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Reversing welfare reform? Immigrant restoration efforts and food stamp receipt among Mexican immigrant families

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ABSTRACT

The safety net that immigrants face today differs significantly from the immediate post-Welfare Reform era in terms of eligibility and economic context. To inform debates on immigrant access to the safety net, this paper examines implications of the 2002 Farm Security and Rural Investment Act, which restored food stamp eligibility to nearly two-thirds of immigrants who lost eligibility under Welfare Reform. Using data from the 1995–2013 Current Population Survey and a difference-in-difference design, I examine how restoration efforts have influenced food stamp participation and food insecurity rates among low-income Mexican immigrant households with children. I then examine trends in food stamp receipt across policy and economic changes since Welfare Reform. Overall, results suggest that immigrant restoration efforts have reversed some but not all of the negative consequences of Welfare Reform and that immigrant households' use of food stamps has increased, particularly in the wake of the Great Recession.

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The Personal Responsibility Work and Opportunity and Reconciliation Act (PRWORA), known also as the Welfare Reform law of 1996, imposed the most restrictive federal eligibility criteria in history for non-citizen immigrants (Fix and Passel, 2002). Many legal immigrant families, who had previously been eligible on the same terms as citizens, lost eligibility for basic safety net supports, including food stamps,[1] Temporary Aid for Needy Families (TANF), Medicaid/SCHIP, and Supplementary Security Income (SSI). Since then, there have been federal efforts to restore benefits to immigrants, mostly centered on food stamps. In 2002, the federal government passed the Farm Security and Rural Investment Act (FARM 2002), which restored food stamp eligibility to nearly two-thirds of the immigrants excluded under Welfare Reform (Henderson et al., 2008).

Did these policy restorations revive the safety net for immigrant families? From the Welfare Reform literature we know that fewer immigrants post-reform access benefits even when they are eligible (Borjas, 2004; Capps et al., 2002; Hagan et al., 2003; Fix and Passel, 2002; Van Hook and Balistreri, 2006). Food stamp restoration efforts could reverse some of this decline, but for immigrant families these restoration efforts have been criticized for being more symbolic than real, given that three-quarters of children in immigrant families are citizens and never lost eligibility (Fix and Zimmerman, 2001). Research to date has mostly focused on the consequences of Welfare Reform and its exclusion of immigrants, and as such, we know comparatively little about the implications of food stamp restoration efforts for immigrant families, particularly for different types of immigrant families.

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[1] Though the federal food stamp program was renamed Supplemental Nutrition Assistance Program, I use the name "food stamps" because much of the analysis pre-dates the name change.

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This study examines the influence of the 2002 FARM bill's food stamp immigrant restorations on food stamp participation and food insecurity rates among low-income Mexican immigrant families, which are the single largest origin immigrant group and the most at risk for poor childhood outcomes (Portes and Rumbaut, 2001). I use data from the 1995–2013 Current Population Survey Food Security Supplement (CPS-FSS) for households with children ages 0–17 and a difference in difference (DiD) design that compares food stamp receipt and food insecurity risk before and after the implementation of the 2002 FARM bill for different immigrant households. To put the 2002 FARM bill's implications into context, I then assess how trends in food stamp receipt have changed across key welfare policy changes and economic time periods. Overall, the results suggest that immigrant restoration efforts have reversed some but not all of the negative consequences of Welfare Reform and that the food stamp program has once again become an important source of support for immigrant families, particularly in the wake of the Great Recession.

1. Food stamps, food insecurity, and Mexican immigrant families

The primary objective of the food stamp program is to reduce food insecurity, which research has shown is associated with poor short and long-term outcomes for children in development, physical health, psychological health, and academic well-being (e.g., see literature summaries by Cook and Frank, 2008; Gundersen et al., 2011). Although assessments of the food stamp program's effectiveness are complicated by selection bias, i.e., more food insecure individuals enroll in the program, overall research has shown that it reduces both the incidence and severity of food insecurity (Gundersen et al., 2011; Kreider et al., 2012), particularly for immigrants (Borjas, 2004).

For Mexican children of immigrants, food insecurity is of special concern but food stamp receipt is low. Compared to non-Hispanic white children of natives, Mexican children of immigrants experience higher rates of food insecurity (46% vs. 12%; Van Hook et al., 2013), but only a quarter (27%) of low income Mexican immigrant families utilize food stamps compared to 44% of their US-born peers (Chaudry and Fortuny, 2010). Because a large proportion of Mexican immigrant adults lack legal status in the US (Passel and Cohn, 2008), their families face unique challenges that may exacerbate food insecurity risk, such as deportation risk, isolation, job insecurity, and exclusion from safety net services (Yoshikawa and Kalil, 2011). Although their children are often US citizens and therefore eligible for safety net services, these mixed status families often remain in the shadows due to fear and confusion about government programs (Yoshikawa et al., 2013). The greater vulnerability of Mexican immigrant families means they may be particularly sensitive to federal changes in food stamp eligibility.

2. Policy background: public benefit exclusions and restorations

In 1996 the PRWORA federally barred non-citizen immigrants from receiving public assistance for at least 5 years of U.S. residence (10 years for food stamps) and allowed states to determine their own program eligibility (e.g., food stamps, Medicaid) for different subcategories of immigrants (e.g., children, the elderly; Zimmerman and Tumlin, 1999; Fix and Passel, 2002). States could also choose to extend their own supplemental programs during the 5-year bar. The result was the loss of a reliable federal safety net for immigrants and a patchwork of state policies, with unknown impacts on immigrant families' well-being.

Since PRWORA, there have been federal efforts to restore benefits to immigrants. The more substantial and widespread efforts have centered on food stamps and have adjusted eligibility criteria to be more on par with TANF and Medicaid. Though Medicaid and TANF imposed a 5-year U.S. residence eligibility bar for post-enactment non-citizens, the food stamp program imposed a 10-year U.S. residence bar and excluded pre-enactment immigrants as well (Bitler and Hoynes, 2011; Zimmerman and Tumlin, 1999). In 1998, the federal government restored food stamp eligibility to pre-enactment children, the elderly, and the disabled but still excluded pre-enactment adults. The 2002 FARM bill restored food stamp eligibility for non-citizens most aggressively, and occurred in three phases: 1) October 2002 restored benefits to the post-enactment disabled, 2) April 2003 reduced the bar from 10 years to 5-years for all Legal Permanent Residents (LPRs), and 3) October 2003 restored benefits to all LPR children no matter length of residence (Capps et al., 2004). By extending benefits to all LPR children the food stamp program has become more inclusive than TANF and Medicaid/SCHIP,[2] which means that for some immigrant families the food stamp program may be their only source of social support. Finally, note that although the 2002 FARM bill had direct relevance for immigrant families, it was the culmination of a long-standing federal interest in broadening access and simplifying application procedures in the food stamp program for all families (Capps et al., 2004); thus, both immigrant and non-immigrant families should have benefitted from the bill's broader outreach efforts.

3. Lessons from welfare reform

There has been a wealth of research on federal Welfare Reform and the consequences of immigrant exclusion (Borjas, 2004; Capps et al., 2002; Cho, 2011; Fix and Passel, 2002; Hall et al., 2010; Kaestner and Kaushal, 2005; Kaushal and Kaestner, 2005; Lofstrom and Bean, 2002; Nam, 2011; Nam and Jung, 2008; Van Hook and Balistreri, 2006); this research

[2] In 2009, the federal government rescinded the Medicaid/SCHIP 5-year U.S. residence bar for immigrant children but provides states the option to bar these children.

provides some important lessons about how immigrant families use public benefits. Exploiting changes in eligibility across time (pre-post), individuals (e.g., non-citizens, naturalized citizens and natives) and state responses, studies mostly find that after the 1996 reforms, caseloads for safety net programs declined more for immigrants than US-born citizens, even when immigrants remained eligible (Borjas, 2004; Capps et al., 2002; Fix and Passel, 2002; Van Hook and Balistreri, 2006). The decline in public benefit use, however, was smaller in states that extended supplementary benefits to immigrants (Borjas, 2004).

Explanations for the decline in welfare use among eligible immigrants has been attributed to several factors, including a "chilling effect" (Fix and Passel, 2002; Van Hook, 2003); a naturalization effect (Nam, 2011; Van Hook, 2003); changes in macroeconomic conditions (Capps et al., 2002; Haider et al., 2004; Lofstrom and Bean, 2002); and increased labor supply of immigrant populations (Kaestner and Kaushal, 2005). The "chilling effect" argument is the idea that families are confused about eligibility and fearful that applying for benefits could cause deportation or interfere with naturalization. This effect may be particularly pronounced for Mexican immigrant families (Hagan et al., 2003) because more than half of foreign-born Mexican adults are estimated to be undocumented—even though most of their children are US citizens (Passel and Cohn, 2008; Fix and Zimmerman, 2001).[3] Moreover, the strong pro-employment cultural values of undocumented Mexican immigrants (Van Hook and Bean, 2009) may make them more susceptible to a chilling effect. Undocumented Mexican immigrants most often migrate to seek jobs, and their strong emphasis on work contributes to their underutilization of public assistance. The pro-work emphasis of Welfare Reform may exacerbate this tendency and drive undocumented Mexican immigrants away from seeking benefits for household members who are eligible.

4. Immigrant restoration efforts: working towards reversing welfare reform

Although the welfare reform era and its effect on immigrants have been heavily studied, the research has three important limitations. First, the safety net immigrant families face today is much different than the post-PRWORA years, which has been the focus of most research. In addition, the economic context has changed tremendously; the robust economy of the late 1990s that coincided with Welfare Reform has given way to the greatest economic recession since the Great Depression. The Great Recession has led to greater job losses among immigrants than non-immigrants (Liu and Edwards, 2015), thus increasing the importance of the social safety net. Few studies have examined whether immigrant restoration efforts have been effective in reversing the negative consequences of welfare reform, particularly in the wake of the Great Recession. In this paper, I assess how today's social safety net for immigrant populations compares to the pre-PRWORA era and whether the immigration restorations have been able to fully reverse the negative consequences of Welfare Reform.

The second limitation is that current literature lacks information about which immigrant families the 2002 FARM bill affected and to what extent. The existing eligibility of US-born children of immigrant parents is the reason that immigrant food stamp restoration efforts have been criticized as being more symbolic than substantive. The vast majority (three-quarters) of children in immigrant families are citizens, and thus never lost eligibility for food stamp benefits (Fix and Zimmerman, 2001). As such, few immigrant families may have actually been affected by the restorations; more research is needed to understand the extent to which this is true.

In this study, I deepen the understanding of how the 2002 Farm Bill's restoration efforts affected immigrant families by examining households with various citizenship compositions. Even immigrant families who never lost program eligibility may have benefited from restoration efforts if the wider eligibility reduced general fear and confusion about the program, i.e., reduced the "chilling effect." To untangle this possibility, I examine the bill's influence on food stamp receipt of immigrant households with all naturalized citizens and households in states with supplementary food stamp benefits, neither of whom lost eligibility under Welfare Reform. I also examine the impact on immigrant families that have mixed citizenship status (i.e. child is a citizen and parent non-citizen)—these families lost partial eligibility under PRWORA. Though citizen children in these households have always been eligible, the restoration of parent eligibility under the 2002 FARM bill may have reduced confusion and increased familial food stamp participation (Fomby and Cherlin, 2011; Van Hook and Balistreri, 2006). Lastly, I examine the impact on Mexican immigrant households with all non-citizens. Some of these households will have legal permanent resident (LPR) parent and children for whom the 2002 Farm Bill restored food stamp eligibility. However, a large portion will consist of undocumented children and adults because over 50% of Mexican foreign-born adults (nearly 80% for recent arrivals) are estimated to be undocumented (Passel and Cohn, 2008). Non-citizen children in these households are also likely to be undocumented. The 2002 FARM bill did not restore eligibility to undocumented immigrants, so I expect that households with all non-citizens will be unaffected.

The third limitation of existing literature is that thus far, studies of the 2002 FARM bill have either focused on implementation challenges and successes across different states (Capps et al., 2004; Gigliotti and Emerson, 2004) or provided only preliminary impact assessments on food stamp receipt (Fomby, 2011; Henderson et al., 2008). The two impact reports of the 2002 FARM bill find that its broader outreach efforts increased food stamp caseloads for both immigrants and non-immigrants (Henderson et al., 2008; Fomby, 2011). Food stamp receipt, however, increased more for immigrants, including those for whom eligibility did not change under the restorations, i.e. undocumented household heads with citizen children.

[3] Passel and Cohn (2008) estimate that in 2008 73% of children of undocumented adults were born in the U.S. They do not provide estimates by racial/ethnic groups.

These impact studies provide a strong evaluation of the 2002 FARM bill, but are either limited by their post-policy time period (particularly for the major restorations[4]; Henderson et al., 2008) or generalizability beyond a subset of cities (Fomby, 2011). This study adds to the research on the 2002 FARM bill by using nationally representative data to compare results across time and to contextualize the bill's immigrant restorations in light of other political and economic changes that have altered the safety net for immigrant families since PRWORA.

5. Study design

5.1. Data and sample

The analysis for this paper relies upon data from the Current Population Survey Food Security Supplement (CPS-FSS). Using a multistage stratified sample, the CPS collects monthly demographic and employment information from about 60,000 housing units across the US for the civilian population. Using a rotating interview system, each housing unit in the CPS is interviewed for four consecutive months, then ignored for the next eight months, and then interviewed again for four more months. The household unit (not the occupants) make up the sample, so if individuals or families move from a household unit they are not followed.

The CPS-FSS is a supplementary questionnaire administered once a year and focuses on household food consumption patterns, food program receipt, and food security measures. Beginning in 2001, the food supplement survey has been conducted every December, which controls for a seasonality effect. The food security supplement collects data on food stamp receipt and food security over the past 12 months. The food security measure follows the USDA guidelines and asks a battery of eighteen questions.[5] The CPS is a good data choice for this project because it has a large, nationally representative sample size; includes a variety of control measures (e.g., demographic and household characteristics, nativity, citizenship, and geographic residence); and can be pooled across years to provide a longitudinal series of cross-sectional data. To assess the 2002 FARM bill, I pool the 2001–2007 CPS data files that cover food stamp receipt and food insecurity between December 2000 through December 2007 (questions are retrospective over the past 12-months); this pooling allows for multiple pre- and post-bill observations.[6] To put the 2002 FARM bill's implications into context, I then pool the 1995–2013[7] CPS data files to assess food stamp receipt across different policy and economic time periods, both before and after PRWORA.

5.2. Sample

The unit of analysis is the household. The main sample includes US-born and Mexican immigrant low-income households with children (ages 0–17) between data years 2001 and 2007 (N = 37,860). I restrict the sample to households 185% or below the federal poverty line to ensure useful comparison groups: Mexican immigrant households (many of which are low-income) and non-immigrant households. The sample is further restricted due to missing data on the dependent variables. The final sample sizes are 37,676 and 37,558 for the food stamp and food insecurity assessments, respectively.

For the main analysis, I classify the sample into four mutually exclusive categories based on nativity and citizenship status of the household head and all members residing in the household: US-born native household (household head is US-born; reference group), Mexican foreign born all citizen household (household head is Mexican naturalized foreign-born citizen and all household members are citizens; All Citizen), Mexican foreign-born mixed citizenship household (household head is Mexican noncitizen but all or some household members are citizens; Mixed Citizen), and Mexican foreign-born non-citizen households (household head is Mexican noncitizen and all household members are foreign-born noncitizens; All FBNC).

Table 1 provides summary statistics for each of these groups. Consistent with prior research (Kalil and Chen, 2008), food insecurity rates among low-income families are lowest for Mexican All Citizen households (27%), followed by US-born (32%), Mexican Mixed Citizen (34%), and Mexican All FBNC households (38%). For Mexican All Citizen households, their low risk of food insecurity mirrors their lower food stamp participation rate (13%). Though Mexican Mixed Citizen households experienced higher levels of food insecurity than US-born households, they were significantly less likely to participate in food stamps (17% vs. 32%), a possible reflection of immigrant exclusion policies. Lastly, only 1% of Mexican All FBNC households

[4] Henderson et al. (2008) used the CPS March sample from 1999 to 2005 (calendar years 1998–2004). Because the bill was implemented in stages, the length of the post-implementation period differs for each of the stage as follows (approximately): a year and a half for the disabled provision; a year for the 5-year bar reduction provision; and 5 months for the LPR children provision.

[5] Sample questions are: Did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food (yes/no)? Did you ever eat less than you felt you should because there wasn't enough money for food (yes/no)? How often did this happen (almost every month; some months but not every month; only 1 or 2 months)? Were you ever hungry but did not eat because you couldn't afford food (yes/no)? Did you lose weight because you did not have enough money for food (yes/no)? For a complete list see Table 1 in Gundersen et al. (2011).

[6] I limit the post-analysis time period to 2007 to avoid potential confounding effects of the Great Recession (Bitler and Hoynes, 2013). I limit the pre-analysis to 2001 because only as of 2001 has the Food Security Supplement been consistently collected in December, which controls for seasonality effects. Food stamp receipt results are robust to the inclusion of years prior to 2001, but food insecurity results are more sensitive, a potential reflection of seasonality effects (results available upon request).

[7] The CPS-FSS are April 1995, 1997, 1999, 2001; September 1996, 2000; August 1998; and December 2001–2013. Because food stamp receipt rates refer to the prior 12 month period, the CPS year and calendar year for the non-December supplements do not always align; the cutoffs used for the time periods adjust for this. The CPS-FSS April 1997 (calendar year 1996) is excluded because it covers both the pre and post-PRWORA time period (Borjas, 2004).

Table 1
Summary statistics of low income households with children by household nativity and citizenship status, current population survey food security supplement 2001–2007.

	US-born native	Mexican foreign-born mixed citizen	Mexican foreign-born all citizen	Mexican foreign-born all non-citizen
	Mean/prop.	Mean/prop.	Mean/prop.	Mean/prop.
Outcome variables				
Food stamp receipt (12 months)	0.32	0.17	0.13[b]	0.01[a]
Food insecure (12 months)	0.32[b]	0.34[a]	0.27[a,b]	0.38[a,b]
Household characteristics				
Head's race/ethnicity				
White	0.58[b]	–	–	–
Black	0.26[b]	–	–	–
Asian	0.01[b]	–	–	–
Hispanic	0.13[b]	–	–	–
Other race/ethnicity	0.02[b]	–	–	–
Head's age	36.99[b]	36.00[a]	40.00[a,b]	36.87
Head's marital status				
Ever married	0.28[b]	0.11[a]	0.23[a,b]	0.11[a]
Never married	0.26[b]	0.13[a]	0.11[a]	0.19[a,b]
Married	0.46[b]	0.76[a]	0.66[a,b]	0.70[a,b]
Number in household	3.98[b]	4.85[a]	4.68[a]	4.43[a,b]
Highest education in household				
Less than high school	0.13[b]	0.49[a]	0.28[a,b]	0.56[a,b]
High school	0.40[b]	0.32[a]	0.36	0.24[a,b]
Some college	0.37[b]	0.15[a]	0.29[a,b]	0.15[a]
Bachelors or more	0.10[b]	0.05[a]	0.07[a]	0.06[a]
Urban residence				
MSA	0.73[b]	0.92[a]	0.88[a,b]	0.90[a]
Non-MSA	0.27[b]	0.08[a]	0.12[a,b]	0.09[a]
MSA Not identified	0.01[b]	0.00[a]	0.00[a]	0.00
State characteristics				
Prop. foreign-born	0.12[b]	0.23[a]	0.23[a]	0.21[a,b]
Unemployment rate	5.19[b]	5.47[a]	5.54[a]	5.47[a]
Poverty rate	12.74[b]	13.34[a]	13.37[a]	13.27[a]
N=	33,380	3425	418	453

Notes: Super-scripts indicate that the respective group mean/proportion difference is statistically different ($p < 0.05$) from the following groups: a = US-born native HH; b = Mexican foreign-born Mixed Citizen HH; c = Mexican foreign-born all citizen HH.

received food stamps, which aligns with the assumption that members of these households are likely undocumented and ineligible for food stamps. Differences in food stamp participation rates across the groups may also reflect differences in household characteristics. Compared to US-born households, for instance, Mexican Mixed Citizen households were larger (4.85 vs. 3.98) and had more limited educational resources; almost half of Mexican Mixed Citizen households had no one who had completed a high-school degree compared to only 13% of US-born households.

5.3. Outcome measures

I examine two outcome measures, both of which are retrospective based on experiences over the past 12 months. My main outcome of interest is whether anyone in the household has received food stamps (1 = food stamps; 0 = else). My secondary outcome of interest is household food insecurity, which I construct as a dichotomous measure (1 = food insecure; 0 = else) where food insecure equals anyone who affirms three or more items in the standardized, 18-item measure of food security in the CPS. The secondary measure serves as a sensitivity check; if the 2002 FARM bill increases food stamp receipt, overall food insecurity rates should also decrease.

5.4. Analysis

I utilize a difference-in-difference (DiD) model, which is frequently used in policy impact assessments and has also been used in prior studies of the 2002 FARM bill (Fomby, 2011; Henderson et al., 2008). The DiD approach identifies policy associations based on differences in pre- and post-policy food stamp receipt (or food insecurity risk) of Mexican immigrants (i.e. the treatment group), while subtracting out any similar pre-post trends observed among non-immigrants (i.e. the comparison group). Because the 2002 FARM bill included general provisions that were likely to affect all low-income households (not just immigrants), both immigrants and non-immigrants should be affected by the policy, but because immigrants also benefited from the immigrant specific restorations, the post-policy impact should be larger for them. Note the analysis is not causal; I use DiD models to assess the associations between policy changes in food stamp eligibility and food stamp receipt.

Table 2
Linear probability models of the 2002 Farm bill on food stamp receipt and food insecurity status for low-income US-born Natives and Mexican immigrant households with children (CPS-FSS 2001–2007).

	Food stamp receipt		Food insecurity status	
	Entire U.S.	States w/o food stamp supplement	Entire U.S.	States w/o food stamp supplement
Panel 1. By household nativity and citizenship status (ref. US-born natives)				
Mixed citizen*post-policy	0.001 (0.019)	0.038 (0.019)*	−0.042 (0.029)	−0.054 (0.025)*
All citizen*post-policy	−0.065 (0.040)	0.025 (0.050)	−0.104 (0.063)	−0.004 (0.066)
All non-citizen*post-policy	−0.041 (0.018)*	−0.056 (0.018)**	−0.055 (0.044)	−0.123 (0.049)*
Post-policy	0.047 (0.007)***	0.048 (0.007)***	−0.016 (0.009)	−0.014 (0.009)
Panel 2. By household members' food stamp eligibility pre-2002 FARM (ref. US-born natives)				
Mixed eligibility*post-policy	−0.005 (0.027)	0.048 (0.024)*	−0.038 (0.027)	−0.083 (0.029)**
All members eligible*post-policy	−0.006 (0.019)	0.027 (0.025)	−0.061 (0.043)	−0.012 (0.029)
All members ineligible*post-policy	−0.043 (0.018)*	−0.057 (0.021)**	−0.032 (0.042)	−0.101 (0.046)*
Post-policy	0.047 (0.007)***	0.048 (0.007)***	−0.016 (0.009)	−0.015 (0.009)

*p < 0.05, **p < 0.01, ***p < 0.001.
Notes: (1) Coefficients reported with standard errors in parentheses. (2) Sample Ns for All States are: food stamps 37,676 and food insecurity 37,558; Ns for States w/o fill-in food stamps are: food stamps 30,645 and food insecurity 30,547. (3) All models include household controls (head's age, marital status, race/ethnicity; household size, education, and MSA location) and state-time varying characteristics (unemployment rate, poverty rate, and percent foreign-born), state fixed effects, and group-specific state fixed effects. (4) Data are weighted and clustered by state-year.

Following the suggestion of Liu et al. (2003) and prior studies on Welfare Reform (Borjas, 2004; Lofstrom and Bean, 2002), I use a linear probability model (LPM), which is analogous to the logit model when robust standard errors are used, but allows for an easier computation of fixed effects and interactions (Wooldridge, 2010). The coefficient can be interpreted as the change in predicted probability of Y associated with X; when multiplied by 100 this indicates the percentage point change (e.g., a 0.10 coefficient indicates a 10 percentage point change). The main analytical strategy is summarized in the equation below:

$$Y_{hts} = \alpha + \beta_1 F_{ht} + \beta_2 C_{hts} + \beta_3 (C_{hts} * F_{ht}) + \beta_4 H_{hts} + \beta_5 X_{ts} + \beta_6 S_s + \beta_7 (S_s * C_{hts}) + \varepsilon_{hts} \quad (1)$$

where Y_{hts} is food stamp receipt (or food insecurity risk) for household *h* at time *t* in state *s*, F_{ht} is the post-2002 FARM indicator (measured as data year 2003 and later since the major immigrant restorations of the bill did not occur until April and October of 2003), C_{hts} is a vector of nativity by citizenship status dummies of the household *i* (US-born native [reference], Mexican All Citizen, Mexican Mixed Citizen, and Mexican All FBNC households), the interaction $C_{hts}*F_{ht}$ is the DiD post-treatment indicator, H_{hts} denotes a vector household controls (household head's age, marital status, race/ethnicity; household size, education, and MSA location) that have been shown to affect food stamp receipt and food insecurity[8] (Chilton et al., 2009; Kalil and Chen, 2008), X_{ts} denotes a vector of time-varying state controls (unemployment rate, poverty rate, and percent foreign-born) that adjust for changes in economic conditions and migration patterns, S_s controls for time invariant observed and unobserved state characteristics (e.g., other state-specific food programs such as coordination with food banks or schools), and the interaction between S_s* C_{hts} controls for time invariant state characteristics that may be unique across immigrant groups. Lastly, ε_{hts} represents a random error. All data are weighted and robust standard errors are clustered by state-year[9] to correct for heteroskedasticity.

In this equation, the coefficients on the nativity/citizenship terms (C_{hts}) indicate the overall difference between the groups, and the post-2002 FARM term (F_{ht}) indicates whether food stamp receipt increased (or food insecurity decreased) for all low-income households during the post-policy time period (i.e., the main effects). The coefficients of the interaction terms between household nativity by citizenship status and post-2002 FARM ($C_{hts}*Fh_t$) indicate whether this policy increase (or decrease) was greater for Mexican All Citizen, Mexican Mixed Citizen, and Mexican All FBNC households. In addition to the main analysis, I run several sensitivity checks by using a different categorization of immigrants and a triple difference estimate. Lastly, I use linear probability models to provide a descriptive assessment of food stamp receipt over key economic and policy time periods.

6. Results

6.1. The 2002 FARM bill, food stamp receipt, and food insecurity

Overall, the results indicate that food stamp receipt increases after welfare restoration (i.e. 2002 FARM) for US-born native, Mexican All Citizen, and Mexican Mixed Citizen households but not for Mexican All FBNC households. The increase is greatest

[8] Because the 2002 FARM restorations are contingent on years in the US I do not control for this in analysis. Results, however, were not sensitive to the inclusion of household head's years in the U.S.

[9] Because repeat observations of the CPS can bias the standard errors, I ran two checks: 1) clustered the standard errors by households (Kaushal, 2008); and 2) dropped potential repeat observations using the month-in-sample proxy (Nam, 2011). Because the results were robust to these checks and because the sampling design of the CPS suggests sample similarity within state I cluster by state-year.

for Mexican Mixed Citizen households when I focus on states without a supplementary food stamp program[10] (Table 2). Also, for Mexican Mixed Citizen households only, I find a corresponding larger decrease in food insecurity risk during this same time period. I do not find that food stamp receipt increases more or that food insecurity risk decreases less for Mexican All Citizen households, and evidence for Mexican All FBNC households is consistent with the assumption that these are mostly undocumented immigrant households.

In Panel 1 of Table 2, the results for the entire US sample indicate that the post-policy period is associated with a 4.7 percentage point increase in food stamp receipt for all households, but that this association does not differ for Mexican Mixed Citizen and All Citizen households as evidenced by the non-significant interaction terms. For Mexican Mixed Citizen households, the non-significant interaction term appears to be driven by the inclusion of states with supplementary food stamp benefits. When the sample is restricted to states without a supplementary program, i.e., states that would be most impacted by the immigrant restorations, the post-policy association remains robust (4.8 percentage points) but the interaction term for this group increases and becomes significant. Specifically, for Mexican Mixed Citizen households, food stamp receipt increases by an additional 3.8 percentage points beyond the main effect. In contrast, for All Citizen Mexican households the interaction term remains non-significant.

Turning to Mexican All FBNC households, I find the 2002 FARM welfare restorations had no influence on their food stamp receipt. The interaction term for this group in both the full and restricted sample is negative and offsets the main effect. For instance, in the entire US sample the influence of the 2002 FARM bill on these households is near zero, as evidenced by the addition of the main policy and interaction coefficients ($b_{\text{post-policy}} + b_{\text{All FBNC post-policy}} = 0.047 - 0.041 = -0.006$; $p = 0.65$). These results are consistent with the assumption that the classification Mexican All FBNC largely captures undocumented immigrant households whose food stamp eligibility was unchanged by restoration policy.

Next, as a sensitivity check I assess whether there is a corresponding decline in food insecurity rates when food stamp receipt increased. When examining the entire US sample, I find no statistically significant decrease in overall (i.e. main effect) food insecurity risk, and no interactive effect for Mexican Mixed Citizen and All Citizen households. Again, however, when I focus on states without a food stamp supplement, the post-policy interaction term for Mexican Mixed Citizen households increases in size (-0.042 to -0.054) and becomes significant; specifically, the risk of food insecurity is associated with an additional 5.4 percentage point decrease beyond the main effect. This decrease corresponds with the increase in food stamp participation observed for Mexican Mixed Citizen households. Food insecurity risk also declines for All Mexican FBNC households, but for this group there is no corresponding increase in food stamp participation after the 2002 Farm bill, so the decrease in food insecurity likely reflects something else.

It is important to note that the food stamp restorations of the 2002 FARM bill are contingent on length of residence; for non-citizen adults the bill reduced the time requirement from 10 to 5 years and for children it eliminated it. Thus, whether households gained eligibility under the restorations will depend on each member's length of residence. To address this, in Panel 2 I classify foreign-born Mexican households based on their pre-2002 FARM eligibility rather than just citizenship status. I first classify each household member as eligible or ineligible based on citizenship status and length of residence in the U.S. From this, I classify Mexican immigrant households into three categories—all eligible, all non-eligible, and mixed eligibility—and keep US-born native households as the reference group.

The results of Panel 2 are consistent with Panel 1. Focusing on states without the food stamp supplement, the overall post-policy increase remains the same (4.8 percentage points), and for Mexican households with mixed eligibility the interaction term is significant suggesting a differential increase of 4.8 percentage points. Similar to Panel 1, these households also demonstrate a larger post-policy decline in food insecurity risk of 8.3 percentage points. In this way, the results of Panel 2 provide further evidence that the 2002 FARM bill was particularly beneficial for Mexican immigrant households that had been partially excluded from the food stamp program. There is no evidence that the bill impacted Mexican immigrant households that did not lose eligibility under PRWORA as evidence by the non-significant interaction term for households with all members eligible. The results for households with all members ineligible align with the Mexican All FBNC results and likely capture undocumented immigrant households.

6.2. Sensitivity analysis

Because the results are sensitive to the inclusion of states that extended supplementary food stamps benefits, I use this variation to calculate a triple difference sensitivity check of the main results. The validity of the DiD model depends on whether the comparison group captures all of the same pre-post trends and shocks that the treatment group experiences, minus the policy change that is being examined. A triple difference model strengthens this assessment by using two comparison groups. In this case, I compare pre-post differences of Mexican immigrant households living in states without a food supplement (the first difference) to Mexican immigrant households in states with a supplement (the second difference), while netting out within state trends of US-born natives (the third difference). For this assessment, I modify equation (1) as follows:

[10] According to the USDA SNAP policy database, in 2003 the following states provided supplementary food stamp benefits for all qualified non-citizen post-enactment immigrants: California, Connecticut, Maine, Massachusetts, Minnesota, Nebraska, Rhode Island, Washington, and Wisconsin.

Table 3
Triple difference sensitivity check.

	Food stamp receipt	Food insecurity status
Panel 1. By household nativity and citizenship status (ref. US-born)		
Mixed citizen*post-policy*states w/o fill-in food stamps	0.060 (0.042)**	−0.019 (0.062)
All citizen*post-policy*states w/o fill-in food stamps	0.186 (0.057)**	0.188 (0.106)
All non-citizen*post-policy*states w/o fill-in food stamps	−0.036 (0.041)	−0.181 (0.082)*
Panel 2. By household members' food stamp eligibility pre-2002 FARM (ref. US born)		
Mixed eligibility*post-policy*states w/o fill-in food stamps	0.109 (0.041)**	−0.101 (0.060)
All members eligible*post-policy*states w/o fill-in food stamps	0.039 (0.049)	0.097 (0.075)
All members ineligible*post-policy*states w/o fill-in food stamps	−0.023 (0.043)	−0.177 (0.082)*

*p < 0.05, **p < 0.01, ***p < 0.001.
Notes: (1) Coefficients reported with standard errors in parentheses. (2) Sample N = 37,676 for food stamps; N = 37,558 for food insecurity. (3) All models include household controls (head's age, marital status, race/ethnicity; household size, education, and MSA location) and state-time varying characteristics (unemployment rate, poverty rate, and percent foreign-born), and the full-set of interactions for the triple difference estimate. (4) Data are weighted and clustered by state-year.

$$Y_{hts} = \alpha + \beta_1 F_{ht} + \beta_2 C_{hts} + \beta_3 N_{hts} + \beta_4 (C_{hts}{*}F_{ht}) + \beta_5 (C_{hts}{*}N_{hts}) + \beta_6 (N_{hts}{*}F_{ht}) + \beta_7 (C_{hts}{*}N_{hts}{*}F_{ht}) + \beta_8 H_{hts} + \beta_7 X_{ts} + \varepsilon_{hts} \quad (2)$$

where I: (1) add $N_{hts,}$ a dummy indicator equal to one if a household is located in a state without a fill-in food stamp supplement; (2) fully interact the three groups (i.e. F_{ht}, $C_{hts,}$ N_{hts}); and (3) eliminate the state fixed effects, which are fully collinear with $N_{hts.}$ In this model, β_7 is the differential influence of the 2002 FARM bill on the treatment group, controlling for pre-post trends/shocks of both comparison groups. I present the results for both the household citizenship (per Panel 1) and eligibility classifications (per Panel 2).

The triple difference estimate (Table 3) supports the finding thus far that the 2002 FARM bill was particularly beneficial for immigrant households that gained partial eligibility, i.e., mixed status or mixed eligibility households in states without a food stamp supplement. In Panel 1, the triple difference coefficient for Mexican Mixed Citizen households indicates that food stamp receipt in the post-policy period is associated with a 6.0 percentage point increase and the result is statistically significant. However, there is no corresponding decrease in food insecurity risk. In Panel 2, the triple difference coefficient for mixed eligibility households indicates a 10.9 percentage point increase in food stamp receipt and is statistically significant. The corresponding coefficient for food insecurity is negative (10.1 percentage points) but non-significant. Overall, the results of the triple difference sensitivity check provide further evidence that welfare restorations were positively associated with food stamp receipt.

6.3. A reversal of welfare reform? trends in food stamp receipt

The immigrant restorations of the 2002 FARM bill appear to have increased participation in the food stamp program for some immigrant households, but is this increase in participation sufficient to reverse the negative effects of Welfare Reform? And, have immigrant families been able to rely on the social safety net for support during the most trying economic times since Welfare Reform—the Great Recession? To contextualize the 2002 FARM immigrant restorations and address these questions, I move forward in time and assess food stamp receipt trends across four policy and economic time periods that have altered the social safety net for immigrant families since the pre-PRWORA era (1995–96; reference group): (1) Post-PRWORA era (1998–02); (2) Post-2002 FARM immigrant restorations (2003–07); (3) Great Recession (2008–09); and (4) Great Recession recovery period (2010–13). For this analysis, I focus only on households in states without a supplementary food stamp program because eligibility for these households has changed over the time periods I examine. I run the analysis using the household citizenship composition classification and run separate regressions for each group. Because sample sizes are small across the different time periods, this analysis is for descriptive purposes only.

Table 4 provides the regression results and Fig. 1 graphically depicts the changes in predicted probabilities of food stamp receipt across the five time periods. As Fig. 1 demonstrates, there was a sharp reduction in food stamp receipt immediately after PRWORA for Mexican Mixed Citizen and All Citizen households,[11] but since then a steady rise. For Mexican Mixed Citizen households, food stamp receipt drops by nearly 7 percentage points during the immediate aftermath of PRWORA but returns to pre-PRWORA participation rates during the 2002 FARM immigrant restorations and continues to increase through the Great Recession and its recovery period. For Mexican All Citizen households, the trends are similar. Note, however, that across time usage rates for both of these two groups always remain lower than US-born households. For Mexican All FBNC households food stamp receipt is relatively low but peaks during the Great Recession Recovery period. Overall, the results suggest the food stamp program has once again become an important safety net support for immigrants in the wake of immigrant restorations and the Great Recession.

[11] While not statistically significant these declines are consistent with the Welfare Reform literature.

Table 4
Linear probability models of policy and economic time periods on food stamp receipt for low-income households with children in states without food stamp supplement (CPS-FSS 1995–2013).

	Food stamp receipt			
	US-born native	Mexican foreign-born mixed citizen	Mexican foreign-born all citizen	Mexican foreign-born all non-citizen
Policy and economic time periods (Pre-PRWORA 1995–96 ref.)				
Post-PRWORA: Immig. Food Stamps Restricted (1998–2002)	−0.018 (0.009)*	−0.069 (0.050)	−0.087 (0.068)	−0.026 (0.043)
Post-2002 FARM: Immig. Food Stamps Restored (2003–07)	0.034 (0.011)**	0.026 (0.054)	0.005 (0.086)	−0.045 (0.050)
The Great Recession (2008–09)	0.067 (0.012)***	0.122 (0.060)*	−0.009 (0.100)	−0.021 (0.068)
Great Recession Recovery Period (2010–13)	0.126 (0.013)***	0.157 (0.064)*	0.115 (0.104)	0.041 (0.077)

*p < 0.05, **p < 0.01, ***p < 0.001.
Notes: (1) Coefficients reported with standard errors in parentheses. (2) Sample Ns are: 64,759 for US-born HH; 3909 for mixed citizen HH; 965 for all citizen HH; and 635 for all non-citizen HH. (3) All models include household controls (head's age, marital status, race/ethnicity; household size, education, and MSA location), state-time varying characteristics (unemployment rate, poverty rate, and percent foreign-born), and state fixed effects.

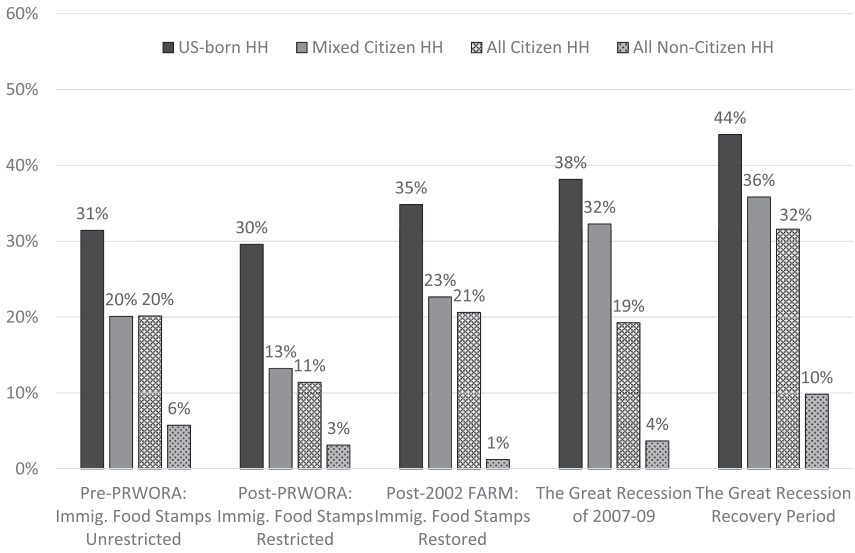

Fig. 1. Predicted probabilities of food stamp receipt for low-income households with children by policy and economic time periods.

7. Discussion

To inform debates on immigrant access to the social safety net, this paper examines how well the current safety net is servicing the largest and most disadvantaged immigrant group—Mexicans—by focusing on the influence of one of the biggest immigrant restoration efforts to date—the passage of the 2002 FARM bill. The 2002 FARM bill reduced the food stamp non-citizen waiting period from 10 years to 5 years of U.S. residence and extended food stamp benefits to all non-citizen children and disabled individuals, which made food stamps the most inclusive federal benefit for immigrant families. Because the food stamp program has become the leading anti-poverty program for low-income families in the post-PRWORA era, the effectiveness of these restoration efforts can provide a good indication of how well the social safety net is meeting the needs of immigrant families.

Similar to prior research on the 2002 FARM bill (Fomby, 2011; Henderson et al., 2008), I found that both immigrant and non-immigrant children from low-income households benefited from the bill. For all low-income families, with the exception of those likely to be undocumented, food stamp receipt increased between the pre-post 2002 FARM time periods. This finding suggests the bill is having its intended policy effect, which was to broaden access and grant more state flexibility so that food stamps are more accessible for all low-income families.

For Mexican non-citizen immigrant families and other immigrant groups, however, the 2002 FARM bill was important because it restored access to rights lost under Welfare Reform. For these families, I found that the influence of the 2002 FARM bill differed by household citizenship composition and state of residence. My results suggest the bill has been especially beneficial for Mexican Mixed Status families, even though a significant criticism of the bill has been that it was largely symbolic for these families because their children were already eligible. When I focused on states without a supplementary food stamp program, I found that for Mexican Mixed Citizen households, the immigrant restorations of the 2002 FARM bill were positively associated with food stamp receipt and negatively associated with food insecurity risk. In other words, food stamp receipt increased more (and food insecurity rates declined more) for Mexican Mixed Citizen households than their US-

born native and Mexican All citizen household counterparts. For food stamp receipt, this difference remained robust to a triple difference sensitivity estimation that exploited state variation in immigrant food stamp access.

In short, I find the expansion of eligibility under the 2002 FARM appears to have had real, substantive effects for Mexican mixed citizen immigrant families and importantly, restored benefit use among children who are entitled to benefits as citizens. Even though the eligibility of children in these families was not immediately altered by the 2002 FARM bill, the bill might have served to calm some of the "chilling effect" that originated with Welfare Reform (Fix and Passel, 2002). Because many parents in mixed citizen families had been excluded from the food stamp program under Welfare Reform, they may have misunderstood that their children remained eligible or have been afraid to apply. The 2002 FARM bill's restoration of parents' eligibility (via the reduction in the waiting bar) may have reduced confusion and fears. Thus, post-2002 FARM I found that Mexican Mixed Citizen household's food stamp participation increased. These results align with prior research that finds household food stamp participation is shaped by both parent and child eligibility (Van Hook and Balistreri, 2006). Additionally, the 2002 FARM bill may have tempered the potential chilling effect of PRWORA by reassuring Mexican immigrant families, who already hold strong pro-employment cultural values (Van Hook and Bean, 2009), that public assistance is a valid resource to overcome temporary employment challenges. Overall, the results highlight that immigrant welfare restrictions have had an unjust impact on US-born citizen children, which is an important reminder of the secondary, perhaps unintended consequences that immigrant restrictions can have on families.

I did not find evidence that the 2002 FARM bill reduced broader "chilling effects" for Mexican immigrant families with children and parents who were never excluded from food stamp benefits after Welfare Reform. In particular, I did not find evidence that increases in food stamp participation were larger for Mexican All Citizen households, i.e., where citizenship guaranteed continuous eligibility. I also did not find an increase in food stamp participation among immigrant households in states that granted access to a supplementary food stamp program. Although immigrants in these states never lost food stamp eligibility, I hypothesized they would benefit if federal restorations reduced confusion. I did not find evidence to support this hypothesis. Instead, consistent with prior research (Borjas, 2004), I found that state supplementary programs acted as a pivotal source of continuous support for immigrant families that tempered the impacts of federal policy fluctuation.

Lastly, I found that Mexican households with all foreign-born noncitizens (FBNC) did not benefit from the welfare restorations. The 2002 FARM bill restorations were intended to benefit legal permanent residents, but a large portion of Mexican All FBNC households are likely not made up of legal permanent residents but instead undocumented adults and children who remained ineligible for food stamps. My results were clear that Mexican All FBNC households' food stamp participation was not affected by the 2002 FARM bill at all, which is consistent with this assumption.

So have the 2002 FARM bill's restorations been enough to reverse the negative consequences of Welfare Reform? My analysis suggests the restorations have worked to restore eligibility, but that immigrant households' food stamp receipt continues to lag behind that of US-born households. Food stamp receipt trends show that the dramatic decline observed among Mexican Mixed Citizen families' in the immediate post-PRWORA period (1998–2002) mostly recovered during the time period of the 2002 FARM immigrant restorations (2003–07). These immigrant restorations likely played a pivotal role during and after the Great Recession—a time period in which food stamp receipt of all low-income families increased significantly. Even with the recession though, immigrant households, no matter their citizenship composition, continued to use food stamps at a lower rate than U.S.-born households.

This study is important because it provides some of the first analysis of post-PRWORA immigrant restorations. However, that said, it is important to remember that the results should be interpreted as non-causal. The inability to control for selection into the food stamp program remains the main limitation of this paper. The difference-in-difference design limits selection concerns by controlling for unobserved selection factors of Mexican immigrant families that are consistent before and after the adoption of the 2002 FARM bill (the first difference) and netting out general trends that similarly affect Mexican immigrants and US-born natives (the second difference). If the selection process of Mexican immigrants changed pre-post 2002 FARM bill, however, the results would be biased. Thus, the results identify only associations and not causation.

Additionally, while this study highlights how state food stamp policies shape immigrant access to social services, contextual features beyond policy also matter and merit future analysis. Federal Welfare Reform and the patchwork of state safety net policies that followed coincided with unprecedented growth and dispersion of immigrant families to new destination areas (Kandel and Parrado, 2005) with strong economies (Crowley et al., 2006) but weak social service infrastructure to support immigrant families (Goździak and Martin, 2005). Access barriers (e.g., language, culture, and misinformation) preclude many eligible immigrant families from enrolling in social services (Gelatt and Koball, 2014)—an issue that may be more pronounced in new destinations (Crowley and Lichter, 2009). More research is needed to understand how immigrant dispersion patterns and state-to-state policy variation work together to change how immigrant families use public assistance.

Nonetheless, the results of this study provide insight into the long-standing concerns about noncitizens' use of public resources, concerns that are once again shaping the immigration reform and welfare policy debates. Currently, there are an estimated 12 million undocumented immigrants in the US and a vigorous, national debate is underway to determine the best way to deal with that reality. A key concern is that granting citizenship to millions of immigrants would severely strain federal welfare programs. Proposed federal legislation would ban undocumented immigrant families from federal benefits for at least 10 years (Bengs, 2013)—a proposal that echoes the 1996 Welfare Reform's exclusions of non-citizen immigrants (Fix and Passel, 2002).

The sizeable and significant associations of the 2002 FARM bill on immigrant families that this paper finds reiterates the importance of the safety net for shaping the well-being of immigrant families. This is particularly true in the post-Great Recession era where more low-income families, immigrant and non-immigrant alike, are relying on safety net supports. If

the federal government again decides to exclude certain immigrants from the safety net, such as newly legalized immigrants, those groups will likely experience similar consequences as were observed for excluded immigrants post-Welfare Reform, such as higher risk of food insecurity, infant mortality, and poor health. The results of this study indicate that restoration efforts may be able to reverse some of these consequences, but it is unclear whether they can completely ameliorate the damage. Policymakers should heed these lessons when deciding on current federal immigration reform.

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