

Immigrants' Labor Supply Response to Food Stamp Access

Chloe N. East
University of Colorado Denver
chloe.east@ucdenver.edu

January 24, 2018

Abstract

Welfare reform in 1996 created a new, large disparity in Food Stamp eligibility between documented non-citizen immigrants and natives. Subsequent policies restored eligibility for most of these immigrants at different times in different states, and I use these changes to estimate the effect of program access on the labor supply of immigrants—a policy-relevant population. The Food Stamp program is one of the largest safety net programs today, and my analysis provides one of the first quasi-experimental estimates of the effects of the modern Food Stamp program on adult labor supply. I find strong evidence of labor supply disincentives, and the magnitude and margin of this response varies across demographic groups. Access to the program reduces the employment rates of single women by about 6%, whereas married men continue to work but reduce their hours of work by 5%. These findings confirm the predictions of traditional labor supply theory regarding the response to a means-tested program.

JEL Codes: I38, J22

Keywords: Food Stamps, Labor Supply

I am grateful to Hilary Hoynes, Marianne Page, Giovanni Peri, and Ann Stevens as well as the participants of the Western Economic Association Annual Conference for excellent comments and suggestions. All errors are my own.

1 Introduction

Rising immigration in the U.S., coupled with the fact that foreign-born individuals participate in safety net programs at higher rates on average than natives, led to concern over the costs associated with immigration in the 1990s (Borjas, 2003). Partly in reaction to this, welfare reform (the Personal Responsibility and Work Reconciliation Act of 1996) created a new “bright line” in eligibility for the Food Stamp program between documented non-citizen immigrants and natives in the U.S., by making most documented non-citizen immigrants ineligible for the program (Bitler and Hoynes, 2013).¹ In response, Food Stamp participation among foreign-born individuals fell dramatically (Haider et al., 2004).² Moreover, East (2016) documents that the restoration of eligibility, which occurred haphazardly at different times in different states in subsequent years, also had large effects on the foreign-born’s participation in the Food Stamp program. In this paper, I build upon these findings to examine how the loss, and subsequent restoration of eligibility, affected immigrants’ labor supply outcomes.

Welfare reform was one of a number of policy changes in the 1990s that dramatically altered the landscape of the safety net. These changes limited traditional welfare, which discouraged work, and expanded the Earned Income Tax Credit, which encouraged work by targeting those with labor earnings. As a result of these changes, Food Stamps has become increasingly important for families, as it remains one of the only universal, means-tested safety net programs available to workers and non-workers.³ Today, Food Stamps (now called “SNAP”) is one of the largest safety net programs; one out every seven individuals received benefits from the program in 2011 (Moffitt, 2013). However, the means-tested nature of Food

¹In 2008, Food Stamps was renamed the Supplemental Nutrition Assistance Program, “SNAP”, but I use the term Food Stamps throughout. Undocumented immigrants were never eligible for Food Stamps and were therefore unaffected by these changes.

²Some researchers suggested this may have been in part due to a “chilling effect” (Fix and Passel, 1999). “Chilling effects” refer to changes in participation among groups whose program eligibility did not change, but who face an “icy” policy climate that deters their participation (Watson, 2014).

³As part of welfare reform, time limits on benefit receipt were introduced for “Able-Bodied Adults Without Dependents”—working-age adults without children. These restrictions are relaxed in times of high unemployment as they were in the Great Recession.

Stamps creates disincentives to work; households with no income are entitled to a benefit guarantee, and for every additional dollar in income the household receives, the benefit amount is reduced (by less than one dollar) until income reaches a high enough level that they become ineligible for benefits. This creates an implicit tax on earnings so standard labor supply theory predicts disincentives to work due to the substitution effect from the lower net wage, as well as the income effect of the benefit guarantee. This has raised concerns about the costs of the program among policy-makers and economists (Mulligan, 2012).

Quantifying the magnitude of these disincentive “costs” of the program, as well as the “benefits” of the program, is crucial for optimal policy design. Despite this, the literature on the labor supply effects of Food Stamps is quite limited, in part because Food Stamps, unlike many other safety net programs, is a federal program with little variation in benefit amounts or eligibility rules across geographic locations or over time (Moffitt, 2002). This paper utilizes the variation in eligibility generated by the immigrant-specific policy changes to provide one of the first quasi-experimental estimates of the labor supply effects of the modern program. Immigrants are a particularly policy-relevant group: prior to welfare reform 10% of all Food Stamp recipients were foreign-born non-citizens, and, foreign-born non-citizens participated at higher rates in the Food Stamp program compared to natives.⁴ Moreover, because about 12% of the working-age population are immigrants, immigrant-specific policies may have had an important impact on aggregate labor supply (Kandel, 2011). Finally, recent policy proposals have suggested additional barriers to immigrants’ participation in safety net programs, so understanding the effect of similar, previous restrictions on labor supply is crucially important (Fix and Capps, 2017).

The early literature compared the labor supply of Food Stamp participants to similar non-participants, which may lead to biased estimates, if even after controlling for observables, there are unobservable differences between these two groups that affect labor supply and

⁴Author’s calculation using the Food Stamp Quality Control data and the Current Population Survey, described in more detail below.

program participation decisions (Currie, 2003). To address this concern, the use of structural methods allowed researchers to jointly model the program participation and labor supply decisions, however these methods rely heavily on the modeling assumptions (Moffitt, 2002). The first quasi-experimental study is by Hoynes and Schanzenbach (2012), who use the county by county introduction of the program in the 1960-70s to estimate the effects of program access on labor supply. They find reductions in labor supply, which are largest for low-educated single mothers, who participated in the program at very high rates. However, major changes have taken place over time in the Food Stamp program and other safety net programs as well as overall labor supply, especially among women, so the effects of the modern program may be very different. Recent papers have used modern state changes in application procedures and eligibility rules as instruments for participation, but these changes had mostly small effects on participation (Ganong and Liebman, 2013; Ziliak, 2015).⁵ All in all, how Food Stamps affect modern adult labor supply is still an open question.

For my analysis, I use the Current Population Survey (CPS) from 1995-2007. This data is well suited for my purposes since it contains detailed demographic information, as well as measures of program participation and labor supply. However, questions about immigrant status were not included in a consistent way until 1995, so I include only one pre-welfare-reform year. I focus on the labor supply response of foreign-born non-citizen individuals ages 16-59, whose head of household has a high school education or less, as these households are more likely to be affected by the eligibility changes. The policy variation creates differences in eligibility that depend on state, and year, as well as country of birth and immigration status (non-citizen documented immigrants or natives). I utilize two reduced-form specifications that take advantage of this rich variation to estimate the intent to treat effects of access to Food Stamps. The first is a double difference model that only includes foreign-born non-

⁵Recent federal changes have given states more flexibility to change their application and recertification processes, as well as expand eligibility by eliminating asset tests. A few of these resulted in small effects on program participation, but many had negligible effects (Ganong and Liebman, 2013; Ziliak, 2015). The papers using this methodology examine a variety of effects of the program and are summarized by Hoynes and Schanzenbach (2015).

citizen individuals subject to the eligibility changes. This approach relies on variation among immigrants across states and over time. The second specification is a triple difference model that adds U.S.-born adults as a control group, and allows me to include state by year fixed effects, so that identification relies only on differential changes among immigrants relative to natives across states and over time.

The common practice in the labor supply literature is to explore differences in labor supply elasticities across groups defined by gender and marital status (Blau and Kahn, 2007) and I take the same approach here. One of the unique aspects of Food Stamps, relative to other means-tested programs in the U.S., is that all households meeting the income test are eligible regardless of their marital status or the presence of children. 17% of all program benefits go to married couples, and married couples are an even larger group of *foreign-born* recipients, because the low-educated foreign-born are much more likely to be married than their low-educated native counterparts.⁶ Therefore, in my analysis, I separately examine the labor supply effects for married men, married women, single women, and single men.

I find, consistent with theory, when immigrants are made eligible for Food Stamps they reduce their labor supply, and the magnitude of this reduction and the margins of response differ across demographic groups. When eligible, single women are less likely to work at all by about 6%. On the other hand, married men's extensive margin adjustments to labor supply are indistinguishable from zero and, instead, married men reduce labor supply along the intensive margin by working 5% fewer hours when eligible. I find mixed evidence regarding the responses among married women, similar to past work on female immigrants' labor supply (Borjas, 2003; Kaushal, 2010). The results are similar across the double and triple difference models and are robust to including a variety of controls for other changes occurring across states and over time in the sample period, including explicitly controlling for welfare reform timing across states, and state policies affecting immigrants' eligibility for

⁶Authors calculation using the Food Stamp Quality Control Data.

other safety net programs. Finally, falsification tests on single men, who participated in the program at very low rates during the sample period, as well as natives, indicate there were no similar changes in labor supply for these “untreated” groups.

The rest of the paper proceeds as follows. In section (2) I detail the background information about the Food Stamp program, the expected effects of Food Stamps on labor supply, and the prior literature. Next, I describe the data I use in section (3) and my empirical strategy in section (4). Section (5) describes the results and section (6) concludes.

2 Background

2.1 The Food Stamp Program

The Food Stamp program, renamed the Supplemental Nutrition Assistance Program (SNAP) in 2008, is a federal program and its benefit amounts are determined as a function of household income and household size (the definition of a Food Stamp “household” is based on which members of the household share the same budget used to purchase food). Most simply, Food Stamps is intended to allow households to maintain a minimum level of adequate nutrition assuming that households will spend 30% of their total income on food. Households with income below 130% of the poverty line are eligible for a maximum benefit amount, which is a function of household size, minus 30% of (adjusted) household income: $\text{Benefit Amount} = \text{Max Benefit}(\text{Number Eligible in Household}) - .30 * [\text{Household Income Net of Deductions}]$.⁷ A more detailed description of these rules is included in the Appendix.

Given this policy design, a household that meets the eligibility requirements will lose \$0.30 for every additional dollar of earned income so the “Benefit Reduction Rate” is 30%. But, importantly for thinking about the effects on labor supply, the household can deduct 20% of their earned income when calculating net income, which effectively lowers the Benefit

⁷The poverty line in 2014 was \$19,790 for a household of three. In 2014, the maximum monthly benefits for a household of 3 were about \$500 and the average benefits received were roughly \$100 below the maximum.

Reduction Rate for earned income to 24%. Usually all members of the household are eligible, but as discussed in more detail below, the restrictions on immigrants' eligibility caused changes in the number of eligible household members among households with foreign-born non-citizen individuals. These eligibility rules and benefit amounts are set nationally and have varied little since the program began.

2.2 Expected Effects and Prior Literature

To fix ideas about the expected effects on labor supply, I first consider the effects of the program on the labor supply incentives of a single earner household. As shown in Table (1), single women make up the majority of participants in the Food Stamp program: 67% of all participating households and 57% of participating foreign-born non-citizen households.⁸ It is also evident from this data that among immigrants, married couples are a much more significant fraction of Food Stamp participants relative to natives (35% of all participating households relative to 13%.) Therefore, I also consider the theoretical predictions of Food Stamps on married couples labor supply below.

For the single earner case, I show the effects of the program on the individual's budget constraint and utility maximization in Figure (1). Without Food Stamps, the individual could earn a wage of w and chooses an amount of leisure L . The budget constraint is represented by the line from CDL_{max} . When Food Stamps are introduced, the budget constraint shifts upward to CDA' . At $L = L_{max}$, the individual does not work and receives the maximum Food Stamp benefit amount, G . The wage is reduced by the Benefit Reduction Rate (BRR), causing the budget constraint to shift, so the slope of the new portion is $-w(1 - BRR)$. The individual receives Food Stamp benefits up until the point when their income exceeds the eligibility threshold—point D.

⁸Tabulations are from the Food Stamp Quality Control, which contains detailed demographic and economic information for a nationally representative sample of households participating in Food Stamps. This data provided online by Mathematica. Patterns of participation are similar in the ASEC supplement to the CPS.

The availability of Food Stamp benefits increases households' total resources, so labor supply is predicted to decline due to the income effect. Additionally, the shift in the budget constraint due to the lower effective wage rate, will cause labor supply to decline due to the substitution effect. Together, the income and substitution effects predict unambiguously that among single earner households there will be reductions in labor supply both on the extensive and intensive margins when the Food Stamp program is available. To see these margins of response, consider an individual at point A when the program is not available. When the program is made available to them, they will reduce labor supply to zero and receive the maximum Food Stamp benefit amount—point A'. On the other hand, individuals working more beforehand—at point B—will reduce their labor supply and receive some Food Stamp benefits, but continue to work an amount greater than zero—point B'.

However, eligibility and benefit amounts are based on total *household* income, and since married couples are a significant fraction of immigrant households that participate in Food Stamps, I also consider the labor supply response among married couples. To understand the expected effects among married couples, I consider a traditional model of married couples' labor supply where the husband is the primary earner and ignores the wife's income when making his labor supply decision. The wife is the secondary earner and takes the husband's earnings as given when making her labor supply decision. Given that only 42% of married foreign-born non-citizen women work, it is likely that the husband is the primary earner in these households.⁹ Again, considering the case where Food Stamps become available, the husband will respond the same way the single earner did, and he will reduce his labor supply along both the extensive and intensive margins, due to the income and the substitution effects. After the husband makes his labor supply decision, the wife takes the husband's earnings and any Food Stamp benefits the household may be eligible for as given when making her labor supply decision. If the husband's earnings alone make the household eligible for the program, then the wife will face the same labor supply disincentives as in

⁹Author's calculation from the CPS.

the single earner case. Since the rates of work among these married women is very low on average, it is possible the labor supply disincentives will be smaller in magnitude relative to married men and single women. I separately examine the labor supply effects for married men, married women, and single women, since the effects may be different for these different groups. I also examine the effects on single men, however, this group participates in the Food Stamp program at very low rates over the sample period—only 9% of foreign-born non-citizen households participating in Food Stamps are headed by a single male, as shown in Table (1)—so the effects on their labor supply should be much smaller.

The existing empirical literature on the labor supply effects of Food Stamps is limited. The first quasi-experimental research documented declines in labor supply when the Food Stamp program was introduced in the 1960-70s (Hoynes and Schanzenbach, 2012). Several earlier papers use structural models to estimate the effect of Food Stamps on single women’s labor supply, primarily in the 1980s, when the program was still relatively new. For example, Fraker and Moffitt (1988) use this method to estimate the effect of Food Stamps and AFDC on hours worked by single women and find among participants there is a one hour reduction in work per week (a 9% reduction off the mean). Similarly, Keane and Moffitt (1998) and Chan (2013) use these methods to analyze the effects of changes in policy parameters for multiple safety net programs, including Food Stamps, on female labor supply. Alternatively, Hagstrom (1996) takes advantage of variation in household-level food stamp benefit amounts, due to non-labor income and deductions for expenses, to identify the effects of Food Stamps on married couples’ labor supply. In response to changes in the benefit guarantee or the benefit reduction rate, he finds small labor supply disincentives for married couples, relative to the magnitude of the estimated disincentives for single women, and larger disincentives for married women relative to married men. More recently, Stacy, Scherpf and Jo (2016) use changes in eligibility rules and application requirements across states in the 1990s and 2000s as instruments for Food Stamp participation, and the authors’ find evidence of a *increase* in

labor supply in response to Food Stamps.¹⁰ This decrease is only present among able-bodied working-age adults without dependents (ABAWDs) and they find no statistically significant effect for other adults. ABAWDs are in many cases, subject to work requirements in order to qualify for benefits and the authors’ attribute this counterintuitive result to these work requirements.¹¹ My paper, therefore, fills an important gap in the literature by providing quasi-experimental estimates of the labor supply disincentive effects in response to a recent, large change in Food Stamp access, and separately estimating these effects for different demographic groups.

2.3 Food Stamp Eligibility Changes for Immigrants

I utilize both federal and state laws governing immigrants’ eligibility for Food Stamps for my analysis. Prior to welfare reform in 1996 (the Personal Responsibility and Work Opportunity Reconciliation Act or “PRWORA”) there was no difference in Food Stamp eligibility for most documented non-citizen immigrants and natives. Welfare reform changed this by making documented non-citizen immigrants ineligible for Food Stamps. States were given the option to use their own funds to provide benefits to this group, and nine states chose to provide these benefits to all newly federally-ineligible immigrants without additional eligibility restrictions.¹² These nine “Fill-In” states were California, Connecticut, Maine, Massachusetts, Minnesota, Nebraska, Rhode Island, Washington and Wisconsin. I call the other 41 states and the District of Columbia the “No-Fill-In” states. The “fill-in” programs began in 1997 and 1998, shown in Figure (2). Then, as part of the 2002 Farm Bill, eligibility was restored to large groups of documented non-citizen immigrants—the disabled, children, or

¹⁰Specifically, these policies include changes in the income reporting requirements, asset tests, online applications, and expansion of eligibility through Broad-Based Categorical Eligibility.

¹¹See Appendix for more details about ABAWD-specific rules.

¹²For example, some states required that immigrants apply for citizenship after receiving Food Stamp benefits, and I do not consider these states to be Fill-in states. I define the presence of a fill-in program based on information from the USDA SNAP Policy Database, the California Department of Social Services, and Bitler and Hoynes (2013).

those who had lived in the U.S. for at least five years.¹³ I show a time line of these events and how they affected immigrants' eligibility in Figure (3).

I focus on foreign-born adults for my analysis, but about half of this sample have at least one child and 90% of these children were born in the U.S..¹⁴ This is important because U.S.-born children, who are citizens, remain eligible for the program even when their foreign-born parents lose eligibility, so adults with U.S.-born children could still receive benefits. However, when the number of eligible members in the household falls, the benefit amount also falls. For example, for a household of three, with one citizen child and two ineligible immigrant parents, benefits could fall by almost 66% (\$2400 annually in 1998).¹⁵ However, the fall in the benefit amount for households with children is very large, so in practice these households may behave as if they have lost eligibility entirely, if the small benefit amounts no longer outweigh the costs of participating (Daponte, Sanders and Taylor, 1999). Existing evidence indicates the latter may be the case (Van Hook and Balistreri, 2006), so to simplify the analysis I focus on how *adults* eligibility affects labor supply outcomes and do not differentiate between households with and without children.¹⁶

Several groups of immigrants were unaffected by these eligibility changes. First, immigrants who had worked in the U.S. for 40 quarters and met minimum earnings requirements in each quarter, those who had served in the military, or those who were refugees, asylees, or

¹³This discussion drawn primarily from Zimmermann and Tumlin (1999), Capps (2004), and Bitler and Hoynes (2013).

¹⁴Author's calculation from the CPS.

¹⁵Additionally, for these "mixed-status" households, states were given the option of discounting the income of ineligible immigrants by the share that they represented in the household when determining the benefit amount (U.S. Department of Agriculture Food and Nutrition Service, 2011). So, for the household of three described above, the income of the parents would be discounted by two-thirds. Therefore, in theory, when immigrants lose eligibility in states that opted to discount, the change in labor supply incentives will be smaller among households with children, than those made up exclusively of the foreign-born. And, this discounting made it such that when benefits were restored to this group, some households could have actually experienced a reduction in benefits or elimination of benefits if the parents' earnings were substantially large. Anecdotal evidence suggests that this was extremely rare— in one Texas region 5% of mixed citizenship households had benefits decline and 6% had benefits stay the same (Swarns, 1997). Moreover, all foreign-born children were made eligible as part of the Agriculture, Research Extension and Education Reform Act in 1998. Discussion of these rules taken from Fix and Zimmermann (2001) and Capps (2004).

¹⁶Additionally as a robustness check I restrict the sample to individuals with no children.

naturalized citizens remained eligible. Additionally, immigrants on temporary visas or who were undocumented were never eligible, and therefore remained ineligible. Immigrants who entered the U.S. after the passage of PRWORA in 1996, were subject to restrictions on eligibility for Medicaid/SCHIP, Supplemental Security Income (SSI), and Temporary Assistance for Needy Families (TANF, formerly Aid to Families with Dependent Child, AFDC) for at least their first five years of residence in the U.S. (unless their state of residence provided these benefits with state funds). Therefore, my primary sample is composed of foreign-born non-citizen individuals who report entering the U.S. before 1997 and less than 15 years before being observed—I call this group “treated immigrants”. The 15 year cutoff drops from the sample immigrants likely to not be affected by the Food Stamp eligibility changes, because they have lived in the U.S. long enough to either meet the 40 quarters requirement or to have applied for and received citizenship. The 1997 cutoff drops from the sample immigrants likely affected by changes in eligibility for other safety net programs.

Fix and Passel (1999) document that following welfare reform the declines in average participation in many safety net programs—not just Food Stamps—were larger for foreign-born individuals relative to native-born. This finding spurred a large literature on the potential “chilling effects” of welfare reform on immigrants’ safety net participation (see for example: Borjas (2004); Kandula et al. (2004)). However, further work found that accounting for differences in demographics between foreign and native-born, as well as differences in the effect of state economic conditions on the foreign-born, explain the differential decline in participation among immigrants relative to natives for all programs except Food Stamps (Haider et al., 2004). Similarly, Bollinger and Hagstrom (2008) emphasize that changes in Food Stamp eligibility should only have affected non-refugees, as refugees remained eligible, and they find evidence no evidence to support chilling effects on refugees.

Borjas (2003) looks at the downstream effects of welfare reform on labor supply and finds that male labor supply among all immigrants, regardless of their year of entry, increased

after welfare reform and attributes this to the loss in Medicaid eligibility for immigrants who entered the U.S. after 1996. Borjas finds a negligible effect on the labor supply of female immigrants. However, as Borjas notes, public health insurance was not the only program for which eligibility was restricted for these immigrants. Similarly, Kaushal (2010) examines changes in the labor supply of elderly immigrants before and after welfare reform, and finds an increase in male labor supply following welfare reform that she attributes to changes in SSI eligibility.¹⁷ Kaushal finds no evidence of large responses by women overall, but does find suggestive evidence that women’s responses differed by whether they lived with other family members: the responses of women living alone were more similar to that of men.

More generally, recent evidence from Borjas (2016) suggests that immigrants and natives labor supply elasticities are not identical and, in particular, the wage elasticity of labor force participation and hours worked is smaller for immigrants than natives. Moreover, this difference between immigrants and natives is larger for men than women. Similarly, Cadena and Kovak (2016) find that immigrants are more geographically mobile in response to a labor supply shock than natives are, which suggests that immigrants adjust on margins besides work in response to changes in wages. Therefore, I expect the effects of Food Stamps on immigrants to be slightly smaller than the effects would be on natives and that this difference may be larger for men than women.

3 Data

For my analysis I use the 1995-2007 Current Population Survey (CPS), which is a nationally representative repeated cross-sectional survey conducted every month on about 60,000 households (Ruggles, 2010). I use information from both the basic monthly surveys and several specialized supplements. Importantly for my analysis, every survey collects information about the country of birth of all individuals, and the year of arrival to the U.S. and

¹⁷Kaushal argues that the 40 quarters of work requirement imposed on SSI eligibility for the elderly incentivized work and delayed retirement. It is possible that the treated immigrants in my sample also increased their labor supply in a desire to reach this 40 quarters requirement.

citizenship status for all foreign-born.¹⁸ However, this information is only available beginning in 1995, so I only observe one pre-welfare-reform year.¹⁹ To the CPS data, I merge on state-year control variables described in detail in the Appendix.

I create several variables to measure the effects of the Food Stamp policy changes. First, I use the Annual Social and Economic Supplement (ASEC) supplement conducted annually in March, which asks about household Food Stamp receipt and the amount of benefits received in the past 12 month. To measure extensive margin labor supply decisions, I construct a variable equal to one if the individual is working in the week before the survey, which is collected in every basic monthly survey. Additionally, I use the “Outgoing Rotation Groups” (ORG) supplement to the CPS conducted on a subset of households each month, which contains information on the “usual” hours worked per week at the time of the survey as a continuous variable and I construct a measure of full-time and part-time work if the individual is working more than 35 and 20 hours per week, respectively.²⁰

I define individuals as treated immigrants if they are foreign-born, moved to the U.S. prior to 1997 (to drop immigrants who likely were subject to restrictions on eligibility for programs beyond Food Stamps), and had been in the U.S. less than 15 years prior to being surveyed (to keep a sample of immigrants less likely to qualify for the 40 quarters of work exemption). There are a number of measurement issues with reported year of entry to the U.S., therefore, this year of entry restriction should be interpreted as only a rough proxy for

¹⁸The citizenship information includes whether the individual is a naturalized citizen or not a citizen. I follow Van Hook (2003) and recode individuals as non-citizens if they have been in the U.S. for fewer than 5 years because most legal permanent residents must live in the U.S. for 5 years before applying for citizenship. I do not observe whether immigrants are documented or undocumented. This may introduce some noise in my analysis because undocumented immigrants are typically not eligible for Food Stamps and make up an estimated 25% of all foreign born in the U.S. (Passel, Capps and Fix, 2002).

¹⁹1994 was the first year the CPS asked about country of birth and year of immigration for all individuals, however, the weights provided by the CPS were not fully adjusted to account for immigrants until 1996. See Schmidley and Robinson (1998) for more details.

²⁰Information about hours of work and earnings are only asked of those reporting to currently work and is implicitly assumed to be zero for those reporting not currently working. The ASEC supplement collects information on annual labor supply measures, however as eligibility is changing frequently across states and years and Food Stamp eligibility is based on monthly income, labor supply last week or “usually” is likely a better measure of the response to the policy changes than annual measures of labor supply, so I only use the ASEC for analysis of the effects of eligibility on program participation.

those likely to have experienced Food Stamp eligibility changes.²¹ Natives are those born in the U.S.. If the head of household is married, I restrict both spouses to be either natives or treated immigrants. I keep only heads of household and spouses aged 16-59, whose head of household has a high school education or less (62% of the full working aged sample), because these disadvantaged households are most likely to be affected by the policy changes (the head of household is assumed to be male, unless no male adult is present.) I further restrict the treated immigrant group to be those in which the adult woman in the household is a non-citizen, under the assumption that women are more likely to make decisions about program participation than men.²² For single male treated immigrants, I keep those where the single male is not a citizen. Among the treated immigrant samples, I do not restrict on the country of birth of children in order to maximize sample size, so some households with have U.S.-born children who remain eligible for Food Stamps.

Food Stamp participation rates in 1996 are shown for different demographic groups in Table (2) based on gender, marital status and head of household's education. As expected, individuals in households where the head has more than a high school education participate at much lower rates, motivating my focus on the low-educated households. Among these low-educated households, married couples and single female treated immigrants participated at higher rates than their native counterparts, but the opposite is true for single men. Rates of participation were high among low-educated treated immigrants prior to welfare reform—22% of treated immigrant married couples, and 44% of treated immigrant single females, participated in the program—so the eligibility changes likely had large effects on the outcomes of these groups. Conversely only 7% of single men participated in the program.

²¹Year of entry information is based off a question about when foreign-born individuals came to the U.S. “to stay” and previous research has documented that for only about 50% of respondents does the year they report they came to the U.S. “to stay” coincide with year that they became legal permanent residents, the latter of which is the relevant year for determining Food Stamp eligibility (U.S. Department of Agriculture Food and Nutrition Service, 2011). Often, this year coincides instead with the date of either their first or most recent spell of time spent in the U.S.. For more information on these measurement issues see Redstone and Massey (2004) and Lubotsky (2007).

²²This is 84% of the working-aged low-educated immigrant sample, and the method is similar to Watson (2014). I test the robustness of the results to this assumption.

Summary statistics are displayed in Table (3) and shown separately for married men, married women, single women, and single men. The average education level is much lower among all groups of treated immigrants, relative to all groups of natives, and treated immigrants are more likely to be Asian or Hispanic than natives. Comparing average labor supply, married men, single women, and single men work at similar rates to natives, but the labor supply among married women is much lower in the treated immigrant group, possibly due to differences in gender norms between the two groups (Blau, Kahn and Papps, 2011).

4 Empirical Strategy

As shown in Figure (4), there were differences in eligibility both within states over time (shown as of December of each year in the figure), as well as across the Fill-In and Non-Fill-In states, and I utilize all these changes in treated immigrants' eligibility to identify the effects. In Figures (5), (6) and (7) I show the average Food Stamp participation rate, rate of working last week, and hours usually work, for each demographic subgroup for Fill-In and No-Fill-In states separately. Because Food Stamps is measured at the household level in the ASEC, I show the results for married couples jointly. The graphs on the left show the outcomes for treated immigrants and on the right the graphs display the outcomes for natives. Recall that Food Stamp participation is collected in March of each survey year, so there should be no change in this outcome from 1995 to 1996, or across Fill-In and No-Fill-In states in these years. Similarly, the labor supply outcomes in these figures are annual averages, so there should little difference in 1996 in these outcomes across Fill-In and No-Fill-In states. For treated immigrant single women, who had the highest pre-PRWORA Food Stamp participation rates, Food Stamp participation increases in Fill-In states, relative to No-Fill-In states, between 1998-2004, and this appears to be accompanied by a reduction in labor supply in the Fill-In states, relative to the No-Fill-In states, as predicted. Reassuringly, there is no commensurate change in participation or labor supply for native single women. For the other demographic groups, the pattern of results is less clear, although this may be

due to the fact that these figures display simple unadjusted means, so I turn to the regression analysis next, which allows me to control for individual and state-level characteristics.

To examine the effect of eligibility on program participation and labor supply in a regression framework, I begin with a double difference model using variation in the state of residence and time of survey among treated immigrants to identify the effects:

$$Y_{ist} = \alpha + \beta Elig_{st} + \gamma_1 X_{ist} + \gamma_2 Z_{st} + \nu_s + \lambda_t + \epsilon_{ist} \quad (1)$$

where Y_{ist} is the outcome of interest for individual i in state s observed in time t . Here $Elig_{st}$ is equal to one if treated immigrants are eligible for Food Stamps.²³ The coefficient β indicates how eligibility for Food Stamps affects the given outcome. Because I measure the effect of *eligibility* on labor supply, these estimates capture the intent to treat effect. I control for state fixed effects, ν_s , to absorb time invariant characteristics of the state that might affect the outcomes of interest, as well as time fixed effects, λ_t , to absorb national shocks to these outcomes over time (time is year of survey in the ASEC, and year and month of survey in the basic monthly surveys and the ORG). In X_{ist} I include controls for individual characteristics including age, education, marital status, race/ethnicity, number of years in the U.S. for foreign-born adults, number of children, number of children under age 5, number of foreign-born children, and number of elderly household members. Z_{st} includes controls for the state unemployment rate in the year of the survey and the year before the survey, as well as controls for state safety net program generosity in the year of the survey.²⁴

I can also include natives as a control group in a triple difference model as follows:

²³Because the primary outcomes refer to either the week prior to the survey or the time of the survey, the measure of Food Stamp eligibility is constructed using information on the eligibility rules in place at the beginning of the month prior to the month of the survey.

²⁴Specifically, I include the state's maximum welfare benefits in the survey year, and Medicaid and SCHIP generosity for children in the survey year, and whether the state had implemented welfare reform or an AFDC waiver in the survey year.

$$\begin{aligned}
Y_{istn} = & \alpha + \beta_1 Elig_{st} + \beta_2 Elig_{st} * TI_n + \gamma_1 X_{istn} + \gamma_2 Z_{st} + \gamma_3 Z_{st} * TI_n \\
& + \nu_s + TI_n + \lambda_t + \nu_s * TI_n + \lambda_t * TI_n + \epsilon_{istn}
\end{aligned} \tag{2}$$

where n denotes whether the individual is in the treated immigrant group or the native control group. To account for inherent differences between immigrants and natives, I include a dummy variable indicating if the individual is in the treated immigrant group, TI_n . Similarly, I control for state by treated immigrant ($\nu_s * TI_n$) and year by treated immigrant ($\lambda_t * TI_n$) fixed effects. I also include the state by year controls described above, as well as these measures interacted with treated immigrant status ($Z_{st} * TI_n$), since economic conditions and state safety net programs may affect immigrants differently than natives (Haider et al., 2004; Bronchetti, 2014). Here, β_1 measures the effect of treated immigrants' eligibility on native outcomes, and $\beta_1 + \beta_2$ measures the effect of treated immigrants' eligibility on treated immigrants' outcomes. Therefore, β_2 captures the differential effect of treated immigrants' eligibility on treated immigrants' outcomes relative to natives. I also drop the variables that vary state by year, and instead include state by year fixed effects, which will flexibly absorb any shocks to outcomes that occur across states and over time and affect natives and treated immigrants similarly. Identification in this model comes from differential changes in treated immigrants' outcomes relative to natives' outcomes that occur across states and over time.

The advantage of the triple difference model is that it allows me to absorb state specific changes in program participation and labor supply that affect treated immigrants and natives similarly. For example, if a state changes their policies related to low-income workers, at the same time they changed immigrants' Food Stamp eligibility, the double difference models may be biased, but the effects of these policy changes will be captured in the triple difference model. However, the disadvantage is that natives may not be an ideal control group for treated immigrants, so including natives in the estimates may bias my estimates rather than differencing out other changes that are occurring across states and over time. Therefore, in

a series of robustness checks, I estimate the double difference model including controls for other things that change across states and over time that may affect program participation or labor supply.

5 Main Results

5.1 Baseline Results

I begin by analyzing the effects of the eligibility changes on Food Stamp participation and benefits received from Food Stamps to verify that the changes in eligibility led to changes in access to the program. For each demographic group, I present three estimates: one for the double difference model with state by time controls, one for the triple difference model with state by time controls, and one for the triple difference model with state by time fixed effects shown in Table (4). Recall that some households in the sample have children born in the U.S., who remain eligible when adults lose eligibility, so these households may continue to participate, but receive smaller benefit amounts when the adults become ineligible. Therefore, I examine the effects on both participation in Panel A, and the dollar amount of benefits received in Panel B.

For low-educated married men and women, I find that eligibility leads to an increase in participation in the program, shown in columns (1) to (3). Becoming eligible for the program increases participation of married couples by 4.2 percentage points ($p < 0.01$) in the double difference model, and the effects are similar in the triple difference models, even when state by year fixed effects are included. Moreover, the effect of treated immigrants' eligibility on natives' participation is close to zero and not statistically significant, as expected. Given the mean participation rate of 14% for married couples, this is a large change in exposure to the program—an increase of about 31% when eligible. There are slightly larger effects of eligibility on participation for low-educated single women, shown in columns (4) to (6). Single women increase participation by about 8 percentage points ($p < 0.05$) in the double difference model,

and the estimate is similar in the triple difference models. Single women also participate in the program at higher rates, so the implied increase in participation is 26%. There is however evidence of under-reporting of program receipt in the CPS (Meyer, Mok and Sullivan, 2009), so I interpret these estimates as a lower bound of the total effect on participation. I return to this issue of under-reporting below, as it is important to interpreting the magnitude of the estimates on labor supply.

Turning to Panel B, looking at the effects on the benefit amount received, there is a positive but insignificant effect among married couples. For single women, there is a statistically significant increase in benefit amount upon eligibility of about \$275-335 (2009\$). To get a sense of how much of the change in benefits received can be explained by the change in participation, I conduct a back of the envelope calculation similar to the method used in McDonald and Moffitt (1980) and Hastings and Washington (2010). I take the average benefit amount received by single women that participated in the program in 1996 (\$3317 in 2009\$) and multiply this by the change in participation (8 percentage points). This indicates that the change in participation can explain roughly \$265 of the change in benefits received for single women—very similar to the point estimate. For married couples, who received an average of \$3011 in benefits in 1996, the change in participation predicts a larger change in average benefits received (\$120) than is indicated by the point estimate, but this predicted change is well within the confidence interval of the point estimate. However, it important to point out that this type of calculation assumes that the marginal single woman (or married couple) who changes participation in the program is the same as the average single woman (or married couple) who participates, which may not be the case.²⁵

²⁵The above analysis in Panel B looking at benefit amounts captures the change due to both the extensive margin changes (participation) and intensive margin changes in benefit amounts received among participants. To further understand how benefit amounts are changing, I also estimate the effect of eligibility on the dollar amount of benefits received *only among those that participate in the program* in Appendix Table (A.1). In interpreting the results for the subsample of program participants, there may be selection into this subsample that affects the estimates. I find a positive effect on the benefit amount received for single women that participate. This suggests that the average benefits received among single women participants was larger when single women were eligible than not, which may be due to the fact that some households remain eligible for a smaller benefit amount even when the single woman is not, because of U.S.-born children. However,

Overall, I take this as evidence that the changes in adult eligibility can be interpreted as having large effects on participation in the program for single women and married couples, and there is some weakly suggestive evidence of selection into who participates in the program when adults are eligible, discussed in detail in the Appendix. Taken as a whole, this indicates there are unlikely to be differences in labor supply disincentives between households with and without children born in the U.S., but I explore this assumption in more detail below.

I next estimate the effect of eligibility on the measure of the extensive margin of labor supply shown in Panel A of Table (5). The coefficients indicate a small reduction in the likelihood of working for married men, but this coefficient is not significant in any model. For married women, the effects are larger—the likelihood of work is reduced by 3 percentage points ($p < 0.01$). Because I am interested in comparing the response of the different demographic groups to one another, I show the “percentage” effect in the table which takes the percentage point estimate of the effect of eligibility on labor supply and divides it by the sample mean, which is important because the demographic groups have different average levels of labor supply. The percent effect for married men is very small—2%—and much larger for married women—7%. The effect on work for single women is also significantly different from zero—the point estimates indicate a decline in work of 3.4 percentage points ($p < 0.10$) when eligible, which, when scaled by the sample mean is 6%. As with the program participation analysis, the point estimates are very similar across the double and triple difference models and again there is no effect of treated immigrants’ eligibility on natives’ labor supply, suggesting that unobserved factors that change within states and over time are not driving my estimates. Finally, low-educated single men provide a falsification test as they participate in the program

due to the selective nature of the sample, I cannot rule out that this is due to changes in selection into participation. In fact, the results suggest that differential selection into participation may be occurring for married couples. The point estimates on benefit amount among married participants are all negative, though none are significantly different from zero. Recall that there was a small and insignificant effect on benefits received among *both* participants and non-participants in Table (4), so taken together, this suggests that the average benefit received among married participants was higher when the adults in the household were ineligible, compared to when all of the household was eligible. This could be explained by a change in the composition of participants. For more details see the appendix.

at very low rates and as shown in Tables (4) and (5), there is no effect of eligibility on single men’s Food Stamp participation or labor supply.

These results indicate significant impacts of eligibility on the extensive margin of labor supply for single and married women, but negligible effects for single and married men. However, focusing only on the extensive margin of labor supply may not reveal the full labor supply effect, especially for men, whose labor force attachment is very high and extensive labor supply elasticity is low (McClelland and Mok, 2012). Men may therefore be more likely to adjust labor supply on the intensive margin rather than the extensive margin. To investigate the intensive margin responses, I turn to the ORG sample, which measures usual hours of work (including zeros), but has a smaller sample size than the basic monthly CPS. I examine the effects of eligibility on the hours worked for the different demographic groups in Panels B-D of Table (5).

Panel B displays the estimated effect on the usual weekly hours worked and Panels C and D show the effects on the likelihood of working full-time (≥ 35 hours per week) or part-time (≥ 20 hours per week), respectively. The smaller sample size results in less precise estimates, however, the point estimates indicate declines in hours worked among married men and single women. Married men reduce their weekly hours worked by 5%, and the likelihood of working full-time by 6% and part-time by 4%. Given that married men did not reduce labor supply along the extensive margin, this implies the reduction in hours worked is purely from the intensive margin. While the estimate is not statistically different from zero, single women appear to reduce hours worked by about 7%. For both married men and single women, the results are consistent across both the double and triple difference models. There are no consistent changes in married women’s or single men’s hours of work.

It is also informative to think about total labor supply among married couples and compare this to the response for single females. I restrict the sample to only include married couples and create variables indicating whether *any* spouse worked at all, worked full-time

or worked part-time, as well as the total hours worked for both individuals. There is a small reduction in the likelihood of having any spouse working and total hours worked are reduced by 5% shown in Table (6), which is similar in magnitude to the effect on hours worked for single women. Similarly, being eligible for Food Stamps decreases the likelihood of either spouse working full-time by 7% or part-time by 6%. Overall, these results indicate that both married couples and single women responded to the changes in Food Stamp eligibility. The magnitude of the total hours response is similar across household types, however, the nature of these hours changes were different across these two types of households.

5.2 Robustness Checks

A potential concern with the empirical strategy is that there are other things that change within states over time that affect labor supply and are correlated with the changes in Food Stamp eligibility. While the triple difference model is reassuring that no such changes are occurring, this conclusion depends on the validity of natives as a control group for immigrants. Since natives may not be the ideal control group, I re-estimate the double difference model including controls for other changes across states and over time.²⁶ I implement these checks for the estimates from the previous section that were significantly different from zero.²⁷

I show the double difference estimates for the individual measures of labor supply in column (1) of Table (7) and for the measures of married couples' joint labor supply in column (1) of Table (8). First, I include controls for year of survey by month of survey, which absorb any national shocks to labor supply that occur within a given year. These results are shown in column (2) of Table (7) for the individual outcome measures and column (2) of Table (8) for the joint measures. Married women's labor supply is sensitive to the inclusion of this more demanding set of fixed effects, and when they are included the effect on married women's work falls to zero. Similarly, total hours worked in married couples, and the likelihood that

²⁶Recall the double difference model already includes controls for the state unemployment rate, Medicaid/SCHIP generosity, AFDC/TANF generosity, and welfare reform or waivers.

²⁷Analogous checks for Food Stamp receipt are shown in Appendix Table (A.3).

either spouse works at all in the week prior to the survey, become indistinguishable from zero when these controls are included. However, the estimates for each of these outcomes have overlapping confidence intervals with the baseline estimates. I therefore conclude the evidence is suggestive, but not definitive, that married women’s labor supply is affected by Food Stamp eligibility. While, on the one hand, a small or null effect on married women may be surprising, since married women have a larger elasticity of labor supply than married men (Blundell and MaCurdy, 1999; Blau and Kahn, 2007), this is consistent with the previous findings of the effect of safety net programs on female labor supply (Kaushal, 2010). The effects on married men’s and single women’s labor supply are robust to these fixed effects, as is the likelihood that either spouse worked full or part-time.

Next, I check whether including controls for state’s labor force policies (state EITC and the state’s minimum wage), other fill-in programs that states implement for immigrants who entered the U.S. after 1996, other changes the states made to their Food Stamp programs, and states’ attitudes towards immigrants affect the estimates. These checks are shown in columns (3) to (6) and none of these controls substantively alter the estimated effects. Additionally, if states are experiencing differential trends in immigrants’ labor supply over this time period, this may be important to account for, so in column (7) I include state linear time trends. This has a minimal effect on the estimates. Finally, immigrants and natives do not concentrate in the same geographic areas, and immigrants are much more likely to live in urban rather than rural areas.²⁸ To account for this, I include metropolitan area by year fixed effects in column (8) to account for shocks to metropolitan areas over time in their economic conditions, for example. This also does not substantially change the results.²⁹

As I include individuals with U.S.-born children who remain eligible in the main anal-

²⁸https://www.census.gov/newsroom/blogs/random-samplings/2016/12/the_foreign-bornby.html

²⁹The sample size shrinks slightly in the labor supply analysis because metropolitan area is not available in every month in 1995.

ysis, a potential concern is that the effect cannot be interpreted as the effect of a change in eligibility. Therefore, I examine how the results change if I restrict the sample to treated immigrants who have no children, so the loss of immigrant eligibility causes the whole household to become ineligible for the program. In column (9) I find very similar effects as with the full sample, although some estimates are no longer statistically significant due to increases in the standard errors because of the smaller sample size.³⁰ It is worth noting that here I find reductions in labor supply for individuals that are likely considered ABAWDs, and therefore my findings are different than those in Stacy, Scherpf and Jo (2016). One possible explanation for the discrepancy relative to Stacy, Scherpf and Jo (2016) is that the margins of the labor supply response are different across the two papers. I focus on the short-term response in terms of weekly measures of labor supply, because the policy changes occur at the monthly level and Food Stamp eligibility is determined based on monthly income, whereas Stacy, Scherpf and Jo (2016) measure the longer-term labor supply response to Food Stamp participation at the annual level.

5.3 Magnitude of Effects

Overall, I find declines in labor supply in response to Food Stamp eligibility that are heterogeneous across demographic groups. Married couples primarily adjust their labor supply by reducing the hours of work of the husband, with less consistent evidence of a change in the labor supply of the wives. On the other hand, single women appear to reduce their labor supply by dropping out of the labor force. All of the point estimates discussed previously were intent to treat (ITT) estimates as they measure the effects of *eligibility* on labor supply, rather than the effect of participation on labor supply. In order to compare my findings to previous findings estimated among participants, I calculate the treatment on the treated

³⁰I have also interacted the main eligibility variable with the number of U.S.-born children in the household. The more U.S.-born kids in the household, the greater the benefit the household can still qualify for when the adults become ineligible, which may lead to heterogeneity in the effect. As expected, I find the coefficient on this interaction term to be positive—indicating the effect of eligibility is smaller for households with many U.S.-born children, but the coefficient is not statistically different from zero. This is consistent with the potential changes in selection into participation for married couples discussed in the Appendix.

(TOT) effect among those that participated in the program. To do this I utilize the estimated change in participation, as well as the change in dollar amount of benefits received, from above, to calculate the change in labor supply among participants and the change in labor supply per dollar of Food Stamp benefits received. As discussed above, the estimated effect on Food Stamps received using the CPS is likely a lower bound of the true effect, because only about 60% of households that participate in Food Stamps report receiving benefits in the CPS in my sample window (Meyer, Mok and Sullivan, 2009). Therefore, I rescale the estimates on Food Stamp participation and the dollar amount of benefits received by this estimate of under-reporting, and then use these inflated estimates to calculate the TOT effects. While the evidence above suggests there may be some changes in the benefit amount received not due to changes in participation, the results also indicate large changes in participation that may be able to account for all of the changes in the benefit amounts, so, to simplify the comparison to previous studies, I assume here that all the effects operate through changes in participation. Thus, the estimates imply married men who participate in the program reduced their hours of work by 24 hours (75%) and for single women there is a reduction in work of 43% among participants. Even though the estimated effects on hours worked of single women are not precise, much of the previous literature focuses on the effects of Food Stamps on total hours worked, so I also rescale these estimates and calculate a reduction in usual hours worked per week among single women participants of 8 hours per week (51%).

Hoynes and Schanzenbach (2012) estimate a treatment on the treated effect of 300-650 annual hours of work, or about 30-60% for single females. My estimated effect of 51% is similar. On the other hand, I find larger effects relative to the structural estimates in Fraker and Moffitt (1988), who document a reduction in hours worked of 1 hour per week among single female participants.

Another point of reference is to compare the implied elasticities of my estimates to

other estimates of labor supply elasticities shown in Appendix Table (A.4). I compare the estimated income elasticity for single women that I find here to the net-of-tax income elasticity estimated using the variation in the Earned Income Tax Credit (EITC) among single mothers. The latter comes from changes in the EITC that occurred in the 1980s and 1990s, and as there have been changes over time in women’s labor supply, these may be a more relevant point for comparison. Given that single women experience an increase in net income of \$558 (after adjusting for under-reporting of Food Stamps) my estimates imply a labor force participation elasticity with respect to net of Food Stamp income of 1.2, which is similar to the upper bound of others’ findings using the EITC to identify this parameter (Hotz, 2003).

5.4 Effect on Other Program Participation

All the above estimates are the reduced form effects of the policy changes on labor supply, and there may be other responses to these policy changes besides changes in participation in Food Stamps that contribute to this total effect. For example, if the changes in eligibility were correlated with changes in participation in other safety net programs, then the estimated effects on labor supply would be interpreted as changes in access to many programs rather than just the Food Stamp program. This could happen for several reasons. First, changes in participation in one safety net program may be linked to changes in participation in other programs if the applications for several programs are linked or the office in which individuals apply is the same (Baicker et al., 2014). In addition, confusion about the eligibility rules, fear of participation affecting immigration status, and complicated application procedures which require proof of immigration status may discourage participation in programs besides Food Stamps (Capps et al., 2004; Watson, 2014).

Therefore I examine this question empirically. I re-estimate the triple and double difference models and look at the effect of Food Stamp eligibility on participation in AFDC/TANF, SSI, Medicaid/SCHIP, and Free and Reduced Price Lunch in Appendix Table (A.5). I look

at married couples and single women, since I found the largest effects on Food Stamp participation for these groups. The coefficients are generally small and not statistically different from zero, indicating that the effects on labor supply are not be driven by large changes in participation in other programs. The only exception to this is changes in participation in welfare among single mothers—the estimates indicate that the changes in Food Stamp eligibility may have also affected welfare participation among this group, and this may also contribute to the effects on labor supply. Overall, this indicates little evidence in support of the “chilling effects” hypothesis as immigrants appear to be primarily responding to direct changes in eligibility and benefit generosity. Importantly, however, there may be other responses to immigrants’ loss of eligibility for Food Stamps, such as increases in private charities (Royer, 2005; Hungerman, 2005) and any effect these other responses have on labor supply will be captured in the reduced form estimates.

5.5 Specification Checks

A concern with the empirical strategy is that the decision to create a fill-in program may be endogenous; there may be other changes occurring within states and over time that are related to this decision that also affect labor supply. East (2016) finds no evidence that state’s fixed demographic or political characteristics predict a fill-in program, however these are absorbed by the state fixed effects. More importantly, therefore, East shows the presence of a fill-in program is not correlated with changes in state’s economic conditions or safety net generosity over time.³¹

Because almost 90% of treated immigrants living in Fill-In states live in California, I drop California from the sample in column (2) of Tables (9) and (10). For many of the

³¹This is in contrast to the findings in Zimmermann and Tumlin (1999), who suggest there may be correlations between the state’s average income and safety net generosity and the decision to create a fill-in program, but who use a different definition of Fill-In states than I do. Nevertheless, if states with these characteristics were trending differently in terms of program participation or labor supply, this may lead to biased estimates. I show the results are robust to including these state characteristics in 1990 interacted with trends shown in column (6) of Tables (9) and (10).

outcomes the effect shrinks and becomes statistically insignificant from zero. However, this is due in part to an increase in the standard errors, and the pattern of effects remains consistent even when California is excluded, which suggests that California is not the only driver of the estimates. I also isolate the changes in Food Stamp eligibility due only to changes in federal policy, rather than state policy, by dropping observations from Fill-In states. Identification in this model comes only from across-year differences in eligibility across treated immigrants, rather than state’s decisions. These results are shown in column (3) of Tables (9) and (10) and are very similar to the results obtained after dropping California.

The definition of Fill-In states is a slightly more restrictive definition than that used by other authors (see for example: Zimmermann and Tumlin (1999)), so I test the robustness of the findings to two broader definitions. The first addresses the fact that foreign-born children under 18 were subject to less severe restrictions on eligibility than foreign-born adults. In the main analysis, I assume all adults in my sample were eligible under the adult rules, rather than the child rules, and in column (4) of Tables (9) and (10) I instead assume teens were subject to the rules for children under 18, which does not affect the results.³² The second definition includes any state that provided Food Stamps to immigrants that entered the U.S. prior to 1997, regardless of whether the state had eligibility requirements beyond the federal ones. Two states—Illinois and New Jersey—fall into this category, and classifying them as Fill-In states does not substantively change the results as shown in column (5) of Tables (9) and (10).

If immigrants acted to avoid the changes in eligibility, either by applying to become citizens or through selective migration, this may cause selection into my sample and bias my results. I test for changes in citizenship and migration directly and find no consistent

³²Several states restored benefits to foreign-born children under age 18 and then federal eligibility was restored in 1998 as part of the Agriculture, Research Extension and Education Reform Act to these children who were also living in the U.S. at the passage of PRWORA. I take account of both of these policy differences between teens and adults. Analogous specification checks for Food Stamp benefit receipt shown in Appendix Table (A.6).

relationship between eligibility and citizenship in Table (A.7), or eligibility and the likelihood of moving in Table (A.8).³³ I also test the robustness of my findings to an alternative definition of treated immigrants. As veterans and refugees were exempt from the Food Stamp eligibility restrictions, I test the robustness of my results to dropping immigrants who likely fell into these exempt categories. As shown in Appendix Table (A.9) there are a significant number in the sample who are “likely” refugees, but very few who are veterans, and the results are very similar when these groups are dropped (shown in Appendix Table (A.10)).³⁴ In the main sample treated immigrant households are defined based on the adult woman’s citizenship unless there is no adult woman present. So I examine whether for married couples, conditioning on the husband’s citizenship status, or conditioning the citizenship status of both spouses affects the estimates. The estimates are consistent across the alternative sample definitions (Appendix Table (A.10)).

6 Conclusion

This paper evaluates the effect of changes in documented immigrants’ eligibility for the Food Stamp program on their labor supply. The Food Stamp program is currently one of the largest safety net programs in the U.S., however, very little is known about the labor

³³The ASEC asks about the state of residence in the year prior to the survey so I can directly test if eligibility influences state to state migration. If immigrants are migrating to avoid the eligibility restrictions would I expect to see an increase in the likelihood of moving if the immigrant is in a No-Fill-In state. To do this I examine whether eligibility in year $t - 1$ affects the probability of moving states between year $t - 1$ and t as follows: $\Delta State_{ist} = \alpha + \beta Elig_{st-1} + \gamma_1 X_{ist-1} + \gamma_2 Z_{st-1} + \nu_s + \lambda_t - 1 + \epsilon_{ist-1}$.

³⁴The CPS does not distinguish between refugees and other immigrants, so to classify immigrants as refugees I follow Borjas (2002) and define refugees as those from 13 major refugee-sending countries. As pointed out by Bollinger and Hagstrom (2008), only 32% of immigrants from these countries were refugees, so this is an overly restrictive sample selection rule. I also show in Appendix Table (A.9) the fraction of the sample that may be undocumented based on their demographic characteristics, as the undocumented population remained ineligible throughout the time period. To classify likely undocumented immigrants I follow the literature and define this group as non-citizen Hispanic individuals under age 45 with a high school education or less (see for example: Amuedo-Dorantes and Bansak (2014) and Orrenius and Zavodny (2015)). It is important to note that this is only a rough proxy for immigration status. Moreover, it is unclear if the effect on undocumented immigrants will actually be zero, since they may have children who were born in the U.S. and therefore some of their household is eligible to participate in Food Stamps. But, chilling effects could affect participation of these types of households because of confusion about eligibility rules, fear of participation affecting deportation, etc.

supply disincentives of the program. Understanding both the costs and the benefits of this program are crucial for optimal policy design and the eligibility changes faced by immigrants provide a unique setting to estimate the labor supply disincentive costs of the program.

I investigate the labor supply response across married men and women, as well as single individuals. I find that changes in immigrants' eligibility for Food Stamps led to changes in labor supply among both married couples and single women, but that the specific labor supply responses are heterogeneous across these demographic groups. In particular, Food Stamp eligibility causes married men to reduce their hours of work, whereas single women reduce the likelihood of working at all. These findings are robust to controlling for other changes across states and over time as well as the inclusion of natives as a control group in a triple difference model. Back of the envelope calculations indicate that restricting immigrants' eligibility for Food Stamps resulted in an increase in the employment to population ratios of single women of 0.7 percentage points, and in the rate of full-time work among married men of 0.1 percentage points.³⁵

Quantifying the effects of the program are especially important today, as there have been several small cuts in program generosity in the past few years and the effect of Food Stamps on labor supply remains a topic of political debate. Currently, new cuts have been proposed, and in particular cuts to immigrants' access are being considered. The evidence in this paper speaks to what the expected effects of a large cut would be today. The findings in this paper suggest that reductions in benefit generosity would increase employment rates among single women and would raise the hours worked among married men. Any benefits of the program must be weighed against these labor supply disincentives when policy changes are considered.

³⁵This calculation uses the average rates of labor supply among treated immigrants and all other working-age adults, along with the point estimates indicating how much work changed among treated immigrants, assuming no change in the labor supply of groups besides the treated immigrants.

References

- Amuedo-Dorantes, Catalina, and Cynthia Bansak.** 2014. "Employment verification mandates and the labor market outcomes of likely unauthorized and native workers." *Contemporary Economic Policy*, 32(3): 671–680.
- Baicker, Katherine, Amy Finkelstein, Jae Song, and Sarah Taubman.** 2014. "The Impact of Medicaid on Labor Market Activity and Program Participation: Evidence from the Oregon Health Insurance Experiment." *The American Economic Review*, 104(5): 322–328.
- Bitler, Marianne P, and Hilary W Hoynes.** 2013. "Immigrants, Welfare Reform, and the US Safety Net." *Immigration, Poverty, and Socioeconomic Inequality*, 315.
- Blau, Francine D, and Lawrence M Kahn.** 2007. "Changes in the Labor Supply Behavior of Married Women: 1980–2000." *Journal of Labor Economics*, 25(3): 393–438.
- Blau, Francine D, Lawrence M Kahn, and Kerry L Papps.** 2011. "Gender, Source Country Characteristics, and Labor Market Assimilation among Immigrants." *The Review of Economics and Statistics*, 93(1): 43–58.
- Blundell, Richard, and Thomas MaCurdy.** 1999. "Labor supply: A review of alternative approaches." *Handbook of Labor Economics*, 3: 1559–1695.
- Bollinger, Christopher R, and Paul Hagstrom.** 2008. "Food stamp program participation of refugees and immigrants." *Southern Economic Journal*, 665–692.
- Borjas, George J.** 2002. "Welfare reform and immigrant participation in welfare programs." *International Migration Review*, 36(4): 1093–1123.
- Borjas, George J.** 2003. "Welfare reform, labor supply, and health insurance in the immigrant population." *Journal of Health Economics*, 22(6): 933–958.
- Borjas, George J.** 2004. "Food insecurity and public assistance." *Journal of Public Economics*, 88(7): 1421–1443.
- Borjas, George J.** 2016. "The Labor Supply of Undocumented Immigrants." National Bureau of Economic Research.
- Bronchetti, Erin Todd.** 2014. "Public insurance expansions and the health of immigrant and native children." *Journal of Public Economics*, 120: 205–219.
- Cadena, Brian C, and Brian K Kovak.** 2016. "Immigrants Equilibrate Local Labor Markets: Evidence from the Great Recession." *American Economic Journal: Applied Economics*, 8(1): 257–90.
- Capps, Randolph.** 2004. "Assessing Implementation of the 2002 Farm Bill's Legal Immigrant Food Stamp Restorations: Final Report to the United States Department of Agriculture Food and Nutrition Service." *The Urban Institute*.
- Capps, Randolph, Leighton Ku, Michael E Fix, Chris Furgiuele, Jefferey S Passel, Rajeev Ramchand, Scott McNiven, and Dan Perez-Lopez.** 2004. "How Are Immigrants Faring After Welfare Reform?: Preliminary Evidence from Los Angeles and New York City-Final Report." *The Urban Institute*.

- CBPP.** 2013. “A Quick Guide to SNAP Eligibility and Benefits.”
- Chan, Marc K.** 2013. “A dynamic model of welfare reform.” *Econometrica*, 81(3): 941–1001.
- Currie, Janet.** 2003. “US Food and Nutrition Programs.” In *Means-tested Transfer Programs in the United States*. 199–290. University of Chicago Press.
- Daponte, Beth Osborne, Seth Sanders, and Lowell Taylor.** 1999. “Why do low-income households not use food stamps? Evidence from an experiment.” *Journal of Human Resources*, 612–628.
- East, Chloe N.** 2016. “The Effect of Food Stamps on Children’s Health: Evidence from Immigrants’ Changing Eligibility.” *mimeo*.
- Fix, Michael, and Wendy Zimmermann.** 2001. “All under one roof: Mixed-status families in an era of reform.” *International Migration Review*, 397–419.
- Fix, Michael E, and Jeffery S Passel.** 1999. “Trends in noncitizens’ and citizens’ use of public benefits following welfare reform: 1994-97.” *The Urban Institute*.
- Fix, Michael E, and Randolph Capps.** 2017. “Leaked Draft of Possible Trump Executive Order on Public Benefits Would Spell Chilling Effects for Legal Immigrants.” *Migration Policy Institute*.
- Fraker, Thomas, and Robert Moffitt.** 1988. “The effect of food stamps on labor supply: A bivariate selection model.” *Journal of Public Economics*, 35(1): 25–56.
- Ganong, Peter, and Jeffrey B Liebman.** 2013. “The decline, rebound, and further rise in snap enrollment: Disentangling business cycle fluctuations and policy changes.” National Bureau of Economic Research.
- Hagstrom, Paul A.** 1996. “The food stamp participation and labor supply of married couples: An empirical analysis of joint decisions.” *Journal of Human Resources*, 383–403.
- Haider, Steven J, Robert F Schoeni, Yuhua Bao, and Caroline Danielson.** 2004. “Immigrants, welfare reform, and the economy.” *Journal of Policy Analysis and Management*, 23(4): 745–764.
- Hastings, Justine, and Ebonya Washington.** 2010. “The First of the Month Effect: Consumer Behavior and Store Responses.” *American Economic Journal: Economic Policy*, 2(2): 142–62.
- Hotz, V Joseph.** 2003. “The earned income tax credit.” In *Means-tested transfer programs in the United States*. 141–198. University of Chicago Press.
- Hoynes, Hilary W, and Diane Whitmore Schanzenbach.** 2015. “US Food and Nutrition Programs.” National Bureau of Economic Research.
- Hoynes, Hilary W, and Erzo FP Luttmer.** 2011. “The insurance value of state tax-and-transfer programs.” *Journal of Public Economics*, 95(11): 1466–1484.
- Hoynes, Hilary Williamson, and Diane Whitmore Schanzenbach.** 2012. “Work incentives and the food stamp program.” *Journal of Public Economics*, 96(1): 151–162.
- Hungerman, Daniel M.** 2005. “Are church and state substitutes? Evidence from the 1996 welfare reform.” *Journal of Public Economics*, 89(11): 2245–2267.

- Kandel, William A.** 2011. *US Foreign Born Population: Trends and Selected Characteristics*. DIANE Publishing.
- Kandula, Namratha R, Colleen M Grogan, Paul J Rathouz, and Diane S Lauderdale.** 2004. "The unintended impact of welfare reform on the Medicaid enrollment of eligible immigrants." *Health Services Research*, 39(5): 1509–1526.
- Kaushal, Neeraj.** 2010. "Elderly immigrants' labor supply response to supplemental security income." *Journal of Policy Analysis and Management*, 29(1): 137–162.
- Keane, Michael, and Robert Moffitt.** 1998. "A structural model of multiple welfare program participation and labor supply." *International economic review*, 553–589.
- Lubotsky, Darren.** 2007. "Chutes or ladders? A longitudinal analysis of immigrant earnings." *Journal of Political Economy*, 115(5): 820–867.
- McClelland, Robert, and Shannon Mok.** 2012. "A review of recent research on labor supply elasticities." *Congressional Budget Office Working Paper Series*.
- McDonald, John F, and Robert A Moffitt.** 1980. "The Uses of Tobit Analysis." *The Review of Economics and Statistics*, 318–321.
- Meyer, Bruce D, Wallace KC Mok, and James X Sullivan.** 2009. "The under-reporting of transfers in household surveys: its nature and consequences." National Bureau of Economic Research.
- Moffitt, Robert A.** 2002. "Welfare programs and labor supply." *Handbook of Public Economics*, 4: 2393–2430.
- Moffitt, Robert A.** 2013. "The Great Recession and the Social Safety Net."
- Mulligan, Casey.** 2012. "The Redistribution Recession: How Labor Market Distortions Contracted the Economy."
- Orrenius, Pia M, and Madeline Zavodny.** 2015. "The impact of E-Verify mandates on labor market outcomes." *Southern Economic Journal*, 81(4): 947–959.
- Passel, Jefferey S, Randolph Capps, and Michael E Fix.** 2002. "Undocumented immigrants: Facts and figures." *The Urban Institute*.
- Redstone, Ilana, and Douglas S Massey.** 2004. "Coming to stay: An analysis of the US census question on immigrants year of arrival." *Demography*, 41(4): 721–738.
- Royer, Heather.** 2005. "The response to a loss in medicaid eligibility: pregnant immigrant mothers in the wake of welfare reform." *Unpublished manuscript, University of California-Santa Barbara*.
- Ruggles, S.** 2010. "Integrated Public Use Microdata Series, Current Population Survey: Version 3.0. [Machine-readable database]."
- Schmidley, A. Dianne, and J. Gregory Robinson.** 1998. "How Well Does The Current Population Survey Measure The Foreign Born Population In The United States?" Population Division Working Paper.

- Stacy, Brian, Erik Scherpf, and Young Jo.** 2016. “New Evidence on Labor Supply and the SNAP Program: What Are the Roles of Work Requirements, Expanded Eligibility, and New Program Rules?” USDA Working Paper.
- Swarns, Rachel L.** 1997. “Denied Food Stamps, Many Immigrants Scrape for Meals.” *The New York Times*.
- U.S. Department of Agriculture Food and Nutrition Service.** 2011. “Supplemental Nutrition Assistance Program Guidance on Non-Citizen Eligibility.”
- Van Hook, Jennifer.** 2003. “Welfare Reform’s Chilling Effects on Noncitizens: Changes in Noncitizen Welfare Reciprocity or Shifts in Citizenship Status?” *Social Science Quarterly*, 84(3): 613–631.
- Van Hook, Jennifer, and Kelly Stamper Balistreri.** 2006. “Ineligible parents, eligible children: Food stamps receipt, allotments, and food insecurity among children of immigrants.” *Social Science Research*, 35(1): 228–251.
- Watson, Tara.** 2014. “Inside the Refrigerator: Immigration Enforcement and Chilling Effects in Medicaid Participation.” *American Economic Journal: Economic Policy*, 6(3): 313–338.
- Wilde, Parke.** 2001. “Understanding the Food Stamp benefit formula.” *USDA, ERS*.
- Ziliak, James P.** 2015. “Why are so many Americans on food stamps? The role of the economy, policy, and demographics.” In *SNAP Matters: How Food Stamps Affect Health and Well-Being*, ed. Timothy Smeeding Judith Bartfeld, Craig Gundersen and James P. Ziliak. Stanford University Press.
- Zimmermann, Wendy, and Karen C Tumlin.** 1999. “Patchwork policies: State assistance for immigrants under welfare reform.” *The Urban Institute*.

Figure 1: Predicted Effects

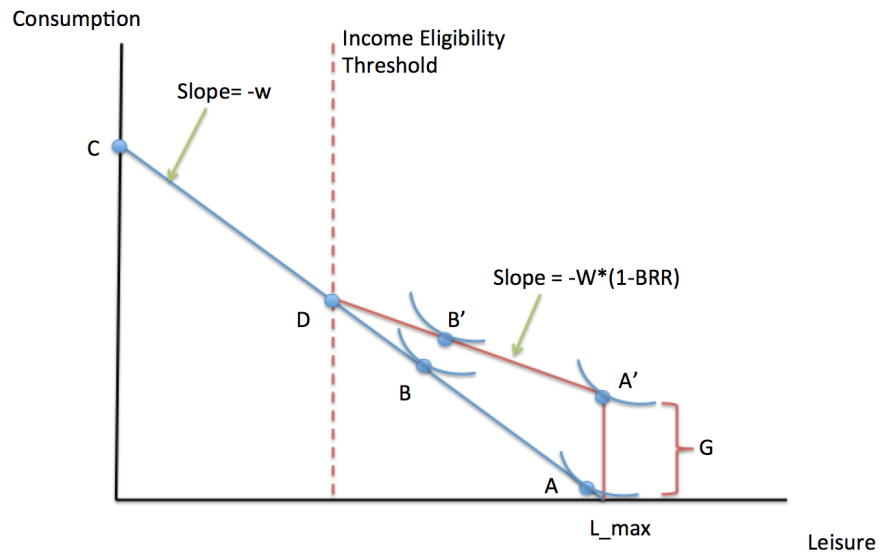
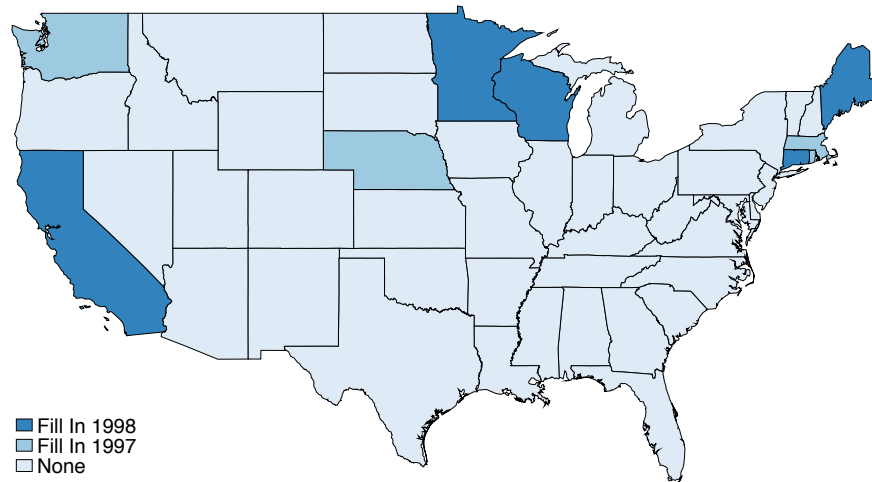


Figure 2: States that Chose to Fill In Food Stamps for Immigrants



Notes: States are classified based on their availability of a Food Stamp fill-in program in December of a given year. Only fill-in programs that provided benefits to children and their parents are included here. Fill-in programs for the elderly are not included. In addition states that provided fill-in programs but had additional eligibility requirements above and beyond the federal ones are not counted as fill-in states. See text for more details.

Figure 3: Eligibility for Food Stamps

Individuals' Characteristics

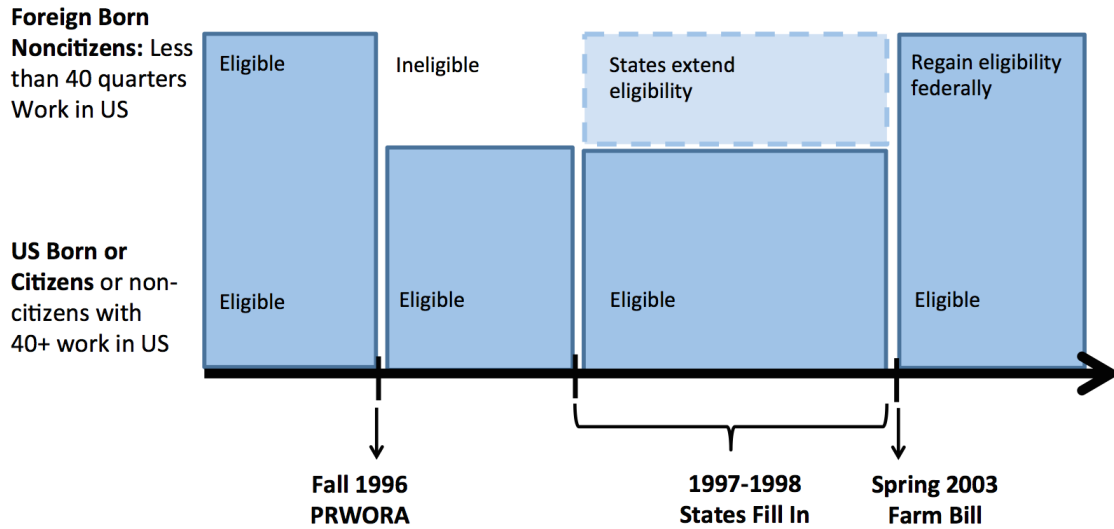
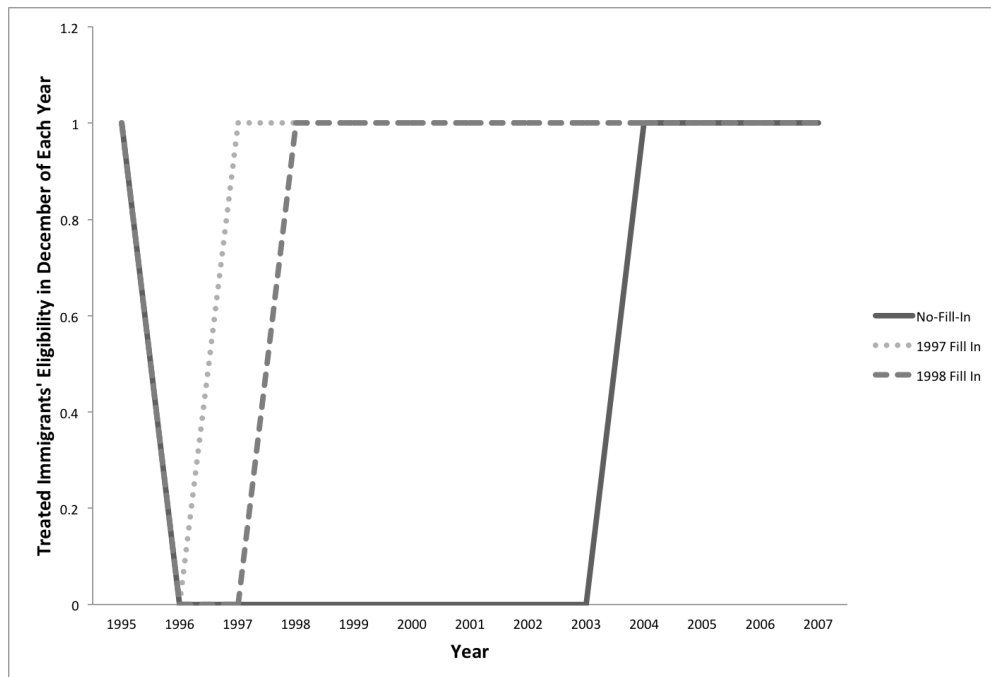
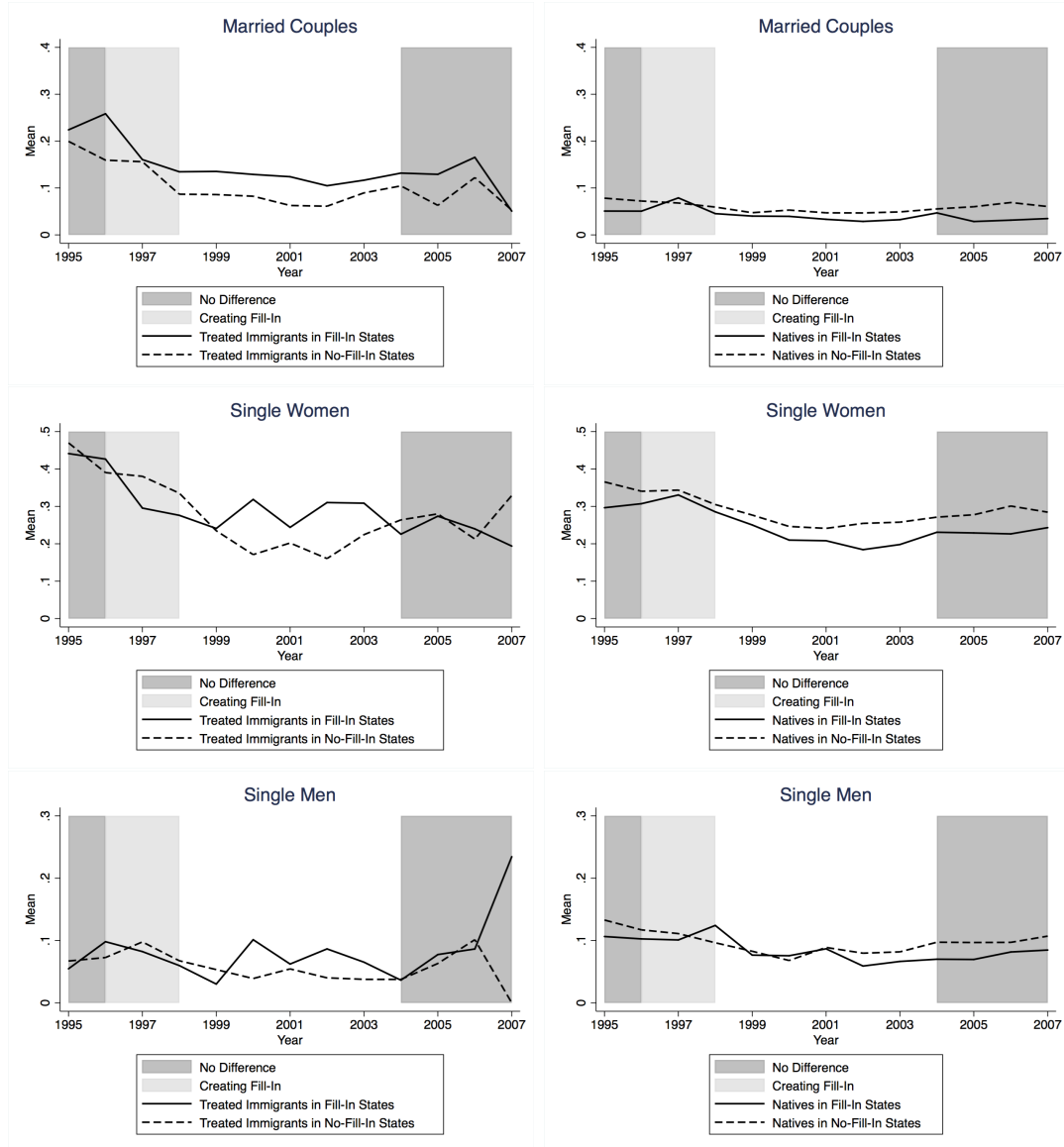


Figure 4: Eligibility for Food Stamps by State



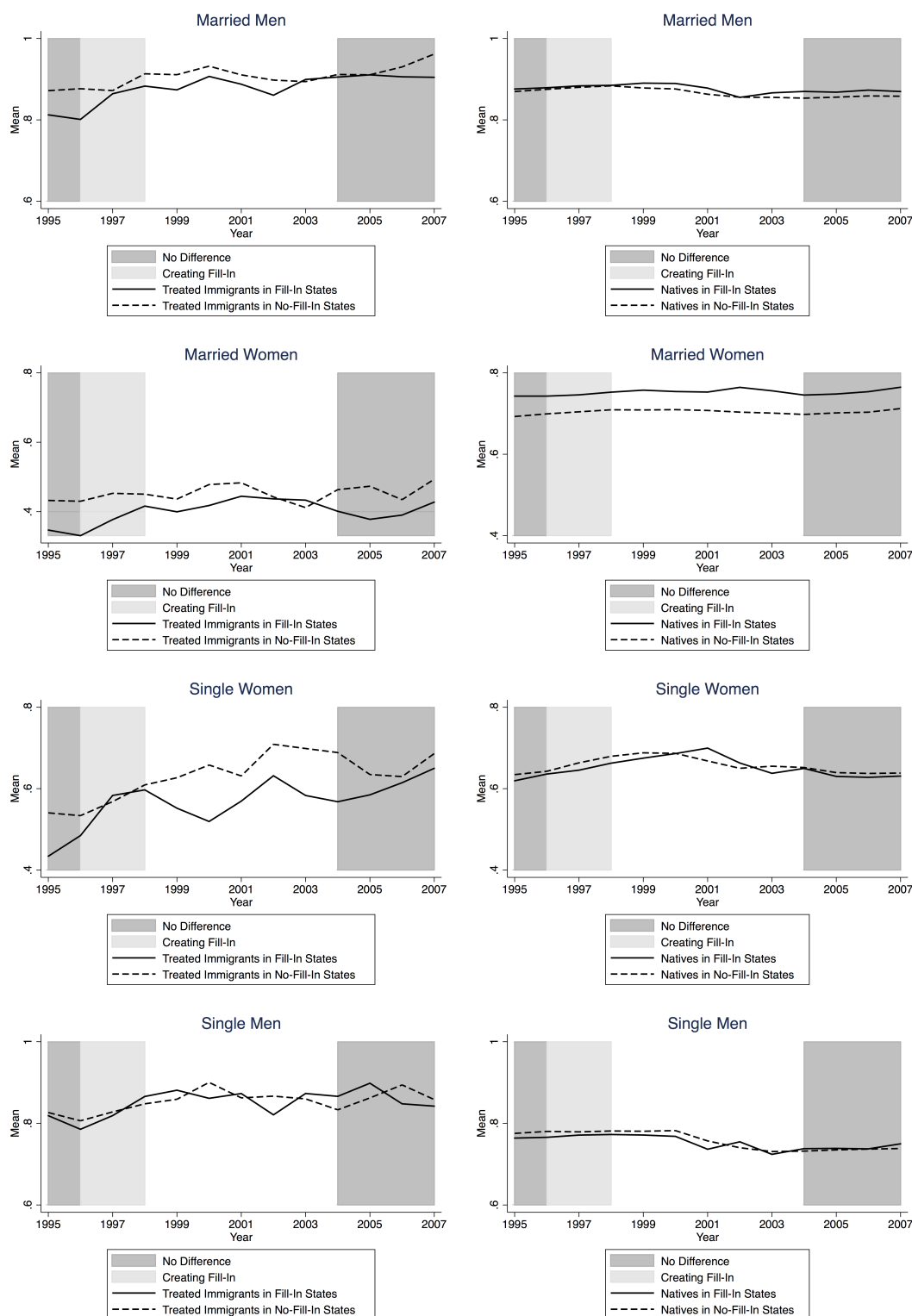
Notes: States are classified based on their availability of a Food Stamp fill-in program in December of a given year. Only fill-in programs that provided benefits to children and their parents are included here. Fill-in programs for the elderly are not included. In addition states that provided fill-in programs but had additional eligibility requirements above and beyond the federal ones are not counted as fill-in states. See text for more details.

Figure 5: Food Stamp Receipt among Treated Immigrants and Natives



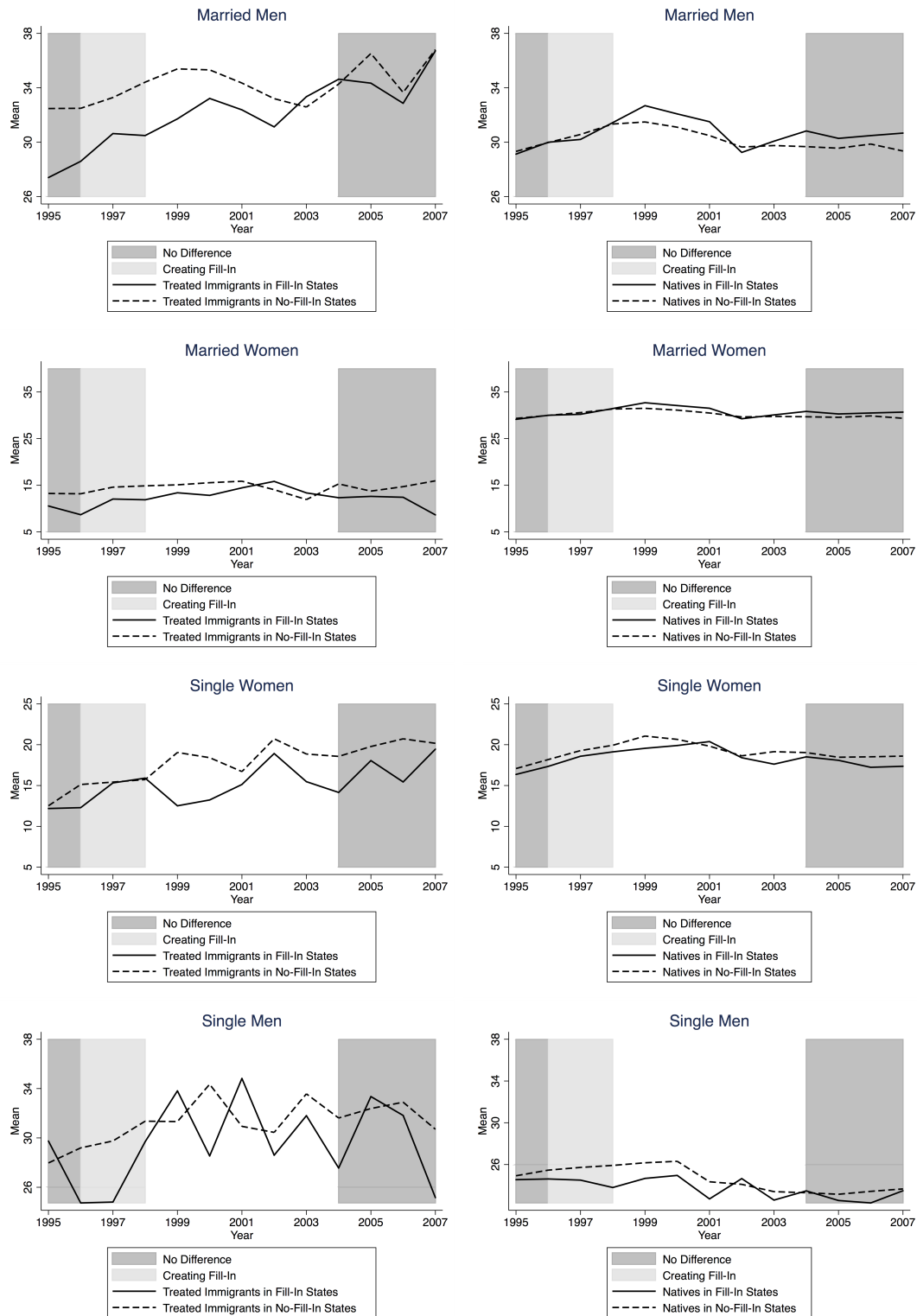
Notes: Data are from the 1995-2007 Current Population Survey. Food Stamp participation measured as of December of the survey year. The sample is individuals aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. The results are weighted using the CPS-provided weights.

Figure 6: Likelihood of Working Last Week among Treated Immigrants and Natives



Notes: Data are from the 1995-2007 Current Population Survey. Labor supply outcomes are annual averages. The sample is adults aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. The results are weighted using the CPS-provided weights.

Figure 7: Average Hours Worked per Week among Treated Immigrants and Natives



Notes: Data are from the 1995-2007 Current Population Survey. Labor supply outcomes are annual averages. The sample is adults aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. The results are weighted using the CPS-provided weights.

Table 1: Composition of Pre-PRWORA Food Stamp Participants

	Married Couples	Single Women	Single Men
1996 Food Stamp Quality Control Data			
All	0.17	0.67	0.16
Foreign-Born Non-Citizen	0.35	0.57	0.09
Natives	0.13	0.69	0.17

Notes: Data are from the Food Stamp Quality Control Data for Fiscal Year 1996. The sample is adults aged 16 to 59 who received Food Stamp benefits. Foreign-Born Non-Citizens are those whose head of household and spouse, if present, are foreign-born. Moreover, Non-Citizens are those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. The results are weighted using the Quality Control sample weights.

Table 2: Pre-PRWORA Food Stamp Participation (1995-1996 ASEC)

	Treated Immigrants			Natives		
	Married Couples	Single Women	Single Men	Married Couples	Single Women	Single Men
<i>A: Head has High School Education or Less</i>						
FS Participation	0.22	0.44	0.07	0.07	0.34	0.12
N	1336	566	408	15210	7299	5223
<i>B: Head has More than High School</i>						
FS Participation	0.07	0.14	0.03	0.02	0.12	0.03
N	678	272	300	20038	8670	6536

Notes: Data are from the 1995-1996 Current Population Survey. The sample is adults aged 16 to 59. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. The results are weighted using the CPS-provided weights.

Table 3: Summary Statistics

	Treated Immigrants						Natives			
	Married			Single			Married		Single	
	Men	Women		Men	Women		Men	Women	Men	Women
Demographics (Basic Monthly CPS)										
Age	36	34	35	32	42	40	39	38		
White	0.81	0.80	0.71	0.77	0.89	0.89	0.65	0.78		
Black	0.05	0.05	0.16	0.11	0.11	0.10	0.33	0.19		
Asian	0.12	0.13	0.11	0.09	0.00	0.00	0.00	0.01		
Hispanic	0.76	0.74	0.68	0.72	0.06	0.06	0.08	0.07		
Number of Kids Under 5	0.74	0.74	0.49	0.17	0.33	0.33	0.28	0.08		
Total Number of Kids	1.8	1.8	1.3	0.3	1.0	1.0	0.8	0.2		
Number of Kids Born Outside U.S.	0.6	0.6	0.3	0.0		
Number People Age 65+	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.03		
Less than High School	0.65	0.63	0.63	0.59	0.20	0.13	0.28	0.24		
Year of Entry into U.S.	1990	1991	1990	1991		
N	41996	41996	18726	16079	998242	998242	527977	424034		
Labor Supply Variables										
Work Last Week (Basic Monthly CPS)	0.89	0.43	0.60	0.85	0.87	0.71	0.66	0.76		
Hours Work Usually (ORG)	33	13	16	30	30	21	19	24		
Whether Work 35+ Hours (ORG)	0.77	0.29	0.35	0.70	0.72	0.44	0.41	0.56		
Whether Work 20+ Hours (ORG)	0.81	0.35	0.42	0.76	0.74	0.55	0.50	0.61		
N (ORG)	5676	5677	3575	2627	95983	95984	96534	68631		

Notes: Data are from the 1995-2007 Current Population Survey. The sample is adults aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. The results are weighted using the CPS-provided weights.

Table 4: Effect of Eligibility on Food Stamps Received

	Married Couples			Single Women			Single Men		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>A: FS Participation</i>									
Elig	0.042*** (0.016)	0.006 (0.007)		0.079** (0.038)	0.001 (0.010)		0.012 (0.021)	0.001 (0.005)	
Elig * TI		0.034** (0.017)	0.035* (0.018)		0.084* (0.045)	0.078* (0.046)		0.019 (0.019)	0.016 (0.020)
Mean Y	0.14	0.06	0.06	0.31	0.28	0.28	0.06	0.09	0.09
Percent Change	0.31	0.25	0.26	0.26	0.28	0.26	0.19	0.31	0.26
N	5857	115672	115672	2603	59755	59755	2103	44222	44222
<i>B: FS Benefits Received</i>									
Elig	44.9 (63.1)	16.9 (21.9)		335.8*** (99.8)	42.4 (44.7)		7.2 (37.9)	0.1 (13.8)	
Elig * TI		30.8 (57.8)	34.8 (62.3)		294.2** (123.0)	275.3** (121.1)		10.9 (39.0)	12.9 (45.4)
Mean Y	360.4	152.3	152.3	848.2	754.4	754.4	118.5	160.7	160.7
Triple Diff		X	X		X	X		X	X
State*Year FE			X			X			X
N	5857	115672	115672	2603	59755	59755	2103	44222	44222

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. *TI* is equal to one if the individual is in the treated immigrant group. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. In the triple difference models these state by year controls interacted with whether the household is a treated immigrant household are included to allow for the fact that these changes may affect immigrants and natives differently. In the triple difference model with state by year fixed effects the controls that vary by state and year only are omitted. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Effect of Eligibility on Whether Working Last Week and Hours Usually Work

	Married Men			Married Women			Single Women			Single Men		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>A: Work Last Week</i>												
Elig	-0.017 (0.011)	-0.002 (0.002)		-0.030*** (0.011)	-0.002 (0.005)		-0.034* (0.019)	0.003 (0.008)		-0.001 (0.022)	-0.003 (0.005)	
Elig * TI		-0.014 (0.013)	-0.016 (0.012)		-0.019* (0.010)	-0.028*** (0.009)		-0.044** (0.022)	-0.048** (0.022)		0.003 (0.021)	0.007 (0.021)
Mean Y	0.89	0.87	0.87	0.42	0.70	0.70	0.59	0.65	0.65	0.85	0.76	0.76
Percent Effect	-0.02	-0.02	-0.02	-0.07	-0.05	-0.06	-0.06	-0.07	-0.08	-0.00	0.00	0.01
N	41996	1039245	1039245	41996	1039245	1039245	18726	546703	546703	16079	440113	440113
<i>B: Weekly Hours</i>												
Elig	-1.761** (0.738)	-0.214 (0.274)		-0.538 (0.668)	0.046 (0.277)		-1.111 (0.835)	0.054 (0.302)		1.113 (1.179)	0.078 (0.379)	
Elig * TI		-1.377 (0.892)	-1.682** (0.835)		-0.155 (0.688)	-0.401 (0.756)		-1.593 (0.958)	-1.786** (0.869)		0.826 (1.248)	1.104 (1.371)
Mean Y	32.59	30.47	30.47	13.29	20.53	20.53	16.22	18.88	18.88	30.48	24.67	24.67
Percent Effect	-0.05	-0.04	-0.05	-0.04	-0.01	-0.03	-0.07	-0.10	-0.11	0.04	0.03	0.04
N	5673	100756	100756	5674	100758	100758	3567	99174	99174	2622	70537	70537
<i>C: Full-time Work (≥ 35 Hours)</i>												
Elig	-0.046** (0.018)	-0.005 (0.006)		0.003 (0.020)	-0.001 (0.007)		-0.034 (0.021)	0.003 (0.007)		0.029 (0.033)	0.004 (0.009)	
Elig * TI		-0.039* (0.022)	-0.046** (0.020)		0.010 (0.022)	0.007 (0.023)		-0.049** (0.024)	-0.053** (0.022)		0.020 (0.033)	0.030 (0.037)
Mean Y	0.77	0.72	0.72	0.29	0.43	0.43	0.35	0.41	0.41	0.70	0.57	0.57
Percent Effect	-0.06	-0.05	-0.06	0.01	0.03	0.02	-0.10	-0.14	-0.15	0.04	0.03	0.04
N	5673	100756	100756	5674	100758	100758	3567	99174	99174	2622	70537	70537
<i>D: Part-time Work (≥ 20 Hours)</i>												
Elig	-0.033** (0.016)	-0.005 (0.006)		-0.016 (0.016)	0.002 (0.008)		-0.032 (0.023)	-0.001 (0.008)		0.027 (0.031)	0.000 (0.009)	
Elig * TI		-0.024 (0.020)	-0.034* (0.018)		-0.008 (0.016)	-0.017 (0.018)		-0.042 (0.026)	-0.047** (0.023)		0.024 (0.033)	0.031 (0.036)
Mean Y	0.81	0.75	0.75	0.35	0.54	0.54	0.42	0.50	0.50	0.76	0.61	0.61
Percent Effect	-0.04	-0.03	-0.04	-0.05	-0.02	-0.05	-0.08	-0.10	-0.11	0.04	0.03	0.04
Triple Diff		X	X		X	X		X	X		X	X
State*Year FE			X			X			X		X	X
N	5673	100756	100756	5674	100758	100758	3567	99174	99174	2622	70537	70537

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. *TI* is equal to one if the individual is in the treated immigrant group. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. In the triple difference models these state by year controls interacted with whether the household is a treated immigrant household are included to allow for the fact that these changes may affect immigrants and natives differently. In the triple difference model with state by year fixed effects the controls that vary by state and year only are omitted. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Effect of Married Couples Joint Labor Supply

	Married Couples		
	(1)	(2)	(3)
<i>A: Any Work</i>			
Elig	-0.020** (0.009)	-0.001 (0.001)	
Elig * TI		-0.018 (0.011)	-0.021* (0.011)
Mean Y	0.93	0.95	0.95
Percent Effect	-0.02	-0.02	-0.02
N	41996	1039245	1039245
<i>B: Total Hours Work</i>			
Elig	-2.376*** (0.722)	-0.133 (0.378)	
Elig * TI		-1.825** (0.869)	-2.368*** (0.763)
Mean Y	45.85	51.02	51.02
Percent Effect	-0.05	-0.04	-0.05
N	5673	100753	100753
<i>C: Any Full-time Work</i>			
Elig	-0.056*** (0.014)	-0.006 (0.005)	
Elig * TI		-0.049*** (0.018)	-0.060*** (0.016)
Mean Y	0.81	0.81	0.81
Percent Effect	-0.07	-0.06	-0.07
N	5673	100757	100757
<i>D: Any Part-time Work</i>			
Elig	-0.053*** (0.014)	-0.003 (0.005)	
Elig * TI		-0.045** (0.018)	-0.055*** (0.016)
Mean Y	0.85	0.85	0.85
Percent Effect	-0.06	-0.05	-0.06
Triple Diff		X	X
State*Year FE			X
N	5673	100757	100757

Notes: Data are from the 1995-2007 Current Population Survey. The sample is married men aged 16 to 59 who have a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. *TI* is equal to one if the individual is in the treated immigrant group. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. In the triple difference models these state by year controls interacted with whether the household is a treated immigrant household are included to allow for the fact that these changes may affect immigrants and natives differently. In the triple difference model with state by year fixed effects the controls that vary by state and year only are omitted. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Effect of Eligibility on Labor Supply: Robustness Checks

	Double Difference								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>A: Work Last Week, Married Women</i>									
Elig	-0.030*** (0.011)	-0.001 (0.016)	-0.033*** (0.010)	-0.039*** (0.011)	-0.040*** (0.012)	-0.031*** (0.011)	-0.049*** (0.011)	-0.073*** (0.012)	-0.052 (0.031)
Mean Y	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.56
N	41996	41996	41996	41996	41996	41996	41996	40534	8254
<i>B: Work Last Week, Single Women</i>									
Elig	-0.034* (0.019)	-0.032 (0.022)	-0.039** (0.018)	-0.034 (0.025)	-0.038* (0.020)	-0.033 (0.022)	-0.035 (0.024)	-0.046* (0.026)	-0.040 (0.031)
Mean Y	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.60	0.67
N	18726	18726	18726	18726	18726	18726	18726	18174	7001
<i>C: Hours Worked, Married Men</i>									
Elig	-1.761** (0.738)	-1.782** (0.728)	-1.691** (0.745)	-1.544* (0.795)	-1.703** (0.769)	-1.558** (0.756)	-1.993** (0.753)	-1.323 (0.987)	-1.755 (1.298)
Mean Y	32.59	32.59	32.59	32.59	32.59	32.59	32.59	32.63	30.63
N	5673	5673	5673	5673	5673	5673	5673	5457	1073
<i>D: Full-Time Work, Married Men</i>									
Elig	-0.046** (0.018)	-0.040* (0.021)	-0.044** (0.018)	-0.044** (0.018)	-0.043** (0.019)	-0.041** (0.019)	-0.058*** (0.018)	-0.044** (0.020)	-0.084*** (0.031)
Mean Y	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.72
N	5673	5673	5673	5673	5673	5673	5673	5457	1073
<i>E: Part-Time Work, Married Men</i>									
Elig	-0.033** (0.016)	-0.036* (0.018)	-0.033** (0.016)	-0.031* (0.017)	-0.032* (0.016)	-0.028* (0.016)	-0.039** (0.017)	-0.024 (0.021)	-0.017 (0.030)
Mean Y	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.76
Year*Month FE		X							
Minimum Wage, EITC			X						
Other State Fill-In				X					
Other State FS Policies					X				
Attit to Immigrants						X			
State Trends							X		
Metro*Year FE								X	
No Kids									X
N	5673	5673	5673	5673	5673	5673	5673	5457	1073

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less, classified as treated immigrants. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, demographic characteristics and controls for the state unemployment rate and state safety net generosity. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Effect of Eligibility on Married Couples Joint Labor Supply: Robustness Checks

Double Difference									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>A: Any Work</i>									
Elig	-0.020** (0.009)	-0.012 (0.010)	-0.021** (0.009)	-0.022** (0.009)	-0.022** (0.009)	-0.018** (0.009)	-0.022** (0.010)	-0.017 (0.010)	-0.020 (0.015)
Mean Y	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92
N	41996	41996	41996	41996	41996	41996	41996	40534	8254
<i>B: Total Hours Worked</i>									
Elig	-2.376*** (0.722)	-0.913 (1.025)	-2.392*** (0.775)	-2.244*** (0.770)	-2.864*** (0.938)	-2.251*** (0.771)	-3.322*** (0.863)	-2.339* (1.323)	-3.366 (2.924)
Mean Y	45.85	45.85	45.85	45.85	45.85	45.85	45.85	45.91	48.41
N	5673	5673	5673	5673	5673	5673	5673	5457	1073
<i>C: Any Full-Time Work</i>									
Elig	-0.056*** (0.014)	-0.044** (0.017)	-0.056*** (0.015)	-0.060*** (0.013)	-0.061*** (0.015)	-0.053*** (0.015)	-0.067*** (0.015)	-0.060*** (0.013)	-0.098*** (0.027)
Mean Y	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.78
N	5673	5673	5673	5673	5673	5673	5673	5457	1073
<i>D: Any Part-Time Work</i>									
Elig	-0.053*** (0.014)	-0.055*** (0.017)	-0.055*** (0.014)	-0.053*** (0.016)	-0.057*** (0.015)	-0.050*** (0.014)	-0.059*** (0.015)	-0.046** (0.020)	-0.073** (0.032)
Mean Y	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.83
Year*Month FE		X							
Minimum Wage, EITC			X						
Other State Fill-In				X					
Other State FS Policies					X				
Attit to Immigrants						X			
State Trends							X		
Metro*Year FE								X	
No Kids									X
N	5673	5673	5673	5673	5673	5673	5673	5457	1073

Notes: Data are from the 1995-2007 Current Population Survey. The sample is married men aged 16 to 59 who have a high school education or less, classified as treated immigrants. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, demographic characteristics and controls for the state unemployment rate and state safety net generosity. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Effect of Eligibility on Labor Supply: Specification Checks

	Double Difference					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A: Work Last Week, Married Women</i>						
Elig	-0.030*** (0.011)	-0.060*** (0.020)	-0.081*** (0.023)	-0.030*** (0.011)	-0.018 (0.012)	-0.032*** (0.011)
Mean Y	0.42	0.46	0.45	0.42	0.42	0.42
N	41996	29253	26465	41996	41996	41996
<i>B: Work Last Week, Single Women</i>						
Elig	-0.034* (0.019)	-0.023 (0.036)	-0.032 (0.050)	-0.035* (0.018)	-0.049*** (0.015)	-0.028 (0.021)
Mean Y	0.59	0.62	0.62	0.59	0.59	0.59
N	18726	14042	12339	18726	18726	18726
<i>C: Hours Worked, Married Men</i>						
Elig	-1.761** (0.738)	-0.434 (1.147)	-0.396 (1.491)	-1.761** (0.738)	-1.855** (0.825)	-1.811** (0.747)
Mean Y	32.59	33.72	33.92	32.59	32.59	32.59
N	5673	3907	3439	5673	5673	5673
<i>D: Full-Time Work, Married Men</i>						
Elig	-0.046** (0.018)	-0.020 (0.031)	-0.036 (0.039)	-0.046** (0.018)	-0.045** (0.022)	-0.051*** (0.019)
Mean Y	0.77	0.80	0.80	0.77	0.77	0.77
N	5673	3907	3439	5673	5673	5673
<i>E: Part-Time Work, Married Men</i>						
Elig	-0.033** (0.016)	-0.009 (0.027)	-0.010 (0.035)	-0.033** (0.016)	-0.038** (0.018)	-0.035** (0.016)
Mean Y	0.81	0.84	0.84	0.81	0.81	0.81
Omit CA		X				
Omit Fill-In			X			
Model Teens as Children for Eligibility				X		
Model Illinois & New Jersey as Fill-In					X	
1990 Char*Trend						X
N	5673	3907	3439	5673	5673	5673

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less, classified as treated immigrants. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, demographic characteristics and controls for the state unemployment rate and state safety net generosity. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Effect of Eligibility on Married Couples Joint Labor Supply: Specification Checks

	Double Difference					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A: Any Work</i>						
Elig	-0.020** (0.009)	-0.007 (0.013)	-0.005 (0.010)	-0.020** (0.009)	-0.019** (0.009)	-0.019** (0.009)
Mean Y	0.93	0.94	0.94	0.93	0.93	0.93
N	41996	29253	26465	41996	41996	41996
<i>B: Total Hours Worked</i>						
Elig	-2.376*** (0.722)	-2.241 (1.737)	-2.922 (2.266)	-2.376*** (0.722)	-2.528** (1.044)	-2.646*** (0.690)
Mean Y	45.85	48.43	48.31	45.85	45.85	45.85
N	5673	3907	3439	5673	5673	5673
<i>C: Any Full-Time Work</i>						
Elig	-0.056*** (0.014)	-0.042* (0.023)	-0.063** (0.029)	-0.056*** (0.014)	-0.053** (0.021)	-0.062*** (0.014)
Mean Y	0.81	0.84	0.85	0.81	0.81	0.81
N	5673	3907	3439	5673	5673	5673
<i>E: Part-Time Work, Married Men</i>						
Elig	-0.053*** (0.014)	-0.037 (0.026)	-0.032 (0.036)	-0.053*** (0.014)	-0.051*** (0.018)	-0.053*** (0.014)
Mean Y	0.85	0.88	0.89	0.85	0.85	0.85
Omit CA		X				
Omit Fill-In			X			
Model Teens as Children for Eligibility				X		
Model Illinois & New Jersey as Fill-In					X	
1990 Char*Trend						X
N	5673	3907	3439	5673	5673	5673

Notes: Data are from the 1995-2007 Current Population Survey. The sample is married men aged 16 to 59 who have a high school education or less, classified as treated immigrants. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, demographic characteristics and controls for the state unemployment rate and state safety net generosity. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A Appendix: Food Stamp Program Details

As discussed in the text, in order to be eligible for Food Stamps, households must meet several income and asset tests. First households' total income, called "gross income", must be below 130% of the poverty line. However, not all income is counted as gross income. The major components of gross income are earnings, cash income from other safety net programs such as TANF, Unemployment Insurance, Social Security, and child support. The second income test is on "net income", which is gross income minus deductions, and net income must be below 100% of the poverty line to be eligible. There is a standard deduction, as well as a deduction for child care expenses, medical expenses, child support payments, and excess shelter costs (high rent and utility payments). During the late 1990s and early 2000s, most states also had an asset test as part of their eligibility requirements. Alternatively, households are eligible if they received AFDC/TANF benefits, SSI payments, or General Assistance benefits, although these programs often had income eligibility thresholds below the Food Stamp thresholds. "Able-bodied adults without dependents" (non-disabled working-age adults without children) were subject to stricter limits on their eligibility as the result of welfare reform in 1996. After 1996, most ABAWDs are subject to a time limit on SNAP receipt unless they meet an additional work requirement. The work requirement is to work or participate in qualifying education or training activities for at least 80 hours per month. These requirements are waived in local areas with high unemployment rates.³⁶

For households that are eligible, household-level benefit amounts are calculated as follows: households receive the maximum benefit amount minus 30% of the households' "net income". The maximum benefit amount is determined by the Department of Agriculture's Thrifty Food Plan, which is designed to provide adequate nutrition at minimal cost, is indexed to inflation, and varies with household size. Appendix Table (A.2) shows the maximum monthly benefit amount for households based on their size in fiscal year 1998.³⁷

³⁶See the USDA website for more details on ABAWD policies: <http://www.fns.usda.gov/snap/able-bodied-adults-without-dependents-abawds>.

³⁷Information in this section is from Wilde (2001) and (CBPP, 2013).

B Appendix: State-Year Control Variables

I merge onto the CPS information about the states' unemployment rates from the Bureau of Labor Statistics, whether the state "filled-in" other programs for immigrants that moved to the U.S. after 1996, changes to Food Stamp application procedures and eligibility rules, whether the state had an EITC program, income eligibility cutoffs for Medicaid and SCHIP for children by state, and the timing of welfare reform or waivers within each state. Information on other Food Stamp program changes—the frequency with which applications must be re-certified, whether in-person applications or re-certifications are required, state spending on outreach, broad based categorical eligibility, vehicle asset rules, and whether benefits are issued on debit cards—are from the USDA's SNAP Policy Database. The EITC information came from the NBER TAXSIM. The Medicaid/SCHIP income eligibility cutoffs were obtained from Hoynes and Luttmer (2011) and supplemented with information from the National Governor's Association. The information about fill-in states comes from Bitler and Hoynes (2013). These data allow me to control for economic conditions and other safety net generosity during my sample period, which may affect labor supply outcomes.

I also include several proxies for state's attitudes regarding immigrants that may be important for determining program participation (Watson, 2014). I follow Bronchetti (2014) and use two measures of attitudes: 1) the fraction of individuals reporting they would like immigration decreased from the American National Election Studies (ANES), and 2) the number of deportation court cases divided by the foreign-born population from Transactional Records Access Clearinghouse (TRAC) Immigration Reports. The ANES only includes census region rather than state, so I assign the same values to all states within the same region. Additionally, the ANES information is only available in 1992, 1994, 1996, 1998, 2000, 2004, 2008 and 2012, so I linearly interpolate for the missing years.

C Appendix: Selection into Food Stamp Participation

For married couples, the results indicate a large and significant change in Food Stamp participation, but a small and insignificant change in the benefit amount received. This could be explained by a change in the composition of participants when the adults in the household become eligible. For example, if households with more children (and therefore higher average benefit amounts) were more likely to participate when the parents were ineligible, relative to households with fewer children, this could explain the pattern of results. As a specific example, assume there are two types of married couple households that both participate when the parents are eligible: 1) with two parents and one U.S.-born child, and 2) with two parents and four U.S.-born children. Since the U.S.-born children remain eligible throughout, both of these types of households can always participate. As shown in Appendix Table (A.2), when the parents are eligible, the households could receive \$321 (type #1) and \$582 (type #2) in benefits respectively, and when the parents become ineligible the households could receive \$122 (type #1) and \$408 (type #2) in benefits, respectively. It is plausible that household type #1 feels the cost of applying for Food Stamps outweighs the benefits when the parents become ineligible, given the much lower benefit amount, whereas household type #2 still feels the benefits outweigh the costs when the parents are ineligible. There are more households of type #1 than type #2 in the sample (the average number of children U.S.-born children is 1.2 in the sample); so, to be concrete, assume there are five of household type #1 and one of household type #2. Then, the average benefits received among participants when the parents are eligible would be $((\$321 \times 5) + \$582) / 6 = \$364.5$, and the average benefits received among participants when the parents are ineligible would be \$408. This would lead to a smaller average benefit received among participants when the parents are eligible, as the results in Appendix Table (A.1) suggest.

Table A.1: Effect of Eligibility on Food Stamp Benefit Receipt Among Participants

	Married Couples			Single Women			Single Men		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Elig	-213.3 (475.5)	-54.4 (129.3)		578.7*** (184.1)	117.7 (97.3)		582.2 (474.5)	-64.9 (142.4)	
Elig * TI		-244.3 (424.9)	-318.6 (487.2)		628.4** (282.1)	611.5* (308.4)		96.7 (420.3)	-84.6 (553.2)
Mean Y	2615.5	2517.3	2517.3	2774.7	2657.0	2657.0	1910.8	1727.1	1727.1
Triple Diff		X	X		X	X		X	X
State*Year FE			X			X			X
N	747	7027	7027	830	17380	17380	137	4445	4445

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less and who reported receiving Food Stamps in the past year. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. *TI* is equal to one if the individual is in the treated immigrant group. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. In the triple difference models these state by year controls interacted with whether the household is a treated immigrant household are included to allow for the fact that these changes may affect immigrants and natives differently. In the triple difference model with state by year fixed effects the controls that vary by state and year only are omitted. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Maximum Food Stamp Benefit in Continental United States in Fiscal Year 1998

Household Size	Benefit Amount
1	\$122
2	\$224
3	\$321
4	\$408
5	\$485
6	\$582
7	\$643
8	\$735
Each Add'l Member	\$92

Notes: Maximum benefit amounts from USDA "CHARACTERISTICS OF FOOD STAMP HOUSEHOLDS FISCAL YEAR 1998".

Table A.3: Effect of Eligibility on Food Stamps Received: Robustness Checks

	Double Difference							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>A: FS Participation, Married Couples</i>								
Elig	0.042*** (0.016)	0.044** (0.017)	0.030* (0.017)	0.039 (0.023)	0.053** (0.022)	0.057** (0.026)	0.158* (0.088)	0.012 (0.028)
Mean Y	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.05
N	5857	5857	5857	5857	5857	5857	5857	1065
<i>B: FS Participation, Single Women</i>								
Elig	0.079** (0.038)	0.085** (0.037)	0.107** (0.042)	0.084* (0.042)	0.068 (0.043)	0.065 (0.044)	0.043 (0.160)	0.131*** (0.029)
Mean Y	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.10
N	2603	2603	2603	2603	2603	2603	2603	882
<i>C: FS Benefits Received, Married Couples</i>								
Elig	44.9 (63.1)	48.8 (69.3)	-8.4 (63.1)	37.2 (74.6)	64.1 (76.9)	64.2 (84.2)	115.3 (225.0)	58.8 (39.6)
Mean Y	360.4	360.4	360.4	360.4	360.4	360.4	360.4	123.8
N	5857	5857	5857	5857	5857	5857	5857	1065
<i>D: FS Benefits Received, Single Women</i>								
Elig	335.8*** (99.8)	328.9*** (102.6)	347.0*** (120.3)	316.5*** (98.3)	377.6*** (120.7)	287.8* (159.7)	-668.5 (687.0)	247.6*** (69.4)
Mean Y	848.2	848.2	848.2	848.2	848.2	848.2	848.2	206.1
Minimum Wage, EITC		X						
Other State Fill-In			X					
Other State FS Policies				X				
Attit to Immigrants					X			
State Trends						X		
Metro*Year FE							X	
No Kids								X
N	2603	2603	2603	2603	2603	2603	2603	882

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less, classified as treated immigrants. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Substitution and Income Elasticities of Labor Supply

	Married Men		Single Women	
	Substitution	Income	Substitution	Income
<i>A: Negative Income Tax Experiments</i>				
Lower Bound	0.06	-0.02	0.12	-0.15
Upper Bound	0.09	-0.14	0.14	-0.20
<i>B: Recent Estimates</i>				
Lower Bound	0.04	-0.02	0.15	-0.02
Upper Bound	0.07	-0.11	0.19	-0.09

Notes: See text for sources.

Table A.5: Effect of Eligibility on Other Program Participation

	Married Couples				Single Women			
	AFDC/TANF	SSI	Medicaid/SCHIP	School Lunch	AFDC/TANF	SSI	Medicaid/SCHIP	School Lunch
<i>A: Double Difference, State by Year Controls</i>								
Elig	-0.000 (0.017)	0.020 (0.014)	0.050 (0.039)	0.005 (0.024)	0.066* (0.034)	0.022 (0.019)	0.039 (0.035)	0.032 (0.024)
Mean Y	0.06	0.03	0.46	0.42	0.21	0.05	0.59	0.45
N	5857	5857	4363	5857	2603	2603	2006	2603
<i>B: Triple Difference, State by Year Controls</i>								
Elig	0.004* (0.002)	-0.002 (0.003)	0.002 (0.013)	0.006 (0.008)	0.003 (0.009)	0.001 (0.005)	0.022** (0.011)	-0.006 (0.008)
Elig * TI	-0.003 (0.014)	0.021 (0.014)	0.047 (0.035)	-0.021 (0.030)	0.068* (0.040)	0.030 (0.021)	0.028 (0.038)	0.048* (0.027)
Mean Y	0.02	0.03	0.26	0.12	0.14	0.10	0.57	0.26
N	115672	115672	57620	115672	59755	59755	38679	59755
<i>C: Triple Difference, State by Year Fixed Effects</i>								
Elig * TI	-0.006 (0.014)	0.031** (0.014)	0.053 (0.039)	-0.020 (0.029)	0.060 (0.043)	0.013 (0.024)	0.005 (0.039)	0.037 (0.025)
Mean Y	0.02	0.03	0.26	0.12	0.14	0.10	0.57	0.26
N	115672	115672	57620	115672	59755	59755	38679	59755

Notes: Data are from the 1995-2007 Current Population Survey. The sample is heads of household aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. *TI* is equal to one if the individual is in the treated immigrant group. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. In the triple difference models these state by year controls interacted with whether the household is a treated immigrant household are included to allow for the fact that these changes may affect immigrants and natives differently. In the triple difference model with state by year fixed effects the controls that vary by state and year only are omitted. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table A.6: Effect of Eligibility on Food Stamps Received: Specification Checks

	Double Difference					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A: FS Participation, Married Couples</i>						
Elig	0.042*** (0.016)	0.047 (0.039)	0.114* (0.061)	0.042*** (0.016)	0.042*** (0.014)	0.057** (0.022)
Mean Y	0.14	0.12	0.12	0.14	0.14	0.14
N	5857	3964	3591	5857	5857	5857
<i>B: FS Participation, Single Women</i>						
Elig	0.079** (0.038)	0.130 (0.086)	0.204 (0.154)	0.063* (0.036)	0.104** (0.048)	0.074** (0.035)
Mean Y	0.31	0.29	0.30	0.31	0.31	0.31
N	2603	1881	1639	2603	2603	2603
<i>C: FS Benefits Received, Married Couples</i>						
Elig	44.919 (63.144)	131.391 (165.803)	168.137 (123.895)	44.919 (63.144)	44.137 (60.260)	96.056 (77.558)
Mean Y	360.4	299.8	291.9	360.4	360.4	360.4
N	5857	3964	3591	5857	5857	5857
<i>D: FS Benefits Received, Single Women</i>						
Elig	335.8*** (99.8)	170.6 (149.6)	917.4* (462.7)	286.2*** (96.6)	276.0** (104.4)	372.5*** (103.1)
Mean Y	848.2	860.4	881.7	848.2	848.2	848.2
Omit CA		X				
Omit Fill-In			X			
Model Teens as Children for Eligibility				X		
Model Illinois & New Jersey as Fill-In					X	
1990 Char*Trend						X
N	2603	1881	1639	2603	2603	2603

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less, classified as treated immigrants. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Effect of Eligibility on Whether Citizen

	Married Men	Married Women	Single Women	Single Men
	(1)	(2)	(3)	(4)
Elig	0.020* (0.011)	0.009 (0.010)	-0.015 (0.018)	0.031 (0.019)
Mean Y	0.16	0.14	0.18	0.14
N	49085	49257	22927	18877

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less, is foreign-born and who entered the U.S. before 1997 and less than 15 years prior to being surveyed. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, and demographic characteristics. Additionally the regressions include controls for state unemployment rate, and state safety net generosity. Results for the double difference models are shown. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.8: Effect of Eligibility on Migration

	Married Couples	Single Women
	(1)	(2)
<i>A: Double Difference, State by Year Controls</i>		
Elig	-0.027 (0.025)	0.024 (0.032)
Mean Y	0.02	0.02
N	5148	2289
<i>B: Triple Difference, State by Year Controls</i>		
Elig	-0.006 (0.013)	0.010 (0.027)
Elig * TI	-0.020 (0.017)	0.016 (0.022)
Mean Y	0.02	0.03
N	106721	55505
<i>C: Triple Difference, State by Year Fixed Effects</i>		
Elig * TI	-0.033 (0.028)	0.031 (0.035)
Mean Y	0.02	0.03
N	106721	55505

Notes: Data are from the 1995-2007 Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Moreover, Treated Immigrants are restricted to those in which the female (if present, otherwise the male) is a non-citizen. Natives are individuals born in the U.S.. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. *TI* is equal to one if the individual is in the treated immigrant group. All regressions include controls for state and year fixed effects, and demographic characteristics. The double difference models include controls for state unemployment rate and state safety net generosity. In the triple difference models these state by year controls interacted with whether the individual is a treated immigrant are included to allow for the fact that these changes may affect immigrants and natives differently. In the triple difference model with state by year fixed effects the controls that vary by state and year only are omitted. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: Composition of Foreign-Born who Entered U.S. before 1997 and less than 15 years prior to being Surveyed

	Married Couples	Single Women	Single Men
Citizens in 1995-1996	0.14	0.13	0.09
Veterans in 1995-1996	0.01	0.00	0.00
Likely Refugees	0.11	0.09	0.08
Likely Undocumented	0.63	0.47	0.56

Notes: Data are from the 1995-2007 monthly Current Population Survey, except the first two rows which restrict the sample to only 1995-1996. The sample is individuals aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. Characteristics for married couples are for either spouse. The results are weighted using the CPS-provided weights.

Table A.10: Effect of Eligibility on Labor Supply: Robustness to Treated Immigrant Definition

	Baseline	Drop Veterans	Drop Refugees	Husband Non-Citizen	Both Non-Citizen
<i>A: Married Men's Hours Worked</i>					
Elig	-1.761** (0.738)	-1.756** (0.756)	-1.916** (0.836)	-1.669* (0.891)	-1.964** (0.850)
Mean Y	32.59	32.58	33.61	32.44	32.58
N	5673	5659	4991	5501	5220
<i>B: Married Couples, Any Full-Time</i>					
Elig	-0.056*** (0.014)	-0.056*** (0.015)	-0.055*** (0.014)	-0.049*** (0.014)	-0.056*** (0.014)
Mean Y	0.81	0.81	0.83	0.81	0.81
N	5673	5659	4991	5501	5220
<i>C: Married Couples, Any Part-Time</i>					
Elig	-0.053*** (0.014)	-0.053*** (0.014)	-0.049*** (0.015)	-0.053*** (0.016)	-0.053*** (0.015)
Mean Y	0.85	0.85	0.87	0.85	0.85
N	5673	5659	4991	5501	5220
<i>D: Single Women's Work Last Week</i>					
Elig	-0.034* (0.019)	-0.034* (0.019)	-0.043** (0.017)		
Mean Y	0.59	0.59	0.60		
N	18726	18723	17111		

Notes: Data are from the 1995-2007 monthly Current Population Survey. The sample is individuals aged 16 to 59 whose head of household has a high school education or less. Treated Immigrants are foreign-born individuals who entered the U.S. before 1997 and less than 15 years prior to being surveyed. *Elig* is equal to one if treated immigrants are eligible for Food Stamps, based on the month and year of the survey, and the state of residence of each individual. This captures both changes over time, as well as changes across Fill-In and No-Fill-In states, in treated immigrants' eligibility. All regressions include controls for state and year fixed effects, demographic characteristics and controls for the state unemployment rate and state safety net generosity. Results for the double difference models including only treated immigrants are shown. The results are weighted using the CPS-provided weights. Standard errors are clustered by state and shown in parentheses. * p<0.10, ** p<0.05, *** p<0.01