



What drives the legalization of immigrants? Evidence from IRCA[☆]

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ABSTRACT

We develop a model to understand the trade-offs faced by an elected representative in supporting an amnesty when a restrictive immigration policy is in place. We show that an amnesty is more desirable the more restricted are the occupational opportunities of undocumented immigrants and the smaller is the fiscal leakage to undocumented immigrants via the welfare state. Empirical evidence based on the voting behavior of U.S. Congressmen on the Immigration Reform and Control Act of 1986 provides strong support for the predictions of our theoretical model.

“The 855-page Senate bill ... contains a path to citizenship. Proponents avoid calling it amnesty, even as they tout the moral imperative of bringing 11 million people out of the shadows. Opponents wield the word as a weapon, decrying amnesty as a free pass to lawbreakers ...”

Cindy Chang (2013)¹

1. Introduction

Growing migration pressures in the presence of restrictive immigration policies have made illegal immigration – i.e. the movement of people across national borders in violation of the immigration laws of destination countries – widespread. As a result, most rich destination countries harbor today large populations of undocumented foreigners.² Among host countries, the U.S. stands out as one the largest recipients

of illegal immigrants (Dustmann and Frattini, 2013), and recent estimates suggest that in 2014 3.5% of the total population, or 11.3 million individuals, was made up by irregular migrants. The legal status of migrants clearly reflects the policy stance of the destination country, both in terms of the ex-ante controls introduced to discipline the flows, and the ex-post measures taken to grant legal status. In particular, legalization programs, commonly known also as immigration amnesties, have been the focus of much attention, and much controversy.

The purpose of this paper is to study the trade-offs faced by a politician in the decision to support the introduction of an immigration amnesty. To address this question, we develop a model in which immigration policy involves a minimum skill requirement,³ which can-

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¹ LA Times May 12, 2013, available at <http://articles.latimes.com/2013/may/12/local/la-me-amnesty-20130513>.

² Throughout the paper we will use “irregular”, “illegal” and “undocumented” immigrants as synonyms.

³ See Czaika and Parsons (2017) for a recent analysis of the effects of skill selective migration policies on the composition of migration flows.

not be perfectly enforced,⁴ leading to the possible presence of illegal immigrants. To establish whether an amnesty is desirable, our analysis focuses on a novel cost–benefit calculus, involving a potential welfare gain arising from the new labor market opportunities available to legalized migrants, and a potential loss resulting from them gaining access to the welfare state. More specifically, in our model the labor market is characterized by imperfect skill matching between employers and employees, and by the presence of a formal sector, where only legal migrants can find employment, and of an informal one, to which illegal immigrants are restricted. As a result, some illegal workers who could have taken up a highly skilled job in the formal sector, are prevented from doing so, leading to a potential output loss. The role of the welfare state is captured by a simple redistributive mechanism consisting of a proportional tax levied on the formal sector and of a lump-sum benefit paid to all natives and legal migrants, whereas illegal immigrants are instead excluded from it.

We show that the incentives to support a legalization program are stronger, the greater is the improvement in the labor market opportunities available to legalized workers as a result of them gaining access to the formal sector. At the same time, since low-skilled legalized foreign workers will gain access to welfare benefits, a larger transfer towards them, i.e. a larger fiscal leakage, makes a legalization less desirable.

In the second part of the paper, we empirically assess the predictions of our model. To this end, we study the determinants of the voting behavior of U.S. Representatives on the Immigration Reform and Control Act (IRCA H.R. 3810) of 1986. Voting on IRCA is an ideal testing ground for our theory for at least three reasons. First, the enactment of this bill resulted in one of the largest legalization programs ever undertaken in the Western world: 2.8 million individuals – or 1.2 percent of the total population of the country – became entitled to permanent residency, with long lasting consequences for the U.S. economy, and for the political debate around immigration reform. Second, IRCA was a highly controversial bill, which passed after years of negotiations with only 58% of the House supporting it, and with considerable variability in the votes across space (even within the same state). Third, the data at our disposal are unique as we can match the voting behavior of elected congressmen to a wealth of constituency level characteristics. In particular, using information from the INS Legalization Summary Tapes we know that between 70% and 80% of the participants in IRCA's legalization programs were from Mexico, and about 8% from El Salvador. Implementing (and adapting) the procedure recently proposed by Borjas (2017) we identify likely undocumented migrants among Mexicans and Salvadorians observed in the 1980 census.⁵ Using this information at the individual level, we then construct detailed measures of the labor market mismatch of illegal immigrants before the legalization took place – based on their degree of over-education in each two digit occupation – and of the fiscal leakage to immigrants – based on the district's fiscal exposure to immigration (Hanson et al., 2007) and on the extent of redistribution across districts. Our empirical analysis shows that the drivers identified in the theoretical framework play a key role. In particular, our preferred specification indicates that a 10 percentage points increase (about 50% of a standard deviation) in the labor market mismatch suffered by illegal migrants leads on average to an increase of 4.3 percentage points in the probability of a representative voting in favor of IRCA (an increase of about 7.3% at the sample mean). Furthermore, representatives of districts facing high

local fiscal exposure to immigrant legalization (13.1% of the total) are 29.6 percentage points (51% at the sample mean) less likely to support IRCA than representatives of districts characterized by a low fiscal leakage. Finally, a ten percent increase in median family income in the district (about two thousand U.S. dollars, or half of a standard deviation) is associated with a 7.4 percentage points (12.7% at the sample mean) decrease in the probability of a representative supporting IRCA.

Besides the factors highlighted in our theoretical model, the existing literature has emphasized the role played by several drivers that might influence a representative's voting behavior on immigration reform. Thus, to assess the robustness of our findings, we account for several additional individual- and constituency-level characteristics. While we find that some of them matter, our main results are unaffected. The same holds true when we use an alternative econometric specification, and account for the possibility of sample selection. Our results confirm that the expected impact of labor market mismatch and of the redistribution performed by the welfare state are robust drivers of support for IRCA.

This paper contributes to the small but growing literature on immigration amnesties. Chau (2001) shows that legalizing undocumented workers can be part of an optimal migration policy package – together with internal and border controls – when there is a time inconsistency problem because the government cannot commit to implement the ex-ante optimal frequency of internal controls. Importantly, in her model all workers share the same skill level and all immigrants are ex-ante undocumented. They can become legal only as a result of an amnesty.

Karlson and Katz (2003) develop a model of illegal immigration focusing instead on the role of amnesties as a tool for governments to induce immigrants to self-select based on ability. In particular, they emphasize that a legalization will offer skilled workers better labor market opportunities. As a result, the latter might be enticed to migrate even as illegals, in the hope that an ex-post legalization will improve their income opportunities.⁶ Differently from Chau (2001) and Karlson and Katz (2003), besides considering heterogeneous workers and firms, we allow for the co-existence of legal and illegal immigrants.⁷

Epstein and Weiss (2011) also study the desirability of legalization programs. In their setting, immigrants can only enter the country illegally, and can become legal as the result of an amnesty. Immigration is always costly from the destination country's point of view, and the cost depends only on the total number of immigrants, and not on their skill level. Moreover, migrants earn the same wages irrespective of their status. Empirical evidence has instead pointed out that the wages of legalized migrants do improve following an amnesty, and so do wage growth and return to skill (Borjas and Tienda, 1993; Kos-soudji and Cobb-Clark, 2002; Kaushal, 2006; Amuedo-Dorantes et al., 2007). This is likely due to an increase in the geographical and occupational mobility of legalized migrants and in the quality of their job matches (Amuedo-Dorantes and Bansak, 2011; Steigleder and Sparber, 2015). More generally, the skill level of the illegal migrant population is likely to be an important determinant of the welfare consequences of a legalization program, and modeling this lies at the center of our analysis.⁸ The skill profile of illegal immigrants is also at the heart of the analysis of the labor market effects of an amnesty carried out by Chassamboulli and Peri (2015). In particular, they build a general equilibrium search model to show that a legalization has an adverse effect on the wages of unskilled native workers,

⁴ This is of course only one of the many features of the migration policies in place in destination countries. We focus on it to simultaneously model the presence of legal and illegal immigrants. The same objective could be achieved by introducing a policy taking the form of a migration quota as in Facchini and Testa (2010). For a discussion see Section 2.

⁵ See Section 5 for more details.

⁶ See Docquier and Rapoport (2012) for a recent survey on the economics of skilled migration.

⁷ For a political economy model of immigration amnesties, see also Chau (2003).

⁸ For a quantitative assessment of the effect of an amnesty in the United States, see Machado (2013).

while instead having a broad positive effect on native skilled workers. Importantly, in their setting the decision to support an amnesty is not modeled.

The remainder of the paper is organized as follows. Section 2 introduces the basic setup, whereas Section 3 establishes the conditions for the desirability of a legalization. Section 4 outlines the debate around the introduction of IRCA, and Section 5 describes the data we use. Section 6 develops our empirical analysis. Section 7 assesses the robustness of our results and Section 8 concludes.

2. The model

To analyze the drivers of support for immigration amnesties, we consider a model with a polity featuring D districts/constituencies. In the representative district, domestic production factors and foreign workers are combined to produce a single good. To keep the analysis simple, they are assumed to be complements, and are both required for positive output levels to be generated.⁹ As a result, the presence of migrants in the labor market is necessarily beneficial, generating the “gains from migration” that have been emphasized in the literature (Berry and Soligo, 1969; Borjas, 1995).¹⁰ Yet, the presence of a redistributive welfare state implies that these gains must be traded off against the potential welfare losses induced by the leakage of benefits to migrants.¹¹

For simplicity, we will think of the domestic factor owners as entrepreneurs.¹² There are \mathcal{J} potentially active firms in the constituency, each one of them indexed by i , with i distributed according to the density function $n(i)$ on the interval $[0, 1]$. Firms can be ranked according to their skill intensity and a higher value of i indicates a higher skill requirement, with 1 being the most skill-intensive firm. The mass of the domestic population is given by N , where $\mathcal{J} \geq N$. A firm will become active if it is matched with a worker.

Potential immigrants differ in their ability, and are indexed by j , with j distributed according to the density function $m(j)$ on the interval $[0, 1]$, with 1 being the highest skill level. To capture in a simple fashion labor market imperfections, we use a random matching framework whereby individual abilities and a vacancy's skill requirement are not necessarily perfectly combined and consequently some highly qualified workers might end up in low-skill jobs, some others may be unemployed, and/or some firms might not be able to find suitable members of staff. Formally, if a migrant is employed, a match of value $v(i, j)$ is created and shared between natives and migrants, where

$$v(i, j) = \begin{cases} [1 - (j - i)]v(j) & \text{if } j \geq i \\ 0 & \text{if } j < i. \end{cases} \quad (1)$$

⁹ At the same time, in our simple model legal and illegal migrants are assumed to be substitutes of each other, as they compete for vacancies in the labor market.

¹⁰ Following for example Benhabib (1996), we could have instead set up a model with two production factors, e.g. skilled and unskilled labor, in which natives and migrants supply both types of inputs. In his setting, domestic and foreign skills are perfect substitutes. Still, under the assumption that output is generated with a constant returns to scale neoclassical production function, Benhabib shows that gains from migration occur, as long as the skill composition differs between natives and migrants (Proposition 1 part (a)). The advantage of such a framework would be to allow for the presence of redistributive effects of legalization through the labor market. At the same time, since support for the legalization in our model is based on its effect on aggregate welfare, the presence of these distributional effects would not alter the main findings of the analysis, while making the functioning of the labor market matching less transparent. Note also that several recent papers, using very different modeling assumptions, have shown that receiving countries tend to experience an increase in welfare due to the arrival of immigrants, thus providing broad support for the basic effect identified in our model. This is true for example both in quantitative exercises based on heterogeneous firm models à la Melitz (di Giovanni et al., 2015) – and in labor market matching models (Battisti et al., 2017).

¹¹ For evidence on the leakage of welfare state benefits from natives to migrants in the U.S. context, see Borjas and Hilton (1996) and Borjas and Trejo (1991).

¹² We have chosen this terminology for expositional convenience, but we could as well think of domestic factor owners simply as workers whose skills are combined in a firm with those of the migrants to produce output, and our results would not be affected.

Note that since higher values of j characterize more skilled individuals, it is reasonable to assume that $v(j)$, i.e. the maximum value of the match generated by a worker of skill j , increases with j . At the same time, equation (1) implies that the value of the match for worker j is maximized if he occupies a vacancy offered by a firm of type j . Furthermore, this value is zero if a migrant of skill level j ends up in a job i for which he is under-qualified (i.e. $j < i$) and finally, if a migrant of skill j obtains a job for which he is over-qualified (i.e. $j > i$), then the value of the match is still positive, but smaller than the one that could be achieved if $i = j$. The probability that individual j is matched to vacancy i is described by the joint density function $f(i, j)$.

A formal and an informal sector coexist in the economy, and we assume that on average the former requires a more highly skilled labor force than the latter. This is consistent with the evidence reported by Schneider (2011), who documents that the shadow economy is particularly large in unskilled labor intensive industries such as construction, wholesale and retail trade and hotels and restaurants. We model the different factor requirements of the two sectors by assuming that firms with skill intensity above a given threshold \tilde{i} represent the formal economy, whereas firms with skill intensity below \tilde{i} constitute the informal economy.

The status quo migration policy – common to all constituencies – involves a minimum skill requirement j^* for legal migrants, which cannot be perfectly enforced. The result is that illegal immigration will emerge if the policy is always binding, i.e. if there are always more migrants willing to enter than those accepted as legal. We will assume this to be the case throughout our analysis.¹³ Importantly, while legal migrants can work in both sectors, illegal immigrants do not enjoy the same employment opportunities, and can work only in the informal sector.¹⁴ Note that modeling the migration policy as a minimum skill requirement enables us to capture an important difference between legal and illegal migrants, i.e. the fact that the former are – on average – more skilled than the latter (see for instance Passel, 2005 and Hanson, 2007). Furthermore, skill selective immigration policies are becoming increasingly widespread among many important destination countries, as documented by Boeri et al. (2012).

The number of legal migrants, i.e. those whose skill level is above the threshold j^* , is given by $M(j^*, 1) = \int_{j^*}^1 m(j) dj$, whereas the number of illegal immigrants is given by $M(j^{ill}, j^*) = \int_{j^{ill}}^{j^*} m(j) dj$, where j^{ill} is the exogenously given skill level of the least qualified migrant worker entering the country illegally. If legal migrants are employed in the formal sector, they generate a total expected income denoted by

$$V(j^*, 1; \tilde{i}, 1) = \int_{j^*}^1 \int_{\tilde{i}}^1 v(i, j) f(i, j) di dj, \quad (2)$$

whereas if they end up in the informal sector, they generate a total expected income given by

$$V(j^*, 1; 0, \tilde{i}) = \int_{j^*}^1 \int_0^{\tilde{i}} v(i, j) f(i, j) di dj. \quad (3)$$

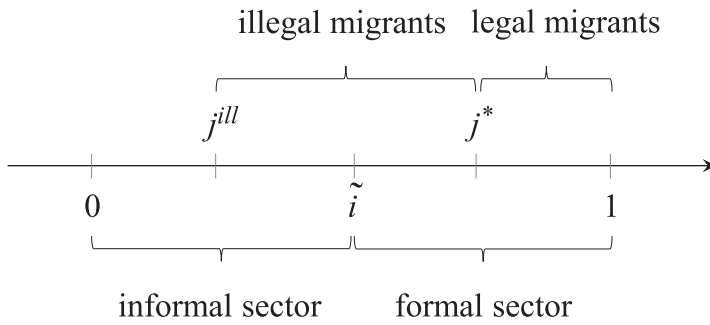
Illegal migrants can work only in the informal sector, i.e. for every illegal migrant j , with $j < j^*$, $v(i, j) = 0$ if $i > \tilde{i}$. They generate an expected income given by

$$V(j^{ill}, j^*; 0, \tilde{i}) = \int_{j^{ill}}^{j^*} \int_0^{\tilde{i}} v(i, j) f(i, j) di dj. \quad (4)$$

Our assumption that immigration policy is always binding results in $j^{ill} < j^*$, i.e. illegal immigration always takes place. Moreover, to

¹³ See Mayda (2010) for evidence that migration policies in many destination countries are likely to be binding.

¹⁴ Notice that our results would not be affected if we allowed the two sectors to partially overlap in terms of skill intensity, as long as illegal immigrants continue to be restricted in their labor market opportunities.

Fig. 1. The distribution of migrants j and firms i .

make the problem interesting, we impose that $j^{ill} < \tilde{i} < j^*$, i.e. that at least some illegal migrants are sufficiently skilled that in the absence of restrictions to their employment opportunities, they could be employed in the formal sector.¹⁵ The top portion of Fig. 1 illustrates the status of migrants according to their skill level, whereas the bottom one shows the breakdown of firms between those active in the formal and those active in the informal sector, depending on their skill intensity. Natives and migrants share the expected value of a match. Let α and β be the fractions which are appropriated by each firm's owner in the formal and the informal sectors, respectively, with $\beta \geq \alpha$ to capture the idea that the bargaining power of firms' owners is likely to be larger in the informal rather than in the formal sector.

The constituency is characterized by the presence of a redistributive welfare system, which has important implications for the desirability of an immigration amnesty (Razin et al., 2002). We assume that redistribution takes place by means of an exogenously given proportional income tax τ and a lump-sum transfer b , which adjusts in order to keep the budget balanced. All natives and legal immigrants in the formal sector contribute to the welfare system, whereas both natives and migrants active in the informal sector do not. All natives and legal migrants are entitled to receive the welfare state benefits, whereas illegal migrants are not.¹⁶ The constituency's budget is thus given by

$$\tau V(j^*, 1; \tilde{i}, 1) = b [N + M(j^*, 1)]. \quad (5)$$

To capture the existence of a fiscal leakage from natives to immigrants (Borjas and Hilton, 1996; Borjas and Trejo, 1991; Razin et al., 2002; Blau and Mackie, 2016), we consider the relationship between the average taxable income of natives and the average taxable income of immigrants. For any j , the former is given by

$$Y^N = \alpha \frac{V(j, 1; \tilde{i}, 1)}{N}, \quad (6)$$

whereas the latter is captured by

$$Y^M = (1 - \alpha) \frac{V(j, 1; \tilde{i}, 1)}{M(j, 1)}. \quad (7)$$

The condition for the presence of a fiscal leakage is $Y^N > Y^M$, which, using equations (6) and (7) can be rewritten as

$$\frac{\alpha}{1 - \alpha} > \frac{N}{M(j, 1)}. \quad (8)$$

If at a given j equation (8) is satisfied, the implication is that, for any proportional tax rate τ , on average natives will be net contributors to the welfare state, whereas immigrants will be on average net

receivers.^{17,18} At the same time, it might well be that some migrants are net contributors and some natives end up on the receiving end of the welfare state.

3. When is a legalization desirable?

In this section we determine the conditions under which a legalization program is desirable from the point of view of a policy maker who maximizes the aggregate welfare of the natives in her constituency.¹⁹ If a legalization is introduced, it will involve all illegal immigrants,²⁰ and will have the following effects. First, legalized migrants will have access to the full set of occupations, i.e. those in the formal and those in the informal sector. At the same time, they will receive benefits from the welfare state, but they will contribute to it only if they work in the formal sector. In other words, legalized migrants share the same rights and obligations as the natives.

The welfare of the constituency is denoted by w^z , with $z \in \{L, NL\}$, where L stands for legalization and NL for the lack of it. If no legalization is implemented, at the status quo policy j^* we have

$$w^{NL} = \alpha(1 - \tau)V(j^*, 1; \tilde{i}, 1) + \beta V(j^{ill}, 1; 0, \tilde{i}) + b^{NL}N \quad (9)$$

with $b^{NL} = b$ determined according to equation (5). Thus, welfare depends linearly on the net income accruing to the natives from the employment of legal migrants in the formal sector (first term on the right hand side), in the informal sector (second term) and on the lump-sum transfer received by the natives (third term). If a legalization is introduced we have instead

$$w^L = \alpha(1 - \tau)V(j^{ill}, 1; \tilde{i}, 1) + \beta V(j^{ill}, 1; 0, \tilde{i}) + b^LN, \quad (10)$$

¹⁷ In particular, as pointed out by Blau and Mackie (2016), page 250: "In the United States, first generation immigrants have historically exhibited lower skills and education and, in turn, income relative to the native-born. Analyses of New Jersey and California for The New Americans (National Research Council, 1997, pp. 292–293) concluded that the estimated negative fiscal impacts during the periods 1989–90 and 1994–95, respectively, were driven by three factors: (1) immigrant-headed households had more children than native households on average, and so consumed more educational services on a per capita basis; (2) immigrant-headed households were poorer than native households on average, thus making them eligible to receive more state and locally funded income transfers; and (3) due to their lower average incomes, immigrant-headed households paid lower state and local taxes." In a recent interview in the New York Times ("Immigrants aren't taking American Jobs, New Study Finds, September 21, 2016") Professor Blau concluded that in the U.S. even today "The first generation of newcomers generally cost governments more than they contribute in taxes, with most of the costs falling on state and local governments, mainly because of the expense of educating the children of immigrant families."

¹⁸ Allowing for a differential tax treatment between entrepreneurs and workers, and in particular assuming a higher income tax rate for entrepreneurs, will make it more likely for native entrepreneurs to be net contributors to the welfare state, and make the fiscal leakage more severe.

¹⁹ The process through which the aggregation of individual preferences takes place is obviously more complex, but welfare maximization is a useful theoretical benchmark. In our empirical analysis we take that into account, for example, by exploring the role played by pressure groups.

²⁰ We do not consider selective amnesties, as this would complicate the analysis, without changing the main determinants of the introduction of legalization programs. Moreover, the conditions we uncover for the desirability of general amnesties are more stringent than those which would apply to the implementation of selective measures.

¹⁵ This assumption is in line with the evidence reported in Kossoudji and Cobb-Clark (2002) indicating that the wages of legalized migrants increase as a result of the legalization.

¹⁶ Of course these are simplifying assumptions, but they capture the stylized facts that the informal sector is often characterized by widespread tax evasion and legal and illegal migrants differ in their net position towards the welfare state. See Camarota (2004).

with

$$b^L = \frac{\tau V(j^{ill}, 1; \tilde{i}, 1)}{N + M(j^{ill}, 1)} \quad (11)$$

indicating the lump-sum transfer paid out by the welfare state when all migrants have access to it. Note that when a legalization is implemented (see equation (10)) all migrants present in the constituency can be employed in the formal sector (first term in equation (10)), but some of them will still end up in the informal one (second term in equation (10)). We can then establish the following result:

Proposition 1. *A legalization is supported when $w^L > w^{NL}$. This condition is more likely to be satisfied the bigger is the gain to aggregate income accruing to natives by allowing legalized workers access to a broader range of occupations and the smaller is the fiscal leakage to legalized migrants.*

Proof. Subtracting equation (9) from equation (10) we obtain the following expression, which captures the incentives faced by the policy maker to support a legalization:

$$w^L - w^{NL} = \alpha(1 - \tau)V(j^{ill}, j^*; \tilde{i}, 1) + N(b^L - b^{NL}). \quad (12)$$

A legalization will be supported when $w^L - w^{NL} > 0$. The sign of $w^L - w^{NL}$ is determined by the relative size of the two terms on the right hand side of (12). The first term, which is positive, captures the labor market matching channel: the bigger is $V(j^{ill}, j^*; \tilde{i}, 1)$, i.e. the bigger is the increase in expected output appropriated by natives by granting legalized migrants access to the formal economy, the more likely it is that a legalization will be supported. The second term captures the change in the redistributive benefit received by the natives following the legalization, and denotes the effect of the welfare state on the desirability of a legalization. In the presence of a fiscal leakage from the natives to the immigrants, i.e. equation (8) is satisfied at $j = j^{ill}$, we have that $b^L < b^{NL}$: since all immigrants working in the formal sector are fully engaged in the welfare state and their taxable income is on average lower than that of natives, the lump-sum transfer paid out by the welfare state decreases in the event of a legalization. The second term is therefore negative. Using equations (5) and (11), we can rewrite $(b^L - b^{NL})$ as $\tau N \left[\frac{V(j^{ill}, 1; \tilde{i}, 1)}{N + M(j^{ill}, 1)} - \frac{V(j^*, 1; \tilde{i}, 1)}{N + M(j^*, 1)} \right]$. For given τ , the difference $(b^L - b^{NL})$ depends, thus, on the extent to which the average taxable income in the economy declines after the legalization. The larger is the decline, and therefore the stronger the fiscal leakage from natives to migrants, the less likely it is that the legalization is supported.²¹ ■

Summing up, our theoretical model indicates that, for a policy maker who maximizes the aggregate welfare of natives in her constituency, the incentives to legalize are stronger the bigger is the gain to expected aggregate (net) income brought about by granting legalized workers access to all the available employment opportunities, and the smaller is the fiscal leakage due to entitling lower-skilled legalized foreign workers to welfare benefits. In the remainder of the paper, we investigate the empirical relevance of the labor market and welfare state channels in explaining the incentives to support a legalization program.

4. IRCA

To assess the implications of our theoretical model, we study the determinants of the voting behavior of U.S. representatives on the Immigration Reform and Control Act (IRCA) of 1986. IRCA introduced the largest immigrant legalization in U.S. history, which enabled 2.8 million undocumented immigrants to gain permanent legal status.

To understand the context in which IRCA was introduced, recall that U.S. immigration policy was fundamentally changed by the Immigration and Nationality Act of 1965, which abolished the national-origin quota system introduced in the Twenties. Instead, a quota of 170,000 was introduced for the Eastern hemisphere, with a cap of 20,000 admissions for each individual country. Moreover, a new quota for the Western hemisphere – which had been exempted under the old regime – was also devised, setting an overall limit of 120,000 admissions, but without an individual country cap. Following the first oil crisis and the ensuing stagflation, Congress introduced a series of restrictive immigration policy measures, ranging from provisions for employer sanctions to tackle the growing employment of undocumented immigrants, to the extension of the applicability of the 20,000 per-country cap to migrants from the Western hemisphere, a measure aimed at limiting immigration from Mexico (Facchini and Steinhardt, 2011; Gimpel and Edwards, 1999). In 1978 the two quotas were merged in an overall worldwide total of 290,000 permanent admissions, with a 20,000 limit for each individual country (Hatton, 2015).

To address the emerging concerns about the growing size of the undocumented immigrant population, President Carter and Congress, pressed by Senator Kennedy and Representative Eilberg, set up the Select Commission on Immigration and Refugee Policy (SCIRP) (LeMay 2006), which started its activities in 1979, and reported its findings to President Reagan in 1981. SCIRP was established – along the lines of the Dillingham Commission seventy years earlier – as a special bipartisan committee in charge of studying ways of reforming American migration policy. The Commission's final report recommended tougher measures to address undocumented immigration, while at the same time, adopting a more open stance towards legal migrants. Furthermore, it argued in favor of the introduction of a legalization program for the existing stock of undocumented immigrants, pointing out that this would be “consistent with American interests” and that “qualified aliens would be able to contribute more to U.S. society once they came into open” (Select Commission on Immigration and Refugee Policy, 1981, p. 74).

After the publication of SCIRP's final report, the chairmen of the Senate and House Judiciary Subcommittees on Immigration, senator Alan Simpson and congressman Romano Mazzoli took the initiative to incorporate some of its recommendations in the *Simpson-Mazzoli bill* (H.R. 1510), which was introduced in Congress in 1982. The first major provision of the bill was to make it illegal to knowingly hire or recruit undocumented immigrants, introducing also penalties for those employing illegal aliens. A second major component was the requirement for employers to attest their employees' immigration status. Last, but not least, it granted an amnesty to certain agricultural seasonal workers and immigrants who entered the U.S. before January 1, 1982 and had lived there continuously. The bill proposal was - from its initial introduction on the Senate floor in 1982 - very controversial, as the provision of sanctions for employers drew strong opposition from liberal democrats, business groups and Latino pressure groups. As a result, the measure was withdrawn. Further consideration to the bill was given during the subsequent Congress, but the measure was finally voted upon in the same form by the two chambers only in 1986, and was signed into law by President Reagan as the *Immigration Reform and Control Act* (H.R. 3810, IRCA).

The main difference with the original Simpson-Mazzoli bill was the addition of a temporary program for agricultural workers, which was requested by the agricultural lobby and strongly opposed by organized labor (Gimpel and Edwards, 1999). As a result, IRCA included provisions for two large immigration amnesties: the Legally Authorized Workers (LAW) and the Special Agricultural Worker (SAW) programs. The LAW program was open to aliens who had resided continuously in the U.S. since at least January 1, 1982, and allowed more than 1.6 million immigrants to achieve legal status. The SAW program provided instead a pathway to legal status for undocumented aliens who worked in the agricultural sector for at least 90 days during the year ending May 1, 1986, and enabled the legalization of over 1.2 million unau-

²¹ Note that we can rearrange the terms in 12 to identify a threshold at which the sign of $(w^L - w^{NL})$ changes. Namely, $(w^L - w^{NL}) > 0$ if: $\frac{V(j^{ill}, 1; \tilde{i}, 1)}{N + M(j^{ill}, 1)} - \frac{V(j^*, 1; \tilde{i}, 1)}{N + M(j^*, 1)} < \frac{\alpha(1 - \tau)}{\tau N}$.

thorized immigrants.²² Several studies on the effects of these amnesties show that newly legalized immigrants saw, on average, increases in their wages, wage growth, and returns to skills (e.g., Borjas and Tienda, 1993; Kossoudji and Cobb-Clark, 2002; Amuedo-Dorantes et al., 2007) due to an increase in their occupational mobility (out of traditionally “illegal occupations”), and to better labor market matches (Amuedo-Dorantes and Bansak, 2011; Steigleder and Sparber, 2015). Interestingly, the existing evidence indicates that there was no discernible increase in the legalized migrants’ geographical mobility (Barcellos, 2010). This is true for both Mexican and other Latin American legalized immigrants, and for all different skill groups.

5. Data

The construction of our dataset draws on a number of different sources.

We obtained information on individual representatives’ voting behavior on IRCA from the VOTEVIEW project (<http://voteview.ucsd.edu>) of Poole and Rosenthal (1997), which also reports the congressmen’s name, party affiliation, state of residence, and congressional district. We rely instead on ICPSR Study number 7803 and the data base built by Swift et al. (2000) for information on representatives’ age and gender. Our dependent variable is a dummy taking a value of 1 if the representative has voted in favor of IRCA and 0 if he has voted against.

The empirical literature has documented that the legal status has a significant impact on the set of labor market matches that are available to migrants (Amuedo-Dorantes and Bansak, 2011). Our model suggests that an amnesty is more likely to be introduced the larger is the increase in output induced by the legalization. This depends on the quality of the initial job match of illegal immigrants, as measured by their degree of over-education. For this reason we construct, for each congressional district, indicators of undocumented immigrants’ over-education based on data from the 1980 Census of Population. In particular, we consider the distribution of educational attainment of workers for each occupation, and classify as over-educated employees who have a level of education (adjusted for the quality of schooling in the home country) above the district-specific mean of natives in that occupation. We then use this measure to construct the district-level share of illegal workers that are over-educated.²³ Specifically, we proceed as follows. First, we transform the Census variable on educational qualification into years of education, accounting for differences in quality of education between the U.S. and the countries of origin of illegal immigrants as outlined below. Second, we compute, for every two-digit occupational category,²⁴ the mean of the number of years of education for native workers. Third, for each employee we construct a dummy variable taking a value of 1 if his/her level of education is above the mean of natives’ education in their occupation and 0 otherwise. Fourth, we compute for each district, and separately for natives and illegal immigrants, the mean value of the dummies defined above, which represents the district-level share of over-educated natives and illegal immigrants. A higher value of the over-education index for illegal immigrants suggests a worse allocation of their skills across occupations, and therefore the possibility of larger output gains from re-matching, which make a legalization more likely to be implemented. The corresponding measure for natives captures instead the general level of skill mismatch prevailing in the local labor market. As a robustness check, we also compute a measure of over-education based on deviations from the median.

As standard sources do not report information on immigrants’ legal status, we cannot directly observe their degree of over-education. However, we can proxy it taking advantage of some features of the data, and of the characteristics of the foreign population in the U.S. As it has been pointed out by Hanson (2006), there is “... abundant evidence that illegal immigrants are represented in official household surveys, including the U.S. Census of Population ...” (page 873), and in fact Warren and Passel (1987) estimate that 2 million undocumented aliens were recorded in the 1980 U.S. Census. Furthermore, as argued by Borjas and Tienda (1993) and Baker (2010), between 70% and 80% of the participants in IRCA’s legalization programs were from Mexico and about 8% from El Salvador. In other words, these two countries account for the vast majority of undocumented immigrants in the U.S. in 1986.²⁵ Additionally, Warren and Passel (1987) estimate that 49% of the 2.3 million Mexicans and 57% of the 89 thousand Salvadorians recorded in the 1980 Census were undocumented. In order to identify in our data individuals that are likely to be undocumented immigrants we therefore focus on natives of Mexico and El Salvador, and adapt the strategy recently proposed by Borjas (2017). Specifically, we define as illegal immigrants all individuals born in Mexico and El Salvador who are observed in the 1980 U.S. census, except for those who satisfy at least one of the following conditions: 1) are U.S. citizens; 2) received, during the previous year, income from Social Security pensions, survivors benefits, or permanent disability insurance, as well as U.S. government Railroad Retirement insurance payments; 3) are veterans, or currently in the Armed Forces; 4) work in the government sector; 5) are employed in occupations that require some form of licensing (such as physicians, registered nurses, air traffic controllers, and lawyers); 6) are married to a legal immigrant or citizen. Following this procedure we identify 57% of all Mexicans and Salvadorian immigrants in the data as likely to be illegals, a figure in line with the estimates of Warren and Passel (1987).

Warren and Passel (1987) also argue that “... undocumented immigrants appear to have a geographic distribution similar to legally admitted aliens ...” (page 391). The latter result is confirmed in Fig. 2 where we show that the number of IRCA applicants in each congressional district – our best guess of the undocumented population in 1986²⁶ – is highly correlated with the stock of immigrants from Mexico and El Salvador which we have identified as likely to be illegals from the 1980 Census.²⁷ All this evidence suggests that our constructed indicator is a good proxy for illegal status in all U.S. congressional districts in 1986. For this reason our measure of over-education is built using information on likely illegal Mexicans and Salvadorians observed in the 1980 Census.

As properly quantifying immigrant skills is key to our analysis, in constructing our measure of over-education we must take into account that there might be significant differences in the performance of school systems across countries, and in particular between immigrant origins and the United States.²⁸ In fact, these differences might make the direct

²⁵ These figures are broadly in line with the estimates of Warren and Passel (1987) and Passel and Woodrow (1987).

²⁶ To this end we have used data from the Immigration and Naturalization Service’s Legalization Summary Tapes (LST), kindly provided by Scott Baker. See Baker (2015) for more details.

²⁷ Furthermore, a linear regression of the logarithm of the district-level stock of IRCA applicants on a constant and the logarithm of the stock of likely illegal immigrants delivers an estimated slope of .8 with a standard error of .034, and an R^2 of .6.

²⁸ We would like to thank one of the referees for raising this issue. Note also that English language proficiency might affect the ability of the individual to fully take advantage of her human capital in the destination country. Our data indicate though that only 25% of the likely illegals did not speak English in 1980. Moreover, language proficiency is a time varying individual characteristic and legalized migrants – not facing a deportation threat and thus being able to stay longer in the destination country – will have greater incentives to acquire proficiency in the local language (see Dustmann and Gorchach, 2016 for a review). As a result, the legalization program will likely improve their labor market match by both making new jobs in the formal sector available, and by increasing their incentives to acquire local language skills.

²² Note that workers legalized as a result of SAW were not constrained to remain in the agricultural sector after the legalization. In fact, fears that the legalization would lead to significant shortages of agricultural workers led to the introduction of a provision for guest workers in case of subsequent labor shortages.

²³ For a discussion of this type of indices see Verdugo and Verdugo (1988) and Chevalier (2003).

²⁴ As a result, we consider a total of 82 occupations.

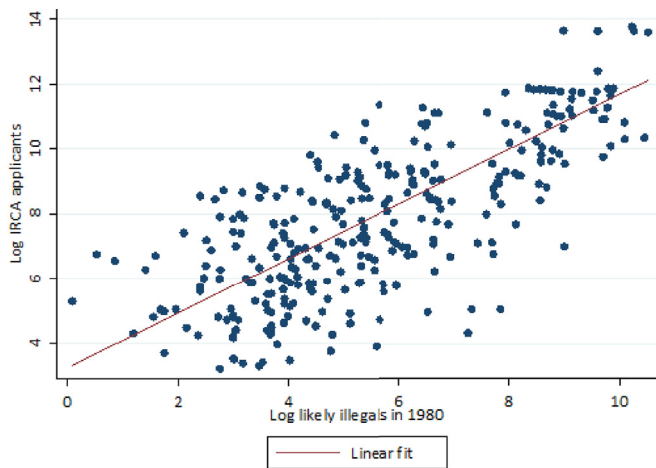


Fig. 2. Correlation between IRCA applicants and stock of likely illegal immigrants in congressional district.

comparison of educational attainment of natives and foreign born problematic. To address this issue, and following Razin and Wahba (2015), we have thus adjusted our measure of educational attainment for likely illegal immigrants taking advantage of recent work on cross-country comparisons of educational systems. In particular, in a recent contribution Hanushek and Woessmann (2012) use several internationally comparable student achievement tests carried out in 64 countries between 1964 and 2003 to develop a common, time-invariant metric for the distribution of educational achievement across countries. Their results indicate that the cognitive skills of Mexican students are on average .815 those of U.S. students over this time period.²⁹ This ratio can be interpreted as an – admittedly rough – macro measure of the relative “quality” of education in Mexico vis à vis the United States (see also Razin and Wahba, 2015), and used to obtain the number of years of “U.S.-equivalent” education obtained by a Mexican migrant. As comparable data are not available for El Salvador, we use data for Mexico to adjust the educational attainment of migrants born in that country too. As we have pointed out, the indicator constructed by Hanushek and Woessmann (2012) is an average over many years. As educational best practices have spread across countries in recent years, it might well be the case that U.S.-Mexico differences in school quality were larger in the 1960s and 1970s than in more recent decades. As our analysis focuses on immigrants observed in the 1980 U.S. Census, we have thus assessed the robustness of our results by considering two alternative and lower coefficients of adjustment (.790 and .765).

The second main prediction of our theoretical model is that, within a given constituency, a larger fiscal leakage to legalized migrants makes an amnesty less desirable. To obtain a measure of the fiscal leakage, we focus on the revenue side of the budget and look at the tax burden on American households. The latter depends on the amount of both local, state and federal taxes. Legalization is more likely to be opposed in those areas with a relatively high level of local tax burden, and a significant number of undocumented immigrants, since in those areas the redistribution from natives to immigrants is more likely to happen and to be sizable. At the same time, the potential cost of legalization for state and federal coffers is borne by residents of all districts, even those with virtually no undocumented immigrants. For these reasons, in our empirical analysis we capture the working of the welfare state channel in two complementary ways. First, we measure the local fiscal leakage associated with a legalization with a dummy variable that identifies districts characterized by a high level of local tax payments, and

by a high presence of undocumented immigrants, since both contribute to determining the scope of the fiscal leakage. Specifically, from the Data Base on Historical Finances of Local Governments: “County Area Finances”³⁰ we calculate the per capita revenues of local governments³¹ at the county level in 1982, and aggregate them up at the congressional district level.³² We then define a dummy variable that identifies the districts above the mean (or alternatively above the 75th percentile) of the distribution of per capita revenues of local governments. Similarly, we construct a dummy variable that identifies districts characterized by a share of likely illegal Mexican and Salvadorian immigrants in the total population above the mean, or, alternatively, above the 75th percentile. We then combine this information in a “High local fiscal leakage” indicator, which takes a value of one if both of the previous indicators are equal to one, and zero otherwise.³³ Second, to capture potential fiscal spill-over effects across jurisdictions, both within and across states, we include a measure of the congressional district income (the median or mean) from the Congressional District Data Files of Lublin (1997) and Adler (2003). The underlying idea is that *ceteris paribus*, high income districts are more likely to be penalized by the redistributive flows to migrants triggered by the legalization program – taking place both within and across states.

In some specifications we will also control for additional factors that may drive a representative’s voting behavior. First, we account for her/his party affiliation, age, gender and ethnic background. Second, we control for an array of district level characteristics. We start by accounting for the ethnic composition of each district including the share of the population with an African-American or Hispanic background, taken from the 1980 U.S. Census. Next, we control for a measure of immigrant penetration in the district, i.e. the ratio of foreign to natives in the district’s working age (16–65) population. We also construct a variable measuring the share of the population living in urban areas, to account for potential differences between rural and urban areas in attitudes toward immigrants’ legalization. A district’s factor endowment has been shown (Facchini and Steinhardt, 2011) to play an important role in shaping policy preferences, and we measure it with the district-level share of individuals with at least a bachelor’s degree in the total population over 25 years of age. We additionally include the district-level unemployment rate, defined as the ratio of individuals looking for a job out of the total labor force. We also control for the sectoral composition of the local economy, using the share of individuals in the labor force employed in each one digit sector.³⁴ Finally, since pressure groups may play a significant role in determining representatives’ voting behavior, in some robustness checks we proxy for their influence using data on labor and corporate Political Action Committees (PAC) contributions, provided by the Federal Election Commission (<http://www.fec.gov/>). As PAC contributions measure lobbying effort on a variety of different issues, we construct two indicator variables taking a value of one if the politician has received contributions that are at or above the eightieth percentile of all corporate (labor) contributions in that year.³⁵

²⁹ See Bureau of the Census (1982).

³⁰ Local governments comprise counties, municipalities, townships, special districts, and independent school districts.

³¹ In particular, we compute weighted averages based on the share of each county in the total population of the district. This applies also to counties split across more than one district. In this case a county’s population is attributed to a particular district, assuming that the former is geographically uniformly distributed. For a similar approach see for instance Conconi et al. (2012).

³² For a similar procedure, see Hanson et al. (2007).

³³ These are: agriculture, construction, manufacturing, transport, communication, trade, finance, business and repair services, entertainment, health and education, other professional services and public administration. Details on the data construction are available from the National Historic Geographical Information System website, <https://www.nhgis.org/> and Bureau of Labor Statistics website <http://www.bls.gov/iag/home.htm>.

³⁴ See Facchini et al. (2013) for a similar strategy.

²⁹ See Table 11, Appendix B of Hanushek and Woessmann (2012).

Table 1
Summary statistics.

	Obs	Mean	Std. Dev.	Min	Max
Roll-call votes	433				
Vote	396	0.581	0.494	0.000	1.000
Illegals' over-education	435	0.089	0.213	0.000	1.000
High local fiscal leakage	435	0.131	0.338	0.000	1.000
District income (thousand USD)	435	20,055	4003	8434	33,404
Democrat	435	0.582	0.494	0.000	1.000
Age	435	50.221	10.653	28	85
Gender	435	0.947	0.224	0.000	1.000
Representative Hispanic	435	0.025	0.157	0.000	1.000
Natives' over-education	435	0.548	0.028	0.480	0.617
Skill ratio	435	0.161	0.064	0.041	0.430
Unemployment	435	0.067	0.025	0.019	0.219
Share of total workers employed in:					
Agriculture	435	0.042	0.043	0.001	0.202
Construction	435	0.059	0.019	0.011	0.129
Manufacturing	435	0.224	0.084	0.043	0.480
Transport	435	0.044	0.014	0.020	0.117
Communication	435	0.029	0.006	0.016	0.061
Trade	435	0.204	0.022	0.130	0.261
Finance	435	0.059	0.022	0.028	0.176
Business and repair services	435	0.041	0.014	0.021	0.103
Entertainment	435	0.042	0.020	0.024	0.325
Health and Education	435	0.161	0.027	0.084	0.273
Professionals	435	0.042	0.013	0.022	0.117
Public Administration	435	0.053	0.029	0.021	0.243
Share of urban population	435	0.737	0.225	0.189	1.002
Immigrants/natives ratio	435	0.087	0.119	0.004	0.686
African American	435	0.114	0.150	0.001	0.921
Hispanic	435	0.065	0.110	0.003	0.717

Notes: The table reports summary statistics for all variables included in the main specification of our analysis. All variables are defined at the congressional district level and are extracted from the 1980 Census of population, unless otherwise specified. *Roll-call votes* indicates the number of representatives who were in office and could vote on IRCA. *Vote* is coded as 1 if the representative voted in favor of IRCA and 0 if he voted against. *Illegals' (natives') over-education* is the share of likely illegal Mexican and Salvadorian workers (native workers) with a level of "quality-adjusted" education higher than the mean of natives' education in their occupation. *High local fiscal leakage* is a dummy variable that identifies the districts above the mean for both per capita revenues of local governments (from the 1982 Data Base on Historical Finances of Local Governments: "County Area Finances") and the share of likely illegal Mexican and Salvadorian immigrants in the total population. *District income* measures the median family income within a district in thousand dollars. *Age* is the age of the representative. *Gender* is coded as 1 for female representatives, 0 otherwise. *Representative Hispanic* indicates whether the representative is Hispanic-American. *Democrat* is coded as 1 if the representative belongs to the Democratic Party. *Skill Ratio* measures the percentage of the population over 25 with at least a bachelor degree. *Unemployment* is the share of unemployed individuals in the total labor force. *Share of total workers employed in sector X* is the fraction of total workers employed in sector X out of total employment in the district. *Share of urban population* is a measure of the share of population living in urban areas. *Immigrants/natives* is the ratio of foreign-born individuals to natives in the working-age (16–65) population. *African American* is the share of African American individuals in the total population. *Hispanic* is the share of Hispanic individuals in the total population.

We report summary statistics for all the variables used in the analysis in Table 1. As we can see, IRCA was a controversial measure, and cleared the House with a 58 to 42 percent majority. On average, the share of undocumented immigrants who are over-educated in a district is around 9 percent, whereas the corresponding figure for natives is approximately 55 percent. This difference can be explained by the fact that undocumented migrants are substantially less educated than natives – on average they have only 6.5 years of "quality-adjusted" education, compared with 13.35 for the natives. As a result, they are less likely than natives to be employed in occupations which require less education than the level they have attained. Note though that, *ceteris paribus*, undocumented migrants are still more likely than natives to be mismatched in the labor market. To see this point, using a sample of natives and undocumented immigrants, we run a regression of the over-education dummy on a constant, years of education and an indicator for illegal status. The specification gives an estimated coefficient on the "illegal status" dummy of .14, with a standard error of .002, which indicates that undocumented immigrants are 14 percentage points more likely to be over-educated than natives with the same level of education. Finally, the share of districts exhibiting high local fiscal leakage is approximately 13 percent of the total and the median family income is approximately 20,055 U.S. dollars, with a standard deviation of 4,003 dollars.

Figs. 3 and 4 illustrate the main forces at work in our model. In par-

ticular, Fig. 3 reports a map of Florida's congressional districts during the 99th congress.³⁶ Consider districts 7 and 8. While more than 14% of the undocumented residents of district 7 are over-educated according to our definition,³⁷ the same is true for none of the undocumented residents of district 8. Our theoretical model suggests that the incentives to legalize will be, *ceteris paribus*, higher in district 7 than in district 8. In fact, the representative of district 8, Bill Young voted against IRCA, while congressman Sam Gibbons, representing district 7, voted in favor. Consider now Fig. 4, which reports instead a map of California's congressional districts. District 10 is characterized by a high local fiscal leakage, and by a median per capita income at the 77th percentile. District 18 has instead a low local fiscal leakage and a considerably lower median per capita income, below the 20th percentile. Interestingly, congressman Don Edwards – representing district 10 – voted against IRCA, whereas congressman Richard Lehman – representing district 18 – supported it, as suggested by our theoretical model. While Figs. 3 and 4 uncover some interesting patterns, in the remainder of this paper we will systematically study their role in shaping individual congressmen voting behavior on this important bill.

³⁶ The map has been extracted from Lewis et al. (2013), retrieved from <http://cdmaps.polisci.ucla.edu> on October 9, 2015.

³⁷ As a result, district 7 is at the 88th percentile of the distribution.

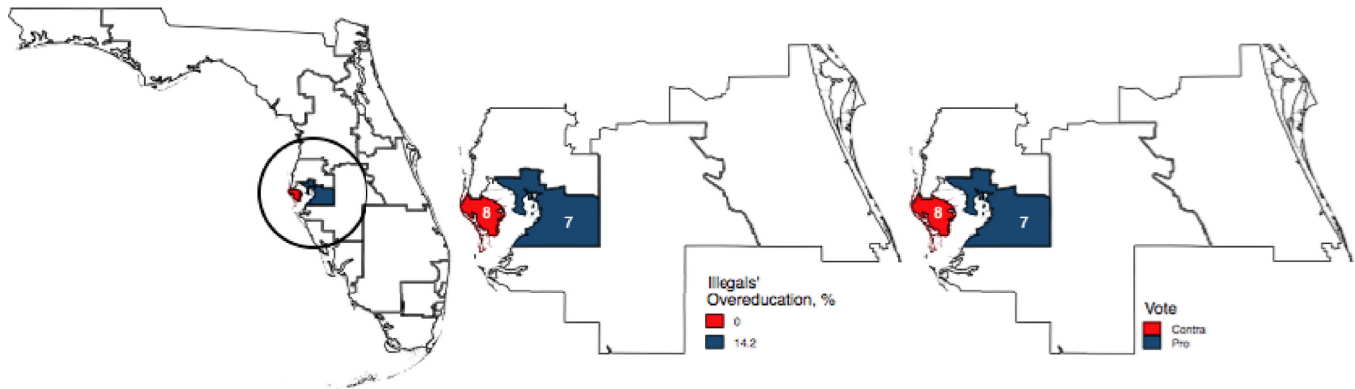


Fig. 3. Florida's 99th Congress Congressional districts and IRCA vote.

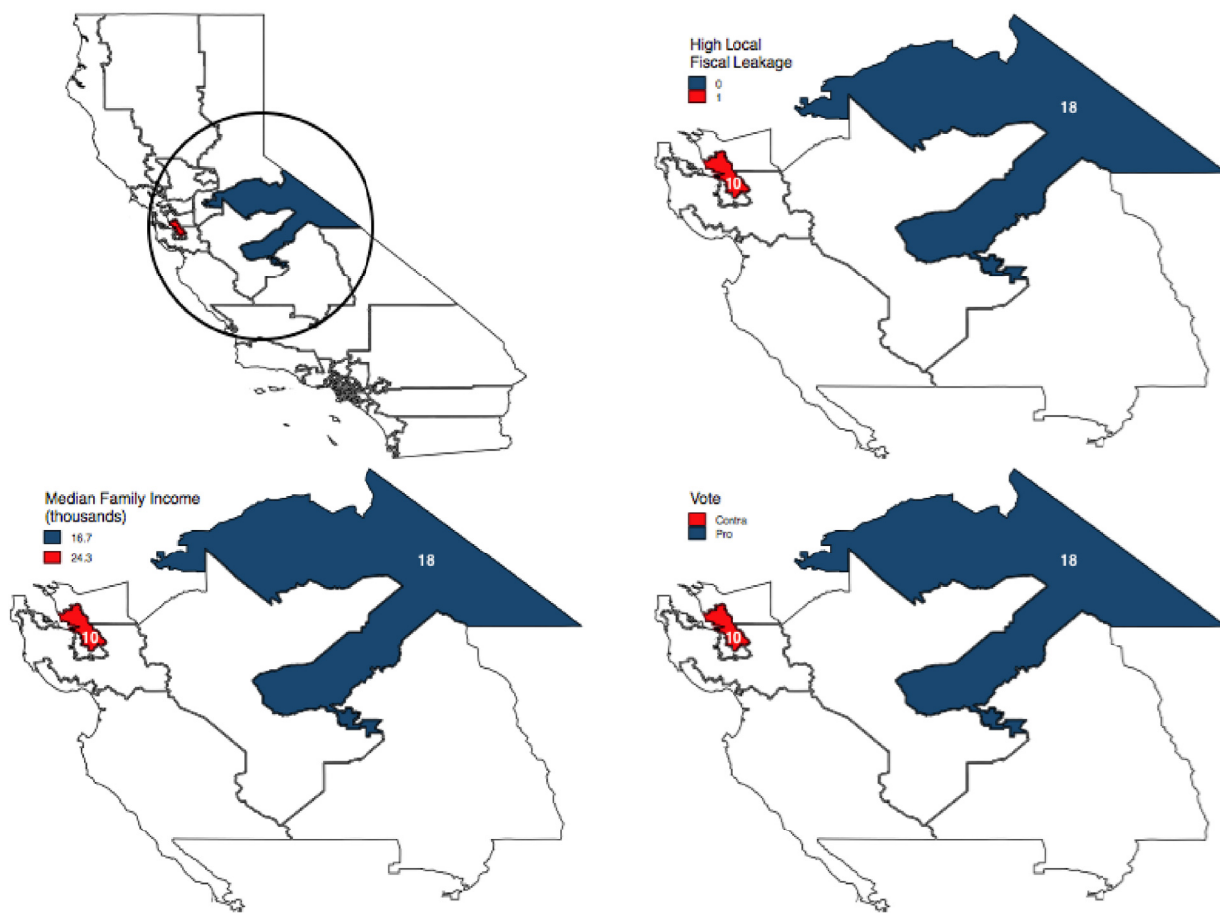


Fig. 4. California's 99th Congress Congressional districts and IRCA vote.

6. Empirical analysis

Our model identifies two drivers that play a role in shaping support for the introduction of an amnesty. It suggests that an amnesty is more desirable the higher is the share of over-educated illegal immigrants, since this leads to a larger expected output gain associated to the legalization. At the same time, the more redistributive is the welfare state, the less desirable is the legalization, as the fiscal leakage to migrants is more severe. To assess these predictions, we estimate the following logit model:

$$Prob(Vote_d = 1 | Z_d) = F(\beta_1 IllegalOverEdu_d + \beta_2 Highlocalfiscleak_d + \beta_3 Medianincome_d + \mathbf{R}_d\delta + \mathbf{X}_d\lambda + I_s) \quad (13)$$

where $Vote_d$ is a dummy variable indicating whether the representative of district d has voted in favor of IRCA; $IllegalOverEdu_d$ is the share of likely illegal Mexican and Salvadorian workers in district d that are over-educated, which proxies for the share of over-educated illegal immigrants; $Highlocalfiscleak_d$ is the “High local fiscal leakage” measure defined in Section 5 and $Medianincome_d$ is the median family income in the district. \mathbf{R}_d is a vector of control variables which includes representatives’ characteristics (party affiliation, age, gender and an indicator

Table 2
Basic specification.

	(1)	(2)	(3)	(4)
Illegals' over-education	0.459*** (0.169)	0.392** (0.156)	0.435*** (0.153)	0.427*** (0.152)
High local fiscal leakage	−0.201* (0.107)	−0.252*** (0.093)	−0.257*** (0.096)	−0.296*** (0.100)
District income	−0.004 (0.007)	0.009 (0.007)	−0.025* (0.015)	−0.037** (0.019)
Democrat		0.379*** (0.036)	0.386*** (0.042)	0.388*** (0.045)
Age		−0.002 (0.002)	−0.001 (0.002)	−0.002 (0.002)
Gender		−0.063 (0.115)	−0.038 (0.115)	−0.024 (0.117)
Representative Hispanic		−0.153 (0.132)	−0.043 (0.184)	0.015 (0.194)
Natives' over-education			2.999** (1.351)	2.751* (1.487)
African American			−0.503* (0.266)	−0.560* (0.321)
Hispanic			−0.62 (0.487)	−0.699 (0.537)
Share of urban population			0.463** (0.196)	0.574* (0.313)
Immigrants/natives ratio			0.152 (0.368)	0.06 (0.464)
Skill ratio			1.261* (0.687)	2.042 (1.387)
Unemployment			−1.227 (2.099)	−1.465 (2.122)
State dummies	Yes	Yes	Yes	Yes
Sector composition	No	No	No	Yes
N	347	347	347	347

Notes: The table reports mean marginal effects from a logit model for the probability of voting in favor of IRCA. Standard errors are reported in parentheses. See notes in Table 1 for the definition of the variables.

*** Significant at 1%, ** significant at 5%, * significant at 10%.

for whether the representative is Hispanic) and \mathbf{X}_d is instead a vector of district-level controls, including economic (the share of native workers that are over-educated, skill ratio, unemployment rate and share of workers employed in each one digit sector), residential (share of urban population), and ethnic characteristics (share of immigrants, share of African American and Hispanic residents). Finally, I_s are state dummies that account for unobserved state-specific factors. $F(x) = \frac{1}{1+\exp(x)}$ is the distribution function of the logistic.

Table 2 contains our main findings. In column (1) we start with a parsimonious specification that includes only our main explanatory variables and state fixed effects. The results show that there exists a positive and statistically significant relationship between the share of over-educated illegal immigrants in a district and the probability of a representative voting in favor of IRCA. This is consistent with the prediction of our model that a larger mismatch between undocumented immigrants' skills and their job increases the likelihood that a representative will support a legalization program. As for the role of the welfare state, the results in column (1) indicate that a greater welfare leakage towards immigrants – as captured by our two complementary measures – has a negative impact on support for an amnesty, but this effect is statistically significant only at the local level.³⁸

As pointed out in the literature, several other factors might explain the support for immigration policy reform (Facchini and Steinhardt, 2011) and, as a result, our parsimonious specification might suffer from an omitted variable bias. For instance, Democratic districts are likely

to exhibit both higher local taxes, and express a representative who is in favor of IRCA. If this is the case, then the omission of a representative's party affiliation biases the estimated effect of *High local fiscal leakage* towards 0. Furthermore, a representative's Hispanic background might affect his/her support for legalization. For this reason, in column (2) we augment our basic specification to include a series of representative-level controls such as age, gender, Hispanic background and an indicator for whether he is a Democrat. Interestingly, we find that Democratic representatives have a 37.9 percentage points higher probability of supporting IRCA than their Republican counterparts, even within the same state. We do not find instead a significant effect for the representative's ethnicity. Furthermore, the estimated effect of *High local fiscal leakage* becomes considerably more negative and is more precisely estimated.

In column (3) we additionally control for a set of district-level characteristics. We find that representatives of districts characterized by a higher share of the population living in urban areas are more likely to support IRCA. Similarly, our results indicate that representatives of more skilled labor abundant districts are also more in favor of the amnesty, confirming previous findings in the literature suggesting that complementarities between the skills of natives and immigrants play an important role in explaining support for migration liberalization (Facchini and Steinhardt, 2011). Finally, we find that representatives of districts characterized by a larger share of African Americans in the population are less likely to support the legalization programs. A possible explanation is represented by the fact that this group is the most likely to face direct competition by legalized migrants in the labor market. We find also some evidence that representatives of districts characterized by a larger Hispanic population are less likely to support this initiative, although the coefficient is not significant. Our specification also controls for the general labor market mismatch in the native population, and we find that representatives of districts characterized by less effi-

³⁸ Note that the model is estimated on 347 observations, despite the fact that 396 representatives voted on IRCA, because in 49 instances there is no within-state variation in direction of vote, and thus these observations are dropped in logit maximum likelihood estimations. The states that are dropped are: Alabama, Alaska, Connecticut, Delaware, Iowa, Maine, Massachusetts, New Hampshire, North Dakota, Rhode Island, South Dakota, Vermont, Washington, West Virginia, Wyoming.

cient labor markets were more likely to support IRCA. Turning to our key explanatory variables, controlling for additional district characteristics strengthens the empirical support for our model. In particular, the estimated effect of median family income becomes considerably more negative and statistically significant. In our last specification in column (4) we additionally control for the distribution of employment across industrial sectors in a given district. Our main results are unaffected.

Summarizing, our empirical findings provide strong support to the predictions of the theoretical model. In terms of the magnitudes of the effects, our preferred specification in column (4) indicates that an increase by ten percentage points in the share of over-educated illegals (about 50% of a standard deviation) leads on average to an increase of 4.3 percentage points in the probability of a representative voting in favor of IRCA (an increase of about 7.3% at the sample mean); at the same time, representatives of districts facing high local fiscal exposure to immigrant legalization (13.1% of the total) are 29.6 percentage points (51% at the sample mean) less likely to support IRCA; finally, a ten percent increase in median family income in the district (about two thousand USD, or half of a standard deviation) is associated with a 7.4 percentage points (12.7% at the sample mean) decrease in the probability of a representative supporting IRCA.

7. Robustness checks

In this section we assess the robustness of our results in a number of different ways.

We start in Table 3 by experimenting with alternative definitions of our key explanatory variables, using the specification in column (4) of Table 2 as the benchmark, which, to simplify comparisons, is reported in column (1).³⁹ In columns (2), (3) and (4) we use alternative definitions of the over-education index. In column (2) we classify as over-educated individuals with a “quality-adjusted” level of education higher than the median of their occupation, rather than the mean, as in our main specification; in columns (3) and (4), instead, we compute the over-education index applying a higher discount factor to illegals’ education (.790 and .765 rather than .815, respectively). We do so to account for the possibility that – as educational best practices have spread across countries in recent years, the data by Hanushek and Woessmann (2012) might be understating the differences in school quality between the United States and Mexico in the Sixties and Seventies, when the undocumented migrants we observe in the 1980 Census received their schooling. Results with all three alternative indices closely resemble those of the benchmark. In columns (5), (6) and (7) we use alternative measures of the extent of local redistribution. First, in columns (5) and (6) we redefine our *High local fiscal leakage* indicator, varying the condition on immigrant concentration (column 5) or the condition on per capita revenues of local governments (column 6). In particular, in column (5) we characterize a district as having “high illegal immigration” if it has a share of likely illegal immigrants in the top 25% of the districts (column 5), rather than above the mean as in our benchmark case, whereas in column (6) we require the per capita revenues of local governments to be above the 75th percentile, rather than above the mean as in our benchmark definition. In column (7), we instead rely on mean, rather than median family income to capture redistribution at the state and federal level. The results are qualitatively unaffected.

In Table 4, we report results with alternative or additional control variables, while keeping the definition of our main explanatory variables as in the benchmark. First, in columns (1) and (2), we experiment with different measures of the ideological orientation of the representative. In column (1) we replace democratic party affiliation with the nor-

malized DW nominate score – which increases in an individual’s conservative orientation, whereas in column (2) we use the ADA score, which assesses every legislator on a scale from 0 to 100, with higher figures assigned to more liberal politicians.⁴⁰ As expected, we still find that more liberal-leaning representatives are more likely to support IRCA, while the estimates of our main coefficients are not affected. In column (3) we additionally control for the share of democratic votes in the 1984 congressional election. This does not play a significant role, and does not affect our main results.

In columns (4) and (5) we replace our measure of a district’s skill composition with the ratio of high school graduates and college graduates to high school dropouts (column 4) and the ratio of individuals employed in high versus low skilled occupations (column 5). Our results are unaffected. In column (6) we replace the immigrants/natives ratio in the district’s working age population with a more flexible functional form specification, i.e. the (logarithm) of the number of immigrant and native residents in the working age population. Once again, our results are not affected. Immigration amnesties may be more welcome in constituencies characterized by over-educated illegal migrants, just because more educated foreign workers may become better citizens (e.g. less prone to criminal behavior or more willing to assimilate), and not because they may generate higher expected output via rematching in the labor market. To investigate this possibility, in column (7) we report results from a regression where we include a measure of the relative education of illegal immigrants and natives in each district as a control variable, in addition to over-education. We measure it as the ratio between the “quality-adjusted” mean years of education of illegal immigrants and those of natives.⁴¹ This ratio has a positive and significant impact on the probability of voting in favor of an amnesty, indicating that, indeed, representatives of districts with a more educated undocumented population are more likely to support legalization. However, the inclusion of this control does not affect the estimates of our coefficients of interest, and of over-education in particular.

In our preferred specification, we include controls for the ethnic composition of the district (share of African American and share of Hispanics in the population), to account for the effect that the votes of ethnic minorities may have on the representative’s decision. However, the share of Hispanics in a district may be correlated with the district’s share of undocumented immigrants, and thus capture more than the simple effect of ethnicity on votes. For this reason, in column (8) we also include as an additional regressor the share of likely illegal Mexican and Salvadorian immigrants in the district’s population. The estimated effect of such a share turns out to be positive, but not statistically significant. More importantly, its inclusion does not significantly affect the estimates of either our main coefficients of interest, or of the share of Hispanics in the district.

So far in our analysis we have accounted for the presence of potential cross-jurisdiction fiscal spillovers by controlling for a district’s median family income. By doing so we capture an “average” effect, occurring both because of redistribution carried out at the federal and at the state level. To account more precisely for within-state fiscal externalities, in columns (9) and (10) we introduce two additional measures, following the same logic developed to construct our main fiscal leakage indicator. In particular, in column (9), we control for a “state fiscal spillover” indicator which, for a given district, takes a value of one if two conditions are met: (i) the share of districts within the state -

³⁹ Note that we omit the coefficients for the individual and district level characteristics to make the table more readable. Note though that the patterns identified for these controls in column (4) of Table 2 continue to hold throughout.

⁴⁰ The DW nominate measure is provided by the VOTIEVIEW project, whereas the ADA score is constructed by the American for Democratic Action, a lobby group. The main difference between the former and the latter is that the ADA score uses only votes on a sub-sample of bills cast in each congress, whereas the DW nominate score employs every roll call vote in each congress, and is based on a more sophisticated estimation procedure. The ADA score is not available for representatives of Texas’ 1st and Louisiana’s 8th congressional districts because these representatives were elected in a 1985 by-election and thus did not take part in enough votes to construct their score.

⁴¹ In the 16 districts where there are no illegal immigrants in our sample we have set this ratio to zero. The model also includes a dummy variable that identifies these districts.

Table 3
Alternative definitions of key regressors.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Illegals' over-education	0.427*** (0.152)				0.425*** (0.154)	0.425*** (0.155)	0.435*** (0.153)
Illegals' over-education (above the median)		0.306* (0.164)					
Alternative illegals' over-education 1			0.356** (0.172)				
Alternative illegals' over-education 2				0.369* (0.188)			
High local fiscal leakage	−0.296*** (0.100)	−0.279*** (0.100)	−0.297*** (0.101)	−0.298*** (0.101)			−0.296*** (0.099)
Alternative high local fiscal leakage 1					−0.214** (0.094)		
Alternative high local fiscal leakage 2						−0.262** (0.112)	
District income	−0.037** (0.019)	−0.035* (0.019)	−0.040** (0.019)	−0.039** (0.019)	−0.039** (0.019)	−0.038** (0.019)	
Alternative district income							−0.018 (0.015)
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector composition	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Natives' over-education	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Representative characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Economic, demographic and ethnic characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector composition	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	347	347	347	347	347	347	347

Notes: The table reports mean marginal effects from a logit model for the probability of voting in favor of IRCA. Standard errors are reported in parentheses. See notes in Table 1 for the definition of main variables. *Illegals' over-education (above the median)* is the share of likely illegal Mexican and Salvadorian workers with a level of quality-adjusted education higher than the median of natives' education in their occupation. *Alternative illegals' over-education - 1 and 2* are the baseline over-education indices, computed with a higher discount rate for education in country of origin (0.790 and 0.765, respectively). *Alternative high local fiscal leakage 1 (2)* is a dummy variable that identifies the districts above the mean (75th percentile) per capita revenues of local governments and above the 75th percentile (mean) of the distribution of the share of likely illegal Mexican and Salvadorian immigrants in the total population. *Alternative district income* measures the mean family income within a district in thousand dollars.

*** Significant at 1%, ** significant at 5%, * significant at 10%.

Table 4
Alternative control variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Illegals' over-education	0.413*** (0.143)	0.459*** (0.152)	0.434*** (0.153)	0.432*** (0.156)	0.425*** (0.155)	0.427*** (0.152)	0.445*** (0.171)	0.429*** (0.152)	0.427*** (0.152)	0.429*** (0.152)	0.469*** (0.157)
High local fiscal leakage	−0.369*** (0.099)	−0.340*** (0.096)	−0.299*** (0.100)	−0.291*** (0.100)	−0.273*** (0.100)	−0.286*** (0.102)	−0.322*** (0.100)	−0.310*** (0.104)	−0.296*** (0.100)	−0.401** (0.189)	−0.350*** (0.105)
District income	−0.040** (0.019)	−0.039** (0.019)	−0.037* (0.019)	−0.014 (0.017)	−0.038* (0.020)	−0.036* (0.019)	−0.038* (0.019)	−0.039** (0.019)	−0.037** (0.019)	−0.036* (0.019)	−0.037* (0.020)
Democrat			0.410*** (0.078)	0.366*** (0.047)	0.384*** (0.044)	0.388*** (0.044)	0.383*** (0.045)	0.390*** (0.045)	0.388*** (0.045)	0.385*** (0.045)	0.378*** (0.054)
DW Nominate	−0.747*** (0.074)										
ADA score		0.008*** (0.001)									
Share of democratic votes			−0.060 (0.173)								
Skill ratio	2.197 (1.374)	1.565 (1.346)	1.981 (1.395)			2.130 (1.397)	1.837 (1.379)	2.113 (1.393)	2.042 (1.387)	1.91 (1.399)	2.245 (1.544)
Alternative skill ratio				−0.202 (0.778)							
Occupational skill ratio					2.445 (1.714)						
Immigrants/natives ratio	0.147 (0.475)	0.408 (0.502)	0.051 (0.462)	0.045 (0.461)	0.033 (0.455)		0.067 (0.465)	0.023 (0.464)	0.06 (0.464)	0.066 (0.463)	0.289 (0.471)
Log natives						−0.261 (0.589)					
Log immigrants						−0.041 (0.096)					
Illegals/natives education ratio							0.180 (0.168)				
Hispanic	−0.967* (0.520)	−1.195** (0.538)	−0.689 (0.538)	−0.686 (0.565)	−0.656 (0.528)	−0.642 (0.547)	−0.696 (0.531)	−0.763 (0.551)	−0.699 (0.537)	−0.715 (0.539)	−1.048* (0.568)
Share of likely illegals								1.429 (3.151)			
State fiscal spillover									−0.199 (0.227)		
Alternative state fiscal spillover										−3.552 (5.592)	
PacLabor											0.021 (0.071)
PacCorporate											0.178*** (0.067)
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector composition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Natives' over-education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Representative characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Economic, demographic and ethnic characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	347	345	347	347	347	347	347	347	347	347	322

Notes: The table reports mean marginal effects from a logit model for the probability of voting in favor of IRCA. Standard errors are reported in parentheses. See notes in Table 1 for the definition of main variables. In columns (1) and (2) we use alternative measures of the ideological orientation of the representative and replace *Democrat* with *DW - nominate* score, which is the normalized DW nominate score (column (1)) and with the *ADA score* (column (2)). In column (3) we additionally control for the *share of Democratic votes* in the last congressional election. In columns (4) and (5) we use alternative measures of a district's *Skill ratio* and replace skill ratio with *Alternative skill ratio*, the ratio of high school graduates and college graduates to high school dropouts (column 4) and with *Occupational skill ratio*, the ratio of individuals employed in high versus low skilled occupations (column 5). In column (6) we replace the Immigrants/natives ratio in the district's working age population with *Log natives* and *Log immigrants*, the logarithm of the number of native and immigrant residents in the same age range. In column (7) we control for the ratio between the quality-adjusted mean years of education of illegal immigrants and of natives in each district, and also include a dummy variable to identify districts where there are no observations on illegal immigrants. In column (8), we control for the share of illegals in the district. In column (9) and (10) we control in two alternative ways for the extent of fiscal spillovers at the state level. In column (11) we control for *PACLabor* and *PACCorporate* which are measures of the intensity of the lobbying activity and take a value of one if the labor/corporate contributions that the representative received are at or above the eightieth percentile of all labor/corporate contributions in that year, and zero otherwise.

*** Significant at 1%, ** significant at 5%, * significant at 10%.

Table 5
Alternative estimation techniques.

	Probit	LPM	Sample selection model	
			Main	Selection
Illegals' over-education	0.426*** (0.148)	0.335*** (0.112)	0.291** (0.119)	−3.332*** (0.936)
High local fiscal leakage	−0.287*** (0.099)	−0.260** (0.104)	−0.266*** (0.091)	−0.724 (1.474)
District income	−0.036* (0.019)	−0.029 (0.019)	−0.031* (0.017)	−0.402* (0.237)
Inverse Mills' Ratio				0.244* (0.147)
Participation				32.872*** (7.768)
State dummies	Yes	Yes	Yes	Yes
Sector composition	Yes	Yes	Yes	Yes
Natives' over-education	Yes	Yes	Yes	Yes
Representative characteristics	Yes	Yes	Yes	Yes
Economic, demographic and ethnic characteristics	Yes	Yes	Yes	Yes
Sector composition	Yes	Yes	Yes	Yes
N	347	396	432	432

Notes: The table reports results from three different econometric models for the probability of voting in favor of IRCA. Column (1) reports mean marginal effects from a probit model. Column (2) shows results from a linear probability model. Column (3) displays the results from the two-stage estimation of a Heckman sample selection model, and column (4) reports the results of the corresponding selection equation. *Participation* measures the share of roll call votes the representative has participated into, except for the vote on IRCA, during her term in office in the 99th Congress.

*** Significant at 1%, ** significant at 5%, * significant at 10%.

excluding the one under consideration - with local per capita revenues above the national mean is greater than the average share nation-wide; (ii) the state hosts a share of illegal immigrants above the national mean. In column (10) we deploy instead an alternative measure which, for a given district, is equal to the share of districts within the state - excluding the one under consideration - with local per capita revenues above the national mean if the state hosts a share of illegal immigrants above the national mean, and zero otherwise. The two controls are not statistically significant and the coefficients of our main explanatory variables are unaffected.

Finally, since pressure groups may play a significant role in determining representatives' voting behavior, in column (11) we proxy for their influence using data on labor and corporate Political Action Committees (PAC) contributions. As PAC contributions measure lobbying effort on a variety of different issues, we construct two indicator variables (*PacCorporate* and *PacLabor*) taking a value of one if the politician has received contributions that are at or above the eightieth percentile of all corporate (labor) contributions in that year.⁴² Interestingly, our results show that larger contributions by business-related lobbies result in a higher likelihood of voting pro-IRCA. At the same time, labor PAC contributions do not appear to affect the voting behavior of elected officials. The size and significance of our regressors of interest is however not affected.

Finally, we have performed several checks to assess the robustness of our results to alternative econometric specifications. We display these results in Table 5. In column (1) we start by reporting mean marginal effects from estimating a probit model, rather than a logit model as in our main analysis. Our findings are comparable to those in our baseline results in column (4) of Table 2.

In the presence of state fixed effects, both our logit and probit specifications use information only from states in which all congressional representatives did not vote in the same way. To take instead advantage of all the information available in our data – thus increasing by approximately 15 percent the number of observations used – we report in column (2) the results of a linear probability model. Importantly, the size and significance of our main coefficients of interest is broadly unaffected.

As we have already discussed in Section 5, IRCA was very controversial and out of a total of 433 members of the House,⁴³ 37 decided not to cast a ballot in favor or against the measure. In our baseline specification we have simply omitted districts whose representative did not vote on IRCA, but this choice might lead to biased estimates if the selection of representatives into voting is non-random. To address this concern, we have additionally estimated a two-step Heckman selection model and the results are reported in columns (3) and (4). In particular, we have implemented the following specification:

$$Vote_d = \mathbf{X}\beta + u_d \quad (14)$$

$$CastBallot_d = 1 \text{ if } \mathbf{Z}\gamma + e_d \geq 0 \quad (15)$$

where β and γ are parameter vectors, \mathbf{X} and \mathbf{Z} are vectors of controls (with potentially common elements), u_d and e_d are normally distributed error terms and $Corr(u_d, e_d) = \rho$. Equation (14) is the main specification, whereas equation (15) models the possible presence of sample selection. In particular, note that $Vote_d$ is observed only if $CastBallot_d = 1$. Of course, if $\rho = 0$, selection is not a concern, and equation (14) can be estimated consistently on its own. To identify the possible effect of selection, without resorting to a functional form restriction in the selection equation, we need to include in equation (15) at least one additional control that is not included in equation (14) and that, conditional on \mathbf{X} , affects the probability of casting a ballot without directly affecting the vote on the migration initiative.

To this end, for each representative we have constructed a proxy for her propensity to cast a ballot in that Congress, *Participation_d*, using the share of “Yes” or “No” votes cast over all roll call votes available, with the exclusion of those on IRCA. This variable is arguably correlated with the probability to take part on the IRCA vote but, conditional on all other control variables, should not have a direct effect on the likelihood to support IRCA. Columns (3) and (4) report our findings. Focusing on the estimates of the selection equation reported in column (4), we can immediately see that the coefficient of *Participation_d* is positive and strongly significant, suggesting that this variable affects the probability of casting a ballot on migration bills. Furthermore, the estimated coefficient of the inverse of the Mills' ratio indicates that we can reject

⁴² See Facchini et al. (2013) for a similar strategy.

⁴³ At the time of the vote, two seats were vacant due to the death of the local representative.

the null hypothesis of no sample selection bias, as it is positive and statistically significant. Still, the sign and statistical significance of our main results do not appear to be affected (see column 3).⁴⁴

8. Conclusions

We have developed a general model of legal and illegal immigration to understand the basic trade-offs faced by an elected official in the decision to support an immigration amnesty in the presence of a selective immigration policy. In our model we have shown that an amnesty is more desirable the bigger is the gain to aggregate income induced by granting legalized workers access to all the available employment opportunities. On the contrary, a more redistributive welfare state makes an amnesty less desirable, as lower-skilled legalized foreign workers become entitled to welfare state benefits.

We have then assessed the relevance of the drivers identified by our theoretical analysis by studying the role played by each of them in determining the voting behavior of members of the U.S. Congress on the IRCA legalization program. We have found strong support for our model, obtaining results that are robust to a variety of alternative specifications.

We can think of several avenues along which our analysis could be extended. First, in our theoretical setting the policy maker acts as a pure welfare maximizer.⁴⁵ An alternative would involve taking explicitly into account political economy forces that do play an important role in shaping immigration policy and its enforcement. Second, our theoretical analysis has abstracted away from the problem of aggregating individual congressmen preferences and the possibility of strategic interactions among representatives. Clearly, coalition building in Congress is a complex issue, as the failure of passing a comprehensive immigration policy reform during the Obama administration has shown. While both are important questions, we leave them for future research.

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⁴⁴ The sample selection model is estimated on 432 observations, even if the members of the House at the time of the vote were 433 because the Speaker, Tip O'Neill, representative of Massachusetts' 8th district is coded as "not a member" of the House in Poole and Rosenthal's dataset for most votes of the 99th Congress, including the vote on IRCA.

⁴⁵ In the empirical analysis, though, we have taken into account the role that organized pressure groups might play.

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