

## **Tax-Transfer Policy and Labor Market Outcomes**

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## **Tax-Transfer Policy and Labor Market Outcomes**

by Nada Eissa and Austin Nichols\*

Public policy towards low -income families with children in the United States has changed dramatically in the last two decades. The Aid to Families with Dependent Children (AFDC) program, in existence since 1935, was replaced with Temporary Assistance to Needy Families (TANF) as part of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). PRWORA eliminated the entitlement feature of cash assistance to poor families. Alongside this dismantling of the traditional welfare system has been the increasing reliance on the tax system as a means of providing cash support for needy families. A series of tax acts starting with the 1986 Tax Reform Act have increased assistance to the *working* poor through expansions of the Earned Income Tax Credit (EITC). In 2003, more than 21 million families are estimated to have benefited from the tax credit, at a total cost to the federal government of more than 37 billion dollars (U.S. Treasury 2004).<sup>1</sup>

It is widely accepted that the Earned Income Tax Credit (EITC) raised the employment of eligible women with children. Empirical evidence consistent with economic theory suggests that the EITC has been especially successful at promoting employment among eligible unmarried women with children (Eissa and Liebman 1996, Meyer and Rosenbaum 2000). In fact, the labor force participation rate of single mothers increased by an astounding 14 percentage points between 1989 and 2002, a period of substantial expansions in the size of the EITC. It is also generally accepted that the credit has been successful in reducing poverty (see Hotz and Scholz 2003). Census data indicate that the EITC removed almost five million people (over half of whom were children) from poverty in 2002, more than any other government program (Llobrera and Zahradnik 2004). These estimates reflect the intent of the 1994 EITC expansion to lift full-time workers earning the minimum wage out of poverty.

This paper reviews the effects of expansions in the EITC on labor market outcomes across demographic groups, and argues that the employment effects raise the question of the incidence of the EITC on wages.

## **I. Tax-Based Transfers in the United States**

The Earned Income Tax Credit began in 1975 as a modest program aimed at offsetting the social security payroll tax for low-income families with children. The program grew slowly from its introduction in 1975 until 1986, and in fact shrank in real terms due to inflation. In a series of expansions starting with the Tax Reform Act of 1986, however, the EITC became the largest cash transfer program for low-income families (see Hotz and Scholz 2003 for details about changes to the credit). By 1988, taxpayers with incomes up to \$18,576 were eligible for the credit and by 2004 some taxpayers with incomes near \$34,500 were eligible.

An eligible taxpayer's credit depends on her earned income, adjusted gross income, and the number of children in the household. There are three regions in the credit schedule. The initial phase-in region transfers an amount equal to the subsidy rate times earnings. In tax year 2004, the subsidy rate was 34% for taxpayers with one child and 40% for taxpayers with two or more children. In the flat region, the taxpayer receives the maximum credit (\$2,604 and \$4,300 respectively). The credit is then phased out at rates of 16 and 21% in the phaseout region.

A large body of work has examined both the distributional impact of, and the behavioral responses to, the EITC. Research using both quasi-experimental methods (Eissa and Liebman 1996, Eissa and Hoynes 2004, Hotz, Mullin and Scholz 2002) and more structural methods (Dickert, Houser and Scholz 1995 and Meyer and Rosenbaum 2001) has reached similar conclusions: The EITC encourages work among single mothers, producing increased labor force participation. However, there is little evidence that eligible working women adjust their hours of work in response to the EITC. We add to this work by

characterizing more broadly the impact of EITC expansions from 1983 to 2002 on the labor market for different demographic groups.

## **II. The Earned Income Tax Credit and Labor Market Outcomes**

To characterize the impact of EITC expansions, we use data from the Current Population Survey (CPS). We use the 1984 to 2003 March CPS data from IPUMS (Ruggles *et al.* 2004), which harmonizes CPS data over time. Our sample is single female-household heads aged 20 to 54.<sup>2</sup> For each female in the sample, we simulate EITC credit amounts and tax rates using reported income and the National Bureau of Economic Research's TAXSIM program (Feenberg and Coutts 1993).

Figures I and II characterize the impact of the federal EITC (and other federal tax changes) on incentives faced by single mothers, separately by race and family size. The data show large increases in tax-based cash transfers for single mothers with at most high school education, by similar amounts for black and white mothers (Figure I). Women with more than one child were, however, receiving more than 1.5 times the credit received by women with one child by the end of the period. Corresponding to the credit increase has been a marked decline in marginal tax rates faced by eligible single mothers (Figure II). On average, black single mothers face lower federal marginal-tax rates than do their white counterparts, and experience the largest decline in their marginal rate over the period. This occurs because lower earnings by black single mothers place a larger share in the phase-in region of the credit.

The mean marginal- tax rate, however, masks a lot of heterogeneity in how the credit affects eligible taxpayers. This occurs not only because of the shape of the credit schedule but also because of differences in earnings by race and family size. The data show that by the end of the period, more than 40% of eligible working single mothers have incomes in the phase-out region of the credit, where they take home less than 60% of every marginal dollar earned (including payroll and federal taxes).

We should note also that these trends reflect not only changes in policy but also the changing demographic composition of single mothers in the United States between 1982 and 2002. By the end of the period, the typical single mother is older (less likely to be less than 30 years old) and more educated (less likely to have only a high school education) than at the beginning of the period. In addition, she is more likely nonwhite, although the change is less noticeable in the labor market than in the population more generally.

Consistent with prior empirical evidence on labor supply, our data show a sharp increase in the proportion of single mothers with two or more children reporting positive earnings starting in 1993 (Figure III). In fact, by the end of the period, less-educated women with children are as likely to report positive earnings as are their childless counterparts. This increase in participation occurs at the same time as the major expansion in the EITC, among precisely the group that saw the largest expansion in the credit.

Simple labor market models would predict that such increases in employment likely impact equilibrium wages. We turn to the issue of hourly wages in the next section.

### **III. What Do We Know About the Impact on Wages?**

To consider the potential impact on wages, it is instructive to start with a simple partial-equilibrium incidence model. Suppose that workers earn a wage  $w$  and face a tax/transfer schedule that implies a tax  $t$  (which may be negative in the case of a subsidy). Consider a labor market characterized by labor demand  $L^d$  and labor supply  $L^s(w)$ . With a labor tax paid by workers, the equilibrium condition would be  $L^d(W) = L^s(w)$ , where  $w = (1-t)W$ . Labor demand at gross (employer-paid)  $W$  equals labor supply at net-wage  $w$ . A tax therefore leads to lower net-wages but higher gross wages. A subsidy on the other hand raises the net-wage but lowers the gross wage.

The economic incidence of a tax or subsidy will be distributed between workers and employers, depending on the elasticities of labor supply and demand. A necessary condition for any incidence effects of the EITC is that the supply elasticity is non-zero; i.e. that labor supply is responsive to the take-home wage.

In fact, one can classify two distinct effects of the EITC on wages. First, the entry of new workers will put downward pressure on pretax wages. The second effect depends on the distribution of workers along the EITC schedule and on how sensitive their hours of work per year are to after-tax wages. If women in the subsidy region work additional hours, we expect lower pre-tax wages for other workers whose skills make them substitutes in production. Similarly, if women in the phase-out work fewer hours, we should expect higher pre-tax wages. The second predicted effect of the EITC on wages is therefore a widening of the wage distribution. The degree to which the shape of the pretax wage distribution changes with the EITC will depend on the location of workers along the credit schedule and on the relative elasticities of participation and hours worked with respect to the wage. If labor force participation responses are substantially larger than hours-of-work responses, the dominant effect should be an overall decline in the wages of less-skilled workers.

Predictions regarding the economic incidence of the EITC depend critically on the assumption that wages are flexible. In the presence of a binding minimum wage, the subsidy accrues to workers. More generally, the minimum wage limits the adjustment of labor supply and wages and therefore the extent to which the EITC benefits employers.

Recent work by Leigh (2004) and Rothstein (2004) directly examines the effect of the EITC on pretax wages and comes to opposite conclusions. Leigh uses variation across states in the presence and generosity of state EITC add-ons to generate cross-sectional variation in the average tax rate faced by women with children. He finds a very strong negative effect of the credit on wages, implying very little

benefit of the credit for its nominal recipients. Rothstein instead uses variation in the implications of the 1993 federal credit expansion on the wage distribution to identify the EITC's effects on the distribution of female workers' wages. He finds that low-skill women's wages actually increased slightly following the 1993 expansion of the EITC, even as their labor force participation increased. These point estimates imply an upward-sloping demand curve, though they are by no means sufficiently precise to reject a small downward slope. One possible explanation for the conflicting findings is the different sources of identification. Leigh uses variation in state EITC provisions (typically 4 to 30 percent of the federal credit, and not always refundable), while Rothstein relies on a large federal expansion. Federal and state-level sources of identifying variation are clearly not mutually exclusive, and together form a potentially useful approach to understanding the effects on the wage distribution.

We present wage trends using data from the quarter of CPS respondents in each month who are asked detailed questions about their labor market experience (hours of work and earnings) in the previous week. These "Outgoing Rotation Group" (ORG) questions are generally thought to provide the most accurate information about hourly wages and weekly hours. We combine ORG observations from twelve consecutive months, running from January of year to December of each year from 1983 to 2002.

To focus the discussion, we present the 10<sup>th</sup> percentile of the hourly wage distribution by race and family size (Figure IV).<sup>3</sup> Two important observations emerge. First, gross hourly wages do not seem to vary by the number of children, possibly because these women are substitutes in the labor market. Second, average wages of black single women are lower than those of white women. Perhaps more striking is that the wages of black mothers (especially with two or more children) track closely the minimum wage for nearly the entire period. Between 1982 and 1998, the average wage earned by black mothers rises and falls with the real-minimum wage. Only after 1998 do the data show a divergence between the average wage and the real-minimum wage.

These data, however, show no obvious effect of the large credit expansions on hourly wages at the 10<sup>th</sup> percentile. Clearly a complete evaluation of the incidence effects would require examining other parts of the wage distribution; as well adjustments for the changing demographic composition of single women and changing labor demand over time.

#### **IV. Conclusions**

Advocates argue that the EITC transfers money to needy individuals without the associated distortion inherent in traditional welfare. Indeed, empirical evidence has shown that the EITC has been particularly successful at raising employment of single women with children. Ultimately, however, the main objective of the EITC is to raise the well-being of low-income families.

Analyses that assume away any changes to the pretax wage suggest that the EITC removes 4-5 million families from poverty each year, and that it offsets about 30 percent of the decline in the share of income received by households in the bottom-quintile of the income distribution. It is not clear, however, how much (if any) of the EITC's direct effects are offset by reductions in pre-tax wages. Understanding the role of the EITC in wage determination is an important step toward evaluating the overall effectiveness of the EITC and that of alternative methods of raising the living standards of low-income families.

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## Notes

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1. By comparison, federal spending on Temporary Assistance to Needy Families (TANF) stands at about 18.6 billion dollars (Hotz and Scholz 2003).

2. We exclude households with any individuals (who are not themselves household heads) and who report a relationship to head other than “child”.

3. We thank Jesse Rothstein for these figures.

Figure I

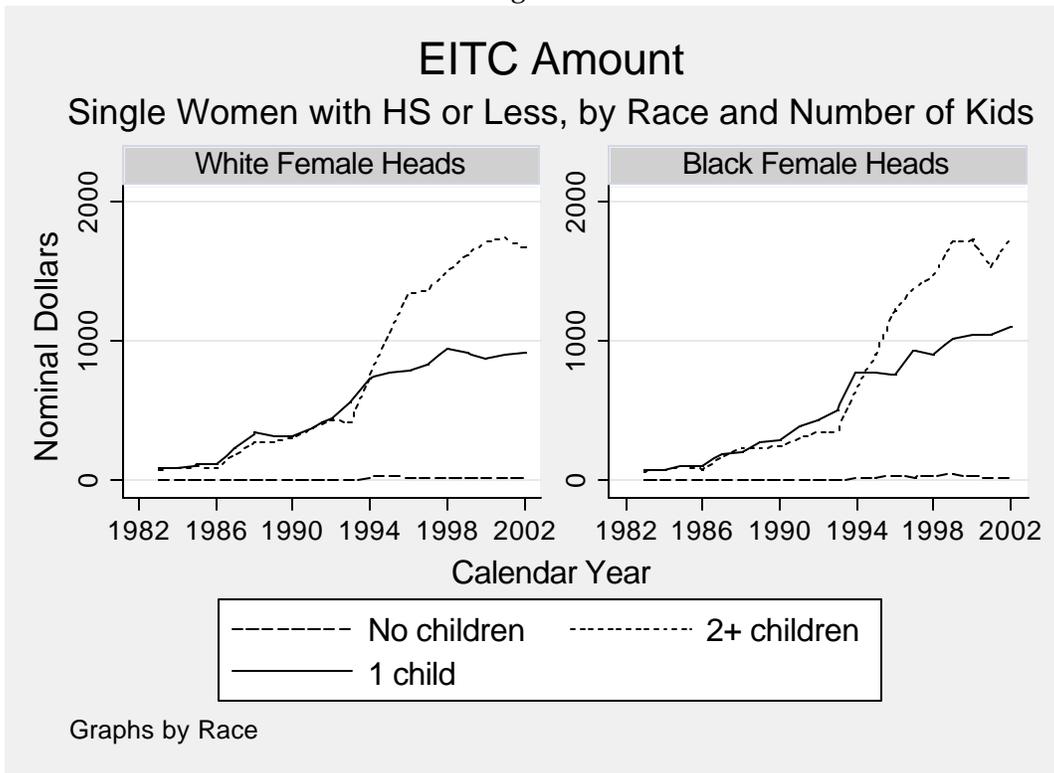


Figure II

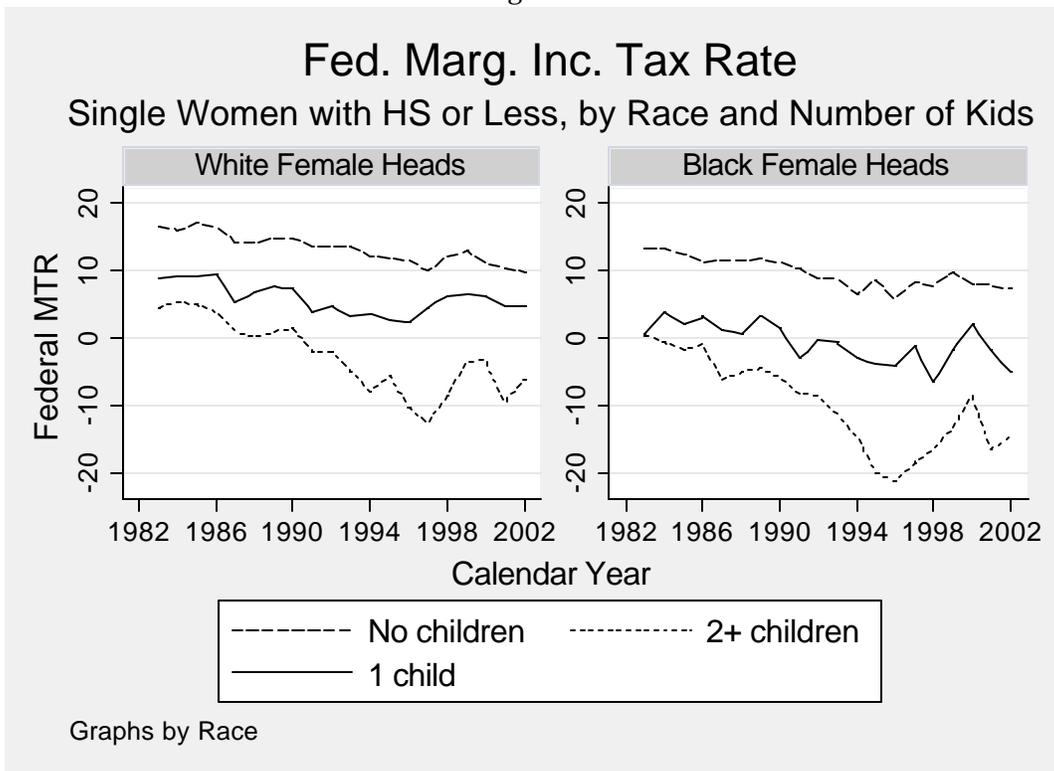


Figure III

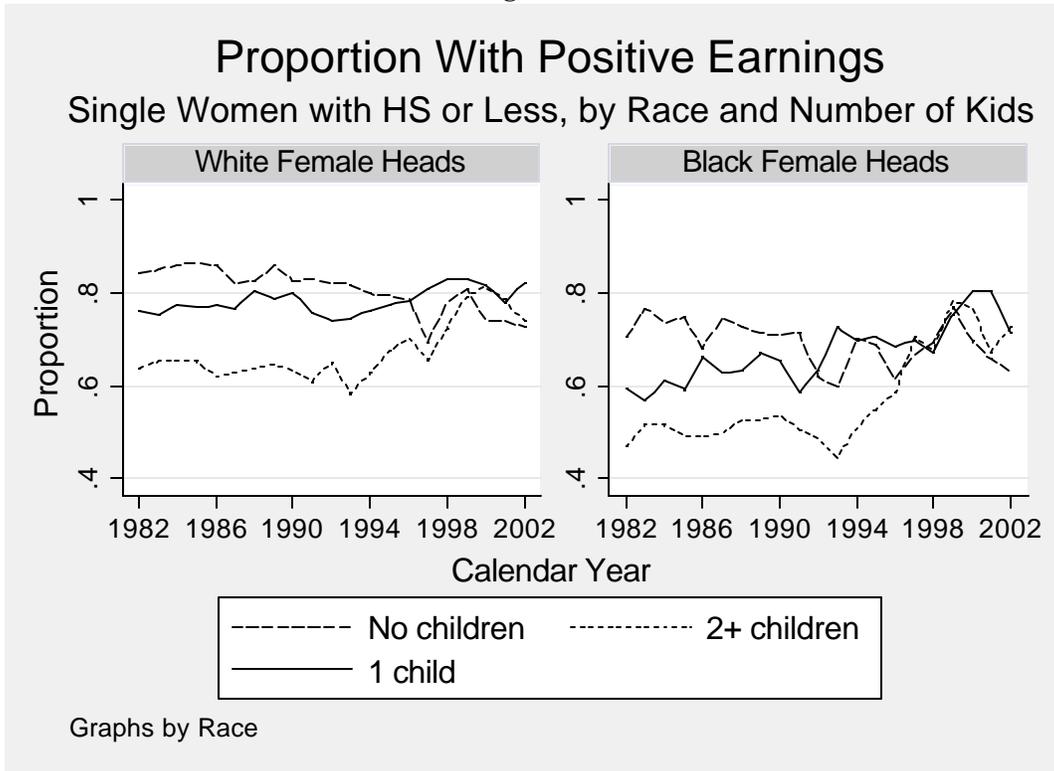


Figure IV

