

APPENDIX – NOT FOR PUBLICATION

**Clicking on Heaven's Door:
The Effect of Immigrant Legalization on Crime**

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Estimating equations

Consider a sample $i = 1, 2, \dots, N$ of applicants at the Click Day. Adopting the same notation as in Section II, let $C_i = 1$ if the i -th applicant commits a crime after Click Days; $L_i = 1$ if i obtains legal status; X_i is the timing of application ($X = 0$ at the cutoff); and $Z_i = 1$ if the application is received before the cutoff (i.e., $Z_i \equiv \mathbf{1}\{X_i \leq 0\}$).

Following Hahn, Todd and Van der Klaauw (2001), the reduced-form and first-stage effect of Z can be estimated non-parametrically by kernel local linear regression

$$(A1) \quad \min_{\beta, \gamma'} \sum_i K\left(\frac{X_i}{\Delta}\right) \cdot (C_i - \beta Z - \gamma_0 - \gamma_1 X_i - \gamma_2 X_i \cdot Z_i)^2$$

$$(A2) \quad \min_{\alpha, \delta'} \sum_i K\left(\frac{X_i}{\Delta}\right) \cdot (L_i - \alpha Z - \delta_0 - \delta_1 X_i - \delta_2 X_i \cdot Z_i)^2,$$

where $K\left(\frac{X_i}{\Delta}\right)$ is a triangular kernel attaching positive weights only to observations within a bandwidth Δ of the cutoff $X = 0$. Fully-parametric regressions include all observations and control for higher-order polynomials in the running variable X on the right-hand side of the equation:

$$(A3) \quad C_i = \theta_0 + \beta Z_i + \sum_{j=1}^J \theta_j X_i^j + \sum_{j=1}^J \vartheta_j X_i^j \cdot Z_i + \epsilon$$

$$(A4) \quad L_i = \pi_0 + \alpha Z_i + \sum_{j=1}^J \pi_j X_i^j + \sum_{j=1}^J \varpi_j X_i^j \cdot Z_i + \nu,$$

where ϵ and ν are error terms summarizing the effect of other omitted factors, and J is the order of the polynomial. The coefficients β and α capture the extent of any discontinuity in C and L at the cutoff – net of any smooth trend in the running variable X . The 2SLS coefficient β/α consistently estimates the LATE in equation (2).

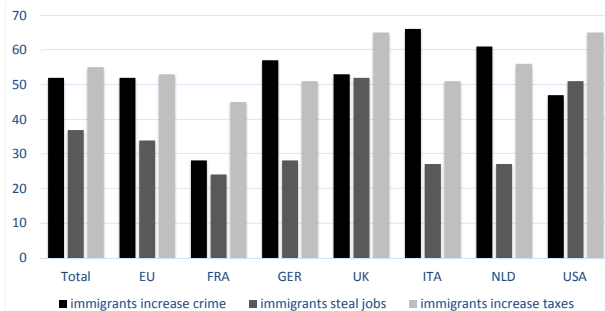
Additional figures

FIGURE A1. PERCENTAGE OF NATIVES CONCERNED ABOUT THE IMPACT OF IMMIGRANTS ON JOBS, TAXES, AND CRIME

Note: This figure shows the main reasons for opposition to immigrants, based on the results of the Transatlantic Trends survey. In year 2008, the survey asked whether the interviewed was concerned that “immigration will increase crime in our society”, “immigration will cause taxes to be raised because of immigrants’ demand for social services”, and “immigrants take jobs away from the native born”, respectively.

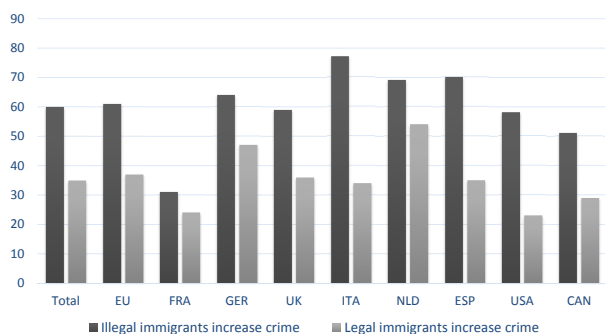


FIGURE A2. PERCENTAGE OF NATIVES CONCERNED ABOUT THE IMPACT OF LEGAL AND ILLEGAL IMMIGRANTS ON CRIME

Note: This figure compares crime concerns about legal and illegal immigrants, based on the results of the Transatlantic Trends survey. In year 2009, the survey asked whether the interviewed was concerned that “legal immigrants increase crime” and “illegal immigrants increase crime”, respectively.

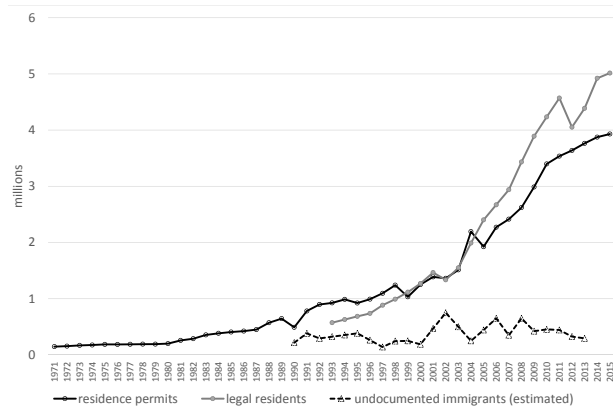


FIGURE A3. LEGAL FOREIGN RESIDENTS AND UNDOCUMENTED IMMIGRANTS IN ITALY

Note: This figure plots the number of residence permit-holders from 1971 to 2015, the number of legal foreign residents from 1993 to 2015, and the estimated number of undocumented immigrants from 1990 to 2013. The sources of these data are, respectively, the Italian Ministry of Interior, ISTAT, and ISMU Foundation (2015).

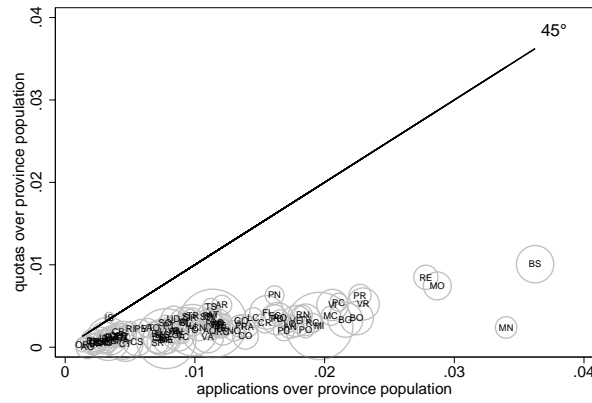


FIGURE A4. QUOTAS OF RESIDENCE PERMITS ESTABLISHED FOR YEAR 2008 AND APPLICATIONS RECEIVED, BY PROVINCE

Note: This table reports the provincial quotas established at the end of 2007 for 2008, the number of applications received, and the ratio of quotas to applications, both divided by province population. The size of markers is proportional to the total province population; the 45-degree line is also included in the graph.

FIGURE A5. SCREENSHOT OF AN APPLICATION SENT THROUGH THE WEBSITE OF THE MINISTRY OF THE INTERIOR DURING A CLICK DAY

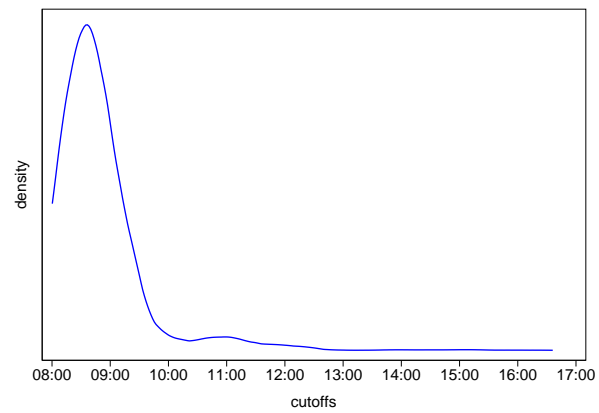


FIGURE A6. DENSITY OF CUTOFF POINTS ACROSS APPLICANTS

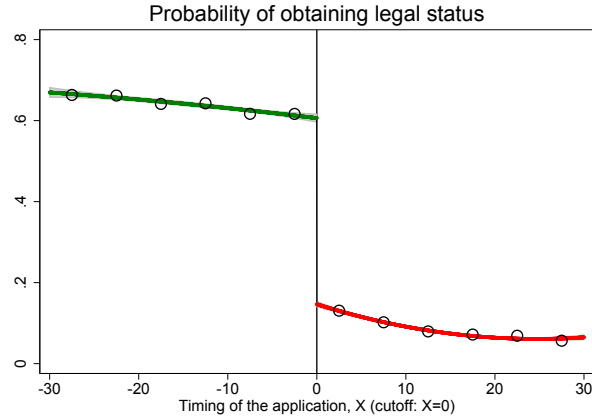


FIGURE A7. FIRST STAGE REGRESSION OF THE PROBABILITY OF OBTAINING A RESIDENCE PERMIT ON THE TIMING OF APPLICATION

Note: The graph shows the average probability of obtaining legal status conditional on the timing of application X across all lotteries, with $X = 0$ being the estimated cutoff. The scatterplots are averages within 5-minute bins, and the solid lines and shaded areas are the predicted outcomes and associated confidence intervals, respectively, based on a quadratic polynomial regression.

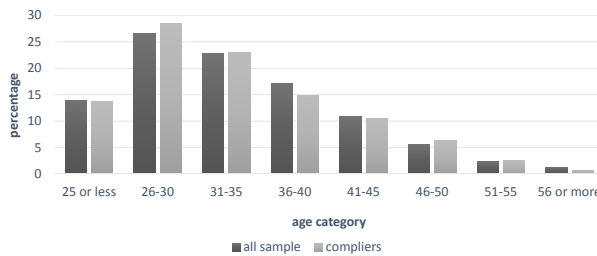


FIGURE A8. AGE DISTRIBUTION AMONG COMPLIERS WITH TREATMENT ASSIGNMENT AND IN THE TOTAL SAMPLE

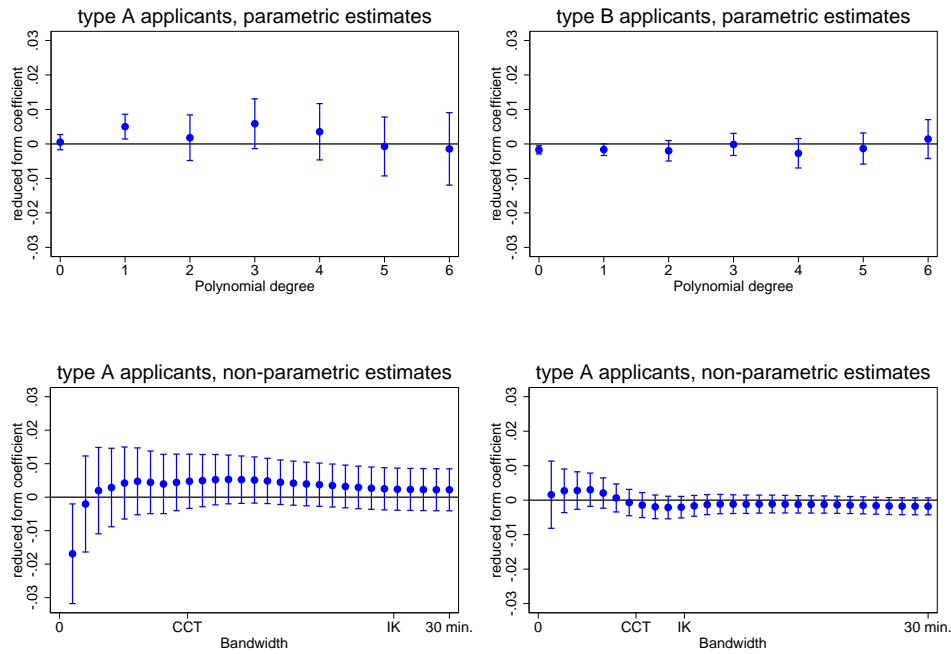


FIGURE A9. SENSITIVITY ANALYSIS, REDUCED FORM ESTIMATES FOR 2007

Note: The graphs show the reduced form regression of the crime in the year before Click Days (2007) on the instrument $Z = 1$ for immigrants applying before the cutoff for different specifications of parametric and non-parametric regressions, distinguishing between type-A and type-B applicants. In particular, the two graphs on the top show the point estimates and associated confidence intervals when varying the degree of the parametric polynomial regression between 0 and 6. The two graphs on the bottom show the point estimates and confidence intervals when varying the bandwidth of the non-parametric regressions between 1 and 30 minutes; the bandwidths selected according to the IK2012 and CCT2014 criteria are also reported on the horizontal axis.

Additional tables

TABLE A1—CHARACTERISTICS OF COMPLIERS WITH TREATMENT ASSIGNMENT AND TOTAL SAMPLE (PERCENTAGES)

	compliers	total sample
Serious crime before Click Day 2007	1.2	1.1
Low-income country of origin	10.2	7.4
Lower-middle income country	55.9	50.5
Upper-middle income country	33.4	41.2
High-income country	0.5	1.0

TABLE A2—DIFFERENTIAL EFFECT OF LEGAL STATUS ON TYPE A AND TYPE B APPLICANTS, 2SLS ESTIMATES

	(1)	(2)	(3)	(4)
	Baseline OLS		FEs, clustered s.e.	
Second stage:				
Legal status	-0.006 (0.003)	0.000 (0.005)	-0.006 (0.004)	0.001 (0.005)
Type A	0.005 (0.002)	0.010 (0.003)	0.001 (0.002)	0.006 (0.003)
Legal Status \times Type A		-0.013 (0.007)		-0.014 (0.007)
First stage for Legal status:				
Z	0.460 (0.007)	0.372 (0.009)	0.463 (0.029)	0.373 (0.041)
Type A	0.030 (0.007)	-0.083 (0.007)	0.062 (0.013)	-0.056 (0.026)
$Z \times$ Type A		0.237 (0.014)		0.246 (0.051)
F-statistic (excluded instruments)	4346.45	1645.26	249.91	83.37
First stage for Legal status X Type A:				
Z		-0.000 (0.000)		0.001 (0.001)
Type A		0.093 (0.005)		0.082 (0.018)
$Z \times$ Type A		0.610 (0.010)		0.619 (0.032)
F-statistic (excluded instruments)		3488.91		367.89
Observations	110,337	110,337	110,337	110,337

Note: This table reports the 2SLS estimated effect of legal status on the crime rate of Click Day applicants. The dependent variable is a dummy $C = 1$ for individuals that committed at least one serious offense in the year after Click Days (2008); the explanatory variables of interest are a dummy $L = 1$ for applicants obtaining legal status in year 2008 and its interaction with a dummy for Type A applicants; the first stage instruments are a dummy $Z = 1$ for having applied before the cutoff time at the Click Day 2007 and its interaction with the dummy for Type A applicants. The first stage coefficients and the F-statistic for the excluded instrument adjusted for heteroskedastic and clustered standard errors (i.e., the Kleibergen-Paap statistic) are also reported. All regressions control for a quadratic polynomial in the time elapsed since the cutoff (by the millisecond) and its interaction with Z , the specifications in columns (2) and (4) further interact the dummy for type A applicants with the polynomial and its interaction with Z , and the specifications in columns (3) and (4) also include lottery-fixed effects and a quadratic polynomial in age. Robust standard errors are reported in parentheses, and they are clustered by lottery in columns (3)-(4).

TABLE A3—REDUCED FORM EFFECT ON THE NUMBER OF CRIMES PER APPLICANT, GLOBAL POLYNOMIAL REGRESSION (ROBUSTNESS)

	(1)	(2)	(3)	(4)	(5)	(6)
	province fixed effects			province X nationality FE		
	all	type A	type B	all	type A	type B
<i>Panel A: Year 2008</i>						
Reduced form	-0.003 (0.002)	-0.008 (0.003)	0.000 (0.002)	-0.003 (0.002)	-0.008 (0.003)	0.000 (0.002)
2SLS effect of legal status	-0.006 (0.003)	-0.013 (0.005)	0.001 (0.005)	-0.006 (0.003)	-0.013 (0.005)	0.001 (0.005)
<i>Panel B: Year 2007</i>						
Reduced form	-0.000 (0.002)	0.002 (0.004)	-0.002 (0.001)	-0.000 (0.002)	0.002 (0.004)	-0.002 (0.002)
Observations	110,337	40,451	69,886	110,337	40,451	69,886

Note: This table shows parametric estimates of the effect of legal status on the crime rate of Click Day applicants. Panel A reports reduced form and 2SLS regressions of a dummy $C = 1$ for applicants that committed at least one serious offense in 2008 on a dummy $L = 1$ for applicants obtaining legal status on Click Days. The first stage instrument is a dummy $Z = 1$ for having applied before the cutoff time, the first stage coefficient of Z and the F-statistic for the excluded instrument (adjusted for heteroskedastic and clustered standard errors) are also reported. Panel B of the table reports the reduced form regression of a dummy for committing at least one serious offense in the year before Click Days (2007) on the instrument Z . All regressions control for a quadratic polynomial in the time elapsed since the cutoff (by the millisecond) and its interaction with Z , and for a quadratic polynomial in age. The specifications in columns (1)-(3) include province fixed effects and cluster robust standard errors by province, whereas the specifications in columns (4)-(6) include province \times nationality fixed effects and cluster robust standard errors by province \times nationality.