# WESLEYAN UNIVERSITY

# The Earned Income Tax Credit and the Changing Face of Welfare Provision

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## I. ABSTRACT

The Earned Income Tax Credit (EITC) is a refundable federal income tax credit program for low-income individuals and families. It is by far the largest cash antipoverty policy in the United States.

After 1996, United States welfare and tax policy changed very significantly. Work-based programs such as TANF and EITC were expanded, replacing entitlement grants like AFDC. Soon after that, caseloads dropped by 60% (Scholz et al., 2001). The earnings of some increased but others became even poorer. As a result the poverty gap widened.

Although the EITC has been praised for raising after-tax wages and encouraging work (Scholz et al., 1996), the lumpiness of the payment may be problematic.

In this project, we explore how well the EITC is taking over the income-support function no longer provided by the large entitlement programs that were cut back. We also take into account the fact that some states choose to provide state EITC.

## II. DATA

This project used data from the Survey of Income and Program Participation (SIPP). The SIPP is designed as a series of continuous panels, each lasting between two and four years, with a 4-month recall period. The survey contains core questions asked at each wave, and topical questions asked periodically providing information on topics such as, health care, child welfare, taxes, and income.

Using SIPP is advantageous because it follows the same sample of individuals over an extended period of time. Unlike the Current Population survey, SIPP provides longitudinal data.

In an effort to select the most appropriate data source, some of the SIPP analysis was repeated with data from the CPS March Supplement.

Taking into account the fact that EITC is a family program, household weights were applied in cases.

## III. THE EARNED INCOME TAX CREDIT

The EITC was adopted in 1975 and was originally promoted as a way to relieve the tax burden on low-wage working parents. It was set to equal 10% of earnings for taxpayers with children, and then phased out at a rate of 10 cents per dollar. After the Welfare Reform in 1996, the EITC was greatly expanded to about 40% of earnings for families with two or more children and 34% for families with one child.
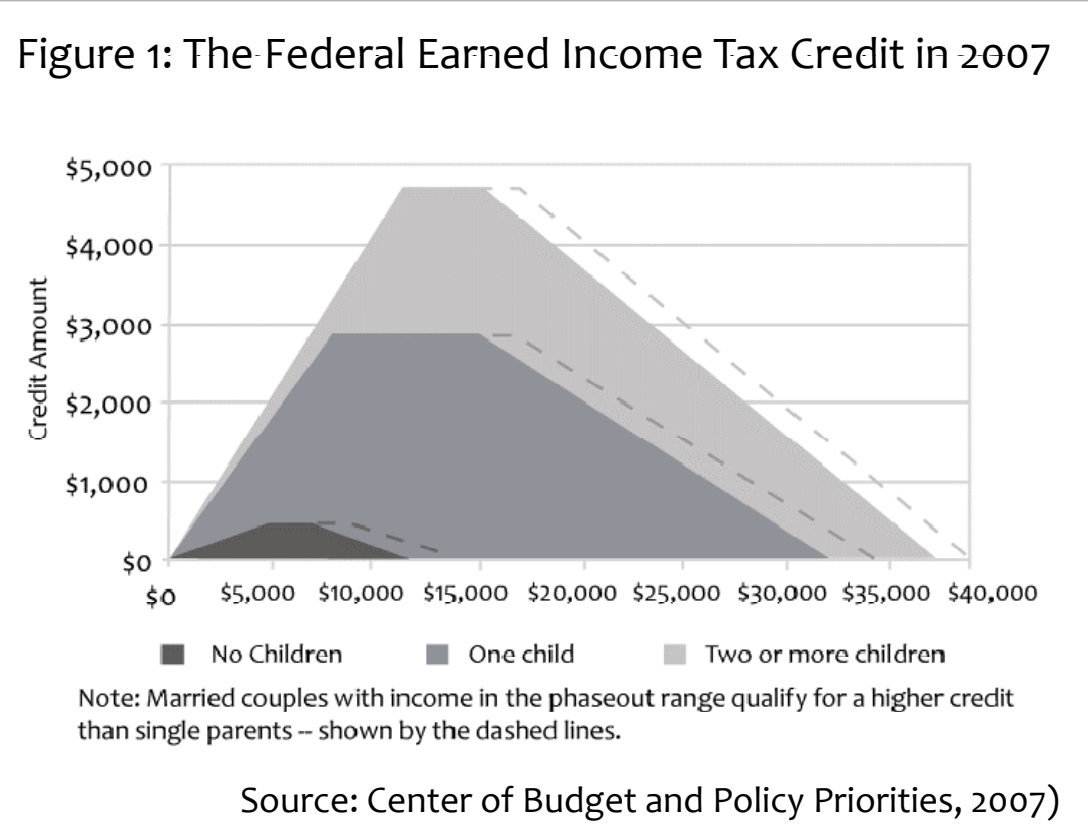
The pay structure of EITC has three main ranges. Depending on whether an individual is unemployed or falls in the subsidy (upward slope), flat or phase-out (downward slope) EITC range, the combination of income and substitution effects will have a different impact on labor supply (Figure 1).



Figure 1: The Federal Earned Income Tax Credit in 2007

Note: Married couples with income in the phaseout range qualify for a higher credit than single parents – shown by the dashed lines.

Source: Center of Budget and Policy Priorities, 2007)

The distribution of amounts of EITC received for 2001 and 2002 are represented below (Figure 2A-B), comparing SIPP and CPS data. Some discrepancies in the estimates by the different data sets can be seen.



Fig2A: Amount of EITC received (2001)



Fig2B: Amount of EITC received (2002)
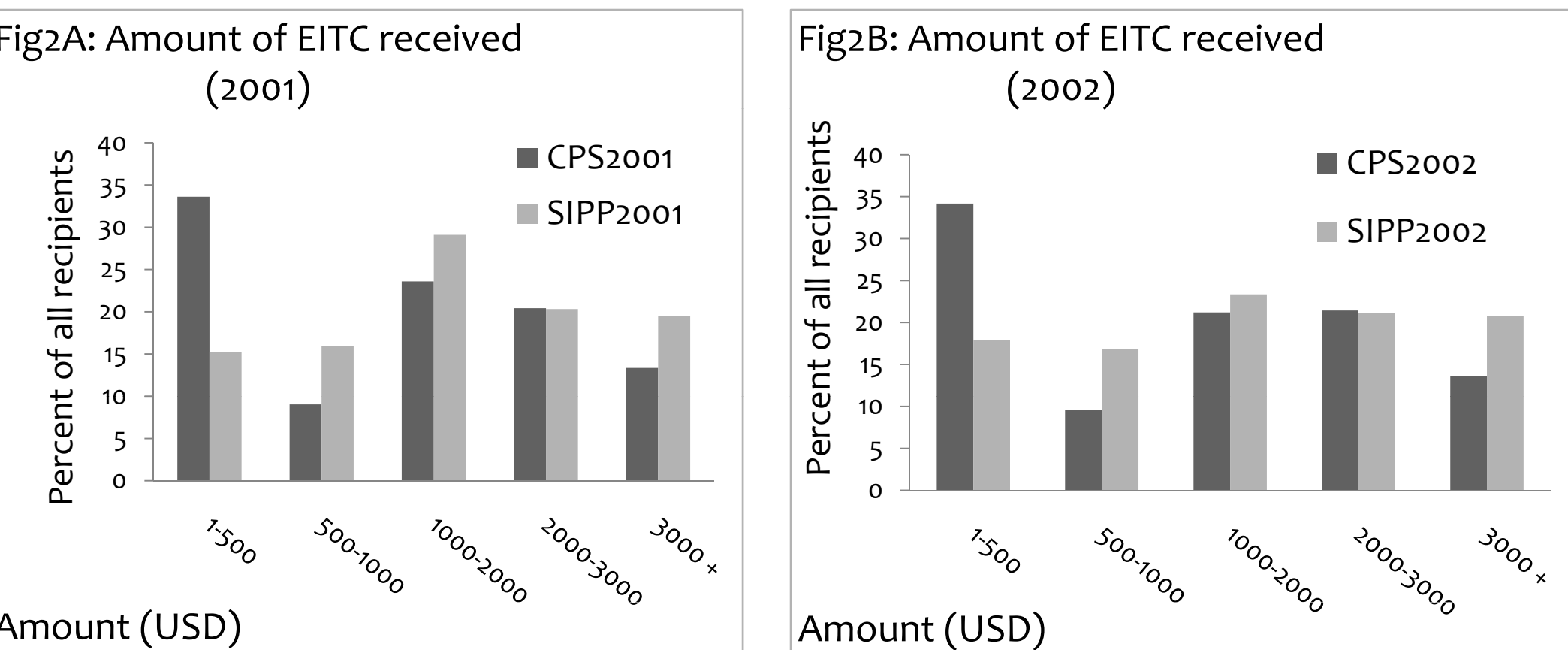
## IV. COMPONENTS OF INCOME

In order to analyze the role of the EITC, we first examine other components and sources of income for the poor and the non-poor. This sets the framework for understanding how the EITC interacts with the other welfare programs and other income sources. Instead of the conventional poverty line, which is calculated using an outdated formula and is less relevant for the typical EITC recipient, a new relative poverty line is used. The relative poverty line is approximately equal to half of median annual income.
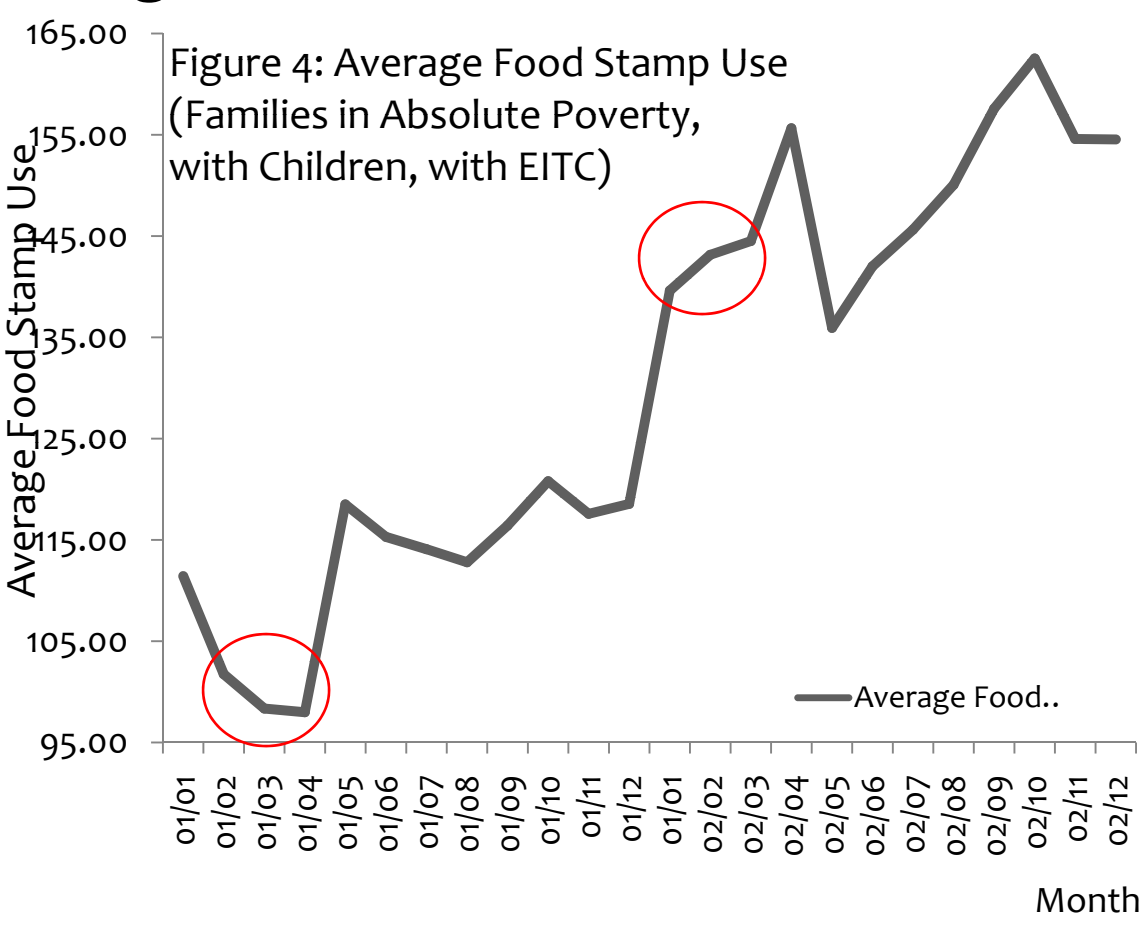
Two types of income were defined: income from private sources (sum of earned income, property income, and non-cash income) and income from public sources (labeled as *other* on the main pie chart and then decomposed, Figure 3).



Figure 3: Components of Income (Households below the relative poverty line)
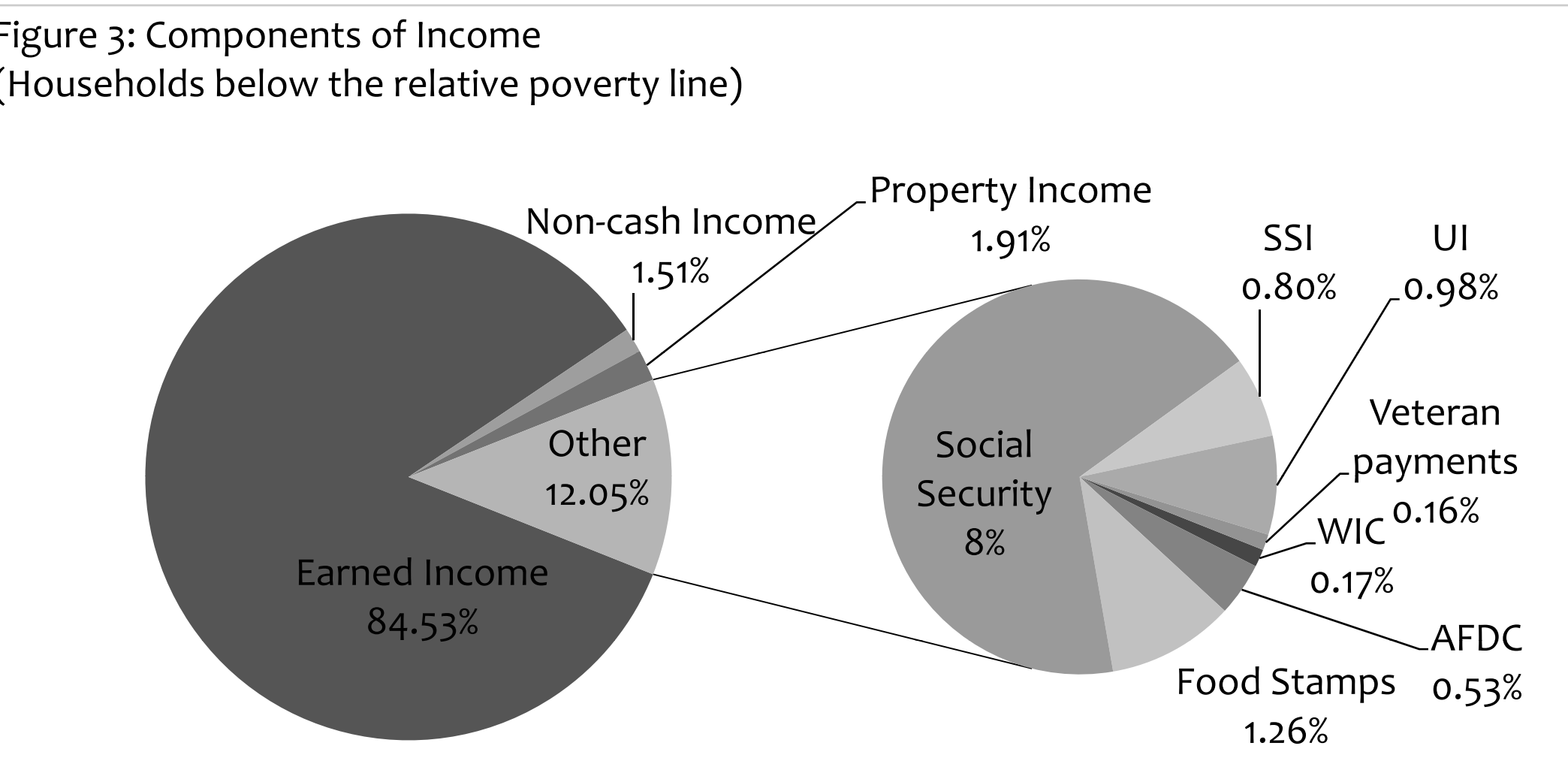
It can be seen that the Food Stamps Program is the largest source of public income after the Social Security benefits, followed by unemployment insurance (UI).

## V. EITC and THE FOOD STAMPS PROGRAM

One way to study the impact of the EITC is to look at its interaction with other programs. The Food Stamps Program is likely to be influenced by monthly changes in income. The lump sum payment of EITC occurs in February – March, so for families receiving EITC, Food Stamps use is likely to drop in this period. This seems to be the case (Figure4).



Figure 4: Average Food Stamp Use (Families in Absolute Poverty, with Children, with EITC)

To study the question, the following fixed-effects model was developed:

$$Y_{it} = b_o + b_k X_{kit}$$

Where $Y_{it}$ is the amount of Food Stamps of family i in period t and $X_{kit}$ is a vector of variables for household i in period t.

Semi-annual data is used to reflect the fact that EITC is only received in the first half of the year. The sample is restricted to female-headed households due to their increasing risk of falling into poverty. The following was observed:

❖ As household size, the age of the household head, and the AFDC amount increase, the amount of Food Stamps increases;

❖ As the number of weeks worked and the earned income decrease, the amount of Food Stamps increases;

❖ When EITC decreases, Food Stamps used increases. The seasonality of the EITC payment seems to be forcing reliance on Food Stamps for other months of the year.

## VI. EITC and PRE-FISC INCOME DEFICIT

Another question explored was the impact of the EITC on pre-fisc income deficit. The deficit was defined as:

*deficit = relative poverty line – annual private pre-fisc income*

The relative poverty line used here was calculated by Wendy Rayack and Colin Hill, and is defined as ½ of the median income, scaled for household composition and smoothed with a moving average formula.

The model used was can be described as:

$$D_i = a_o + a_k X_{ki}$$

where $D_i$ is the deficit of household i and $X_{ki}$ is a vector of variables for household i.

The sample included female-headed households below the relative poverty line. Income from public sources was expected to offset the lower income of these households and reduce their income deficit. The preliminary results show these significant effects:

❖ As household size increases, the income deficit increases;

❖ As social security benefits and the number of weeks worked increase, the income deficit decreases;

❖ As the amount of Food Stamps increases, the deficit increases. This is probably a result of reverse causality – households with higher deficits are likely to received a larger amount of Food Stamps.

❖ An increase in the amount of EITC decreases the income deficit, although these effects do not appear to be significant.

## VII. EITC and PRE-FISC INCOME VARIABILITY

Another measure of welfare is income variability. High income variability causes insecurity and decreases welfare, particularly with positive risk aversion, imperfect capital markets, and an inability to smooth consumption. A possible measure of income variability is the log variance of income. Using monthly household income, annual variability is calculated as:

$$variance[ln(private\ income)_{1-12}]$$

To study the impact of EITC and other parameters on income variability, the following tentative model was developed:

$$V_{it} = c_o + c_k X_{kit}$$

Where $V_{it}$ is the income variability of household i in year t and $X_{kit}$ is a vector of variables for household i in year t.

To take into account that some states have chosen to administer state EITC, this regression was run separately depending on the availability of state EITC. Figure 5 presents the preliminary results of this analysis.

Figure 5:

| | Experience | Social Security Benefits | Unemployment Insurance | Number of weeks worked | Amount Of Federal EITC |
|---|---|---|---|---|---|
| All states | ▽ | ▽ | ▲ | ▼ | ● |
| States with S.EITC | ▽ | ▽ | ▲ | ▼ | ● |
| States w/o S.EITC | ○ | ▽ | ● | ▽ | ● |

Legend:
▼ Decreases significantly
▽ Decreases insignificantly
▲ Increases significantly
○ Increases insignificantly

These preliminary results are somewhat inconclusive and suggest that further research is necessary.



Figure 6: States with state EITC programs (2008)

Legend:
■ Refundable EITC
■ Non-ref. EITC
■ No state EITC
■ No income tax
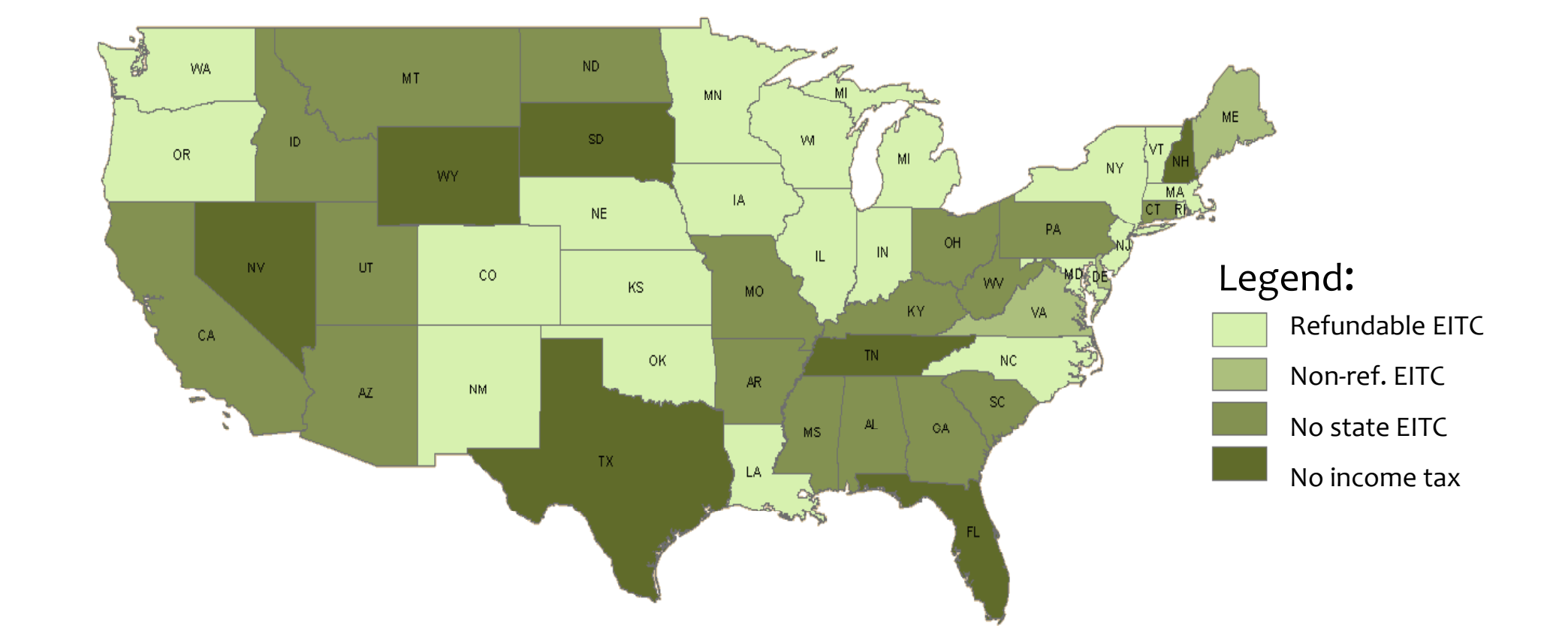
*Note: Although not shown here, Alaska and Hawaii do not have state EITC*

## VIII. CONCLUSIONS and FUTURE WORK

This exploration of EITC using SIPP data found the following:

❖ SIPP reveals a different distributional pattern for EITC than the CPS. It is not clear which data source gives the better estimate.

❖ The pattern of Food Stamps receipt appears to be influenced significantly by the receipt of EITC. This suggests that the income support role of EITC falls short in the second half of the year, forcing increased use of the food stamp program during those months.

❖ No significant impact of EITC on the pre-fisc income deficit and income variability has been found.

❖ Programs like Social Security and UI seem to have a discernible effect on income deficit and variability. This might be the result of EITC being a lump sum payment. A monthly payment of EITC might make the program more efficient, allowing greater consumption smoothing.

❖ Further analysis of the EITC's impact on post-fisc income deficit and variability is also a fruitful area for further research.