

# Participation in the Food Stamp Program by U.S.-Born Children of Immigrants Before and After the Farm Bill Act of 2002

Contractor and Cooperator Report No. 67  
June 2011

**By Paula Fomby, University of Colorado Denver\***

## Abstract

This study uses administrative records from participants in a longitudinal study of low-income families in three U.S. cities to determine whether enrollment in the Food Stamp Program increased in households with U.S.-born children and foreign-born heads after legal immigrants' access to the program was restored under the Farm Bill Act of 2002. The analysis includes cross-tabulation, graphical comparisons, and multivariate Cox proportional hazard models predicting the risk of program entry and program exit. Results indicate that there was a short-term spike in the likelihood of enrollment by households headed by noncitizen parents immediately after the Farm Bill Act was fully implemented in October 2003. For this population, the likelihood of enrollment declined by April 2004, but participation in the post-Farm Bill Act era remained elevated through 2006 compared with prior periods.

---

\*Direct correspondence to Paula Fomby, Department of Sociology, University of Colorado Denver, Campus Box 105, P.O. Box 173364, Denver, CO 80217-3364, or [paula.fomby@ucdenver.edu](mailto:paula.fomby@ucdenver.edu).

**This study was conducted by John Hopkins University under a cooperative research agreement with USDA's Economic Research Service (ERS) Food Assistance and Nutrition Research Program (FANRP): agreement number 43-3AEM-4-80116 (ERS project representative: Constance Newman). The views expressed are those of the authors and not necessarily those of ERS or USDA.**

Executive Summary  
**Participation in the Food Stamp Program by U.S.-Born Children of Immigrants  
Before and After the Farm Bill Act of 2002**  
By Paula Fomby

This report uses administrative records from participants in a longitudinal study of low-income families in three U.S. cities to determine whether enrollment in the Food Stamp Program<sup>2</sup> increased in households with U.S.-born children and foreign-born heads after legal immigrants' access to that program was restored under the Farm Bill Act of 2002. Federal policies regarding legal immigrants' access to food stamps changed five times during and after welfare reform in 1996. Each change redefined the eligible population. Prior to passage of the Personal Responsibility Work Opportunity Reconciliation Act (PRWORA), legal immigrants and U.S. citizens had comparable access to federal social service benefits, including food stamps. Immediately after welfare reform, most legal immigrants became ineligible for food stamps (although some states introduced state-funded nutrition assistance programs to cover immigrants ineligible for federal aid). The Agricultural Research, Extension, and Education Act of 1998 restored federal eligibility to food stamps for immigrant children and elderly or disabled immigrants who were in the United States prior to the 1996 welfare reform act. The Farm Bill Act of 2002 further broadened eligibility in three phases. In October 2002, the Act restored eligibility to all legal immigrants who were receiving disability payments from the federal government or a state. In April 2003, the Act restored access to food stamps to immigrants who had legally resided in the United States for at least five years. The terms of the act were broadened in October 2003 to restore eligibility to all legal immigrants under age 18, regardless of time in the United States. For adult applicants, the Farm Bill of 2002 retained the condition of "sponsor deeming" for adult recipients, meaning that sponsors' income counts toward the total income of sponsored legal immigrants when assessing income eligibility. (Sponsor deeming applies to about 25 percent of immigrants whose sponsors live in separate households (Leftin and Wolkwitz 2009)). As of October 2003, sponsor deeming was not considered in calculating income eligibility for child applicants. The end result of the policy changes essentially returns legal immigrants who had been in the United States for at least five years to the standards of eligibility in place prior to welfare reform.

Previous research has found that low-income U.S.-born children of immigrants were less likely than comparable children of native-born parents to receive food stamps in the period immediately after welfare reform, although U.S.-born children of immigrants whose families met income requirements were eligible for all federal benefits for the entire period, both before and after welfare reform. In 2000, 34.3 percent of eligible mixed status households (where a citizen child resided with at least one noncitizen parent) received food stamps, compared to 69.6 percent of all eligible households with children. Researchers have hypothesized that immigrant parents

---

<sup>2</sup> The Farm Bill Act of 2008 renamed the Food Stamp Program to the Supplemental Nutrition Assistance Program, or SNAP. This report generally maintains the use of the original program name because the analyses are based on survey data collected before the name change.

were less likely to enroll their children in programs for which they themselves were ineligible. This hypothesis is supported by comparisons of participation in various programs by U.S.-born children of legal immigrants and children of U.S.-born parents. Low-income children of legal immigrants were as likely or more likely than comparable children of U.S.-born parents to participate in programs to which immigrants' access was not affected by welfare reform (i.e., the Women, Infants, & Children program), or where immigrants' access became more selective but barriers to children's access were relatively low and state and federal agencies promoted children's enrollment (i.e., Medicaid and state children's health insurance plans (S-CHIP), as opposed to TANF).

This project investigates whether children of immigrants became more likely to receive food stamps when legal immigrants' eligibility was broadly restored under the 2002 Farm Bill Act compared to the period before restoration. The objectives of the project are summarized in the following hypothesis: Enrollment among U.S.-born children would be expected to increase if immigrant parents are more likely to enroll children in programs for which they themselves are also eligible. This hypothesis may be tested by considering enrollment rates among U.S.-born children of foreign-born parents as follows by comparing enrollment rates and participation rates in the Food Stamp Program among U.S.-born children of immigrants before and after October 2003, when eligibility was restored for all legal immigrants, and by comparing enrollment and participation rates among U.S.-born children of immigrants to those of children of native-born parents before and after the eligibility dates to determine whether children of immigrants' use increased disproportionately in the post-restoration period.

The project uses data from the Three-City Study, a longitudinal study of the well-being of children and their female caregivers in the post-welfare reform era. The study followed approximately 2,400 low-income families in low-income neighborhoods in Boston, Chicago, and San Antonio over three waves between 1999 and 2005. The study was designed so that approximately half of participants were not enrolled in TANF at wave 1. The multi-method study includes three waves of survey data collected from children and caregivers, as well as an in-depth developmental study that followed young children from the survey sample in conjunction with the first two waves of the survey and an intensive ethnography of 250 families not included in the survey sample.

Results suggest that the Farm Bill Act was effective in enrolling low-income mixed status households in the six-month period immediately after its full implementation in October 2003. Since implementation, noncitizen-caregiver households have become more likely to receive food stamps than are households headed by naturalized caregivers, but noncitizens' households continue to have lower rates of receipt than do low-income households headed by U.S.-born caregivers. The overall pattern of enrollment by mixed status households suggests that the Farm Bill Act immediately satisfied some unmet need for food stamps among families who were already in the public assistance system as TANF recipients. Following that period, there was a slower but steady uptake in food stamp enrollment through June 2006 that was on a par with entrance rates for U.S. citizens. Immediately after the Farm Bill Act went into effect, average monthly exit rates were higher for U.S.-born caregivers than for noncitizen caregiver households, but exit rates for the two groups have since achieved parity, and by 2006, the two groups

paralleled each other in their quarterly participation rates in the Food Stamp program (see figure 1).

Nearly all of the families in the study had been in the United States for at least five years when the Farm Bill Act went into effect, meaning that they became eligible to enroll during the first phase of the Act's implementation in April 2003. One possible explanation for the lag in uptake is that information about the Act might have begun to spread only after full implementation in October. For example, state agencies might have held off on broadly advertising expanded eligibility until all of the phases to broaden the program had been implemented, perhaps to avoid receiving and rejecting applications from families with minor immigrants who had been in the United States fewer than five years during the first phase of implementation. Alternatively, news might have spread by word of mouth more effectively once the Act was fully implemented. Another explanation is that the application and processing stages to begin transferring benefits to families might have taken several months after legal immigrants initially became eligible to enroll, so that even early adopters did not show up in the rolls until Fall 2003.

This study has several limitations. First, it is representative only of low-income families in low-income neighborhoods in three U.S. cities. Second, the study would benefit from an improved definition of means-tested eligibility to participate in the Food Stamp Program. Sponsor deeming is a dimension of eligibility that is salient to the foreign-born caregiver population and that we are unable to capture in our household-based study. A challenge to researchers focusing on noncitizen caregivers' eligibility for public assistance is to effectively model sponsors' income and to account for how it is figured into a noncitizen caregiver's application for public assistance. Such an effort may require a study design focused exclusively on legal immigrants, like the New Immigrant Study. Third, while administrative records are considered superior to self-report data in terms of accuracy and completeness, respondents who consent to share their administrative records are distinct from those who decline, so some amount of bias is introduced into the study design. Finally, we have not accounted for variation in state and federal policies or macroeconomic conditions over time that might have differentially affected Food Stamp Program participation among children with native-born or foreign-born parents. Future work will investigate how the differential impacts of policy changes and macroeconomic structure by nativity affected enrollment in TANF and the Food Stamp Program for mixed-status families.

This report uses administrative records from participants in a longitudinal study of low-income families in three U.S. cities to determine whether enrollment in the Food Stamp Program<sup>3</sup> increased in households with U.S.-born children and foreign-born heads after legal immigrants' access to that program was restored under the Farm Bill Act of 2002.

## Background

Federal policies regarding legal immigrants' access to food stamps changed five times during and after welfare reform in 1996. Each change redefined the eligible population. Prior to passage of the Personal Responsibility Work Opportunity Reconciliation Act (PRWORA), legal immigrants and U.S. citizens had comparable access to federal social service benefits, including food stamps. Immediately after welfare reform, most legal immigrants became ineligible for food stamps (although some states introduced state-funded nutrition assistance programs to cover immigrants ineligible for federal aid).<sup>4</sup> The Agricultural Research, Extension, and Education Act of 1998 restored federal eligibility to food stamps for immigrant children and elderly or disabled immigrants who were in the United States prior to the 1996 welfare reform act. The Farm Bill Act of 2002 further broadened eligibility in three phases. In October 2002, the Act restored eligibility to all legal immigrants who were receiving disability payments from the federal government or a state. In April 2003, the Act restored access to food stamps to immigrants who had legally resided in the United States for at least five years. The terms of the act were broadened in October 2003 to restore eligibility to all legal immigrants under age 18, regardless of time in the United States. For adult applicants, the Farm Bill of 2002 retained the condition of "sponsor deeming" for adult recipients, meaning that sponsors' income counts toward the total

---

<sup>3</sup> The Farm Bill Act of 2008 renamed the Food Stamp Program to the Supplemental Nutrition Assistance Program, or SNAP. This report generally maintains the use of the original program name because the analyses are based on survey data collected before the name change.

<sup>4</sup> Legal immigrants with 40 quarters of work experience, veterans, and active members of the military and their families remained eligible.

income of sponsored legal immigrants when assessing income eligibility. (Sponsor deeming applies to about 25 percent of immigrants whose sponsors live in separate households (Leftin and Wolkwitz 2009)). As of October 2003, sponsor deeming was not considered in calculating income eligibility for child applicants. The end result of the policy changes essentially returns legal immigrants who had been in the United States for at least five years to the standards of eligibility in place prior to welfare reform. (See Capps, Koralek, Lotspeich, Fix, Holcomb, and Reardon-Anderson 2004 for a detailed discussion of these policy changes.)

Previous research has found that low-income U.S.-born children of immigrants were less likely than comparable children of native-born parents to receive food stamps in the period immediately after welfare reform (Capps, Fix, Henderson, and Reardon-Anderson 2005; Cunyningham 2002; Fix and Passel 2002; Fomby and Cherlin 2004), although U.S.-born children of immigrants whose families met income requirements were eligible for all federal benefits for the entire period, both before and after welfare reform. In 2000, 34.3 percent of eligible mixed status households (where a citizen child resided with at least one noncitizen parent) received food stamps, compared to 69.6 percent of all eligible households with children (Leftin and Wolkwitz 2009). Researchers have hypothesized that immigrant parents were less likely to enroll their children in programs for which they themselves were ineligible (Capps and Fortuny 2006; Capps, Ku, Fix, Fielder, Greenwell, and Hays 2002; Fomby and Cherlin 2004). This hypothesis is supported by comparisons of participation in various programs by U.S.-born children of legal immigrants and children of U.S.-born parents. Low-income children of legal immigrants were as likely or more likely than comparable children of U.S.-born parents to participate in programs to which immigrants' access was not affected by welfare reform (i.e., the Women, Infants, & Children program), or where immigrants' access became more selective but barriers to children's

access were relatively low and state and federal agencies promoted children's enrollment (i.e., Medicaid and state children's health insurance plans (S-CHIP), as opposed to TANF) (Capps, Fix, Henderson, and Reardon-Anderson 2005; Cunyningham 2004; Fix and Passel 2002; Fomby and Cherlin 2004).

### Research Questions and Hypotheses

The current project investigates whether children of immigrants became more likely to receive food stamps when legal immigrants' eligibility was broadly restored under the 2002 Farm Bill Act compared to the period before restoration. However, an increase in food stamp use by children of immigrants may be indicative of other policy changes. Families left TANF as a result of rising income, time limits, sanctions, or personal choice. Any observed increase in food stamp enrollment among children of immigrants may simply reflect the overall trend to use food stamps in place of TANF income. In fact, while FSP participation broadly diminished immediately after welfare reform, program use among eligible households increased annually in the three states considered between 2004 and 2006 (the last year considered here) (Cunyningham, Castner, and Schirm 2008). Therefore, while the analysis examines changes in absolute enrollment rates among children of immigrants after October 2003, when access to food stamps was restored for all legal immigrants, it also compares the prevalence of enrollment in food stamps among children of immigrants to prevalence among children of U.S.-born parents over time. A relative increase in food stamp use over time by children of immigrants would indicate the influence of a policy change specifically affecting immigrant and mixed-status families.

The objectives of the project are summarized in the following research question, hypothesis and empirical tests:

*Did enrollment and participation in the Food Stamp Program increase for U.S.-born children of immigrants after eligibility was restored for legal immigrants by the Farm Bill Act of 2002?*

*Hypothesis:* Enrollment among U.S.-born children would be expected to increase if immigrant parents are more likely to enroll children in programs for which they themselves are also eligible. This hypothesis may be tested by considering enrollment rates among U.S.-born children of foreign-born parents as follows:

*Test 1a.* Compare enrollment rates and participation rates in the Food Stamp Program among U.S.-born children of immigrants before and after October 2003, when eligibility was restored for all legal immigrants.

*Test 1b.* To isolate the effect of the policy change, compare enrollment and participation rates among U.S.-born children of immigrants to those of children of native-born parents before and after the eligibility dates to determine whether children of immigrants' use increased disproportionately in the post-restoration period.

#### Data

The project uses data from the Three-City Study, a longitudinal study of the well-being of children and their female caregivers in the post-welfare reform era. The study followed approximately 2,400 low-income families in low-income neighborhoods in Boston, Chicago, and San Antonio over three waves between 1999 and 2005. The study was designed so that approximately half of participants were not enrolled in TANF at wave 1. The multi-method study includes three waves of survey data collected from children and caregivers, as well as an in-depth developmental study that followed young children from the survey sample in conjunction



with the first two waves of the survey and an intensive ethnography of 250 families not included in the survey sample.

The current project uses information from the three waves of survey data. One child from each sampled household was selected as the primary unit of analysis. Focal children in the sample were between 0 and 4 years old or 10 to 14 years old in 1999. At each wave, focal children and their female caregivers responded to separate survey instruments. Approximately 20 percent of children's caregivers (mostly mothers) in the sample are foreign-born. The most frequent countries of origin are Mexico and the Dominican Republic.

The first wave of data was collected between February and December 1999. Children and caregivers were re-interviewed 16 months later, on average, between September 2000 and June 2001, and for a third and final time between February 2005 and February 2006. The wave 1 response rate was 75 percent, and the retention rate from wave 1 to wave 3 was 80 percent.

During the first survey wave, female caregiver respondents were asked to report all dates when they began or ended a spell of participation in the Food Stamp Program where they or their children were the recipient(s) during the past two years (1997-1999). If a caregiver or child was receiving food stamps at the beginning of that two-year window, the caregiver was asked to provide the actual start date of the spell. At the second wave of the study, caregivers provided start and end dates for spells of food stamp receipt occurring between the two survey waves. At the third wave of the study, caregivers provided data parallel to what they provided in the first wave: They reported the start and end dates for all spells occurring within the last two years, with actual start dates reported where a spell was in progress at the beginning of the two-year window. The resulting information from the survey provides a continuous report of food stamp receipt from 1997 to 2000 or 2001 (depending on when respondents were interviewed at wave 2)

and a report of food stamp receipt between 2003 and 2005 (or between 2004 and 2006 for the few respondents interviewed near the end of data collection).

To supplement survey data, the Three-City Study research team has collected administrative records for TANF and Food Stamp Program enrollment for those caregivers participating in the third wave of the study who consented to participate in the administrative records portion of the study.<sup>5</sup> These records provide a continuous and accurate report of program participation for consenting respondents who still resided in Illinois, Massachusetts, or Texas at wave 3.<sup>6</sup> The records indicate the dates of receipt and benefit amount for benefits received by the caregiver of by any children on whose behalf the caregiver applied.

The survey and administrative data are complementary. The administrative data are continuous and generally more accurate than self-reports on the timing of food stamp enrollment and participation. However, the administrative data are not available for all study participants, so sample size is lower. Furthermore, the sample in the administrative data may be biased to the extent that undocumented foreign-born caregivers lack Social Security numbers that were used for record matching, and are necessarily excluded from the administrative data component. (Study participants lacking a Social Security number were not asked for a taxpayer identification number.) In sum, the administrative data include fewer cases and may not be representative of the entire survey sample.

*For the purposes of the current project, only administrative data are used.* Preliminary analyses (available upon request) indicate significant discrepancies between self reports and administrative records about uptake rates in the Food Stamp Program, with self reports

---

<sup>5</sup> The consent rate was 75 percent.

<sup>6</sup> The matching effort has been completed and was about 95 percent successful, meaning that we have validated that administrative records were drawn for the correct person in 95 percent of cases.

suggesting significant underreporting compared to administrative records. Among those cases that did report Food Stamp Program enrollment during the observation period, there were significant discrepancies between self reports and the administrative reports with regard to the timing of enrollment. We are pursuing an analysis of the correlates of erroneous information in the self-report data; for the time being, we regard the administrative records as more accurate, bearing in mind that selection into the administrative sample may produce biased results. Our analysis includes a description of the potential sources of selection bias emerging from the incomplete representation of the survey sample in the administrative records database.

We have not estimated respondents' eligibility for the Food Stamp Program because we lack data on monthly income, assets, and household membership over the entire observation period. Therefore, the analytic sample includes some households that are at least periodically ineligible for the Food Stamp Program. However, the sample by design is low-income and vulnerable to falling into poverty – a marginal drop in income might make families who are ineligible in one month eligible in the next. Cross-sectional participation rates in our sample are similar to participation rates among the eligible population reported in Leftin and Wolkwitz (2009).

### Methods

Four methods using administrative records address the question of whether the incidence of enrollment in the Food Stamp Program increased among U.S.-born children of foreign-born caregivers after the 2002 Farm Bill Act. Only households where a U.S.-born focal child remained with the same caregiver and which participated in the study at all three waves are included in the analytic sample.

The first analytic method is a cross-tabular analysis that describes the prevalence of participation in the Food Stamp Program at each wave of the Three-City Study by the female

caregiver's nativity status. Waves 1 and 2 occurred before passage of the Farm Bill Act, and wave 3 occurred after its passage. The second method is a graphical description of the proportion of households with U.S.-born and foreign-born caregivers initiating enrollment in the Food Stamp Program in each quarter between June 1997 (About five years before eligibility was restored to all legal immigrants) and June 2006 (the last month administrative records were collected for wave 3 participants). The quarters include January to March, April to June, July to September, and October to December.

Third, a multivariate analysis using a Cox proportional hazard model framework predicts the hazard rate of enrolling in the Food Stamp Program in a given month when a household includes a foreign-born female caregiver compared to households with U.S.-born female caregivers, given that the household was not enrolled the previous month. The analysis considers the period from June 1997 to June 2006, the period for which we have continuous administrative records from all three cities. For each household, the Cox proportional hazard model includes one record for each month for the period under consideration up to and including the month when a household began a spell of food stamp receipt. For each household, the analytic file may contain multiple spells of receipt over the 9-year period, and the regression model includes a count of the number of prior Food Stamp Program entries as a control variable. In the case that the household does not begin to receive food stamps in the observation period, the case is right-censored in the last month observed. The Cox proportional hazard model measures the hazard ratio of Food Stamp Program enrollment. The pool of potential enrollees changes from month to month. As each household exits the Food Stamp Program, it re-enters the eligible pool. We recognize that eligibility is means-tested. Continuous data on income and assets would permit us to estimate a household's eligibility in each month, but we lack those data. Instead, we use administrative reports of the

household's receipt of TANF in each month and a respondent's self-reported employment history as a proxy for means-tested eligibility. (The vast majority of legal immigrant household heads in our sample were in the United States when PRWORA passed and therefore remained eligible for TANF during the period of observation.)

The multivariate Cox proportional hazard model pools households including U.S.-born children of native-born, Puerto Rican island-born, and foreign-born caregivers who are not enrolled in the Food Stamp Program in a given month. The set of analytic models includes indicators of nativity status, citizenship status, and historical time. Specifically, dummy variables represent four periods: June 1997 to March 2003, before any element of the Farm Bill Act was implemented; April 2003 to September 2003, when eligibility was restored on a restricted basis; October 2003 to April 2004, the six-month period following the broader re-instatement of immigrant eligibility; and May 2004 to June 2006. As we describe below, these periods represent a post-hoc interpretation of the observed data, which suggested a moderate uptick in enrollment immediately after the October 2003 expansion of the Farm Bill, followed by a tapering off in mid-2004. The period prior to April 2003 is the excluded category. The key result in each model is the coefficient associated with the interaction of foreign-born/non-citizen status and historical time. A positive interaction coefficient associated with any of the post-Farm Bill periods would be consistent with the hypothesis that the policy change regarding legal immigrants' eligibility increased the likelihood that households including U.S.-born children and noncitizen immigrants would receive food stamp benefits (either as recipients themselves or through their caregiver's receipt).

Control variables include time-varying measures of marital status (married, cohabiting, or not married or cohabiting), age of the youngest child in the household, age of the focal child

originally sampled into the Three-City Study, caregiver’s employment status (any employment vs. unemployed), TANF participation status, caregiver’s age, and the number of prior entries to the Food Stamp Program. The time-varying marital status indicator is based on a caregiver’s union history reported at wave 3. Age of the youngest child in the household and age of the focal child are based on household roster reports from each wave. Caregiver’s employment status is based on self-reported employment histories from each wave. TANF status is based on administrative reports of TANF receipt in each month. Time-invariant characteristics include caregiver’s race/ethnicity (Non-Latina white, non-Latina black, or Hispanic), household poverty status at wave 1, and state of residence.

The event history model takes the following form:

$$\log h(t) = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

where  $\log h(t)$  represents the logged value of the predicted hazard rate of enrollment in the Food Stamp Program,  $X_1$  represents a vector of variables indicating caregiver’s nativity and citizenship status (born in the United States, born in Puerto Rico, naturalized foreign-born citizen or foreign-born non-citizen),  $X_2$  represents a set of dummy variables corresponding to the historical period in which a person-month record falls,  $X_3$  represents the interaction between foreign-born noncitizen status and historical period,  $X_4$  represents time-variant characteristics, and  $X_5$  represents time-invariant characteristics.  $\beta_1$  through  $\beta_5$  represent vectors of coefficients associated with each corresponding set of covariates.

The fourth analytic method is a series of Cox proportional hazard models predicting *exit* from the Food Stamp Program, given that a household was enrolled the previous month. As with the model predicting program entry, the model predicting program exit includes multiple spells

of program participation. The covariates are the same as those described in the program entry model.

#### Note on bias in the analytic sample

The administrative records sample includes 1,285 households. After deleting cases where the focal child was not born in the United States, where the household was not interviewed at wave 2, where the child did not live continuously with the same caregiver, or where data were missing on independent variables, the analytic sample includes 946 households. We compare this group of households to excluded eligible households from the full Three-City Study sample. Eligible households from the full sample include those where a focal child was U.S.-born, the same household responded at all 3 waves, the child remained with the caregiver over the course of the study, and data for the analysis were complete. In total, 470 eligible households *did not* participate in the administrative records sample.

A Three-City Study participant might be excluded from the administrative records sample for one of three reasons. First, a study participant might have explicitly declined to consent to the add-on administrative records study (N=304). Second, the Three-City Study protocol at wave 3 required interviewing by telephone those respondents who had moved more than 100 miles from the city where they were originally interviewed. The administrative records study did not solicit consent from telephone respondents because a long-distance move might have put a respondent in another state from which the study investigators would not request administrative records, and because the investigators expected that response rates to a telephone request for confidential data would be low (N=38). Third, participants who consented might have provided a Social Security number that could not be validated by a credit bureau database or by the administrative records database to which the number was submitted for matching (N=128).

Table 1 provides a comparison of the analytic sample to the remaining portion of the eligible longitudinal Three-City Study sample that is excluded from the administrative records pool.

Time-varying indicators are measured as of June 1997, the first month of the observation period.

Table 1. Descriptive statistics, administrative records sample and Three-City Study participants excluded from administrative records sample

Variable	Analytic sample		Excluded eligible households	
	Mean	Std. Dev.	Mean	Std. Dev.
Caregiver is U.S.-born	0.81		0.71	*
Caregiver is a naturalized citizen	0.04		0.05	
Caregiver is a noncitizen	0.11		0.17	*
Caregiver born in Puerto Rico	0.05		0.06	
Caregiver's age, in years	29.75	9.48	30.19	9.49
On food stamps, w1 (self-report)	0.64		0.49	*
On food stamps, w2 (self-report)	0.52		0.39	*
On food stamps, w3 (self-report)	0.57		0.42	*
On TANF, w1 (self-report)	0.40		0.32	*
On TANF, w2 (self-report)	0.28		0.21	*
On TANF, w3 (self-report)	0.18		0.11	*
Focal child's age	3.84	3.91	4.19	4.72
Age of youngest child in household	4.45	4.82	3.60	3.75
Caregiver is working	0.09		0.13	*
Household in poverty, wave 1	0.78		0.72	*
Caregiver is non-Hispanic white	0.09		0.08	
Caregiver is non-Hispanic black	0.45		0.46	
Caregiver is Hispanic	0.46		0.46	
Caregiver is single	0.61		0.58	
Caregiver is cohabiting	0.21		0.18	
Caregiver is married	0.18		0.24	*
Household in Boston	0.30		0.42	*
Household in Chicago	0.34		0.34	
Household in San Antonio	0.36		0.24	*
N	976		460	

\*Group differences are statistically significant at  $p < .05$

Households that did not participate in the administrative records study were more often headed by non-citizens compared to households that did participate. This is a potentially significant source of bias. However, administrative records may provide a more accurate estimate of the effect of the Farm Bill Act on households with foreign-born caregivers. The Farm



Bill Act restored eligibility only to legal immigrants. The Three-City Study survey did not ask foreign-born caregivers to report their legal status, and it is highly probable that the sample includes undocumented immigrants whose ineligibility for the Food Stamp Program would be unchanged by the Farm Bill Act. Because undocumented immigrants who lack a Social Security number (or who report a false SSN) will not be represented in the administrative records sample, that sample is more likely to include only legal immigrants among the foreign-born in the Three-City Study. Non-participants were more likely to be employed in June 1997, less likely to be in poverty at wave 1, more often married, more likely to reside in Boston (where participation rates were also lower for the Three-City Study overall), and less likely to live in San Antonio (where Three-City Study participation rates were higher). Other group differences were not statistically significant.

## Results

### *Cross-tabular analysis*

Table 2 summarizes three dimensions of contact with the Food Stamp Program: the average monthly participation in a given period among all households, the average monthly entrance rate in a given period among food stamp non-recipients, and the average monthly exit rate in a given period among food stamp recipients. Changes in the monthly participation rate are a function of the entrance rate offset by the exit rate. Data are presented separately for households headed by U.S.-born caregivers, non-citizen caregivers, foreign-born citizen caregivers, and caregivers born in Puerto Rico. For each dimension, we present the *average monthly rate* within each of the four periods considered. Panel 1 presents average monthly participation rates.

In general, households with Puerto Rican-born caregivers were the most likely to receive food stamps. In an average month before the Farm Bill Act was implemented in April 2003, 66%

of Puerto Ricans in the sample received food stamps, and 60% received food stamps in an average month between April 2004 and June 2006. They were followed by households with U.S.-born caregivers. Both groups were more likely to receive food stamps than were households with foreign-born caregivers. Prior to the full implementation of the Farm Bill Act, households headed by noncitizens were the least likely of the four groups to receive food stamps. After the full implementation of the Farm Bill Act in October 2003, food stamp use in noncitizen-headed households increased, and the average monthly receipt rate surpassed that for foreign-born citizen headed households after March 2004.

Table 2. Monthly averages of proportion of respondents participating in, enrolling in, or exiting from the Food Stamp Program, by historical period

	U.S.- born	Noncitizen	Naturalized citizen	Puerto Rican- born
<u>Ever participating in Food Stamp Program during period</u>				
Before April 2003	0.60	0.41	0.49	0.67
April 2003 - September 2003	0.56	0.39	0.44	0.57
October 2003 - March 2004	0.59	0.43	0.44	0.57
April 2004 - June 2006	0.56	0.47	0.39	0.60
<u>Entering Food Stamp Program (of all not enrolled in prior month)</u>				
Before April 2003	0.01	0.01	0.00	0.01
April 2003 - September 2003	0.04	0.03	0.02	0.02
October 2003 - March 2004	0.04	0.04	0.02	0.01
April 2004 - June 2006	0.02	0.02	0.01	0.02
<u>Exiting Food Stamp Program (of all enrolled in prior month)</u>				
Before April 2003	0.01	0.02	0.01	0.01
April 2003 - September 2003	0.03	0.06	0.04	0.00
October 2003 - March 2004	0.02	0.01	0.02	0.01
April 2004 - June 2006	0.02	0.02	0.02	0.01

The second panel of table 2 shows average monthly entrance rates by nativity status over the four periods considered. Households with U.S.-born, non-citizen, or citizen caregivers experienced higher rates of enrollment in the periods immediately following partial and full implementation of the Farm Bill Act, and enrollment for each group decreased in the period

beginning six months after full implementation. The highest enrollment rate for households headed by non-citizen caregivers was in the period within six months of the full implementation of the Farm Bill Act, when an average of 4 percent of non-recipients enrolled in the program each month.

The third panel of table 2 shows average monthly exit rates by nativity status. All groups except Puerto Ricans experienced their highest exit rates in the six-month period between the partial and full implementation of the Farm Bill Act (ending in September 2003). An average of 6 percent of non-citizen-headed households that were in the Food Stamp Program exited each month in that period, offsetting the rising entrance rates for that population and resulting in a net drop in enrollment compared to the earlier period (see panel 1). Households with U.S.-born caregivers experienced a similar but smaller dropoff.

It is important to note that the comparison over time presented in Table 2 does not account for changes in the general economy or policy changes that might have differentially affected eligible children with native-born or foreign-born parents. For example, FSP policies like the transition to electronic benefit transfers and fingerprinting or greater outreach efforts might have disproportionately affected enrollment and exit rates for children in one parental nativity group or the other. Furthermore, the early part of the period under observation was characterized by strong economic growth, and the later period by a decline in growth. To the extent that macroeconomic factors resulted in differential employment and income growth for native-born and foreign-born parents, the apparent nativity differential in the effect of Food Stamp Program policy is overestimated in this descriptive analysis.

*Graphical analysis*

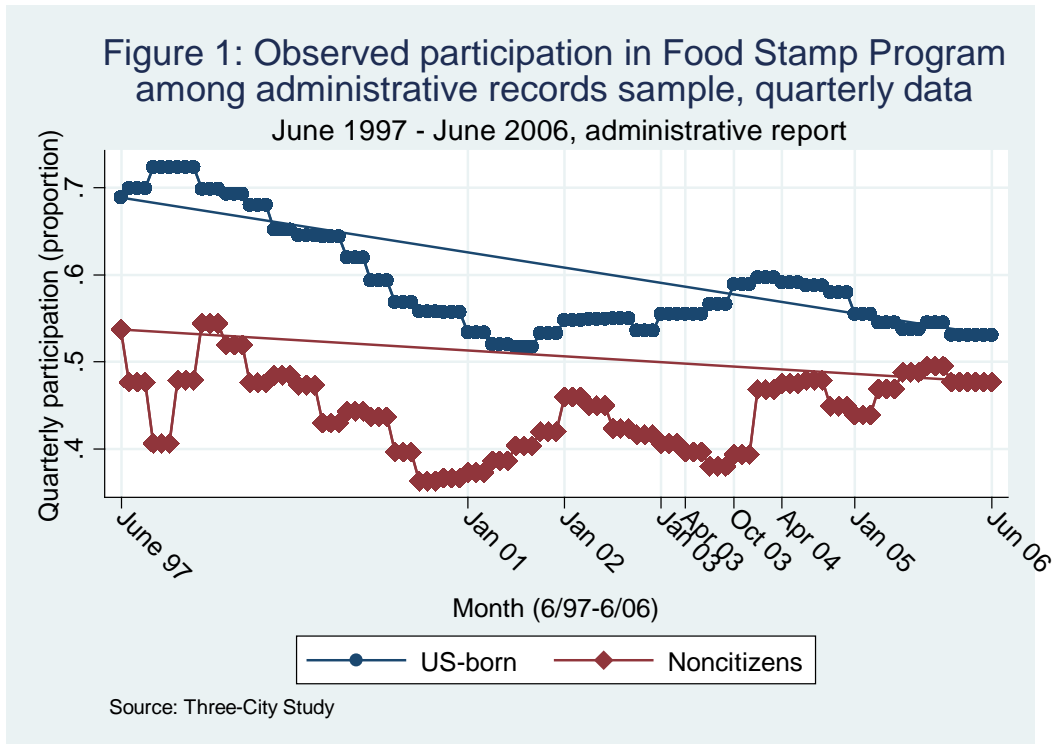


Figure 1 presents quarterly averages of enrollment in the Food Stamp Program for households headed by U.S.-born or non-citizen caregivers between June 1997 and June 2006. Quarters begin in January, April, July, and October of each year. (June 1997 stands on its own in the graphs.) The line marked by circles represents quarter-to-quarter changes in enrollment among U.S.-born caregiver households, and the line marked by squares represents quarterly changes for non-citizen caregiver households. The linear trend line associated with each set of points represents summarizes the general trend in participation for each group. The X-axis shows calendar quarters and is marked to show April 2003, when eligibility was restored for legal immigrants in the United States for at least five years, and October 2003, when eligibility was restored for all legal immigrants under 18. The Y-axis shows proportions enrolled in a given quarter.

Overall, the graph shows a declining trend in enrollment for households headed by U.S.-born caregivers over the 9-year period. Participation among households headed by non-citizen

caregivers fluctuated more over that period, peaking in the late 1990's and then steadily falling until late 2000. Participation rates increased slowly over the next two years and then fell again until October 2003, when the Farm Bill Act was broadly implemented. Shortly thereafter, participation rates jumped about 10 percentage points and remained elevated until the end of the data series in June 2006.

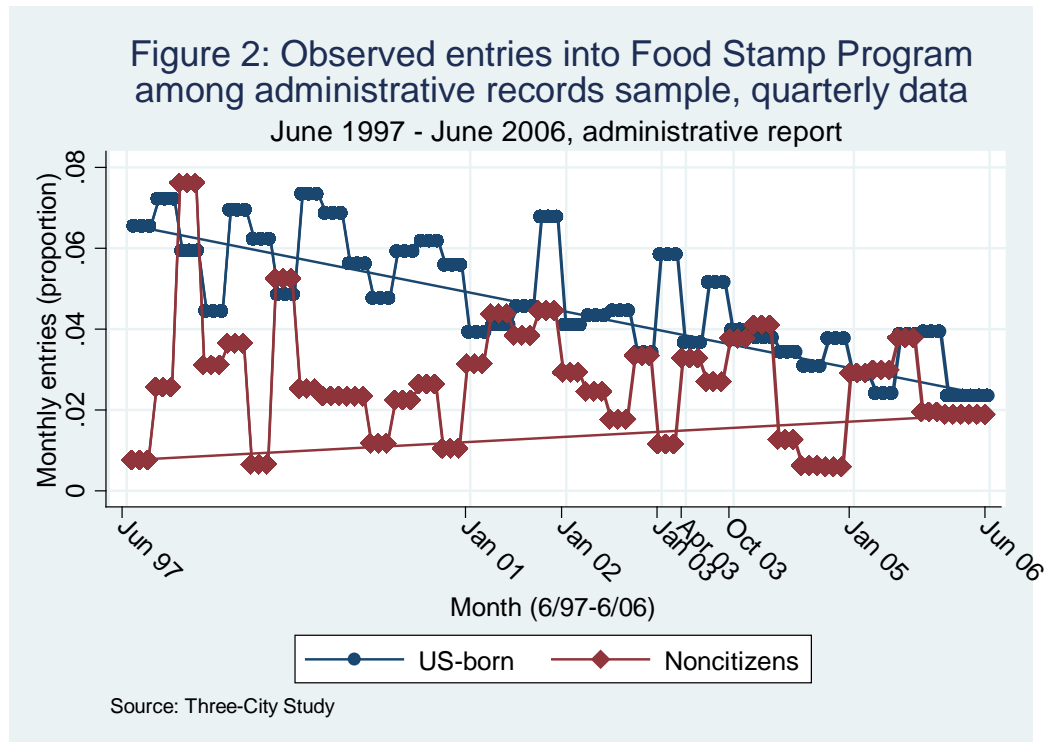


Figure 2 summarizes changes in quarterly *entrance* rates for households with U.S.-born or non-citizen caregivers from June 1997 to June 2006. The pattern echoes that for participation rates over that period. Enrollment among households with U.S.-born caregivers declined overall, although there were periodic spikes in enrollment. Again, enrollment among households with non-citizen caregivers fluctuated more, although the quarter-to-quarter variations diminished later in the period. In regard to the main research question, it is important to note that enrollment increased *only for non-citizen headed households* immediately after full implementation of the

Farm Bill Act in October 2003.

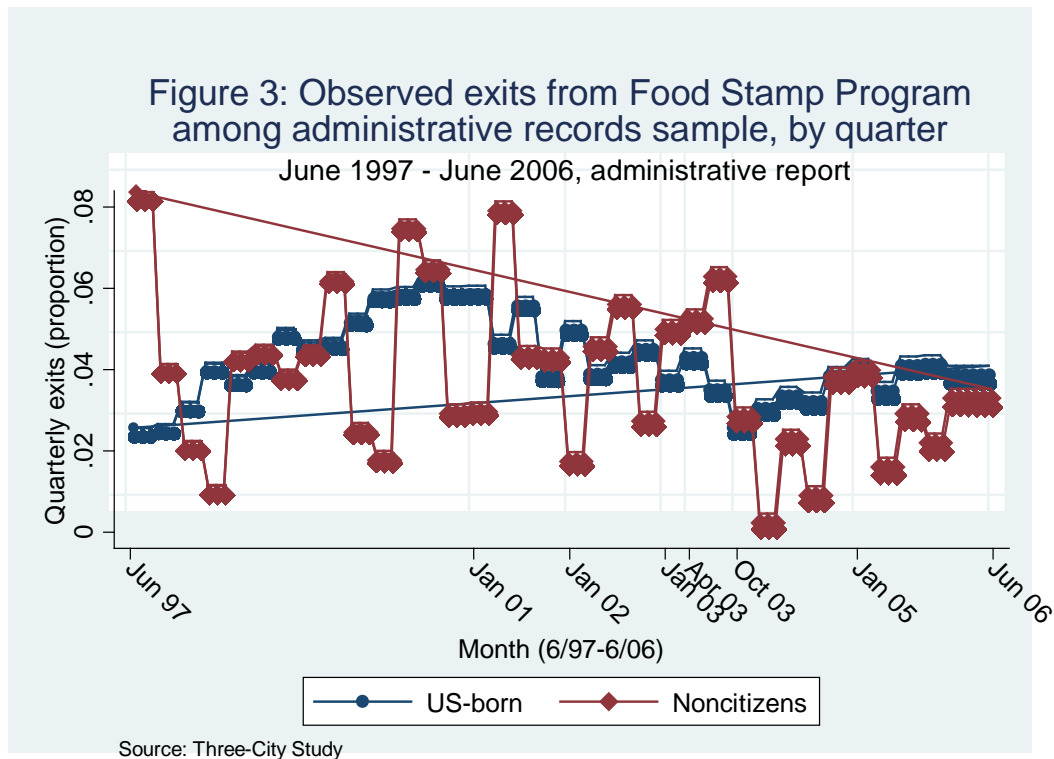


Figure 3 summarizes changes in quarterly exit rates for households with U.S.-born or non-citizen caregivers over the 9-year period. Exit rates for U.S.-born-headed households peaked in mid-2001, when about 5 percent of recipients exited each quarter, and then declined by about one percentage point and held roughly steady over the rest of the period. Foreign-born-headed households fluctuated more, but reached a low point shortly after October 2003. Their exit rates increased again to a quarterly exit rate comparable to that for U.S.-born households in 2005 and 2006.

#### *Longitudinal models of enrollment*

Table 3 summarizes results from Cox proportional hazard models estimating the hazard rate of entry into the Food Stamp Program.

Table 3. Cox proportional hazard model predicting the risk of entering the Food Stamp Program, June 1997-June 2006 (model coefficients with standard errors beneath)

		Model 1	Model 2	Model 3
	Naturalized citizen	-1 †	-0.79	-0.77
		0.57	0.59	0.61
<u>Caregiver's nativity/citizenship status (vs. US- born)</u>	Noncitizen	-0.24	-0.02	-0.06
		0.29	0.3	0.33
	Born in Puerto Rico	-0.01	-0.03	-0.09
		0.38	0.4	0.44
	No. of prior FSP entries	0.84 ***	0.88 ***	0.89 ***
		0.06	0.05	0.05
	April 2003- Sept. 2003	0.24	0.39	0.39
		0.25	0.24	0.24
<u>Historical time (vs. June 1997- Mar. 2003)</u>	Oct. 2003 - Mar. 2004	-0.14	0.09	0.08
		0.3	0.29	0.29
	April 2004 - June 2006	-0.65 **	-0.47 †	-0.47 †
		0.24	0.26	0.26
	Noncitizen * April-Sept. 2003	-0.69	-1.03	-1.07
		1.1	0.99	0.99
<u>Interactions</u>	Noncitizen * Oct 2003-Mar. 2004	1.24 *	1.02	0.98
		0.57	0.63	0.63
	Noncitizen*April 2004-June 2006	0.58	0.08	0.08
		0.63	0.71	0.72
	Caregiver's age		-0.03 *	-0.03 *
			0.01	0.01
	Age of youngest child in household		0	0
			0.02	0.02
<u>Family composition</u>	Focal child's age		0.03	0.03
			0.03	0.03
	Caregiver is cohabiting (vs. single)		0.24	0.26
			0.21	0.2
	Caregiver is married (vs. single)		0.11	0.13
			0.19	0.19
	Household receiving TANF		1.7 ***	1.66 ***
			0.2	0.21
<u>Household economy</u>	Caregiver is employed		-0.56 **	-0.55 **
			0.19	0.19
	Household below federal poverty level @ w1		0.37	0.37
			0.26	0.26
	Caregiver is non-Hispanic black (vs. white)			0.09
				0.3
	Caregiver is Hispanic			0.06
				0.35
<u>Controls</u>	Household in Chicago (vs. Boston)			-0.16
				0.22
	Household in San Antonio (vs. Boston)			-0.15
				0.26
	Chi-square	271.63	527.12	528.47
	Person-years	28026	28026	28026

Model 1 includes indicators of the household head's nativity and citizenship status (U.S.-born households are the excluded category), a count of the number of prior entries in the Food Stamp Program that the household had in the observed period, indicators of historical time (compared to the period prior to April 2003), and interactions between non-citizen status and historical time. There are no direct effects of nativity/citizenship status, and all households experienced a dropoff in enrollment after March 2004. Interaction terms show that for noncitizens only, there is a statistically significant increase ( $p < .05$ ) in the risk of enrolling in the Food Stamp Program between October 2003 and March 2004. This is evidence of a period-specific spike in enrollment for non-citizens only in the six-month period following full implementation of the Farm Bill Act. The lack of significance in the interaction term for the following period (April 2004 – June 2006) suggests that the relative increase in noncitizens' Food Stamp Program enrollment was temporary, rather than sustained.

Model 2 includes covariates related to family composition (caregiver's age, focal child age, age of youngest child in household, and caregiver's marital status) and the household economy (TANF participation, employment status, and poverty level at wave 1). When these attributes are accounted for, the interaction term between noncitizen status and the six-month period following the full implementation Farm Bill Act is statistically insignificant ( $B = 1.02$ ,  $p = .105$ ). Stepwise regressions (not shown) suggest that income-related factors including TANF receipt, poverty status at wave 1, and employment status have a stronger attenuating effect on the interaction term than do family composition factors like marital status, the age of the focal child, or the age of the youngest child in the household. Concurrent enrollment in the TANF program is



the strongest predictor of food stamp receipt. These results together suggest that implementation of the Farm Bill Act enabled noncitizens already enrolled in TANF to begin receiving Food Stamps as well.

Model 3 includes race/ethnicity and city of residence. Including these items improves model fit but does not change the relationship between citizenship status, historical time, and Food Stamp Program enrollment described in model 2.

#### *Longitudinal models of program exit*

Figure 3 shows that Food Stamp Program exit rates for U.S.-born caregivers' households peaked around 2001 and then trended downward. Exit rates fluctuated for noncitizen caregivers' households until 2005, when they stabilized at a rate similar to U.S.-born caregivers' households. The post-2001 downward trend for U.S.-born caregivers is reflected in the multivariate analysis summarized in table 3: in model 1, the main effect of historical time (i.e., the effect for U.S.-born caregivers) for the period after March 2004 is negative and statistically significant at  $p < .05$ , indicating a lower risk of exiting the Food Stamp Program compared to the period prior to April 2003. This period effect becomes more pronounced and significant ( $p < .01$ ) when indicators of family composition and the household economy are added in model 2. In addition, the period between October 2003 and March 2004 is also associated with a lower rate of exit ( $p < .05$ ).

The interaction terms across the three models in table 3 indicate that noncitizens were similar to U.S.-born caregivers' households in their exit patterns over historical time. In other words, while there is some evidence in table 2 that noncitizen households were unique in their increased likelihood of Food Stamp Program *enrollment* shortly after the Farm Bill Act went into effect, their patterns of *exit* are not distinct compared to U.S.-born caregivers' households. The strongest predictors of Food Stamp Program exit are TANF non-participation and employment.

Table 4. Cox proportional hazard model predicting the risk of exiting the Food Stamp Program, June 1997-June 2006 (model coefficients with standard errors beneath)

		Model 1	Model 2	Model 3
<u>Caregiver's nativity/citizenship status (vs. US-born)</u>	Naturalized citizen	0.37	0.27	0.08
		0.32	0.34	0.41
	Noncitizen	-0.03	-0.33	-0.64
		0.4	0.42	0.51
	Born in Puerto Rico	-0.49	-0.21	-0.49
		0.46	0.42	0.49
	No. of prior FSP exits	0.75 ***	0.7 ***	0.73 ***
		0.07	0.07	0.07
<u>Historical time (vs. June 1997-Mar. 2003)</u>	April 2003- Sept. 2003	0.11	-0.15	-0.21
		0.34	0.32	0.33
	Oct. 2003 - Mar. 2004	-0.56	-0.86 *	-0.94 *
		0.41	0.38	0.38
	April 2004 - June 2006	-0.61 *	-0.9 ***	-0.97 ***
		0.27	0.25	0.25
<u>Interactions</u>	Noncitizen * April-Sept. 2003	-0.65	-0.68	-0.62
		1.11	1.11	1.11
	Noncitizen * Oct 2003-Mar. 2004	0.2	0.2	0.3
		1.16	1.16	1.16
	Noncitizen*April 2004-June 2006	-0.52	-0.47	-0.37
		0.59	0.58	0.58
<u>Family composition</u>	Caregiver's age		0.01	0
			0.01	0.01
	Age of youngest child in household		0.01	0.01
			0.02	0.02
	Focal child's age		0	0.01
			0.02	0.03
	Caregiver is cohabiting (vs. single)		-0.47 †	-0.43 †
		0.25	0.24	
	Caregiver is married (vs. single)		0.2	0.32
			0.27	0.27
<u>Household economy</u>	Household receiving TANF		-1.66 ***	-1.86 ***
			0.27	0.27
	Caregiver is employed		0.42 *	0.41 *
			0.17	0.17
	Household below federal poverty level @ w1		-0.23	-0.24
			0.23	0.23
<u>Controls</u>	Caregiver is non-Hispanic black (vs. white)			0.38
				0.32
	Caregiver is Hispanic			0.13
				0.36
	Household in Chicago (vs. Boston)			-0.79 **
			0.25	
	Household in San Antonio (vs. Boston)			-0.9 ***
				0.26
	Chi-square	176.12	337.66	341.31
	Person-years	29852	29852	29852

In addition, results presented in model 3 indicate that families in Chicago and San Antonio were less likely to exit the Food Stamp Program than were families in Boston.

### Discussion

The purpose of this paper was to consider whether the reinstatement of food stamp eligibility to legal immigrants under the Farm Bill Act of 2002 led to increased enrollment in the Food Stamp Program among households that include foreign-born, noncitizen caregivers and U.S.-born children. While all U.S.-born children remained eligible for food stamps after welfare reform in 1996, legal immigrants became ineligible, and observers have hypothesized that differences in eligibility within a mixed-status household would lead to underuse of the program by eligible children if their immigrant parents were not themselves eligible to apply.

To address this question, the current study compared participation, enrollment, and exit rates among households with foreign-born, Puerto Rican-born, or U.S. mainland-born caregivers where at least one child was born in the United States over a 9-year period from June 1997 to June 2006. The analytic sample comes from a study of low-income children and families in three U.S. cities followed from February 1999 to February 2006. Data on Food Stamp Program participation were drawn from administrative records for the 75 percent of study participants who consented to record collection during the third wave of the study.

Results suggest that the Farm Bill Act was effective in enrolling low-income mixed status households in the six-month period immediately after its full implementation in October 2003. Since implementation, noncitizen-caregiver households have become more likely to receive food stamps than are households headed by naturalized caregivers, but noncitizens' households continue to have lower rates of receipt than do low-income households headed by U.S.-born

caregivers. The overall pattern of enrollment by mixed status households suggests that the Farm Bill Act immediately satisfied some unmet need for food stamps among families who were already in the public assistance system as TANF recipients. Following that period, there was a slower but steady uptake in food stamp enrollment through June 2006 that was on a par with entrance rates for U.S. citizens. Immediately after the Farm Bill Act went into effect, average monthly exit rates were higher for U.S.-born caregivers than for noncitizen caregiver households, but exit rates for the two groups have since achieved parity, and by 2006, the two groups paralleled each other in their quarterly participation rates in the Food Stamp program (see figure 1).

Nearly all of the families in the study had been in the United States for at least five years when the Farm Bill Act went into effect, meaning that they became eligible to enroll during the first phase of the Act's implementation in April 2003. One possible explanation for the lag in uptake is that information about the Act might have begun to spread only after full implementation in October. For example, state agencies might have held off on broadly advertising expanded eligibility until all of the phases to broaden the program had been implemented, perhaps to avoid receiving and rejecting applications from families with minor immigrants who had been in the United States fewer than five years during the first phase of implementation. Alternatively, news might have spread by word of mouth more effectively once the Act was fully implemented. Another explanation is that the application and processing stages to begin transferring benefits to families might have taken several months after legal immigrants initially became eligible to enroll, so that even early adopters did not show up in the rolls until Fall 2003.

This study has several limitations. First, it is representative only of low-income families in low-income neighborhoods in three U.S. cities. However, those cities represent a microcosm of the variety of policies to which immigrants were exposed following welfare reform in terms of the availability of state-funded substitutes. In addition, the Three-City Study has a relatively large proportion of foreign-born cases included in its low-income sample, which provides statistical power and explorations of within-group variation that are infeasible in even large, nationally representative studies.

Second, the study would benefit from an improved definition of means-tested eligibility to participate in the Food Stamp Program. Because the study lacks continuous data on employment, earnings, assets, and family size over the 9-year period of observation, we cannot directly observe time-varying income eligibility. We have identified measures that indirectly capture means-tested eligibility, including TANF enrollment. This measure is flawed in that while it does indicate income eligibility, it does not capture eligible families who are not enrolled in that program. Our other time-varying, indirect measure of eligibility is caregiver's employment status, which behaves as expected in our multivariate models, with working caregivers less likely to enter and more likely to exit the Food Stamp Program compared to non-workers.

Sponsor deeming is a dimension of eligibility that is salient to the foreign-born caregiver population and that we are unable to capture in our household-based study. A challenge to researchers focusing on noncitizen caregivers' eligibility for public assistance is to effectively model sponsors' income and to account for how it is figured into a noncitizen caregiver's application for public assistance. Such an effort may require a study design focused exclusively on legal immigrants, like the New Immigrant Study.

Third, while administrative records are considered superior to self-report data in terms of accuracy and completeness, respondents who consent to share their administrative records are distinct from those who decline, so some amount of bias is introduced into the study design. We were able to define this bias to some extent by comparing observable characteristics among the included and excluded households in our analytic sample. We found that households that were excluded from the administrative records file were somewhat more advantaged in that they were more likely to include married or cohabiting partners, less likely to be in poverty at wave 1, and more likely to include an employed caregiver compared to the analytic sample. In some ways, this pattern of exclusion is reassuring, in that we may infer that the sample we are working with is more likely to include households that are income-eligible for the Food Stamp Program.

Prior work not shown here has compared the pattern of food stamp use described in the administrative records data to that described in respondents' self reports. The comparison yields a surprising number of discrepancies, with the self-report data suggesting lower Food Stamp Program enrollment rates and substantially different timing for entries and exits. A next step is to investigate patterns in these discrepancies, including to identify correlates of seam bias (the tendency for respondents to assign last interview dates to the timing of events like program entry and exit), and underreporting and/or overreporting.

Finally, we have not accounted for variation in state and federal policies or macroeconomic conditions over time that might have differentially affected Food Stamp Program participation among children with native-born or foreign-born parents. For example, biometric controls on food stamp receipt, such as fingerprinting, might have discouraged foreign-born parents with any history of undocumented immigration from applying for child benefits. In terms of macroeconomic factors, there is some evidence from the Three-City Study that Hispanic families

(not accounting for nativity status) who had previously been on TANF were more likely to have moved out of poverty by the mid-2000's compared to low-income African-American families from the same cities (Cherlin, Frogner, Ribar, and Moffitt 2009), in part because of more frequent employment and the presence of other income earners in the household. Therefore, variation in enrollment and participation rates by nativity status may be partly attributable to race-ethnic differences in economic gains following welfare reform. Future work will investigate how the differential impacts of policy changes and macroeconomic structure by nativity affected enrollment in TANF and the Food Stamp Program for mixed-status families.

## REFERENCES

- Capps, Randolph, Michael Fix, Everett Henderson, and Jane Reardon-Anderson. 2005. "A Profile of Low-Income Working Immigrant Families." The Urban Institute, Washington, DC.
- Capps, Randolph and Karina Fortuny. 2006. "Immigration and Child and Family Policy." in *The Urban Institute and Child Trends Roundtable on Children in Low-Income Families*. Washington, DC.
- Capps, Randolph, Robin Koralek, Katherine Lotspeich, Michael Fix, Pamela Holcomb, and Jane Reardon-Anderson. 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, Washington, DC.
- Capps, Randolph, Leighton Ku, Michael Fix, Eve Fielder, Michael Greenwell, and Tonya Hays. 2002. "How Are Immigrants Faring After Welfare Reform? Preliminary Evidence from Los Angeles and New York City." The Urban Institute, Washington, DC.
- Cherlin, Andrew, Bianca Frogner, David Ribar, and Robert Moffitt. 2009. "Welfare Reform in the Mid-2000s: How African American and Hispanic Families in Three Cities Are Faring." *The ANNALS of the American Academy of Political and Social Science* 621:178-201.
- Cunyngham, Karen. 2002. "Trends in Food Stamp Program Participation Rates: 1994 to 2000." Mathematica Policy Research, Inc., Washington, DC.
- . 2004. "Trends in Food Stamp Participation Rates: 1999 to 2002." Mathematica Policy Research, Inc., Washington, DC.
- Cunyngham, Karen, Laura A. Castner, and Allen L. Schirm. 2008. "State Food Stamp Participation Rates in 2006." Mathematica Policy Research, Inc., Washington, DC.
- Fix, Michael and Jeffrey Passel. 2002. "The Scope and Impact of Welfare Reform's Immigrant Provisions." The Urban Institute, Washington, DC.
- Fomby, Paula and Andrew J. Cherlin. 2004. "Public Assistance Use among U.S.-Born Children of Immigrants." *International Migration Review* 38:584-611.
- Leftin, Joshua and Kari Wolkwitz. 2009. "Trends in Supplemental Nutrition Assistance Program Participation Rates: 2000-2007." Mathematica Policy Research, Inc., Washington, DC.