children receive the EITC (Internal Revenue Service 2015).[3]

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[1] Qualifying children must be under age 19 (or 24 if a full-time student) or permanently disabled and residing with the taxpayer for more than half the year.

[2] In 2015, the parameters for other groups are as follows, for families with one child (three or more children) the phase-in rate is 34% (45%), the maximum credit is $3,359 ($6,242) and the phase-out range is from $18,110 to $39,131 ($18,110 to $47,747). For taxpayers without children the subsidy rate is 7.65%, maximum credit is $503, and the credit is phased out between $8,240 and $14,820.

[3] The EITC is federal, but states can and do include EITCs as part of the state income tax system. As of 2016, twenty-six states offer state EITCs (Center for Budget and Policy Priorities 2016), though they tend to be small add-ons to the federal credit, averaging around 15-20% of the federal credit (Tax Policy Center, 2016b).

The Child Tax Credit (CTC) was introduced in 1997. It is structurally similar to the EITC, but more universal in design and less targeted on lower-income families. The maximum credit is $1000 per child less than 18. The phase in rate is 15%; with a very large flat zone for the credit and a low phase-out rate (5%) the maximum credit is available at incomes as high as $110,000 for married couples ($75,000 for singles) and the credit extends overall to families with incomes as high as $150,000 for married couples ($115,000 for singles). Unlike the EITC, the CTC is not inflation adjusted; the nominal maximum credit has been unchanged at $1,000 per child since 2003.

The CTC, unlike the EITC, is not fully refundable. The refundable portion of the CTC is known as the Additional Child Tax Credit (ACTC), and is limited to 15% of earned income above a fixed threshold. This threshold was $11,500 (in nominal dollars) in 2007, preventing most low income families from receiving meaningful CTCs. But in 2009, the American Recovery and Reinvestment Act reduced the threshold to $3,000 (again nominal). This allowed more taxpayers to claim the ACTC and increased the amount of refundable credits, making the low-income portion of the schedule more similar to the EITC.

Supplemental Security Income is a means-tested program providing cash benefits that historically served low-income aged and disabled individuals. However, a 1990 Supreme Court decision relaxed the medical eligibility criteria for children and the SSI-child caseload has steadily grown since that time, growing more rapidly after welfare reform. The benefit is higher than AFDC/TANF and, as the program is designed for those who are not able to work, most recipients receive the maximum benefit. For some families,

SSI has "replaced" AFDC as a source of cash welfare income (Duggan and Kearney 2016, Daly and Burkhauser 2003).

In addition to the cash or near cash safety net, the two more important inkind programs for low income families with children are food stamps and Medicaid. Food stamps, now known as Supplemental Assistance for Needy Families or SNAP, is a means-tested program and benefits are based on maximum benefit level that is reduced with additional earnings using a benefit reduction or phase-out rate. While the eligibility and benefits are like cash welfare, it is a voucher that can be spent on (most) food items in the grocery store. Benefits are adjusted for changes in prices each year. It is federal and has little variation and little scope for rule-setting by states. The benefit reduction rate for SNAP is relatively low for a welfare program (30 percent), the gross income eligibility threshold is higher (at 130 percent of poverty) than other U.S. cash welfare programs, thus the program serves the working and non-working poor. [4]

While not though the focus of our analysis, another important change during this period is the expansion of public health insurance for low to moderate income children. This began with expansions to Medicaid (between 1986 and 1990), followed by the introduction of and expansions to the State Children's Health Insurance Program (introduced in 1996, expanded in the 2000s), and most recently with the Affordable Care Act of 2010. The result is a dramatic decline in the share of children who are uninsured – from 13% in 1990 to 6% in 2015 (Child Trends 2016).

[4] Welfare reform left Food Stamp rules relatively unaffected. However, beginning with regulatory changes in 1999 and continuing with the 2002 Farm Bill, the USDA has allowed states to make changes in how they implement the program's rules to facilitate obtaining access to benefits. This has led to a relaxation of asset requirements and expanded gross income eligibility in what has been called broad-based categorical eligibility (U.S. Government Accountability Office, 2007).

Finally, the period has also seen a steady decline in real value of federal minimum wage. The current rate of $7.25 has been fixed in nominal terms since 2009. In the recent period, there have been many cities and states that are setting and expanding local minimum wages above the (low) federal rate. This is not an element of the social safety net per se, but is highly relevant for a social safety net built around work. More generally, there are significant concerns around wage and income stagnation particularly for those with less than a college degree. For example, men with a less than a college degree earned less, in real terms, in 2012 than they did in 1972 (e.g., Autor 2014). These declines are less severe for women, but nonetheless wage gains are concentrated in the college educated workers.

Changes in Canada

The structure of the social safety net for families with children also changed significantly over the 1990s. Most significantly, in 1993 Canada introduced the Canada Child Tax Benefit (CCTB), a refundable tax credit (replacing the former child tax credit) payable to families with children up to 17 years old. The benefit is paid monthly from July to June based on reported income in the previous tax year. The benefit increased with the number of children. Importantly, there was no work requirement to receive the benefit. As of 2014-2015 the benefit phased out for family net income over $43,953 at a rate of 2% for one child and 4% for two or more children. In 1998 Canada added the National Child Benefit Supplement (NCB) to the CCTB, aimed, in part, at assisting parents in transitioning from welfare to work. The benefit, based on the number of children, is paid in addition to the CCTB and for net incomes over $25-584 (in 2014-15) it phased out more sharply at

rates of 12.2% for one child, 23.0% for the second child and 33.3% for the third. The NCB was a joint federal-provincial program and provinces could, at their discretion, subtract NCB payments from their welfare programs and use the recovered funds for other social programs. As a result, the benefits available through the NCB differ significantly across provinces.

In 2006 the Canadian government added a universal child care benefit of $100 per month for each child under age 6. Unlike the CCTB this benefit is taxable and was paid together with the CCTB and NCB. In 2007 Canada also added a Working Income Tax Benefit (WITB), similar in structure to the EITC in that it supplements earned income. It is available to low income earners (regardless of whether they have children or not) and, like the CCTB and NCB, the amount payable has increased over time. It is paid separately (quarterly from other benefits). At the federal level there are a few additional tax credits available to families that are still available (the federal dependent children tax credit and related credits).

Finally, as of July 2016 the government of Canada introduced the new Canada Child Benefit (CCB) to replace the existing child benefit programs (the combined Canada child tax benefit, national child benefit and universal child care benefit). The new CCB is $6400 (tax free, unlike the universal child care benefit) for each child up to age 5 and $5400 for each child ages 6 – 17. The benefit is phased out starting at $30,000 with a second kink point at $65,000 family net income. The phase out rate depends on the number of children.[5] The

[5] The reduction is calculated as follows: families with one eligible child: the reduction is 7% of the amount of AFNI between $30,000 and $65,000, plus 3.2% of the amount of AFNI over $65,000. Families with two eligible children: the reduction is 13.5% of the amount of AFNI between $30,000 and $65,000, plus 5.7% of the amount of AFNI over $65,000. Families with three eligible children: the reduction is 19% of the amount of AFNI between $30,000 and $65,000, plus 8% of the amount of AFNI over $65,000. Families with four or

benefit is paid monthly starting in July of each year. Given how new this change is, we note the new program here but it is not included in our empirical analysis below.

The provinces also offer a variety of supports for low-income families including both welfare programs and cash benefit income programs (for example, Ontario offers the Ontario Child Benefit, similar in design to the National Child Benefit, which we include in our hypothetical budget constraint below). Instead of describing these programs in detail here we list the major provincial benefit programs in Appendix A. In general, programs have evolved in a number of provinces alongside the federal benefits, toward families with children and away from single individuals, although (smaller) welfare programs do remain.

Overall, Canada's social safety net has evolved over the past two decades toward providing more resources for families with children and fewer for those without children. In some cases these have replaced some of the support that was previously available through social assistance/welfare programs in the provinces. Notably, the changes have not required labor market income to qualify (with the exception of the WITB which makes up a fairly small portion of the overall support). Finally, the programs work to reduce the welfare wall that exists in most social security programs with a gradual phase out of benefits with earned income of approximately $15,000.

Comparing the sources of support in Canada and the United States.

To summarize these programs, Figure 1 plots real per capita expenditures since 1990 for AFDC/TANF, EITC, the CTC, and SNAP. Post welfare reform, cash welfare (TANF)

more eligible children: the reduction is 23% of the amount of AFNI between $30,000 and $65,000, plus 9.5% of the amount of AFNI over $65,000.

has declined dramatically. The EITC, on the other hand, has increased substantially. The CTC has expanded recently and spending has almost reached the levels of the EITC. SNAP.

While we are unable to report per capita expenditure by program in Canada, we report aggregate per capita spending (including federal, provincial and local government spending) over time in Canada in figure 1b. While there was an initial decline in per capita social spending through the mid-1990s (Canada went through a major deficit reduction exercise during this period beginning in 1995) it was followed by an increase in spending to almost pre-1994 levels over the 2000s, in part generated by the introduction of new federal programs and increased generosity of the NCB over this period.

Figures 2 and 3 show the cash and near cash sources of support for hypothetical single parent families with two children in the US and Canada. For each country we simulate the benefits for a range of annual earnings; all benefits amounts and earnings are in 2015 (Canadian or U.S) dollars.[6]

Beginning with the U.S., we present the budget constraint for 1992 (Figure 2a) and 2015 (Figure 2b) for a single mother living in Colorado. In 1992, welfare is still an entitlement, the EITC has not been expanded, and the CTC has yet to be introduced. Comparing the budget constraints in 1992 and 2015, we see striking evidence of the shift in resources away from out of work to in-work. For example, in 1992 a single mother with two children who is not working receives $12,600 (2015 USD) in assistance (AFDC+SNAP), this falls by half to $6,132 (2015 USD) in 2015. The same woman working full time at the 2015 federal minimum wage of $7.25 would earn $15,000. Benefits for this minimum wage

[6] For the US calculations, we assume that the household spends $6,000 per year on child care, $9,000 per year on housing, and that the children are ages 4 and 6. For Canada we assume 2 children under the age of 18 living in Ontario.

full time worker rises from about$6,762 in 1992 to $11,792 (both in 2015 USD). This is a striking change. Also clear in these budget constraints are the high implied tax rates faced by very low earnings women in 1992 in contrast to the negative tax rates for the same women in 2015. In the appendix we present a second set of graphs that expand the programs covered to include public health insurance programs as well as the non-entitlement programs (housing benefits and, in 2015, TANF).

The Canadian budget constraints illustrate the programs available for a single parent family with two children in the province of Ontario. Figure 3a shows the range of available programs in 1992, and figure 3b shows the programs as of 2015. In 1992 the major source of support was welfare support provided through the provinces. Federal supports came through a series of small tax credits. By 2015 welfare plays a much smaller role in the total support available, focused mainly on those with very low incomes. Instead, the Canada Child Tax Benefit (taking the place of the largest of the 1992 credits), National Child Benefit, Working Income Tax Benefit, and Universal Child Care Benefit provide considerable support for a much larger share of the population. The structure of benefits is strikingly different. Unlike the Ontario Works (welfare program), which did not reward labor force participation, the CCTB and NCB begin from $0 of earnings and phase out slowly only after more than $20,000 of income. The WITB phases in with earned income, like the EITC, and the UCCB is universal. A child benefit in Ontario supplements the federal child benefits, operating in much the same fashion as the NCB.

Overall, several features stand out in these figures. First, there have been significant changes in policy design in both countries over the past few decades. The nature of support, the conditions required, and the generosity have all changed in both countries.

Second, both countries have moved away from a welfare-based out-of-work benefit system that dominated both countries in 1992. Figure 2a and 3a show that in 1992, welfare was the main source of support in Canada (e.g. Ontario Works) and the U.S. (e.g. AFDC plus SNAP). Both countries have introduced in-work programs (the EITC and the additional CTC in the U.S. and the Working Income Tax Benefit in Canada) thereby lessening the work disincentives of a welfare based support system.

Third, benefits in Canada start with universal (or near universal) child supports that are not tied to work. This includes the universal child care benefit, the national child benefit supplement, the child tax benefit as well as the provincial versions of these programs. Many of these are phased out around the same point as the EITC (the NCB) but, notably, all are available regardless of work status.[7] In contrast, the U.S. is almost entirely based on a system of benefits tied to work; the EITC and the child related tax credits all require wage income in order to qualify and over the range that affects the poorest families, benefits increase as wage income increases. SNAP is only source of out of work assistance, and thus while in work benefits have expanded the basic income floor has decreased. We consider the difference in work requirement across the two countries one difference that may matter.

Fourth, the level of generosity between the two sets of programs is quite different. In both 1992 and 2015 Canada provides more support to low income families. For example, in 1992, the maximum benefit in the U.S. (e.g. that received if not working), including cash and near cash benefits such as food stamps (Figure 2a) is approximately $12,000 (2015 USD). This fell to a little over $5,000 (2015 USD) in 2015 (figure 2b). The maximum cash

[7] The working income tax benefit, while similar to the EITC in design, makes up a much smaller share of the total benefit available to families.

benefit in Canada in 1992 is about $27,000 (2015 CDN) and fell to about $25,000 (2015 CDC) in 2015. (PPP across the two countries over much of this period is approximately 1.23 although the exchange rate fluctuated considerably[8]). At an earnings level of $20,000 in 2015, benefits are about $20,000 in Canada compared to $12,000 in the US. Thus, clearly Canada provides a much higher level of support, particularly so for those at very low or zero earnings. The difference in the value of the cash transfer is a second difference that may matter.

Considering these differences in light of simple static labor supply model, the incentives to work in the U.S. have risen dramatically over this period for single mothers in the U.S. They have also risen in Canada, but with more universal child supports, the incentives have not risen as much as they have in the U.S. Thus, all else equal, employment should have risen in both countries but by more in the U.S. We would also expect that poverty rates would be higher in the U.S. compared to Canada, given the higher level of support in Canada (throughout the period). Additionally, we expect deep poverty (those with income less than 50% of the poverty line) to have risen in the U.S. relative to Canada given the reduction in out-of-work support post-welfare reform.[9]

III. Trends in demographics, employment and poverty

In this section we examine the trends across the U.S. and Canada in demographics, female employment and absolute and relative poverty. Our analysis uses data from the U.S.

[8] http://data.worldbank.org/indicator/PA.NUS.PPP

[9] A final difference that isn't evident in the figures but that potentially affects the effectiveness of the social safety net is how benefits are paid to recipients. In Canada, the CCTB/NCB/UCCB are all paid monthly. The WITB is paid quarterly. In the US, the EITC and the CTC is paid annually. (Food stamps are paid monthly.)

Current Population Survey (CPS) and the Canadian Survey of Labour and Income Dynamics where we have harmonized the sample, data and variables to maximize comparability across the two countries. To focus on the working age population, for both countries we limit our analysis to women aged 25-54. Because of our interest in the social safety net and the disadvantaged, our core sample is single women who have less than a college degree.[10] To highlight the trends for single mothers, more generally we compare trends across four groups: single women with children, single women without children, married women with children, and married women without children. We use a time period that spans the major changes in the social safety net that we describe above though the exact years differ somewhat across the two surveys. We briefly describe the two surveys below; for more details on our data and variable construction, see the Appendix B.

For the U.S. analysis, we use the Annual Social and Economic Supplement to the Current Population Survey, administered to most households in March every year. The CPS-ASEC is an annual survey of about 90,000 households (or about 175,000 persons) that collects labor market, income, and program participation information for individuals for the previous calendar year, as well as demographic information at the time of the survey. Our sample uses the 1991 through 2015 CPS-ASEC surveys, corresponding to the 1990-2014 calendar years. Employment is measured as having any work during the calendar year. We measure income and poverty at the household level, after dropping unrelated children (as does the Census bureau). Our analysis is weighted using the March supplement person weight.

[10] To be clear, this includes those with less than a high school degree, those with a high school degree or GED, and those who have some college but less than a four year degree.

For the Canadian analysis, we use the Survey of Labour and Income Dynamics (SLID). The SLID is conducted annually by Statistics Canada with a stratified random sampling of Canadians. As with the CPS, with survey weights, the data are nationally representative. Our analysis uses public-use cross sectional individual and census family files providing data for calendar years 1996 through 2011.[11] The SLID provides information on income and benefits received over the past year and detailed information on demographics at the time of the interview. The survey consists of approximately 55,000 people per year, our sample of women ages 25-54 results in a sample of approximately 16,000 per year (considerably smaller than the corresponding sample in the CPS). For the purpose of the Canadian analysis we treat individuals as married if they report being either married or common law married and single otherwise.

Trends in demographics

We begin by examining trends in the demographics underlying our sample of single women with children. Figure 4 presents the share of women 25-54 who are single (panels a, c) and single with children (panels b, d) by education group. The top two figures (panels a and b) are for the U.S. and the bottom two figures are for Canada (panels c and d). On each figure, we plot the demographic trends for two education groups: those with less than a college degree and, for comparison, those with a college degree or more. Both countries show much higher rates of single motherhood among the non-college graduate group (compared to college graduates). Additionally, the less than college group in both countries

[11] There is no 1995 public use release of the SLID. In a future version of the paper we may add the 1993 and 1994 SLID files.

exhibits increasing trends in the share who are single mothers and an even larger increase in the share who are single.

There are differences between the countries as well. First, the rate of single motherhood is significantly higher in the U.S. – rising from 16 percent in 1990 to just over 20 percent by the end of the period for those with less than a college degree. The share of single mothers in Canada (among those with less than a college degree) rose from just over 11 percent in 1996 to 13 percent by the end of the period. Second, the share single in Canada (defined as neither married nor common law married) rose for both college graduates and non-graduates through 2007, falling somewhat between 2008 and 2011. In the U.S. the share single rose steeply for those without a college degree but remained fairly constant for those with a college degree. The implication is that the "marriage gap" between high and low education groups is rising significantly in the U.S. while the differences are much smaller in Canada.

Trends in Employment

We move into the central outcome of employment. In Figure 5, we plot the share of women 25-54 with less than a college degree who worked at all during the calendar year. For each country (panel a for the U.S., panel b for Canada) we show the share working for four groups: single women with children, single women without children, married women with children and married women without children. While our focus is on single women with children, we include the other groups to highlight the changes occurring for single mothers.

In the U.S., employment for non-college graduate single mothers increased sharply and significantly between the early 1990s and late 1990s (Figure 5a). For example, the share working at all last year increased from 69 percent in 1992 to 82 percent in 2000. This increase eliminates the prior gap in employment rates between single mothers and married and single women without children (married women continue to have lower labor supply rates compared to the other three groups). Beginning in 2000, all four groups experience a steady downward trend in employment rates dropping by 10 percentage points over this period.

While the Canadian data start a few years later we see an initial rise in employment of single mothers over the 1990s up to the level of married mothers and women without children (Figure 5b). After this initial narrowing of the employment gap, between 1996 and 2001, all four groups experience a steady increase in employment through the end of the period (2011). The employment rates hover around 80% over the later part of this period. Overall, both countries experienced a significant narrowing of the employment gap between single mothers and women without children.

Figure 6 presents similar trends for full time work. Overall, these figures show similar patterns to those for any work in Figure 5. However, a few differences are worth noting. First, in Canada married women with children are less likely to work full-time compared to the other groups and that difference remains fairly constant over the period (figure 5b). In the US (Figure 5a), both employment rates and FT employment rates are lower for married couples (compared to single mothers and women without children). Second, among single mothers with less than a college degree, full-time employment rates

are higher in Canada – ranging from 60 to 65 percent compared to the peak in 2000 in the US at 60 percent.

These patterns are particularly interesting given that the composition of the less than college group is changing over time, falling from 82 percent of women 25-54 in 1996 to 70% by 2011 in Canada. One notable difference between the US and Canada here is that married women with children only have lower employment in the college graduation category [not shown here] (this is not the case for full time work, where married women without a college degree also have lower employment rates) suggesting that more Canadian married mothers are at least working part time. This is true despite the fact that the major child benefits in Canada do not require work in order to receive benefits, unlike in the US.

Finally, and importantly, the post-2000 trends in Figures 5 and 6 differ significantly between the US and Canada. In the U.S., growth declined significantly after the historically strong labor market of the late 1990s. This was punctuated by the Great Recession and the significant downturn between 2008 and 2010. To illustrate the dramatic differences that emerge in the macroeconomy over this period, Figure 7 presents the annual unemployment rate series for both countries from 1990-2015. Historically, the US unemployment rate has been lower than Canada's and the countries follow similar fluctuations. However, the US experienced a steady increase in unemployment in the 2000s along with a sharp increase in the Great Recession. In contrast, while Canada's unemployment rate was higher over the 1990s and early 2000s, Canada experienced a much smaller recession in 2008 followed by a quicker recovery. This makes it quite

difficult to derive conclusions about the role of the social safety net by comparing trends across countries. We take a deeper dive into those issues in the next section.

Trends in poverty

To broaden our analysis to examine family well-being, here we examine trends in poverty across the two countries. To facilitate comparisons across countries, we adopt the OECD definitions of absolute and relative poverty (Organisation for Economic Cooperation and Development, 2015), also recently highlighted in a UNICEF series on child poverty in the Great Recession (UNICEF 2014, Bitler, Hoynes and Kuka 2014). The main advantage of this approach is that one does not have to grapple with a different absolute poverty threshold across the two countries.[12]

We construct the poverty rates using the following process. First, we compute an after tax and transfer (ATT) income measure for the family or household.[13] Second, we

[12] Official poverty in the U.S. is determined by comparing total *pre-tax* family *cash* income to poverty thresholds, which vary by family size, number of children, and presence of elderly persons. The poverty thresholds reflect a basket of goods set in the 1960s and are adjusted each year for changes in prices. For example, in 2015, the poverty threshold for a family of three (one adult, two children) was $19,096. This measure has many drawbacks, in particular is its omission of the key sources of support that we examine here: SNAP (because it is inkind not cash), and the EITC and CTC (because they are taxes). The Census now releases the Supplemental Poverty Measure along with official poverty in its annual poverty reporting (Short, 2011). The SPM resource measure expands to include the cash value of various in-kind transfers and nets out taxes (and deducts from income child support payments, medical out of pocket expenditures, and work expenses including child care). Additionally, the SPM family unit is modified to include cohabitors and their children and poverty thresholds vary geographically. The Census SPM thresholds are defined to be the average between the 30th and 36th percentiles of the distribution of consumer expenditures on food, clothing, shelter, and utilities plus an additional 20 percent to account for additional necessary expenditures. This makes the SPM a "quasi-relative" poverty measure.

[13] In the U.S. we use a "household" sharing rule, combining the income of all persons living in the same household (excluding unrelated children). This allows for clear measurement

compute equivalized ATT income (i.e. ATT income / equivalized household size; where equivalized household size is computed using the OECD modified scale[14]). Third, we compute the median of the equivalized ATT income in our base year, 2011 (chosen because it is the last year in the SLID; we use the same for the U.S.). The absolute poverty line for 2011 is then 60% of the median of equivalized ATT income for 2011. To compute the absolute poverty lines for the other years, we start from the 2011 poverty line just computed and correct for inflation. The relative poverty line for each year *t* is simply 60% of the median of equivalized ATT income for year *t*.

If the household (for the US) or Census family (for Canada) has ATT equivalized income below the equivalized poverty line, then they are assigned to be poor. To highlight the role of the labor market versus the social safety net, we also construct a "private income" poverty measure. Here the absolute and relative poverty thresholds remain the same. All that differs is the equivalized income measure that is compared to the threshold. Private income is pre-tax and transfer income and includes earned and unearned income. After tax and transfer income equals private income plus the value of non-cash transfer payments, less payroll taxes and net federal and state/provincial income taxes (including in-work benefits and child tax benefits). For more information on the sources of income for both countries see Appendix B.

Figure 8 shows the trends in absolute ATT poverty for women aged 25-54 with less than a college degree. As with the employment graphs we show this for four groups

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of inkind sources of income, including SNAP and energy assistance. See Bitler and Hoynes (2016b) and Bitler, Hoynes and Kuka (2016) for more information on this measurement. In the Canada we use the Census family (those related by birth and marriage). In practice in the differences in outcomes for the Census and household income and poverty are minimal.

[14] The OECD equivalized scale equals 1 for the head plus 0.5 for each additional adult [age 14+] plus 0.3 for each child [age < 14].

(marital status by presence of children). In both countries, poverty rates for single mothers are substantially higher than the rates for married women (with and without children). Interestingly, in Canada (Figure 8b) poverty for single women without children is lower than the rate for single mothers with children in the late 1990s but very similar after 2005. In the U.S. single women without children have lower poverty rates than single women with children. In both countries, poverty rates for single women with children fell (dramatically in the case of the US) over the 1990s. As with the employment trends above, in 2001 poverty begins to increase in the US but continues to decline in Canada. Comparing the magnitudes across countries, in the beginning of the period poverty rates for single mothers were higher in Canada (e.g., in 1996, 64% in Canada and 52% in the US) yet by the end of the period they are much lower in Canada (e.g., in 2011, 37% percent in Canada and 48% in the US).

Figure 9 show the trends in relative poverty for women by marital and maternal status. The patterns look similar, though slightly muted in the U.S. In contrast, the decline in relative poverty for single mothers in Canada is less pronounced, particularly post 1999. One explanation for this is that we also observe an increase in median nominal incomes in Canada over this period (not shown).

To explore the role of the social safety net in these trends, in Figure 10 we compare private income poverty and after-tax and transfer poverty for single mothers with less than a college degree (ATT poverty is the same as presented above in Figure 8). In Canada (Figure 10b) the PI and ATT poverty series track each other quite closely over the 1990s but begin to fan out over the 2000s with ATT poverty rates dropping by a greater amount. This suggests that while part of the decline is due to changes in market income, a growing

part of the decline in poverty over the 2000s might be due to the effects of taxes and transfers. In the case of the US, Figure 10a shows a much larger increase in PI poverty during the post 2000 period, suggesting a strong role for the social safety net in moderating the effects of the weak labor market. We return to this issue in our difference-in-differences analysis below.

IV. The effects of the social safety net on women and children

In this section, we review the evidence on the effects of the social safety net on the outcomes we present above – employment and poverty. Additionally, we also review what we know about the effects of these programs on children. Given the significance of the policy changes in both countries it is perhaps not surprising that there has been a considerable amount of research on the effects of the programs. Given their central role in the current policy landscape, we pay particular attention to the EITC and NCB.

Effects on maternal labor supply

Looking back at Figure 5a, employment among single mothers with less than a college degree increased substantially in the period between around 1992 and 2000. Following, 2000, employment for this group (and other women—and men, see for example Economic Report of the President 2015) begins to decline steadily. There is a large literature studying the 1990s period, trying to understand the role of the EITC expansion, welfare reform, and the strong labor market. All three of these factors should lead to higher rates of employment (Blank 2001). There are many comprehensive reviews of this work, particularly on welfare reform (e.g., Blank 2003, Grogger and Karoly 2005, Moffitt 2003,

Ziliak 2016) and the EITC (Hotz and Scholz, 2003, Nichols and Rothstein 2016, Hoynes and Rothstein 2016, Eissa and Hoynes 2006). The evidence shows that all three factors—welfare reform, the EITC and the strong labor market—contributed to the observed increase in employment among single mothers. In particular, the EITC leads to substantial increases in employment for single mothers (e.g., Eissa and Liebman 1996, Meyer and Rosenbaum 2000, 2001, Hoynes and Patel 2015) with little evidence that wage and salary workers reduce hours worked (the intensive margin).[15] Many of these studies use a difference-in-difference approach comparing single women with children to women without children (who are eligible only for a very small EITC) in periods before and after an expansion in the EITC. The magnitudes are large – for example, Meyer and Rosenbaum (2001) find that the EITC raised labor force participation by 7.2 percentage points for single women with children relative to those without children between 1984 and 1996. Hoynes and Patel (2015) find that the 1993 expansion increased employment of single mothers with less than a college degree by 6.1 percentage points.[16] More generally, Hoynes and Patel (2015) find that a $1000 policy-induced increase in the EITC lead to a 7.3 percentage point increase in employment.

Milligan and Stabile (2007) investigate the effect of the introduction of the Canadian NCB, and the ability of provinces to choose to subtract NCB payments from social assistance/welfare, on the labor force participation of single mothers. The findings suggest substantial labor market effects from the integration of benefits and social assistance. A

[15] Some studies show that self-employed workers adjust to maximize the credit along the phase-in region (Chetty, Friedman and Saez 2013, Saez 2010, Chetty and Saez 2013).
[16] Eissa and Liebman (1996) examined the earlier 1986 expansion of the EITC and find that labor force participation increased by 2.8 percentage points for single women with children, relative to single women without children.

$1000 increase in benefits deducted from social assistance payments is associated with a 3-4 percentage point decline in social assistance take up and an equivalent 3-4 percent point increase in employment. The effects are concentrated on the extensive margin of labor force participation.

Effects on child well-being

Recent research has investigated the effects of both the EITC and NCB on educational and health outcomes. Researchers have used variation in benefits over combinations of state/province, time, and family sizes to provide plausible causal estimates of the effects of the programs on education and health. In general, the programs have had a positive effect on a number of education and health outcomes.

Recent work has explored the effects of the Canadian child benefit system on the health and educational outcomes of children. Milligan and Stabile (2009, 2011) use policy variation over time, province and family size to investigate the effects of benefit income and find positive contemporaneous effects on test scores, mental health and some physical health outcomes.

There is also a recent literature explores the effects of the EITC on "downstream" outcomes. The credit has been found to lead to improvements in infant health including increases in birthweight, reductions in the incidence of low birth weight and reductions in the incidence of infant mortality (Baker 2008; Baughman 2012; Hoynes, Miller, and Simon 2015; Strully et al. 2010). The EITC has also been found to increase children's cognitive outcomes (Dahl and Lochner 2012; Chetty, Friedman, and Rockoff 2011) and educational attainment (Bastian and Michelmore 2015, Maxfield 2013 and Manoli and Turner 2014).

These are generally interpreted as income effects (in that the EITC, as described below, increases after tax income) though it is possible that a portion of each effect is directly related to increased maternal employment.

In those cases where estimates are comparable, it is notable how similar the coefficient estimates are between the two countries when it comes to child outcomes, despite the differences in program design outlined above.

There is also a substantial literature on the effects of welfare reform on children (reviewed recently in Ziliak 2016). There is consistent evidence of a reduction in teen dropout and teen fertility, but an increase in child maltreatment. There is less consistent evidence on children's achievement and school performance. Overall adolescents seem to be more likely to be harmed, younger children may experience improvements if the welfare reform led to higher income along with higher maternal employment.

Effects on maternal wellbeing and health

Evans and Garthwaite (2014) find that the 1993 expansion of the EITC leads to a reduction in risky biomarkers in mothers, suggesting an important role for improving mental health and the incidence of chronic elevations of cortisol. There are a few studies on welfare reform and maternal health. Bitler and Hoynes (2008) find that the reform led to an improvement in maternal mental health but Kaestner and Tarlove (2006) find no significant effects on mothers' health.

Given the high rates of single parenthood in the U.S., there is much interest in assessing the role that the social safety net plays in these outcomes. This is a long studied question with respect to welfare, starting with AFDC (where eligibility essentially required

being a single parent) and continuing with evaluations of the effects of welfare reform (particularly since reducing single parenthood featured prominently in the goals of welfare reform). Overall, there is little evidence that welfare or welfare reform has a large impact on marriage and single parenthood (e.g., Moffitt 2003, Ziliak 2016). Similarly, there are a handful of studies that examine the effect of the EITC on marriage (e.g., Ellwood 2000; Rosenbaum 2000; Herbst 2011; Michelmore 2014) and fertility (Baughman and Dickert-Conlin 2009) all showing insignificant or small effects.

V. Analysis of the effects of the EITC and NCB on poverty

As described above, the policy changes over the past 25 years have moved the US to a social safety net with much more emphasis on in-work assistance (particularly through welfare reform and the expansion of the EITC). The EITC can affect after-tax and transfer (ATT) income, and hence poverty, through three primary channels.[17] First, direct EITC payments increase ATT income. Second, EITC-induced changes in employment (and hence earnings) increase pre-tax and transfer income. Third, increases in earnings may lead to reductions in other income sources. In particular, the likelihood that the same family qualifies for traditional welfare payments such as cash welfare (AFDC/TANF) and SNAP is expected to decrease (as earnings increases).

Hoynes and Patel (2015) use a difference-in-difference approach comparing single women with and without children and find that the 1993 expansion led to a 7.9 percentage point increase in the share with ATT income above poverty, for a sample of single mothers with less than a college degree. More generally, they find that the EITC has little effect on

[17] This discussion is based on Hoynes and Patel (2015).

the very lowest income groups (below 75% of poverty), likely reflecting low labor market attachment of families in this range. Between 75% and 150% of the poverty line, the effects of the EITC are large and statistically significant; they then fall to zero by 250% poverty. Overall, Hoynes and Patel find that ignoring the indirect effects of the EITC (increased earnings net of changes in other income) leads to a significant underestimate—as much as a 50% underestimate--of the anti-poverty effects of the EITC.

Taking the evidence together, welfare reform and the expansion of the EITC have led to an increase in employment and reduction in poverty for low educated single mothers. However, there are limitations of relying on an in-work based safety net. First, Bitler, Hoynes and Kuka (forthcoming) show that the EITC does not function well to protect income in the presence of job loss such as a recession. In other words, work is necessary for an in-work social safety net. Second, while the EITC has generally helped those with income around the poverty line, it does little to help those with lower income levels such as deep poverty (below 50% poverty) (Hoynes and Patel 2015, Edin and Shaefer 2015). The Great Recession highlighted the consequences of welfare reform and the rise of the in-work safety net in the US. As shown in Bitler and Hoynes (2015, 2016b), deep poverty rose by more in the Great Recession than we would have expected from compared to earlier cycles which they link to less countercyclical response of cash welfare (AFDC/TANF).

We perform an analogous difference-in-differences analysis to analyze the effects of the Canadian National Child Benefit on ATT poverty. To do so, we look at the probability of being in absolute and relative poverty for women with children versus without children, before and after the introduction of the NCB. Using the introduction of the NCB in 1998, we use the SLID to construct pre (1996-1997) and post (1998-2011) periods. We look both at

all women and at the subgroup of single women in particular. These models also control for province* year effects, number of children, education, age and an indicator for being divorced. Our results are presented in Table 1.

For all women we find a 4 percentage point decline in the probability of being in absolute poverty using after tax and transfer income off a base of 25 percent (column 1). We find no such decline for being in absolute poverty using private income (pre tax and transfers). We also find no decline in relative poverty for this group. If we focus on single women (following Hoynes and Patel, 2015) we find a larger decline in the probability of being in absolute poverty of 11 percentage points off a base of 42 percent (column 2). In this case we also see a decline of 7 percentage points using pre tax and transfer income. Further we find similar results using our measures of relative poverty both pre and post tax and transfers. For single women in particular, this suggests that the decline in poverty is due both to changes in market income and changes in benefit income. In columns 3 and 4 we limit the sample to women with less than a college education. The findings for absolute poverty using this subgroup are quite similar to the full sample. These results are consistent with previous research by Milligan and Stabile (2007) which found a positive labor supply effect on single women following the introduction of the NCB, and with the graphical evidence presented earlier showing an increasing effect of benefit income over the 2000s for both all women and single women in particular.

VI. Conclusion

The introduction of the EITC in the US and the NCB/CCTB (and it's successor) in Canada represent a major change in the structure of the social safety net in both countries.

The programs are striking in both their similarities and their differences. They both reflect a move away from traditional welfare benefits toward providing cash assistance for families. They both encourage labor force participation either through having work requirements (EITC) or through long phase out ranges coupled with declines in welfare transfers (NCB). Not surprisingly, the evidence presented and reviewed here suggests that these reforms have had positive employment effects on single mothers – the group most targeted by the programs. Recent evidence also confirms that these programs have had positive effects on the educational outcomes and health of children in both countries. Interestingly, where estimates are most directly comparable, they are also remarkably similar between the two countries. Finally, we find that both sets of programs are associated with a reduction in poverty rates among women with children and particularly among single women with children. On the face of it, the changes in the social safety net in both the US and Canada have been successful in helping families out of poverty, into work, and to succeed in school.

Despite the similarities in outcomes, there are some significant differences between the programs. Perhaps the largest of these differences is in the work requirements: the EITC requires household to work while the NCB/CCTB does not. In theory, we expect this difference to result in greater labor force attachment in the US compared to Canada. Our evidence does not reveal strong differences along these lines. However, we note that a number of demographic and economic changes in the labor market that were not driven (in large part) by changes in the social safety net could very well be masking some of these differences.

Additionally, the generosity of the Canadian social safety net exceeds that of the U.S. This is revealed in lower absolute poverty rates in Canada, particularly in the recent period. However, this could also be affected by weaker labor market in the U.S. beginning around 2000. Finally, the lack of an out-of-work safety net in the U.S. suggests we would expect higher rates of deep poverty compared to Canada. More work could be done to understand the role of the changes in the labor market versus the changes in the social safety net in explaining the differing outcomes across the U.S. and Canada. Additionally, more could be done to understand the broader impacts of the social safety net on the distribution of income and inequality in the two countries.

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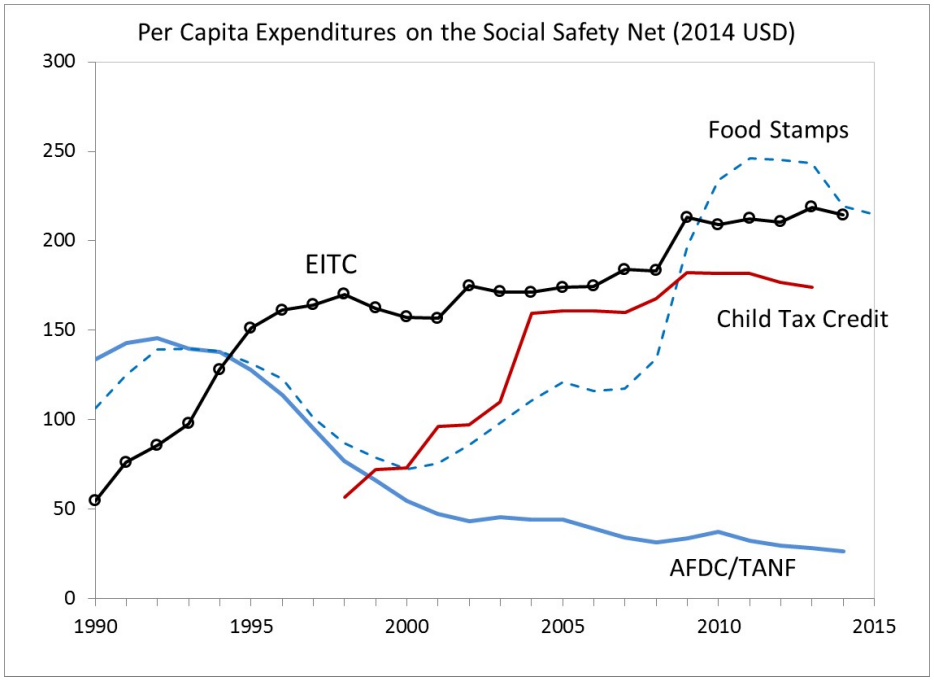
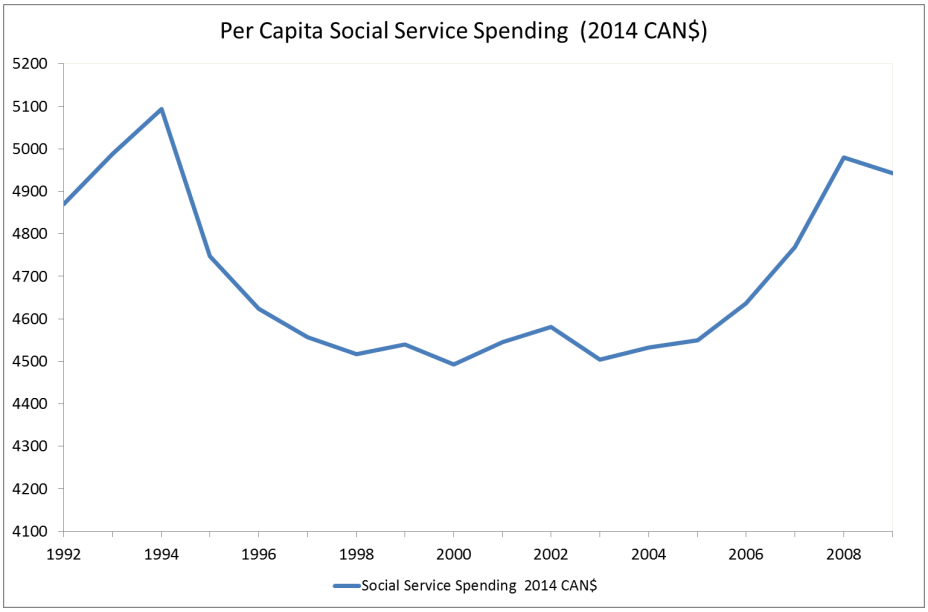
Figures

Figure 1: Real per capita spending on key safety net programs

Panel A: United States



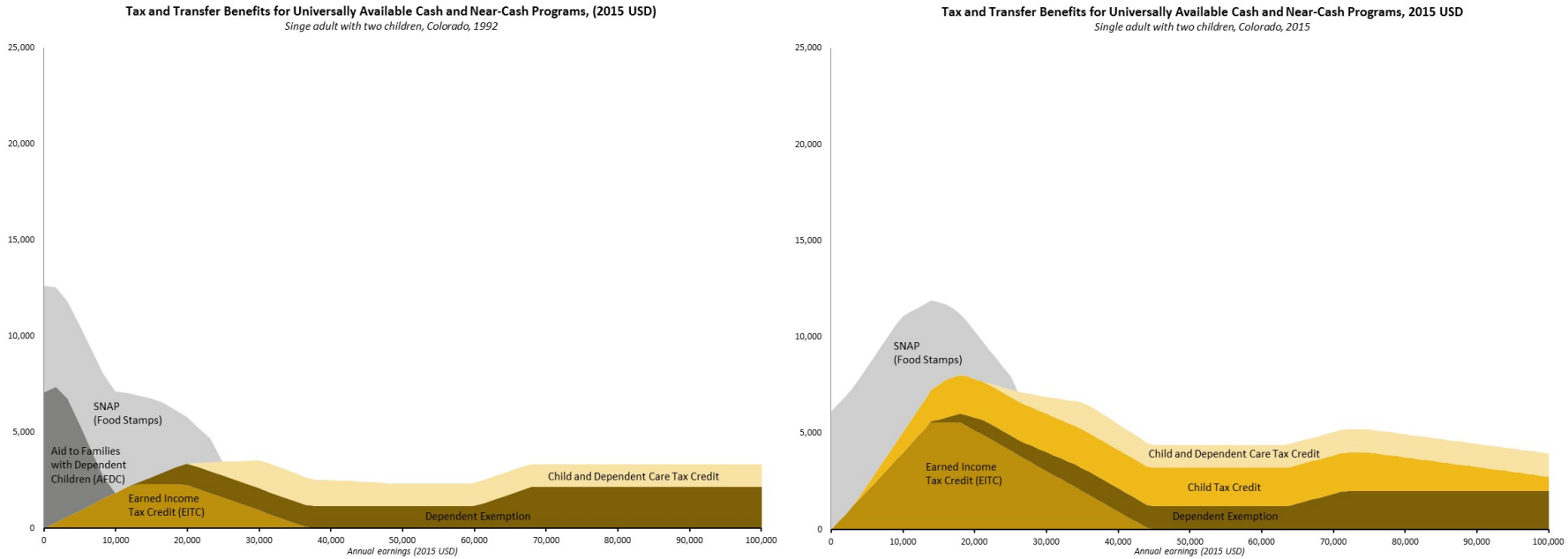
Panel B: Canada



Notes: US: Total expenditures from Internal Revenue Service (EITC and CTC); Department of Agriculture (Food Stamps); and Department for Health and Human Services (AFDC/TANF). All values in 2014 dollars, adjusted by the CPI-U divided by the total population. CA: Social Service Spending from federal, provincial, territorial and local governments (Statistics Canada). All values in 2014 CAN dollars, adjusted by the CPI and divided by the total population.

Figure 2: US budget constraint, cash and near-cash universal programs

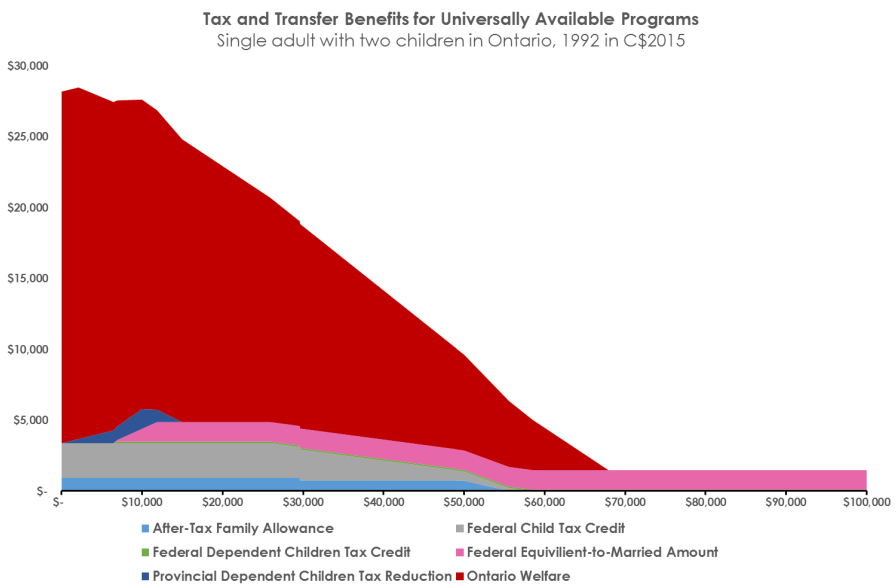
Panel A: 1992 *Panel B: 2015*



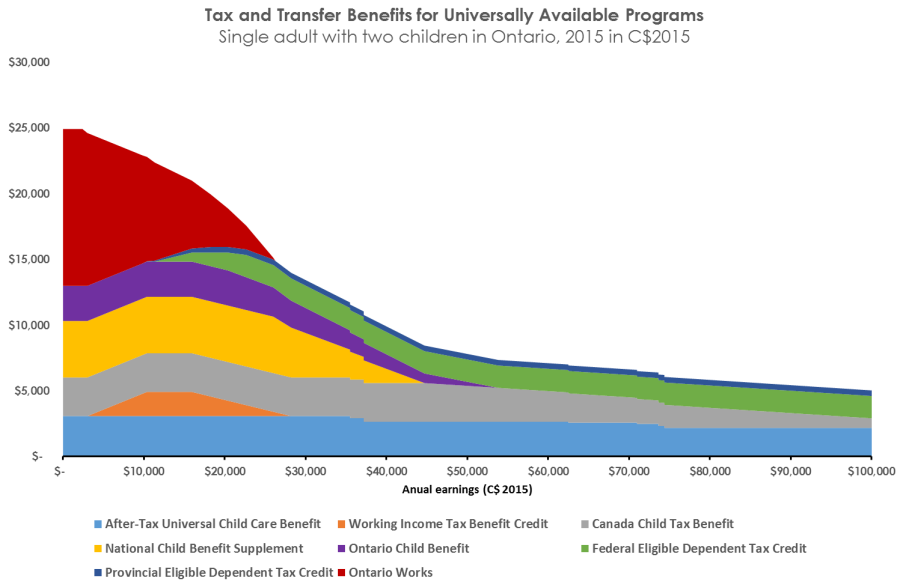
Notes: Estimated value of tax and transfer benefits for a single parent with two children living in Colorado. Program parameters from Internal Revenue Service and Tax Policy Center (EITC, CTC, Dependent Exemption, Child and Dependent Care Tax Credit) and Ways & Means Green Book and Department of Agriculture (SNAP). Based on data from Steuerle and Quakenbush (2015).

Figure 3: Canada budget constraint, cash and near-cash universal programs

Panel A: 1992



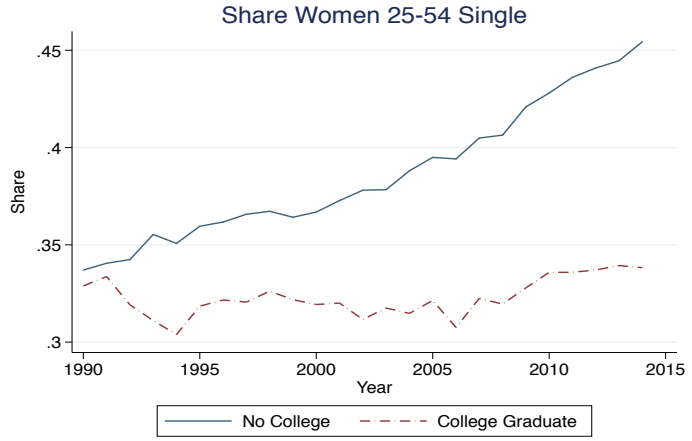
Panel B: 2015



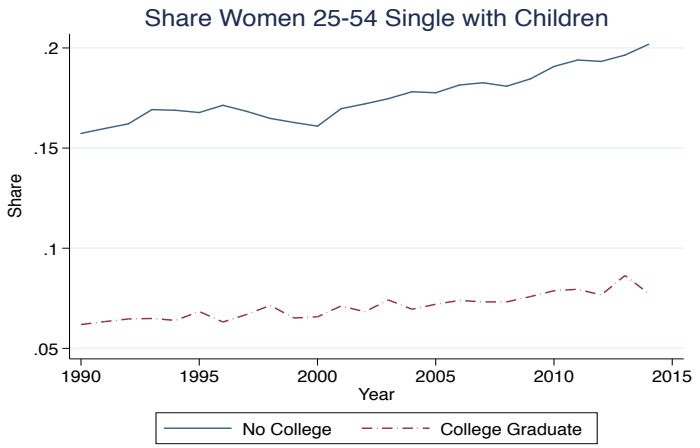
Notes: Estimated value of major tax and transfer programs for a single parent family with two children in the province of Ontario in real (2015) CDN dollars. Program parameters from Department of Finance, Canada and the Ontario Ministry of Finance.

Figure 4: Share single and share single with children, by education group

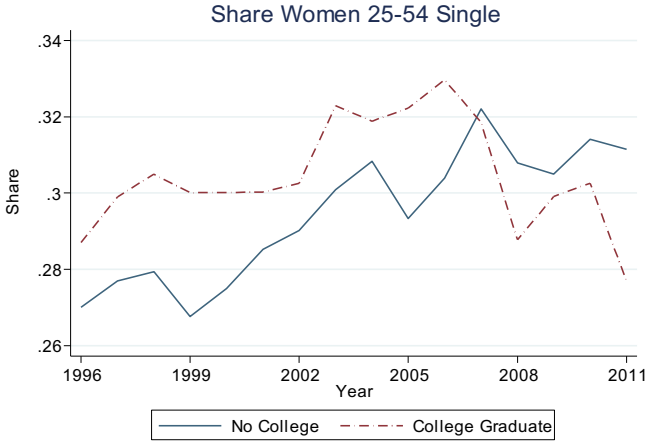
Panel A: US



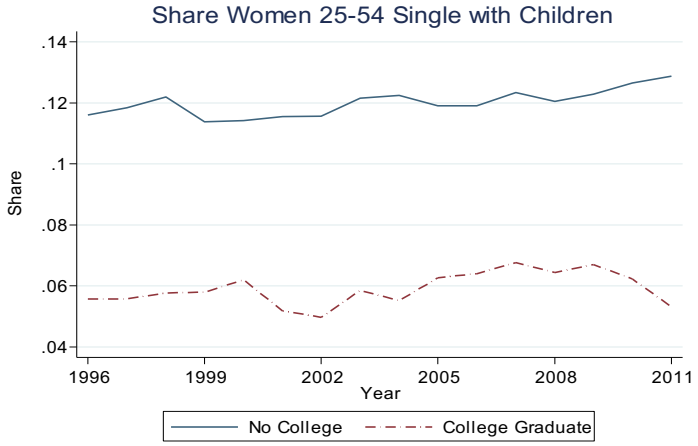
Panel B: US



Panel A: CA



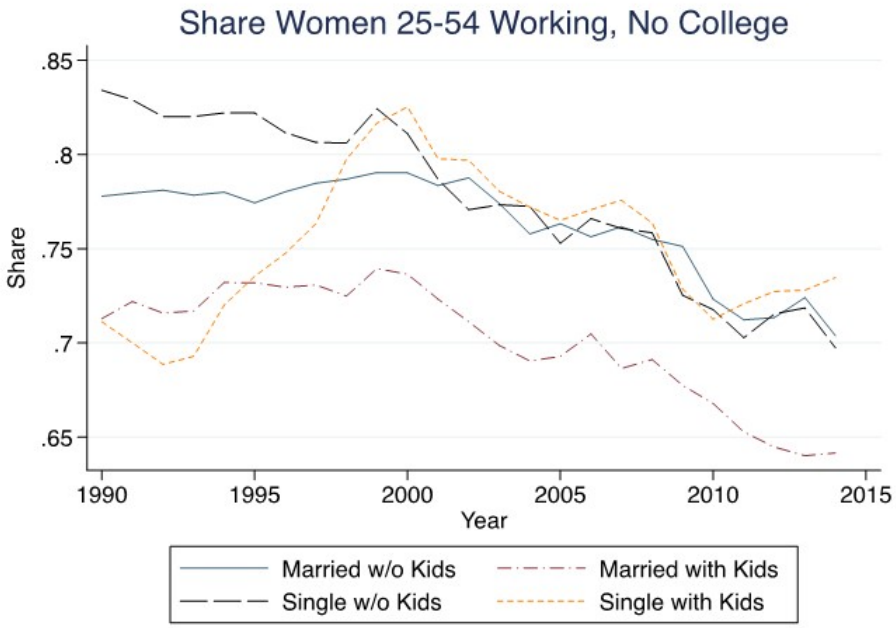
Panel B: CA



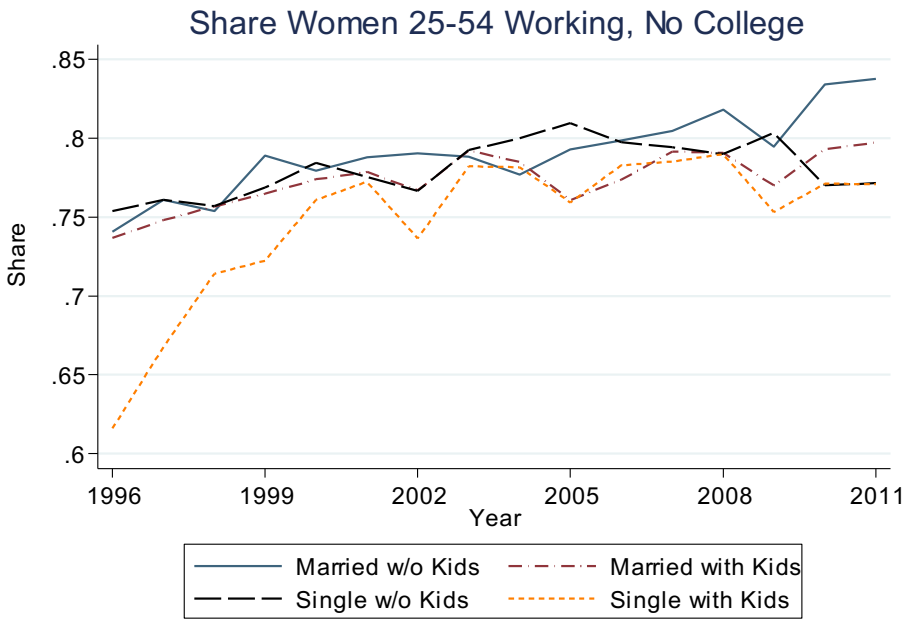
Notes: No college defined as less than a four-year degree; "college graduate" defined as a four-year degree or higher. Data from Current Population Survey, Annual Social and Economic Supplement (US), and Survey of Labour and Income Dynamics (CA). Sample includes women 25-54.

Figure 5: Employment by marital status and children

Panel A: US



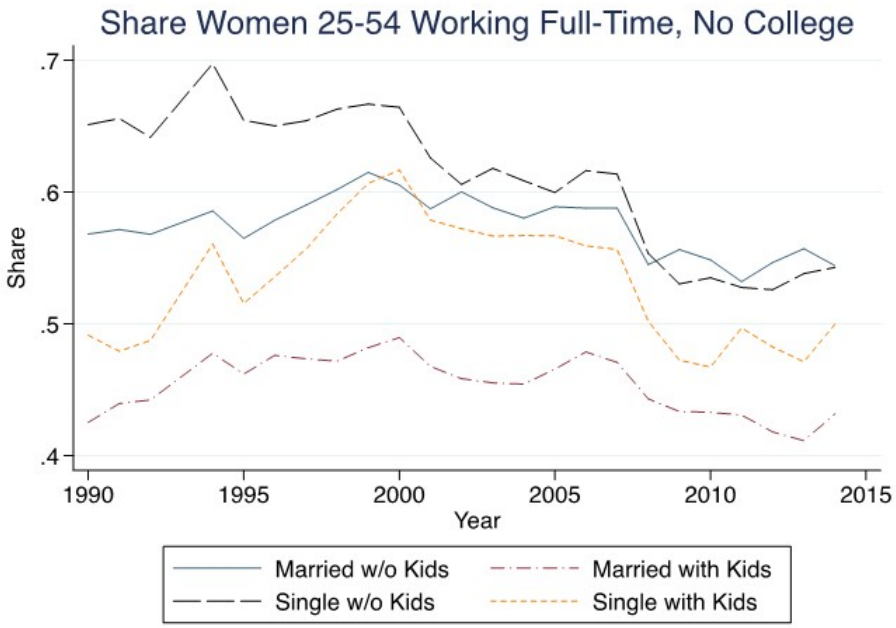
Panel B: CA



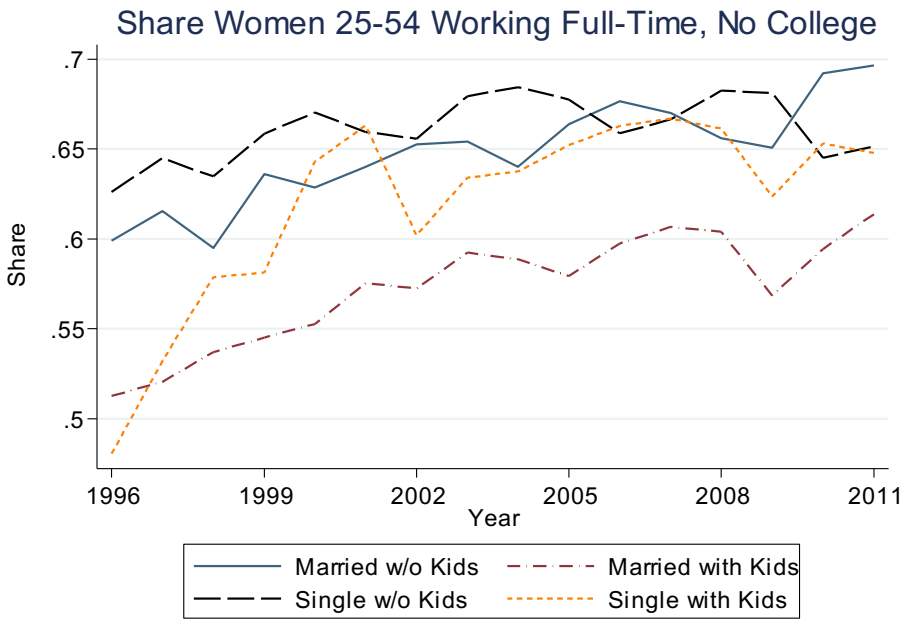
Notes: No college defined as less than a four-year degree. Women are considered working if they worked at least one week in the previous year. Data from Current Population Survey, Annual Social and Economic Supplement (US), and Survey of Labour and Income Dynamics (CA). Sample includes women 25-54.

Figure 6: Full-Time employment by marital status and children

Panel A: US

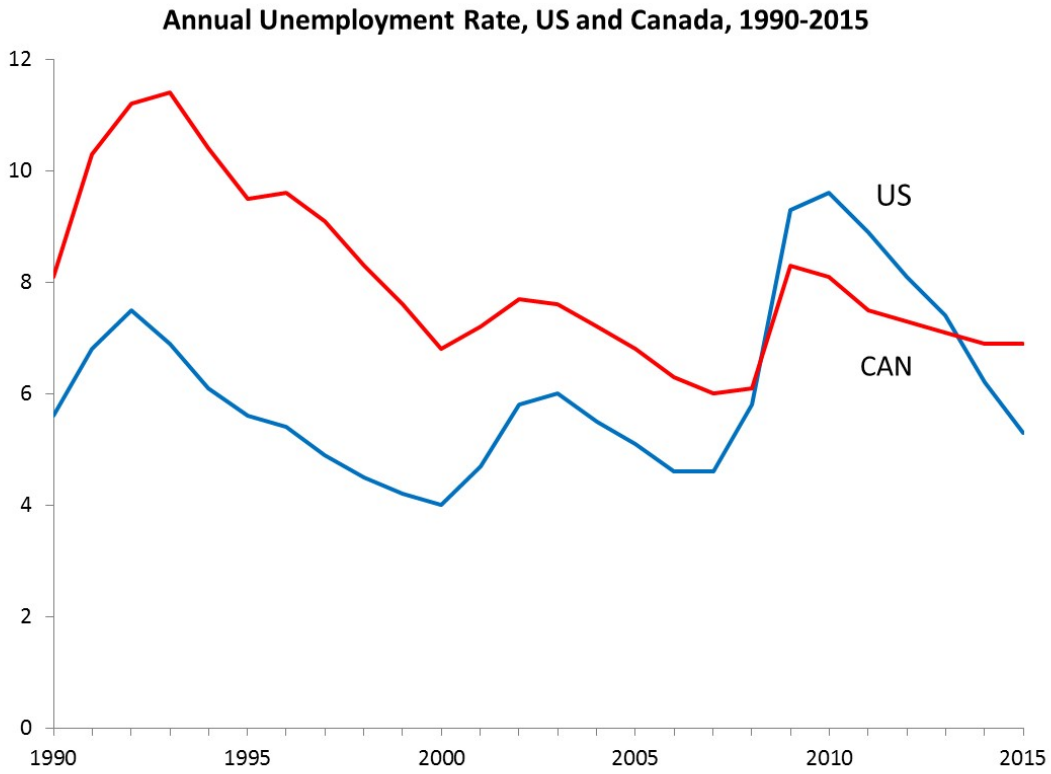


Panel B: CA



Notes: No college defined as less than a four-year degree. Women are considered working full-time if they reported usually working at least 35 hours a week and at least 50 weeks in the previous year. Data from Current Population Survey, Annual Social and Economic Supplement (US), and Survey of Labour and Income Dynamics (CA). Sample includes women 25-54.

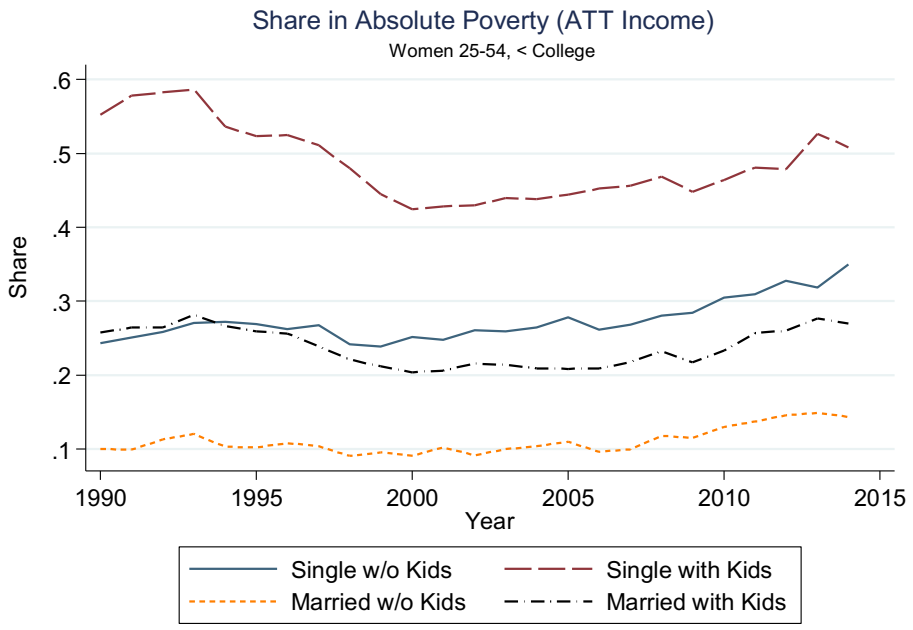
Figure 7: Annual unemployment rate



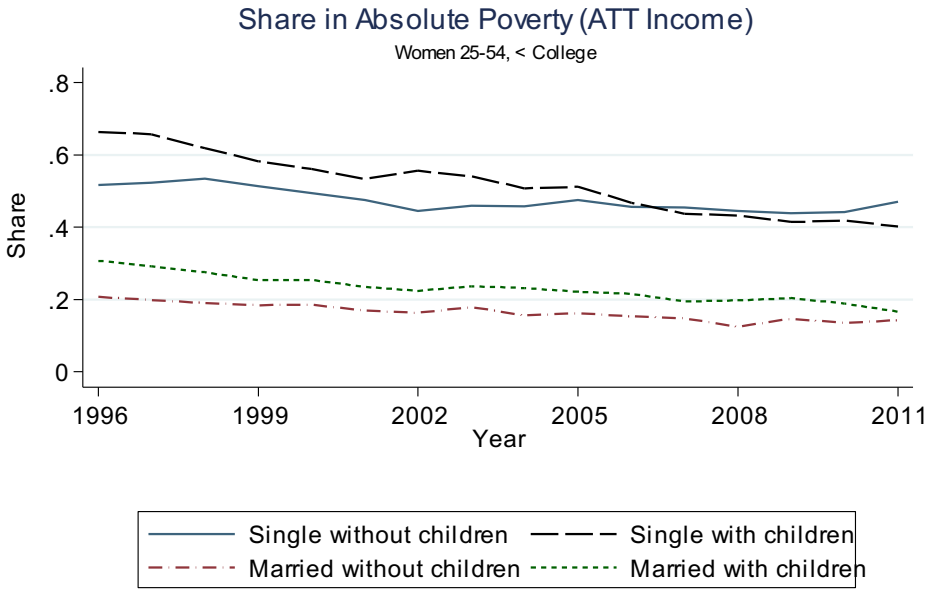
Notes: Figure presents annual unemployment rate. Data from Bureau of Labor Statistics and Statistics Canada, Labour Force Survey (CA).

Figure 8: Absolute poverty by demographic group

Panel A: US



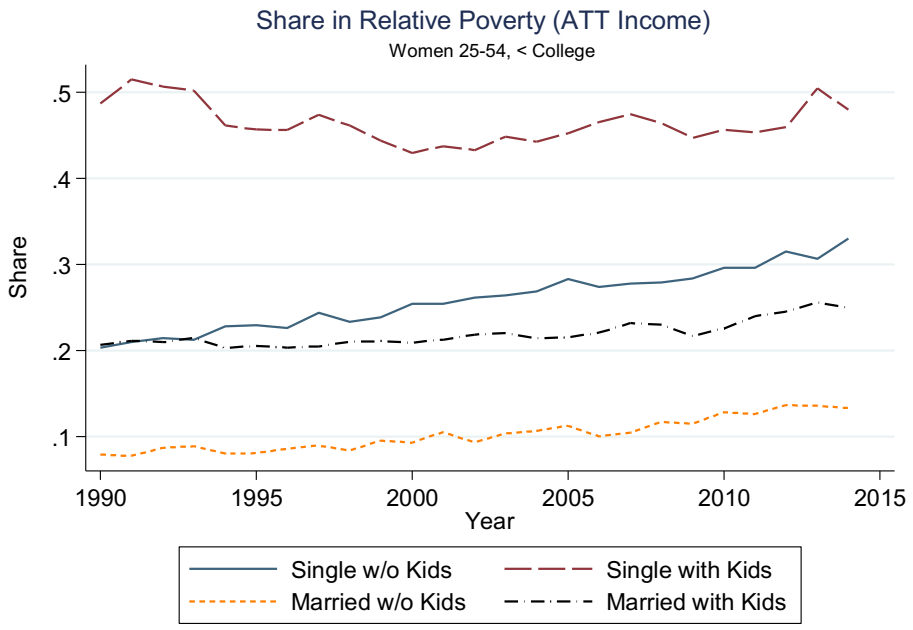
Panel B: CA



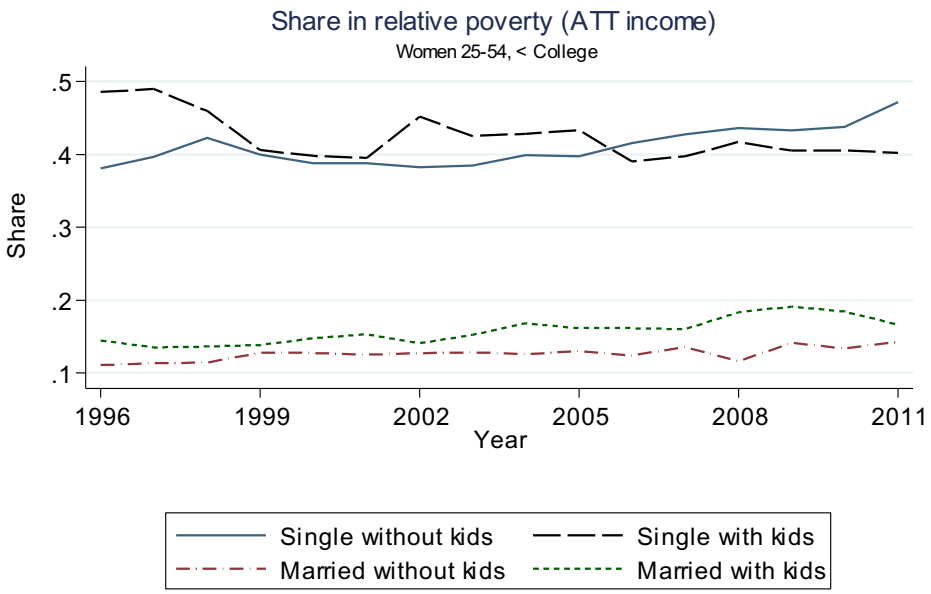
Notes: No college defined as less than a four-year degree. Absolute poverty defined as 60 percent of the median equivalized after tax and transfer (ATT) income in 2011, adjusted for inflation. See text for details. Data from Current Population Survey, Annual Social and Economic Supplement (US), and Survey of Labour and Income Dynamics (CA). Sample includes women 25-54.

Figure 9: Relative poverty by demographic group

Panel A: US



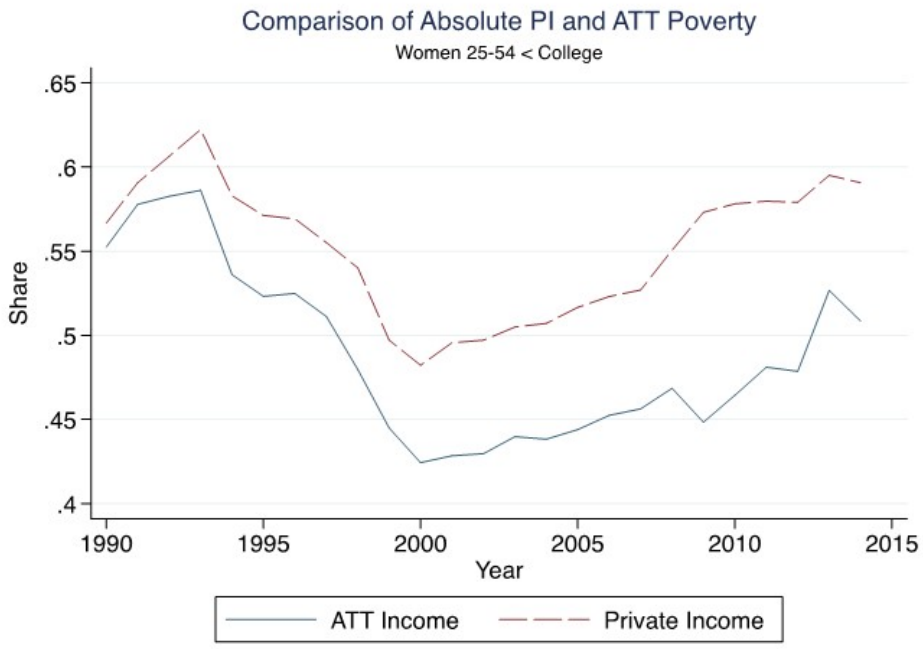
Panel B: CA



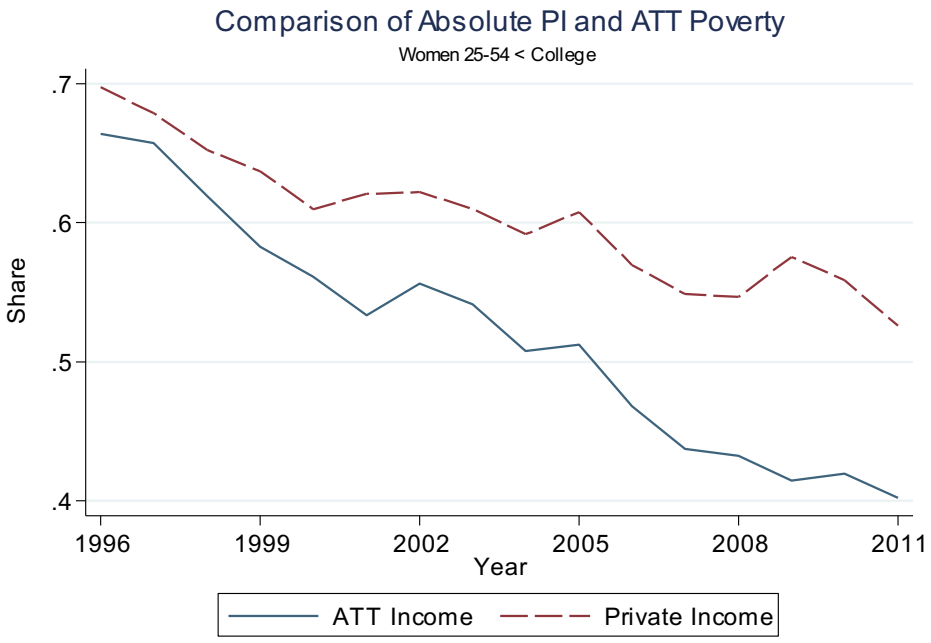
Notes: No college defined as less than a four-year degree. Relative poverty defined as 60 percent of the median equivalized after tax and transfer (ATT) income each year. See text for details. Data from Current Population Survey, Annual Social and Economic Supplement (US), and Survey of Labour and Income Dynamics (CA). Sample includes women 25-54.

Figure 10: Absolute PI and ATT poverty for single mothers

Panel A: US



Panel B: CA



Notes: No college defined as less than a four-year degree. The absolute poverty threshold is defined as 60 percent of the median equivalized ATT income in 2011, adjusted for inflation. The same threshold is used for private income poverty and ATT poverty, the measures differ only in what resource measure is used. See text for details. Data from Current Population Survey, Annual Social and Economic Supplement (US), and Survey of Labour and Income Dynamics (CA).

Table 1: Difference-in-Differences analysis of the effects of benefit programs on poverty

Dependent variables	(1) All women Canada	(2) Single women Canada	(3) Women with less than College	(4) Single women, less than College
Absolute poverty ATT income	-0.040***	-0.114***	-0.042***	-0.111***
	(0.007)	(0.009)	(0.01)	(0.014)
Mean	0.25	0.42	0.28	0.47
Relative poverty ATT income	-0.009	-0.085***	-0. 013	-0.099***
	(0.013)	(0.016)	(0.015)	(0.02)
Mean	0.18	0.34	0.20	0.38
Absolute poverty Private income	-0.011	-0.070***	-0. 014	-0.066***
	(0.014)	(0.022)	(0.01)	(0.016)
Mean	0.27	0.45	0.31	0.51
Relative poverty Private income	0.005	-0.057**	0. 004	-0.06***
	(0.015)	(0.025)	(0.013)	(0.019)
Mean	0.22	0.41	0.26	0.46
Controls:				
Demographics	x	x	x	X
Province*year indicators	x	x	x	x
# kids indicators	x	x	x	x

Notes: Standard errors in parenthesis clustered at province level
Significance levels: * p<.1; ** p<.05; *** p<.01.

Each coefficient is the d-in-d interaction of year>= 1998* having children (and hence being eligible for the National Child Benefit introduced in 1998).

Appendix A: changes in social safety net and provincial programs, Canada[18]

TAX BASED BENEFITS

Federal:

The *Canada Child Tax Benefit* pays $1,446 per child in 2014-15. For family net income over $43,953 it is phased out at a rate of 2% for one child; 4% when there are two or more children. The benefit amounts and thresholds have been updated annually since 1997 for inflation, but otherwise not changed.

The *National Child Benefit Supplement* began in 1998. The rates for 2014-15 are $2,241 for the first child, $1,982 for the second, and $1,886 for the third. The benefits are phased out sharply at rates of 12.2%, 23.0%, and 33.3% for incomes over $25,584. It is indexed annually for inflation. There were substantial additional increases in several years. Between 1998 and 2001 the benefit levels more than doubled. There were also increases of 13% in 2003, 14% in 2005, and 13% in 2006.

In 2006, the *Universal Child Care Benefit* was introduced. It pays $100 per month for each child under age 6 and is taxable in the hands of the lower income spouse.

In 1997, there was a small benefit of $500 called the *Working Income Tax Benefit* paid to families with children. It was phased in with income over $3,750 and then phased out for income over $20,921. It was removed when the National Child Benefit Supplement was introduced in 1998.

In 2007, the Working Income Tax Benefit began payments to adults. There was no supplement for children in this benefit. The amount for singles in 2014 is $998, with couples getting $1813. There are some differences across provinces, but for most provinces it is phased in at 25% for income over $3,000, and phased out at 15% starting at $11,332 for singles and $15,649 for couples. For singles, it is completely phased out by $18,000—so this benefit is very narrowly targeted.

Newfoundland and Labrador:

The Newfoundland Child Benefit was introduced in 1999 and is paid monthly. In 2014, the annual rate for a first child was $369, $392, for a second child, $421 for a third child, and $451 for a fourth child. The clawback of these benefits was in the income range $17,397 to $21,480. Increases through time followed inflation, except for a 25% increase to the one-child rate in 2007. An additional supplement for children age zero was added in 2001.

Prince Edward Island:

No child benefit program.

Nova Scotia:

The Nova Scotia Child Benefit started in 1998 and is paid monthly. Families with 1 to 3 children receive different payments. Initially in 1998, the payments ranged from $250 for the first child to $136 for a third (or higher) child. In 2001, the payments for third and higher children increased substantially. In 2005, the payment rates were $445 annually for a first child, $645 for a second, and $720 for a third. These benefits are clawed back at high clawback rates for incomes over $16,000. Nova Scotia does not update the benefit for inflation.

[18] This appendix draws heavily on Milligan, and Stabile (2011).

In 2010, the Affordable Living Tax Credit was introduced with a base benefit of $240 augmented by $57 per child. This is phased out at 5% for income over $30,000.

New Brunswick:

The New Brunswick Child Tax Benefit was introduced in 1997, before the national NCB program reached its starting point. The annual benefit is $250 per child paid monthly, and has not changed since 1997. The benefit is clawed back at 2.5% or 5% for family net income over $20,000. In addition, there is a Working Income Supplement of $250 annually that is phased in at 4% for earned income over $3,750 and clawed back at a rate of 5% for family net income over $20,921. These amounts have been the same since 1997 with no updates for inflation.

Quebec:

Until 1997, residents of Quebec were eligible for a family allowance, an allowance for young children, and an allowance for newborn children. These amounts increased with the number of children in the family and did not depend on family income.

In 1997, these were combined into a new family allowance. The rates for the new family allowance were $2,275 per child for a single parent family and $975 per child for a two-parent family. These amounts were clawed back starting at incomes of $15,332 for singles and $21,825 for two-parent families. However, the clawback only took benefits down to a minimum benefit level that was $80 annually for one and two child families and $975 for three child families. But, for those with family net incomes higher than $50,000 these 'minimum' benefits were clawed back at a rate of 5%. In Quebec there was also an earned income benefit called APPORT in place from 1988 to 2004. In 2004, this benefit was phased in for earnings over $1,200 at a rate of 35% until an earnings level of $11,370 (two-parent) or $7,790 (one-parent), and then clawed back at 43% after that. At the peak benefit level the benefit amount was quite large, but take-up of this benefit was not high.

In 2005 a new Child Assistance program replaced the family allowance. The Child Assistance benefit in 2014 was $2,341 for the first child, $1,170 for the second and third children, and $1,755 for the fourth or higher child. The phaseout rate is 4% for incomes over $33,944 (single) or $46,699 (couple). The amounts have been updated annually for inflation. Benefit distribution defaults to a quarterly schedule, although families can opt to receive the benefit monthly.

Also in 2005, a new Work Premium replaced APPORT. It is phased in for incomes over $2,400 (single) or $3,600 (couple) at 25% (couples) and 30% (single). After a 'turnaround' point, it is phased out at a rate of 10%. The turnaround point is $10,286 (singles) or $15,914 (couples).

Ontario:

Ontario introduced the Ontario Child Care Supplement for Working Parents in 1997, and renamed as the Ontario Child Benefit in 2007. It pays out monthly. The initial rates were $400 per child age 0 to 6, clawed back at 4% for net family income over $20,000. In 1998, the amounts were revamped and largely stayed the same until 2005. From 1998, the amount was phased in with earned income over $5000, at a rate of 20% for 1998 and 21% from 1999 to 2005. The 2014 benefit amount was $1,100 per child age 0 to 6 for a one-parent family and $1310 for a two-parent family. The clawback rate was 8% for incomes over $20,000. These amounts did not change between 1999 and 2014, with no adjustments for inflation.

In 2010, a new Sales Tax Credit was introduced, paying $260 per member of the family; phased out with income over $25,000 at a rate of 4%.

Manitoba:

Manitoba ran its own child benefit program called CRISP until 2008. In 2008, CRISP paid $360 annually per child, with a clawback rate of 2.083% for incomes over $12,384. These amounts had not changed in nominal terms since the 1980s.

Starting in 2009, a new Manitoba Child Benefit was introduced, with a rate of $420 per child, clawed back after income of $15,000 at rates of 7.73%, 15.46%, and 23.18% for families of one, two, and three or more children respectively. The amounts have not been updated for inflation.

Saskatchewan:

The Saskatchewan Child Benefit was introduced in 1998. In the first year, it paid $900 annually to a one child family, $1,104 for a second child, and $1,176 for a third. It is clawed back at high rates for family net incomes over $15,921. As the NCBS increased in the following years, the Saskatchewan Child Benefit was decreased downward dollar for dollar, so that by 2005 it paid only $7 annually for a 2nd child and $86 for a third. It was cancelled in 2006.

Additionally, there is a working income supplement in Saskatchewan. In 2005 the amount ranges from $2,385 for a one child family to $4,293 for a five child family. It is phased in for earnings over $1,500 at rates between 25% and 45% and clawed back at a 20% rate for incomes over $14,640. There is a supplement for children under age 13 that pays an extra 25% on top of the regular employment supplement. These amounts have not been updated for inflation through time.

In 2000, Saskatchewan introduced the Saskatchewan Low Income Tax Credit, paying $77 for each adult and $55 for each child. It was clawed back at 1% for incomes that varied with family type. The amounts increased to $100 and $75 in 2003, then $216 and $84 in 2008. The phased out rate was increased to 2%, and all family types faced the same threshold of $28,335. These amounts have been updated annually for inflation and it is paid quarterly.

Alberta:

Alberta has an employment-related child benefit that is paid monthly. It was introduced in 1997 with a phase-in rate of 8% for earnings over $6,500 up to a maximum of $250 for one child and $500 for two or more. The benefit is clawed back at a rate of 4% for incomes over $25,000. Between 1998 and 2004, the benefit maximum was set at $500 for one child and $1000 for two or more children, but was otherwise similar to 1997.
The benefit changed again for the 2005 year. The new rates were $550 for one child, $500 for two children, $300 for three children, and $100 for four. These amounts were phased in at 8% for earnings over $2,760, and then phased out on incomes of $25,000 or more at a rate of 4%. These amounts have been updated for inflation each year since 2005.

British Columbia:

The BC Family Bonus was introduced in 1996, two years before the NCB program, and is paid monthly. The Bonus rate was $1,236 per child and was clawed back at a rate of 8% for one child and 16% for two or more for incomes higher than $18,000. These amounts were increased to $1,332, 9%, 18%, and $20,500 in 2001 and have remained constant since. However, the NCBS is subtracted from the BC Family Bonus, rendering it to zero by 2005 since the NCBS is now larger than the prescribed BC Family Bonus payments.

There is also a BC Earned Income Benefit that was introduced in 1998. It pays differing amounts for each child and is phased in between earnings levels of $3,750 and $10,000. It is clawed back for incomes higher than $20,921 at high rates. The amounts for 2005 are $365 for the first child, $370 for the second, and $372 for the third or higher. Until 2003, the amount for the first child was $605, with $405 for the second and $330 for the third. After 2003, the BC Earned Income Benefit was diminished as the NCBS grew, leading it to zero by 2013.

SOCIAL ASSISTANCE

Income support is provided by provincial/territorial governments in all 13 provinces and territories. The eligibility criteria differs by jurisdiction. In 2013, for example, the basic welfare cut-off income for a single employable individual ranged between $6,807 (NB) and $10,876 (SK), and the basic welfare cut-off income for a couple with two children ranged between $20,724 (NB) and $26,690 (PEI) (Tweddle et al., 2014). The benefit amount also differs by jurisdiction, and is generally tied the family status, income level, and financial need of the individual or family. For single employable individuals, the basic welfare income provided by the province/territory ranges from $6,807 (NB) to $17,343 (YK), and for a couple with two children, the basic welfare income ranges from $20,724 (NB) to $37,733 (YK) (Tweddle et al., 2014).[19]

In British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, and Prince Edward Island, a separate social assistance program provides benefits for individuals with a disability (Caledon Institute of Social Policy, 2015). In all provinces and territories, with the exception of Newfoundland and Labrador, additional social assistance benefits are provided in some form - either through a higher benefit as part of their general social assistance program, or through separate program directed to individuals with disabilities (Tweddle et al., 2014).

Appendix B: Data Appendix

United States

We use the CPS to construct private income (PI) poverty and after-tax-and-transfer (ATT) poverty. Private income includes earned income, asset income, and private transfers (child support, alimony, private disability and retirement). After-tax-and-transfer resource measure, developed in Bitler and Hoynes (2010, 2016), includes private income plus cash transfers (AFDC/TANF, Social Security, SSI, Unemployment Compensation, veterans payments and workers' compensation), the cash value (as reported by the household or imputed by the Census Bureau) of non-cash in-kind programs (food stamps/SNAP, school lunch, housing subsidies, and energy subsidies), tax credits (the EITC, child tax credits, and stimulus payments) and then subtracts payroll, federal, and state income taxes. We use the NBER TAXSIM model for all tax variables.

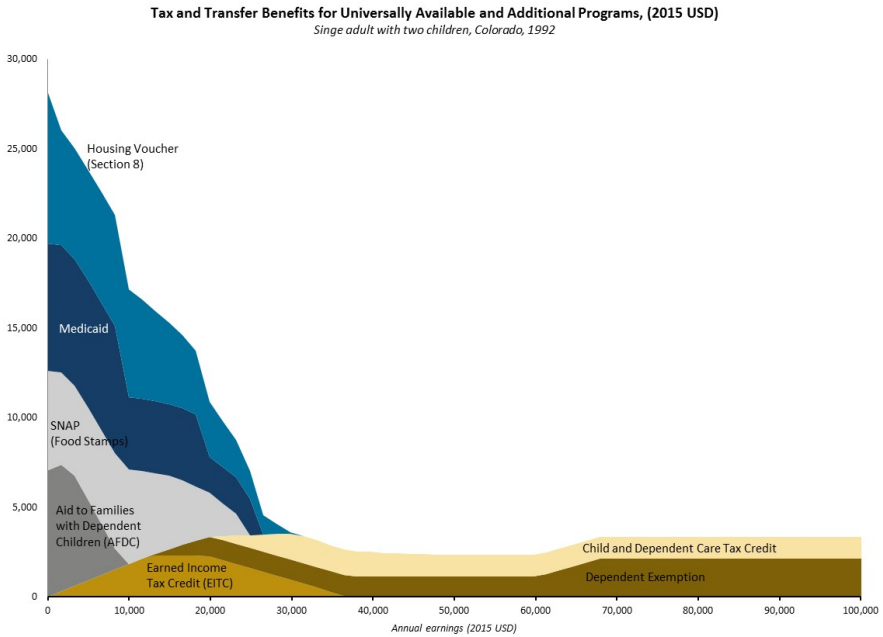
Canada

[19] The welfare income for Nunavut is actually the lowest of all the provinces or territories, but the vast majority of social assistance recipients reside in public housing, and have housing, and many other costs, covered.

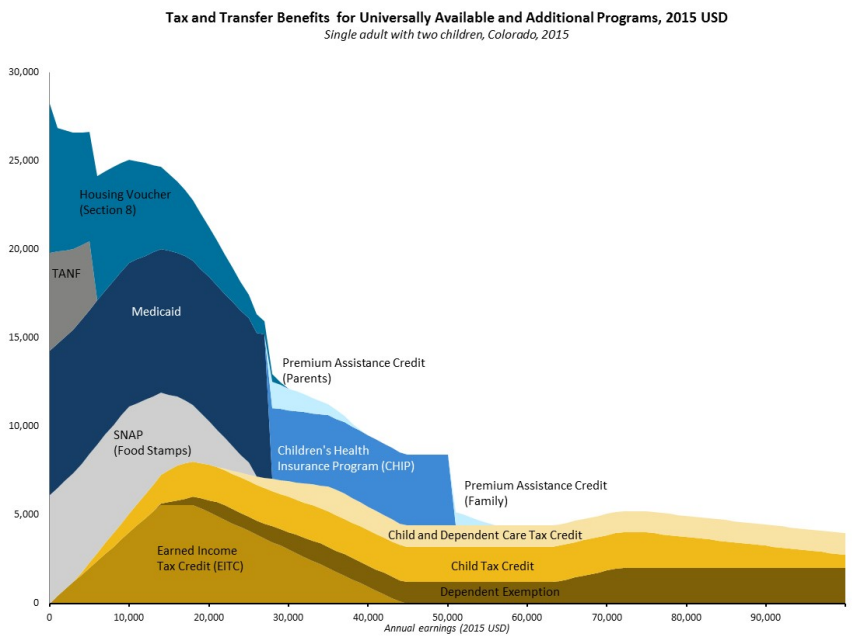
We use SLID income variables to construct private income (PI) poverty and after-tax-and-transfer (ATT) poverty. SLID's market income variable (private income) includes earnings, investment income, private retirement pensions and support payments received, such as alimony and child support. Moreover, SLID's after-tax (and after-transfers) income variable is defined by total income before taxes (market income plus federal and provincial government transfers) minus federal and provincial income tax.

Appendix Figure 1: Budget constraint, cash and near-cash universal programs plus Medicaid, housing, and TANF

Panel A: 1992



Panel B: 2015



Notes: Estimated value of tax and transfer benefits for a single parent with two children living in Colorado. Premium assistance credit excludes the value of penalties paid by employers on the beneficiaries' behalf and the value of additional cost-sharing subsidies. Health coverage and quality of services provided varies by source: Medicaid and CHIP benefits are more comprehensive and have less cost-sharing than those in the exchange. Medicaid and CHIP also pay providers for services at lower rates than private insurers. Based on data from Steuerle and Quakenbush (2015).