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

Paula Fomby[1]
University of Colorado Denver

Prepared for presentation at the Annual Meeting
of the Population Association of America

New Orleans, Lousiana
April 17-19, 2008

[1] Direct correspondence to Paula Fomby, Department of Sociology, University of Colorado Denver, Campus Box 105, P.O. Box 173364, Denver, CO 80217-3364, paula.fomby@cudenver.edu. This research was supported by a FANRP award from the Economic Research Service at the United States Department of Agriculture and the National Institute of Child Health and Human Development (R01 HD050370-01).

This paper uses self reports and 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 that program was restored under the Farm Bill Act of 2002.

Background

Federal policies regarding legal immigrants' access to food stamps changed four 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 provisions to cover immigrants ineligible for federal aid).[2] 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 two phases. In April 2003, the Act restored access to food stamps to adult immigrants who had 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, regardless of time in the United States. (The Farm Bill retained the condition of "sponsor deeming," meaning that sponsors' income counts toward the total income of sponsored legal immigrants when assessing income eligibility.) The end result of the policy changes essentially returns legal immigrants to the standards of eligibility in place prior to welfare reform (with the added constraint of sponsor

[2] Legal immigrants with 40 quarters of work experience, veterans, and active members of the military and their families remained eligible.

deeming). (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; Fix and Passel 2002; Fomby and Cherlin 2004), although U.S.-born children of immigrants were eligible for all federal benefits for the entire period, both before and after welfare reform. 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; Cunnyngham 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. Specifically, enrollment in the food stamp program has increased significantly in the first half of the current decade as families have 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. 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 75 percent of caregivers participating in the third wave of the study. 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.[3] 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.

[3] 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.

The survey and administrative data are complementary. The administrative data are continuous and generally more accurate than self-reports of 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 (see Appendix 2 for summary statistics on sample members excluded from the administrative data file).

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 suggesting significant underreporting compared to administrative records. Among those cases that did report Food Stamp enrollment during the observation period, there were significant discrepancies between self reports and the administrative reports with regard to the timing of enrollment. My collaborators and I 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.

To some extent, 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 children's enrollment in the Food Stamp Program would be unaffected 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.[4]

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 month between September 2000 (About three years before eligibility was restored to all legal immigrants) and June 2006 (the last month administrative records were collected for wave 3 participants).

Third, a multivariate analysis using discrete-time logistic regression predicts the log-odds that a household including a foreign-born female caregiver will enroll in the Food Stamp

[4] See the discussion at the end of this paper for some comments on the comparison between administrative and self reports of Food Stamp Program enrollment and participation.

Program in a given month compared to households with U.S.-born female caregivers. The analysis considers the period from the wave 2 interview date (September 2000 to June 2001) to June 2006. For each household, the regression includes one record for each month for the period under consideration up to and including the month when the household first receives food stamps. 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 regression model measures the log-likelihood of the event of Food Stamp Program enrollment. Households already receiving food stamps at the beginning of the observation period (the wave 2 interview date) are not eligible for inclusion in the analytic sample. Therefore, the analytic sample includes only those respondents who were not receiving food stamps at the beginning of the observation period. The analysis file includes a maximum of 70 records per person.

The selected time frame (i.e., September 2000 to June 2006) for the longitudinal analyses is employed because the wave 2 interview period represents a low point in Food Stamp enrollment for the foreign-born, both nationally and in the Three-City Study sample. A longitudinal model estimating uptake rates among households not enrolled in the Food Stamp Program at wave 1 (1999) would exclude those households that dropped out of the program between waves 1 and 2, and thus would underestimate the effect of nativity status differences and the effect of the Farm Bill Act, which targeted only the foreign-born (specifically, legal immigrants).

The multivariate regression model will combine 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 at the beginning of the observation period. The regression model includes include indicators of nativity status, citizenship status, and historical time; specifically, a dummy variable indicates the number of months that have passed since comprehensive federal

reinstatement of legal immigrant eligibility for the Food Stamp Program in October 2003. (This indicator is scored 0 in the months prior to the reinstatement.) 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 would suggest 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, and caregiver's age. Time-invariant characteristics include caregiver's race/ethnicity (Non-Latina white, non-Latina black, or Hispanic), household poverty status at wave 2, and state of residence.

The discrete-time logistic regression model takes the following form:

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

where β_0 represents a constant, 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 variable indicating the number of months after October 2003 that a person-month record falls, X_3 represents the interaction between foreign-born noncitizen status and time since October 2003, X_4 represents time-variant characteristics, and X_5 represents time-invariant characteristics. B_1 through β_5 represent vectors of coefficients associated with each corresponding set of covariates.

Fourth, cross-sectional logistic regression models predict the probability of participating in the Food Stamp Program at each interview wave. This method retains the full eligible sample[5] and does not account for the timing of enrollment in or departure from the Food Stamp Program. Cross-sectional models of participation provide a complement to longitudinal models of enrollment by including respondents who have exited from the Food Stamp Program and by considering the prevalence of Food Stamp Program participation, rather than the incidence of enrollment, at three specific points in time. These models omit the measure of historical time included in the discrete-time logistic regressions and include indicators of caregiver's age, caregiver's employment status, caregiver's marital status, household poverty status, youngest child's age and focal child's age obtained at interview.

The administrative records sample includes 444 respondents in the discrete-time logistic regression models and 946 respondents in the cross-sectional logistic regression models. Descriptive statistics for the administrative records sample are in Appendix 1.

Results

Cross-tabular analysis

Table 1 shows the weighted percentage of households receiving food stamps at each interview wave by the female caregiver's nativity status, based on administrative records. At each wave, households with Puerto Rican-born caregivers were the most likely to receive food stamps (62.7% at wave 1, 58.9% at wave 3), followed by households with U.S.-born caregivers (52.5% and 55%, respectively). Both groups were more likely to receive food stamps than were households with foreign-born caregivers (28.8% at wave 1 and 35.9% at wave 3). For households with foreign-born and Puerto Rican-born caregivers, food stamp use declined

[5] Households where the focal child and caregiver remained together and participated in each wave of the Three-City Study, children are U.S.-born, caregivers identify ethnically as non-Hispanic white, non-Hispanic black, or Hispanic, and the household contributes complete information on all variables included in the analysis.

between waves 1 and 2, and food stamp use increased for all groups between waves 2 and 3. Proportionally, households with foreign-born caregivers saw the largest increase in use between waves 2 and 3 – enrollment for those households increased about 34 percent during the 4-year period between waves, from 26.7 percent at wave 2 to 35.9 percent at wave 3.

INSERT TABLE 1 HERE

The cross-tabular analysis does not reflect the frequency of movement on or off food stamps between waves. That is, the percentages do not reveal whether the households observed on food stamps at wave 3 are the same households observed on at wave 2, or whether there has been some change in the enrolled population. Table 2 reports the frequency of two types of change between waves 2 and 3 by nativity status: movement off food stamps by wave 3 among households participating in that program at wave 2 and movement onto food stamps by wave 3 among households not participating at wave 2.

INSERT TABLE 2 HERE

Table 2a shows that among households with U.S.-born caregivers, about 22 percent of those enrolled in food stamps at wave 2 had left the program by wave 3, and 30 percent of families not enrolled at wave 2 had enrolled by wave 3. Among households with foreign-born caregivers, 24.6 percent left food stamps and another 20.3 percent enrolled between waves. Overall, households with foreign-born caregivers left food stamps between waves slightly more often than those with U.S.-born caregivers and enrolled between waves and remained on by wave 3 about two-thirds as often.

Graphical analysis

The Farm Bill Act restored food stamp eligibility to legal immigrants about halfway between wave 2 and wave 3. A month-by-month comparison of enrollment rates indicates how much of

the addition of caseloads between waves occurred before and after that policy change. Figure 1 shows the proportion of households with U.S.-born or foreign-born caregivers enrolling in food stamps each month between September 2000 and June 2006 according to administrative records.

INSERT FIGURE 1 HERE

In the figure, triangles represent enrollment rates among households with foreign-born caregivers. Hollow triangles represent rates obtained from self-reports and solid triangles represent rates obtained from administrative records and diamonds represent enrollment rates among households with U.S.-born caregivers. The X-axis shows calendar months 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. The Y-axis shows proportions enrolling in a given month.

Among households not participating in the Food Stamp Program at the wave 2 interview, those with U.S.-born caregivers showed a spike in enrollment in the early months of that year. According to administrative records, between 3 and 4 percent of households with U.S.-born caregivers began to receive food stamps between June 2000 and January 2001. After the first quarter of 2001, uptake rates declined through 2001 for households with U.S.-born caregivers. That decline continued gradually through the observation period, falling from a high of 4 percent in December 2000 to below 2 percent in June 2006.The overall pattern suggests that some portion of households with U.S.-born caregivers not on food stamps in September 2000 were on the threshold of enrollment and enrolled early in the observation period. Those households that did not enroll during that upsurge maintained a fairly constant rate of low enrollment with no apparent time-associated triggers for sudden changes in enrollment.

Households with foreign-born caregivers (shown with solid triangles) had a less dramatic uptake at the beginning of the observed period, but similar rates of receipt through 2001 (about 3 percent). During 2002, immigrant households' enrollment began to decline some relative to U.S.-born households. The disparity between the two groups becomes more apparent around April 2003, exactly when the policies associated with the Farm Bill Act went into effect for immigrants in the United States at least five years. The increasing difference appears to be a function of both declining likelihood of enrollment among households with immigrant caregivers and an increasing likelihood of enrollment among households with U.S.-born caregivers. The enrollment gap continued to widen until about 2005, when the difference between the groups became roughly constant.

Longitudinal models of enrollment

Why might immigrant households not receiving Food Stamps in 2000/2001 have become increasingly less likely relative to households with U.S-born caregivers to enroll in the Food Stamp Program after the Farm Bill Act went into effect? One possibility is that the associated policy changes were not effectively advertised to newly-eligible immigrants. Another possibility is that the hypothesized "chilling effect" was no longer operating by 2003, and immigrants' decisions to apply for food stamps on behalf of U.S.-born children were made without regard for their own eligibility. In that case, the policy change would not have made mixed status households more likely to apply. Finally, households with immigrant caregivers might have been distinctive from those with U.S.-born caregivers in the period after October 2003 in terms of TANF receipt, employment status, marital status, the age composition of children in the household or other attributes that are predictive of Food Stamp Program enrollment. If so, group

variation in those attributes would explain the observed between-group difference in enrollment rates that emerged in 2003.

The discrete-time logistic regression models present the log-odds of enrolling in the Food Stamp Program in a given month according to administrative records (table 3). Three models are presented. The first compares the log-odds of enrolling in the Food Stamp Program to U.S.-born caregivers for foreign-born citizen caregivers, noncitizen caregivers, and Puerto Rican-born caregivers separately. The second model accounts for historical time with a variable indicating the number of months that have passed since the Farm Bill Act restored food stamp eligibility for all legal immigrants in October 2003 and includes an interaction of foreign-born/noncitizen status and historical time. The third model adds in control variables measuring household characteristics, caregiver's ethnicity, caregiver's marital status, and the city in which the caregiver and focal child were first interviewed.

Results from model 1 show that foreign-born noncitizen caregivers' households were no less likely to enroll in TANF compared to U.S.-born caregivers. Households with foreign-born citizen caregivers, by contrast, have an odds of enrollment more than twice those compared to U.S.-born caregivers ($\exp(\beta) = \exp(.87)=2.39$), but that difference is not statistically significant.

Model 2 includes covariates for historical time and an interaction of nativity/citizenship status with historical time. The effect of historical time is negative and significant at the .01 level. The odds ratio for enrolling in the Food Stamp program after October 2003 diminishes by 2 percent each month ($\exp(\beta) = \exp(-.02)=.98$) compared to enrollment prior to October 2003.

That direct effect pertains only to households with U.S.-born caregivers. For households with caregivers of other nativity statuses, the odds are the exponentiated sum of the coefficients associated with each covariate on which a household has a nonzero score. For households with

foreign-born noncitizen caregivers observed one month after the policy change went into effect, that includes the direct effects of nativity status and historical time and their interaction. The odds ratio is .22 (exp(-.67 + (-.02*1) + (-.03*1)=.487), or lower than the odds ratio of enrolling prior to the policy change. The interaction term is statistically significant at the .05 level. In other words, the policy change decreased the likelihood of enrollment in the Food Stamp Program for households with U.S.-born children and foreign-born caregivers relative to the earlier period.

Model 3 includes control variables. Those covariates do not change substantively the findings described in Model 2, except that the main effect of historical time is reduced effectively to 0. Caregiver's age, being married compared to being neither married nor cohabiting, and any employment are associated with a lower likelihood of enrollment in food stamps, and current TANF receipt and focal child age are significantly associated with a greater likelihood of enrollment.

The multivariate analysis including administrative records reinforces the graphical results presented in figure 1. Those records indicate that households with U.S.-born children and U.S.-born caregivers experienced a steady decline in enrollment after an initial uptake in the observed period, while comparable households with foreign-born caregivers maintained a constant but low enrollment rate. Figure 2 shows the average predicted probability of enrollment in the Food Stamp Program for caregivers with U.S.-born and foreign-born caregivers separately, and compares those predictions to the observed data. Observed data are indicated by solid diamonds (U.S.-born caregivers) and solid triangles (foreign-born caregivers), and average predicted values are indicated by hollow diamonds and triangles. Predicted probabilities overestimate the drop-off in enrollment for households with U.S.-born caregivers, but overall capture the declining likelihood of enrollment over time for both U.S.-born and foreign-born caregivers.

INSERT FIGURE 2

Cross-sectional models of participation

Table 4 summarizes results from cross-sectional models estimating the probability of participation in the Food Stamp Program at each survey wave using administrative records data. At each wave, households with foreign-born noncitizen caregivers are less likely to receive food stamps compared to households with U.S.-born caregivers (Model 1). However, that effect is attenuated at each wave by the inclusion of indicators of employment status, poverty status, and marital status, and at wave 1, by residence in San Antonio, compared to Boston (Model 2). Importantly, model 3 in each wave shows that TANF participation also has an attenuating effect on nativity status in addition to a strong independent effect on the probability of food stamp receipt. That is, part of children of immigrants' lower food stamp participation is explained by their lack of participation in other programs for which they are eligible. Comparing the first models from each wave, the association between noncitizen status and the probability of food stamp receipt is weakest at wave 3, when the difference in participation rates between households with U.S.-born and foreign-born caregivers was the smallest (see table 1).

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 enrollment and participation rates among households with foreign-born or U.S.-born caregivers where at least one child was born in the United States over a 70-month period from September 2000 to June 2006. Data come from a study of low-income children and families in three U.S. cities followed from February 1999 to February 2006. Two sources of data are used: self reports collected at each wave and retrospective administrative records collected for 75 percent of respondents participating at the third wave. Administrative records from consenting respondents are available from 1997 to June 2006.

Results suggest that the reinstatement of eligibility made little difference to mixed-status households that were not receiving food stamps at wave 2. Those mixed status households that elected to enroll in the Food Stamps Program between waves 2 and 3 were more likely to have done so *prior* to the reinstatement period. Descriptive and cross-sectional analyses indicate that the likelihood of participating in the Food Stamp Program for mixed status households relative to households with U.S.-born heads did increase between waves. It appears that the timing of that change in likelihood cannot be pegged to a policy change, but rather, to secular changes in the economy or other environmental factors. These factors may have included the information that forthcoming policy changes would make legal immigrants eligible for food stamps, and foreign-born caregivers may have acted to obtain benefits for their eligible U.S.-born children even before the policy went into effect for their own eligibility.

An analysis of survey self reports not presented here indicates less uptake in any month for both U.S.-born and foreign-born caregivers' households compared to administrative records, and the drop-off in enrollment among U.S.-born caregivers' households occurs earlier (prior to

October 2003) and less dramatically, resulting in continuities in uptake rates between U.S.-born and foreign-born caregivers' households with slight increases for both after October 2003.

Significant discrepancies between administrative records data and self-report data in terms of food stamp receipt by households with U.S.-born or foreign-born caregivers prevented the inclusion of self-report data here. In descriptive tabular data, administrative data show less drop-off and more uptake between waves 2 and 3 compared to self-report data. In multivariate analyses, U.S.-born households appear less likely to take up food stamps after the legal immigrants' food stamp eligibility was restored in October 2003 in the administrative data, but more likely to take up food stamps during that period in the self-report data. Cross-sectional logistic regressions show a declining association between caregiver's noncitizen status and food stamp receipt relative to U.S.-born status over time in the administrative data, while the opposite is true in survey data.

There are several potential explanations for the discrepancy between administrative records and self reports. First, the administrative data may be consistently biased in the exclusion of households with selected characteristics. Appendix 2 shows that excluded households included more noncitizen caregivers (16% compared to 13% of households included in the administrative records sample), more households in poverty at wave 2 (54% compared to 46% of households in the administrative records sample), and more households receiving food stamps at wave 2 (35% compared to 26% in the administrative records sample).

The difference in noncitizen caregivers has the most obvious consequences. Noncitizen caregivers may include undocumented immigrants whose eligibility for food stamps would have remained unaffected by a policy change targeted at legal immigrants. The survey instrument did not ascertain immigrants' legal status, so there is no direct method to determine whose eligibility

was affected. Because the administrative records study was conducted using Social Security numbers obtained from respondents, undocumented immigrants who lack that identification will be systematically excluded. Therefore, differences between the two samples pertaining to the association of noncitizen status with food stamp receipt may result from the probable exclusion of undocumented immigrants from the administrative records sample.

Another source of the discrepancy may be respondents' reporting error in the self-report data. Respondents reporting retrospective data on detailed information like the timing of food stamp entries and exits may systematically err, putting the event in the more distant or more recent past depending on the interview context. Generally speaking, administrative data should provide a gold standard for accuracy, as they are not susceptible to recall error. However, the potential sources of bias may undermine the validity of the available data. One method to determine the relative effects of recall error and sample bias would be to conduct analyses from both data sources only including the cases that appear in both the self-report and administrative records sample. Remaining discrepancies can be attributed to recall error.

This study has three additional 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 period included in the longitudinal analysis (wave 2 to wave 3) is somewhat arbitrary. While it represents a low point in Food Stamp Program enrollment in the post-welfare

reform period, the period does not represent a particular phase of policy implementation or economic cycles. The method selected (discrete-time logistic regression) requires a sample that includes households not receiving benefits at the beginning of the observed period, and so the sample changes as the observed period changes. For example, an earlier iteration of this analysis used only the period from February 2003 to June 2006 in order to use both administrative records and wave 3 self-report data, which went back only to 2003. Results from the administrative records analysis on that period were different from those presented here,[6] because the households not on food stamps in February 2003 are different from those not on at the wave 2 interview.

Third, the longitudinal analysis does not account for unobserved factors that may be related to the increasing selectivity of enrollment over time. A random effects model may be a good next step, as that method would describe variation in the baseline probability of enrolling in the Food Stamp Program, as well as variation in the rate of change over time.

[6] The interaction between non-citizen foreign-born caregiver status and time since the Farm Bill Act went into effect was not statistically significant, and there appeared to be a convergence in enrollment rates between foreign-born and U.S.-born caregivers, rather than a divergence, after October 2003.

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.

Cunnyngham, Karen. 2004. "Trends in Food Stamp Participation Rates: 1999 to 2002." 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.

Marquis, Kent H. and Jeffrey C. Moore. 1990. "Measurement Errors in SIPP Program Reports." in *Sixth Annual Research Conference, U.S. Census Bureau*, edited by U. S. C. Bureau. Washington, DC: U.S. Census Bureau.

Rips, Lance J., Frederick G. Conrad, and Scott S. Fricker. 2003. "Straightening the Seam Effect in Panel Surveys." *Public Opinion Quarterly* 67:522-554.

Table 1. Percentage of U.S.-born children receiving food stamps at each survey wave, by female caregiver's nativity status, administrative records (weighted)

	Wave			
Caregiver's nativity status	Wave 1 (1999)	Wave 2 (2000-2001)	Wave 3 (2005)	N (unweighted)
U.S.-born	51.4	52.6	55.3	787
Born in Puerto Rico	63.5	55.6	59.2	50
Foreign-born	27.9	25.7	33.4	141
				978

Table 2. Weighted percentages of households transitioning on or off Food Stamp Program between waves 2 and 3, Three-City Study, administrative records

Caregiver's nativity status	On at wave 2, off at wave 3	*Unwtd. N on at wave 2*	Off at wave 2, on at wave 3	*Unwtd. N off at wave 2*
U.S.-born	21.7	*436*	29.8	*351*
Born in Puerto Rico	23.1	*31*	36.9	*19*
Foreign-born	24.1	*53*	18.6	*88*
Overall	22.7	*520*	20.9	*458*

Table 3. Discrete-time logistic regression estimates of the log-odds of enrollment in the Food Stamp Program, September 2000 - February 2006, using administrative records from participants in the Three-City Study

	Model 1 b/se		Model 2 b/se		Model 3 b/se	
Caregiver's nativity status						
Caregiver foreign-born citizen	0.87		0.85		1.69	**
	0.63		0.6		0.62	
Caregiver foreign-born noncitizen	-0.07		-0.67		-0.17	
	0.34		0.44		0.44	
Mother born in Puerto Rico	-0.25		-0.26		-0.22	
	0.51		0.46		0.67	
No. of months since immigrant eligibility restored			-0.02	**	0.00	
(after Oct 2003 - equals 0 in earlier months)			0.01		0.01	
Mother foreign-born noncitizen * # of months			-0.03	*	-0.04	*
since eligibility restored			0.02		0.02	
Household characteristics						
Caregiver's age (in years)					-0.06	***
					0.01	
Age of youngest child in household (years)					0	
					0.03	
Age of focal child (years)					0.06	†
					0.03	
Household in poverty, wave 2					0.23	
					0.22	
Household receiving TANF					3.54	***
					0.42	
Caregiver is employed					-1.11	***
					0.28	
Caregiver's race/ethnicity						
African-American					0.36	
					0.35	
Hispanic					-0.14	
					0.3	
Caregiver's marital status						
Caregiver is cohabiting (vs. single)					0.12	
					0.28	
Caregiver is married (vs. single)					-0.51	†
					0.3	
City						
Chicago					0.49	†
					0.25	
San Antonio					0.9	**
					0.28	
Constant	-4.17	***	-4.35	***	-2.78	***
Chi-square	0.13		0.15		0.62	
Records	2.34		22.18		181.42	
N	16568		16568		16568	

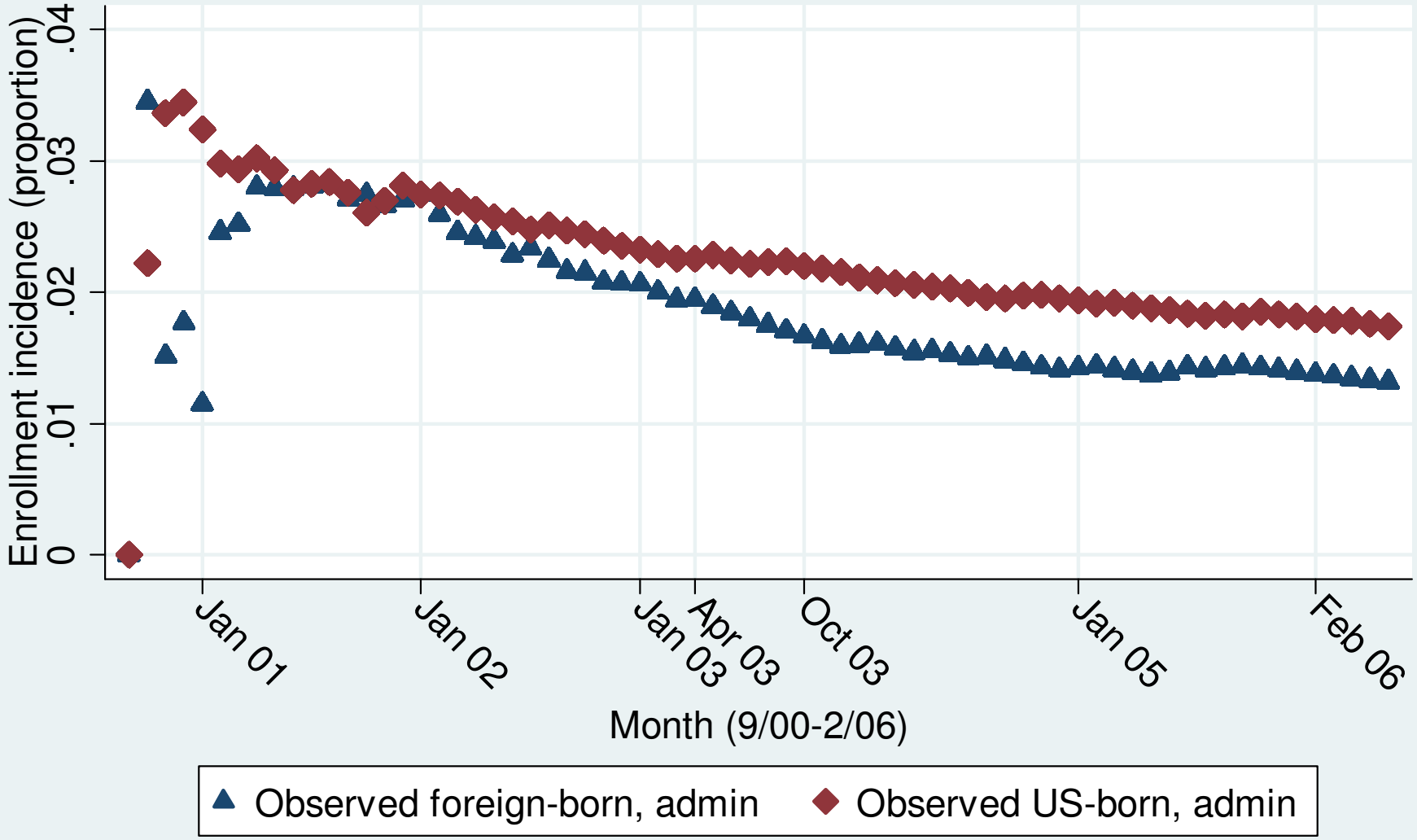
† p<.10 * p<.05 ** p<.01 *** p<.001

Table 4. Cross-sectional logistic regression estimates of the log-odds of participation in the Food Stamp Program, February 2003 - February 2006 Program, January 2003 - February 2006, using administrative reports from participants in the Three-City Study, wave 3

	Wave 1			*Wave 2*			*Wave 3*		
	Model 1	Model 2	Model3	Model 1	Model 2	Model3	Model 1	Model 2	Model3
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Caregiver's nativity status									
Caregiver foreign-born citizen	-0.52	-0.65	-0.81	-0.48	-0.24	-0.33	-0.47	-0.05	-0.07
	0.62	0.77	0.83	0.64	0.52	0.61	0.66	0.6	0.67
Caregiver foreign-born noncitizen	-1.1 **	-0.9 *	-0.44	-1.32 ***	-0.78 †	-0.3	-0.99 **	-0.75	-0.66
	0.37	0.45	0.53	0.34	0.41	0.45	0.34	0.48	0.5
Mother born in Puerto Rico	0.5	0.6	0.86	0.12	0.24	0	0.16	-0.22	-0.44
	0.48	0.48	0.75	0.45	0.54	0.59	0.45	0.48	0.53
Household characteristics									
Caregiver's age (in years)		0.01	0.02		-0.04 *	-0.04 **		-0.05 **	-0.06 ***
		0.02	0.02		0.02	0.02		0.02	0.02
Age of youngest child in HH (years)		-0.13 *	-0.12 *		-0.08 †	-0.06		-0.07 **	-0.07 *
		0.05	0.06		0.04	0.05		0.03	0.03
Age of focal child (years)		0.07 †	0.06		0.08 *	0.07 †		-0.02	0
		0.04	0.04		0.04	0.04		0.03	0.03
Household in poverty		1.18 ***	0.87 **		1.42 ***	1.4 ***		0.64 *	0.63 *
		0.28	0.33		0.24	0.29		0.29	0.3
Caregiver is employed		-0.94 **	-0.7 *		-0.73 *	-0.37		-1.09 ***	-0.77 **
		0.3	0.32		0.29	0.32		0.28	0.29
Caregiver's race/ethnicity									
African-American		-0.07	-0.28		-0.21	-0.02		-0.38	-0.58
		0.5	0.85		0.57	0.83		0.58	0.65
Hispanic		0.01	-0.01		-0.07	0.2		0	-0.06
		0.52	0.83		0.56	0.81		0.59	0.66
Caregiver's marital status									
Caregiver is cohabiting (vs. single)		0.17	0.11		0.26	0.3		-0.06	0.08
		0.34	0.42		0.29	0.31		0.4	0.42
Caregiver is married (vs. single)		-0.69 *	-0.4		-0.89 **	-0.71 †		-1.15 **	-1.19 **
		0.32	0.36		0.34	0.39		0.38	0.37
City									
Chicago		0.11	0.01		0.64 *	0.79 *		0.03	0.64 †
		0.3	0.38		0.31	0.36		0.31	0.34
San Antonio		0.51	1.37 **		0.25	0.6 †		-0.17	0.19
		0.34	0.42		0.31	0.36		0.35	0.38
Household is receiving TANF			3.31 ***			3.17 ***			3.32 ***
			0.36			0.38			0.69
Constant	0.06	-0.85	-2.21 *	0.1	0.28	-0.62	0.21 †	3.61 ***	3.19 ***
Chi-square	11.23	49.6	130.89	15.99	77.43	114.74	9.22	68.39	78.3
N	950	917	917	950	917	917	950	921	921

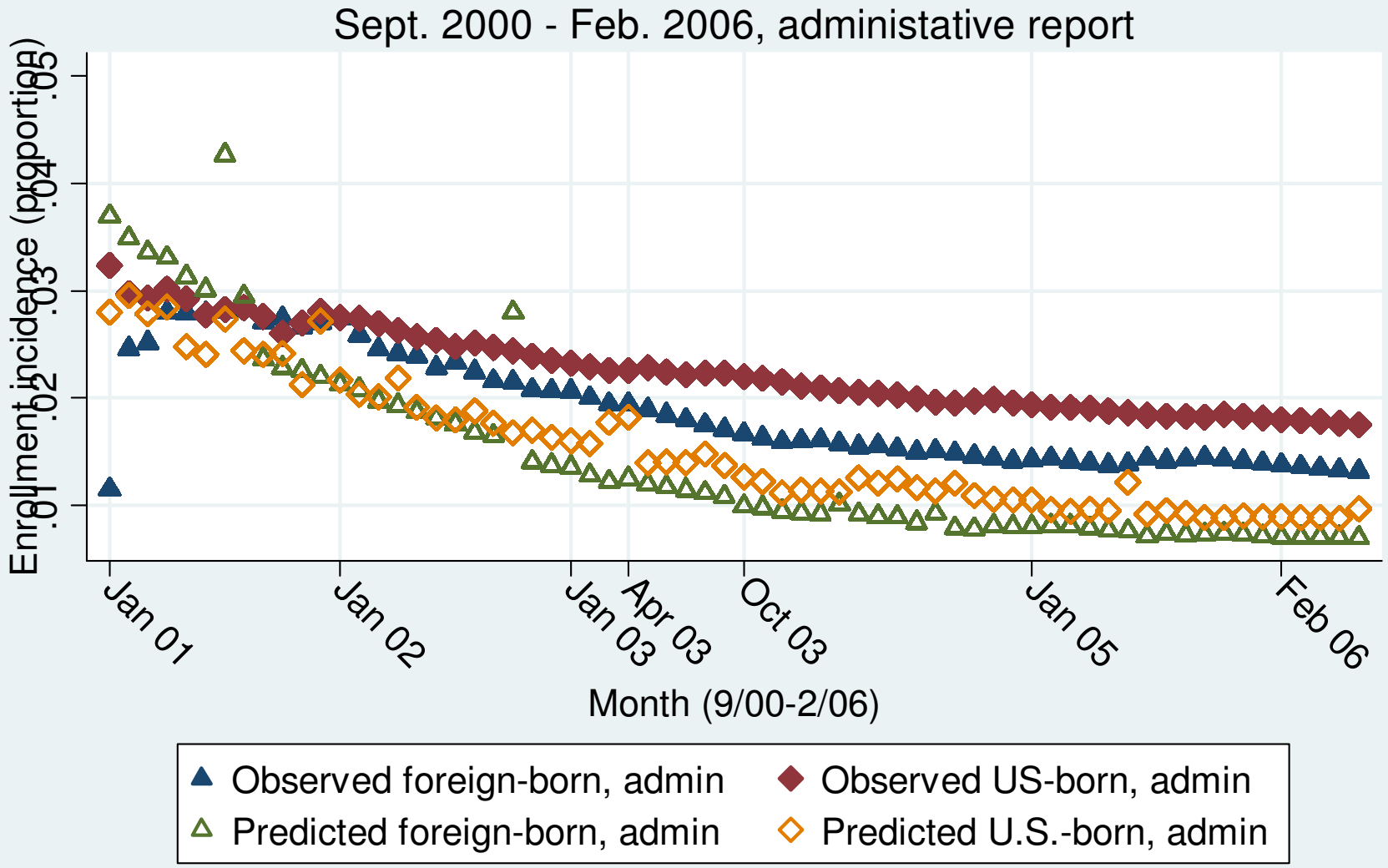
Figure 1: Observed incidence of Food Stamp enrollment

Sept. 2000 - Feb. 2006, administative report



Source: Three-City Study

Figure 2: Predicted vs observed incidence of Food Stamp enrollment



Source: Three-City Study

Appendix 1. Descriptive statistics for respondents not enrolled in the Food Stamp Program at the beginning of the observation period (February 2003 for administrative data, 2 years before 2005 interview for survey data), unweighted

	Administrative Data						Survey Data					
	Overall		U.S.-born caregiver		Foreign-born caregiver		Overall		U.S.-born caregiver		Foreign-born caregiver	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Caregiver's nativity status												
U.S.-born	0.78						0.74					
Foreign-born citizen	0.04						0.05					
Foreign-born noncitizen	0.13						0.15					
Born in Puerto Rico	0.05						0.05					
Receiving food stamps												
Wave 1 (1999)	0.46		0.48		0.34		0.44		0.46		0.31	
Wave 2 (2000-2001)	0.26		0.26		0.23		0.29		0.30		0.24	
Wave 3 (2/2005-2/2006)	0.32		0.35		0.23		0.26		0.29		0.20	
Household characteristics												
Caregiver's age (1st obs)	36.74	10.04	36.70	10.50	37.14	8.33	36.55	9.65	36.57	10.14	36.36	8.01
Age of youngest child in years (1st obs)	7.29	5.15	7.42	5.34	6.62	4.26	7.30	5.13	7.48	5.29	6.52	4.41
Age of focal child	10.29	5.22	10.53	5.26	9.35	4.98	10.34	5.19	10.66	5.29	9.15	4.76
Household in poverty at wave 2 (2000-01)	0.46		0.48		0.42		0.49		0.49		0.48	
Household receiving TANF (1st obs)	0.02		0.03		0.00		0.04		0.04		0.01	
Caregiver employed (1st obs)	0.58		0.59		0.57		0.61		0.61		0.61	
Caregiver's race/ethnicity												
white	0.11		0.13		0.04		0.10		0.13		0.02	
black	0.44		0.55		0.05		0.43		0.55		0.10	
hisp	0.45		0.32		0.91		0.47		0.32		0.88	
Caregiver's marital status (1st obs)												
Cohabiting	0.15		0.15		0.13		0.16		0.18		0.13	
Married	0.25		0.24		0.30		0.28		0.25		0.37	
City of interview (wave 1)												
Boston	0.36		0.31		0.49		0.40		0.33		0.55	
Chicago	0.32		0.32		0.38		0.30		0.29		0.35	
San Antonio	0.32		0.38		0.13		0.31		0.38		0.11	
	N=444		N=345		N=77		N=861		N=637		N=179	

Appendix 2. Descriptive statistics for survey respondents for whom administrative data were not obtained, unweighted

	Mean	SD
Receiving food stamps		
Wave 1 (1999)	0.46	
Wave 2 (2000-2001)	0.35	
Wave 3 (2/2005-2/2006)	0.29	
Caregiver's nativity status		
U.S.-born	0.73	
Foreign-born citizen	0.06	
Foreign-born noncitizen	0.16	
Born in Puerto Rico	0.05	
Household characteristics		
Caregiver's age (1st obs)	36.02	9.52
Age of youngest child in years (1st obs)	7.06	5.08
Age of focal child	10.12	5.13
Household in poverty at wave 2 (2000-01)	0.54	
Household receiving TANF, Jan 2003	0.03	
Caregiver employed (1st obs)	0.57	
Caregiver's race/ethnicity		
white	0.10	
black	0.44	
hisp	0.47	
Caregiver's marital status (1st obs)		
Cohabiting	0.17	
Married	0.27	
City of interview (wave 1)		
Boston	0.41	
Chicago	0.29	
San Antonio	0.30	
	N=492	