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Immigration Amnesty and Immigrant's Earnings

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ABSTRACT

We review the role immigration amnesties have played in US immigration policy, placing them in the context of similar programs embarked upon by other nations. The theory of amnesties suggests rent-seeking, bargaining, and costs as reasons for a country offering an amnesty, often in conjunction with increased border controls, internal enforcement and employer penalties. We model an immigration amnesty in which the destination country has a formal sector employing only legal immigrants, an informal sector employing both legal and illegal immigrants, and open unemployment. The model focuses on the productivity enhancing effects of legalization, and establishes specific conditions under which unemployment, the informal sector and the formal sectors increase/decrease in size. Building on these insights, our empirical work examines Mexican migration to the US. We study who are migrants; among migrants, who are legalized via IRCA, and who are legalized via sponsorship of family or employer. Furthermore, to measure the impact of amnesty on welfare of migrants, we estimate earnings equations of various migrants groups.

JEL Classification: J61, J68, H59, F22

Keywords: Amnesty, immigration, illegal immigration, border controls, internal controls, migrants, immigration, amnesty, IRCA, illegal, undocumented

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1. Introduction

With the discussion, passage and implementation of the amnesty provisions of the Immigration Reform and Control Act (IRCA) of 1986 (Public Law 99603), the United States altered its immigration landscape and made immigration amnesties a regular consideration in US policy discussions.

The US has at times invited migrants in, while at other times severely restricted immigration. Indeed, in this type of vacillation and policy ambiguity the US is not much different from other countries. Germany, perceiving itself as having a labor shortage through the 1960s and into the early 1970s, opened its borders to immigrants through its guestworker policies. When this perception changed, the guestworker program was stopped. Similar stories with idiosyncratic variations have occurred in France, the Netherlands, Great Britain, and many other countries. These policies, both the liberalizations and the restrictions, have not been universally favored in the enacting countries, leading often to ambiguous policy directions. Thus it is not unusual to find otherwise law-abiding citizens and businesses hiring immigrants who lack legal status in the host country.

Amnesties arise out of this ambiguous attitude towards immigration. A fundamental feature of an amnesty is that it only applies to people who have already illegally immigrated. If the recipient country were united behind the policy of limiting immigration and backed the set of laws enacted to enforce this limit (e.g., border and internal controls and enforcement), there would be no illegal immigrants and no potential amnesty issue. Recipient country employers

would refuse to hire those without proper documentation – illegal immigrants’ probability of obtaining a job would be zero – and eventually they would stop immigrating. There may be other reasons migrants might come without proper documents – certain refugees, for example – but these we do not consider here.

The US and other countries spend significant resources attempting to limit the number/types of immigrants they admit. Yet, more immigrants enter many of the recipient countries than at least the law admits to wanting. From the migrants point-of-view the potential benefits of migrating, even illegally, must outweigh both the direct and indirect costs. From the recipient country’s point-of-view the broadly defined gains from allowing this to happen must outweigh the costs – again both direct and indirect. As the stock of illegal migrants grows they may become a higher cost to the economy than legal migrants. The societal cost may well cross the host’s tolerance level. Moreover, the cost of locating, capturing and expelling illegal migrants may be prohibitive. When these occur the scene is ripe for an amnesty which converts some or all of the illegal migrants into legal migrants.

Under an amnesty, illegal immigrants who can demonstrate that they meet certain requirements, such as continuous employment, length of stay in the country, no criminal record, and so on, are made legal. The exact legal status they obtain varies from country-to-country and program-to-program, from short-term permits with requirements to leave when the permits expire, to citizenship. In Table 1 we see a list of some of the largest amnesty programs over the last 20 years in several OECD countries – in OECD terminology the “regularization” of immigrants in an “irregular” situation. The largest single amnesty by far was the IRCA in the US. Most of the recipient countries on this table offered multiple amnesty programs each

separated by only a few years.

By introducing discussion of the possibility of granting of immigration amnesties, the recipient country is essentially changing the rules of the game after the game has started. Prior to the enactment and implementation of an amnesty (and certainly prior to its discussion), those who migrated illegally did so expecting to remain illegal or, possibly, to obtain legal status through conventional means. An amnesty increases the number of legal immigrants in a “single” stroke. This paper asks two fundamental questions that are present in amnesty debates: Will granting amnesty induce further migrations, especially illegal migrations?; How much does amnesty affect migrants’ welfare? In both theoretical and empirical studies, we address these two questions by studying the migrants themselves – both illegal and legal – as well as non-migrants, asking who migrates and the impact of an amnesty on their behavior and earnings.

After providing some background discussion on immigration amnesties, especially on the IRCA in Section 2, we review the tiny literature on immigration amnesties in the Section 3. In Section 3, we also develop very simple model that addresses the impact of an amnesty on the size and allocation of illegal migrants in the recipient country’s labor market. In Section 4, we examine Mexican migrants to the US in light of the lessons learned from our theoretical model. In absolute numbers, the US is the world's largest country of immigration; Mexico is the world's major country of emigration. Migration from Mexico to the United States is the largest sustained flow of migration in the world. Here we examine some of the labor market impacts of the amnesty provisions of the IRCA on the migrants themselves. We do this using data from the Mexican Migration Project (MMP). We study who are migrants; among migrants, who are legalized via IRCA, and who are legalized via sponsorship of family or employer. Furthermore,

to measure the impact of amnesty on welfare of migrants, we estimate earnings equations of various migrants groups. Section 5 concludes.

2. Legal and Political Background in the United States

Here we summarize some of the background discussions to the of IRCA, its major features, and the number of people involved. Our discussion is drawn largely from the papers by Chiswick (1988), Hoefer (1991), and Rivera-Batiz (1991).

The formal introduction of an amnesty provision into the discussion of immigration legislation came in 1975 when Congressman Peter Rodino (Democrat, New Jersey) added a proposal for the legalization of illegal aliens to existing proposals for sanctions against employers who hired undocumented workers. This new proposal stalled in the House Judiciary Committee. However, with the substantial growth in the stock of undocumented migrants during the late 1970s and early 1980s, what emerged from Congress and signed into law by President Reagan on November 6, 1986 contained two major legalization programs.

In contrast to previous immigration policy reforms, the Immigration Reform and Control Act (IRCA) of 1986 (Public Law 99603) was targeted to deal with the growing illegal alien population and curtail further undocumented migration. It pursued these goals by providing amnesty to large categories of illegal immigrants and introducing sanctions for employers who knowingly hired undocumented workers (Rivera-Batiz, 1991). There were four major provisions of IRCA (see Chiswick, 1988; Hoefer, 1991; and Rivera-Batiz, 1991):

1. Employers were prohibited from knowingly hiring, recruiting, or referring for a fee undocumented aliens. Penalties for violating the law ran from civil fines of a maximum of

\$1,000 per alien for a first offense to criminal penalties of \$10,000 per alien and/or imprisonment for further offenses.

2. Increased Immigration and Naturalization Service (INS)¹ funding for enforcement of immigration laws and mandatory state participation in the INS Systematic Alien Verification Entitlement System, an automated on-line system allowing instant verification of an alien's immigration status.

3. Eligibility for temporary resident status for undocumented aliens who had continuously resided in the United States illegally since January 1, 1982. Chiswick (1988) suggests that the reasoning for the entrance date is the feeling that more recent migrants were not so firmly established that they could not leave. Applications needed to be filed on or before May 4, 1988. Once a person applied for temporary resident status, he or she was also eligible for permanent resident status, if they filed for it on or before November 6, 1990 and the applicant satisfied the English language requirements. After five years as permanent resident, he or she could apply for citizenship.²

4. Eligibility for temporary – and later permanent – resident status for up to 350,000 undocumented field laborers who worked in perishable agricultural commodities for at least 90 days during the year ending May 1, 1986. Under the Special Agricultural Worker (SAW) program these workers were classified as Group I workers and were eligible for permanent residence on December 1, 1989. Those who also qualified but applied after the 350,000 limit

¹ On March 1, 2003 the service/benefit functions of the US Immigration and Naturalization Service (INS) transitioned into the Department of Homeland Security as the US Citizenship and Immigration Services (USCIS).

² The date of eligibility for citizenship and the method of data collection for our sample provides for only a few cases of those legalized under IRCA obtaining citizenship.

was reached were Group II residential status and permanent residence on December 1, 1990. The SAW program was supplemented by the Replenishment Agricultural Worker (RAW) program which, from 1990 and lasting for three years, allowed US farmers to import foreign laborers to harvest perishable crops if the Departments of Labor and Agriculture agreed there was a labor shortage. These foreign workers are given temporary resident status and, aside from the 90 days of work a year each must spend in US agriculture, they could seek employment elsewhere during the rest of the year. Once a foreign worker is employed under the RAW program for at least three consecutive years, he/she becomes eligible for permanent residency. No shortages were ever found so the RAW never came to pass. According to Chiswick (1988) and Rivera-Batiz (1991) the SAW and RAW programs were added as compromise items to attract the support of producers of perishable agricultural products. These farmers were particularly vulnerable to a sudden drop in the availability of seasonal agricultural workers. However, while there may have been 3 to 5 million illegals in the US just prior to IRCA, a not insignificant number of the SAW applicants may not have been among them given the substantial fraud in the SAW program.

Tables 2 and 3 (Rytina, 2002) summarize the impact of the IRCA on changes in immigrants legal status. The three million persons who applied for legalization under IRCA represent most of the legalization eligible aliens given an estimated illegal immigrant population of 3-5 million in 1986 (Hoefer, 1991). Of those applying, 85 - 91% were legalized, and of those legalized 33% became citizens by 2001. The citizenship rate for the regular IRCA legalizations was 40%; for SAW applicants, 23%. Visa over-stayers had a much higher rate of naturalization than illegal entrants. Of those granted permanent residence, those legalized under IRCA made

up 44% in 1989, 57% in 1990, 62% in 1991, 17% in 1992, and zero to 2% in later years.

Table 4 highlights the major features of IRCA and amnesty laws that followed IRCA. Post-IRCA amnesties were largely extensions of the original act, generally cleaning up and more carefully defining who was to be covered under IRCA. Thus the story of immigration amnesties in the US is at least until June 1, 2006, properly the story of IRCA.

3. Economic Theory of Immigration Amnesty

In this section we review the limited theoretical literature on immigration amnesties and offer a simple model which captures elements of the amnesty decision and its effects. Formal theoretical models are very scarce. The literature includes papers by Epstein and Weiss (2001), Chau (2001, 2003), and Karlson and Katz (2003).

3.1 Aspects of the Economic Theory of Immigration Amnesty

The theory of immigration amnesties asks where do amnesties come from and why do they take the forms they take. There are several considerations behind the theory of immigration amnesties – some entering into the formal modeling, some outside of the modeling but setting its context.

(1) As discussed above, there must be a reason that illegal migrants are present in the first place – that they are tolerated. Someone must be giving them jobs. At some level law enforcement tolerates their presence. Most likely their existence and toleration reflects competing interests in the recipient country.

(2) The coexistence of legal and illegal migrants is puzzling. Epstein and Weiss (2001)

discuss this in some detail, offering several explanations, including: (2a) immediate legalization of successful entrants will affect the flow of migrants; (2b) legalized migrants cannot be deported, so the recipient country may prefer illegal immigrants to allow for a deportation; (2c) there may be benefits from having workers confined to certain sectors, which can be guaranteed in a democratic society only if they are illegal (Hillman and Weiss, 1999), or from having them largely unemployed for efficiency wage purposes (Epstein and Hillman, 2000); (2d) It is easier to deny illegal entrants income transfers of various sorts, and to discourage dependent family members from joining them.

(3) If legal and illegal immigrants coexist, the desire to legalize the illegal immigrants must represent some increased benefit to having them legal, or an increased cost to their remaining illegal. The coexistence of legal and illegal immigrants tells us that for the recipient country these two groups have different costs and benefits. The desire to enact an amnesty may arise due to increased border and internal control expenses. Among the explanations they offer, Epstein and Weiss (2001) point out that the social costs from migrants may increase at a faster rate if the migrants are illegal than if they are legal. At a critical number of illegal immigrants it becomes cheaper to legalize them than to continue bearing this additional cost. Also, the existence of a very large illegal base may signal the natives that illegality is acceptable.³

These are political economy questions and indeed the four papers on the theory of immigration amnesties capture these issues in their modeling.⁴ Epstein and Weiss (2001) derive

³ Epstein and Weiss (2001): “What matters in some sense is not whether these effects actually exist, but since immigration is limited and countries set up controls to keep illegals out, at the very least government officials believe there is some potential harm from allowing free migration.”

⁴ These models, and indeed all of the discussion of illegal migration and amnesties, start from

an optimal amnesty policy where the decision to migrate depends on relative wages and the probability of being caught and deported. They assume illegal immigration is unwanted with border and internal control expenses incurred to prevent their entry and deport them if they manage to enter, but prevention is not complete. At some point an amnesty will be preferable to having a large number of immigrants outside of the rule of law. An amnesty will also reduce the cost of internal controls, allowing resources to be diverted to border controls. Moreover, they discuss circumstances for the optimality of a delayed amnesty, under which only those in the country for a certain minimum number of years are eligible for the amnesty, as well as for a limited amnesty, in which illegal workers who come forward are granted a work permit for a fixed period, after which they are forced to return to their home country.

Chau (2001) asks why we frequently find employer sanctions and amnesties jointly enacted. She argues that an amnesty credibly commits the host country to continue efforts that it would otherwise choose to discontinue apprehending and deporting illegal immigrants once they have entered the labor force. In a similar vein Chau (2003) shows that while amnesty may appear to run contrary to the original intent of the immigration reform, it may nevertheless facilitate rent-capture by the politician by "wiping the slate clean" and reducing the deadweight

the presumption of a second best world and look not at how to get to the first best, but at alternative second best policies. The related international trade literature frequently starts its discussions with what the first best world would look like. In the standard models with international goods mobility but not international factor mobility the first best policy is free trade; when there is international factor mobility but not international goods mobility the first best policy is unrestricted factor mobility (Mundell, 1957). When there is some distortion that puts us in a second best world, such as an economy-wide or sector-specific minimum wage, the initial question in this literature is what policies can be implemented to achieve a first best solution (Basu, 1998). The first best solution becomes a reference point from which to measure the costs and success of other policies.

loss of employer sanction measures.

The trade-offs between amnesties, border/internal controls and enforcement are also approached in Karlson and Katz (2003), who start from the assumption that some illegal immigration is desirable as the recipient country may wish to attract workers to its low productivity sector, which can be made profitable only by hiring low wage illegal workers. In Karlson and Katz (2003) the wage offer is not enough on its own to induce illegal migration, so it must be supplemented with a probabilistic amnesty which would allow these immigrants to eventually/possibly work in the high wage sector.

3.2 Amnesty, Size and Allocation of Illegal Migrants: An Illustrative Model

One major topic not thoroughly discussed in the amnesty literature is whether the amnesty policy is effective in reducing the size of illegal immigrants in the host country. To answer this question, we model an immigration amnesty in which the destination country has a formal sector which employs only legal immigrants, an informal sector employing both legal and illegal immigrants, and open unemployment. The model focuses on the productivity enhancing effects of legalization, and establishes specific conditions under which unemployment, the informal sector and the formal sectors increase/decrease in size.

The elements of this model are:

(1) Immigrants come from a pool of potential migrants in their home country. Labor is homogenous. The only heterogeneity among laborers is that some enter the recipient country legally and some illegally. Note that the heterogeneity of labor is of interest in the empirical modeling.

(2) In their home country potential migrants can earn some sort of a living, possibly on family farms. We will assume full employment in the home country, with the wage inversely related to labor supply, and equal to the marginal product of labor. Variations on this theme can have some interesting implications, but do not change the story's essentials (Gang and Gangopadhyay, 1987).

(3) In the recipient country immigrants can find employment in the formal sector or informal sector, or end up unemployed. In these three sectors workers are paid fixed wages. This greatly simplifies the modeling without grossly deviating from having more relaxed assumptions. The unemployed receive a wage that is indexed at zero. Informal workers receive a wage that is fixed at the subsistence level or near it. Formal workers receive a wage that is substantially above the subsistence level. It is not outside the bounds of the modeling to have the informal wage above the formal wage, although we do not expound on this situation. Also, the informal wage could be above or below the wage in the home country.

(4) Unemployment exists only in the recipient country and the unemployed are actively involved in job search. The unemployed may have entered the recipient country either legally or illegally. We do not distinguish the two, though if all of one type of labor became employed it would have implications for the other type. In the internal equilibrium that we discuss this cannot happen. It would however be relevant in the end stages where wages in the home country have risen to the level of wages in the recipient country.

(5) While we label the productive sectors in the recipient country formal and informal, they are not necessarily completely populated with only legal or only illegal workers, respectively. Legality here involves possessing a piece of paper giving you certain rights and

obligations in the recipient country – e.g., a “green card.” Even though an immigrant may possess such a piece of paper, he may choose to work in the informal sector. In fact, he may be one of the entrepreneurs in the informal sector, or hire illegal immigrants to work for his family, or he may employ illegal immigrants in order to hire them out to local employers (see Epstein, 2003 for a full exposition of this relationship). Though legal, he is clearly working in the informal sector. On the other hand, we assume that illegal entrants cannot work in the formal sector.

(6) To close the model we will assume an expanded Harris-Todaro (Harris and Todaro, 1970) type equilibrium with risk neutral labor. Essentially this means that *ex ante* migrants and potential migrants compare their expected gains (wages) from migrating to what they get if not moving, and equilibrium occurs when these are equal.

(7) An amnesty creates new pieces of paper legalizing people. The new legal immigrants do not necessarily work in the formal sector, as in (5) above.

(8) We only look at immigrants and potential immigrants from the home country. By inference can talk about consequences for recipient country native labor, or past immigrants from the same or different origins. While there are clearly income distribution effects of migration, there is evidence on both positive and negative aggregate implications for wages and unemployment of natives and previous immigrants. While simple theory tells us increasing the supply of a factor will lower the returns to the existing stock of the factor, this ignores international capital mobility (which we ignore here too). If firms cannot get the cheaper labor in the recipient country, they may set up shop in the home country or some other country with cheap labor. This would deny the recipient country the complementary gains from immigration,

though it would also reduce costs. Who wins or loses when all issues are properly accounted for is difficult to say. (All we can say is that the world is better off under free everything. And each individual is potentially better off).

(9) The modeling is heavily drawn from Dutta, Gang and Gangopadhyay (1989), Gang and Gangopadhyay (1985, 1987b), and, in particular, Gang and Gangopadhyay (1990). The idea of legalized immigrants functioning in both the formal sector and the informal sector is taken from Epstein (2003).

Consider only migrants and potential migrants; later we will discuss recipient/host country labor. All originate from their home country, all labor is homogeneous, and each laborer is currently in one of four possible states, three in the recipient country and one in their home country. In the recipient country migrants can either work in the formal sector, F , informal sector, I , or may be unemployed and engaged in job search, L^U . In their home country they work in a “traditional” type economy, H . We consider labor, L^i , as homogeneous and an input in each productive sector i , $i = F, I$, and H .

Legal documentation (the allowed number of legal immigrants, permits, green cards, etc.), K , complements labor in production and is used in the production of both F and I . The total availability of legal documentation is set by the government, here exogenously. As just discussed, legal documentation can move back and forth between both F and I , and does so until its marginal product is the same in both sectors. The increased availability of legal documentation is what we use to capture an amnesty.

The production equations are

$$F = F(L^F, K^F); F_L, F_K, F_{LK} > 0; F_{KK}, F_{LL} < 0; \quad (1)$$

$$I = I(L^I, K^I); I_L, I_K, I_{LK} > 0; I_{KK}, I_{LL} < 0; \quad (2)$$

and,

$$H = H(L^H); H_L = H' > 0; H_{LL} = H'' < 0. \quad (3)$$

Firms are price-takers and final goods prices are fixed and normalized to unity in order to concentrate on the supply side relationship.

To establish a model with four labor market states we need four specifications for the wage-labor market relationship. In the recipient country both working sectors face effective wage floors. In the formal sector this is $w^F \geq \bar{w}^F$ and is substantially above the subsistence wage; while in the informal sector w^I is limited on its downward side by the subsistence wage, i.e., $w^I \geq \bar{w}^I$. Wages in the home country are flexible. The unemployed receive no wage, $w^U = 0$; i.e., their wages are indexed at zero. In the initial equilibrium we assume,

$$\bar{w}^F \geq \bar{w}^I \text{ and } \bar{w}^I \geq \bar{w}^H. \quad (4)$$

The relationship, $\bar{w}^I \geq w^H$, allows migrants to be attracted directly to the informal sector because of opportunities in that sector itself, not just as a stepping stone for formal jobs and legalization of their statuses.

Firms in the three sectors are maximize profits so that employment of labor in each sector is determined by

$$H' = w^H, \quad (5)$$

$$I_L = \overline{w}^I, \quad (6)$$

and

$$F_L = \overline{w}^F. \quad (7)$$

The total amount of labor (migrants and potential migrants) is fixed at L , i.e.,

$$L^F + L^I + L^H + L^U = L. \quad (8)$$

The basic story holds if labor supply is variable, though extra conditions are needed and there are some useful additional insights (Gang and Tower, 1990).

Legal documentation, a type of capital, is fixed at total quantity K and can be used by either the formal or informal sectors, so that

$$K^F + K^I = K. \quad (9)$$

Furthermore, the market for legal documentation and the people who hold it is such that its marginal products in these two sectors are equated,

$$F^K = I^K. \quad (10)$$

To close the model we need to determine how labor allocates itself among its four possible states. Assuming that workers are risk-neutral income maximizers, we invoke an expanded version of Harris-Todaro (1970) labor market equilibrium condition,

$$(\bar{w}^F L^F + \bar{w}^I L^I)/(L^F + L^I + L^U) = H' \quad (11)$$

Equations (6) to (11) comprise the system of equations in L^F , K^F , L^I , K^I , L^H and L^U we need to analyze for our model. Workers migrate to the recipient country in search of informal as well as formal jobs, but may end up unemployed. Legal workers can be found in both the formal and informal sectors. Using these equations we derive the following comparative static results which are useful in studying the effect of amnesty on the reallocation of migrants in the host country.

Comparative Static Results

$$dK^F / dK = (-F_{LL})\Delta^I / |D| \geq 0;$$

$$dK^I / dK = (-I_{LL})\Delta^F / |D| \geq 0;$$

$$dL^F / dK = F_{LK}\Delta^I [(H_L / (L - L^H)) - H_{LL}] / |D| \geq 0;$$

$$dL^I / dK = I_{LK}\Delta^F [(H_L / (L - L^H)) - H_{LL}] / |D| \geq 0;$$

$$dL^H / dK = (-\bar{w}^I I_{LK}\Delta^F - \bar{w}^F F_{LK}\Delta^I) / |D| < 0;$$

$$dL^u / dK = \{F_{LK}\Delta^I [H_{LL} + (w^F - H_L) / (L - L^H)] + I_{LK}\Delta^F [H_{LL} + (w^I - H_L) / (L - L^H)]\} / |D| \leq 0;$$

$$\text{where } \Delta^i = i_{LL}i_{KK} - (i_{LK})^2 \begin{cases} \geq 0 \\ < 0 \end{cases}, i = I, F; \text{ and } |D| = -(H_{LL}\Delta^F + F_{LL}\Delta^H) > 0.$$

The main question we are interested in is what happens when there is an immigration amnesty – an increase in the number of “legality coupons” which allow illegal workers to become legal. What happens depends crucially on whether there are increasing (IRS), constant (CRS) or diminishing (DRS) returns to scale in the formal and informal sectors. In our model these correspond to the cases where $\Delta^i < 0$, $\Delta^i = 0$ and $\Delta^i > 0$, respectively. However, we cannot entertain the assumption of IRS because it is not consistent with profit maximization by competitive firms, which we assumed in making firms in our model price takers. Moreover, for a solution to exist, i.e., $|D| \neq 0$, or, in our case, $|D| > 0$ – there cannot be CRS in both the formal and informal sectors. Generally we assume DRS in both sectors, pointing out what happens if CRS exists in I or F .

If there is CRS in the formal sector (F) and DRS in the informal sector (I), then all new legal documentation will end up in the informal sector, and all growth (output increase) will

occur there – the formal sector will stagnate. Labor will migrate from the home country and will obtain a job in the informal sector or become unemployed. Unemployment may, on net, rise or fall, depending on the production technology in the home country, the size of the formal and informal sectors in the recipient country and on relative wages (the exact conditions are discussed below). If, instead, there is CRS in I and DRS in F , it is the informal sector which is stagnating and the formal sector which is growing. Of course, with DRS in both sectors, they are growing and the relative growth rates of each sector depend on the production technologies. Below we discuss the specific technologies.

The basis premise of our model is that migrants are looking for some sort of job in the recipient country. They would prefer formal jobs but not all migrants get a relatively high pay formal job, so some migrate illegally and look for jobs in the informal sector. Some get these jobs and some become unemployed. An amnesty increases the number of legality documents. Generally, both the formal and informal sectors will expand. The informal sector expands for as the formal sector grows more people may be pulled out of the home country by the draw of high paying jobs than the formal sector can absorb – the higher expected wage (and/or the expectation of future amnesties, which we do not model). These people enter the informal sector or become unemployed. Some legal immigrants may also enter (or stay if they just became legalized) the informal sector, and if one amnesty follows another, for a time the number of illegal workers and unemployment increases. This process has been described in some detail in Gang and Gangopadhyay (1990), though for a simpler economy than we have outlined here.

We now look at the consequences of these forces for the *relative size of the sectors*. Basically we are concerned with what happens when an amnesty makes more legality documents

available to the economy. When the number of legality documents available in the economy increases, some will go into the formal and some into the informal sector, as our allocation rule (10), $F^K = I^K$, tells us they will be allocated in such a way that marginal products are equated.⁵ This raises the question of what determines the relative growth rates of legality documents between the formal and informal sectors. The condition is given in the following proposition.

Proposition 1: Let g_K^F be the growth rate of legality documents in the formal sector and g_K^I be the growth rate of legality documents in the informal sector (i.e., $g_K^i = (1/K^i) (dK^i/dK)$, $i=F,I$), then

$$g_K^F \geq g_K^I \Leftrightarrow (-e_L^{F_L}) [e_L^{I_L} e_K^{I_K} - e_K^{I_L} e_L^{I_K}] \leq (-e_L^{I_L}) [e_K^{F_K} e_L^{F_L} - e_K^{F_L} e_L^{F_K}], \quad \text{where,}$$

$e_j^i = (\partial i / \partial j) (j/i)$, i.e., e is $(1/\eta)$ and η is the elasticity of the marginal product curve with respect to the different factors of production.

⁵ In the extreme case of a completely inelastic demand for documents/green cards in the formal (informal) sector, where $F_{LL} = 0$ ($I_{LL} = 0$), all of the document increase goes into the informal (formal) sector.

Proof of Proposition 1: To see this, from the comparative statics results box,

$$\begin{aligned}
& (1/K^F)(-F_{LL})\Delta^I / |D| \stackrel{\geq}{<} (-I_{LL})\Delta^F(1/K^I)/|D| \Leftrightarrow (1/K^F)(-F_{LL})\Delta^I \\
& \stackrel{\geq}{<} (-I_{LL})\Delta^F(1/K^I) \Leftrightarrow (1/K^F)(-F_{LL})\Delta^I \\
& \stackrel{\geq}{<} -(\partial I_L / \partial L^I)(L^I/I_L)(I_L/L^I)(1/K^I) \\
& \times [(\partial F_L / \partial L^F)(L^F/F_L)(F_L/L^F)(\partial F_K / \partial K^F)(K^F/F_K)(F_K/K^F) \\
& - (\partial F_L / \partial K^F)(K^F/F_L)(F_L/K^F)(\partial F_K / \partial L^F)(L^F/F_K)(F_K/L^F)] \\
& = -(e_L^{I_L} L)(I_L/L^I K^I) [e_K^{F_K} e_L^{F_L} (F_L F_K / L^F K^F) - e_K^{F_L} e_L^{F_K} (F_L F_K / K^F L^F)],
\end{aligned}$$

i.e.,

$$\begin{aligned}
& (-e_L^{F_L} L)(F_L/K^F L^F) [e_L^{I_L} e_K^{I_K} - e_K^{I_L} e_L^{I_K}] (I_L I_K / L^I K^I) \\
& \stackrel{\geq}{<} (-e_L^{I_L} L)(I_L/L^I K^I) [e_K^{F_K} e_L^{F_L} - e_K^{F_L} e_L^{F_K}] (F_L F_K / K^F L^F),
\end{aligned}$$

i.e., since $I_K = F_K$

$$(-e_L^{F_L}) [e_L^{I_L} e_K^{I_K} - e_K^{I_L} e_L^{I_K}] \stackrel{\geq}{<} (-e_L^{I_L}) [e_K^{F_K} e_L^{F_L} - e_K^{F_L} e_L^{F_K}].$$

We can see that the relative sizes of the elasticities are crucial in determining the growth of one sector versus the other. That is, given the fixed wage differential, $\bar{w}^F - \bar{w}^I$, the relative production technologies provide a snapshot the effect of an amnesty on the relative size of the sectors. Generally, we should expect to witness switching back and forth – the formal sector growing faster for a while, and then the informal growing faster. Note, however, in a Cobb-Douglas technology of the form $F = \lambda K^\alpha L^\beta$ and $I = K^\alpha L^\beta$, $\alpha + \beta < 1$, $\lambda > 1$, we have the left side of Proposition 1 equaling the right hand side. That is, as long as the number of unemployed is positive, $L^U > 0$, the rates of growth of the sectors are the same.

Next we ask, as a result of the amnesty, what are the concomitant changes in the labor market? Clearly, as the absolute amount of legality documents increases, employment increases in both the formal and informal sector.

Proposition 2: Let g_L^F be the growth rate of labor in the formal sector and let g_L^I be the growth rate of labor in the informal sector (i.e. $g_L^i = (1/L^i)(dL^i/dL)$, $i=F,I$), then $g_L^F \geq g_L^I \Leftrightarrow (e_K^{F_L}) [e_L^{I_K} e_K^{I_K} - e_K^{I_L} e_L^{I_K}] \geq (e_K^{I_L}) [e_K^{F_K} e_L^{F_L} - e_K^{F_L} e_L^{F_K}]$ where $e_j^i = (\partial i / \partial j) (j/i)$, i.e. e is $(1/\eta)$ and η is the elasticity of the marginal product curve with respect to the different factors of production.

Proof of Proposition 2: To see this, from the comparative statics results box,

$(1/L^F)(dL^F/dK) \geq (1/L^I)(dL^I/dK) \Leftrightarrow (L^I/L^F) \geq (I_{LK}/F_{LK})(\Delta^F/\Delta^I)$. Substituting and rearranging, the proof follows as in Proposition 1.

Thus, as with changes in the relative growth of the legality coupons between the formal and informal sectors, there will be employment shifts among the sectors. As we saw above, labor leaves the home country to search for informal and formal jobs. However, total employment may increase or decrease, as we have not yet taken into account what happens to unemployment as people leave the home country seeking the new jobs in the formal and informal sectors. This leads to our next proposition, where E is employment, i.e., $E = L^H + L^I + L^F$.

Proposition 3: *Employment falls, or unemployment rises, i.e., $dE/dK < 0$, if and only if $1 +$*

$$(I_K/F_K) (L^F/L^I) (e_K^{F_L}/e_K^{I_L}) \{[H_{LL} + (W^F - H_L)/(L-L^H)]/[H_{LL} + (W^I - H_L)/(L-L^H)]\} > 0.$$

Proof of Proposition 3: *To see this, from the comparative statics results box,*

$$dL^u / dK = \{F_{LK} \Delta^I [H_{LL} + (w^F - H_L) / (L - L^H)] + I_{LK} \Delta^F [H_{LL} + (w^I - H_L) / (L - L^H)]\} / |D| \gtrless 0.$$

Substituting and rearranging, the proof follows as in Proposition 1.

This condition is more complicated than that found in Gang and Gangopadhyay (1990). Here, depending on the relative elasticities, relative wage differentials and the relative size of sectors of the economy, immigration amnesties will have different effects. In particular we have established conditions under which the informal sector expands more rapidly than the formal, both in its use of legality documents and in employment.

There are two important caveats to our modeling. First, our work concentrates on supply side relationships, ignoring the demand side. Clearly changing employment patterns and incomes in the three sectors have implications with regard to effective demand and the extent to which different sectoral output levels can actually be consumed given the intersectoral income distribution and consumption parameters. In a more general and much more complicated model, we would have to account for these. The second caveat is that, in reality, not all labor is homogeneous and skill requirements may differ from one sector to another. Our model could be

made more flexible, for example, by allowing different degrees of substitutability between labor skills so that an unskilled worker moving from the home country or informal sector to the formal sector would be only imperfectly substitutable for a skilled worker. While this certainly would help generalize the model, the additional conditions *vis-à-vis* growth of the informal and formal sectors would yield few additional insights.

Our very simple model shows that the effects of an immigration amnesty are not straightforward, though it is quite clear that an amnesty will impact on the number of illegal migrants and their allocation into sectors of the economy. While our conditions in the theoretical model are in terms of elasticities, that is not our main interest in modeling. The model provides insights into how the labor market adjusts to an amnesty. In our empirical work which follows, we build on these insights and study who the migrants were; among migrants, who were legalized via IRCA, and who were legalized via sponsorship of family or employer. Furthermore, to measure the impact of amnesty on welfare of migrants, we estimate earnings equations of various migrants groups.

4. Data and Analysis

So far we have discussed the major US amnesty initiative, the IRCA, setting it in the foreground of similar amnesties in other OECD countries. Using a theoretical model we highlighted the reallocation of the labor force as a result of an immigration amnesty. Together they provide a context for our empirical work. In order to provide greater focus we did not discuss in our theory the wage effects of an amnesty. Generally, these are theoretically ambiguous and need to be determined empirically. Our empirical work examines the Mexican migration to the US, first

looking at who migrates and who doesn't, who became legalized under IRCA, who under other programs, and who never became legalized. Against this background we also estimate the wage effects of IRCA on Mexican immigrants to the US.

Unfortunately, even now, almost twenty years after the legislation was signed into law, we still have relatively few studies on the economic consequences of immigration amnesties (Chiswick (1988), Barreto, Ramirez and Woods (2005), Gonzalez-Baker (1997), Kossoudji and Cobb-Clark (2000, 2002), Massey (1987), Phillips and Massey (1999), Orrenius and Zavodny (2003), Rivera-Batiz (1999), Bucci and Tenorio (1997), Chiquiar and Hanson (2002), Chiswick and Miller (1999), Nelson and Xu (2001)). This is not for lack of interest; rather there are a limited number of data sets available for proper study of these issues. The data available either does not ask the right questions, was sloppy in its collection, did not include "control" groups, or simply does not have enough observations. While the U.S. and Mexican Censuses have been used, they and most other data sets fail to identify illegal immigrants and/or IRCA recipients. A notable exception is the 1989-1992 Legalized Population Survey (LPS), collected in conjunction with the implementation of the IRCA. The LPS provides a random sample of illegal immigrants seeking legalization under the regular program. This part of the IRCA amnesties was designed to regularize immigrants with an ongoing long-term commitment to the U.S. labor market. The LPS does not include illegal immigrants legalized under the Special Agricultural Worker program, nor immigrants who did not come forward under any of the IRCA provisions. Unfortunately the LPS does not contain information on groups comparable to the IRCA legalized population.

By constructing a synthetic control group using an external dataset, Cobb-Clark and

Kossoudji (2002) use the LPS to examine the effects of IRCA on wages. They find that the wage penalty for being unauthorized is ranges from 14% to 24%, while the wage benefit of legalization under IRCA was approximately 6%. This study complements previous studies, e.g., Cobb-Clark and Kossoudji (2002), by studying the allocation of Mexicans into different sectors, and then estimating their wage equations.

4.1. Descriptive analysis – Mexican Migration Project Data

We use individual and village level data on Mexican-U.S. migration available through the Mexican Migration Project (MMP93). The data comprise almost 16,000 households with over 100,000 people in 93 communities spread out over Mexico (*see figure MAP*), selected for their diversity in size, ethnic composition and economic development without regard to their degree of involvement with migration to the US. Each year since 1982, 200 households in each of two to five communities are interviewed, though in smaller communities fewer households are chosen. These are retrospective data with each community surveyed only once, which also means that villages that were surveyed in the early years of the project have no information on IRCA. An ethno-survey approach, combining techniques of ethnographic fieldwork and representative survey sampling, is used for data collection.

Interviews are generally conducted in December-January when sojourner U.S. migrants often return to Mexico. If initial fieldwork indicates that U.S. migrants return home in large numbers during months other than December or January, interviewers return to the community during those months to gather a portion of the 200 interviews. These representative community surveys yield information on where migrants go in the United States, and during the months of

July and August interviewers travel to those U.S. destinations to gather non-random samples of 10 to 20 out-migrant households from each community. The U.S.-based samples thus contain migrants who have established their households in the United States.

Massey and Zeteno (1999) show that the Mexican Migration Project data are a good source of reasonably representative retrospective data on documented and undocumented migration to the United States. We use the MMP93 version of the data. Massey et. al. (1987), Massey, Goldring and Durand (1994), and Massey and Zenteno (1999) provide details and some data analysis. Massey and Zenteno (1999) show the data are a source of reasonably representative retrospective data on documented and undocumented migration to the United States.

There are a few serious problems with the data. The interviews were free ranging, with the questioners following a semi-structured format. While the questioners tried to cover core questions, this process left many missing observations. Moreover, while the sample may be representative in a particular survey year, it will not be representative across time since it is retrospective and people are surveyed only once. To be included a migrant must have a link to a household in Mexico. Individuals who might have died or migrated permanently would not be in the sample in the survey year but may or may not have been legalized under the IRCA. There are people in the data who were interviewed before IRCA, and there are people in our data that were not legalized under IRCA at the time they were surveyed, but may have later become legalized. It is impossible to know how important the "missing" information is for the analysis, but it may potentially severely bias the results. Also, as the data has been collected over a twenty year period there are issues with deflating wages, relative price changes, and the like.

What is of particular interest to us is the information the MMP contains on the migrant's legal status. We know if individuals ever migrated to the U.S., whether they were legal or not, and if legal who sponsored them – if they were legalized was it via the regular amnesty of the IRCA, under the SAW, or by other means. Moreover, we have information on, for example, how many times people worked in the U.S., the aggregate time spent in the U.S., when they made their first trip and when they made their last trip, how long was each of these trips, whether they were currently working in the U.S., their wages and occupations in the U.S., as well as information on the socioeconomic characteristics of the household members such as age, education and marital status. The MMP also contains more detailed migration information on household heads that have migrated.

In the sample we look at here, we restrict age to between 20 and 60 and survey years to 1986 or later since the IRCA was introduced in 1986. We focus on observations with US wage information which is obtained for the last migration they have taken or is currently under way. For comparison purposes, we select non-migrants with Mexican domestic wage information, assuming that they can potentially migrate to and work in the US. For this reason, we choose those who reported wages from the last formal job in Mexico.⁶

Table 5 shows the mean characteristics of six groups: two groups legalized through IRCA (regular IRCA and SAW/IRCA), two groups legalized through programs or procedures other than IRCA (i.e., sponsored by a family member or employer), those never legalized and non-

⁶ Unfortunately, the year of this last job in Mexico is not reported, hence we do not study wages of non-migrants. Obviously, migrants –except for those legalized through family sponsorship – should have wage information in US. However, a substantial portion of migrants have not reported their wage information. Since we cannot treat those who did not report the wage information as non-participants in the labor market, we simply ignore them and focus on those

migrants. As shown in the Table 5, migrants legalized by IRCA have the highest hourly wages, followed by those legalized by employer sponsorship. Those legalized via SAW, family member sponsorship and non-legalized migrants have similar wage rates.⁷ The age distribution is quite similar, except that non-migrants are a few years older than other groups. Age when migrants last migrated is calculated using year of birth and the year of last migration, adjusted by the duration of migration. There is not much difference between the age at the survey year and age of last migration among legalized migrants whether through IRCA or other sponsorship. However, there are substantial differences between the two ages among immigrants who were not legalized. This indicates that obtaining legal paperwork is important for migration behavior. Those who legalized via regular IRCA and employer sponsorship have more experience than other migrant groups. But non-migrants have the greatest experience.

Education levels are higher among legalized migrants sponsored by family members or employers, and non-migrants. Those who legalized via IRCA, both regular and SAW, have lower education levels. The difference between education levels at the survey year and last migration is minuscule. The proportion of males in each group shows that males dominate among migrants. Only those who legalized through family sponsorship show a lower proportion of migrating males than females, though it is still greater than 50%. Employment related migration to the US is male dominated. The number of migrations within Mexico is highest among SAW recipients. This may show the nature of temporary agricultural work. The distribution of US migration destinations is concentrated in the West, followed by the South.

who reported wage information.

⁷ In this sense, it seems not to be desirable to aggregate regular IRCA and SAW. Also those legalized through non-IRCA procedures show different wage rates.

These patterns for the mean characteristics are also found in the male sample shown in Table 5-2. This is not surprising, given that most of the people in the sample are men. Generally, the female sample also shows similar patterns for mean characteristics. However, the hourly wages in the last migration is somewhat different; those legalized via the regular IRCA have lower wages than do those legalized via SAW, and those legalized through employer's sponsorship have lowest wages. It is not clear whether this is due to the smaller female sample size.

4.2. Legalization Categories and Earnings

We present an empirical multinomial logit model of the “choice” of Mexicans into the six groups. This will allow us to discuss who became legalized and who not. This analysis forms the background, and the selection equation that allow us to estimate a wage equation.

Lee (1983) describes a sample selection model when selection is based on the multinomial logit.⁸ Let suppose that s is the selection variable which takes values of 0, 1, ..., J for $J+1$ outcomes. The model for determination of s is

$$P_j = \Pr[s_i = j] = \exp(Z_i \gamma_j) / [1 + \sum_{j=1}^J \exp(Z_i \gamma_j)],$$

where i indexes the individual and j indexes the choice or outcome. Selection is based on $s_i = j$.

For convenience purposes, we drop the individual subscript for the earning equation below.

When the earnings equation is $y_j = X\beta_j + e_j$, the implied regression equation with the selection bias correction term is

⁸ The treatment of the multinomial logit is based on Greene (2002). The estimation is done

$$y_j = X\beta_j + (\rho_j\sigma_j)\lambda_j + \eta_j,$$

Where $\lambda_j = \phi [\Phi^{-1}(P_j)]/P_j$, where ϕ and Φ are the standard normal probability density function and cumulative distribution function, respectively; ρ_j is correlation coefficient between e_j and $\Phi^{-1}(P_j)$, and σ_j is the standard deviation of e_j .

4.2.1. Multinomial Logit Results

The sample is divided into six groups: two groups legalized through IRCA (regular IRCA and SAW/IRCA), two groups legalized through procedures other than IRCA (i.e., sponsored by a family member or employer), those never legalized and non-migrants.⁹ We choose a parsimonious specification: the right hand side includes age and its square in hundreds, years of education, a dummy variable for male and the total number of migrations within Mexico.¹⁰

Table 6 shows our estimation of the marginal effects of the multinomial logit model. The reference group is non-migrants whose coefficients are restricted to zero for identification purposes. The chi-squared statistics for testing goodness of fit is 1407.864, which is significant at 1% level.¹¹ Using the estimated coefficients of the multinomial logit model, marginal effects are

using Limdep, version 8.

⁹ Due to sample size considerations, the model is estimated using the whole sample; we do not separately consider the male and female samples.

¹⁰ The total number of migrations in Mexico might be endogenous. Due to data limitations, we cannot fully model this potential endogeneity. For a robustness check we estimated the same model without this variable; the results are not changed substantially.

¹¹ The chi-squared statistic is $2(\log L - \log L0)$, where $\log L$ and $\log L0$ are unconstrained log-likelihood and the log-likelihood when all coefficients are restricted to zero except for the constant. The values of $\log L$ and $\log L0$ are -5809.272 and -6513.204.

calculated. As the mean characteristics in the Table 5 suggested, education increases the probability of staying in Mexico (non-migrants) and migration through family sponsorship, while decreasing the probability of having been legalized through IRCA (both regular and SAW) and never being legalized.

Gender also plays a role in the outcome of migration status: Males are more likely to migrate as shown by positive significant marginal effects for all migrant groups except for family sponsored migrants, and it has a negative significant marginal effect for non-migrants. Agricultural workers may migrate both inside and across the Mexican border as shown by its positive and significant marginal effect. On the other hand, those who legalized through family sponsorship have negative significant marginal effects, hence the more one migrated inside Mexico, and the less likely they become legalized via family sponsorship.

4.2.2. Earnings Estimations

Using the selection bias correction model described above, we estimate US earnings equations for Mexican migrants during their last migration. Again, the specification for the earnings equation is parsimonious as was the specification of multinomial logit model discussed above: The independent variables are potential experience, when last migrated and its square in hundreds, education when last migrated, a dummy variable for male, dummy variables capturing the US destination of migrants (West, Mid-West, and South), and the total number of months of experience in the US, in addition to a control variable on whether the survey was conducted in US or Mexico.¹²

¹² The information on wage of the last migration is assumed to be the wage at the end of the

Tables 7 and 8 report estimates of earnings equations using OLS and a selection bias correction method. Table 7 shows that the usual human capital related variables (education and variables of potential experience) do not have a significant impact on earnings except for the education variable for the regular IRCA.¹³ Considering that Mexican migrants may take low skilled jobs in US where their human capital may not be valued much, this may not be surprising. Even the duration of migration does not substantially affect wage determination, as the variable “total months in US” is marginally significant in the earnings equation of those legalized via SAW and the non-legalized. Mexican migrants may be slow in assimilating into US labor market. The other finding is that there is a male earnings premium for all migration groups except for those who legalized via employer sponsorship, though its coefficient is virtually the same magnitude as other groups. This may be due to the small sample size of the employer sponsored migrant group.

Table 8 includes the selection bias correction term constructed following Lee (1983). Only two groups have significant estimates for the selection bias correction term: SAW and not legalized migrants. Note that the second step coefficient of the selection bias term is $(\rho_j \sigma_j)$, hence the sign is determined by the correlation coefficient between e_j (error term in earnings equation) and $\Phi^{-1}(P_j)$ related to the error term in choice equation. Both groups show positive selection, which means that the unobserved characteristics which determine the choice of

migration. Hence, age and education are adjusted using the duration of the migration. If they are still in US, then age and education are equal to current age and education level. The wages are adjusted using CPI (1982-84 = 100). The reference region is the northeast.

¹³ When the variable “age” is used instead of “potential experience,” still those variables related to human capital do not affect the wage determination substantially as human capital theory predicts.

migration status increase their earnings. The human capital related variables (education and potential experience) do not show the typical impact on earnings except for the education variable for regular IRCA. For the non-legalized group, education is negatively contributing to earnings. The total months in the US increases wages of not legalized workers; their coefficient is positive and significant. There is still a male earnings premium for SAW and non-legalized migrants.

4.2.4. Earnings Premium of Legalization

We studied the determination of migration legalization categories and the earnings equations of each category using a multinomial logit selection model. One question not immediately answered using this procedure is what earnings' benefit can be obtained via legalization. In this section, as a summary, we estimate earnings equations using a pooled sample with dummy variables capturing legalization categories. The reference group is those not legalized. We also estimate the earnings equation using the standard Heckman's two step method for correcting the migration decision. The estimation is done for the whole sample, and men and women separately. The estimation results are in Table 9.¹⁴

Table 9 shows that coefficients of selection bias correction terms in all three samples (whole, men and women) are all positive and significant, meaning positive selection is occurring in the migration decision and wage determination. The variables related to human capital do not

¹⁴ The specification of the probit model used for the choice of migration is the same as the multinomial logit model in Table 6. Roughly speaking (averaging the results for the various categories of migrants) the results are basically confirm what we have found in the multinomial logit model. The results of the probit model for the migration decision as the first step of Heckman's two step model are available from the authors.

positively contribute to wage determination. Contrary to human capital theory, the highly educated and the more experienced would have lower wages as the negative coefficients of education and of potential experience square indicate. The US experience measured in terms of total months in US increases wages.

The benefit of legalization, particularly via IRCA, is demonstrated by the wage premium of those legalized over the wages of non-legalized workers. The coefficients of category variables of regular IRCA and SAW are positive and significant at the 1% level. Overall, those legalized via regular IRCA have enjoyed a higher wage premium over non legalized than those legalized via SAW. However, in the case of women, only the premium of SAW is significant, and its magnitude is larger than that of the regular IRCA. It is interesting to note that other two legalized migrant categories, family sponsored and employer sponsored do not provide significant wage premiums. In short, those legalized via IRCA, whether it is regular or SAW, have enjoyed wage premium over the non-legalized.

5. Conclusion

Unlike capital mobility across borders, there are multi-faceted dimensions to labor mobility. Migration is causing challenges to both source and recipient countries. There is great inequality in the world and as barriers to mobility come down, it is very likely that we have begun another period of great international migration as people from low income countries migrate to richer countries. However, developed countries face big social and economic problems when they perceive there are “too” many migrants. Hence, many countries have imposed various rules and regulations related to migration. These government imposed barriers create the problem of

illegal/undocumented/unregulated migrants in recipient countries. Within the recipient countries there is great debate – the recognition in part of the lack of agreement on whether immigration is good or bad – on how to deal with illegal migrants, from deportation to amnesty. This paper deals with the effect of amnesty on the size and allocation of illegal migrants in the recipient country.

The debate over immigration amnesties has many dimensions. We focus on two questions often addressed in these debates: Will granting amnesty induce further migrations, especially illegal migrations?; How much does amnesty affect migrants' welfare? Both in our theoretical and empirical work a clear unambiguous answer is difficult to find. An amnesty will generally increase the flow of both illegal and legal migrants into the recipient country, increasing labor supply to all sectors of the economy, and our model tells us how the labor market adjusts to the amnesty and changes in size and allocation of illegal migrants. The model provides some insight on allocation of different migrant groups in labor market.

For the migration ties between the United States and Mexico the great amnesty “experiment” to the present day was the Immigration Reform and Control Act of 1986 (IRCA). We show which groups moved, and who did better and who did worse, among the Mexican migrants. Those migrants regularized under the IRCA – the regular IRCA – gained the most, followed by the participants in the SAW program. Those sponsored by family or employers, *ceteris paribus*, did not gain, relative to those who did not migrate.

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Mexican Migration Project Communities
(MMP93)

**Table 1. Main Regularization Programs of Immigrants in an Irregular Situation
in Selected OECD Countries**

| Country | Year | Numbers Regularized (thousands) |
|---------------|-----------|---------------------------------|
| Belgium | 2000 | 52.0 |
| France | 1981-1982 | 121.1 |
| | 1997 | 77.8 |
| Greece | 1997-1998 | 371.0 |
| | 2001 | 351.0 |
| Italy | 1987-1988 | 118.7 |
| | 1990 | 217.7 |
| | 1996 | 244.5 |
| | 1998 | 217.1 |
| | 2002 | 634.7 |
| Portugal | 1992-1993 | 39.2 |
| | 1996 | 21.8 |
| | 2001 | 179.2 |
| Spain | 1985-86 | 43.8 |
| | 1991 | 110.1 |
| | 1996 | 21.3 |
| | 2000 | 163.9 |
| | 2001 | 234.6 |
| Switzerland | 2000 | 15.2 |
| United States | 1986 | 2684.9 |
| | 1997-1998 | 405.0 |
| | 2000 | 400.0 |

Source: Trends in International Migration: SOPEMI 2004 edition - ISBN 92-64-00792-X-
OECD 2005.

**Table 2. IRCA Legalization: Temporary and Permanent Residence,
and Naturalization through 2001**

| Category of Admission | Applicants for temporary residence (1) | Applicants granted permanent residence (2) | Percent of applicants granted permanent residence (3)=(1)/(2) | Applicants who naturalized (4) | Naturalized as a percent of applicants granted permanent residence (5)=(2)/(4) |
|---|--|--|---|--------------------------------|--|
| Total | 3,040,475 | 2,688,730 | 88 | 889,033 | 33 |
| Legalization applicants | | | | | |
| Total | 1,763,434 | 1,595,766 | 90 | 634,456 | 40 |
| Entered illegally prior to 1/1/1982 | 1,444,925 | 1,312,058 | 91 | 480,871 | 37 |
| Overstayed nonimmigrant visa prior to 1/1/1982 | 311,071 | 277,337 | 89 | 149,676 | 54 |
| Blanket enforced voluntary departure/unknown | 7,438 | 6,371 | 86 | 3,909 | 61 |
| SAW applicants | | | | | |
| Total | 1,277,041 | 1,092,964 | 86 | 254,577 | 23 |
| Group I Seasonal agricultural workers 1984-1986 | 67,308 | 59,975 | 89 | 12,124 | 23 |
| Group II Seasonal agricultural workers in 1986 | 1,209,733 | 1,032,989 | 85 | 242,453 | 23 |
| Unknown | 473 | | | | |

Source: from Nancy Rytina, IRCA Legalization Effects: Lawful Permanent Residence and Naturalization through 2001. Column (1) - Legalization Application Processing System (LAPS) and Statistics Division, US Immigration and Naturalization Service, as of August, 1992. Columns (2) and (4) - Statistics Division, US Immigration and Naturalization Service.

Table 3. Persons Granted Permanent Residence by Fiscal Year, IRCA Legalization

| Fiscal Year | <u>IRCA totals</u> | | <u>Regular IRCA (pre-1982 immigrants)</u> | | | | <u>SAWS</u> | | |
|-------------|--------------------|------------------------|---|------------------|--------------------------|--|-------------|-------------|-----------|
| | number | as % of all immigrants | Total | Illegal entrants | Non-immigrant over-stays | Enforced Voluntary Departures (EVD)/ unknown | Total | I 1984-1986 | II 1986 |
| 1989 | 478,883 | 44 | 478,882 | 383,852 | 95,905 | 125 | 1 | | 1 |
| 1990 | 880,940 | 57 | 824,272 | 683,240 | 137,551 | 3,481 | 56,668 | 56,668 | |
| 1991 | 1,134,509 | 62 | 215,399 | 180,575 | 32,962 | 1,862 | 919,110 | 1,293 | 917,817 |
| 1992 | 165,089 | 17 | 47,915 | 39,863 | 7,328 | 724 | 117,174 | 2,008 | 115,166 |
| 1993 | 16,702 | 2 | 16,702 | 14,049 | 2,545 | 108 | | | |
| 1994 | 4,083 | 1 | 4,083 | 3,456 | 607 | 20 | | | |
| 1995 | 2,898 | 0 | 2,898 | 2,335 | 546 | 17 | | | |
| 1996 | 3,037 | 0 | 3,037 | 2,534 | 488 | 15 | | | |
| 1997 | 1,300 | 0 | 1,300 | 1,055 | 232 | 13 | | | |
| 1998 | 820 | 0 | 818 | 693 | 121 | 4 | 2 | | 2 |
| 1999 | 6 | 0 | 4 | 4 | | | 2 | 2 | |
| 2000 | 271 | 0 | 267 | 232 | 33 | 2 | 4 | 2 | 2 |
| 2001 | 192 | 0 | 189 | 170 | 19 | | 3 | 2 | 1 |
| Total | 2,688,730 | 21 | 1,595,766 | 1,312,058 | 277,337 | 6,371 | 1,092,964 | 59,975 | 1,032,989 |

Note: Due to the elimination of duplicate records, immigrant totals in this table will slightly from those shown in the INS Statistical Yearbook.

Source: from Nancy Rytina, IRCA Legalization Effects: Lawful Permanent Residence and Naturalization through 2001. Originally compiled by Statistics Division, US Immigration and Naturalization Service.

Table 4. Highlights of IRCA and other US Immigration Amnesty Laws

IRCA Amnesty, 1986 Immigration and Reform Control Act

<http://iscos/gpv/graphics/aboutus/history/eligibility.htm> Accessed 5/29/2005.

Imposed employer sanctions, increased border controls, etc. and allowed for amnesties with the creation of two programs for obtaining temporary resident status:

a. Those who could show continuous illegal residence in the US since January 1, 1982 (except for “brief, casual and innocent absences”), and not subject to grounds of excludability added to the Immigration and Nationality Act in 1965 – e.g., if they had received any public cash assistance since 1982. Application period for temporary residency began May 5, 1987 and ended May 4, 1988 (section 245A of IRCA). Application for permanent residency began November 7, 1988 and has no fixed ending date.

b. Special Agricultural Workers (SAWs) Program – those who worked as agricultural workers for at least 90 days between May 1, 1985 and May 1, 1986. Must file between June 1, 1987 and Nov 30, 1998. Residence did not need to be continuous or unlawful. Public charge excludability applied only if had relied on public case assistance. Permanent residency for SAWs virtually automatic if granted temporary residency. SAWs aliens who worked on perishable crops for 3 years eligible on December 1, 1990.

Immigration Act of 1990

Amnesty extended to family members of those who had taken advantage of amnesty provision of IRCA and had taken steps to become US citizens.

Section 245(I) 1994

Passed as part of FY 1995 Commerce Justice State Appropriations bill. In effect FY 1995, sunset Sept 30, 1997. Under special circumstances allows adjustment of immigration status without leaving the United States.

Section 245(I) Extension 1997

Til January 14, 1998

Nicaraguan Adjustment and Central American Relief Act (NACARA) 1997

Nicaraguans and Cubans who lived in US illegally since 1995, and spouses and children granted legal resident status if applied by April 1, 2000. Also included certain Salvadoreans, Guatemalans and Eastern Europeans

Haitian Relief Immigration Fairness Act (HRIFA) 1998

<http://iscos/gpv/graphics/publicaffairs/factsheets/hrifafac.htm> Accessed 5/29/2005

Permanent resident status to Haitians who have continuously (no more than 180 days outside the US from Dec 31 1995 til HRIFA adjustment granted, unless special circumstances) been in US since December 31 1995 and spouses and children, if apply by Sept 1, 2000.

Legal Immigration and Family Equity (LIFE) Act 2000 (reinstatement of rolling Section 245(I))

<http://iscos/gpv/graphics/publicaffairs/questsans/lifelegal.htm> Accessed 5/29/2005.

Those who were denied and were here before 1982 and were part of lawsuits claiming they should have received amnesty. Must have entered US before January 1, 1982 and resided continuously til May 4, 1988, with continuous presence from Nov 6, 1986 til May 4, 1988. Reinstated Section 245(I) for the first 4 months of 2001 (Jan-Apr). Expires June 4, 2003. (Scheduled). Has family unity clause. Spouses and minor children (under 21) of those amnestied under IRCA granted amnesty.

Sources: Various.

Table 5-1. Mean Characteristics (Both Sexes)

| | Migrants | IRCA | Regular IRCA | SAW | Non-IRCA Legalized | Family Sponsored | Employer Sponsored | Not Legalized | Non Migrants |
|--------------------------------|--------------------|---------------------|---------------------|--------------------|----------------------|----------------------|---------------------|--------------------|--------------------|
| US Hourly Wage | 4.687 (4.586) | 4.786 (2.756) | 4.942 (2.825) | 4.613 (2.670) | 4.677 (3.302) | 4.600 (3.192) | 4.882 (3.604) | 4.618 (5.693) | --- |
| Age† | 35.561 (9.624) | 35.460 (8.727) | 36.929 (8.379) | 33.830 (8.825) | 36.356 (9.999) | 36.064 (10.441) | 37.132 (8.757) | 35.500 (10.162) | 39.486 (10.491) |
| Age | 32.114 (9.015) | 35.038 (8.640) | 36.521 (8.242) | 33.395 (8.783) | 34.655 (9.877) | 34.298 (9.953) | 35.604 (9.702) | 29.583 (8.354) | --- |
| Potential Experience† | 22.886 (11.311) | 23.085 (10.506) | 24.365 (10.070) | 21.666 (10.806) | 22.273 (11.645) | 21.901 (12.189) | 23.264 (10.098) | 22.844 (11.807) | 25.818 (12.382) |
| Potential Experience | 19.451 (10.446) | 22.672 (10.397) | 23.973 (9.896) | 21.230 (10.756) | 20.572 (11.195) | 20.135 (11.435) | 21.736 (10.545) | 16.943 (9.661) | --- |
| Education† | 6.675 (3.553) | 6.375 (3.543) | 6.564 (3.697) | 6.165 (3.356) | 8.082 (3.571) | 8.163 (3.525) | 7.868 (3.716) | 6.656 (3.504) | 7.668 (4.492) |
| Education | 6.663 (3.526) | 6.366 (3.500) | 6.548 (3.619) | 6.165 (3.356) | 8.082 (3.571) | 8.163 (3.525) | 7.868 (3.716) | 6.640 (3.484) | --- |
| Male | 0.856 (0.351) | 0.887 (0.317) | 0.865 (0.342) | 0.911 (0.285) | 0.727 (0.447) | 0.667 (0.473) | 0.887 (0.320) | 0.856 (0.352) | 0.513 (0.500) |
| Surveyed in US | 0.211 (0.408) | 0.318 (0.466) | 0.409 (0.492) | 0.218 (0.413) | 0.309 (0.463) | 0.326 (0.471) | 0.264 (0.445) | 0.117 (0.321) | --- |
| Total Months in US | 84.384 (79.095) | 124.187 (79.522) | 153.837 (82.088) | 91.309 (61.798) | 138.995 (102.581) | 132.837 (104.781) | 155.377 (95.503) | 46.570 (49.319) | --- |
| Number of Migration in Mexico† | 0.636 (1.648) | 0.887 (2.393) | 0.548 (1.182) | 1.263 (3.205) | 0.371 (0.703) | 0.333 (0.673) | 0.472 (0.775) | 0.500 (0.921) | 0.611 (1.023) |
| US Northeast Region | 0.065 (0.246) | 0.047 (0.211) | 0.039 (0.193) | 0.056 (0.230) | 0.098 (0.298) | 0.128 (0.335) | 0.019 (0.137) | 0.072 (0.258) | --- |
| US Western Region | 0.594 (0.491) | 0.690 (0.463) | 0.671 (0.470) | 0.711 (0.454) | 0.593 (0.493) | 0.567 (0.497) | 0.660 (0.478) | 0.525 (0.500) | --- |
| US Mid-West Region | 0.088 (0.283) | 0.062 (0.242) | 0.112 (0.316) | 0.008 (0.087) | 0.077 (0.268) | 0.057 (0.232) | 0.132 (0.342) | 0.108 (0.311) | --- |
| US Southern Region | 0.253 (0.435) | 0.200 (0.401) | 0.178 (0.383) | 0.225 (0.418) | 0.232 (0.423) | 0.248 (0.434) | 0.189 (0.395) | 0.295 (0.456) | --- |
| Observations | 2184 | 833 | 438 | 395 | 194 | 141 | 53 | 1157 | 3561 |

Note1: US hourly wage when last migrated is deflated using CPI (1982-84 = 100). Standard deviations are reported in parentheses.
Note2: Variables with † are measured when the survey was done. Variables without † are measured when the last migration occurred.

Source: Authors' calculations using MMP93.

Table 5-2. Mean Characteristics (Male)

| | Migrants | IRCA | Regular IRCA | SAW | Non-IRCA Legalized | Family Sponsored | Employer Sponsored | Not Legalized | Non Migrants |
|--------------------------------------|--------------------|---------------------|---------------------|--------------------|-----------------------|----------------------|-----------------------|--------------------|--------------------|
| US Hourly Wage | 4.817 (4.791) | 4.912 (2.849) | 5.129 (2.916) | 4.684 (2.762) | 4.873 (2.889) | 4.773 (2.345) | 5.071 (3.771) | 4.738 (6.010) | --- |
| Age† | 35.557 (9.676) | 35.579 (8.801) | 37.087 (8.479) | 33.992 (8.865) | 35.674 (9.922) | 34.723 (10.210) | 37.574 (9.129) | 35.524 (10.256) | 40.590 (10.578) |
| Age | 32.132 (9.003) | 35.122 (8.717) | 36.628 (8.338) | 33.536 (8.837) | 34.000 (9.942) | 32.968 (9.760) | 36.064 (10.085) | 29.634 (8.310) | --- |
| Potential Experience† | 22.987 (11.358) | 23.275 (10.617) | 24.620 (10.180) | 21.858 (10.893) | 21.660 (11.385) | 20.745 (11.743) | 23.489 (10.517) | 22.962 (11.876) | 26.801 (12.593) |
| Potential Experience | 19.574 (10.462) | 22.827 (10.513) | 24.179 (9.995) | 21.403 (10.864) | 19.986 (11.128) | 18.989 (11.133) | 21.979 (10.965) | 17.087 (9.630) | --- |
| Education† | 6.570 (3.524) | 6.304 (3.543) | 6.467 (3.699) | 6.133 (3.367) | 8.014 (3.523) | 7.979 (3.398) | 8.085 (3.798) | 6.563 (3.464) | 7.789 (4.667) |
| Education | 6.558 (3.496) | 6.295 (3.494) | 6.449 (3.608) | 6.133 (3.367) | 8.014 (3.523) | 7.979 (3.398) | 8.085 (3.798) | 6.547 (3.446) | --- |
| Surveyed in US | 0.193 (0.394) | 0.286 (0.452) | 0.377 (0.485) | 0.189 (0.392) | 0.305 (0.462) | 0.309 (0.464) | 0.298 (0.462) | 0.107 (0.309) | --- |
| Total Months in US | 84.098 (79.535) | 123.426 (80.139) | 153.116 (83.446) | 92.169 (62.930) | 147.411 (103.842) | 140.851 (106.124) | 160.532 (98.922) | 45.723 (49.338) | --- |
| Number of Migration in Mexico† | 0.656 (1.739) | 0.938 (2.507) | 0.573 (1.235) | 1.322 (3.321) | 0.355 (0.718) | 0.298 (0.685) | 0.468 (0.776) | 0.489 (0.922) | 0.672 (1.143) |
| US Northeast Region | 0.067 (0.251) | 0.053 (0.224) | 0.045 (0.207) | 0.061 (0.240) | 0.085 (0.280) | 0.117 (0.323) | 0.021 (0.146) | 0.076 (0.265) | --- |
| US Western Region | 0.583 (0.493) | 0.686 (0.464) | 0.662 (0.474) | 0.711 (0.454) | 0.567 (0.497) | 0.543 (0.501) | 0.617 (0.491) | 0.508 (0.500) | --- |
| US Mid-West Region | 0.093 (0.291) | 0.064 (0.244) | 0.116 (0.321) | 0.008 (0.091) | 0.099 (0.300) | 0.074 (0.264) | 0.149 (0.360) | 0.114 (0.318) | --- |
| US Southern Region | 0.257 (0.437) | 0.198 (0.398) | 0.177 (0.382) | 0.219 (0.414) | 0.248 (0.434) | 0.266 (0.444) | 0.213 (0.414) | 0.302 (0.459) | --- |
| Number of Observation | 1870 | 739 | 379 | 360 | 141 | 94 | 47 | 990 | 1827 |

Note1: US hourly wage when last migrated is deflated using CPI (1982-84 = 100). Standard deviations are reported in parentheses.

Note2: Variables with † are measured when the survey was done. Variables without † are measured when the last migration occurred.

Source: Authors' calculations using MMP93.

Table 5-3. Mean Characteristics (Female)

| | Migrants | IRCA | Regular IRCA | SAW | Non-IRCA Legalized | Family Sponsored | Employer Sponsored | Not Legalized | Non Migrants |
|--------------------------------------|--------------------|---------------------|---------------------|--------------------|-----------------------|----------------------|-----------------------|--------------------|--------------------|
| US Hourly Wage | 3.914 (2.985) | 3.792 (1.553) | 3.736 (1.734) | 3.887 (1.206) | 4.158 (4.198) | 4.255 (4.438) | 3.398 (1.128) | 3.905 (3.147) | --- |
| Age† | 35.583 (9.323) | 34.521 (8.105) | 35.915 (7.695) | 32.171 (8.344) | 38.170 (10.068) | 38.745 (10.489) | 33.667 (3.830) | 35.359 (9.618) | 38.323 (10.275) |
| Age | 32.006 (9.098) | 34.383 (8.023) | 35.831 (7.632) | 31.943 (8.182) | 36.396 (9.576) | 36.957 (9.902) | 32.000 (5.060) | 29.275 (8.628) | --- |
| Potential Experience† | 22.280 (11.021) | 21.596 (9.513) | 22.729 (9.242) | 19.686 (9.791) | 23.906 (12.271) | 24.213 (12.852) | 21.500 (6.221) | 22.150 (11.403) | 24.783 (12.074) |
| Potential Experience | 18.717 (10.333) | 21.457 (9.402) | 22.644 (9.199) | 19.457 (9.534) | 22.132 (11.327) | 22.426 (11.804) | 19.833 (6.735) | 16.090 (9.833) | --- |
| Education† | 7.303 (3.664) | 6.926 (3.517) | 7.186 (3.655) | 6.486 (3.275) | 8.264 (3.722) | 8.532 (3.775) | 6.167 (2.639) | 7.210 (3.696) | 7.540 (4.297) |
| Education | 7.290 (3.645) | 6.926 (3.517) | 7.186 (3.655) | 6.486 (3.275) | 8.264 (3.722) | 8.532 (3.775) | 6.167 (2.639) | 7.186 (3.660) | --- |
| Surveyed in US | 0.318 (0.467) | 0.574 (0.497) | 0.610 (0.492) | 0.514 (0.507) | 0.321 (0.471) | 0.362 (0.486) | 0 (0.000) | 0.174 (0.380) | --- |
| Total Months in US | 86.088 (76.523) | 130.165 (74.630) | 158.466 (73.240) | 82.457 (48.490) | 116.604 (96.545) | 116.809 (101.249) | 115.000 (51.217) | 51.593 (49.058) | --- |
| Number of Migration in Mexico† | 0.519 (0.929) | 0.489 (1.075) | 0.390 (0.743) | 0.657 (1.474) | 0.415 (0.663) | 0.404 (0.648) | 0.500 (0.837) | 0.569 (0.915) | 0.547 (0.874) |
| US Northeast Region | 0.048 (0.214) | 0 (0.000) | 0 (0.000) | 0 (0.000) | 0.132 (0.342) | 0.149 (0.360) | 0 (0.000) | 0.048 (0.214) | --- |
| US Western Region | 0.662 (0.474) | 0.723 (0.450) | 0.729 (0.448) | 0.714 (0.458) | 0.660 (0.478) | 0.617 (0.491) | 1 (0.000) | 0.629 (0.485) | --- |
| US Mid-West Region | 0.057 (0.233) | 0.052 (0.226) | 0.085 (0.281) | 0 (0.000) | 0.019 (0.137) | 0.021 (0.146) | 0 (0.000) | 0.072 (0.259) | --- |
| US Southern Region | 0.232 (0.423) | 0.223 (0.419) | 0.186 (0.393) | 0.286 (0.458) | 0.189 (0.395) | 0.213 (0.414) | 0 (0.000) | 0.251 (0.435) | --- |
| Number of Observation | 314 | 94 | 59 | 35 | 53 | 47 | 6 | 167 | 1734 |

Note1: US hourly wage when last migrated is deflated using CPI (1982-84 = 100). Standard deviations are reported in parentheses.

Note2: Variables with † are measured when the survey was done. Variables without † are measured when the last migration occurred.

Source: Authors' calculations using MMP93.

Table 6. Marginal Effects from Multinomial Logit (Both Sexes)

| | Regular IRCA | SAW | Family Sponsored | Employer Sponsored | Not Legalized | Non Migrants |
|--------------------------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| Constant | -0.404*** (0.050) | -0.044 (0.034) | -0.021 (0.028) | -0.066*** (0.018) | 0.235*** (0.724) | 0.300*** (0.095) |
| Age† | 0.017*** (0.003) | 0.000 (0.002) | -0.002 (0.001) | 0.002* (0.001) | -0.015*** (0.004) | -0.001 (0.005) |
| Age Squared in Hundreds† | -0.024*** (0.003) | -0.004* (0.002) | 0.003 (0.002) | -0.002* (0.001) | 0.011** (0.005) | 0.017*** (0.006) |
| Education† | -0.005*** (0.001) | -0.006*** (0.001) | 0.001** (0.001) | 0.000 (0.000) | -0.013*** (0.001) | 0.022*** (0.002) |
| Number of Migration in Mexico† | -0.002 (0.003) | 0.011*** (0.002) | -0.009*** (0.003) | -0.001 (0.001) | -0.011* (0.006) | 0.012* (0.007) |
| Male | 0.086*** (0.008) | 0.079*** (0.006) | 0.003 (0.004) | 0.012*** (0.003) | 0.226*** (0.012) | -0.406*** (0.015) |
| Actual Number | 438 | 395 | 141 | 53 | 1157 | 3561 |
| Predicted Number | 0 | 30 | 0 | 0 | 622 | 5093 |

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively. Chi-squared statistics is 1407.864***. The chi-squared statistic is $2(\log L - \log L_0)$ where $\log L$ and $\log L_0$ are unconstrained log-likelihood and the log-likelihood when all coefficients are restricted to zero except for constant; The values of $\log L$ and $\log L_0$ are -5809.272 and -6513.204.

Source: Authors' calculations using MMP93.

**Table 7. Earnings Equations for Categories of Mexican Immigrants to US
(OLS, Both Sexes)**

| | Regular IRCA | SAW | Family Sponsored | Employer Sponsored | Not Legalized |
|---|---------------------|---------------------|---------------------|-----------------------|---------------------|
| Constant | 1.210*** (0.220) | 1.384*** (0.186) | 1.507*** (0.311) | 1.411 (0.901) | 1.177*** (0.115) |
| Potential Experience | 0.008 (0.011) | 0.002 (0.009) | -0.005 (0.017) | 0.028 (0.040) | -0.003 (0.006) |
| Potential Experience Squared in Hundreds | -0.019 (0.018) | -0.017 (0.016) | 0.002 (0.031) | -0.063 (0.078) | -0.009 (0.014) |
| Education | 0.014* (0.009) | 0.006 (0.009) | -0.006 (0.018) | -0.027 (0.030) | -0.006 (0.006) |
| Male | 0.321*** (0.071) | 0.160** (0.072) | 0.202* (0.103) | 0.402 (0.313) | 0.207*** (0.047) |
| US Western Region | -0.252** (0.125) | -0.193** (0.095) | -0.166 (0.142) | -0.125 (0.698) | 0.045 (0.066) |
| US Mid-West Region | -0.314** (0.141) | -0.090 (0.244) | -0.368 (0.225) | 0.022 (0.714) | 0.181** (0.080) |
| US Southern Region | -0.275** (0.134) | -0.090 (0.101) | 0.036 (0.163) | 0.054 (0.730) | 0.160** (0.069) |
| Surveyed in US | 0.107** (0.052) | 0.086 (0.053) | -0.074 (0.101) | -0.072 (0.282) | -0.089 (0.055) |
| Total Months in US | 0.000 (0.000) | 0.001* (0.000) | 0.000 (0.001) | -0.002 (0.002) | 0.001** (0.000) |
| F-Statistics | 4.01*** | 3.93*** | 1.56 | 1.29 | 5.56*** |
| Adjusted R-squared | 0.058 | 0.063 | 0.035 | 0.047 | 0.034 |
| Number of Observations | 438 | 395 | 141 | 53 | 1157 |

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.
Source: Authors' calculations using MMP93.

**Table 8. Earnings Equations for Categories of Mexican Immigrants to US
(Multinomial Logit Selection Bias Correction Model, Both Sexes)**

| | Regular IRCA | SAW | Family Sponsored | Employer Sponsored | Not Legalized |
|---|---------------------|---------------------|---------------------|-----------------------|----------------------|
| Constant | 1.911*** (0.668) | 1.159*** (0.225) | 2.290** (1.070) | -5.434 (6.412) | 0.355* (0.196) |
| Potential Experience | -0.004 (0.015) | 0.001 (0.009) | -0.000 (0.018) | 0.069 (0.078) | -0.011* (0.006) |
| Potential Experience Squared in Hundreds | 0.008 (0.030) | -0.021 (0.016) | -0.002 (0.030) | -0.162 (0.163) | -0.007 (0.013) |
| Education | 0.023** (0.011) | -0.003 (0.010) | -0.009 (0.018) | -0.010 (0.054) | -0.027*** (0.007) |
| Male | 0.163 (0.159) | 0.259*** (0.091) | 0.182* (0.102) | 1.421 (1.079) | 0.601*** (0.090) |
| US Western Region | -0.247** (0.124) | -0.182* (0.094) | -0.152 (0.137) | -0.334 (1.221) | 0.009 (0.065) |
| US Mid-West Region | -0.305** (0.139) | -0.073 (0.240) | -0.354 (0.217) | -0.221 (1.253) | 0.153* (0.078) |
| US Southern Region | -0.272** (0.132) | -0.080 (0.099) | 0.044 (0.157) | -0.201 (1.282) | 0.138** (0.068) |
| Surveyed in US | 0.106** (0.051) | 0.094* (0.052) | -0.082 (0.097) | -0.117 (0.490) | -0.028 (0.055) |
| Total Months in US | 0.000 (0.000) | 0.001 (0.000) | -0.000 (0.001) | -0.002 (0.003) | 0.001*** (0.000) |
| Selection Bias Correction term | -0.288 (0.260) | 0.126* (0.073) | -0.353 (0.462) | 2.192 (1.990) | 0.605*** (0.118) |
| F-Statistics | 3.73*** | 3.85*** | 1.45 | 1.63 | 7.73*** |
| Adjusted R-squared | 0.059 | 0.067 | 0.031 | 0.108 | 0.055 |
| Number of Observations | 438 | 395 | 141 | 53 | 1157 |

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.
Source: Authors' calculations using MMP93.

Table 9: Earnings Equations (OLS and Probit Selection Bias Correction Model)

| | OLS | | | Selection Bias Correction Model | | |
|--|---|---------------------|---------------------|--|----------------------|---------------------|
| | Both Sexes | Male | Female | Both Sexes | Male | Female |
| Constant | 1.227*** (0.081) | 1.383*** (0.079) | 1.676*** (0.228) | 0.786*** (0.120) | 1.340*** (0.078) | 0.331 (0.640) |
| Potential Experience | -0.000 (0.004) | 0.002 (0.005) | -0.011 (0.013) | -0.004 (0.004) | -0.001 (0.005) | -0.014 (0.012) |
| Potential Experience Squared in Hundreds | -0.013 (0.008) | -0.017* (0.009) | 0.001 (0.026) | -0.022** (0.009) | -0.024*** (0.009) | -0.020 (0.026) |
| Education | -0.002 (0.004) | -0.001 (0.004) | -0.010 (0.011) | -0.023*** (0.006) | -0.021*** (0.006) | -0.030** (0.013) |
| Male | 0.219*** (0.033) | | | 0.565*** (0.075) | | |
| US Western Region | -0.057 (0.047) | -0.033 (0.049) | -0.315* (0.160) | -0.071 (0.047) | -0.045 (0.048) | -0.357** (0.156) |
| US Mid-West Region | 0.023 (0.058) | 0.057 (0.060) | -0.337 (0.213) | 0.011 (0.058) | 0.047 (0.060) | -0.374* (0.207) |
| US Southern Region | 0.040 (0.049) | 0.072 (0.052) | -0.286* (0.170) | 0.027 (0.049) | 0.059 (0.051) | -0.304* (0.165) |
| Surveyed in US | 0.012 (0.030) | 0.040 (0.033) | -0.119 (0.079) | 0.036 (0.030) | 0.060* (0.033) | -0.071 (0.080) |
| Total Months in US | 0.345*10 ⁻³ * (0.194*10 ⁻³) | 0.000 (0.000) | 0.001* (0.0006) | 0.411*10 ⁻³ ** (0.191*10 ⁻³) | 0.000 (0.000) | 0.001** (0.0005) |
| Regular IRCA | 0.130*** (0.035) | 0.137*** (0.037) | 0.088 (0.107) | 0.158*** (0.035) | 0.164*** (0.037) | 0.120 (0.104) |
| SAW | 0.094*** (0.032) | 0.088*** (0.033) | 0.204* (0.113) | 0.140*** (0.033) | 0.131*** (0.034) | 0.259** (0.113) |
| Family Sponsored | 0.070 (0.050) | 0.060 (0.058) | 0.077 (0.107) | 0.080 (0.049) | 0.077 (0.058) | 0.080 (0.103) |
| Employer Sponsored | 0.019 (0.076) | 0.017 (0.080) | -0.040 (0.246) | 0.039 (0.075) | 0.031 (0.078) | 0.031 (0.243) |
| Selection Bias Correction term | | | | 0.451*** (0.087) | 0.380*** (0.078) | 1.067** (0.418) |
| F-Statistics | 8.44*** | 4.77*** | 1.28 | 9.91*** | 6.15*** | 1.66* |
| Adjusted R-squared | 0.042 | 0.024 | 0.011 | 0.054 | 0.035 | 0.027 |
| Number of Observations | 2184 | 1870 | 314 | 2184 | 1870 | 314 |

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.
Source: Authors' calculations using MMP93.

