

Illegal immigration and a heterogeneous labour force. When can quotas generate an internal conflict?

Authors: Jesús Clemente,
 Pedro García-Castrillo.
 Gemma Larramona

 University of Zaragoza.

Abstract: In this paper we analyze the effects on the welfare of heterogeneous native workers in the context of the presence of legal and illegal immigrants, and where the main instrument of economic policy takes the form of entry quotas. In the framework of a model of overlapping generations, we find that these effects are not monotonous. More particularly, we note that in certain circumstances the effects on the native workers of a change in the quota are opposite in nature, depending on whether or not these workers are qualified. The key aspect of this result is, on the one hand, the effect of illegal immigration on wages and, on the other, the part of income generated by the illegal immigrants that is appropriated by the natives for managing this “informal” labour market.

Keywords: Illegal immigration; entry quotas; qualification.

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Address: Gemma Larramona,
Departamento de Análisis Económico.
Facultad de Ciencias Económicas y Empresariales
Gran Vía, 2.
50005 Zaragoza (Spain)
e-mail: gemmalar@posta.unizar.es

1. INTRODUCTION

During the last few years we have witnessed a progressive hardening of entry barriers to immigrants on the part of the developed countries. These measures have arisen in response to the new wave of immigration, one that has itself provoked a wide-ranging debate on the economic effects of immigration in the host countries. It has further resulted in the application of restrictive measures such as the implementation of entry quotas¹, which have contributed to the segmentation of immigrants dependent upon whether or not they have the necessary valid documentation. Some immigrants, described as legal, go on to directly form part of the formal productive system. Others, considered as illegal, become part of the “hidden” or “black” economy (as, for example, carers for infants and the elderly, and as domestic workers, see Harazi and Sgro, 2003 and Hillman and Weiss, 1999), with wages and working conditions that are habitually below those of the market. Illegal immigration is increasingly common and has now reached a significant scale: Coppel, Dumont and Visco (2001) have estimated that some 500,000 illegal immigrants enter Europe each year.

In response, a number of countries have chosen to restrict the number of legal immigrants in the economy; that is to say, they have established entry quotas by way of legal devices. This has led to the appearance of illegal immigration as an associate of its legal counterpart, thereby making clear the importance of drawing a distinction between both types of immigration.

¹ There are many other types of immigration control policies, from amongst which we can cite those formulated in California’s Proposition 187, which excludes illegal immigrants from using public services, such as health or education, or those included in the immigration reforms introduced in the USA in 1986, which increased the penalties on employers who hire illegal immigrants and strengthened frontier controls. However, in this paper we concentrate exclusively on the establishment of a legal immigration entry quota and on certain costs of illegal immigration in a generic sense.

The analysis of this phenomenon has been undertaken from different perspectives, some of which have focused exclusively on illegal immigration (Djajic, 1997, and Gaytán-Fregoso and Lahiri, 2000). More recently, the discussion has concentrated on the effect of illegal immigration in terms of the welfare (Myers and Papageorgiou, 2002, Dolado, Goria and Ichino, 1993, Braun 1993) or the salaries (Kemnitz, 2001) of the native population, or on the influence of such immigration when the labour market contains qualified and non-qualified work and the native workers appropriate a percentage of the product that is generated by illegal immigrants (Hazari and Sgro, 2003). Taking this perspective as a starting point, our paper considers the possible conflicts that might arise in given circumstances between heterogeneous workers when the government fixes a quota on legal immigration and when illegal immigration is also possible.

It is clear that many factors exert an influence on the decision to emigrate: demographic pressure in underdeveloped countries, conflicts that threaten human rights, the fall in transport costs or the collapse of the Soviet block. However, in this paper we concentrate on the most commonly considered factor in studies related to immigration, namely the differential in productivity or in wages that exists between host countries and the countries of origin. Here we should recall that, as a general rule, a very significant part of migration is not channeled according to the rules in force and effect in the host countries. Rather, emigrants take their decisions in conditions of uncertainty and in the hope of finding a job and a legal status as resident, even on a temporary basis, in the host country, integrating themselves in the hidden economy until they have achieved their objective. Depending on the legislation of the host country, these individuals face the risk of detention and expulsion, although they can also eventually legalize their situation and form part of the labour force of that country. Of course, the costs associated with the transport and illegal entry to a country are an influential factor on the volume of illegal migration. The efficiency of the police and legal apparatus in discovering and expelling illegal workers can also have an effect. However, in this paper no attention is given to such questions, and we consider that the decision to emigrate, whether legally or illegally, only takes into account the wage differential. These wages are certain in the country of origin but only expected in the country of

destination, given that the wage actually achieved depends essentially on whether the immigrant integrates into the legal labour market or can only form part of the hidden economy, a situation that is unknown at the time of making the decision. Thus, the decision to emigrate is taken in an environment of uncertainty given that the manner of integration into the host economy is a priori unknown. The mechanism that seeks to represent the decision making process of the immigrant, described as self-selection, is taken from Faini (1996), in such a way that the final distribution of immigration between the legal and the illegal is endogenous.

The existence of a wage differential between the labour carried out legally and that undertaken within the framework of the hidden economy would appear to be evident. The key question to be asked is: precisely who benefits from the difference?. A simple examination of some of the tasks carried out by these workers (domestic service, agricultural labour, small-scale building repairs) confirms that a quite significant percentage of the production that they generate is appropriated by the native workers who, as a consequence, benefit from the wage difference of these workers. In the light of this, we assume that the situation of illegality weakens the possibility of immigrants achieving the average wage and that it is the natives who benefit from this, in a way similar to that proposed in Hazari and Sgro, 2003.

However, this is not the only effect of migration, given that the increase in the labour force affects the wages of the host country. This influence will depend on the type of labour that is contributed, that is to say, qualified or not, as well as on the interaction between the different types of work in the host economy. Additionally, if the individuals of the host country are heterogeneous, then the effects on some groups will be different from those felt by others. Therefore, one can easily foresee a conflict of interests with respect to the number of immigrants that each group is willing to admit and, for this reason, changes in entry quota policies will have different effects on the welfare of the different groups of native workers.

Against this background, the aim of this paper is to consider the effect of an immigrant quota policy on both the relative proportion and the size of illegal immigration, as well

as on the welfare of different groups of residents of the host country, according to their qualifications. The literature in this regard, Dolado, Goría and Ichino (1993), Braun (1993), finds a negative relationship between such immigration and the welfare of the native population in its totality. However, these papers do not take into account the positive aspects of immigration, such as the part of the production of these workers that reverts to the native themselves, and nor do they consider the distinct effects felt by different workers, depending on their qualifications. An alternative perspective is adopted in Myers and Papageorgiou (2002), who analyze the effects of limiting the entry of immigrants by imposing a “toll” or payment for obtaining a residence permit in the host country, which is then divided amongst the native workers, and where entry quotas are removed. That is to say, the idea is to produce a disincentive to immigration, with the wages of all the immigrants being reduced and divided between the native workers.

In order to achieve the objective we have set for ourselves, we construct a model of overlapping generations which represents a host economy with natives that are heterogeneous in their qualifications and with a labour factor that is substitute amongst itself. The role of the State is limited to fixing a maximum immigration quota, expressed in terms of a percentage of the native population, although it is admitted that other immigrants participate in the economy of the host country in an illegal way, paying a percentage of their productivity to the natives under the concept of insertion into the labour market. This percentage can be interpreted as the cost of illegal immigration.

The analytical framework adopted in this paper allows us to draw conclusions on the migration rate and its distribution between legal and illegal immigrants. We are also able to determine the effects on the welfare of the native workers in function of various key variables or parameters, such as the conditions in the country of origin, the costs of illegal immigration, or the immigration quota policy adopted by the State. The existence of heterogeneous individuals leads to conflicts of interest where a given policy measure will benefit one group of workers to the prejudice of others.

The rest of the paper is organized as follows. In Section 2 we construct a model, describe the agents that intervene in the economy and the institutional context in which they interact, and obtain the optimal conditions of the decentralized economy. In Section 3 we obtain the steady state of the economy and consider its dynamic properties. The relationship between entry quotas and the welfare of the different types of native workers is analyzed in Section 4. Finally, Section 5 closes the paper with a review of the main conclusions.

2. THE MODEL: BASIC ASSUMPTIONS.

We consider a model of overlapping generations with aggregate production function of the Cobb-Douglas type, $Y_t = AK_t^\beta L_t^{1-\beta}$, where Y is the product, A a scale parameter, K the physical capital and L is a measure of the effective labour of the economy. We further consider qualified and unqualified labour as substitutes. Under the assumption of perfect competition in the factors markets and with k denoting the capital per unit of effective labour, the unitary retributions of effective labour and capital will be:

$$\omega_t = (1 - \beta)Ak_t^\beta \quad (1)$$

$$(1 + r_{t+1}) = \beta Ak_t^{-(1-\beta)}. \quad (2)$$

The agents present in this economy can be classified by reference to two criteria. The first, by their origin, which allows us to differentiate between natives and immigrants. The second, by their manner of integration in the labour market, which generates a dual differentiation. Amongst the natives, it allows us to distinguish between qualified and unqualified workers, depending upon whether or not they have decided to dedicate time to their training. Amongst the immigrants (who carry out all unqualified work), we can differentiate between legal and illegal workers, according to the way in which they have entered the host country. Thus, there are four types of workers which will be denoted by the index $j = 1, 2, 3, 4$, representing qualified natives, unqualified natives, legal immigrants and illegal immigrants, respectively.

All the individuals live for two periods. In the first they are endowed with one unit of time that they dedicate to work and, as appropriate, to education, obtaining wage income. In addition to the wage, each native worker receives a remuneration ρ paid by the illegal immigrants for their integration into the informal market. The totality of incomes obtained, which we denote by $w_t(j)$, is dedicated to consumption and saving. In the second period, they consume with a charge on the saving of the earlier period. They all share the same utility function of the type $U_t(j) = \ln[c_t(j)] + \delta \ln[c_{t+1}(j)]$, where j indicates the type of individual, c_t and c_{t+1} are the consumptions of each period and $\delta < 1$ is the subjective inter-temporal discount rate. With $s_t(j)$ representing the saving of the first period and r_{t+1} the interest rate, the inter-temporal restrictions for a representative individual of the class j will be:

$$c_t(j) = w_t(j) - s_t(j) \quad (3)$$

$$c_{t+1}(j) = (1 + r_{t+1})s_t(j) \quad (4)$$

Let N_t be the number of native individuals born in the period t (which, for simplicity, we normalize to 1 in $t=0$), and let us assume a constant vegetative growth at rate n on the total of the working population of the country, including in this the immigrants, who adopt the domestic fertility patterns.

The only function of the State in this economy is to establish a maximum limit on the number of legal immigrants that it is willing to admit in each period. Such a limit, or quota, takes the form of a percentage ϕ of the total native population.

The natives

The native workers can integrate themselves into the labour market in two ways, that is to say, as qualified or unqualified workers. In order to acquire the status of qualified worker, the individuals must dedicate a fraction $e \in [0,1)$ of their time in the first period of life to training. The qualification provides increases in productivity, in such a way that the unqualified workers have a productivity per unit of time that is a fraction q of that of the qualified workers which, for simplicity, normalize to one.

The individuals are heterogeneous as regards their innate ability to be trained. The heterogeneity of such training abilities takes the form of a uniform distribution of the time required for each individual to become qualified. We represent by $G(\cdot)$ the accumulated distribution function, in such a way that $G(\hat{e})$ indicates the number of individuals who require a time less than \hat{e} to become qualified.

The individuals make the decision about their training taking into account the productivity gains that goes with it, as well as the cost in time of the investment in education, which will depend on the aptitudes of each individual. Thus, individuals with greater innate ability have to dedicate only a little time to education in order to obtain productivity gains during the rest of their working life. However, the gains derived from training decline as individuals with a lesser capacity, who must dedicate a larger share of their time to education to the detriment of productive work, have access to that training. Therefore, there is an ability threshold level e^* , for which the wages obtained as a qualified worker are equal to those obtained from unqualified work. As a consequence, only those individuals with an ability, measured as the time required to become qualified, equal to or less than e^* , will dedicate resources to their training and, therefore, become qualified workers, so that the number of qualified workers is given by $G(e^*)$.

The income of the natives in the first period of life is made up of two parts: the wage incomes and the incomes they receive from the immigrants ($\rho\omega_t$). The latter, are identical for all native workers, but this is not the case with the wage retribution, which will be different depending on whether the work is carried out with or without qualification y , within this group, will depend inversely on the time that the worker has needed to dedicate to training. Thus, the income of a native worker will be: $w_t(1)$, whilst that of an unqualified worker will be: $w_t(2) = [q\omega_t + \rho]$.

For the ability threshold level, the retributions per unit of time for the work of the individual with a lower innate capacity who becomes qualified have to be equal to those of unqualified work. Given that the productivity of qualified work is one, the equilibrium condition can be written as $1 - e^* = q$, from where $e^* = 1 - q$.

The immigrants

We start from the hypothesis that those who emigrate do so as a consequence of the wage difference with their country of origin, in which the productivity of labour is a fraction p ($< q$) of that of the host country. They emigrate in their first period of life, without capital, and assuming the risk of not regularizing their situation in the host country. This obliges them to work as illegal immigrants, receiving only a fraction θ of their productivity, given that the rest, $1 - \theta$, has to be delivered to the native workers as a payment for their integration into the formal market. Therefore, $1 - \theta$ is a parameter than reflects the implicit cost of emigrating as an illegal worker.

With M_t representing the total number of immigrants of the period and $m_t = M_t / N_t$ the percentage they represent over the native population, the number of legal immigrants will come imposed by the entry quota established by the government, in such a way that the fraction of immigrants who enter as legal will be $\alpha_t = \phi N_t / M_t$. These immigrants will work as unqualified labour, independent of their training, with the same rights and obligations as the natives. The existence of a relative permeability of the frontiers allows for the entry of illegal immigrants who will represent a fraction $\alpha_t^i = 1 - \alpha_t$ of the total number of immigrants.

The wage retributions of a legal immigrant are similar to those of an unqualified worker and will be equal to his marginal productivity: thus, $w_t(3) = q\omega_t$. However, the retribution of the illegal immigrants will be: $w_t(4) = \theta q\omega_t$, with the resulting difference being divided in equal parts amongst the natives, such that $\rho = \alpha^i m(1 - \theta)q\omega_t$.

All the immigrants adopt the domestic norms of fertility, preferences and abilities, and their descendants form part of the native population.

The decision to emigrate is taken under conditions of uncertainty with respect to the manner in which work will be carried out in the host country. This decision will be made always provided that the expected income in the host country $\alpha_t q + \alpha_t^i q\theta$ is

greater than that of the country of origin, p . In equilibrium both must coincide². Therefore, the probability of entering as a legal immigrant will be:

$$\alpha^* = \frac{p - q\theta}{q[1 - \theta]} \quad (5)$$

which does not depend on the migratory flow that is produced, given that each individual decides individually on whether or not to emigrate. From (5) and taking into account the definitions of m and α , we have that:

$$m^* = \frac{\phi q [1 - \theta]}{p - q\theta} \quad (6)$$

Expressions (5) and (6) represent the equilibrium values of m and α . Any other rates of migration or of legal immigration different from those of equilibrium generate forces that lead the agents to a situation of equilibrium. For example, if $\alpha > \alpha^*$, the perception of a high probability of entering the country as legal immigrants leads to an increase in migration which, in the presence of an entry limit, causes the percentage of those who enter as legal immigrants to fall, until the equilibrium situation is reached. If, for example, $m > m^*$, then the existence of the quota will reduce the probability of entry as a legal immigrant, which will, in turn, reduce the migration rate to m^* .

We can immediately appreciate that increases in the entry quota of legal immigrants does not change the fraction of those who enter illegally. In other words, attempts to slow down the presence of illegal immigrants by relaxing the barriers are inefficient, in that this leads to a “call effect” which tends to increase the total number of illegal immigrants in the country.

The role played by the productivities of labour in the origin and host countries is as expected. Any improvement of productivity in the country of origin of the immigrants

² In order for there to be finite emigration, it must hold that $q \geq p \geq \phi q$

(increase of p) leads to a fall in the migration rate and, in turn, to an increase in the proportion of those that arrive in a legal way, thereby reducing the number of illegal immigrants who enter the host country. The opposite situation is produced when what improves is the productivity of unqualified labour in the host country (increase of q). In this case, the migration rate increases and there is a fall in the proportion of immigrants who come legally; that is to say, the host country is more attractive, which leads to a higher entry on the part of illegal immigrants if the entry quota fixed by the government is not extended.

Finally, the fall in the implicit entry cost for illegal immigrants ($1-\theta$) leads to an increase in the immigration rate and, in turn, increases the number of illegal immigrants who are incentivated by the improvement in their economic perceptions.

In any event, emphasis should be placed on the fact that although the migration rate is not constant, the parameters on which it depends are. Total migration will increase as the number of natives increases, both as a result of their own vegetative growth and with the assimilation of the immigrants of the earlier period.

3. THE STEADY STATE.

In closing the model, we can obtain the rate of saving derived from the process of maximization of utility for each type of representative agent:

$$s_t(j) = \frac{\delta}{1+\delta} w_t(j) \quad (7)$$

The aggregate saving of the economy in each period will be the sum of the savings of all the individuals in the economy. Where $S_t(j)$, for $j=1\dots 4$, the aggregate saving for each type of agent will be:

$$S_t(1) = (1+m^*)^t (1+n)^t \frac{\delta}{1+\delta} \omega_t \int_0^{e^*} [(1-e) + (1-\alpha^*)m^*(1-\theta)q] dG,$$

$$S_t(2) = (1+m^*)^t (1+n)^t \frac{\delta}{1+\delta} \omega_t [q + (1-\alpha^*)m^*(1-\theta)q][1-G(e^*)],$$

$$S_t(3) = (1+m^*)^t (1+n)^t \frac{\delta}{1+\delta} \omega_t \alpha^* m^* q,$$

$$S_t(4) = (1+m^*)^t (1+n)^t \frac{\delta}{1+\delta} \omega_t (1-\alpha^*) m^* q \theta, \quad (8)$$

The total effective labour of the economy is the sum of the effective labour contributed by each of the individuals. Thus, it is necessary to add the total time that each individual dedicates to work weighted by its corresponding productivity, taking into account that the illegal immigrants represent unqualified labour with productivity q and we establish the hypothesis that the management of the illegal labour carried out by the natives does not consume work time. Given that the variables which affect the migration and education decisions remain constant, it is sufficient to calculate the effective labour supply in the first period, given that in successive periods this will increase due both to vegetative growth and to the migration rate. Therefore:

$$L_0 = q[1-G(e^*)] + qm^* + \int_0^{e^*} (1-e)dG \quad y \quad L_t = (1+m)^t (1+n)^t L_0 \quad (9)$$

The aggregate capital stock of the economy will be the total of the aggregate saving of the earlier period; that is to say, $K_{t+1} = \sum_{j=1}^4 S_t(j)$. Taking into account the saving expressions for each type of agents (8) as well as that of effective labour (9), we can obtain the capital per unit of effective labour:

$$(1+m^*)(1+n)k_{t+1} = \frac{\delta}{1+\delta} w_t \quad (10)$$

Substituting in (10) expression (1) of the wage per unit of effective labour, we obtain the equation in differences that demonstrate the dynamic of the capital per unit of effective labour:

$$(1+m^*)(1+n)k_{t+1} = \frac{\delta}{1+\delta} (1-\beta) A k_t^\beta \quad (11)$$

from which we obtain the capital per unit of effective labour in the steady state that is unique and stable³:

$$k^* = \left[\frac{1}{(1+m^*)(1+n)} \frac{\delta}{1+\delta} (1-\beta)A \right]^{\frac{1}{1-\beta}} \quad (12)$$

4. ENTRY QUOTAS AND WELFARE.

On the basis of the model described above it is possible to evaluate the effects of entry quotas on the welfare of the different working groups of the resident population, using the income obtained by each one as the measurement of welfare⁴. Here we should note that, due to the heterogeneity of the qualified workers, it is necessary to specify the type of worker being referred to. For that purpose, we segment the native population into D groups, in such a way that the income obtained in the first period of life for each group will be $w_d = z_d \omega + \rho$, with $d = 0, \dots, D-1$, where $z_d = (1-e^*) + \frac{d}{D} e^*$ is the result of multiplying the unitary productivity of labour by the fraction of time dedicated to that labour by the representative worker of the d -th group. The case $d=0$ always corresponds to the unqualified worker. The case $d=1$, will represent the average qualified worker when $D=2$, or will be the representative of the first quintile in the distribution of abilities for the workers trained when $D=5$, or of the first decile if $D=10$.

³ As $dk_{t+1}/dk_t|_{k_{t+1}=k_t=k^*} = \beta < 1$, the steady state is stable. Given that when $k_t \rightarrow 0$, $k_{t+1} \rightarrow 0$ and the second derivative of the dynamic equation of the capital is negative, we can conclude that the steady state is unique.

⁴ Given that the utility is proportional to the income.

The relationship between welfare and entry quotas allows us to conclude that there exists a minimum quota of welfare⁵ for a value ϕ_u that depends on z_d according to the expression:

$$\phi_u = \left(\frac{\beta}{1-\beta} z_d - (q-p) \right) \frac{p-q\theta}{q(1-\theta)(q-p)} \frac{1-\beta}{1-2\beta}, \quad (13)$$

which demonstrates that the quota threshold, ϕ_u , is greater when shorter is the time required to acquire the qualification. Or, put in another way, is increasing with the aptitude or ability for training. This allows us to represent the possibility of a situation of conflicts of interest between groups of workers with respect to the way the quota policy is handled by the government. The relationship between welfare and entry quota is shown in Figure 1 for the most simple case, where $D=2$ and, therefore, $d=0$ represents the unqualified worker, whilst $d=1$ indicates the average qualified worker.

We can note three different scenarios or situations. In the first, characterized by $\phi < \phi_u(z_0)$, increases in the quota above the established level leads to losses in the welfare of all the resident workers. The reason for this lies in the fact that the fall in wages brought about by the increase in migration is not counterbalanced by the current of income that has its origin in the management of illegal labour, due to the low volume of illegal migration. In the second, characterized by $\phi > \phi_u(z_1)$, precisely the opposite occurs. Increases in the entry quota generate a “call effect” that leads to an increase in illegal immigration and the appropriation of part of the production that this generate compensates for the fall in wages, thereby increasing the welfare of both groups of workers. The third scenario, where $\phi_u(z_0) < \phi < \phi_u(z_1)$, gives rise to a conflict of interests, in that an increase in the immigrant entry quota reduces the welfare of the average qualified worker and increases that of the unqualified worker, in such a way

⁵ For that value, it holds that $\partial w_d / \partial \phi = 0$ and $\partial^2 w_d / \partial \phi^2 > 0$. The quota is positive always provided that $q - p < z_d \beta / (1 - \beta)$ is satisfied.

that the former will exert pressure for a reduction in the quota, whilst the latter will be interested in its increase. (*See Appendix, Figure 1*)

The model has been calibrated, normalizing to 1 the technological parameter ($A=1$), assuming that there is no vegetative growth of the population ($n=0$). The elasticity of the physical capital (β) has been fixed at 0.36, as is usual in neoclassical growth models. The time preference parameter has been established at 0.4 and its choice is adapted from the work of Bouzahzah, De la Croix and Docquier (2002). For the parameters p , θ we have used 0.4 and 0.36, respectively. Finally, for the choice of the fraction of productivity of unqualified labour we have considered that university education supposes a maximum of 20% of the active life of an individual, in such a way that q has been fixed at 0.8. In this context, we have obtained threshold quotas of 7% and 13% for unqualified and qualified workers, respectively.

The same scheme that we have described up to this point is reproduced when we compare different segments of qualification of the native population one with another. There are two elements that characterize the scheme. On the one hand, the least able individuals have a lower welfare, and therefore their welfare is situated below. The differences between the incomes of the most able and those of the workers that require more time to be trained will be greater when their productivity differential is greater (lower q), when the productivity of the country of origin is higher (greater p) or when there are bigger entry quotas. That is to say, establishing lower entry barriers for legal immigrants is an element of convergence in the incomes amongst natives, given that the call to illegal immigrants means that the weight of the wage income falls on the totality of incomes. On the other, we can analyze what happens when we increase the interval of quotas in which the conflict appears (third scenario), which supposes that an opening of frontiers benefits the least able to acquire training to the detriment of the more able. When our workers are more homogeneous (greater q), the tranche of quotas in which the conflict appears will be smaller. However, if we wish to reduce that tranche of

conflict, then the differential of productivity between the country of origin and that of the host country must increase.

5. CONCLUSIONS.

The conclusions that we can draw from this study can be divided into two blocks. The first makes reference to the effects associated with the entry of more or fewer immigrants and to the scale of illegal immigration. The second refers to the effects on the welfare of the natives which depends, amongst other things, on the conditions in the country of origin and the entry quota that is established.

The main conclusions we obtain are that if there is a fall in the implicit cost to the entry of illegal immigrants, then the immigration resulting from the “contagious effect” will increase and, in turn, the number of illegal immigrants who enter will also increase. The same effect is produced in the circumstances where the State adopts the policy of opening the frontiers by increasing the level of legal entry quotas; in this case, immigration will increase and, paradoxically, the number of immigrants without proper entry papers will also increase, due, fundamentally, to the “call effect”. This effect arises because an increase in the quota supposes an increase in the probability of being hired as a legal immigrant, thereby affecting the decision to emigrate.

When analyzing the effects in welfare, we can particularly note that a reduction in quotas is not always beneficial for the native workers. Furthermore, increasing the entry quotas provokes what we have described as the “call effect”, whereby the greater number of immigrants who can participate in the legal labour market acts as an incentive to a greater number of illegal immigrants. Additionally, we can observe that the effects of a change in the entry quotas are not homogeneous, given that they depend both on the type of worker being considered and on the conditions of the emigrants in their country of origin. In turn, this change in quotas is converted into an elements of convergence or divergence in the incomes of the natives.

By way of example, two totally opposite measures that lead to an increase in the welfare of the natives are: 1) to reduce the entry quota to the country, that is to say, to establish

greater barriers to the entry of immigrants with high income wages in their country of origin, given that the quota established in such cases is located below the threshold quota; 2) whereas if their incomes in the country of origin are very low, then the measure to be applied is the contrary, that is to say, to increase the entry quota, given that we do not have a threshold quota. By contrast, only a fall in the entry quotas increases the welfare of the immigrants who are actually resident in the host country, independent of the wage they received in their country of origin. This leads to an interesting aspect, namely the analysis of the effects of country-specific entry quotas, a recommendation that can be deduced from this work.

As regards the second block of conclusions, we have noted the existence of intervals or combinations of values of the parameters where an increase or decrease in the entry quotas have opposite effects on the different types of native worker. This question alerts us to the multiple effects of the phenomenon of immigration in a context which reflects these characteristics and, above all, the interest in discussing how decisions are made in this regard.

In any event, a policy that essentially rests on entry quotas must take into account the questions considered in this paper, in which we have found that the effects can be contradictory depending upon the different types of workers who make-up the internal labour market.

In closing, we would like to indicate some of the possibilities for extending this study. First, it might be interesting to analyze the effect of immigration on the effectiveness of the education system; that is to say, in making this process more costly in terms of time. Secondly, it would be worthwhile to include an expensive control of the entry quotas, for which purpose we must define an appropriate tax system. Thirdly, we could introduce a penalty system for participating in the informal market. Finally, changing the system of dividing that part of the incomes generated by the illegal immigrants in function of the qualified acquired, or by the innate ability of the natives, might serve to enrich the analysis.

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Appendix

Figure 1. Quota and conflict

