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Earned Income Tax Credit Recipients: Income, Marginal Tax Rates, Wealth, and Credit Constraints

Kartik B. Athreya, Devin Reilly, and Nicole B. Simpson

The Earned Income Tax Credit (EITC) has become the federal government's largest cash-assistance program for low-income families, making it the centerpiece of anti-poverty programs in the United States. Approximately 15 percent of households nationwide now qualify for the EITC (Hoffman and Seidman 2002). Moreover, unlike other government programs, the EITC is administered through the income tax filing process, which re-

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1975	Introduced temporary “work bonus” called the EITC
1978	Made EITC permanent
1986	General expansion (largest increase since its inception) and indexed for inflation; part of the Tax Reform Act
1990	General expansion by doubling the maximum credit and increased eligibility; added separate schedule for families with two or more children; part of OBRA
1993	General expansion (larger expansion for families with two or more children); added EITC for childless filers; part of OBRA
1997	Provisions made to improve compliance; part of Taxpayer Relief Act
2001	Changes to provide marriage penalty relief and promoted simplification; part of EGTRRA
2009	Expansion for families with three or more children and expanded eligibility for married couples; part of the American Recovery and Reinvestment Act

Sources: Hotz and Scholz (2003); Holt (2006); Tax Policy Center (2009).

parents as well as married couples were eligible for the program. The EITC went through minor changes in subsequent years, the most important being when it became a permanent provision of the Internal Revenue Code in 1978.

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Phase-In	= Phase-In Rate * Income
Plateau	= Maximum Credit
Phase-Out	= Maximum Credit − Phase-Out Rate * (Income − Income Where Phase-Out Begins)

Finally, the American Recovery and Reinvestment Act of 2009 increased the credit for families with three or more children and expanded eligibility for married couples. Families making up to $48,250 in annual earnings can now qualify for the tax credit, with the maximum credit as high as $5,657 for a family with three or more children. This EITC expansion is expected to help an additional 650,000 households and 1.4 million children.[3]

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The EITC acts as an after-tax wage subsidy for low-income workers and depends on earned income, number of children, and marital status.[4] Earned in-

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Much of the variation in the EITC across household types is because of differences in annual income. Not surprisingly, married households earn more than single households since there is the potential for two earners. It is interesting to note, however, that the share of married households that have two earners is quite low for EITC recipients, compared to non-recipients. For example, approximately 30 percent of married households with two children who receive the EITC have two earners, while 71 percent of non-recipients have two earners. This could be due to the fact that the majority of two-earner households surpass the income qualifications of the EITC. Or, it could be that EITC-recipient households choose not to have a second income since they receive the EITC.

Another interesting feature is that household earnings for EITC recipients increase with the number of children, and this occurs for both married couple households and single parent households. The difference in annual income between childless households and households with children is much larger for EITC-recipient households than for non-recipient households.

Even though single households that receive the EITC earn less than married households, they tend to be more educated (for married households, we use the education level of the household head). Approximately 10 percent fewer single households have a high school degree or less compared to married households and this is independent of the number of children. This is not the case for non-recipient households: Single households that do not receive the EITC are more likely to only have a high school education than married households.

Thus, the EITC likely has the largest impact on households with children since the EITC is much larger for these households as a share of their annual income and more than 75 percent of EITC recipient households have children. Single households represent the majority (60 percent) of EITC recipient households, and tend to be more educated than married EITC households, which contrasts with the general population. EITC recipient households are much less likely to have two earners than non-recipient households.

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We now analyze how the EITC changes across recipients of different ages. Since the EITC targets low-income families, it will disproportionately affect younger households of child-rearing age. However, households may qualify for the EITC at any stage of their life, as long as they have earned income that is below the income limit. Importantly, there is no limit to the amount of benefits received over a lifetime nor is there a time limit.

We analyze the pool of EITC recipients between 1992–2008 and catalog how the EITC varies across households of different ages in a shortened panel. Specifically, we estimate the average income/EITC (in 2008 dollars) for each

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The EITC represents a negative income tax for households that qualify for it. Thus, for low income levels, marginal income tax rates are negative. Using data from TAXSIM version 9.0 from the National Bureau of Economic

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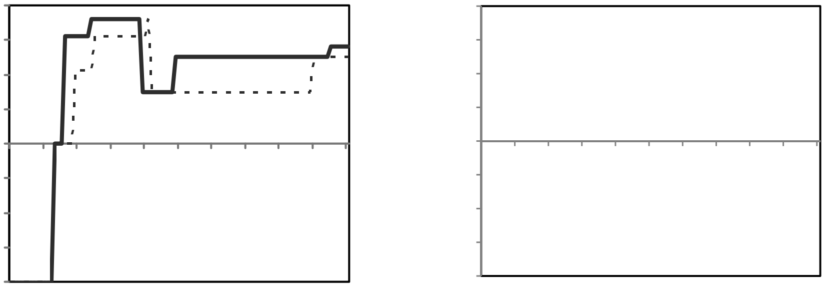

households experience significant reductions in their marginal tax rates as soon as they are ineligible for the EITC.

In the last panel of Figure 3, the income tax schedule is quite different for those with no children compared to those with children. Recall that the EITC is much less generous for childless households. Thus, the negative marginal rates are quite low (in absolute .l25(w)-244.3((in)-244ah4.8(the)-221(in277((in)8(mar) hence the cost of pursuing an additional unit of leisure, is w units of consumption. In Figure 4a, we plot the budget constraint with leisure on the x-axis and consumption on the y-axis (BL_A). Plotting an indifference curve on this graph (with all of the standard assumptions for utility) provides the equilibrium quantity of leisure (l_A) and consumption (c_A), at point A. If after-tax wages rise because of a reduction in the marginal income tax rate, the budget

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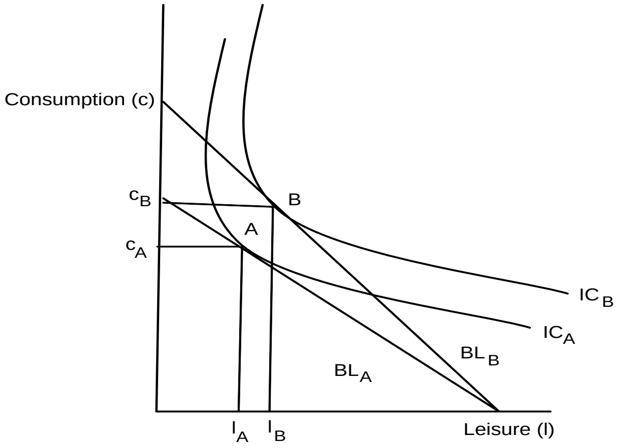
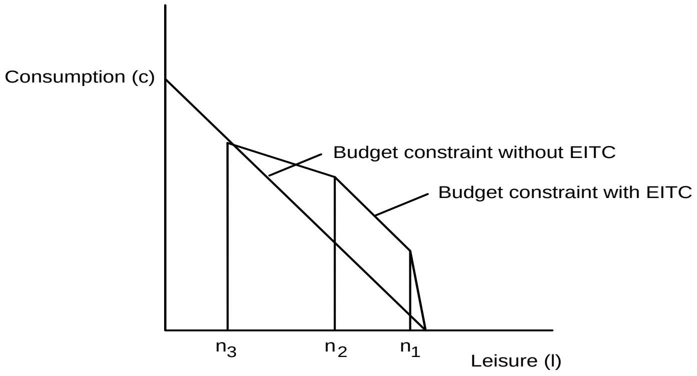
Panel A: Labor-Leisure Model without the EITC


Consumption (c)
c_B
c_A
B
A
IC_B
IC_A
BL_B
BL_A
l_A
l_B
Leisure (l)

Panel B: Budget Constraints with and without the EITC


Consumption (c)
Budget constraint without EITC
Budget constraint with EITC
n_3
n_2
n_1
Leisure (l)

Here, a negative substitution effect influences households to substitute leisure for hours worked. In addition, a negative income effect may reduce hours worked even more. Thus, households in the phase-out region unambiguously reduce hours worked. Since a majority of EITC recipient households fall in the flat or phase-out region, it is likely that the overall effects of the EITC on hours worked are negative (Hotz and Scholz 2003). For those with income beyond the phase-out region ($n \in [n_3, T)$), their return to an additional hour of work is w, so that some of them may choose to restrict labor hours to be eligible for the EITC, once again leading to a negative extensive margin effect.

Of course, the magnitude of these responses depends on the elasticities of labor supply. High elasticities lead to larger labor supply responses, and labor supply elasticities vary across different types of people. For example, the uncompensated elasticity of labor supply is higher for women than for men and the elasticity on labor force participation is larger than the elasticity of hours (Evers, Mooij, and Van Vuuren 2008). Thus, the quantitative effects of the EITC on both the extensive and intensive margins of labor supply decisions depend critically on the presumed elasticities of labor supply.

There is a large empirical literature that examines the effects of the EITC on labor supply, with most of the work focusing on single mothers. For a more detailed summary of this literature, refer to Holt (2006) and Hotz and Scholz (2003). The evidence indicates that the EITC does in fact increase labor force participation, especially for single mothers (Meyer 2001), leading to positive effects on the extensive margin. In fact, the EITC has led to a dramatic increase in employment rates for single mothers during the 1980s and 1990s (Eissa and Leibman 1996; Meyer 2001; Grogger 2004). However, the effects of the EITC on the intensive margin are less clear in the data, with most studies not finding a significant change in hours worked because of the EITC. The most relevant work here is that of Cancian and Levinson (2005), who study a natural experiment arising from the fact that one U.S. state (Wisconsin) altered the generosity of its matching of the federal EITC. They argue that there is essentially zero effect on hours. There is some evidence, however, suggesting that single mothers may work more in response to the EITC since they are likely to be in the phase-in region where marginal income tax rates are negative (Eissa and Liebman 1996). Married women, however, who typically fall in the phase-out range, may work fewer hours as a result of the EITC rates (Ellwood 2000; Eissa and Hoynes 2004).

Very few studies analyze the labor market effects of the EITC on married8o-eacq3a

T38eds8edT38eds8ed empirs8ed litera88edthedEITC because of the complexity of the income tax and benefits structure in the United States. Recent theoretical work in a separate but related context suggests that a central force may be that low-income households are typically low-wealth households. As a result, these households will often be close to a borrowing constraint. Consumption theory predicts that such households will work in a manner insensitive to current wages, as the value of lowering the likelihood of a binding borrowing limit (by working and reducing consumption) will be high. The work of Pijoan-Mas (2006) suggests that this may be exactly the case, as he is able to rationalize a relatively high willingness of households to substitute labor intertemporally, with a low aggregate correlation between wages and hours. In ongoing work, Athreya, Reilly, and Simpson (2010) utilize this insight and embed households into a setting in which they face uninsurable risks and liquidity constraints, and find that, indeed, the disincentives to labor supply arising from the EITC are not strong.

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As documented above, EITC recipients earn much less over their lifetimes than the general population. This will have important effects on their wealth holdings. In addition, their wealth level may affect their labor supply decision, as discussed above. In this section, we use the 2007 SCF to compare the distribution of wealth for EITC recipients and non-recipients, and then analyze differences across the six different types of households. Wealth is defined as household net worth, which is the difference between total assets and total debt.[9] The SCF does not report anything related to the EITC. However, we calculate the imputed EITC level that households would have received in tax year 2006 using the household structure and wage/salary income reported by the SCF. That is, we feed the parameters of the federal EITC program into the SCF to generate a proxy for the amount of EITC each household is eligible to receive. However, it should be made clear that we cannot observe directly if each household received the EITC—we know only whether or not they distribution of household types between the CPS (reported in Table 4b) and the SCF (in Table 5b), it is evident that married households are oversampled in the SCF compared to the CPS and that single households are undersampled (and especially childless singles and single parents with one child). Surprisingly, the SCF just slightly oversamples households that are eligible for the EITC; they represent 12.8 percent of the CPS sample and 16.4 percent of the SCF sample. Also, the SCF does surprising well in capturing an accurate distribution of EITC recipients across household types and their mean income and EITC levels, compared to the CPS. This provides support to our use of the SCF to analyze EITC recipients. All of the reported means are reported in 2007 dollars and are weighted using the replicate weights produced by the SCF.[10]

In Table 5a, we report mean net worth (i.e., wealth), assets, debt, and income across household types. wsincomed9holsincomed9holsinccome

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EITC Recipients:							
Mean Net Worth	$103,753	$284,403	$204,918	$118,468	$67,574	$56,102	$49,837
Mean Assets	$149,507	$359,963	$255,239	$179,050	$86,545	$89,365	$96,465
Mean Debt	$45,755	$75,560	$50,321	$60,582	$18,971	$33,263	$46,628
Mean Household Income	$17,593	$6,199	$21,818	$22,502	$6,990	$18,903	$19,070
Mean (Imputed) EITC	$1,778	$231	$1,440	$2,409	$277	$1,720	$2,726
Mean Age	38.5	46.6	37.2	37.5	37.1	40.4	38.1
Non-EITC Recipients:							
Mean Net Worth	$580,245	$803,447	$621,345	$737,654	$275,437	$351,416	$223,309
Mean Assets	$708,564	$929,270	$790,176	$933,762	$334,930	$448,206	$296,280
Mean Debt	$128,319	$125,823	$168,830	$196,108	$59,493	$96,790	$72,971
Mean Household Income	$76,686	$87,916	$95,962	$105,640	$38,071	$50,373	$35,849
Mean Age	44.3	46.9	43.6	41.3	44.8	47.2	41.5

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EITC Recipients:							
Percent of All Households	0.97%	2.20%	4.88%	2.53%	2.46%	3.38%	16.42%
Percent of EITC Recipients	5.9%	13.4%	29.7%	15.4%	15.0%	20.6%	100.00%
Non-EITC Recipients							
Percent of All Households	25.47%	12.66%	22.68%	17.42%	2.83%	2.52%	83.58%
Percent of Non-EITC Recipients	30.47%	15.15%	27.13%	20.84%	3.39%	3.02%	100.00%

Source: AuthorsÕ calculations using the 2007 SCF. Means are weighted, in 2007 $.

hold more than the average wealth level for EITC recipients ($103,753). This compares to non-recipients, where 41 percent hold more than the average wealth level of $580,245 and 69 percent have more wealth than the average EITC recipient.

There is significant variation in wealth across household types, as illustrated in Table 5a. Married households have three times as much wealth as single households, with the largest difference for households with no children. It is likely that most of the wealth held by married households with no children is comprised of housing wealth since this group is relatively old. In addition, mean household wealth is smaller for households with more children despite higher earnings, and this effect is particularly large for married households. Thus, mean wealth levels for single households are quite low but are not that different for those with and without children. For married households, households with children have higher earnings but significantly less wealth compared to those without children. This is partially explained by age differences across married households—those without children are approximately nine years older than those with children. In addition, single households without children earn the least income of any group, but are not the poorest type of household in terms of net worth. Single households with two or more children have the lowest net worth in both the EITC and non-recipient samples.

Our analysis documents several interesting findings about the wealth holdings of EITC recipients. Not surprisingly, we find that EITC recipients hold very little wealth: EITC recipients, on average, hold only one-fifth of the wealth of non-EITC recipients. In fact, the bottom quartile of EITC recipients hold negative wealth on average, while the bottom quartile of non-recipient households have small, positive wealth holdings. However, debt-to-income ratios of EITC households are significantly higher than those of non-recipients (2.6 compared to 1.7 on average). We find that married households that are eligible for the EITC hold more wealth than single households, and wealth holdings decrease with the number of children in the household.

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Based on the data presented in Figure 2b, the EITC increases earnings for recipients during every year of their working life and more so in early life. In a typical lifecycle model of savings and consumption, a household would save in periods when income is high, and borrow when income is low. As a result, the EITC allows low-income families to smooth consumption over their lifetimes. At higher frequencies, such as within a given year, the EITC can help, even though most families receive the EITC in lump sum when they

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EITC Recipients:						
Bottom Quartile	−$16,617	$1,860	−$473,700	$170	$14,938	34.0
Lower Middle Quartile	$3,489	$85	$190	$7,560	$15,919	33.7
Upper Middle Quartile	$24,038	$531	$7,630	$51,400	$20,507	38.6
Upper Quartile	$404,272	$24,215	$52,120	$615,000,000	$19,014	47.7
Non-EITC Recipients:						
Bottom Quartile	$1,899	$324	−$118,999	$24,120	$34,055	37.9
Lower Middle Quartile	$75,329	$697	$24,130	$141,500	$51,829	42.6
Upper Middle Quartile	$253,637	$1,467	$141,520	$396,210	$76,599	46.5
Upper Quartile	$1,991,197	$33,646	$396,300	$806,000,000	$144,308	50.4

Source: AuthorsÕ calculations using the 2007 SCF. Means are weighted, in 2007 dollars.

file their tax returns.[11] In addition, households may borrow against their EITC, knowing that they will be receiving it later. Alternatively, households may save their EITC for future consumption.

The ability of households to smooth (bring forward) an expected EITC lump-sum payment that is made at the time of one’s annual income tax payment depends on the household’s ability to borrow. For those who can borrow, the EITC may act as insurance against income, employment, or health shocks, for example. If, on the other hand, households face significant borrowing constraints, they may not be able to borrow against their EITC, and so, while the EITC still provides low frequency smoothing, it may not assist consumption smoothing efforts within5(fortu.h)t373* 0 Tc aTods, for example one calendar year.

Direct evidence on the extent to which EITC recipients are credit constrained is not possible, given current data limitations. Moreover, credit constraints are generally very difficult to identify. Typically, the measurement of

in Section 1, EITC-recipient households are younger, less educated, and have more children than non-recipient households; as a result, they are poorer. Obviously, having fewer current and, especially, future resources to borrow against will make it more difficult for EITC-recipient households to borrow. Nonetheless, it is useful to know the extent to which any household is likely to be constrained as suggested by the criteria above. We therefore do not condition on all possible household characteristics since they would likely explain away any differences between EITC recipients and non-recipients. Instead, we attempt to document the extent to which households that fit the EITC profile face borrowing constraints.

In Table 7, we report the means and standard deviations of these four measures for EITC recipients, non-recipients, and across household types. (Recall that EITC recipients in this context are defined as those who qualify for the EITC.) EITC recipient households report being denied a checking account because of bad credit more frequently than non-recipients (2.3 percent versus 0.5 percent for non-recipients). They also have lower credit card balances ($2,131 compared to $4,174); this could indicate that these households have lower credit limits, or are less willing to use acquire debt, or are less willing to use credit cards. EITC households are twice as likely to have late debt payments as non-recipients (11.2 percent compared to 5.4 percent), which would lead to having less access to credit. In addition, EITC households are three times more likely to not have a checking account (28 percent versus 7 percent).

When looking across households types, we can see that several interesting facts emerge. First, single households have lower credit card balances; they are generally more likely to have late payments; and they are less likely to have a checking account than married households (holding constant the number of children). However, the differences between single and married households are larger for non-recipients than for EITC recipients. For example, married households have much larger credit card balances than single households in the non-EITC sample, but the difference is smaller for married and single EITC recipients.

Second, married households with children that qualify for the EITC report very high late payment frequencies compared to their non-recipient counterparts. Approximately 13 percent of married households with one child have a late repayment, compared to just 5 percent of non-recipients. We do not obser(non-rec F)15(6.6(immpared)-2ts.)-296.4ling

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EITC Recipients:		
Bad Credit	2.3%	0.3%
Credit Card Balance (2007$)	$2,131	$140
Late Payment for 60+ Days	11.2%	0.6%
Has No Checking Account	27.9%	0.9%
Non-EITC Recipients:		
Bad Credit	0.5%	0.1%
Credit Card Balance (2007$)	$4,174	$91
Late Payment for 60+ Days	5.4%	0.2%
Has No Checking Account	7.0%	0.3%

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EITC Recipients:						
Bad Credit	0.0%	0.0%	2.2%	3.0%	3.3%	3.1%
Credit Card Balance (2007$)	$2,541	$2,966	$2,092	$2,419	$1,456	$1,933
Late Payment for 60+ Days	1.9%	13.6%	13.1%	7.0%	10.8%	13.5%
Has No Checking Account	28.7%	25.6%	25.7%	31.6%	27.3%	29.3%
Non-EITC Recipients:						
Bad Credit	0.2%	0.3%	0.0%	1.3%	0.0%	1.3%
Credit Card Balance (2007$)	$4,497	$4,946	$5,502	$2,693	$3,509	$1,401
Late Payment for 60+ Days	3.7%	3.9%	5.3%	6.5%	11.7%	8.5%
Has No Checking Account	5.0%	4.1%	2.1%	11.7%	13.2%	25.7%

Source: AuthorsÕ calculations using the 2007 SCF. Means are weighted.

Lastly, using data from the Survey of Consumer Finances, we estimate the wealth distribution of EITC households and measure the extent to which EITC households are credit constrained. Not surprisingly, we find that EITC-recipient households are very poor in terms of net worth: The average household has less than 20 percent of the average wealth of the average non-recipient household. In addition, EITC recipients are more likely to have bad credit and are more likely to have late debt payments than the average U.S. household, suggesting that they are more credit constrained.

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