Labor Market Effects of Immigrant Legalization in the Post-IRCA Era

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Abstract

Taking advantage of the ability to identify immigrants who were unauthorized to work prior to obtaining Legal Permanent Resident status, we use the New Immigrant Survey to examine whether lacking legal status to work in the U.S. constrains employment outcomes of illegal immigrants. With the exception of high-skilled unauthorized immigrants, the data fail to reveal evidence of improved employment outcomes attributable to legal status. In light of evidence that unauthorized immigrants experienced increased wages as a result of receiving amnesty through the 1986 Immigration and Reform Control Act during the 1990s, we interpret the results as consistent with a reduced threat of employer sanctions combined with widespread availability of false work authorization documents.

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1. Introduction

In 1986 Congress enacted the Immigration Reform and Control Act (IRCA) with the intention of curtailing the inflow of unauthorized immigrant workers. The framers of IRCA pursued a three-pronged strategy. First, a general amnesty for those unauthorized workers meeting certain residence or work requirements wiped the slate clean for the millions of undocumented immigrants already established in the country. Second, the legislation imposed sanctions on employers that hire unauthorized immigrants, attempting to remove the lure of higher-paying employment for would-be unauthorized workers. Third, the legislation provided more funds for border enforcement, in an effort to make it more difficult to enter the country without proper documentation. By all measures, IRCA failed to achieve its key objective. Since IRCA's enactment, the undocumented immigrant population has grown to close to 11 million in 2010 (Passel and Cohn, 2011).

The general public is deeply—and often vociferously—concerned about the effects unauthorized immigrants may have on the economy. Policymakers continue to face difficult decisions about whether and how to legalize some of these immigrants, weighing the costs and benefits of doing so. As with IRCA, an important factor in their consideration is the effect that legalization will have on employment outcomes of the undocumented. Earnings are likely to be lower and job opportunities limited if legal status cause undocumented workers to face difficulties in obtaining jobs which effectively utilize their skills. Removing these barriers would then lead to higher earnings and possibly productivity gains. Earnings and productivity gains for the formerly undocumented may also impact some workers currently working legally.

A consistent picture of employment gains to legalization emerges from the research based on IRCA, although the magnitudes of the effects vary substantially. Estimates of the wage effect (as measured in 1992, about four years after receiving legal status) using survey data from the Legalized Population Survey (LPS) find gains for men of between 6 and 15 percent (Rivera-Batiz, 1999; Kossoudji and Cobb-Clark, 2002 and Amuedo-Dorantes, Bansak, and Rafael, 2007). Wage gains are also found in recent studies using the 1990 Census; Pan (2010) puts the wage legalization benefit among men at about 12 percent while Barcellos (2010) provides a more modest estimate of about 6 percent. Further evidence that lacking legal status impedes

employment outcomes is provided by Kossoudji and Cobb-Clark (2000) who finds indication of upward occupational mobility among unauthorized immigrant men who received amnesty.

Not surprisingly given the abundance of evidence of legalization employment gains, many assume that if a new amnesty were to be granted to today's working population of unauthorized immigrants, these workers would generally enjoy higher earnings and better job matches as a result, with the potential for a widespread economic boost (Hinojosa-Ojeda, 2010 and Pastor et al, 2010). However, some new research based on more recent survey data suggest that caution for such optimism is warranted.

For example, Kaushal (2006) finds that although the smaller scale 1997 Nicaraguan Adjustment and Central American Relief Act (NACARA) amnesty increased the wages of unauthorized immigrants with a high school degree or more by about 5 percent it did not statistically significantly raise the wages of the larger low-skilled target group without a high school degree. In a study of agricultural workers, Pena (2010) concludes that "that a new legalization program would have minimal effects on the earnings of currently undocumented farm workers as they transition to legal employment" (p.2). Furthermore, both Pan (2010) and Barcellos (2010) provide evidence that the positive wage effects among workers who obtained legal status through IRCA dissipated over time. However, the latter two studies rely on data from sources such as the Census, American Community Survey (ACS) and the Current Population Survey (CPS) which do not contain information on legal status. Also, the other two recent studies are restricted to specific immigrants from a small subset of countries and to a specific industry. In sum, the effects of legal status on employment outcomes in today's labor market are unclear.[1]

In this paper we take advantage of recent data that allows for direct identification of unauthorized immigrant workers to assess whether unauthorized immigrants are likely to experience upward occupational mobility or wage gains from receiving legal status. We argue that the IRCA based estimated employment effects may not provide a good basis for which to base our expectations of the labor market effect of a new legalization program for two reasons. First, relying on IRCA to identify the causal labor market impact of legalization is challenging

[1] In a study of the effects of increased enforcement, Orrenius and Zavodny (2009) find that hourly wages of recent Latin American immigrants decreased by about 3 percent in the post-9/11 period when compared to African-American non-Hispanic natives. However, they also find that hourly wages may have increased in the post-9/11 period when the comparison is made with observationally similar native born Hispanics or non-Hispanic whites.

since relevant comparison groups are themselves likely to be affected by the large scale amnesty and employer sanctions and that the earnings of unaffected groups, i.e. natives, may grow differently over time. Second, and maybe more importantly, it is also possible that the role of employer sanctions has changed and that it is no longer an effective deterrent. This may be due to lax enforcement combined with widespread availability of false work authorization documents.

We analyze how receiving Legal Permanent Resident (LPR) status affects occupational mobility and wages of individuals who previously worked illegally in the U.S. and whether LPR status allow them to obtain jobs in more desirable occupations and/or to increase wages. To do so we use recent data from the New Immigrant Survey (NIS) and explore whether such potential effects differ between workers who crossed the border illegally and workers who violated the terms of a temporary visa. Importantly the NIS sample is rich enough to allow for tests of differences in legalization effects by skills and is not restricted to Mexican and Central American immigrants. Although legal status is not exogenously determined in the NIS sample we provide numerous robustness checks of our results and discuss the directions of potential biases in our estimates.

We find that improvements in employment outcomes from a new legalization program are likely to be small, and possibly zero—at least in the short run. Specifically, the employment outcomes of immigrants who cross the border without documentation do improve over time, but none of these improvements are attributable to gaining legal status. These immigrants are typically low-skilled workers with little education and lacking proficiency in the English language. On the other hand, those immigrants who gain legalization after violating the terms of a temporary visa are likely to demonstrate some occupational mobility that may be related to acquiring legal status. On average, these workers are more highly skilled than those who cross the border illegally. The differences we observe in occupational earnings growth between these two groups of unauthorized immigrants are specifically attributable to their differences in skill: We find that highly skilled immigrants in both groups exhibit occupational improvements after gaining legal status.

The paper is organized in the following way. We discuss relevant existing research in section 2, introduce our data in section 3 and show descriptive statistics in section 4. The empirical

method is presented in section 5, results are discussed in section 6 and lastly, in section 7 we provide a summary with our conclusions.

2. Previous Research

Most of the existing studies have in common that they take advantage of the 1986 Immigration Reform and Control Act (IRCA) and that they find an earnings penalty for undocumented status and an increase in earnings resulting from legalization, often with varying results by gender and differing returns to English skills and other human capital. Studies have applied various methods utilizing mostly the Legalized Population Survey (LPS), a panel dataset of formerly undocumented immigrants who received legal status under IRCA. These data have the advantage that survey respondents are observed in the working population before and after legalization. One challenge faced, though, is how to construct a suitable comparison group of legal immigrants whose earnings can be meaningfully compared to those of the newly legalized group.

Rivera-Batiz (1999) uses the LPS to examine the earnings of undocumented Mexican workers. He then uses the 1990 census to compare these with the earnings of the overall Mexican-born working population in the U.S. This analysis reveals a wage penalty of 14 and 26 percentage points for men and women, respectively, vis-à-vis the comparable legal working population. He goes on to compare the earnings of legalized immigrants earnings pre- and post-IRCA, finding an increase of about 13 percentage points for men and 16 for women.

Kossoudji and Cobb-Clark (2002) also examine the effect of the IRCA legalizations, employing the LPS to focus on the earnings of Mexican and Central American men. They use the National Longitudinal Survey of Youth (NLSY) to construct a comparison group of Latino men, and estimate the wage penalty for unauthorized status to be between 14 and 24 percent. They estimate the earnings benefit of legalization to be a rather modest six percent, and they attribute these gains to increased occupational mobility – in particular, an enhanced ability to secure employment that rewards human capital such as English or formal education.

Amuedo-Dorantes, Bansak and Raphael (2007) also use the LPS and NLSY to estimate the legalization effects of IRCA – in particular, what role occupational mobility and a change in the reservation wage might play in the labor force attachment of newly legalized immigrants. They consider the experience of both sexes and find a decrease in employment rates for men of five

percent and a decrease in labor force participation by women of nearly seven percent. Like Kossoudji and Cobb-Clark, however, they find that legalization enhances the value of immigrants' human capital – particularly English skills – in commanding higher earnings.

Both Pan (2010) and Barcellos (2010) use IRCA's January 1, 1982 residency requirement in the Legally Authorized Workers (LAW) program to identify the effects of legalization. Unlike previous research which relied on LPS data, they utilize large nationally representative survey data to compare outcomes of pre-1982 arrivals to those of later arrivals. Both studies find positive legalization wage effects in the 1990s but also evidence that these effects diminished over time. Primarily due to the inability to directly identify unauthorized workers in the data, it is unclear whether the identified effects reflect legalization.

Attributing the wage growth of the previously unauthorized to legalization is challenging because it is difficult to find a comparison group of workers whose legal status did not change and that did not also see changes in their wages related to the status change of a large group of low-skilled workers. Not surprisingly, the results of previous studies are sensitive to the choice of comparison group, as seen in the wide range of relative gains reported above.

Our research examines legalization in an economic environment where legalization could be expected to have minimal effects beyond a relatively small group of immigrants experiencing a change in legal status—approximately 240,000 out of an estimated 7.9 million unauthorized immigrants in 2003 (Passel and Cohn, 2009). Recognizing that labor markets change over time we use more recent data from the NIS which provide a relevant comparison group in the same dataset – continuously legal immigrants. This group attained LPR status at the same time (2003), and has the same set of demographic, human capital, employment, and immigration-related information, all of which is measured and reported in the same way as for the unauthorized worker groups. Furthermore, the unauthorized population has changed since the 1980s and now includes many who are not from Mexico and Central America and whose skills vary to a greater extent. Our sample includes workers of both genders, in various occupations, from a wide range of countries, who arrived in the U.S. at various points.

3. Data

The data utilized in this paper come from the New Immigrant Survey (NIS). The NIS seeks to provide a nationally representative public-use dataset on adults and their families who have recently (2003) gained legal permanent residence in the United States. The NIS takes as its sampling frame the USCIS administrative records of all foreign-born persons admitted to LPR status. From this universe, a stratified sample is drawn and detailed interviews are conducted. The first full cohort surveyed as part of this project used a target population of 289,478 adult immigrants granted LPR status between May and November of 2003 (Jasso et al., 2006).

The 2003 NIS gathered details about historical and current employment (for example, dates, occupation, industry, and earnings), including for U.S. jobs held before admission to LPR, and work authorization attained, migration history as well as standard socioeconomic information. To determine each immigrant's legal status prior to earning LPR status, we look at migration and employment history. If a respondent reports having arrived with no documents, or with falsified documents, he or she is classified as a illegal border crosser or "crosser" for short (also known as "entry without inspection" or EWI in DHS language). If, instead, a respondent reports having worked while on a visa that did not permit employment, he or she is classified as visa abuser or "overstayer" for short. Otherwise, the respondent is classified as having worked legally on that pre-LPR job and is referred to as continuously legal. From these detailed data we are able to observe immigrants in their first U.S. jobs and soon after earning green cards (between 3 and 14 months). We can thus measure gains for the unauthorized relative to the continuously legal in earning LPR status.

Our analysis begins with the full sample of 8,573 completed interviews. We eliminate records for which key information is missing – namely, age, sex, marital and household status, education, and whether the respondent worked for pay before or after gaining LPR status – and retain 7,522 records. We then restrict our sample to individuals between the ages of 18 and 65 with valid responses for occupation in pre-LPR and post-LPR jobs, and who reported working in both periods. These restrictions yield 4,486 individuals for our occupational mobility analysis. Finally, requiring valid calculable wage information for both pre-and post-LPR jobs, we winnow down the dataset to 2,660 observations for examining hourly wages. To analyze the economic benefits of receiving legal status, we focus on two outcomes – median gender and occupation

specific annual earnings and hourly wages. We do not study changes in employment or other changes in labor force attachment in this paper.

The objective with the first measure is to evaluate whether the data provides evidence that previously unauthorized immigrants experience upward occupational mobility as a result of removing the potential barrier of lacking legal status. To do so, we use gender-specific median earnings of foreign-born individuals by occupation, as recorded in the 2000 census, as an outcome measure. For each job under consideration, a census occupation code is provided. Using the 5% 2000 census Public Use Microdata Sample File (PUMS) data, we calculate the median gender-specific earnings for foreign-born persons in each occupation, then assign these earnings data to each job performed by each respondent. In this way, we can compare changes between pre- and post-LPR earnings, among former overstayers, crossers, and continuously legal workers. As mentioned above, the analysis using this measure may best be viewed as one of occupational mobility, but we frequently refer to this measure "occupational earnings."

This measure fails to capture earnings growth within the same occupation, or similarly remunerated occupation, as a result of legalization. Hence, similarly to previous research (e.g. Kossoudji and Cobb-Clark, 2002), we also examine hourly wages. Although there are several advantages of using this outcome measure, there are a few potential drawbacks.

First, the data only allows us to reliably generate earnings or wages for about 60 percent of the sample of individuals who meet our sample restriction criteria. The reasons are either missing earnings information or missing information that would allow us to determine the time period the reported earnings refer to (i.e. per year, month or week). When we compare the sample of those who have reported their hourly wages to the larger sample for whom we have occupation data, we find little difference between the two (Hill, Lofstrom and Hayes, 2010).

Second, because the pre-LPR status period for about one-quarter of our sample is more than five years prior to the interview date, we are uncertain as to whether the reported historical earnings information, i.e., pre-LPR wages, is accurate. Our extensive sensitivity analyses discussed below, addressing both the differences in the occupational earnings and wage samples as well as potential drawbacks with our labor market outcome measures, provide no indication that these issues alter the conclusions drawn in the report.

How Representative is the NIS Sample of Unauthorized Immigrants?

A concern about the use of the NIS to study the impact of legalization on the employment mobility and wages of formerly unauthorized immigrants is that they may not be representative of all undocumented immigrants; employment or family sponsorship enabled them to become legal without an amnesty program. It is impossible to know how many of the current stock of undocumented immigrants could ultimately legalize in this manner.[2] Therefore, their pre-legalization employment options may be better on average than those for undocumented workers lacking sponsorship possibilities. However, because the characteristics of the undocumented population are not known (no national surveys ask documentation status), it is difficult to compare undocumented immigrants in the U.S. population to those in the NIS. Here, we rely on estimates of the characteristics of the unauthorized population produced by the Pew Hispanic Center from 2003 and 2004 CPS data (see method description in Passel and Cohn 2009) to assess the possible representativeness of our NIS sample (data from Passel 2009a).

Our comparison reveals that national estimates of undocumented immigrants (CPS) are younger than NIS unauthorized immigrants (see Appendix table A1). NIS unauthorized immigrants are also more likely to be female (52% compared to 43% in the CPS). Only 9% unauthorized immigrants in the NIS are single men without children compared to 26% in the CPS. More NIS unauthorized immigrants are couples. This is no doubt related to their ability to gain LPR status in the first place. Most formerly unauthorized immigrants in the NIS data ultimately gained LPR status through family sponsorship (Hayes and Hill, 2008). Notably, Passel's estimation methods require that adults married to U.S. citizens or legal immigrants are assigned a status of "legal", thereby making it impossible to have an LPR (or citizen) spouse paired with an unauthorized immigrant in the estimates from the CPS (Passel 2009b). .

Country of origin varies across the two samples. We find about one-third of NIS unauthorized immigrants are from Mexico, as opposed to 55% in the CPS. However, when we combine Mexico with Latin America, the share is more similar: 80% in the CPS versus 72% in the NIS. Many more NIS unauthorized immigrants arrived in the 1980s or earlier (31%) than are estimated to have done so in the CPS (24%). This is especially true for crossers, 44% of whom arrived in this era. This is partially related to the estimation method; in Passel's calculations

[2] According to NIS data, over 40% of those earning LPR status in 2003 were unauthorized at prior point in time (Hayes and Hill 2008).

using the CPS data, any immigrant with an arrival date before 1980 is assumed to have legal status, so none could have arrived prior to 1980.

Nineteen percent of NIS undocumented immigrants have a Bachelor's degree or more while the same is true for 15% of CPS undocumented immigrants. At the other end of the spectrum, 26% of the NIS sample has less than a ninth grade education as does 32% of the CPS population. The occupational distribution is quite similar. CPS estimates suggest one third of unauthorized immigrants work in the service sector and in the NIS sample, that figure is 31%. More NIS unauthorized immigrants work in sales and administrative support than in the CPS (18% versus 13%). Similar percentages work in agriculture: 3% in the CPS versus 2% in the NIS. More CPS immigrants work in construction (15%) then NIS immigrants (11%). Similar percentages work in the two categories of production, installation, repair and transportation, materials moving. More NIS immigrants are found in the management, business, and professional sector than in the CPS (14% versus approximately 10%).

We conclude that while there are some important differences between the NIS sample and estimates of unauthorized immigrants from the Passel, the NIS sample is remarkably similar in observable ways. There ways in which they are observably different may stem from the assumptions required to make the Passel estimates, notably, the assumption that no unauthorized immigrants arrived prior to 1980 and that no unauthorized immigrants are married to LPRs or U.S. citizens. There may of course be unobservable difference between the two populations of unauthorized immigrants. This may include a selection bias among unauthorized immigrants with a pathway toward legal status in the absence of a legalization program. These issues may lead to limitations in the generalization of our results, but where feasible we will attempt to control for that possibility in our analyses.

4. Descriptive Statistics

We begin our analysis by comparing our sample of recent immigrants by legal experience in the U.S. Table 1 shows that slightly more than one-half of our occupation sample (those individuals who reported working in both the pre- and post-LPR period) were employed without authorization in the U.S. in the pre-LPR period. The percent who abused a visa, 27.6 percent, is just slightly greater than the proportion of illegal border crossers, 25.9 percent.

Illegal border crossers appear to earn substantially less than their counterparts. Their group's median annual earnings in their last reported U.S. occupation prior to earning LPR status average about $15,000, more than $4,500 less than the visa abusers, and nearly $9,000 less than the continuously legal group. A similar pattern holds for the first reported post-LPR occupation: the formerly illegal workers earn roughly $18,000 on average, compared to $23,000 for former visa abusers and over $25,000 for the legal group. A simple comparison of the earnings differences, pre- and post-LPR, suggests that the two groups of formerly unauthorized workers stand to gain substantially more from earning green cards than do their always-legal counterparts – their earnings rise by an average of $3,100 (illegal border crossers) and $3,700 (visa abusers), compared to $1,700 for the continuously legal group.

Immigrants in our three legal groups differ in many dimensions of observable characteristics. For example, Table 1 shows that illegal border crossers are less likely to be female, less likely to be married, and have more children than do their counterparts. Close to 90 percent of illegal border crossers come from Latin America and the Caribbean, with slightly more than 38 percent from Mexico. In the legal sub-group, Asian immigrants constitute nearly 40 percent, while only three percent are Mexican. The class of admission used to gain LPR status also varies greatly across the three groups. While family preferences are the most common way of receiving legal permanent resident status for each group, employment preferences are much more commonly used by continuously legal immigrants (21.0 percent) than by visa abusers (11.4 percent) or illegal border crossers (3.6 percent). A similar, if less pronounced, pattern emerges in the use of the diversity lottery. Illegal border crossers are the most likely group to employ the "legalization" option – 37.3% obtained LPR status this way. This not a program, but rather a collection of special legislation and other instances in which illegal residents qualified to have their deportation orders canceled. The legalization category includes those who qualified for the Nicaraguan Adjustment and Central American Relief Act of 1997.

The illegal border crossers group displays low levels of education, as reflected in the mean total years of education (9.5 years) and the profile of educational attainment – 61.7 percent do not have a high school diploma, compared with 22.9 and 20.8 percent of visa abusers and continuously legal immigrants, respectively. Similarly, only 7.2 percent of illegal border crossers have a bachelor's degree, while more than a third of the visa abusers and nearly half of strictly legal respondents do. English ability also varies across the three groups with visa abusers

appearing to be the most fluent group. Forty-five percent of illegal border crossers report that they speak and understand English either "not well" or "not at all," compared with only about a third of each of the other groups, and only 14.4 percent report top levels of speaking and comprehension, as compared with roughly a third for visa abusers and continuously legal respondents. We also observe differences in the time elapsed between the beginning of that pre-LPR occupation and the eventual NIS interview – illegal border crossers had been in the U.S. for an average of 11.0 years since taking that job, compared with 5.9 years and 2.7 years, respectively, for the visa abusers and the strictly legal immigrants.

To better understand occupational mobility, we examine occupations by legal status group. Table 2 displays for each group the top ten *pre*-LPR occupations and their representation. The second column shows what percentage of these job-holders stayed in the same occupation in their post-LPR job. The last column shows each of the top ten pre-LPR period job's representation in the post-LPR era. A few patterns emerge.

First, the jobs most commonly held by former illegal border crossers tend to be in low-skill occupations. Many of these occupations appear as well among the jobs reported by former visa overstayers, the new additions being retail salespersons, waiters and waitresses, and nursing, psychiatric, and home health aides. Some of the same jobs appear near the top of the list for continuously legal workers as well, but now the additions are in more conspicuously high-skill occupations: computer software engineers and postsecondary teachers.

Almost without exception, the most commonly held occupation in the post-LPR job is the one held in the pre-LPR job. (The two exceptions are dishwashers, who predominantly took other jobs in the food service industry, and child care workers, who were only slightly more likely to take jobs as maids and housekeeping cleaners than to stay in their previous occupation.)

Third, the two groups of formerly unauthorized workers show a greater propensity towards occupational mobility than does the group of consistently legal workers. In just this sample of the ten most common occupations for each group, the former illegal border crossers stayed in their pre-LPR occupations about 26 percent of the time. The former visa abusers maintained their pre-LPR occupations 36 percent of the time. But the consistently legal immigrants stayed in their pre-LPR occupations 62 percent of the time. This may be largely a result of the aforementioned differences in recent U.S. experience – both formerly illegal groups report much more time spent here since beginning the pre-LPR job than do the consistently legal immigrants.

5. Empirical Model

Our empirical strategy is to compare employment outcomes of unauthorized workers to immigrants with no unauthorized immigration history. Clearly we need to address the endogeneity, or selection, concerns stemming from the possibility that individuals sort themselves into the three groups partially based on factors related to employment outcomes. It should be pointed out that we do not view the comparison of outcomes across groups as a quasi-experimental exercise since the distinction across groups is arguably due to unobservable personal decisions and characteristics which may also be linked to earnings. Our approach is to as carefully as possible control for these factors in our empirical models by including variables that serve as proxies.

Although it is well known that immigrants in different class of admission groups differ in observable skills, they may also differ with respect to unobservable earnings related factors. For example, it may be that immigrants obtaining LPR status through employment preferences possess more of these characteristics, say motivation, ambition or ability, than immigrants who receive a green card through family. It is also possible that immigrants receiving a green card through family preferences benefit from existing family networks to a greater extent than other immigrants. Controlling for eventual class of LPR admission may then serve to address the role of unobservable earnings related characteristics. In addition, the inclusion of country of origin fixed effects will further control for such factors, which are unobserved by the econometrician.

We use ordinary least squares (OLS) to estimate the following regression model of pre-LPR status log-annual earnings and log-hourly wages, $y_i^{\text{Pre-LPR}}$, of individual *i* from country *j* who arrived at time *t*.

$$y_{ijt}^{\text{Pre-LPR}} = \alpha_1 IBC_i + \alpha_2 OS_i + \mathbf{X}_{it}^{\text{Pre-LPR}}\beta + \mathbf{W}_i\gamma + \delta_j + \tau_t + e_{ijt} \qquad (1)$$

Where *IBC* and *OS* are indicator variables for border crossers and overstayers and;

$\mathbf{X}_{it}^{\text{Pre-LPR}}$ = Matrix containing demographic characteristics such as age, gender, family composition, educational attainment and geographic location

$\mathbf{W}_i$ = Matrix containing network proxies represented by class of admission and whether post-LPR job was obtained with the help of family or relative and whether the person works for a relative.

δ_j = Country of origin fixed effects

τ_t = Year of entry fixed effects

An analysis of labor market outcomes at first U.S. job potentially provides information on the penalty of lacking legal status. A concern with interpreting this as a legalization effect in a cross sectional regression is that it may well be due to unobservable factors correlated with legal status. Instead, we view this as a starting point, arguing that if the lack of legal status is a barrier to good employment outcomes, removing this barrier should lead to better outcomes for this group, holding other individual factors constant, and comparing those changes to those of continuously legal.

To do so, we specify a model of the changes in outcomes between the pre- and post-LPR periods. The specification contains the above factors as well as information on post-LPR English ability and education obtained in the U.S. These post-LPR factors are added to the X matrix, now labeled $\mathbf{X}_{it}^{\text{Post-LPR}}$.

$$\Delta y_{ijt}^{\text{Post-Pre}} = \alpha_1^{'} IBC_i + \alpha_2^{'} OS_i + \mathbf{X}_{it}^{\text{Post-LPR}} \beta^{'} + \mathbf{W}_i^{'} + \delta_j^{'} + \tau_t^{'} + \varepsilon_{ijt} \qquad (2)$$

The parameters of interest in specifications (1) and (2) are α_1, α_2, α_1', and α_2'. Under the assumptions that $E[e_{it} IBC \mid \mathbf{X}_{it}^{\text{Pre-LPR}}, \delta_i, \tau_t] = 0$ and $E[e_{it} OS \mid \mathbf{X}_{it}^{\text{Pre-LPR}}, \delta_i, \tau_t] = 0$, i.e., conditional on $\mathbf{X}_{it}^{\text{Pre-LPR}}, \delta_i$ and τ_t, the disturbance term is uncorrelated with legal status, OLS will yield unbiased estimates of the employment effect of legalization. Similar assumptions are necessary for OLS estimates of α_1' and α_2' to be unbiased, although these are arguably more tenable given the focus on changes. A limitation to our OLS approach is that there is no formal test for whether these assumptions hold. Unfortunately, we are not aware of an appropriate instrument for legal status in the pre-LPR period in our data. Nonetheless, we believe that the above factors, which also include potentially important controls for unobservable factors like networks, time-of-arrival macro economic conditions, assimilation and transferability of human capital, substantially reduce the concerns of endogeneity of legal status.

Also if, among our NIS sample, the above factors fail to capture employment related unobservable factors correlated with legal status (such as ability, motivation and networks), these factors are likely to be positively correlated with authorized status, exacerbating the differences between legal and illegal workers and hence leading to an upward bias of the OLS estimated legalization benefits. From this perspective, the presented results below are upper bounds of the employment gains to adjusting to legal status.

However, it is also possible that our NIS sample is not representative of the general unauthorized population in the country. It seems plausible that the unauthorized immigrants who find a way to obtain a green card are positively selected, compared to those who do not. If lacking legal status can be overcome more easily among the positively selected unauthorized immigrants in the NIS data by using, for example, their network of friends and family, our estimates understate what the true employment gains to legalization are. That is, our results cannot be expected to be the same for the general population of unauthorized immigrants residing in the United States unless the two groups are similar and operate in similar labor markets. Recall, however, our comparison of unauthorized immigrants in the NIS to those of Passel's (2009) CPS estimates of the characteristics of the unauthorized working age population in general, revealed a large degree of similarities at least in observable characteristics across samples.

6. Empirical Results

Occupational Earnings and Mobility

We begin our discussion of the empirical results with an analysis of pre-LPR median earnings by occupation. Before doing so, a reminder on our terminology is warranted. For simplicity, we will frequently refer to our foreign born gender-specific median annual earnings by occupations simply as "occupational earnings", particularly in the pre-LPR analysis.

Pre-LPR Status Occupational Earnings Differences

Unauthorized workers are employed in occupations with substantially lower earnings than are legal workers. Model 1 in Table 3 shows that the pre-LPR period unadjusted occupational earnings differences between crossers and individuals authorized to work are approximately 31

and 28 percent respectively for men and women.[3] The unadjusted unauthorized occupational earnings penalty for overstayers is substantially smaller, 13 percent for men and 10 percent for women.

The observed pre-LPR occupational earnings differences may not entirely be related to legal status but may instead partially be a consequence of differences in earnings-related factors. We next investigate how much of the unauthorized occupational earnings gaps are due to differences in demographic characteristics. The Model 2 results indicate that roughly between ¼ and ½ of the lower occupational earnings among unauthorized workers are due to differences in factors such as age, family composition, geographic location and years of schooling. A closer look reveals that among these factors education differences drive the results. In fact, we obtain adjusted gaps of the same magnitudes as those reported for Model 2 using a model specification where we only add years of schooling to the Model 1 specification.[4]

We find that differences in year of arrival are somewhat important factors contributing to the observed pre-LPR unauthorized occupational earnings differences (Model 3). Furthermore, differences in the country of origin composition across the three legal status groups help explain the lower occupational earnings among unauthorized immigrants. The Model 4 specification results show that roughly three to five percentage points of the lower earnings of unauthorized immigrants can be attributed to differences in the country of origin composition.

We next investigate whether differences in class of admission or use of family-specific networks matters. Results are presented as Model specification 5. We find that these variables help explain the pre-LPR occupational earnings gap somewhat beyond the factors already taken into account. Comparing observationally similar crossers to continuously legal immigrants, we estimate that the pre-legalization earnings penalty, based on median occupational earnings, of being a crosser is about 12 percent for men and 8 percent for women. For male overstayers the penalty is approximately 10 percent and even less for women, about 7 percent.

The finding that unauthorized immigrants work in occupations with lower median annual earnings than observationally similar legal workers in the pre-LPR period is consistent with unauthorized status limiting their labor market opportunities. As discussed above, these differences may be due to other factors than legal status and a more reliable approach to estimate

[3] We use e^b-1, where *b* is the estimated coefficient, to convert the log point estimates into percentages.
[4] The results are not presented in the table but are available upon request.

the legalization effect is to see whether legal status opens the doors to occupations that allow previously unauthorized immigrants to find jobs that are better aligned with their skills, and hence better paid. Consequently, we next address the issue whether obtaining legal status leads to greater upward occupational mobility, as measured by occupational earnings, and whether legalization allows pre-LPR status unauthorized workers to catch up with their continuously legal counterparts.

Occupational Mobility - Pre-Post Changes in Occupational Earnings

Between the pre- and post-LPR periods, the annual occupational earnings of male immigrants who were unauthorized to work in the pre-LPR period increased by roughly 13 percent more than did the occupational earnings of continuously legal immigrants (shown in Table 4). The unadjusted differences are roughly the same for males who crossed the border illegally or violated the terms of a visa. The occupational earnings growth differences among women are smaller. Female overstayers' and crossers' occupational earnings grew by about six and four percent respectively more than the earnings of continuously legal women. These unadjusted occupational earnings growth differences are shown as Model 1 in Table 4. We next turn to an analysis of whether, and to what extent, these differences are due to factors other than legalization.

The estimates using Model specification 2 in Table 4 indicate that differences in the demographic composition between the three legalization groups are not major factors explaining the relatively higher earnings growth among pre-LPR unauthorized workers. However, the Model 3 results show that the observed greater increase in earnings among immigrants who were not authorized to work in the pre-LPR period, compared to immigrants who were authorized, is to a large extent due to the fact that they have been in the U.S. for a longer time.[5] This appears to be particularly relevant to crossers for whom we do not find any greater increase in occupational earnings once this factor is accounted for. In fact, the subsequent addition of controls for country of origin, class of admission or family network differences across groups do not change the estimated occupational earnings growth differences greatly compared to the ones shown for Model 3.

[5] Note that given that all post-LPR status interviews took place within a few months of obtaining LPR status in 2003, the arrival year fixed effects captures assimilation, or put differently, years in the U.S. effects on earnings. They also capture potential long lasting effects of the macro economic conditions present at the time of arrival in the U.S.

The results indicate that overstayers benefited significantly from obtaining LPR status. Although they worked in occupations with lower earnings in the pre-LPR status period than their otherwise observationally similar legal immigrant counterparts, they work in equally well paid occupations after receiving their green cards.[6] This holds for both men and women and suggests that legalization opened the door to labor market opportunities they could not access without authorization to work. Crossers, on the other hand, are not as fortunate and do not improve their occupational earnings appreciably after receiving LPR status. We fail to find evidence that the earnings of immigrant men or women in this legal status group increase at all in response to obtaining green cards, relative to those of their observationally similar continuously legal counterparts.

Our empirical results point towards years in the U.S. as a major determinant in explaining occupational earnings growth differences between unauthorized workers and continuously legal immigrants. However, as Table 2 indicates, few of the workers in the latter group have been in the U.S. for a very long time, the average years since first U.S. job is less than 3 years, compared to 11 years for illegal border crossers. This is not surprising since temporary work visas, such as H-1B, are issued for three years (renewable once for a total of six years). Given the limitations of how long continuously legal workers can work legally in the U.S. without adjusting their status to LPR, we estimated the occupational earnings models for the sub-sample of immigrants who have spent no more than five years since their first U.S. job. The results, shown in Appendix Table A2, are similar to the ones we obtain with our larger unrestricted samples of immigrants. The magnitudes of the legal status parameters are somewhat smaller, and not surprisingly less precisely estimated, and imply that receiving legal status leads to greater upward occupational mobility only for visa overstayers.

Exploring the Role of Skills

Why do overstayers benefit from legalization while crossers do not? A look at Table 1 reveals that these two groups differ in terms of skills. Over 60 percent of crossers have less than a high school diploma, while the same is true for a much smaller share of overstayers, 23 percent. Also, over 30 percent of overstayers report excellent English ability, while only 14

[6] We fail to reject the hypotheses of equal earnings between observationally similar overstayers and continuously legal immigrants in post-LPR status earnings regression model, results not shown but available upon request.

percent of crossers do. It is possible that for the relatively more highly skilled group, overstayers, lack of legal status might suppress earnings opportunities, whereas for the less skilled it does not.

One approach to test whether relatively higher-skilled unauthorized immigrants are more constrained by their legal status than their less-skilled counterparts is to look for differences in the impact of receiving a green card for unauthorized workers by educational attainment. To do so, we defined indicator variables for schooling level (less than high school, high school graduate, some college or college graduate) and interacted these variables with legal status. The pre-post occupational mobility results, presented in Table 5, quite clearly show that upward mobility as a result of receiving legal status is limited to unauthorized workers with at least some college education. The estimates indicate that unauthorized workers, both overstayers and crossers, who arrived in the U.S. with no more than a high school degree, experienced no greater occupational mobility than observationally similar legal workers. These results suggest that the finding that overstayers benefitted from receiving legal status while crossers did not is driven by the relatively higher levels of skill and education among overstayers.

Many unauthorized immigrants are low-skilled and work in low-skilled jobs, as can be seen in Table 2. It is of course possible that it is the lack of legal rights to work in the U.S. that constrains these workers to low-skilled occupations. Table 2 also reveals that a higher proportion of unauthorized workers leave their pre-LPR occupation than continuously legal immigrants. An alternative way to determine the labor market benefits of receiving LPR status is to restrict the analysis to immigrants who were observed in low-skilled occupations in the pre-LPR period.

We hypothesize that if unauthorized status limits some workers to these low-skilled occupations, we would expect to see a higher proportion of unauthorized immigrants moving to occupations with higher earnings once they receive LPR status. To test this, we analyze occupational mobility of a subset of our occupational earnings sample restricted to immigrants who reported working in specific low-skilled occupations in the period before receiving legal status. The subset is limited to occupations for which we have representation from all three legal status groups, wherein the typical worker has less than a high school degree, and that are among the most common low-skilled occupations for unauthorized workers. These restrictions yield the following low-skilled occupations; maids and housekeeping cleaners, janitors and building cleaners, cooks, dishwashers, construction workers, child care workers and agricultural workers. The low-skill occupation sample represents approximately 20 percent of our full occupational

earnings sample and consists of 37 percent continuously legal immigrants, 22 percent overstayers and 41 percent crossers.

The results limited to the sub-sample of immigrants working in low-skilled occupations in the pre-LPR period, shown in Table 6, show that previously unauthorized immigrants moved up to more remunerative occupations than did continuously legal immigrants (Model 1). However, once we control for our full set of observable characteristics, Model 5, we find no evidence that unauthorized immigrants moved to more high paying occupations than did continuously legal immigrants. The results fail to reveal any differences across the three legal status groups in occupational earnings in the post-LPR period.

These results suggest that the relatively skilled unauthorized workers for whom we found benefitting from receiving a green card were not limited to these common low-skilled occupations in the pre-LPR period – if these existed in any meaningful numbers, we would expect to see higher earnings among the unauthorized immigrants in the post-LPR period – we do not. Also, the results imply that the greater occupational mobility that we observe in Table 2 among unauthorized immigrants in low-skilled occupations is mostly not associated with moves to higher paying occupations.

The estimates presented so have relied on an outcome measure using gender-specific median annual earnings among immigrants. We next turn to an analysis in which we rely on individuals' reported hourly wages.

Results Using Self-Reported Wages

As with our occupational median earnings measure, we observe substantially lower wages among unauthorized workers, as compared to continuously legal workers. Model 1 in Table 7 shows that the pre-LPR period unadjusted wage differences between crossers and individuals authorized to work are approximately 42 and 41 percent respectively for men and women. The unadjusted unauthorized earnings penalty for overstayers is substantially smaller, 12 percent for men and 10 percent for women.

The wage differences are likely to be at least partially due to some of the differences in demographic characteristics such as family composition, education and geographic location, shown in Table 1. The results in Model 2 show that these factors explain much of the lower earnings among unauthorized workers. In fact, these factors alone explain the lower wages

among overstayers, relative to continuously legal workers.[7] Furthermore, once we add country of origin and year of arrival fixed effects, we fail to find a pre-LPR earnings penalty among crossers.

We next explore whether receiving legal status allowed for greater wage growth among unauthorized workers. Given that we do not find a pre-LPR wage penalty for unauthorized workers, we do not expect to find higher wage growth among the unauthorized once our set of control variables is taken into account. Nonetheless, we examine the possibility of such differences by estimating regressions of pre-post-LPR changes in hourly wages and present the results in Table 8. Hourly wages increased substantially more between the pre- and post-LPR periods among unauthorized workers compared to continuously legal workers. However, as with our occupational mobility analysis, the greater growth is mostly due to demographic factors and the greater time spent in the U.S. by previously unauthorized workers.

Above, we tested the hypothesis that if unauthorized workers are restricted to low-skilled occupations in their first job in the U.S. we would expect that they are more likely to move to better paid occupations after receiving a green card than observationally similar continuously legal immigrants in the same pre-LPR low-skilled occupations. Although we found no support for this notion, it is possible that there was greater upward mobility within occupations among the previously unauthorized workers. That is, some of these workers may not change their occupation but upon receiving a green card they obtain better paid position in the same occupation (for example, going from a non-unionized to unionized janitorial job). Our occupational earnings analysis would fail to reveal such a pattern. To address this concern, we re-estimate the models in Table 6 using instead of the post-LPR occupational annual earnings the reported post-LPR wages. Utilizing this outcome measure addresses the possibility of within occupational improvements in remuneration. The results from this sensitivity analysis are shown in Appendix Table A3 and also provide no evidence of higher post-LPR wages among the previously unauthorized low-skilled occupation workers compared to their observationally similar continuously legal counterparts.

Our estimates may underestimate the impact of legal status if continuously legal immigrants benefit from adjusting to permanent legal status (for example, for H-1B holders the adjustment

[7] Controlling only for years of schooling reduces the earnings gap between continuously legal workers and crossers by half, relative to the unadjusted differences.

removes the attachment to a particular employer). As we noted earlier, it is difficult to choose a comparison group to use to evaluate the impact of a change in legal status for the formerly unauthorized. To address this concern, we looked at pre- to post-LPR wage gains among the continuously legal sample. Although the unadjusted gains to adjustment to LPR status are positive and significant (27 percent) once we account for potentially relevant factors such as the number of years between the first job and the post-LPR job, we find no statistically significant effect of adjusting to legal status for the continuously legal sample.[8] The results suggest that the unadjusted wage gains are primarily due to labor market assimilation and not due to change in status.

Overall, the results using hourly wages are consistent with our median occupational earnings measures. A noteworthy difference is that these results more strongly indicate that the labor market benefits, as measured by hourly wages, to gaining legal status are very limited and possibly zero. In our occupational mobility analysis we found some evidence that overstayers benefitted from gaining legal status. There is a concern that the lack of a wage effect even among these previously unauthorized workers may be due to the smaller, more restrictive sub-sample for which we have valid wage information. To address this concern we re-estimated key model specification using the median annual occupational earnings measure limited to the smaller wage sample. The results, presented in Appendix Table A4, are very similar to the full occupation sample results and do not reveal any meaningful sensitivity of the specific sample used. Although we are not able to determine the reason for the differences in pre-LPR results between occupational based earnings and hourly wages, we note that it may be due to recall bias. The pre-LPR period for unauthorized workers was several years earlier on average than it was among continuously legal immigrants. It is possible that because of this, they recall pre-LPR wages with greater error than legal immigrants do.

As discussed above, there is a concern that individuals do not accurately recall wages from the first job held in the U.S. as for many this was more than five years ago. However, we believe that the reported occupation of their first job in the U.S. and current wages at the time of the interview closely reflect their actual labor market outcomes. Furthermore, the main conclusions that the there are no labor market benefits of obtaining legal status for most unauthorized

[8] The estimated adjusted wage change is about -4 percent with a t-statistic of -0.88. The results are not shown in the tables but available upon request from the authors.

immigrant workers, do not depend on the outcome measure used. Overall, the broad sensitivity analyses we provide suggest that our results are robust to the employment measure used.

7. Discussion and Conclusions

Nearly 11 million unauthorized immigrants live in the United States (Passel and Cohn, 2011). Although when is in question, legislators in Washington, D.C. will again consider comprehensive reform in federal immigration policies, including legalizing unauthorized immigrants. Many observers, supported by the findings of the 1986 IRCA based research, believe that the economic effects of a legalization program could be substantial, significantly improving employment outcomes among the workers restricted in their opportunities due to lack of legal status (Hinojosa-Ojeda, 2010).

In this paper we use recent data from the New Immigrant Survey (NIS) to assess whether a new legalization program is likely to lead to upward occupational mobility or wage gains. Importantly, the rich NIS data allow us to identify immigrant workers who were unauthorized to work prior to obtaining LPR status and to distinguish between different types of illegal immigration experience – those who crossed the border without proper documentation and those who violated the terms of their visa. We use the group of continuously legal immigrants as a comparison group in our empirical approach.

We find that legalizing unauthorized immigrants is unlikely to lead to dramatic changes in the labor market outcomes of most unauthorized immigrants. This is especially true for low-skilled workers, for whom any improvement is likely to be small at best. For immigrants who cross the border without documentation, employment outcomes do improve over time—but none of these improvements are attributable to gaining legal status. For those who gain legalization after overstaying a temporary visa, the outlook is slightly better. In these cases, we do see some upward occupational mobility, which may be related to acquiring legal status. However, this finding is specifically attributable to skill level: We find that highly skilled immigrants, regardless of how they arrived in the United States, exhibit occupational improvements after gaining legal status.

These findings differ from the influential research based on IRCA, which consistently found evidence of employment gains (e.g. Rivera-Batiz, 1999; Kossoudji and Cobb-Clark, 2002 and

Amuedo-Dorantes, Bansak, and Rafael, 2007). This research was limited to Mexican and Central American immigrants and did not separately identify effects for crossers and overstayers. However, we do not believe that the differences are driven by these factors since the only noticeable gains found in our study are, regardless of illegal status group, among the relatively few most educated unauthorized immigrants (a small number of whom originate in Mexico or Central America).[9] What are then the most likely reasons for the discrepancy? Below, we consider the shorter time frame in which we are able to observe the newly legalized immigrants, the role of comparison groups in establishing relative employment outcome gains, and changes in the employment context for unauthorized workers as explanatory factors.

Shorter Time Horizon

One noticeable difference between our study and the IRCA research is that we only observe outcomes among the previously unauthorized immigrants during the first year after adjusting status while the LPS collects the information about four years after becoming legal. It is plausible that one year is not enough time for the employment legalization benefits to fully materialize and hence that our results are only relevant in the short-term. However, if unauthorized immigrants are receiving below market wages for legal workers, it is reasonable to expect that they would also be more likely to search for new employment than continuously legal immigrants after obtaining LPR status. Utilizing the same NIS sample as the one used in this paper, Hill, Lofstrom and Hayes (2010) find no evidence supporting this. They also find no support for greater investments in human capital among the previously unauthorized, which would lead to future improvements in labor market outcomes. Lastly, the period between receiving legal status and the NIS interview was sufficiently long for us to detect gains among high-skilled previously unauthorized immigrants, for whom we would expect that it would take longer time to find new suitable employment than low-skilled workers. This is not conclusive but suggests that the differences may not be due to short-run versus medium-run.

[9] Recent studies estimate that the group with a bachelor's degree or more comprise a relatively small share of the unauthorized immigrant population, about 15 percent in 2008 (Passel and Cohn 2009).

Role of Comparison Groups in Disentangling Relative Gains of Unauthorized Workers

Another reason why our research could differ from those of the IRCA era relate to the impact of legalization on comparison groups used in the prior research. IRCA legalized nearly 3 million low-skilled workers, and in doing so, dramatically increased the supply of workers who were both low skilled and legal. At the same time, employer sanctions against the hiring of unauthorized workers were introduced. Each of these actions could have affected both the targeted group (the formerly unauthorized) and the likely comparison groups: (1) the low-skilled workers who were legal before and after IRCA and (2) the low-skilled immigrant workers who remain unauthorized after IRCA, making it difficult to isolate the "true" effect of legalization on wages of the formerly unauthorized.

Comparing wages of formerly unauthorized low-skill workers to those of low-skill workers who were legal both before and after IRCA might make wage growth appear greater than it is. Because IRCA legalized so many immigrants, the supply of legal low-skilled workers may have increased sufficiently that, at least theoretically, the average wages of the group that was legal before IRCA might have actually fallen after IRCA. Thus, the gap between the two groups appears smaller, but in part because wages of one group have fallen while the wages of the other have risen. Not all can be attributed to growth in absolute wages of the formerly unauthorized.

Similarly, the introduction of employer sanctions against the hiring of unauthorized workers makes employers less willing to pay unauthorized workers what they would receive in absence of sanctions, making this group a problematic comparison group as the relatively higher wages of previously unauthorized workers at least partly represents the worsening conditions for unauthorized workers. In both instances, the result would also be an overestimation of the effect of legalization. An alternative approach of using a group not affected by the amnesty may seem like a reasonable strategy. However, this group may also differentially be affected by changes in the economy or other relevant factors that may change over time.

Not surprisingly, the results of previous studies are sensitive to the choice of comparison group, as seen in the wide range of relative gains reported above. The study that compares earnings for unauthorized immigrants after legalization to, arguably, the most appropriate group (relatively young Latino men with limited labor market experience) finds the smallest effects of legalization on wages (Kossoudji and Cobb-Clark, 2002). However, even this group may have been negatively affected by IRCA through statistical discrimination (Bansak and Rapahel, 2001),

and the downward pressure on the comparison group may thus lead to overstating the benefits of acquiring legal status.

Changes in Employment Context for Unauthorized Workers

Our findings of small or no gains are however consistent with recent research relying on more recent data. For example, Pan (2010) and Barcellos (2010) provide evidence that the positive wage effects among workers who obtained legal status through IRCA dissipated over time and are no longer noticeable. It appears that the labor market for low-skilled unauthorized immigrants may have changed. Could employer sanctions have lost their bite? Here we consider the incidence of employer sanctions since IRCA's implementation and the widespread use of false employment authorization documentation.

Immediately following IRCA's implementation, employers of all types were probably concerned about the employer sanctions that were part of the legislation. Indeed, our examination of numerous employer sanctions measures demonstrates that all measures for which we have data were dramatically higher in 1989 – 1999 than they were from 2000-2005 (Appendix figure A1). Warnings were at a high of 1,400 in 1988 and fell to their low of 124 in 2002. Cases complete were 8,000 in 1980, climbed to a peak of 11,000 in 1989, and hovered around 2,000 from 2000-2003 (the last year for which we have data on this variable). Beginning in 2006, criminal and administrative arrests began to increase dramatically. Administrative arrests leapt from 1,100 in 2005 to 3,700 in 2006 while criminal arrests went from 176 to 716 during this same interval. Final orders climbed from a low of 25 in 1988 to a high of 1,100 in 1992, subsequently fell to 124 by 2003 and have stayed below 100 through 2009. Recently (in 2010) they rose above 200 Notices of intent to fine, which are collected through 2004, display a similar pattern of large numbers through 1998, and then falling dramatically from 1999 through 2004. Similarly, dollar figure amounts of final orders issued and collected were at their highest in the late 1980s and early-to-mid 1990s. From 2000 to 2007, these total dollar figures were under $500,000 per year (not shown here, available from the authors upon request).

The volume of warnings, fines, and arrests were much higher at the time when the employment effects of IRCA legalization were studied as compared to the time we have studied the impact of a potential legalization program. Employer sanctions have never ensnared more

than what surely must be a tiny fraction of the employers using unauthorized labor, but at the time when IRCA evaluations were underway, their threat may well have loomed large.

Further, many unauthorized immigrants using false employment documents to obtain employment. Since most employers are only obligated to request and photocopy employees' work authorization papers (and not to verify authenticity), they cannot be expected to identify who among their employees providing them with documentation does not actually have authorization to work. Widespread use of false SSNs by unauthorized workers is indirectly evident in the growing Social Security Earnings Suspense File and in ever-increasing tax filings from unauthorized workers. Starting in 1996, the IRS has issued unique identifiers (ITINs) for those who are required to file federal tax returns but who do not have a social security number. While not all users of ITINs are unauthorized, the vast majority (90%) appear to be because they have attached W-2 forms to their returns (among those filed from U.S. addresses). In 2001, 700,000 returns were filed with ITINs from U.S. addresses, and by 2004 that number had risen to 1.3 million. In 2008, 3.1 million tax returns were filed with ITINs from U.S. addresses (Hill and Johnson 2011).

In sum, employers of low-skilled workers probably correctly assess the very low probability that they will be caught or fined for having hired unauthorized workers, and unauthorized workers may increasingly be using false documentation to obtain employment. Thus, the relatively ineffective employer sanctions mean that they do not differentiate pay to low-skilled laborers based on legal status. In the period immediately following IRCA, employers likely did expect that the newly approved employer sanctions for hiring unauthorized workers would have teeth. That does not appear to be the case at the time of our study. Indeed, because we find that there are no real differences in occupational mobility or reported wages among low-skilled unauthorized immigrants, when compared to continuously legal immigrants it appears that labor markets function competitively for low-skilled unauthorized workers.

Why might the threat of employer sanctions appear to be different for the employers of the highly skilled? In the current era, it seems likely that employment law violations are more likely anticipated among the employers of the highly skilled than among those employing low-skilled workers. This should then impact the wages and occupational opportunities for the high-skill and low-skilled unauthorized workers differently.

The labor market for high-skilled workers may be monopsonistic, with fewer and larger employers than the low-skilled labor market. The cost of detection and fines (including reputational cost) and of losing a trained employee because of employment law violations might be too great for high-skill employer, and they might avoid hiring unauthorized workers in the first place. It is also possible that high-skilled workers are more likely to be employed by firms in which closer scrutiny of documents and background is institutionalized than low-skilled workers. For example, the use of human resource departments in processing job applications and hiring may be greater among firms hiring high-skilled than low-skilled workers. Consequently, after a high-skilled unauthorized immigrant gains legal status, he or she could successfully apply for jobs that were formerly closed off. Because we separate high-skill workers from low-skill workers, we may be in a position to observe an effect of employer sanctions on the occupational mobility and reported wages of unauthorized high-skill workers after they become legal.

The results in this paper have strong policy relevance. Comprehensive immigration reform will need to include a newly effective employment verification system, possibly mandating the use of the federal government's E-Verify program for all new hires, as well as sanctions for employers with teeth in order for the reform to act as a deterrent to future unauthorized immigration. The increase in employer sanctions we note beginning in 2006 are still likely too few to make employers differentiate among low-skill workers based on legal status, especially when a large number present documentation that makes assessing their true employment eligibility difficult. In Arizona, where E-Verify has been required for employers making new hires starting in 2008, size of the likely unauthorized population has fallen and there has been an increase in the self-employment of likely unauthorized immigrants, which probably signals a shift into the informal economy (Lofstrom, Bohn, and Rafael 2011). If more states implement E-Verify mandates in advance of a federal legalization program, employers may again be able to differentiate between legal and unauthorized low-skill workers. Without widespread use of tools that allows employers to correctly assess the documentation status of their low-skill employees, we expect that impact of legalization on employment outcomes of formerly unauthorized low-skilled immigrants would be little to none, at least in the short term. Of course, numerous other factors should be taken into account in the debate and decision of whether or not to provide a pathway to legal status for the country's large unauthorized immigrant population.

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Table 1. Descriptive Statistics by Legal Status Group

Variable	Illegal Border Crosser	Visa Overstayer	Continuously Legal
Annual Occupational Earnings			
Pre-LPR Job	$15,160	$19,727	$23,913
Post-LPR Job	$18,272	$23,418	$25,613
Change	$3,112	$3,692	$1,700
Demographic traits			
Share of Sample	25.9	27.6	46.4
Percent Female	36.8	45.8	44.4
Percent Married	67.8	80.7	75.5
Mean Number of Children	2.3	1.6	1.2
Mean age at NIS interview	35.8	37.1	35.0
Mean age first worked during last U.S. trip	24.8	31.2	32.3
Mean duration of pre-LPR job (years)	3.8	2.5	1.4
Mean time elapsed since start of pre-LPR job (years)	11.0	5.9	2.7
Country of Origin			
Mexico	38.5	16.4	3.0
Other Latin America & the Caribbean	50.1	29.0	18.5
East Asia, South Asia & the Pacific	4.5	18.0	38.8
Sub-Saharan Africa	0.8	8.3	8.2
Europe & Central Asia	2.5	18.7	22.1
Middle East & North Africa	1.0	5.4	5.0
All Other	2.6	4.1	4.4
Class of admission			
Spouse of Citizen	33.1	53.0	30.4
Child of Citizen (<21, unmarried)	1.6	1.7	1.9
Parent of Citizen	2.5	4.3	1.9
Child of Citizen (21+ and/or married)	1.7	1.4	0.9
Spouse of LPR	3.3	0.8	0.9
Sibling of Citizen	0.9	2.1	7.3
Employment Preference	3.6	11.4	21.0
Diversity Lottery	0.7	4.8	14.3
Refugee/Asylee	8.2	11.5	8.6
Legalization	37.3	3.6	0.5
Other	7.1	5.5	12.3

Helped by a Relative to Get Current Job	18.3	11.1	18.7
Current Employer is a Relative	2.3	3.2	3.9
Human Capital			
Total number of years of education	9.5	13.7	14.3
Total number of U.S. years of education	1.3	1.0	0.9
Proportion with less than high school diploma	61.7	22.9	20.8
Proportion with a high school diploma	22.6	28.7	21.1
Proportion with some college	8.6	12.9	10.2
Proportion with a bachelor's degree or more	7.2	35.4	48.0
Proportion with excellent English	14.4	31.1	28.8
Proportion with very good English	7.9	8.8	7.7
Proportion with good English	32.8	29.0	26.8
Number of Observations	945	1,071	2,470

Source: 2003 New Immigrant Survey (NIS)

Table 2. Occupational Distribution and Mobility from Pre- to Post-LPR Status

Rank	Illegal Border Crossers during pre-LPR job Pre-LPR occupation	% in pre-LPR job	% same in post-LPR job	% in post-LPR job
1	Maids And Housekeeping Cleaners	7.4	42.3	7.2
2	Other Agricultural Workers	7.3	28.1	2.7
3	Janitors And Building Cleaners	6.0	24.5	5.5
4	Dishwashers	5.2	0.0	0.5
5	Child Care Workers	5.1	13.3	1.6
6	Cooks	4.4	28.2	5.0
7	Construction Laborers	4.1	31.9	3.0
8	Cashiers	3.7	22.2	2.7
9	Grounds Maintenance Workers	3.5	36.5	2.4
10	Sewing Machine Operator	2.5	27.0	1.0
	Sum/Totals	**49.2**	**25.7**	**31.5**
Rank	**Visa Overstayers during pre-LPR job Pre-LPR occupation**	**% in pre-LPR job**	**% same in post-LPR job**	**% in post-LPR job**
1	Cashiers	5.9	23.9	2.7
2	Maids And Housekeeping Cleaners	4.4	44.4	3.4
3	Janitors And Building Cleaners	3.7	26.1	2.2
4	Cooks	3.4	52.7	3.1
5	Retail Salespersons	3.3	36.9	3.6
6	Waiters And Waitresses	3.3	33.3	2.6
7	Child Care Workers	3.0	44.3	2.2
8	Construction Laborers	2.3	28.1	1.7
9	Nursing, Psychiatric, And Home Health Aides	2.0	57.1	3.0
10	Grounds Maintenance Workers	2.0	13.9	0.3
	Sum/Totals	**33.2**	**35.6**	**24.8**
Rank	**Legal during pre-LPR job Pre-LPR occupation**	**% in pre-LPR job**	**% same in post-LPR job**	**% in post-LPR job**
1	Cashiers	5.9	65.4	5.0
2	Computer Software Engineers	3.9	72.8	4.3
3	Waiters And Waitresses	3.4	51.0	2.1
4	Maids And Housekeeping Cleaners	3.4	77.5	2.9
5	Janitors And Building Cleaners	3.3	60.3	3.6
6	Postsecondary Teachers	3.0	37.0	1.7
7	Nursing, Psychiatric, And Home Health Aides	2.5	60.6	2.8
8	Retail Salespersons	2.4	62.1	2.5
9	Registered Nurses	2.4	79.9	2.4
10	Stock Clerks And Order Fillers	2.3	52.3	1.7
	Sum/Totals	**32.6**	**62.4**	**29.1**

Source: 2003 New Immigrant Survey (NIS)

Table 3.
OLS Regression Results, Log of Occupational Annual Earnings, Pre-LPR Status Period.

	Model Specification				
	1	2	3	4	5
Overstayer at Pre-LPR Job	-0.134	-0.108	-0.181	-0.138	-0.107
	(2.48)	(2.41)	(3.93)	(3.81)	(3.10)
Crosser at Pre-LPR Job	-0.370	-0.173	-0.219	-0.175	-0.122
	(4.47)	(3.36)	(4.35)	(4.48)	(3.43)
Female*Overstayer	0.024	0.026	0.029	0.046	0.035
	(0.43)	(0.52)	(0.60)	(1.04)	(0.88)
Female*Crosser	0.048	0.049	0.038	0.050	0.038
	(0.62)	(0.77)	(0.60)	(0.84)	(0.70)
Female	-0.410	-0.261	-0.300	-0.330	-0.339
	(5.13)	(3.92)	(4.47)	(5.23)	(5.54)
Age		0.019	0.022	0.022	0.018
		(3.55)	(4.04)	(3.89)	(3.85)
$Age^2/100$		-0.029	-0.029	-0.032	-0.026
		(3.84)	(3.68)	(4.00)	(4.14)
Married		0.148	0.109	0.064	0.033
		(3.43)	(3.15)	(2.30)	(1.09)
Number of Children		-0.007	-0.012	-0.011	-0.010
		(0.60)	(1.06)	(0.96)	(0.96)
Female*Married		-0.117	-0.087	-0.081	-0.044
		(1.89)	(1.40)	(1.49)	(1.02)
Married*Number of Children		-0.017	-0.012	-0.005	-0.002
		(1.28)	(0.93)	(0.43)	(0.17)
Female*Number of Children		-0.014	-0.019	-0.014	-0.008
		-1.040	-1.410	-1.100	-0.700
Female*Married*Number of Children		0.017	0.018	0.015	0.009
		(0.89)	(0.91)	(0.81)	(0.53)
Years of Education before Migration		0.034	0.030	0.023	0.018
		(5.32)	(6.05)	(5.88)	(5.10)
Female*Years of Ed before Migration		-0.005	-0.002	-0.002	-0.003
		(0.66)	(0.32)	(0.37)	(0.57)
Class of Admission:					
Minor Child of U.S. citizen					-0.087
					(1.55)
Parent of U.S. citizen					0.048
					(1.04)
Adult Child of U.S. citizen					-0.082
					(1.29)
Spouse of LPR					-0.035
					(0.60)
Sibling of U.S. citizen					-0.112
					(2.45)
Employment Preferences					0.398
					(5.24)
Diversity Lottery					-0.153
					(4.39)
Refugee/Asylee/Parolee					-0.133

	Model Specification				
	1	2	3	4	5
					(2.88)
Legalization					-0.065
					(1.68)
Other					-0.067
					(1.94)
Helped by a Relative to Get Current Job					-0.037
					(1.95)
Current Employer is a Relative					0.068
					(1.08)
Includes Fixed Effects:					
State	No	Yes	Yes	Yes	Yes
Year of Arrival	No	No	Yes	Yes	Yes
Country of Origin	No	No	No	Yes	Yes
R-Squared	0.189	0.291	0.344	0.399	0.461
Number of Observations			4,486		

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations.

Table 4.
OLS Regression Results, Change in Log of Occupational Annual Earnings, Post-Pre LPR Status Periods

	Model Specification				
	1	2	3	4	5
Overstayer at Pre-LPR job	0.125	0.113	0.068	0.072	0.064
	(5.52)	(5.14)	(3.05)	(3.18)	(2.85)
Crosser at Pre-LPR job	0.132	0.120	-0.008	-0.009	-0.017
	(4.47)	(4.04)	(0.24)	(0.28)	(0.49)
Female*Overstayer	-0.069	-0.058	-0.051	-0.056	-0.056
	(2.03)	(1.77)	(1.60)	(1.78)	(1.77)
Female*Crosser	-0.096	-0.073	-0.056	-0.059	-0.055
	(2.29)	(1.82)	(1.33)	(1.38)	(1.28)
Female	0.019	0.048	0.042	0.048	0.052
	(0.82)	(0.86)	(0.76)	(0.85)	(0.92)
Age		0.012	-0.003	-0.004	-0.003
		(2.39)	(0.70)	(0.79)	(0.61)
Age²/100		-0.015	0.001	0.002	0.001
		(2.45)	(0.12)	(0.30)	(0.17)
Married		0.015	0.016	0.029	0.013
		(0.57)	(0.68)	(1.23)	(0.54)
Number of Children		0.015	0.013	0.011	0.008
		(1.56)	(1.48)	(1.16)	(0.81)
Female*Married		-0.042	-0.029	-0.027	-0.031
		(1.14)	(0.81)	(0.73)	(0.83)
Married*Number of Children		-0.005	-0.005	-0.005	-0.001
		(0.45)	(0.44)	(0.43)	(0.05)
Female*Number of Children		-0.010	-0.009	-0.009	-0.009
		(0.80)	(0.77)	(0.76)	(0.75)
Female*Married*Number of Children		-0.001	0.003	0.001	0.002
		(0.09)	(0.20)	(0.09)	(0.12)
Years of Education before Migration		0.003	0.007	0.008	0.009
		(1.16)	(2.22)	(2.64)	(2.69)
Years of Education in the U.S.		0.030	0.025	0.026	0.026
		(4.21)	(3.77)	(4.17)	(4.22)
Excellent English		0.004	-0.034	-0.046	-0.046
		(0.12)	(1.03)	(1.35)	(1.32)
Very Good English		-0.014	-0.024	-0.027	-0.025
		(0.39)	(0.70)	(0.74)	(0.70)
Good English		0.074	0.047	0.041	0.041
		(2.91)	(1.82)	(1.65)	(1.65)
Female*Years of Ed before Migration		0.001	0.001	0.000	0.000
		(0.38)	(0.17)	(0.06)	(0.02)
Female*Years of Ed in the U.S.		0.001	-0.001	-0.002	-0.002
		(0.10)	(0.06)	(0.18)	(0.24)
Female*Excellent English		0.044	0.067	0.074	0.072
		(0.78)	(1.23)	(1.39)	(1.37)
Female*Very Good English		0.117	0.107	0.103	0.102
		(1.80)	(1.78)	(1.68)	(1.70)
Female*Good English		-0.073	-0.049	-0.042	-0.045

	Model Specification				
	1	2	3	4	5
		(2.03)	(1.40)	(1.21)	(1.28)
Duration of Pre-LPR Job		0.003	-0.007	-0.007	-0.007
		(1.64)	(2.86)	(2.86)	(2.72)
Interval Between LPR and Interview		0.001	0.001	0.001	0.001
		(0.44)	(0.47)	(0.45)	(0.17)
Class of Admission:					
Minor Child of U.S. citizen					-0.075
					(1.65)
Parent of U.S. citizen					-0.001
					(0.03)
Adult Child of U.S. citizen					0.007
					(0.12)
Spouse of LPR					-0.062
					(1.70)
Sibling of U.S. citizen					-0.017
					(0.53)
Employment Preferences					-0.081
					(2.12)
Diversity Lottery					-0.050
					(1.74)
Refugee/Asylee/Parolee					-0.041
					(1.08)
Legalization					-0.005
					(0.12)
Other					-0.008
					(0.28)
Helped by a Relative to Get Current Job					-0.015
					(0.85)
Current Employer is a Relative					-0.020
					(0.70)
Includes Fixed Effects:					
State	No	Yes	Yes	Yes	Yes
Year of Arrival	No	No	Yes	Yes	Yes
Country of Origin	No	No	No	Yes	Yes
R-Squared	0.018	0.067	0.119	0.131	0.136
Number of Observations			4,486		

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations.

Table 5.
OLS Regression Results, Change in Log of Occupational Annual Earnings, Post-Pre LPR Status Periods, by Schooling Levels

	Model Specification	
	1	5
High School Diploma	-0.001	-0.012
	(0.03)	(0.26)
Some College	0.038	-0.012
	(1.31)	(0.47)
College Degree	-0.059	-0.048
	(1.97)	(1.67)
Overstayer at Pre-LPR Job	0.121	0.001
	(3.28)	(0.03)
High School Diploma*Overstayer at Pre-LPR Job	-0.058	0.022
	(0.92)	(0.40)
Some College*Overstayer at Pre-LPR Job	0.001	0.071
	(0.02)	(1.50)
College Degree*Overstayer at Pre-LPR Job	0.038	0.124
	(0.63)	(2.42)
Crosser at Pre-LPR Job	0.102	-0.111
	(3.04)	(2.66)
High School Diploma*Crosser at Pre-LPR Job	-0.009	0.067
	(0.14)	(1.06)
Some College*Crosser at Pre-LPR Job	0.053	0.148
	(0.82)	(2.34)
College Degree*Crosser at Pre-LPR Job	0.164	0.302
	(2.07)	(4.19)
Female	-0.013	0.007
	(0.32)	-0.140
Female*High School Diploma	0.047	0.073
	(0.68)	(1.12)
Female*Some College	0.022	0.038
	(0.43)	(0.96)
Female*College Degree	0.051	0.074
	(1.00)	(1.49)
Female*Overstayer at Pre-LPR Job	-0.076	-0.038
	(1.16)	(0.64)
Female*High School Diploma*Overstayer at Pre-LPR Job	0.095	0.035
	(0.98)	(0.39)
Female*Some College*Overstayer at Pre-LPR Job	-0.034	-0.053
	(0.34)	(0.63)
Female*College Degree*Overstayer at Pre-LPR Job	0.009	-0.019
	(0.10)	(0.21)
Female*Crosser at Pre-LPR Job	-0.051	0.001
	(0.95)	(0.01)
Female*High School Diploma*Crosser at Pre-LPR Job	-0.039	-0.060
	(0.40)	(0.58)
Female*Some College*Crosser at Pre-LPR Job	-0.004	-0.029
	(0.04)	(0.27)
Female*College Degree*Crosser at Pre-LPR Job	-0.336	-0.325

	Model Specification	
	1	5
	(1.72)	(1.75)
Age		-0.002
		(0.28)
Age²/100		-0.001
		(0.16)
Married		0.015
		(0.68)
Number of Children		0.005
		(0.59)
Female*Married		-0.031
		(0.84)
Married*Number of Children		0.000
		(0.01)
Female*Number of Children		-0.008
		(0.73)
Female*Married*Number of Children		0.001
		(0.11)
Years of Education in the U.S.		0.022
		(3.90)
Excellent English		-0.033
		(0.99)
Very Good English		-0.022
		(0.64)
Good English		0.049
		(2.01)
Female*Years of Ed in the U.S.		-0.001
		(0.07)
Female*Excellent English		0.063
		(1.22)
Female*Very Good English		0.098
		(1.63)
Female*Good English		-0.046
		(1.36)
Duration of Pre-LPR Job		-0.008
		(3.00)
Interval Between LPR and Interview		0.000
		(0.02)
Class of Admission:		
Minor Child of U.S. citizen		-0.077
		(1.73)
Parent of U.S. citizen		-0.002
		(0.05)
Adult Child of U.S. citizen		0.010
		(0.16)
Spouse of LPR		-0.062
		(1.67)
Sibling of U.S. citizen		-0.023
		(0.70)

	Model Specification	
	1	5
Employment Preferences		-0.067
		(1.77)
Diversity Lottery		-0.034
		(1.24)
Refugee/Asylee/Parolee		-0.053
		(1.38)
Legalization		-0.002
		(0.05)
Other		-0.006
		(0.21)
Helped by a Relative to Get Current Job		-0.021
		(1.18)
Current Employer is a Relative		-0.021
		(0.72)
Includes Fixed Effects:		
State	No	Yes
Year of Arrival	No	Yes
Country of Origin	No	Yes
R-Squared	0.025	0.141
Number of Observations	4,486	

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations. Model specification number refers to the specifications in Tables 3 and 4.

Table 6.
OLS Regression Results, Change in Log of Occupational Annual Earnings, Pre-to-Post LPR Status Periods, and Post-LPR Period; Pre-LPR Low-Skilled Occupation Sub-Sample

Time Period:	Pre- to Post-LPR		Post-LPR	
Model Specification:	1	5	1	5
Overstayer at Pre-LPR job	0.172	-0.061	0.147	-0.044
	(3.76)	(1.43)	(2.36)	(0.99)
Crosser at Pre-LPR job	0.223	-0.015	0.132	-0.023
	(4.75)	(0.29)	(2.23)	(0.38)
Female*Overstayer	-0.098	0.009	-0.104	-0.020
	(1.25)	(0.15)	(1.19)	(0.35)
Female*Crosser	-0.151	-0.094	-0.105	-0.087
	(2.33)	(1.88)	(1.48)	(1.62)
Female	0.012	0.163	-0.361	-0.113
	(0.16)	(1.84)	(4.40)	(1.13)
Age		-0.013		-0.016
		(1.26)		(1.62)
Age²/100		0.015		0.017
		(1.17)		(1.45)
Married		0.115		0.057
		(1.98)		(1.04)
Number of Children		0.024		0.018
		(1.53)		(1.41)
Female*Married		-0.145		-0.137
		(1.91)		(1.91)
Married*Number of Children		-0.026		-0.011
		(1.62)		(0.68)
Female*Number of Children		-0.022		-0.028
		-1.170		-1.810
Female*Married*Number of Children		0.028		0.024
		(1.25)		(1.30)
Years of Education before Migration		0.019		0.023
		(4.18)		(4.33)
Years of Education in the U.S.		0.031		0.032
		(2.52)		(2.93)
Excellent English		0.094		0.087
		(1.64)		(1.63)
Very Good English		0.070		0.080
		(0.88)		(1.04)
Good English		0.025		0.016
		(0.78)		(0.44)
Female*Years of Ed before Migration		-0.009		-0.016
		(1.37)		(2.01)
Female*Years of Ed in the U.S.		0.014		0.014
		(0.83)		(0.90)
Female*Excellent English		0.092		0.076
		(1.01)		(0.80)
Female*Very Good English		0.149		0.186
		(0.81)		(1.11)
Female*Good English		-0.023		-0.034

Time Period:	Pre- to Post-LPR		Post-LPR	
Model Specification:	1	5	1	5
		(0.47)		(0.64)
Duration of Pre-LPR Job		-0.005		-0.002
		(1.47)		(0.55)
Interval Between LPR and Interview		-0.001		-0.005
		(0.25)		(1.30)
Class of Admission:				
Minor Child of U.S. citizen		-0.115		-0.235
		(1.25)		(2.83)
Parent of U.S. citizen		-0.084		-0.122
		(1.15)		(1.86)
Adult Child of U.S. citizen		0.070		0.015
		(0.78)		(0.18)
Spouse of LPR		-0.123		-0.189
		(2.43)		(2.67)
Sibling of U.S. citizen		-0.098		-0.107
		(1.84)		(1.83)
Employment Preferences		-0.066		-0.097
		(1.20)		(1.87)
Diversity Lottery		-0.142		-0.139
		(2.14)		(2.26)
Refugee/Asylee/Parolee		-0.065		-0.074
		(0.96)		(1.27)
Legalization		-0.102		-0.136
		(2.02)		(2.90)
Other		-0.057		-0.099
		(1.29)		(2.00)
Helped by a Relative to Get Current Job		0.013		0.012
		(0.40)		(0.40)
Current Employer is a Relative		-0.080		0.001
		(1.64)		(0.02)
Includes Fixed Effects:				
State	No	Yes	No	Yes
Year of Arrival	No	Yes	No	Yes
Country of Origin	No	Yes	No	Yes
R-Squared	0.060	0.392	0.322	0.568
Number of Observations			902	

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations. Model specification number refers to the specifications in Tables 3 and 4.

Table 7.
OLS Regression Results, Log of Hourly Wages, Pre-LPR Status Period

	Model Specification				
	1	2	3	4	5
Overstayer at Pre-LPR job	-0.128	-0.056	-0.089	-0.048	-0.020
	(2.04)	(1.24)	(1.85)	(0.97)	(0.43)
Crosser at Pre-LPR job	-0.543	-0.196	-0.115	-0.063	0.023
	(7.09)	(3.44)	(1.74)	(0.95)	(0.35)
Female*Overstayer	0.023	0.003	0.021	0.056	0.058
	(0.25)	(0.04)	(0.29)	(0.77)	(0.82)
Female*Crosser	0.014	-0.041	-0.067	-0.005	-0.039
	(0.13)	(0.47)	(0.78)	(0.06)	(0.46)
Female	-0.086	0.156	0.085	0.036	0.037
	(1.19)	(1.36)	(0.77)	(0.33)	(0.36)
Age		0.042	0.039	0.037	0.031
		(4.63)	(4.14)	(3.99)	(3.18)
Age²/100		-0.053	-0.049	-0.049	-0.040
		(4.06)	(3.69)	(3.78)	(2.93)
Married		0.103	0.097	0.060	0.038
		(2.28)	(2.15)	(1.32)	(0.75)
Number of Children		-0.012	0.005	0.010	0.021
		(0.29)	(0.11)	(0.23)	(0.51)
Female*Married		-0.076	-0.083	-0.082	-0.028
		(0.98)	(1.10)	(1.12)	(0.39)
Married*Number of Children		-0.028	-0.030	-0.024	-0.024
		(0.65)	(0.69)	(0.55)	(0.56)
Female*Number of Children		-0.037	-0.040	-0.037	-0.030
		-0.800	-0.860	-0.790	-0.660
Female*Married*Number of Children		0.034	0.030	0.026	0.013
		(0.68)	(0.61)	(0.52)	(0.28)
Years of Education before Migration		0.042	0.037	0.028	0.021
		(8.51)	(7.70)	(5.88)	(4.40)
Female*Years of Ed before Migration		-0.013	-0.007	-0.006	-0.008
		(1.65)	(0.90)	(0.82)	(1.12)
Class of Admission:					
Minor Child of U.S. citizen					0.035
					(0.45)
Parent of U.S. citizen					-0.019
					(0.18)
Adult Child of U.S. citizen					0.092
					(0.89)
Spouse of LPR					0.005
					(0.06)
Sibling of U.S. citizen					-0.130
					(1.72)
Employment Preferences					0.519
					(10.23)
Diversity Lottery					-0.118
					(2.30)

	Model Specification				
	1	2	3	4	5
Refugee/Asylee/Parolee					-0.134
					(2.06)
Legalization					-0.239
					(2.46)
Other					-0.050
					(0.94)
Helped by a Relative to Get Current Job					-0.044
					(1.30)
Current Employer is a Relative					-0.025
					(0.32)
Includes Fixed Effects:					
State	No	Yes	Yes	Yes	Yes
Year of Arrival	No	No	Yes	Yes	Yes
Country of Origin	No	No	No	Yes	Yes
R-Squared	0.090	0.202	0.265	0.310	0.373
Number of Observations			2,660		

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations.

Table 8.
OLS Regression Results, Change in Log of Hourly Wages, Pre-to-Post LPR Status Periods

	Model Specification				
	1	2	3	4	5
Overstayer at Pre-LPR job	0.201	0.127	-0.066	-0.074	-0.068
	(3.69)	(2.41)	(1.38)	(1.55)	(1.40)
Crosser at Pre-LPR job	0.521	0.424	-0.050	-0.070	-0.077
	(9.94)	(6.55)	(0.80)	(1.04)	(1.13)
Female*Overstayer	-0.073	-0.008	0.025	0.020	0.014
	(0.90)	(0.10)	(0.35)	(0.29)	(0.20)
Female*Crosser	-0.174	-0.123	-0.022	-0.045	-0.043
	(2.04)	(1.30)	(0.26)	(0.53)	(0.49)
Female	-0.050	-0.134	-0.146	-0.138	-0.143
	(1.53)	(0.96)	(1.14)	(1.07)	(1.12)
Age		0.036	-0.010	-0.009	-0.011
		(3.19)	(0.97)	(0.85)	(0.90)
Age²/100		-0.043	0.008	0.007	0.008
		(2.95)	(0.57)	(0.51)	(0.54)
Married		0.080	0.077	0.089	0.095
		(1.59)	(1.72)	(1.96)	(1.74)
Number of Children		0.000	-0.009	-0.009	-0.011
		0.00	(0.20)	(0.19)	(0.25)
Female*Married		-0.147	-0.082	-0.082	-0.082
		(1.90)	(1.19)	(1.20)	(1.19)
Married*Number of Children		0.006	0.004	0.000	0.001
		(0.11)	(0.09)	0.00	(0.03)
Female*Number of Children		0.028	0.008	0.004	0.003
		(0.52)	(0.18)	(0.09)	(0.06)
Female*Married*Number of Children		-0.020	0.005	0.007	0.010
		(0.36)	(0.10)	(0.13)	(0.20)
Years of Education before Migration		-0.007	0.002	0.003	0.002
		(1.11)	(0.31)	(0.46)	(0.38)
Years of Education in the U.S.		0.035	0.012	0.013	0.013
		(2.29)	(0.86)	(0.93)	(0.89)
Excellent English		0.177	0.026	0.017	0.015
		(2.82)	(0.50)	(0.31)	(0.27)
Very Good English		0.086	0.058	0.065	0.061
		(0.98)	(0.73)	(0.83)	(0.79)
Good English		0.104	0.015	0.008	0.010
		(2.12)	(0.35)	(0.18)	(0.22)
Female*Years of Ed before Migration		0.014	0.009	0.009	0.009
		(1.41)	(0.99)	(0.98)	(1.05)
Female*Years of Ed in the U.S.		0.007	-0.001	0.000	0.001
		(0.33)	(0.08)	(0.02)	(0.05)
Female*Excellent English		-0.051	0.018	0.018	0.017
		(0.53)	(0.21)	(0.22)	(0.21)
Female*Very Good English		0.138	0.110	0.081	0.083
		(0.99)	(0.93)	(0.68)	(0.71)
Female*Good English		-0.077	0.022	0.031	0.025

	Model Specification				
	1	2	3	4	5
		(1.04)	(0.34)	(0.48)	(0.38)
Duration of Pre-LPR Job		0.016	-0.029	-0.028	-0.028
		(2.42)	(3.94)	(3.91)	(3.88)
Interval Between LPR and Interview		0.005	0.008	0.007	0.007
		(0.74)	(1.47)	(1.35)	(1.28)
Class of Admission:					
Minor Child of U.S. citizen					-0.024
					(0.24)
Parent of U.S. citizen					0.129
					(1.29)
Adult Child of U.S. citizen					-0.153
					(1.42)
Spouse of LPR					-0.102
					(0.84)
Sibling of U.S. citizen					-0.015
					(0.21)
Employment Preferences					0.008
					(0.17)
Diversity Lottery					0.017
					(0.35)
Refugee/Asylee/Parolee					-0.032
					(0.49)
Legalization					0.164
					(1.65)
Other					0.047
					(0.91)
Helped by a Relative to Get Current Job					0.013
					(0.36)
Current Employer is a Relative					-0.039
					(0.64)
Includes Fixed Effects:					
State	No	Yes	Yes	Yes	Yes
Year of Arrival	No	No	Yes	Yes	Yes
Country of Origin	No	No	No	Yes	Yes
R-Squared	0.078	0.140	0.316	0.323	0.327
Number of Observations			2,660		

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations.

Appendix

Table A1.
Comparison of Observable Characteristics of the Unauthorized Population, NIS and 2003/2004 Current Population Survey.

	NIS 2003	CPS 2003/2004
Country/Region (18+)		
Mexico/Latin America	72%	80%
Asia	10%	13%
Europe and Canada	10%	5%
Africa and Other	8%	2%
Arrival Year (18+)		
2000-2004	19%	24%
1995-1999	25%	32%
1990-1994	25%	20%
1980s	31%	24%
Age (18+)		
18 to 39	64%	72%
40 and over	35%	28%
Sex (18+)		
Male	48%	57%
Female	52%	43%
Educational Attainment (25-64)		
Less than 9th grade	26%	32%
9th - 12th grade	21%	17%
HS Diploma	24%	25%
Some college	9%	10%
B.A. degree or more	19%	15%
Labor Force Participation (adults 18-64)		
Men	96%	92%
Women	72%	57%
Occupation (All ages in Labor Force)		
Service	31%	33%
Sales and Administrative Support	18%	13%
Agriculture	2%	3%
Construction & Extractive	11%	16%
Production, Installation, & Repair	16%	17%
Transportation & Materials Moving	9%	9%
Management, Business, & Professional	14%	9%

Source: The CPS calculations are based on unpublished tabulations prepared by Jeffrey S. Passel, Pew Hispanic Center from the March CPS Supplements augmented with immigration status and adjusted for omissions from the survey. The CPS data are weighted using "Vintage 2007" population estimates (Passel and Cohn, 2008 and 2009).

Table A2.
OLS Regression Results, Change in Log of Occupational Annual Earnings, Pre-LPR Status Period, and Change in Pre- to Post-LPR Periods, for Immigrants in the U.S. No More Than Five Years

Time Period:	Pre-LPR		Pre- to Post-LPR	
Model Specification:	1	5	1	5
Overstayer at Pre-LPR job	0.007	-0.053	0.104	0.082
	(0.14)	(1.22)	(4.09)	(3.26)
Crosser at Pre-LPR job	-0.164	-0.087	0.029	-0.019
	(2.35)	(1.66)	(0.90)	(0.57)
Female*Overstayer	-0.091	-0.033	-0.072	-0.066
	(1.62)	(0.69)	(1.99)	(1.82)
Female*Crosser	0.005	0.037	-0.005	0.005
	(0.06)	(0.46)	(0.09)	(0.09)
Female	-0.362	-0.266	0.022	-0.016
	(4.96)	(3.17)	(1.08)	(0.29)
Age		0.013		0.001
		(1.83)		(0.21)
Age²/100		-0.020		-0.003
		(2.17)		(0.35)
Married		0.036		-0.013
		(1.14)		(0.52)
Number of Children		-0.002		-0.021
		(0.10)		(2.03)
Female*Married		-0.049		-0.013
		(0.90)		(0.33)
Married*Number of Children		-0.012		0.019
		(0.59)		(1.56)
Female*Number of Children		-0.016		0.006
		-0.820		(0.44)
Female*Married*Number of Children		0.016		-0.004
		(0.64)		(0.23)
Years of Education before Migration		0.024		0.000
		(4.68)		(0.13)
Years of Education in the U.S.				0.007
				(1.03)
Excellent English				-0.068
				(2.17)
Very Good English				-0.064
				(1.46)
Good English				0.056
				(1.99)
Female*Years of Ed before Migration		-0.007		0.001
		(1.16)		(0.29)
Female*Years of Ed in the U.S.				0.002
				(0.18)
Female*Excellent English				0.120
				(2.66)
Female*Very Good English				0.061

Time Period:	Pre-LPR		Pre- to Post-LPR	
Model Specification:	1	5	1	5
				(0.92)
Female*Good English				-0.033
				(0.77)
Duration of Pre-LPR Job				-0.007
				(0.91)
Interval Between LPR and Interview				0.004
				(0.95)
Class of Admission:				0.00
Minor Child of U.S. citizen		-0.133		-0.075
		(2.08)		(1.67)
Parent of U.S. citizen		0.042		0.062
		(0.62)		(1.21)
Adult Child of U.S. citizen		-0.165		-0.018
		(2.42)		(0.32)
Spouse of LPR		-0.154		0.024
		(2.45)		(0.54)
Sibling of U.S. citizen		-0.088		-0.026
		(1.73)		(0.98)
Employment Preferences		0.433		-0.073
		(4.45)		(1.77)
Diversity Lottery		-0.186		-0.042
		(5.05)		(1.41)
Refugee/Asylee/Parolee		-0.121		-0.065
		(2.14)		(1.62)
Legalization		-0.102		-0.081
		(0.92)		(0.98)
Other		-0.108		-0.014
		(2.56)		(0.55)
Helped by a Relative to Get Current Job		-0.047		0.010
		(1.99)		(0.54)
Current Employer is a Relative		0.067		-0.004
		(0.87)		(0.14)
Includes Fixed Effects:				
State	No	Yes	No	Yes
Year of Arrival	No	Yes	No	Yes
Country of Origin	No	Yes	No	Yes
R-Squared	0.135	0.448	0.011	0.071
Number of Observations			2,781	

Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations. Model specification number refers to the specifications in Tables 3 and 4.

Table A3.
OLS Regression Results, Change in Log of Hourly Wages, Pre-to-Post LPR Status Periods, and Post-LPR Period; Pre-LPR Low-Skilled Occupation Sub-Sample

Time Period:	Pre- to Post-LPR		Post-LPR	
Model Specification:	1	5	1	5
Overstayer at Pre-LPR job	0.353	-0.143	0.283	-0.036
	(3.04)	(1.13)	(3.14)	(0.51)
Crosser at Pre-LPR job	0.639	-0.257	0.309	-0.016
	(5.61)	(1.36)	(3.64)	(0.17)
Female*Overstayer	0.139	0.228	-0.044	0.012
	(0.75)	(1.45)	(0.34)	(0.13)
Female*Crosser	-0.077	0.016	-0.214	-0.084
	(0.54)	(0.10)	(2.13)	(0.74)
Female	-0.143	-0.327	-0.130	-0.314
	(1.19)	(1.10)	(1.41)	(1.72)
Age		-0.007		0.008
		(0.25)		(0.50)
Age²/100		0.001		-0.014
		(0.03)		(0.67)
Married		-0.026		0.120
		(0.21)		(1.70)
Number of Children		0.040		0.024
		(0.73)		(0.70)
Female*Married		0.156		-0.014
		(0.78)		(0.17)
Married*Number of Children		-0.061		-0.033
		(0.91)		(0.88)
Female*Number of Children		-0.017		-0.003
		-0.240		-0.080
Female*Married*Number of Children		0.012		0.011
		(0.12)		(0.23)
Years of Education before Migration		0.012		0.010
		(0.77)		(1.05)
Years of Education in the U.S.		-0.006		0.001
		(0.20)		(0.05)
Excellent English		0.113		0.236
		(0.51)		(2.18)
Very Good English		0.245		-0.033
		(0.74)		(0.43)
Good English		0.095		0.128
		(0.76)		(2.02)
Female*Years of Ed before Migration		0.009		0.014
		(0.42)		(1.19)
Female*Years of Ed in the U.S.		-0.004		0.057
		(0.07)		(2.56)
Female*Excellent English		-0.017		-0.161
		(0.07)		(1.16)
Female*Very Good English		0.151		0.351
		(0.35)		(1.52)

Time Period:	Pre- to Post-LPR		Post-LPR	
Model Specification:	1	5	1	5
Female*Good English		-0.021		-0.134
		(0.12)		(1.33)
Duration of Pre-LPR Job		-0.021		0.002
		(1.71)		(0.30)
Interval Between LPR and Interview		0.008		-0.001
		(0.57)		(0.12)
Class of Admission:				
Minor Child of U.S. citizen		-0.047		-0.147
		(0.19)		(0.97)
Parent of U.S. citizen		0.350		0.230
		(1.77)		(1.28)
Adult Child of U.S. citizen		-0.158		-0.060
		(0.46)		(0.37)
Spouse of LPR		-0.129		-0.272
		(0.43)		(2.06)
Sibling of U.S. citizen		-0.182		-0.101
		(1.16)		(0.83)
Employment Preferences		-0.068		0.021
		(0.60)		(0.21)
Diversity Lottery		-0.169		-0.158
		(1.02)		(1.59)
Refugee/Asylee/Parolee		-0.151		-0.068
		(0.68)		(0.73)
Legalization		0.291		-0.047
		(1.60)		(0.52)
Other		-0.064		-0.012
		(0.41)		(0.14)
Helped by a Relative to Get Current Job		-0.016		-0.042
		(0.22)		(1.01)
Current Employer is a Relative		0.196		-0.033
		(1.36)		(0.30)
Includes Fixed Effects:				
State	No	Yes	No	Yes
Year of Arrival	No	Yes	No	Yes
Country of Origin	No	Yes	No	Yes
R-Squared	0.131	0.463	0.134	0.481
Number of Observations		498		

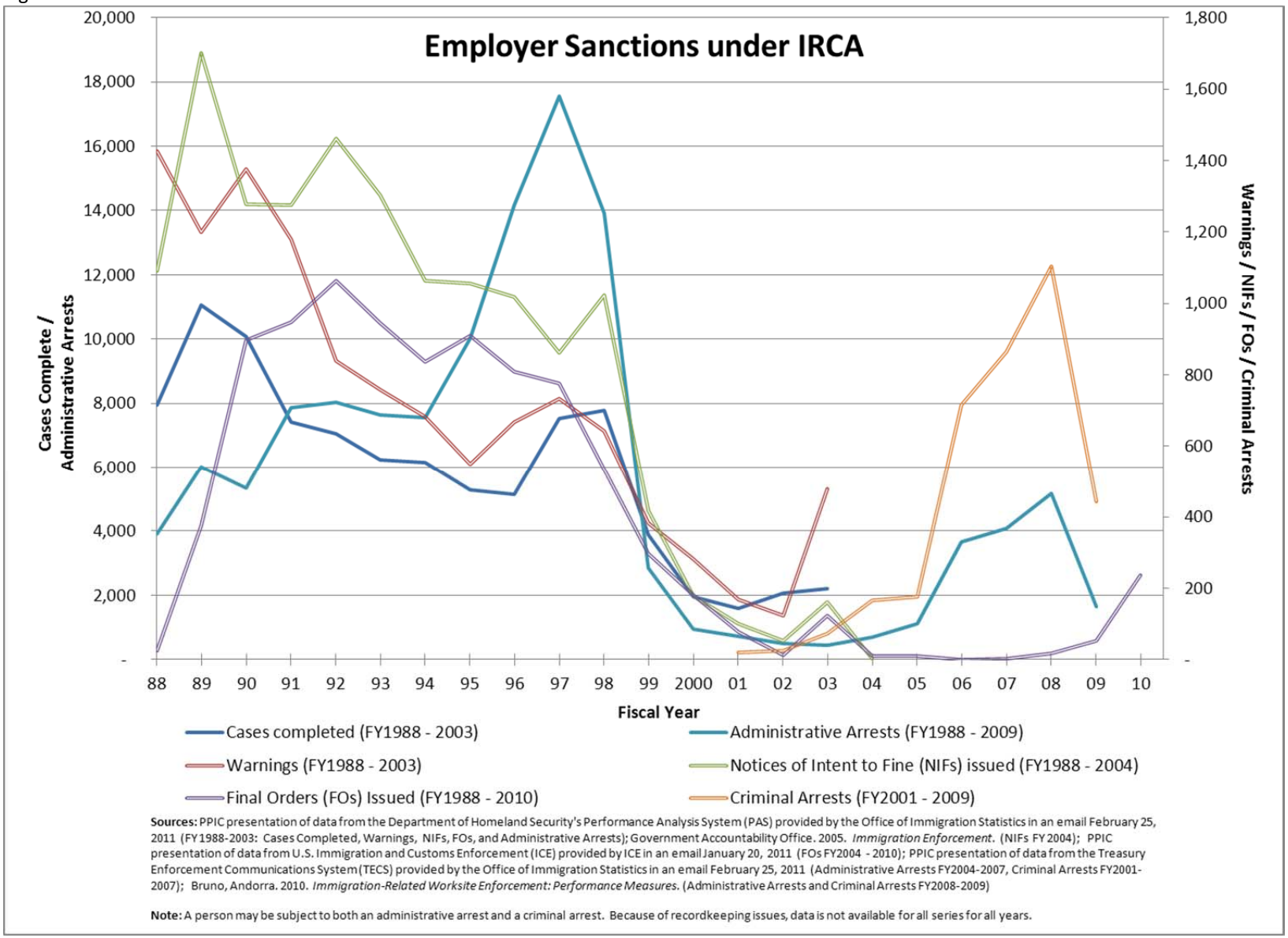
Note: The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations. Model specification number refers to the specifications in Tables 7 and 8.

Table A4.
Sample Sensitivity Analysis, OLS Regression Results, Utilizing Occupational Annual Earnings for the NIS Wage Sub-Sample

Time Period:	Pre-LPR		Pre- to Post-LPR	
Model Specification:	1	5	1	5
Overstayer at Pre-LPR Job	-0.160	-0.145	0.186	0.100
	(2.95)	(3.81)	(6.21)	(3.49)
Crosser at Pre-LPR Job	-0.371	-0.141	0.141	-0.015
	(4.35)	(3.17)	(4.29)	(0.38)
Female*Overstayer	0.020	0.070	-0.079	-0.071
	(0.26)	(1.23)	(1.86)	(1.74)
Female*Crosser	0.005	0.030	-0.024	0.016
	(0.05)	(0.45)	(0.46)	(0.31)
Female	-0.379	-0.388	0.024	0.067
	(4.41)	(5.68)	(0.97)	(1.03)
Includes Controls for:				
Demographic Characteristics	No	Yes	No	Yes
Human Capital	No	Yes	No	Yes
Immigration/Employment Networks		Yes		Yes
Includes Fixed Effects:				
State	No	Yes	No	Yes
Year of Arrival	No	Yes	No	Yes
Country of Origin	No	Yes	No	Yes
R-Squared	0.183	0.499	0.039	0.181
Number of Observations		2,660		

Note: Model specification number refers to the specifications in Tables 7 and 8. The t-statistics, shown in parentheses, are calculated based on standard errors clustered around occupations.

Figure A1



Sources: PPIC presentation of data from the Department of Homeland Security's Performance Analysis System (PAS) provided by the Office of Immigration Statistics in an email February 25, 2011 (FY1988-2003: Cases Completed, Warnings, NIFs, FOs, and Administrative Arrests); Government Accountability Office. 2005. *Immigration Enforcement.* (NIFs FY2004); PPIC presentation of data from U.S. Immigration and Customs Enforcement (ICE) provided by ICE in an email January 20, 2011 (FOs FY2004 - 2010); PPIC presentation of data from the Treasury Enforcement Communications System (TECS) provided by the Office of Immigration Statistics in an email February 25, 2011 (Administrative Arrests FY2004-2007, Criminal Arrests FY2001-2007); Bruno, Andorra. 2010. *Immigration-Related Worksite Enforcement: Performance Measures.* (Administrative Arrests and Criminal Arrests FY2008-2009)

Note: A person may be subject to both an administrative arrest and a criminal arrest. Because of recordkeeping issues, data is not available for all series for all years.