American Economic Review: Papers & Proceedings 2015, 105(5): 210–213
http://dx.doi.org/10.1257/aer.p20151041

Effects of Immigrant Legalization on Crime[†]

By Scott R. Baker*

In the late 1970s, rates of undocumented immigration into the United States began to increase dramatically. Fearing negative labor market and social effects, Congress passed the 1986 Immigration Reform and Control Act (IRCA). The primary purpose of the bill was to enhance the controls on the hiring of undocumented immigrants, making it illegal to hire or recruit undocumented immigrants. However, the legislation also represented a near-universal legalization of immigrants in the United States, a group comprising almost three million people, about 1 percent of the nation's population.

This paper examines the effects that the IRCA had on the commission of crime in the United States. I provide estimates of the total effect of this legalization, exploiting the large amount of variation in both the geographical distribution and the quasi-random timing of the legalizations. I find persistent decreases in crime of 3 percent to 5 percent, primarily driven by a drop in property crimes. This fall in crime is equivalent to 120,000–180,000 fewer violent and property crimes committed each year across the nation due to legalization. Moreover, the declines in crime cannot be explained by existing trends, economic conditions, declines in drug crimes, changes to police forces and prison populations, or other common explanations of changes in crime rates during this period.

Looking more deeply into prior literature and examining surveys conducted on the legalized IRCA applicants, I find strong evidence for enhanced levels of human capital and greater labor market opportunities resulting from becoming legal residents. To this end, I also provide theoretical evidence that these increases in labor market opportunities and shifts from crime to legal work could be the primary mechanism that drove down crime.

* Finance Department, Kellogg School of Management, Northwestern University, 2169 Campus Drive, Evanston, IL 60208 (e-mail: s-baker@kellogg.northwestern.edu).

† Go to http://dx.doi.org/10.1257/aer.p20151041 to visit the article page for additional materials and author disclosure statement.

I. Legalization and Crime

While this legislation affected IRCA applicants in a number of ways, I focus on the potential impacts on crime. Other researchers have turned to various immigration and legalization programs in Europe to link legalization and crime. Bell, Machin, and Fasani (2013) examine two waves of immigration to the UK in the 1990s and 2000s, one composed of asylum seekers who were legally prevented from finding work, and one composed of workers from newly admitted EU countries. They find no impact on violent crime but find increases in property crime associated only with the first group. Freedman, Owens, and Bohn (2013) concur, finding evidence of decreases in crime associated with the ability of undocumented immigrants to obtain legal employment. Also of note is recent work by Mastrobuoni and Pinotti (forthcoming) and Pinotti (2014). With quasi-experimental designs, both find that there exists a negative relationship between legalization and both crime and recidivism rates.

In explaining this relationship, I turn to the literature on labor market effects of legalization. Much of the literature on undocumented immigrants highlights the lower wages that they received relative to legal immigrants, even conditional on observable education and skills. Part-time work and rapid job changing was common and stemmed from a desire to elude deportation as well as the insecure nature of their jobs in general. Employers were able to more easily fire undocumented workers, as they had essentially no legal recourse. Such frequent shifts in employment most likely hindered undocumented workers' ability to acquire job-specific capital and decreased average productivity.

In the years following the IRCA, a number of surveys have pointed to increases in both

Table 1—Legalization and Crime

Variables	All crime (1)	Nonzero IRCA (2)	Violent crime (3)	Property crime (4)	All crime (5)
Predicted IRCA per cap					−48.55*** (1.296)
Residual IRCA per cap					−3.520** (1.403)
IRCA per capita	−4.525*** (1.245)	−4.019*** (1.544)	−1.333 (1.829)	−4.022** (1.690)	
Observations	47,688	6,602	47,688	47,688	47,688
R^2	0.599	0.611	−0.654	0.585	0.599
Year FE	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes
Economic/crime controls	Yes	Yes	Yes	Yes	Yes

Notes: Dependent variable is log(crime per cap). IRCA per cap refers to the cumulative legalized weighted IRCA applicants per capita by county, weighted by criminal propensity of age and sex composition. Economic controls are unemployment rate, poverty rates, county income, and employment. Predicted IRCA per cap is the legalized applicants per capita predicted by filing date, county of filing, and all individual demographics. Residual IRCA refers to the difference between the Predicted and actual legalizations. Column 2 restricts sample to counties with nonzero IRCA applicants.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

language skills and education levels, as well as higher marriage rates, among IRCA applicants. Such increases spoke to increases in levels of general skills and productivity, coinciding with increases in wages of 15 percent to 25 percent among this group. In addition, they find that over 75 percent of applicants reported that it was easier to find work and that almost two-thirds said that it was easier to advance in their job following legalization. Kossoudji and Cobb-Clark (2000) find significant evidence for increased job mobility and upwards earnings trajectories for newly legalized IRCA applicants. Lozano and Sorenson (2011) examine the value of legal status, finding large effects on income among previously undocumented immigrants, speaking to better labor market access, skill acquisition, and more efficient bargaining.

II. Data

For data regarding the IRCA applicants, I use the 1990 Legalization Summary Tapes created by the Immigration and Naturalization Service (INS). This database can quantify the number and the demographics of the IRCA applicants in each county in the United States as well as their application and legalization dates. Overall, the mean ratio of IRCA applicants to county population is approximately 0.8 percent, with individual county values ranging from 0 percent to over 20 percent. For data on crime, I utilize the FBI's annual, country-level, Uniform Crime Reports (UCR) from 1980–2000. These data are assembled annually using a standardized methodology across the country.

III. Empirical Results

Table 1 shows results regressing logged crime per capita on the cumulative number of county-level IRCA legalizations per capita. From 1980 until 1986, this IRCA measure is zero for all counties, as no applicant had been legalized, and increases after 1986 as applicants are legalized. Column 1 reports that an increase of one percentage point in the number of legalized IRCA applicants per capita is associated with a fall in overall crime of 4.5 percent. Column 2 reports results from the same regressions with a sample restricted to counties with nonzero numbers of IRCA applications, finding a similar decline. Columns 3 and 4 report results for differing subsections

of arrests. I find that violent crime sees little decline while property crime underwent a significant fall associated with higher levels of IRCA legalizations. This suggests that economically motivated crimes were those most affected by the IRCA.

The application review process was one of the largest bureaucratic undertakings ever attempted by the INS up to that time. Setting up over 100 "legalization offices," the INS sent paperwork around the country in order to distribute work. The unfamiliarity of the INS with the massive undertaking, as well as the underestimate of the number of applicants, meant the INS was overwhelmed and the application approval process took much longer for some applicants than others. In essence, it meant that if two identical IRCA applicants both applied in mid-1987 in the same county, one might be legalized by the end of 1987 and the other remaining without legal status for up to three additional years. Using a cumulative measure of the legalized population allows me to exploit some of the quasi-randomness in timing of legalization to more precisely estimate effects that may occur upon legalization.

Column 5 displays results splitting cumulative IRCA legalizations per capita into predicted and unpredicted components, explicitly leveraging the variation in timing of legalization within counties. The "predicted" variable is based on the number of legalizations that were predicted to occur if each applicant experienced the average processing time to legalization, conditional on when and where they filed their application. I find little difference between these coefficients, suggesting that it was the number of realized legalizations that drove crime downwards, not anything about the number of applications or other county-specific attributes.

In Baker (2014), I undertake various robustness and placebo testing, finding that no other commonly cited drivers of crime can account for the observed relationship. I also find stronger evidence for the impact being largely on property crimes. Finally, I perform instrumental variables testing to attempt to extract exogenous drivers of IRCA applicant populations based on distance from borders and ports of entry, as well as historical immigrant populations across counties. Using these instruments, I find consistent estimates of declines in crime driven by increased numbers of legalizations.

IV. Labor Market Model

I propose a labor market model which relates shifts in labor market outcomes due to legalization with changes in rates of crime. In the model, an agent allocates his time between four activities: formal sector employment, informal sector employment, a crime sector, and a job search sector. Participation in formal employment is influenced by an agent's job search effort as well as by the amount of time spent in the crime sector. The agent has a probability of being apprehended that is increasing in the amount of time he allocates to crime. If apprehended, he receives only $\overline{c}$ consumption in the current period. While the crime sector has a higher wage than the informal labor sector, but agents have an inherent distaste for crime.

If employed in the full-time sector, this employment fills a set $\overline{h}$ of the agent's available time, reflecting a full-time job, and the remaining $(h - \overline{h})$ of time is allocated among the other sectors. Agents have probabilities of finding and losing formal sector employment that are governed by the amount of time spent on job search as well as by a three-state transition matrix. IRCA applicants and legal US residents are differentiated in the model by differing access to the formal employment sector. Prior to legalization, IRCA applicants are unable to access the formal employment sector.[1]

I calibrate parameters of the model, including those for full and part-time wages and for job finding and losing rates, to correspond to real-world values. In this model, the level of crime is equal to the total proportion of time allocated to the crime sector throughout the economy relative to the total amount of time available.

Numerically solving the model, I find that levels of crime drop by approximately 3.25 percent due to legalization's labor market effects. As applicants' wage and access to full-time employment grew, job search time rose while time in the crime sector fell. I find immediate drops in crime as all IRCA applicants are initially legalized and shift some of their time allocation towards job search from the crime sector. After these initial drops, there are then further

[1] Full model specifications and numerical results can be found in Baker (2014).

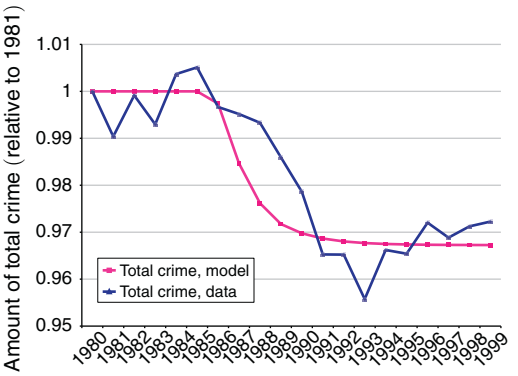

FIGURE 1. MODELED AND ACTUAL CHANGE IN CRIME

Notes: "Data" line denotes nonparametric coefficients of the all-time number of IRCA applicants per capita interacted with yearly dummies in a regression on crime. "Model" line denotes the path of crime from the calibrated model.

declines in crime over approximately eight years as IRCA applicants find full-time jobs and shift even further away from the crime sector.

Figure 1 displays a comparison of the model's predicted changes in crime and the empirically observed declines associated with IRCA applicant legalizations, finding a fairly close match. The plotted empirical estimates are coefficients from a regression of crime per capita on year dummies interacted with the total number of IRCA applicants in a given county. Thus, these coefficients represent the contribution of the IRCA applicant population to crime in a given county over time. This time-profile is consistent with a causal negative impact of legalization on crime and also with the gradual transition of IRCA applicants into the labor force, substituting away from criminal activities.

V. Conclusion

Undocumented immigration is, and will remain, an important topic in American politics and around the globe. One common method of dealing with undocumented immigration is a general or targeted amnesty program. The 1986 IRCA was one such program, eventually providing a path to legal residency in the United States to almost 3 million people.

I find that the implications of this amnesty program on the commission of crime are large, with estimated effects of approximately 3 percent to 5 percent. This decline is higher for property crime than for violent crime, suggesting more effect on crimes with an economic motive. I also provide some theoretical guidance with a labor market model of crime, finding that this model fits the data well and that much of the drop in crime could be attributed to greater job market opportunities among IRCA applicants.

REFERENCES

Baker, Scott R. 2014. "Effects of Immigrant Legalization on Crime: The 1986 Immigration Reform and Control Act." Stanford Law and Economics Working Paper 412.

Bell, Brian, Stephen Machin, and Francesco Fasani. 2013. "Crime and Immigration: Evidence from Large Immigrant Waves." *Review of Economics and Statistics* 95 (4): 1278–90.

Freedman, Matthew, Emily Owens, and Sarah Bohn. 2013. "Immigration, Employment Opportunities, and Criminal Behavior." Unpublished.

Kossoudji, Sherrie A., and Deborah A. Cobb-Clark. 2000. "IRCA's Impact on the Occupational Concentration and Mobility of Newly-Legalized Mexican Men." *Journal of Population Economics* 13 (1): 81–98.

Lozano, Fernando A., and Todd A. Sorensen. 2011. "The Labor Market Value to Legal Status." Study of Labor Discussion Paper 5492.

Mastrobuoni, Giovanni, and Paolo Pinotti. Forthcoming. "Legal Status and the Criminal Activity of Immigrants." *American Economic Journal: Applied Economics*.

Pinotti, Paolo. 2014. "Clicking on Heavens Door: The Effect of Immigrant Legalization on Crime." Baffi Center Research Paper 2014-154.