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The US earned income tax credit, its effects, and possible reforms

Bruce D. Meyer

**With comments by
Ann-Sofie Kolm**

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The US earned income tax credit, its effects, and possible reforms[°]

by

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Abstract

In this paper, I first summarize how the US Earned Income Tax Credit (EITC) operates and describe the characteristics of recipients. I then discuss empirical work on the effects of the EITC on poverty and income distribution, and its effects on labor supply. Next, I discuss a few policy concerns about the EITC: possible negative effects on hours of work and marriage, and problems of compliance with the tax system. I then briefly discuss some possible reforms to the structure of the current EITC.

Keywords: Welfare reform, Earned income tax credit, EITC, Earnings subsidies, Tax credits, Poverty

JEL-codes: D31, H24, I38, J38

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Since its inception in 1975, the federal Earned Income Tax Credit (EITC) has grown dramatically in size and is now the largest anti-poverty program for the non-aged in the United States. In 2003, 22 million families received EITC payments totaling USD 38.7 billion.¹ As a result, the EITC lifted 3.7 million individuals above the poverty line. In addition to directly raising incomes, the EITC has sharply changed work incentives, increasing the after-tax wage by up to forty percent for those with low earnings. The EITC is part of the tax system and does not require people to have a tax liability that the credit offsets. A person without a net tax liability receives it as a payment that, by 2007, could be as large as USD 4,716. The fundamental problem in designing tax and transfer programs to those with few resources is that such programs undermine work effort. The goal of the EITC has been to transfer income while encouraging work. This feature led to the political support for its initial adoption and for its subsequent expansions (Liebman 1998, Ventry 2001). The program has taken on increased prominence in recent years as policy makers have sought to reduce the dependence encouraged by welfare programs.

1 How the EITC works

The EITC provides an earnings subsidy to family members who satisfy three criteria. First, a family must have a wage earner, since only those who work are eligible. Second, the family must have low income. In 2007, a family with one child can receive the EITC if its income is below USD 33,241, while a family with two children can earn up to USD 37,783 and receive a credit.² Third, while a small EITC (up to USD 428 in 2007) is available to the childless, to receive a significant EITC, a family has to have resident children. The maximum credit for a family with one child is USD 2,853 in 2007, while that for a family with two or more children is USD 4,716. Since the EITC is refundable, a family can receive the credit even if they do not have an income tax liability. In the vast majority of cases, the credit is received as a lump sum as part of a

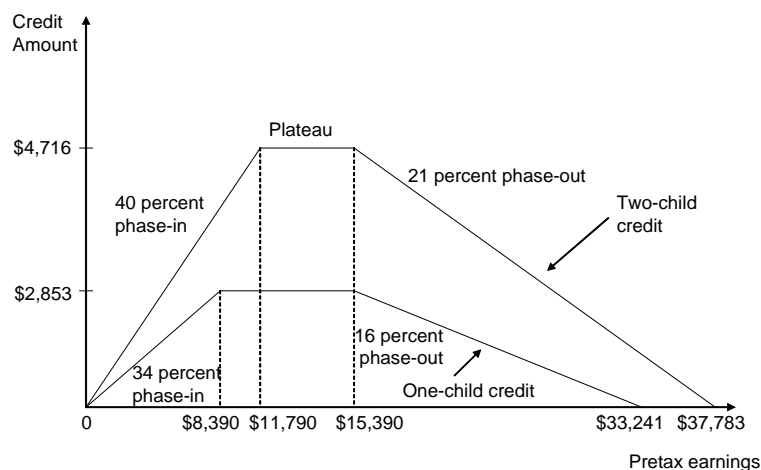
¹ Seventeen percent of those filing tax returns received the EITC.

² Beginning in 2002, a married couple could have income USD 1,000 higher than a single parent family and still receive a tax credit. This was changed to USD 2,000 starting with tax year 2005.

tax refund early the following year. The tax filer must fill out a one page form, with information on the qualifying child or children, that is submitted with the rest of the tax return. In summary, the credit subsidizes work by poor parents as it transfers income to them.

The EITC schedule for families with children in 2007 is shown in *Figure 1*. The top schedule, for families with two or more children, provides a larger credit at all income levels than that for one-child families, shown underneath. Both schedules provide a large earnings subsidy initially as the credit is phased in: forty cents for each dollar earned for the first USD 11,790 in earnings for those with two or more children. For example, a single mother with two children who earned USD 10,000 would receive a credit of USD 4,000. In the flat, or plateau part of the schedule, the total credit received does not change with earnings. With additional earnings beyond the plateau, however, the credit is decreased in the phase-out region, resulting in an implicit tax on earnings at a rate just over 21 percent for those with two or more children. For those with one child there are somewhat lower earnings subsidies, credits and implicit taxes.

Figure 1 Federal earned income tax credit schedule for single parent families with children, tax year 2007



2 Who receives the EITC?

While eligibility for the EITC does not explicitly select single mothers, the income ranges and the dependence on children leads the credit to implicitly target single mothers. To paint a statistical portrait of recipients, we examine their characteristics from several angles and with two data sets. The two sources of data do not perfectly agree, but they lead to roughly similar conclusions. *Table 1* is calculated from the Current Population Survey (CPS), the largest in-depth survey of the economic status of American households. Based on data for 2004, the table suggests that nearly 40 percent of EITC dollars go to single mothers. Adding in single fathers, one can see that nearly half (49 percent) of EITC dollars go to single parents. Since poor families with children are disproportionately headed by single parents, such families receive a large share of EITC payments. The vast majority of remaining dollars go to married couples with children, who receive 46 percent of the credit dollars. While a substantial number of recipient couples or individuals are childless (24 percent), they only receive 6 percent of the credit dollars. This concentration of 94 percent of EITC dollars in families with children reflects the program design to provide larger credits to these families.

Table 2 reports demographic characteristics of EITC recipients with children, by marital status. The characteristics of non-recipients with children are reported for comparison. Single recipients with children are fairly similar to single non-recipients with children, except they are slightly older, less educated (particularly less likely to have a college degree), and have more children, but fewer young children. That recipients are older and have fewer young children partly reflects that one must work to receive the EITC. Married recipients are much less educated, and more likely to be black. Nevertheless, the vast majority of EITC recipients are white.

Table 1 EITC benefits received and number of recipients, by family type, 2004

| Recipient Category | EITC credit (millions) | Distrib. of EITC (per-centage) | Average benefit received |
|---|---------------------------|-----------------------------------|--------------------------------|
| <i>Single women with children</i> | | | |
| Total benefit | \$10,735 | 41.09 | \$2,066 |
| Number of individuals | 5.197 | 31.32 | |
| <i>Single men with children</i> | | | |
| Total benefit | \$1,948 | 7.46 | \$1,627 |
| Number of individuals | 1.198 | 7.22 | |
| <i>Married couples with children</i> | | | |
| Total benefit | \$11,980 | 45.86 | \$2,084 |
| Number of individuals | 5.747 | 34.64 | |
| <i>Individuals without qualifying child</i> | | | |
| Total benefit | \$1,362 | 5.21 | \$349 |
| Number of individuals | 3.903 | 23.52 | |
| <i>Couples without qualifying child</i> | | | |
| Total benefit | \$98 | 0.37 | \$178 |
| Number of individuals | 0.548 | 3.30 | |
| Total | | | |
| Total benefit | \$26,122 | 100.00 | \$1,574 |
| Number of individuals | 16.592 | 100.00 | |

Source: Author's calculation using data from the CPS Annual Social and Economic Supplement 2005. All numbers are weighted.

Table 2 Demographic characteristics of EITC recipients, 2004

| Recipient characteristic | Recipients with children | | Non-recipients with children | |
|--|-----------------------------|---------|---------------------------------|---------|
| | Single | Married | Single | Married |
| Average age (years) | 37.6 | 38.8 | 35.2 | 39.4 |
| <i>Educational attainment (percentage)</i> | | | | |
| High school dropout | 17.5 | 31.3 | 18.6 | 8.6 |
| High school graduate | 39.2 | 37.0 | 31.3 | 26.9 |
| Some college | 33.9 | 21.7 | 31.5 | 28.5 |
| College graduate | 9.4 | 10.0 | 18.7 | 35.9 |
| Black (percentage) | 22.1 | 9.3 | 21.0 | 5.7 |
| <i>Average number of children, by age</i> | | | | |
| 0 to 5 years old | 0.386 | 0.672 | 0.585 | 0.595 |
| Six to 17 years old | 1.216 | 1.251 | 0.989 | 1.313 |
| Total | 1.602 | 1.924 | 1.574 | 1.909 |

Source: Author's calculation using data from the CPS Annual Social and Economic Supplement 2005. All numbers are weighted.

Table 3 EITC benefits and number of recipients, 2003: Comparison of IRS data to CPS data

| | IRS | | CPS | | |
|--|--------------------|--------------------------------------|--------------------|--|--------------------------------------|
| Recipient characteristic | EITC (millions) | Distribution of EITC (percent) | EITC (millions) | Distribution of credit (percent) | Ratio (CPS \$EITC/ IRS \$EITC) |
| <i>By filing status of recipient</i> | | | | | |
| <i>Head of household</i> | | | | | |
| Total benefit | \$28,149 | 72.82 | \$12,478 | 49.47 | 0.44 |
| Number of individuals | 12.46 | 56.55 | 6.25 | 39.11 | 0.50 |
| <i>Joint</i> | | | | | |
| Total benefit | \$9,567 | 24.75 | \$11,548 | 45.78 | 1.21 |
| Number of individuals | 5.18 | 23.51 | 6.01 | 37.61 | 1.16 |
| <i>Single</i> | | | | | |
| Total benefit | \$942 | 2.44 | \$1,200 | 4.76 | 1.27 |
| Number of individuals | 4.39 | 19.94 | 3.72 | 23.27 | 0.85 |
| <i>Total</i> | | | | | |
| Total benefit | \$38,658 | 100.00 | \$25,226 | 100.00 | 0.65 |
| Number of individuals | 22.02 | 100.00 | 15.98 | 100.00 | 0.73 |
| <i>By number of qualifying children</i> | | | | | |
| <i>Returns without a qualifying child</i> | | | | | |
| Total benefit | \$942 | 2.44 | \$1,285 | 5.09 | 1.36 |
| Number of individuals | 4.39 | 19.94 | 4.19 | 31.97 | 0.95 |
| <i>Returns with one qualifying child</i> | | | | | |
| Total benefit | \$13,746 | 35.56 | \$6,985 | 27.69 | 0.51 |
| Number of individuals | 8.27 | 37.55 | 4.65 | 35.54 | 0.56 |
| <i>Returns with more than one qualifying child</i> | | | | | |
| Total benefit | \$23,970 | 62.01 | \$16,956 | 67.22 | 0.71 |
| Number of individuals | 9.36 | 42.51 | 4.26 | 32.49 | 0.45 |
| <i>Total</i> | | | | | |
| Total benefit | \$38,658 | 100.00 | \$25,226 | 100.00 | 0.65 |
| Number of individuals | 22.02 | 100.00 | 13.10 | 100.00 | 0.59 |

Source: Author's calculation using data from the CPS Annual Social and Economic Supplement 2004, IRS figures derived using data from SOI Bulletin Fall 2006 – Individual Tax Returns 2004, *Figure H* (Year 2003) and the 2004 Green Book, *Table 13-13*.

The EITC is also targeted toward large families. The bottom panel of *Table 3* reports total benefits received and the number of recipient families by number of children. IRS data indicate that families with more than one child receive most of the credit dollars, over 62 percent of total payments. CPS data indicate a slightly higher share of payments go to families with two or more children. Over 39 percent of dollars go to families with two children, while 29 percent of dollars go to families with three or more children. Overall, we can see from *Table 3* that the IRS paid out USD 38.7 billion dollars under the EITC in 2003.

3 How the EITC affects the distribution of income

The effect of the EITC on income distribution is among the most important effects of the tax credit. Hence, we provide a brief description of the distributional effects of the credit. One way to assess the impact of the EITC is to calculate the mean income with and without the EITC for different initial income ranges. For single mothers with income between USD 6,000 and USD 12,000, the increase in mean income is about 9.5 percent. For single parent families with incomes between USD 12,000 and USD 20,000, the EITC raises mean income by approximately 16.6 percent. For other income groups the effects are smaller, with little discernable effect on the incomes of those with pre-tax income over USD 35,000. In short, the EITC goes primarily to very low income single parents, and it amounts to a large share of the resources this group has available to consume.

A second way to gauge the distributional effects of the EITC is to ask how many people it raises above the poverty line or other target income levels. As shown in *Table 4*, in 2004 the EITC lifted just under 1.0 million families and just under 2.0 million children above the poverty line. Overall, the credit lifted 3.7 million people above the poverty line, reducing the overall poverty rate by 14 percent, and the poverty rate among children by 18 percent.³ If we believe investments in children are especially productive (Heckman and Masterov 2007), then the EITC is well targeted.

While no other anti-poverty program reduces the poverty rate as much as the EITC, one caution is that the effects of the EITC are concentrated around the poverty line (see Liebman 1998). *Table 4* shows that the number of families or children below other target levels such as 50 percent of the poverty line or 200 percent of the poverty line is also sharply reduced by the EITC. However, the largest effects occur at levels just under the poverty line: the largest percentage changes tend to be at 75 percent of the poverty line.

³ Given that the CPS imputes less than two-thirds of the dollars that the IRS has paid out (as indicated in *Table 3*), it seems likely that these numbers understate the transfers to low income families and understate the number of individuals raised above the poverty line by the EITC.

Table 4 Number of families, individuals, and children in poverty with and without the EITC, 2004 (in thousands)

| Recipient income level | Without EITC | With EITC | Difference (without EITC - with EITC) | Ratio (without EITC / with EITC) |
|----------------------------|--------------|-----------|---------------------------------------|----------------------------------|
| | (1) | (2) | (1)-(2) | (1)/(2) |
| <i>Families</i> | | | | |
| Below 50% of poverty line | 3,949.76 | 3,658.88 | 290.87 | 1.08 |
| Below 75% of poverty line | 6,179.63 | 5,465.16 | 714.47 | 1.13 |
| Below the poverty line | 9,003.00 | 8,021.60 | 981.40 | 1.12 |
| Below 150% of poverty line | 15,464.75 | 14,694.26 | 770.50 | 1.05 |
| Below 200% of poverty line | 23,416.87 | 23,050.80 | 366.07 | 1.02 |
| Total number of families | 76,866.33 | | | |
| <i>Individuals</i> | | | | |
| Below 50% of poverty line | 12,380.15 | 11,229.57 | 1,150.58 | 1.10 |
| Below 75% of poverty line | 20,037.61 | 17,103.15 | 2,934.46 | 1.17 |
| Below the poverty line | 29,452.51 | 25,780.10 | 3,672.41 | 1.14 |
| Below 150% of poverty line | 50,643.63 | 47,927.24 | 2,716.39 | 1.06 |
| Below 200% of poverty line | 75,263.02 | 74,038.27 | 1,224.75 | 1.02 |
| Total no. of individuals | 240,753.58 | | | |
| <i>Children under 18</i> | | | | |
| Below 50% of poverty line | 5,542.75 | 4,885.65 | 657.10 | 1.13 |
| Below 75% of poverty line | 8,959.68 | 7,324.83 | 1,634.85 | 1.22 |
| Below the poverty line | 12,986.76 | 11,006.80 | 1,979.96 | 1.18 |
| Below 150% of poverty line | 20,674.34 | 19,366.75 | 1,307.59 | 1.07 |
| Below 200% of poverty line | 28,629.50 | 28,111.54 | 517.96 | 1.02 |
| Total no. of children | 72,334.90 | | | |

Note: The poverty line refers to the standard measure reported by the U.S. Census Bureau. Calculations based on money income of families and individuals before taxes (excluding capital gains).

Source: Figures are the author's calculations using data from the CPS Annual Social and Economic Supplement 2005. All numbers are weighted.

An interesting question is how the EITC compares to other policies that transfer income to the poor such as our main cash welfare program for single parents, Temporary Assistance for Needy Families (TANF), and our main broad-based program (similar to a negative income tax) that provides food assistance, Food Stamps. In *Table 5* we compare the analyses of *Table 4* for the EITC to the corresponding ones for TANF and Food Stamps. As expected, these programs are more targeted at those with the very lowest incomes. Nevertheless, in part because TANF has shrunk in size since welfare reform, it has a smaller effect at all income cutoffs than the EITC. Even at half the poverty line, it only raises 6 percent of people over the line compared to 10 percent for the EITC. TANF has little effect at the poverty line, raising 2 percent of people out of poverty compared to 14 percent for the EITC.

Table 5 Ratios of families, individuals, and children in poverty with and without the EITC, TANF and food stamps, 2004

| Recipient Income Level | Ratio (without EITC/ with EITC) | Ratio (without TANF/ with TANF) | Ratio (without FS/ with FS) |
|----------------------------|---------------------------------------|---------------------------------------|-----------------------------------|
| <i>Families</i> | | | |
| Below 50% of poverty line | 1.08 | 1.05 | 1.16 |
| Below 75% of poverty line | 1.13 | 1.03 | 1.10 |
| Below the poverty line | 1.12 | 1.01 | 1.05 |
| Below 150% of poverty line | 1.05 | 1.00 | 1.01 |
| Below 200% of poverty line | 1.02 | 1.00 | 1.00 |
| <i>People</i> | | | |
| Below 50% of poverty line | 1.10 | 1.06 | 1.19 |
| Below 75% of poverty line | 1.17 | 1.03 | 1.11 |
| Below the poverty line | 1.14 | 1.02 | 1.06 |
| Below 150% of poverty line | 1.06 | 1.00 | 1.01 |
| Below 200% of poverty line | 1.02 | 1.00 | 1.00 |
| <i>Children under 18</i> | | | |
| Below 50% of poverty line | 1.13 | 1.08 | 1.27 |
| Below 75% of poverty line | 1.22 | 1.04 | 1.14 |
| Below the poverty line | 1.18 | 1.02 | 1.07 |
| Below 150% of poverty line | 1.07 | 1.00 | 1.01 |
| Below 200% of poverty line | 1.02 | 1.00 | 1.00 |

Note: The poverty line refers to the standard measure reported by the US Census Bureau. Calculations based on money income of families and individuals before taxes (excluding capital gains).

Source: Figures are the author's calculations using data from the CPS Annual Social and Economic Supplement 2005. All numbers are weighted.

Interestingly, Food Stamps raises 19 percent of people and 27 percent of children past 50 percent of the poverty line, compared to 10 and 13 percent for the EITC. However, Food Stamps only raises 6 percent of all people and 7 percent of children above the poverty line.⁴ The minimum wage is a policy alternative to the EITC that has often been promoted as helping low wage workers. The minimum wage is much less well targeted than these transfer programs, with a large share going to children and secondary workers in well-off families (Burkhauser *et al* 1996; Neumark and Wascher 2001; Hoffman and Seidman 2003; MaCurdy and McIntyre 2004).

⁴ All of the reported effects of the EITC, TANF and Food Stamps probably understate their true effects given the pronounced under-reporting of all of these programs in the CPS (Meyer, Mok and Sullivan 2007).

4 The EITC and work

I summarize the effects of the EITC on work, with a particular emphasis on single mothers, given the focus of the paper.⁵ The EITC encourages work by making it more attractive to single parents. If a single parent is thinking about whether or not to participate in the labor market at all over a year, the EITC unequivocally makes work more attractive. Whatever hours level a person would choose if they worked, the gain at that hours level from working rather than not working has increased. Given that for many single mothers the net return to working is so low (weighing what is gained by work compared to what is lost in welfare and other benefits), a few thousand dollars can dramatically change the calculation in favor of working. Meyer and Rosenbaum (2000) calculated that the average net return to working, defined as after tax earnings plus the cash value of benefits received if a woman worked minus the cash value of benefits received if she did not work, was USD 7,270 in 1984. Tax changes, primarily the EITC, raised that net return to work by an average of USD 1,442 by 1996 (in 1996 dollars). The increase in incentives was especially high for the lowest-skilled single mothers, those likely to receive welfare benefits and who, if they work, are likely to be on the phase-in or plateau portions of the EITC schedule.

Meyer and Rosenbaum (2001) examine the effect of the EITC on the employment of single mothers using a very simple structural model. Much of the identification of labor supply effects in this study comes from the contrast between employment changes for single mothers and single women without children. For identification, the study also relies on differences across women by number of children, the state taxes they face, and the real value of the credit relative to state living costs. Other studies have found similar results, exploiting different sources of variation. For identification, Eissa and Liebman (1996) also rely on the single mother contrast with single childless women. Hotz, Mullin and Scholz (2005), and Grogger (2003) rely on relative changes over time in the EITC credit for those with two children relative to those with one. Dickert, Houser and Scholz (1995) and others have used estimates for a single mother population to simulate

⁵ Excellent summaries of the labor supply effects of the EITC can be found in Hotz and Scholz (2003) and Eissa and Hoynes (2006).

the effects of the EITC. Meyer and Rosenbaum (2001) find that the employment of single mothers in 1996 was 7 percentage points higher because of the EITC. The other papers mentioned have results that imply similar or larger estimates.

Table 6 reports employment rates of single mothers and single childless women with different levels of education between 1984 and 2005. We see the largest changes in employment for those without a high school degree. We report these numbers so that one can see the variation that is behind the estimates of employment effects described above, though the analyses previously cited are much more sophisticated than the simple comparisons presented here. The largest EITC expansions began in 1990 and would be expected to have completed their effects by 1997 (the last large expansion was in 1996, but a slightly lagged effect might be expected, see Eissa and Liebman 1996; Meyer and Rosenbaum 2001). There are large increases in employment over this period for single mothers relative to single women without children. The relative changes fall sharply as education rises. Welfare reform accelerated in the middle of the 1990s, so more sophisticated methods are needed to estimate credible effects in the later years.

Since identification in several of the papers relies on the contrast in EITC schedules by family size, I also report employment by number of children. The employment of those with two or more children changes little prior to 1994. Starting then, the employment of those with two or more children rises relative to those with one child. At this same time, the EITC schedule for those with two or more children was increased sharply relative to that for those with one child. Again, this pattern suggests EITC effects on employment.

These patterns in *Table 6* suggest that the comparison groups used in past studies may have been quite sensible ones. Since 1999, the employment of single mothers has declined. It is unclear what is behind this pattern. However, an encouraging feature of this pattern for past research is that the employment of those with and without children has moved in a parallel fashion. Similarly, the employment of single mothers with two or more children has fallen at about the same rate as single mothers of one child. These patterns support the idea that single childless women are a sensible comparison group for single mothers and that single mothers with different numbers of children are comparable.

Table 6 Employment rates of single mothers and single childless women, by education and family size, 1986-2006

| Year | Less than high school degree | | High school graduate | | More than high school | | One child | Two + children |
|------|------------------------------|-----------|----------------------|-----------|-----------------------|-----------|-----------|----------------|
| | Mothers | Childless | Mothers | Childless | Mothers | Childless | Mothers | Mothers |
| 1986 | 0.456 | 0.745 | 0.764 | 0.937 | 0.884 | 0.975 | 0.821 | 0.636 |
| 1987 | 0.442 | 0.743 | 0.783 | 0.935 | 0.892 | 0.981 | 0.812 | 0.660 |
| 1988 | 0.459 | 0.754 | 0.775 | 0.931 | 0.905 | 0.984 | 0.830 | 0.662 |
| 1989 | 0.479 | 0.719 | 0.788 | 0.924 | 0.896 | 0.980 | 0.839 | 0.670 |
| 1990 | 0.494 | 0.737 | 0.779 | 0.925 | 0.912 | 0.981 | 0.835 | 0.681 |
| 1991 | 0.464 | 0.720 | 0.752 | 0.920 | 0.907 | 0.980 | 0.817 | 0.668 |
| 1992 | 0.444 | 0.657 | 0.742 | 0.893 | 0.895 | 0.978 | 0.814 | 0.660 |
| 1993 | 0.472 | 0.709 | 0.755 | 0.907 | 0.883 | 0.973 | 0.853 | 0.649 |
| 1994 | 0.551 | 0.696 | 0.772 | 0.897 | 0.920 | 0.973 | 0.873 | 0.712 |
| 1995 | 0.558 | 0.718 | 0.799 | 0.895 | 0.924 | 0.977 | 0.870 | 0.744 |
| 1996 | 0.563 | 0.694 | 0.830 | 0.900 | 0.920 | 0.966 | 0.867 | 0.769 |
| 1997 | 0.605 | 0.691 | 0.840 | 0.914 | 0.936 | 0.971 | 0.873 | 0.807 |
| 1998 | 0.678 | 0.763 | 0.857 | 0.913 | 0.947 | 0.971 | 0.901 | 0.833 |
| 1999 | 0.741 | 0.739 | 0.899 | 0.924 | 0.949 | 0.977 | 0.924 | 0.867 |
| 2000 | 0.731 | 0.748 | 0.894 | 0.908 | 0.951 | 0.975 | 0.914 | 0.874 |
| 2001 | 0.723 | 0.712 | 0.868 | 0.884 | 0.951 | 0.967 | 0.906 | 0.856 |
| 2002 | 0.699 | 0.700 | 0.867 | 0.869 | 0.949 | 0.961 | 0.908 | 0.841 |
| 2003 | 0.677 | 0.677 | 0.853 | 0.886 | 0.921 | 0.960 | 0.880 | 0.833 |
| 2004 | 0.685 | 0.702 | 0.842 | 0.859 | 0.936 | 0.961 | 0.886 | 0.832 |
| 2005 | 0.667 | 0.672 | 0.832 | 0.866 | 0.925 | 0.957 | 0.882 | 0.822 |
| N | 14,391 | 10,194 | 29,284 | 30,780 | 30,940 | 76,736 | 36,701 | 37,914 |

Notes: From the 1989-2006 March Current Population Surveys. See Table 1 for additional notes.

The expected effects of the EITC on hours of work for single parents are complicated. Most recipients are on plateau or phase-out sections of the credit schedule reported in *Figure 1*.⁶ On the plateau section, there is a negative income effect and no substitution effect since marginal rates are unaffected. On the phase-out portion, income and substitution effects are both negative. Thus, most people should be encouraged to reduce their hours because of the EITC. However, this theoretical prediction has not been borne out in the data analyzed to date. This lack of an “hours effect” is one of the more puzzling, yet robust findings in the literature (Eissa and Liebman 1996; Meyer and Rosenbaum 1999; Meyer 2002; Eissa and Hoynes 2006).

⁶ 1994 IRS data indicate that 26.6 percent of recipients with children are on the phase-in portion of the schedule, 13.9 are on the plateau, while 59.5 are on the phase-out portion (US General Accounting Office 1996).

Various explanations have been offered for this surprising finding. The most common explanations are: 1) an inability of workers to freely vary their hours because of employer preferences for certain hours, 2) measurement error in hours, and 3) imperfect perception of marginal tax rates (Eissa and Hoynes 2006; Meyer 2002). I think the most plausible explanation is imperfect perception of marginal rates. It would not be surprising if recipients do not fully understand the tax schedule given the complexity of eligibility and the instructions.⁷ In recent years, the instructions for the EITC were a very dense 13 or 14 pages. The marginal rates are not reported on the tax forms anywhere. This situation is unlike the base income tax rates for which marginal rates are reported quite clearly on the tax rate schedules. Most recipients do not fill out the tax forms themselves⁸ and those who prepare tax returns for them do not routinely explain marginal rates to clients. Thus, a lack of a response to the incentive to reduce hours may not be too surprising.

The expected effects of the EITC on work and hours among couples are even more complicated. Since it is very likely at least one parent is working, the effects have some similarities to the hours effects for single current recipients. The income effect always discourages work, and it is likely recipients will be on the phase-out region where the substitution effect reinforces this tendency. With couples, overall hours can be reduced by one of the partners leaving the work force, as well as a reduction in hours by one or more workers. The main evidence on this occurrence comes from Eissa and Hoynes (2004) and Heim (2006). Both papers find a small reduction in overall hours. While Eissa and Hoynes find that most of the effect comes through a reduction in participation by wives, Heim finds that most of the effect is on the intensive (hours) margin.

5 The EITC and welfare caseloads

The EITC reduces welfare receipt by making work more attractive than welfare for a substantial fraction of single mothers. In response to the welfare reforms of the mid-

⁷ See Romich and Weisner (2000) for a discussion of worker perceptions of EITC provisions.

⁸ See US General Accounting Office (1996).

1990s and the EITC expansions, welfare caseloads fell from over 5 million families in 1994 to just over 2 million by 2001. Caseloads have been roughly steady since 2001.

Grogger (2003, 2004) identifies EITC effects in his regressions through differences in EITC maximum benefit amounts by the number of children. He concludes that the EITC was responsible for about 15 percent of the very large decline in welfare receipt in the 1990s. He argues that most of the reduction in welfare cases seems to be through a reduction in welfare entry.

6 Problems with the EITC: Hours, marriage, compliance

Three important problems with the EITC are its predicted negative effects on hours, its potential to discourage marriage among low income workers, and the potential for ineligibles to receive benefits. The first issue, hours of work, has already been discussed above. A concern is that even if we cannot see in the data a reduction in hours among single mother recipients, the theoretical prediction is sufficiently clear that we think it is likely to happen. If the reason that we currently do not see an hours response is that recipients do not currently understand the marginal incentives, then if the understanding of recipients improved, the situation might change and an hours reduction may emerge.

A second concern is marriage incentives. The EITC as currently designed has complicated incentives for marriage. The schedule is almost the same for singles and couples, with the maximum benefit available to someone who earns slightly more than full-time work at the minimum wage (see *Figure 1*). Because of this structure, the EITC encourages marriage for some: those who have children, but with little or no earnings. The EITC discourages marriage for others: those with children who are working full-time, but remain poor. On net, there are more couples and potential couples who increase their EITC payments by divorcing or staying unmarried than who would increase them by marrying or staying married. Thus, the EITC discourages marriage somewhat overall. Of the two most detailed studies that estimate the effects on marriage (Ellwood 2000; Eissa and Hoynes 2000), one finds no effect, the other little or no effect on marriage. Ellwood conducts two analyses: 1) he examines changes in marriage rates

of women at different wage quartiles, with the lowest quartile expected to be affected by the EITC and 2) he examines whether cohabitating couples marry, comparing those whose EITC amount would rise with marriage to those whose credit would fall with marriage. Eissa and Hoynes identify marriage effects by comparing marriage rates for a sample of couples that are either married or cohabitating but differ in how tax and welfare provisions affect their marriage incentives because their earnings differ (and provisions change over time).

The final major concern about the EITC, and the one that is most popular in the press, is the issue of noncompliance. Noncompliance means not paying the taxes that are due, either intentionally or unintentionally. The IRS estimates that in 1999, about 30 percent of credit dollars were claimed in error. The most common source of error is a claim where a child is not eligible, most often because the child does not reside with the claimant. While it is not clear that this noncompliance rate is higher than for other tax provisions, a disproportionate share of tax enforcement effort has been devoted to making sure those who receive the EITC were in fact eligible. EITC recipients have been subject to a very large share of audits relative to the potential lost revenue. In Fiscal Year 2004, the EITC accounted for 48 percent of individual income tax return audits, despite the EITC being only 3-4 percent of the tax gap (taxes due that were not collected). Even this share is probably overstated given the IRS methodology, because even if the filer in question is not eligible for the EITC, another person in the household or outside often is. In addition, a large share of cases where payments are denied are overturned when assistance is provided in understanding the required documentation. Much of noncompliance is probably driven by needless complexity – 14 pages of instructions in the overall tax guide, and 56 pages in the EITC instruction booklet.

7 Optimality

Standard models of optimal income taxation such as Mirrlees (1971) assume that people continuously vary their hours. In such models, tax rates are always positive so that an EITC would not be optimal. However, much of labor supply is the decision to work or not to work such as the participation of women, retirement decisions, and responses to

disability. Diamond (1980) shows that negative taxes may be optimal in a model where the only decision is to work or not to work. Saez (2002) considers a situation where individuals have both participation and hours responses. When people discontinuously vary their hours, i.e. the participation decision is important, then negative tax rates like those with an EITC may be optimal.

Liebman (2001) analyzes the incentive and income distribution effects of changing the many parameters of the EITC for single taxpayers. He finds that a schedule close to the current one is optimal for plausible relative weights put on efficiency and equity concerns. These analyses by Saez and Liebman suggest that there is a significant theoretical justification for a policy like the current US EITC. I should mention, though, that studies of alternative policies that assume that policy makers can collect information on hours (and wages) suggest that such policies are better targeted and have fewer distortions than an EITC (see MaCurdy and McIntyre 2004, for example).

8 EITC reform

Many types of reforms to the EITC have been proposed (see Hoffman and Seidman 2003). Common types of reforms include: 1) providing a more generous EITC for 3-child families; 2) modifications to the tax schedule to reduce marriage penalties; 3) simplifying eligibility criteria for the credit; and 4) providing a more generous credit for single childless individuals or non-custodial fathers. I consider these possibilities in turn.

The current federal EITC has a more generous schedule for families with at least two children than for families with one child. Cash welfare (TANF), food assistance (Food Stamps) and housing assistance all rise with family size beyond a second child.

Currently, the state of Wisconsin has a supplement to the federal EITC that increases with each child up to three. Several authors (including Hoffman and Seidman) have argued for a higher schedule for families with three or more children. Larger families need greater resources to have the same standard of living, yet larger families tend to have fewer resources. *Table 7* reports percentiles of the income distribution for single mother headed families with different numbers of children. At the 5th and 10th

percentiles, families with three or more children have similar income to families with one or two, while at all higher percentiles they have lower income. A more generous subsidy for these larger families can be achieved in at least two ways. One alternative would provide a higher subsidy rate than that for 2-child families. A second alternative would apply the same subsidy rate over a longer phase-in range for larger families. The first alternative would be more targeted at those with the lowest incomes, while the second would reach a larger number of families.

Table 7 Percentiles of single mothers' annual income, by number of children, 2001-2003, Consumer Expenditure Survey

| | Single mothers with one child | Single mothers with two children | Single mothers with three or more children |
|--------------------|----------------------------------|-------------------------------------|---|
| Income percentiles | (1) | (2) | (3) |
| 5th Percentile | 3,567 (380) | 3,558 (687) | 3,675 (676) |
| 10th Percentile | 5,593 (513) | 5,949 (512) | 6,186 (443) |
| 20th Percentile | 9,025 (515) | 9,874 (379) | 8,843 (368) |
| 30th percentile | 12,374 (599) | 12,207 (554) | 11,406 (515) |
| 40th percentile | 15,366 (569) | 15,151 (687) | 13,464 (738) |
| 50th percentile | 19,351 (897) | 19,353 (833) | 16,394 (754) |
| 60th percentile | 22,540 (1,080) | 22,710 (651) | 18,938 (617) |
| 70th percentile | 27,078 (937) | 27,213 (916) | 21,775 (936) |
| 80th percentile | 32,036 (1,259) | 32,302 (1,624) | 27,049 (1,410) |
| 90th percentile | 41,246 (1,813) | 47,637 (2,076) | 36,291 (2,403) |
| N | 1,547 | 1,536 | 982 |

Notes: Dollar figures are expressed in year 2000 dollars. The bootstrapped standard errors in parentheses are corrected for within family dependence.

A second area for reform that politicians and academics have discussed is the reduction of marriage penalties. Again, there are several ways one can reduce marriage penalties. One could change the married credit to be always twice the credit for single parents, but that would be very expensive. Other alternatives that balance increased costs and penalty reductions have been considered by Holtzblatt and Rebelein (2001). One can extend the plateau of the schedule or lower phase-out tax rates and thus extend the phase-out range for couples. Alternatively, one can add a second earner deduction, which would reduce the amount of income subject to income tax for families with two

earners in the phase-out range of the credit, thus flattening and extending the phase-out. This last option is inexpensive relative to the alternatives as nearly all of the lost revenue goes toward reducing marriage penalties, but it would require another worksheet to be added to the tax forms (Holtzblatt and Rebelein 2001).

There are many ways the EITC could be simplified. While also true of other income tax provisions besides the EITC, the rules and instructions are extraordinarily complicated. As already mentioned, the main instruction booklet includes 14 very dense pages on the EITC and the dedicated booklet on the EITC is 56 pages long. Much of the complication with the EITC is the determination of who is a child for EITC purposes. Current tax law has several definitions of a child that apply to different tax credits. A clear simplification proposed by the President's Advisory Panel on Federal Tax Reform (2005) would use the same definition of a child for the EITC, the Child Tax Credit, and the determination of dependents (per child deduction from income). One could also consider combining these three tax reductions for those with children. Such a proposal is a much greater change in the overall shape of the tax schedule and is a more expensive change but has been proposed by others (Ellwood and Liebman 2001).

Finally, recent proposals have circulated to provide an expanded EITC for the childless. Such an approach necessarily increases marriage penalties somewhat since it increases credits for the non-married. An interesting variant on this idea was recently implemented in New York State and now provides a state supplement to the federal EITC for non-custodial parents who are up to date in their child support obligations. Such changes are not likely to have as big an effect on labor supply per dollar transferred as the current single mother focused EITC, given that most men work and labor force participation rates of childless women are fairly high. An expanded EITC for the childless would, however, provide a way to transfer income to another segment of the poor without significantly discouraging work.

9 Conclusions

In summary, the evidence indicates that the income distribution features of the EITC are quite good. It targets resources at those below the poverty line, particularly families

with children. The empirical evidence on labor supply and marriage indicates that the incentives of the EITC are remarkably favorable given the resources transferred.

However, there are still substantial opportunities for reform along several dimensions.

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Comment by Ann-Sofie Kolm*

This paper discusses in a very balanced way the effects of the US Earned Income Tax Credit (EITC) on labor supply, poverty and income distribution. Considering the author's own very careful work on the effects of the EITC, it is difficult to find a person more suited for this task than Bruce Meyer. Thus, it has been a pure pleasure to read this paper.

The expansions of the EITC in the US have provided researchers with extensive opportunities to evaluate the effects of the program. Although different time periods have been studied and different empirical methods and identifying strategies have been used, the results are rather robust. The EITC seems to stimulate labor supply and reduce poverty. Moreover, the potentially negative effects from the EITC on, for example, work hours of those already working, and participation among the second income earners in the family, seem to be a non issue.

Considering the rather strong empirical support for the EITC, it comes as no surprise that this type of policy has become increasingly popular as a means to reduce poverty and improve work incentives across the western world. The UK followed the US more than 25 years ago and implemented a version of tax reliefs conditioned on work. Other countries that have recently followed the US and UK are Belgium, Canada, Denmark, Finland, France, Ireland, The Netherlands, New Zealand and, in fact, since a year ago, also Sweden.

Taking a Swedish perspective, I guess it would be fair to say that Sweden both has a different aim with such a reform and different preconditions for how well such a reform would function in comparison to the US. The aim of reducing poverty is less of an issue in Sweden, although decision makers certainly care about the income distribution. Affecting work incentives is more of an argument in favor of an EITC-type of policy in Sweden.

This view is also supported by a study by Boone and Bovenberg (2006) which shows that the relationship between in-work benefits and welfare payment is *U-shaped*. Generous in-work benefits are called for both in countries with low welfare benefits and

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in countries with high welfare benefits, although for different reasons. In countries such as the US, where the social benefits are low and the incentives to work are fairly good, the EITC aims at alleviating poverty. Many countries in Europe, on the other hand, deal with poverty through generous social benefits. Generous social benefits, however, create disincentives to work which induces a demand for implementing an EITC-type of policy in order to maintain work incentives.

I mainly want to stress three things in this comment on the US. Earned Income Tax Credit. First, the expansion of the EITC in the US makes it increasingly important to account for the general equilibrium effects in order to trace out the employment effect of the program. Thus, a better understanding of the wage adjustments is needed in order to evaluate the full effects of the EITC in comparison to that of alternative policies. Second, in order to analyze the likely effect on an EITC-type of policy in a less market oriented country such as Sweden, it is important to account for the country's particular institutional settings. A valid question to ask is if we can expect such a reform to be equally successful when implemented in Sweden and other less market oriented economies as it has been in the US. After all, the institutional framework is far from the same in Sweden and the US. Finally, I would like to draw a parallel to a different type of policy which has a long history in Sweden, namely subsidized day care.

Institutional differences

Two potentially important aspects of the Swedish institutional framework when considering the effects of an EITC-type of policy are the *compressed wage distribution* and the *imperfectly competitive labor market*.

The fact that Sweden has a compressed wage distribution is often viewed as problematic for any design of an EITC-type of policy that involves a phase-out region. With a compressed wage distribution, many people will be located in the phase-out region of the credit schedule. This is a concern as the phase-out of the tax credit is associated with negative incentive effects on work hours.¹

¹ Here, one can note that the recently implemented tax credit in Sweden is not being phased out. Negative incentive effects due to the substitution effect in the phase-out region are thus not a problem. However, the negative incentive effects due to the income effect remain.

In addition, a recent study by Immervol *et al* (2007) that looks at the design of optimal in-work benefits suggests that countries with a wider income distribution have more to gain from in-work benefits. The reason is that the efficiency loss for a given improvement in the redistribution is higher when wages are compressed.

Considering the particular Swedish institutional framework, it might be even more important that the Swedish labor market can be viewed as less market oriented than the US labor market. Wages are set in bargains where workers or worker representatives have the power to push for high wages. This makes involuntary unemployment a concern in Sweden. Considering that the impact of an EITC-type of policy will be likely to have different effects on employment in countries like Sweden and the US due to institutional differences, accounting for those differences in an analysis seems important.

Expected effects of an EITC-type of policy in Sweden

Since no EITC-type of policy in a less market oriented setting such as Sweden has been in place long enough to make empirical evaluations possible, one must rely on theoretical models and simulations to trace out the likely effects. Let us take a very simple model featuring involuntary unemployment as an outcome variable such as the standard search and matching model of Pissarides (see Pissarides 2000). Then, account both for an endogenous choice of labor force participation (as that has turned out to be a very important margin) and an endogenous search effort among the unemployed. Moreover, assume that wages are set in wage bargains, and that firms will open vacancies as long as it is profitable to do so.

It is then straightforward to trace out the general equilibrium effects of a tax credit on wages, unemployment, search effort, labor force participation, and employment. In such a simple framework, it can be shown that the effect of a tax credit conditioned on work is likely to increase search effort, labor force participation and employment, while reducing wages and the unemployment rate. The effects, however, do not mainly work through increased incentives to work because the take home pay increases. Rather, the effect works through job creation. In fact, this simple framework can easily be used to show that the take home pay may actually fall with the reform due to rather strong wage moderation. However, the shorter expected unemployment spells due to more vacancies

being posted when gross wages are lower increase labor force participation and search effort. Thus, employment increases both because labor force participation increases and because the equilibrium unemployment rate falls. See Kolm and Tonin (2006) for details.

A tax credit conditioned on work is thus likely to be good for employment also in an imperfectly competitive labor market setting where wages are allowed to respond to policy changes, although for different reasons than what is usually stressed in the literature. The traditional story is that employment increases as labor supply increases with a higher take-home pay. One could potentially argue that the labor supply story may be more accurate in the US economy where the EITC is targeted to low income earners where the minimum wage operates. This may stop the gross wage from falling, thus inducing the take home pay to increase and consequently reward work in terms of a higher consumer wage.

Child care subsidy as in-work benefit?

I finally want to end this comment with a parallel to a different type of policy which has had a long history in Sweden. It is true that Sweden only recently implemented a tax credit conditioned on work. However, what about viewing the Swedish child care subsidy as an in-work benefit? The child care subsidy in Sweden resembles the US system of EITC in a number of ways. First, it is an in-work benefit as it is conditioned on work (recently, in 2002, unemployed got limited access to subsidized child care). Second, it is directed towards families with children (although in the Swedish case, small children). Third, it is more generous to families with more children. Fourth, it is based on family income rather than individual income (which is unusual for the Swedish tax and transfer systems). It is also more generous towards single mothers (however, this is only symbolic as the differences are very small). There are clearly also differences between the Swedish child care subsidy scheme and the US EITC system. Most importantly, the Swedish childcare subsidy is in kind as it can only be used for child-care service consumption. However, it is very generous. The subsidy is about SEK 90,000 (USD 12,800) a year/child. This adds up to total payments of SEK 34 billion (USD 4.8 billion), which constitutes about 1.3 percent of GDP in Sweden. To get a

perspective of the size of this program, the EITC constitutes about 0.3 percent of GDP in the US.

It is difficult to empirically evaluate the impact of subsidized child care on, in particular, female employment. Many things happened at the same time as the child care subsidy was introduced. But in my view, child care subsidies have most likely had a large impact on female labor supply.

Conclusions

Considering some of the particular Swedish institutional settings and earlier programs of similar type, there are thus reasons to believe that an EITC-type of policy will be good for employment also in a country like Sweden. However, it may be difficult to empirically evaluate the effects of the reform in the future since no consideration of how to evaluate the reform was taken at the time of implementation.

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