

Return Decisions of Undocumented Migrants: Do Network Effects Help the High-Skilled Overstay?*

Nicola D. Coniglio[†] Giuseppe De Arcangelis[‡] Laura Serlenga[§]

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Abstract

This paper analyzes the return plans of irregular migrants by stressing the role of individual skills and network effects. We propose a simple two-period life-cycle model that we test using individual-level data on irregular migrants in Italy and on undocumented Mexicans in the US. Our evidence shows that highly skilled clandestine migrants are more likely to return home than migrants with low or no skills. We argue this result is due to constraints imposed by the irregular status on migrants' ability to fully employ human capital in the destination country. However, the presence of strong social networks may lessen this effect.

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Contacting author and address:

Giuseppe De Arcangelis

Dipartimento di Analisi Economiche e Sociali and CIDEI

Facoltà di Scienze Politiche

Sapienza Università di Roma

P.le Aldo Moro, 5

00185 Roma (ITALY)

phone: +393397582634

fax: +39064453870

e-mail: g.dearcangelis@caspur.it

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[†]Dipartimento di Scienze Economiche, University of Bari, and SNF (Bergen, Norway); e-mail: Nicola.Coniglio@snf.no.

[‡]Dipartimento di Analisi Economiche e Sociali and CIDEI, Sapienza University of Rome; e-mail: g.dearcangelis@caspur.it.

[§]Dipartimento di Scienze Economiche, University of Bari, and IZA (Bonn, Germany); e-mail: laura.serlenga@dse.uniba.it.

1 Introduction and Related Literature

Illicit migration is a widespread phenomenon in modern societies. The number of migrants who cross the borders irregularly or overstay their regular visa is significant and increasing over time. Recent analysis conducted for Europe estimate the population of irregular migrants between 1.9 and 3.8 millions in EU27, i.e. between 7 and 13% of the total foreign population. According to the US Immigration and Naturalization Office (INS) the number of undocumented aliens in the country in January 2009 is approximately 11 million (Hoefler et al 2009).¹

The rise of irregular migration is a consequence of the combination of two elements: (i) the persistence (and in many cases increase) of socio-economic disparities between poor and rich countries; (ii) increasing restrictiveness of immigration policies in rich countries. When the migration pressure is sufficiently intense many individuals who are not granted access through the main entrance will decide to enter through “windows and cracks in the walls”. Although Hatton and Williamson (2009) seem to suggest that migration pressure from poor countries is not increasing, their projections do not conclude either for a declining trend over the next few decades.

A shift from legal to illegal migration poses interesting and challenging questions since the status has important consequences on migrants behavior. Indeed, the status of irregular migrant sets relevant constraints in the host countries and deeply conditions the costs and benefits associated to the migration experience.

In this paper we focus on the determinants of the return intentions of undocumented migrants and in particular on two related aspects: first, the role that individual skills play in shaping migrants’ decisions to return in the home country, and secondly the importance of social networks in the destination countries as cost-reducing factors to help undocumented migrants overstay.

Several studies have documented that return flows of migrants to their countries of origin are large (see Borjas and Bratsberg 1996 and Jasso e Rosenzweig 1982 for the US; Dustmann and Weiss 2007 for the UK). Since return migration is one of the main channels linking migration and development in the source country, it is important to investigate the main characteristics of return migrants. Are return flows positively or negatively self-selected? The existing literature on the “quality” of return flows of regular migrants is mixed. Dustmann (1996, 2003b) finds a negative effect of years of schooling on the intention to return to the home country. Reagan and Olsen (2000) find no evidence of skill bias in return migration. Borjas and Bratsberg (1996) find that return migration reinforces the initial selectivity of immigration flows. One reason for the ambiguous effect of schooling on return migration decision might be due to the imperfect substitutability between education obtained in different countries because of substantial differences in the quality of educational systems (see for instance Chiswick and Miller, 2008, and Sanromá et al., 2008).

The role of network effects has also been underlined under many aspects. Migration chains and the endogenization of migration costs are just two aspects of the social networks among migrants (see for instance Carrington, et al. 1996). But networks may also affect the geographical distribution of migrants in the destination country (see Bartel, 1989, and Bauer, et

¹See Tapinos (1999) and Jandl (2004) for an overview of the statistical approaches to measure irregular migration. See Hanson (2006) and the relative cited literature for methods to estimate illegal migration flows and stocks between Mexico and the US.

al., 2002, for the US; Jayet, et al., 2007 and 2010, for France and Italy), or provide links with the country of origin that can be useful to decrease transactions costs and encourage bilateral trade (Rauch, 2001).

While the literature has documented and investigated several aspects of legal migrants' return migration and their networks, we still know very little — mainly due to lack of data — on return behavior of irregular migrants and the relative effect of networks on this decision.

One important dimension on which legal and illegal migrants differ is the ability to fully employ in the country of destination the human capital accumulated at home. In addition, the lack of legal status constrains the migrants' ability to obtain access to many markets and institutions in the host country (including banks for deposits or financial institutions for other types of savings). Irregular migration has negative consequences on individual consumption and production opportunities which in turn affect both the quality of life and the economic returns during the migration spell. Being irregular likely makes individual skills much less effective than in the home country, as the irregular migrant often has to resort uniquely to the shadow economy.²

Hence, illegality can cause *skill waste*, i.e. illegality impinges the positive outcome of skills on both individual income and savings. In fact Hanson (2006) shows that undocumented Mexican migrants are generally less skilled and educated compared to regular migrants. The existence of a *skill waste* should imply that the opportunity cost of returning to the country of origin be substantially lower for the skilled rather than for the unskilled individuals; other things equal, we should observe a positive self-selection in return migration of irregular migrants.

A reduced ability to fully exploit the human capital and skills accumulated at home, and hence a negative self-selection of immigration flows, might depend also on the structure of the productive system in the hosting country. Venturini and Villosio (2008) in a study on the pattern of wage assimilation of (legal) migrants in Italy find a positive self-selection in return flows. The authors argue that this is mainly due to the fact that the Italian productive structure, strongly based on unskilled-intensive sectors, does not provide opportunities for highly qualified individuals (whether they are native or immigrants).

Secondly, social networks of migrants, which are generally supposed to alleviate the adaptation costs of legal migrants in the destination country, may play an important role also for irregular migrants. Our question is to uncover whether this helps uniformly all the irregular migrants or it helps relatively more the skilled ones by thwarting the skill-waste effect and inducing them to overstay.

The contribution of the paper is twofold. First we present the relationship between skills and return migration in a simple life-cycle framework where the irregular status reduces the ability to fully employ migrants' skills but migration networks may help reduce the costs of overstaying. Second, we test the main proposition of a positive self-selection of irregular migrants and the effect of migration networks using two data sets: (i) the Survey of Irregular

²Mattoo, Neagu and Ozden (2008) study the brain waste in the US labor market. Kossoudji and Cobb-Clark (1996) and Cobb-Clark and Kossoudji (2002) document the presence of less opportunity for job advancement and the existence of a wage gap between legal and illegal migrants in the US. Moreover, Bratsberg et al (2002), using longitudinal US data on wage immigrants, show that naturalization, in particular for migrants from less-developed countries, is associated with faster wage growth even after accounting for unobserved individual characteristics. Similar findings are presented in a study by DeVoretz and Pivnenko (2004) on the economic effects of Canadian citizenship.

Migration in Italy (SIMI), conducted at the University of Bari in 2003; and (ii) Survey of Mexican Migrants (SMM) conducted by the Pew Hispanic Center in 2005.

The SIMI database allows us to investigate the determinants of return plans for a sample of migrants who just crossed irregularly the Italian border (i.e. immigration “at the gate”); thus we focus on initial individual plans based only on the information/expectations which triggered the migration experience (not yet revised on the basis of new information or events which occurs while the migrant is in the destination country). In this sample we consider all types of irregular migrants, including asylum seekers.

We complement the analysis employing the Survey of Mexican Migrants (SMM) which allows us to investigate the intentions to return of undocumented Mexican migrants who have been living and working in the US for a longer period.

The two samples differ along several important dimensions — countries of origin and destinations, density of migration networks, average duration of the migration experience, presence or absence of asylum seekers, etc. — which makes a comparative analysis particularly interesting.

Our results provide empirical evidence on the positive relationship between individual skill endowments and intentions to return for irregular immigrants, in particular in countries like Italy with highly restrictive immigration policies where migrants networks were not yet so consolidated in 2003 (the year of the survey SIMI).

The paper is organized as follows. Section 2 presents a theoretical (life-cycle) framework to model the return plans of irregular migrants with heterogeneous levels of skills. Section 3 describes the main characteristics of the data sets that we employ for estimation both on Mexicans interviewed in the US and Italian undocumented immigrants. Section ?? reports and discusses the results of the empirical analysis. Lastly, Section 5 concludes with some general remarks and suggestions for further research.

2 Return Decisions of Irregular Migrants in a Life-Cycle Framework

In this section we present a simple two-period model on the return plans of undocumented migrants that have already arrived in a “rich” (i.e. with a minimum wage higher than at origin) destination country. The main aim of this simple framework is twofold. On the one hand, we want to outline the relationship between the individual level of skills and the return decision and show that the illegal status, by dampening the return on skills of immigrants, leads to a higher incentive to return home for highly skilled migrants. On the other hand, we also underline that some important factors, like migrating within a network, may reduce this incentive by increasing the probabilities of obtaining a legal status.

Consider a population of illegal migrants with a heterogeneous level of skills from the same source country A who have migrated to the host country B . Migrant j 's skills are continuously distributed over the interval $a^j \in [1, \infty)$.

Individuals live in a two-period world and are endowed with a unit of labor which is inelastically supplied in each of the two periods.³

³We assume that the individual possesses no capital at the beginning of the first period. In reality, it is often the case that migrants from less developed countries have a negative amount of wealth since they have

The migrants' intertemporal utility function is defined over first- and second-period consumption — respectively, c_1 and c_2 — and takes the following simple logarithmic form:

$$U(c_1, c_2) = u(c_1) + \delta u(c_2) = \ln(c_1) + \delta \ln(c_2)$$

where δ is the discount factor.

In the first period individuals live and work in the host country B .⁴ Consumption of migrant with a skill level a^j is:

$$c_1^j = w_1^j - s^j = a^j \tau w^B - s^j \quad (1)$$

where w_1^j is the first-period wage when working illegally in country B and s^j are savings. Given their status of irregular migrants in the host country B the rewards to human capital cannot be fully exploited: income earned in country B is increasing in the skill level but we assume that the skill premium is compressed because of illegality. More precisely, first period wages are equal to $w_1^j = a^j \tau w^B$ where w^B is the exogenously given “minimum” wage for a unit of labor in the host country. Individual wages positively depend on individual skills but the status of irregular migrant makes those skills less effective. The parameter $\tau \in (0, 1]$ captures the magnitude of the *skill waste* effect associated with the status of illegal migrant. As $\tau \rightarrow 0$ illegal migration tends to be less and less rewarding for all migrants and has a ‘squeezing effect’ on the level of human capital, i.e. being uneducated and unskilled rather than having a PhD in engineering does not change the returns from migration.⁵ On the contrary, when $\tau = 1$ there is no skill waste and migrants' human capital is fully rewarded according to the skill content a^j . In other words, when $\tau = 1$ we assume that migration is legalized.

The skill waste affects also the ability of illegal migrants to fully exploit financial markets in the host country and therefore the return on savings, which differs depending on the migrant's choice for the second period.

Often the sole motive for migration is the necessity to accumulate assets that will be subsequently employed in productive activities at home.⁶ Here we assume that if the migrant decides to go back to homeland A in period 2, then period-1 savings will be directly used, together with individual skills, in an entrepreneurial project with gross return $a^j R$ in the home

borrowed from friends and relatives in order to pay for migration costs.

⁴For simplicity we are not modelling the choice to leave the origin country and assume instead that the migrant has already arrived illegally in the country of destination. We recall that Orrenius and Zavodny (2005) deal instead with the issue of whether to leave the origin country and reside illegally at destination, but within a different theoretical framework.

⁵Even if $\tau = 0$ is implausible since the brightest and more skilled migrants are more likely to obtain the best opportunities, skills and formal qualification are of little use to an irregular migrant. There is anecdotic evidence that very often migrants employed illegally in highly unskilled and manual jobs – such as agricultural workers in developed countries – are actually highly skilled and educated individuals. Indirect evidence of the skill-waste effect is provided by a series of studies on migrants' performance after their legalization through amnesties in the United States (such as IRCA). See Rivera-Batiz (1999), Cobb-Clark and Kossoudji (2000 and 2002). See also the more recent study by Mattoo, Neagu and Ozden (2008).

⁶See, for instance, a study on the occupational choice of return migrants in Egypt by McCormick and Wahba (2001) who find that both the spells of periods overseas and overseas savings significantly increase the probability of starting an entrepreneurial project for more literate migrants. Moreover, a recent report by the World Bank (2006) includes a thorough study of the effects of remittances on development that highlights the importance of entrepreneurial activities financed by remittances.

country A — where $R \equiv (1 + r)$ is the exogenously given “mimum” gross return on savings in the home country.⁷ We allow for returns from the entrepreneurial project to differ among migrants. The higher the level of skills of the migrant, the higher the likelihood that she will pick the best investment opportunities; hence, the more rewarding the allocation of her capital will be.

Similarly, savings are located in the host country B in case the migrant decides to stay in B during period 2 and generate a return $\tau a^j R$, which is higher for individuals with higher skills, but is affected by the skill waste.

Hence, the return from savings (e^j) will vary according to the migrant’s preferred location choice for the second period:

$$e^j = \begin{cases} e_R^j = a^j R s^j & \text{if he or she returns to country } A \\ e_{NR}^j = \tau a^j R s^j & \text{if he or she stays in country } B \end{cases} \quad (2)$$

In other words, irregular migrants face constraints which negatively affect not only their ability to fully exploit their labor potential but also their ability to locate and exploit investment opportunities. For instance, although fully aware of the investment opportunities in the host country, the unlawful migrant does not have access to them since she does not have a legal residence permit. Instead, when planning to go back to the homeland, migrants immediately send home their savings, where they start their entrepreneurial project even before returning.

Consumption in the second period also differs depending on the migrant’s second-period location. Labor income and returns from savings in period 2 depend on what the irregular immigrant decides at the end of period 1, i.e. whether to go back home to country A or to stay in the destination country B . In the latter case, there is a nonzero probability of becoming legal (for instance through a naturalization process due to an amnesty, family reunification etc.) but there is also a positive probability that the irregular migrant is caught and sent back to the home country A by the authorities.

In *case of return*, in period 2 the migrant will be able to be fully rewarded for her skills and no illegality skill-waste effect takes place, but in the origin country A the “minimum” wage w^A is lower than in the destination country. Hence the period-2 wage in case of return is given by: $w_{2,R}^j = a^j w^A$, and using the expression e_R^j from Equation (2) we obtain the following equation for consumption in the second period:

$$c_{2,R}^j = w_{2,R}^j + e_R^j = a^j w^A + a^j R s^j = a^j (w^A + R s^j)$$

where in the home country return migrants are fully able to exploit their skill both in the labor market and on the capital saved in the host country.

If migrants decide to *stay in the host country* they face two possible events: (i) getting caught and sent back to the home country (*forced repatriation*) with a probability $\phi \in [0, 1]$; (ii) getting legal residence with a probability measured by the parameter $\gamma \in [0, 1]$.⁸ The latter event might happen for instance in the case of an amnesty granted to all illegal migrants who

⁷In order to simplify the framework, without loss of generality, we assume that the “base” rate of return is not different in the two countries, i.e. $R^A = R^B = R$. A generalization of the model with two different rates of return for the home and destination country is available from the authors upon request.

⁸For simplicity and without loss of generality we assume that γ does not depend upon skills. While this is probably true for Italy and partly for the US, we acknowledge that in host countries with selective immigration policies the probability of obtaining legal status might positively depend upon skills. A version of the present

have been residing and working for a certain period in the host country or in the case of acceptance of an asylum application.

One key element which affects the possibility of obtaining legal status is the presence in the country of destination of a dense *network of already established migrants*. In fact, in several OECD countries lawful permanent residence is mainly granted through family reunification. Networks might play a crucial role in providing assistance throughout the legalization process also in case of other than family-sponsored category of admission.⁹ The main consequence of being granted legal status in terms of our model is the ability to fully make use of individual skills, i.e. the skill waste effect disappears in the second period when the migrant obtains the legal status.¹⁰

Hence, the expected wage for period 2 in case of no return is the following:

$$w_{2,NR}^j = (1 - \phi) [\gamma a^j w^B + (1 - \gamma) a^j \tau w^B] + \phi a^j w^A$$

where $a^j w^B$ is the wage (without skill waste) that the migrant j would get in case she obtains a legal status (with probability γ) and $a^j \tau w^B$ is the wage in case she does not get legal status (like in period 1). This average wage (in squared brackets above) will be earned in case she is not caught in period 2 with probability $(1 - \phi)$; when caught (with probability ϕ), she will have to go home to country A and earn as much as in case of return. We can rewrite more compactly the period-2 wage in case of no return as follows:

$$w_{2,NR}^j = (1 - \phi) h a^j w^B + \phi a^j w^A$$

where $h \equiv \gamma + (1 - \gamma)\tau$.

In *case of no return* period-2 consumption can be expressed as the expected income in period 2 ($w_{2,NR}^j$) plus the accumulated savings, invested in the host country B (e_{NR}^j):

$$c_{2,NR}^j = w_{2,NR}^j + e_{NR}^j = a^j [(1 - \phi) h w^B + \phi w^A + \tau R s^j] \quad (3)$$

To sum up, the problem of the illegal migrant is then to maximize her utility U under two different cases, whether he or she returns to the home country A or stays in the destination country B .¹¹

In the *case of return* the lifetime utility function of an illegal migrant with skills a^j is:

$$U_R^j(c_1, c_2) = \ln [\tau a^j w^B - s^j] + \delta \ln [a^j (w^A + R s^j)] \quad (4)$$

framework taking this aspect into consideration is available from the authors upon request. Intuitively, the effect of such an extension is straightforward (a reduction in the range of the parameters for which the marginal benefit is higher than the opportunity cost of return for highly skilled illegal immigrants relative to the low-skilled ones). Moreover, one of the aims of our work is to highlight the non-neutrality of the absence of selective migration policies, which link the probability of getting legal status to the skill endowment of the applicants.

⁹In 2008, approximately 58% of new legal permanent residents in the US were already living in the country and 65% of the total new green card recipient were granted permanent residence based on family sponsor.

¹⁰Note that if the skill waste is due to other factors such as the characteristics of labour demand in the host country (see Venturini and Villosio 2008), the granting of legal status will not bring τ to 1. Here, for simplicity and without loss of generality, we abstract from this possibility.

¹¹An alternative way of presenting the problem is to consider the two choices as generating two different budget constraints, one in case of returning and one in case of no return. See Coniglio, et al. (2009a and 2009b).

whereas in the *case of no return* the lifetime utility function and the associated intertemporal budget constraint of an illegal migrant with skills a^j are:

$$U_{NR}^j(c_1, c_2) = \ln [\tau a^j w^B - s^j] + \delta \ln [(1 - \phi) h a^j w^B + \phi a^j w^A + \tau a^j R s^j] \quad (5)$$

The optimal level of savings s^{*j} for an individual with skills j is conditional on her location decision for the second period.

In the case of return migration the level of savings which maximizes the individual's intertemporal utility function (4), is given by:

$$s_R^{j,*} = \frac{\delta \tau a^j R w^B - w^A}{R(1 + \delta)} \quad (6)$$

If the illegal migrant decides to stay in the host country, instead, the maximization of the utility function (5) yields the following optimal savings:

$$s_{NR}^{j,*} = \frac{[\delta \tau^2 a^j R - h(1 - \phi)] w^B - \phi w^A}{\tau R(1 + \delta)} \quad (7)$$

By substituting the optimal level of savings (6) and (7) in the respective utility functions (4) and (5), we obtain the indirect utility function in case of return (V_R^j):

$$V_R^j = (1 + \delta) \ln \left[\frac{R \tau a^j w^B + w^A}{1 + \delta} \right] + \delta \ln(\delta a^j) - \ln(R) \quad (8)$$

and in case of no-return (V_{NR}^j):

$$V_{NR}^j = (1 + \delta) \ln \left[\frac{[R \tau^2 a^j + h(1 - \phi)] w^B + \phi w^A}{1 + \delta} \right] + \delta \ln(\delta a^j) - \ln(\tau R) \quad (9)$$

Let us define the net indirect utility derived from returning V^j for an illegal migrant with a^j level of skills as the difference between the two optimal levels of utility. Hence:

$$\begin{aligned} V^j(\delta, \tau, a^j, w^A, w^B, R, \gamma, \phi) &\equiv V_R^j - V_{NR}^j \equiv \\ &\equiv (1 + \delta) \ln \left[\frac{R \tau a^j w^B + w^A}{[R \tau^2 a^j + h(1 - \phi)] w^B + \phi w^A} \right] + \ln \tau \end{aligned} \quad (10)$$

Proposition 1 shows that under general conditions on the relative wages, relatively more high- skilled illegal migrants are more likely to return.¹²

¹²Proposition 1 reports the condition for a positively-sloped net indirect utility function with respect to the skill level of the migrant. It is easy to derive also the “marginal” skill level a^* for the migrant who is indifferent between staying or returning home by imposing that $V^j = 0$. This is equal to:

$$a^* = \frac{\mathcal{K}(1 - \phi) h \frac{w^B}{w^A} - (1 - \mathcal{K}\phi)}{\frac{w^B}{w^A} R \tau (1 - \mathcal{K}\tau)}$$

where $\mathcal{K} \equiv \left(\frac{1}{\tau}\right)^{\frac{1}{1+\delta}}$. It is also straightforward to show that $a^* > 1$ for plausible levels of the wage gap and values of the parameters. Computations and simulations are available from the authors upon request.

Proposition 1 *If the “minimum” wage gap $(w^B - w^A) > 0$ is strictly positive then, net utility from return migration is an increasing function of the individual level of skills.*

Proof. When taking the first derivative of the net utility from return migration V^j with respect to a^j , we obtain:

$$\frac{\partial V^j}{\partial a^j} = \frac{(1 + \delta)\tau w^B R}{[R\tau^2 a^j w^B + (1 - \phi)hw^B + \phi w^A](R\tau a^j w^B + w^A)} [(1 - \phi)hw^B + (\phi - \tau)w^A]$$

The net utility is then strictly increasing in the skill level a^j if and only if:

$$(1 - \phi)hw^B + (\phi - \tau)w^A > 0 \text{ or } \frac{w^B}{w^A} > \frac{(\tau - \phi)}{(1 - \phi)h}$$

Notice that, if $\phi > \tau$ then the lower bound for $\frac{w^B}{w^A}$ is negative and the proposition is always verified. If $\tau > \phi$, after some algebraic manipulation, the lower bound for $\frac{w^B}{w^A}$ is less than 1 since $\tau < h < 1$. Hence, $\frac{w^B}{w^A} > 1$ is a sufficient condition to assure that V^j is increasing in a^j . ■

Another important effect on V^j to consider is the change in the probability of getting legal status. The net utility is decreasing with respect to this probability as the first derivative of V^j with respect to γ proves:

$$\frac{\partial V^j}{\partial \gamma} = -\frac{(1 + \delta)(1 - \tau)(1 - \phi)w^B}{[R\tau^2 a^j w^B + (1 - \phi)hw^B + \phi w^A](R\tau a^j w^B + w^A)} < 0 \quad (11)$$

Intuitively expected, better prospects of legalization for period 2 increase the expected income from staying in the host country and reduce the incentives to return. As mentioned above, the existence of migration networks may affect and increase this probability hence lessening the negative effect of the skill waste.

3 Undocumented Migration: Two Micro Surveys with “Front-runners” and Dense Networks

As for other phenomena which take place “in the shadow”, the size and characteristics of undocumented migrants are difficult to measure in a systematic way. By means of different methodologies several authors and Institutions have tried to make “intelligent guesses” of the flows and stocks of irregular migrants. Recent analysis conducted for Europe estimate the population of irregular migrants between 1.9 and 3.8 millions in EU27, i.e. between 7 and 13% of the total foreign population.¹³ According to the US Immigration and Naturalization Office (INS) the number of undocumented aliens in the country in January 2009 is approximately 11 million (Hoefler et al 2009). The phenomenon is quantitatively large and it is also important to consider that a large share of the now legal immigrant population has transited through a period of irregularity.

¹³See the database on Irregular Migration created in the CLANDESTINO project available under <http://irregular-migration.hwwi.net>.

The unique way to investigate the qualitative aspects of undocumented migration, such as the intentions to return in the home country, is to use reliable micro-level (survey) data.

In this study we employ two micro-level surveys which contain information on undocumented migrants: the Survey of Illegal Migration in Italy (SIMI), generated through a field survey conducted in Italy in 2003, and the Survey of Mexican Migrants (SMM) of the Pew Hispanic Center conducted in 2005.

In particular, the Survey of Illegal Migration in Italy (SIMI) is a field survey on apprehended undocumented immigrants for the year 2003 (see Chiuri, De Arcangelis, D’Uggento and Ferri, 2004 and 2008). The survey has been conducted with personal interviews that have been taken at meeting points for illegal immigrants (e.g. public canteens, etc.), as common to other studies.¹⁴ The total number of collected questionnaires was close to 1,000. Some of the interviews have also been collected at special hosting centers that the Italian law prescribes for apprehended and undocumented aliens. More exactly, since identification after apprehension is required by the law, all apprehended and undocumented immigrants were hosted for at most thirty days (according to the law in 2003) in special residence centers (*Centri di Permanenza Temporanea*) to ascertain their origin. Part of the survey was conducted on illegal immigrants during this identification period.

The Survey of Mexican Migrants (SMM) is a survey conducted by the PEW Hispanic Center on Mexican individuals that were applying for a *Matricula Consular* (i.e. a Mexican piece of identification) at seven major consulates in the US — Los Angeles, New York, Chicago, Fresno, Atlanta, Dallas and Raleigh.¹⁵ The questionnaires were offered to the Mexican ID applicants while they were waiting in the consulates. The sample contains information on 4,836 adults. SMM was designed to collect information about all types of undocumented Mexican immigrants, independently of their previous length of stay. The main advantage of this survey is that it gives a detailed socio-economic picture of undocumented Mexican migrants in the US. One important shortcoming of the survey is the fact that the migrants are interviewed at the consulates which likely implies a sample bias towards migrants who need a Mexican document.

We believe that these two surveys are particularly useful and complementary for shedding lights on the influences of individual human capital and migration networks on the return plans of irregular migrants. In fact, the two surveys share the common aim of gathering information useful to analyze illegal migrants but they differ in several important dimensions which, in our opinion, make interesting the comparison of the results that follows.

The first important difference between SIMI and SMM is the destination country of the irregular migrants, respectively Italy (partly, other European destinations) and the US. While the US has a long tradition as a country of immigration (in particular, for Mexican migrants), Italy has a relatively short experience as a destination country. This also implies a weak presence of established migrant networks in 2003. Only 35.6% of individuals in SIMI have migrated within a network of established migrants; on the contrary almost all individuals in SMM migrate within dense networks.

As many studies have emphasized, migrants’ networks play an important role in shaping the migration experience and in determining the selectivity of the incoming flows (McKenzie and Rapoport, 2007; Munshi, 2003) and most likely of return migration.

In terms of the theoretical model presented in the Section 2 we should expect that indi-

¹⁴The survey is downloadable at the web site <http://www.dse.uniba.it/simi/>.

¹⁵The survey is downloadable at the web site <http://pewhispanic.org/datasets/>.

viduals' skills might play a significantly different role in the return project in the two dataset employed. In what follows we will interpret the results on SMM as a benchmark case where networks of migrants are dense and highly consolidated in the destination country; hence, a situation where recent countries of immigration such as Italy, Spain, Greece and other EU countries will gradually tend over time.

A second difference which is worth to consider is the fact that while the focus of SMM is exclusively on Mexican undocumented migrants, SIMI covers a undocumented migrants from several countries of origin.

Migration is often the result of a complex decision-making process undertaken under uncertainty. The plan of the migrants, including the return decision, are often revised over time once new pieces of information and new unforeseen opportunities and constraints arise. The existence of networks greatly affect migrants plan by providing a set of more reliable information.

Moreover, we ought to consider the different economic environment where the two surveys have been conducted. Focusing on skills, we recall that the return on education (and on skills) is different between Italy and the US. In other words, as pointed out in other papers (e.g. Venturini and Villosio, 2008), the structure of the labor demand is very relevant in shaping the return decisions of regular (and also undocumented) migrants. This important caveat has to be taken into consideration when interpreting and comparing the results.

Apart from the different density of the networks, the comparison between SIMI and SMM is in our opinion interesting also for another fundamental difference between the two surveys. SIMI was specifically designed with the aim of capturing information on illegal migrants as they enter the destination country, i.e. "at the gate". The advantage of such survey design is to allow a more precise collection of information on the push and pull factors which triggered the migration decision and on the (initial) plans/expectations of the migrants. Hence, SIMI contains information on flows of irregular migrants through Italian borders in 2003.

On the other hand, the Survey of Mexican Migrants (SMM) collects information (and plans/expectations) of migrants who already live and work in the destination country (US); it is therefore representative of the stock of irregular Mexican migrants at the moment the survey was conducted. This is one important difference since we expect that the experience and knowledge accumulated in the US play a significant role in shaping migrants' return plans.

In what follows we briefly describe the profile of illegal migrants in the two surveys.

3.1 The Profile of Irregular Migrants in SIMI and SMM

The "illegal immigrant" in SIMI is defined as an adult clandestine or asylum seeker (at least 18-year old) that has been in Italy for a period no longer than 6 months. This short period minimizes the measurement error when interviewees are asked to recall previous events. One of the aims of the survey was to obtain an accurate recollection of earnings and expenditures before migration, as well as future expectations.

The sample included 920 individuals that were interviewed in the period January-September 2003 in the four border regions mostly concerned with the phenomenon of illegal entrance (Apulia, Calabria, Friuli Venezia Giulia and Sicily). The total number of individuals interviewed represented 10.82% of all the 8,502 illegal migrants that were hosted in the selected centers in the same period between January and September 2003. Fifty-five different nationalities are represented in the sample, the six largest fractions coming from: Iraq (9.6%), Liberia

(9%), Sudan (5.4%), Morocco (5.1%), Senegal (4.8%), Turkey (4.8%).

Table 1 summarizes the main social and economic characteristics of clandestine migrants within SIMI distinguishing those individuals that can be classified as “front-runner” migrants (since they migrate alone and do not have family and friends in the country of destination) from individuals that migrate within networks.

It is interesting to notice that 51% of front runners intend to return home compared to 71% of individuals migrating within a network. The role exercised by networks is substantial if we consider that the “push” factors (economic and social conditions at home) are on average more favorable to the latter group. For instance the percentage of front runners who declare to have electricity and drinkable water in the dwelling at home is respectively 71 and 62, compared to 78 and 75 for migrants within networks.

The occurrence of economic crisis and violent conflicts in the 5 years before migration is high for both groups and, surprisingly, also the average monthly family income does not differ largely (approximately 220 current US dollars in 2003).

Individual economic opportunities as proxied by the status of unemployed are also highly homogeneous. Notice that on average front runners expect to earn a higher monthly salary in the destination locations and also the standard deviation is higher with respect to individuals migrating within a network. Although the difference is not very large, more optimistic expectations might be due to the lack of precise and reliable information rather than to individual characteristics, such as skills and qualifications. Indeed, while illegal immigrants in SIMI have a non-negligible level of skills, with respect to several measures of human capital, front runners are relatively less qualified than individuals within networks (schooling, knowledge of the host-country language or other foreign languages, job qualifications).

The level of skills and the degree of formal-education attainments of the legal migrants seem to be substantially higher if compared with our sample. Although not directly comparable, the 2001 census data reveal that only 2.5% of the foreigners residing in Italy were illiterate, while 12.1% were literate but without formal education. It is interesting to note that 12.1% of the legal migrant population in 2001 had a university degree and 27.8% attained an high-school degree. Finally 32.9% and 12.6% had a middle and primary school diploma.

In the table we also report other individual characteristics which shows that front runners are more likely to have a past migration experience (29% against 20%), are slightly older (27.3 years versus 26.6 years), mostly male (90% versus 83%) and have fewer family ties in the country of origin (a lower percentage is married and have children back home).

It is also important to notice that some of the differences might be attributed to the different geographical composition of the two sub-samples. Indeed, a larger share of individuals who migrate within established networks comes from Asia, North Africa and other European countries while a large share of front runners originates from East Africa and Sub-Saharan Africa.

Networks also seems to affect substantially the mode of entry into destination countries. In fact, the journey undertaken by front runners lasts on average 244 days. This very high figure is the proof that international migration is a highly costly project and many individuals do frequent forced stops between the origin and sending countries; in some cases these stops are motivated by the need to accumulate financial resources in order to continue with the trip.

The cost of the journey for the front runners is on average 1493 US \$ (circa 7 month of family income in the home country). The figure is slightly higher for individuals migrating within networks mostly because they tend to use faster but more expensive means of transport.

In sum, SIMI data shows that irregular migrants toward Italy (and other EU countries) come from origin countries that had experienced strong push factors and the existence of established networks might actually condition both the profile and plans of migrants.

Table 1: Summary Statistics of SIMI 2003, Survey on Illegal Migration in Italy: “front runners” versus individuals migrating within a network.

Variables	Front runners		Network	
	Mean	se	Mean	se
Intention to return	0.51	0.50	0.71	0.45
Push factors in the home country and expected income at destination				
GNI per capita in the home country (median; current \$ in 2003)	488	2.6	812	2.3
Electricity available in the dwelling	0.71	0.45	0.78	0.41
Drinkable water available in the dwelling	0.62	0.49	0.75	0.43
Conflict in the village o origin in the 5 years before departure	0.72	0.45	0.70	0.46
Economic crisis in the village o origin in the 5 years before departure	0.86	0.35	0.87	0.34
Family monthly income at home (median; in 2003 current US\$)	217.4	256.6	225.7	193.7
Unemployed in the country of origin	0.54	0.50	0.58	0.50
Expected monthly income in destination country (median; in 2003 current \$)	984.6	579.8	928	436
Individual characteristics				
School degree (from 1 = no degree to 5 = university)	3.28	1.25	3.64	1.12
High-skilled	0.11	0.32	0.21	0.41
Low-skilled	0.77	0.43	0.74	0.44
No qualification	0.12	0.33	0.08	0.27
Host-country language proficiency (from 0 = poor to 5 = very good level of knowledge)	1.65	1.00	1.98	1.06
Knowledge of foreign languages (at least good level of proficiency)	0.46	0.70	0.81	0.78
Median age (in years)	27.3	6.07	26.6	6.10
Male	0.90	0.30	0.83	0.36
Children left behind in the home country (yes/no)	0.23	0.42	0.24	0.42
Past migration experience	0.29	0.45	0.20	0.40
Muslim	0.53	0.50	0.68	0.47
Areas of origin and journey				
Asia	27.3%		29.1%	
South America / Latin America	1%		0%	
Europe	17.3%		33.1%	
North Africa	6.7%		11.1%	
Rest of Africa	47.8%		26.6%	
Cost of the trip (median; in 2003 current US\$)	1493	1445	1842	1381
Duration of the journey (average days)	244	686	149	320
Number of observations	502		278	

In order to make the SMM sample comparable to the SIMI we select from the SMM individuals, aged between 18 and 60, that declare not to possess any kind of photo ID issued by a US government agency. As discussed by the PEW researchers, the subsample of individuals with no photo ID is very likely to include only undocumented immigrants.

Moreover, in order to make results from the two survey more comparable, we also select the “recent” immigrants’ cohorts, i.e. individuals who spent in the US up to five years. Considering individuals with a longer migration spells might in fact bias the estimates due to self-selective out-migration of irregular migrants or to selectivity in the naturalization process.

Also, as the Mexican migration in the US dates back for many years and networks are extremely dense. The SMM sample only contains individuals already residing in the US that have already accumulated experience in the host country. In SMM we do not consider the case of “front runners” in the SMM and select a subsample of individuals who declare to be in a network, i.e. individuals that have relatives in the same location in the US. Indeed, networks are a pervasive feature of the migration experience of the irregular migrants. In facts, less than 20% of the migrants has no relatives in the same location in the US.¹⁶

In Table 2 we present the main relevant descriptive SMM statistics on individual staying in a network and on “front runners”, i.e. those who have no relatives in the same location in the US and are excluded from estimation.

Focussing only on the sample employed in the estimates, the median age is 27.1 and migrants’ weekly earning is about (current-2005) US\$ 298. A large number of individuals intend to return (54%). Only 3% of the sample is composed by individuals who have a good knowledge of English while 11% on the basis of their job qualification in Mexico can be considered as highly-skilled. Most of the migrants have primary and middle education, 23.3% have an high-school diploma and 5% a university degree.

Generally speaking migrants who stay in a network are younger, have less children, earn slightly more income and have a lower propensity to return than the “front runners”. Figures on the knowledge of English are similar in the two groups whereas individuals within network are less skilled than front runners. Lastly, figures on education level are mixed.

4 The Empirical Model and Estimation Results

The model outlined in Section 2 suggests that the level of skills affects positively the return plans of irregular migrants since the net utility from returning home is an increasing function of the parameter a . On the other hand, the nexus between skills and return decision might be altered by the existence of dense network of already established migrants which potentially affects both the magnitude of the skill waste and the probability of obtaining legal status in the model.

We should hence consider that skills play a different role on migration decision depending on the presence or not of networks.

In order to test this prediction we specify a probit model for the individual intentions to return obtained for the irregular clandestine migrants interviewed in SIMI and for the Mexicans in SMM as described in Section 3. The dependent variable is equal to 1 if the individual clandestine migrant has stated that he/she would return home, zero otherwise.

¹⁶In terms of gender, age, years in the US and education, SMM seems to offer a picture of undocumented migrants that is not that different from other measures of illegal Mexican immigration in the US (as in Passel et al., 2004).

Table 2: Summary Statistics of SMM 2005, Survey of Mexican Migrants: migrating within and without a network.

	Network		No Network	
	Mean	se	Mean	se
Age (in years)	27.11	7.71	29.94	9.61
N. of children	1.28	1.40	1.53	1.52
N. of children in US	1.34	1.38	1.29	1.34
Weekly Earnings (2005 US\$)	297.81	160.28	292.65	175.64
Intend to return	53.8%		61.1%	
Length of Stay (in years)	12.94	12.49	11.48	12.84
English	0.03	0.17	0.03	0.17
Presence of High skills	0.11	0.31	0.15	0.36
<i>Education</i>				
no school	1.29%		1.46%	
primary school	26.90%		24.76%	
secondary school	43.62%		45.15%	
high school	23.26%		20.87%	
college or more	4.93%		7.77%	
Number of observations	925		206	

We estimate separate regressions for front runners and individuals within networks in SIMI. Considering the small number of front runners in SMM we do not run separate regressions. Exact definitions and basic statistics of the explanatory variables, as well as the relative data sources, are available from the authors upon request.

As in Coniglio et al. (2009), we explicitly consider the multiple dimension of individual skills and abilities by employing different measures: (i) years of schooling in SIMI and a dummy for Mexican with a school degree higher than the secondary level in SMM (*School (secondary)*), which captures the level of formal education undertaken by the migrant; (ii) qualified occupation at home, indicated by a dummy which equals 1 for individuals who declared to hold a relatively skill-intensive job qualification; (iii) foreign language proficiency, measured by a general measure of (at least basic level) proficiency in foreign languages which is available only for SIMI; (iv) host-country language proficiency, which proxies the abilities to fully access the job market in the specific country of intended destination; for SIMI this is not necessarily Italy, whereas in the case of Mexicans in SMM we consider the good knowledge of English.

We expect that these proxies of individual skills play a strong and positive effect on the probability of returning to the country of origin for front runners. On the contrary, we expect that networks of established migrants might mitigate the skill waste effects associated with the status of irregular migrant. Given the nature of Mexican migration in the US we expect that the density of networks might make the return to individual skills and ability more valuable also in the destination country, hence mitigating the skill waste effect.

As return intentions depends on other individual and country specific characteristics we include in our analysis a set of controls.

In SIMI we include a dummy variable for being unemployed in the home country before

migrating, which is expected to have a negative influence on the probability of returning home. We also consider whether strong family ties — such as the presence of children in the home country — may condition the return intentions. The GNI per capita in the country of origin is included as a general proxy of the level of development which in turn might affect future perspectives of return migrants; we expect this variable to be positively related with return intentions.

Other relevant push factors which might affect the ability and willingness of individuals to return are events such as the occurrence of violent conflicts and/or economic crisis. Hence, we include a dummy equal to one if such events occurred in the village of origin up to 5 years before migration took place. A measure of psychological costs of migration is proxied by the (log of) bilateral distance between the country of origin and that of destination. As the history of integration of migrants within the hosting country proves, the higher the cultural distance between migrants and natives, the higher the likelihood of hostility toward migrants communities (and the higher the degree of economic and social discrimination). One dimension where this potential hostility is particularly relevant is religion. Hence, we decided to include a dummy variable which equals 1 if the individual declared to be a Muslim. We expect this variable to be positively associated with return intentions given the high difficulties of integration of Muslim communities in Europe. In order to capture for unobserved characteristics related to the country of origin which might affect return intention we include also a set of area of origins controls.

Similarly, as control variables, in SMM we consider whether the migrant has some family left in Mexico, which should capture other factors increasing the propensity to return home. Moreover, as a indication of integration in the US, we include a dummy variable that equals 1 if the Mexican migrant has a US bank account (which is possible also for undocumented migrants in the US) and if they declared to prefer to watch US television channels in English. Although, differently from SIMI, Mexico is the unique origin country, we include “region-of-origin” dummies in Mexico because of the great dispersion of economic conditions within the country. Finally, dummies for the US state where the data were collected are also included.

Table 3 reports directly the estimated marginal effects of the probit models for the intention to return using SIMI.¹⁷

Apart from years of schooling, all the other measures of skills point to an important effect of the presence of a network. When migrating within a network, the “skill waste” effect seems to be less important and the decision to return does not depend on the level of skills of the migrant. An irregular front runner migrant in SIMI who had a qualified occupation at home is 43% more likely to return compared to a low or not qualified front runner. Instead, for those who migrate within a network the marginal effect is not statistically significant, although still positive. Similar results hold for language abilities both general and specific of the host country.

It is also interesting to notice that when considering migration within a network, the effect of some of the traditional variables is highly attenuated. For instance, in two out of the four cases considered, having children left at home strongly encourage return in the “front runners”, whereas it is unimportant for migrants within a network. Secondly, a past experience of migration has a much higher and significant negative impact on the probability to return

¹⁷The estimated coefficients are available from the authors upon requests.

for irregular migrants within a network while is not significant for the front runners. The latter result might be due to the fact that front runners, whether or not they already have done a past migration experience, are mostly individuals with low migration costs (because of low risk aversion or strong determination) and/or lower attachments to the home location.

It is also interesting to notice that return intentions for front runners and individuals within networks seem to react differently to economic conditions in the home country. Within the literature, GNI in the country of origin — a proxy for relative level of development in the home country — is considered one of the most relevant variables to explain migration flows and its increase is intuitively associated with a higher propensity to return home. Our estimates show that this is verified for the “front runners”, whereas the presence of a migration network lessens the effect of the GNI as a push factors to return. This is consistent for all specifications.

This result points out that, when dense networks are established, the relationship between migration flows and differentials in economic opportunities between sending and receiving locations become weaker. In fact, migration might continue also when economic differentials disappear over time. Carrington et al. (1996) and Chau (1997) present dynamic models of labor migration in which moving costs decrease with the number of established migrants in a particular destination. The authors show that once started, due to networks effects, migration flows from the same source area accelerate even while inter-regional income gaps are reduced.

Past economic crises have no statistically significant effects for those individuals migrating within a network, while “front runners” seem to use migration as a temporary adaptation strategy to such negative shocks. On the contrary, conflicts in the village of origin are associated with a lower propensity to return both for front runners and migrants within networks.

Moreover, the area dummies become insignificant and, especially, being a Muslim — that is usually a strong push factor to return home — is not relevant in the decision to return if the migrant is in a network. One possible interpretation might be that networks have also a positive effect associated with the reduction of psychological costs of migration since they allow an individual to recreate (at least partially) the home social environment and culture. In turn this effect might reduce the incentive to return home.

As discussed before, distance may represent another and more comprehensive (if compared to be a Muslim) measure of cultural distance; therefore, greater distance implies higher propensity to return since it signals a higher cost of integration. Migrants in a network consistently show a higher reactivity to distance; one possible explanation might be the relative lower costs of migration for “front runners”. Indeed, front runners migrate even in the absence of the positive externalities generated by a network, which is a revealed signal of their abilities to react to opportunities and of high preferences toward risks and/or ambition.

What is the role played by individual skills and abilities in shaping return intentions when migrant networks represent a pervasive feature of the migration experience? We can deem the case of Mexicans in the US as the extreme case of long-lasting “migration within a network” and the estimation of our model for SMM can serve as a useful benchmark.

Table 4 presents the results of the estimates conducted using SMM, more exactly the marginal effects as for SIMI. As mentioned in Section 3, although SMM comprehends more than four thousands interviews, we consider a subsample that could actually represent undocumented migrants who stay in the US and are within a network.

In Table 4 the negative estimated coefficient on the knowledge of English language shows that migrants who are fluent in English show a lower propensity to return to Mexico. This can be due to two different explanations. On the one hand, we can interpret this evidence as

the effect of network mitigating the skill waste since our maintained hypothesis is that all the migrants in the chosen subsample of SMM are actually migrating within a network.

On the other hand, the knowledge of English might also proxy for integration in the destination country, although this feature is better captured by the other dummy equal to 1 for the individuals who declared preference for an English-broadcast television channel (indicated by “US television channels” in the Table).

To complement the analysis with the estimation already done for SIMI, we would like to a measure of the effects of skills on the intentions to return for undocumented migrants that are without a network even in SMM. However, this is almost impossible due to the long-lasting Mexican migration in the US. Hence, we can only evaluate the network effect over time. More exactly, we included a dummy for the Mexican migrants that have been in the US for less than six months. These migrants will be the individuals as close as possible to the individuals present in SIMI.

Indeed, in line with our expectations, when considering the interaction between the English proficiency variable and the dummy for individuals who spent at most six months in the US, the negative effect of language proficiency is significantly attenuated.¹⁸

¹⁸Similar qualitative results can be obtained with the other two measures of skills — i.e. schooling and a dummy variable identifying high-skilled migrants. They are not reported here, but are available from the authors upon requests.

Table 3: Estimated Marginal Effects of the Probit Model for the Intention to Return in SIMI

Regressors	(1) (Front Runners)	(2) (Network)	(3) (Front Runners)	(4) (Network)	(5) (Front Runners)	(6) (Network)	(7) (Front Runners)	(8) (Network)
<i>Qualified occupation at home</i>	0.4383* [0.201]	0.3465 [0.239]	0.1138* [0.052]	0.2016* [0.083]	0.2039** [0.068]	0.1911 [0.098]	0.2995** [0.097]	0.1723 [0.127]
<i>Years of schooling</i>							-0.2490 [0.130]	-0.1910 [0.208]
<i>Foreign language proficiency</i>							0.3065* [0.154]	0.1786 [0.245]
<i>Host-country language skills</i>							-0.0935 [0.142]	-0.8071** [0.226]
<i>Unemployed at home</i>	-0.2643* [0.128]	-0.2533 [0.201]	-0.2838* [0.130]	-0.2727 [0.203]	-0.2724* [0.129]	-0.1964 [0.204]	-0.2490 [0.130]	-0.1910 [0.208]
<i>Children in the home country</i>	0.3110* [0.153]	0.2485 [0.242]	0.2797 [0.155]	0.2696 [0.243]	0.2917 [0.154]	0.2346 [0.244]	0.3065* [0.154]	0.1786 [0.245]
<i>Past migration experience</i>	-0.0973 [0.140]	-0.7624** [0.223]	-0.0612 [0.144]	-0.6610** [0.225]	-0.1255 [0.142]	-0.7989** [0.226]	-0.0935 [0.142]	-0.8071** [0.226]
<i>GNI per capita</i>	0.4258** [0.112]	0.2643 [0.194]	0.4116** [0.112]	0.2031 [0.196]	0.3854** [0.113]	0.2523 [0.198]	0.4057** [0.112]	0.3305 [0.198]
<i>Conflict</i>	-0.6976** [0.163]	-0.7069** [0.258]	-0.7452** [0.168]	-0.6985** [0.258]	-0.6821** [0.165]	-0.6765** [0.261]	-0.6984** [0.166]	-0.6566* [0.260]
<i>Economic crisis</i>	0.6459** [0.204]	0.4262 [0.314]	0.6262** [0.200]	0.3533 [0.318]	0.5420** [0.202]	0.4069 [0.318]	0.5258** [0.201]	0.5090 [0.321]
<i>Distance</i>	0.1779** [0.053]	0.3490** [0.107]	0.1711** [0.053]	0.3444** [0.109]	0.1843** [0.053]	0.3409** [0.111]	0.1682** [0.054]	0.3591** [0.117]
<i>Muslim</i>	0.2852* [0.143]	0.2800 [0.227]	0.3103* [0.146]	0.2856 [0.230]	0.2803* [0.143]	0.3018 [0.228]	0.2693 [0.143]	0.2402 [0.233]
<i>Asia</i>	-0.9614** [0.197]	-0.2429 [0.333]	-0.9958** [0.200]	-0.2110 [0.335]	-0.8901** [0.201]	-0.0304 [0.347]	-0.9486** [0.200]	-0.1268 [0.344]
<i>Europe</i>	0.0174 [0.282]	0.7685 [0.466]	-0.0757 [0.282]	0.8037 [0.464]	0.1832 [0.289]	0.8539 [0.489]	-0.1028 [0.283]	0.6782 [0.486]
<i>North Africa</i>	0.2145 [0.368]	1.1217 [0.586]	0.0730 [0.371]	1.1138 [0.584]	0.1016 [0.370]	0.9787 [0.595]	0.0324 [0.376]	1.0065 [0.597]
<i>South America</i>	-1.8229* [0.868]		-1.9162* [0.868]		-1.8540* [0.859]		-2.2125* [0.867]	

continued on next page

Table 3: continued

Regressors	(1) (Front Runners)	(2) (Network)	(3) (Front Runners)	(4) (Network)	(5) (Front Runners)	(6) (Network)	(7) (Front Runners)	(8) (Network)
<i>Observations</i>	470	258	455	253	467	253	464	247
<i>Pseudo R²</i>	0.15	0.18	0.15	0.19	0.16	0.18	0.14	0.19
<i>Log likelihood</i>	-277.3	-123.9	-276.6	-120.7	-273.5	-117.7	-278.7	-121.7

Robust standard errors in brackets / Probability of return (baseline) for (1) = 0.52 / Probability of return (baseline) for (2) = 0.78
 Probability of return (baseline) for (3) = 0.53 / Probability of return (baseline) for (4) = 0.77
 Probability of return (baseline) for (5) = 0.52 / Probability of return (baseline) for (6) = 0.79
 Probability of return (baseline) for (7) = 0.52 // Probability of return (baseline) for (8) = 0.78
 + significant at 10%; * significant at 5%; ** significant at 1%

5 Conclusions

In this paper we analyze the effects of the illegal status of migrants' on their intentions to return to the home country. Illegality forces migrants to "live in the shadow" and hinders the full utilization of individual skills. At the same time, constraints to the full utilization of individual skills might also depend on the productive structure of the host country as argued by Venturini and Villosio (2008) who find a higher propensity to return for skilled (legal) migrants in Italy. As a consequence of the skill waste – due to the clandestine status as highlighted here or to low demand for skills in the host country as suggested by Venturini and Villosio (2008) – the opportunity cost of returning home is lower for highly skilled illegal migrants rather than for individuals with few or no skills. This evidence contrasts the common findings that legal skilled migrants tend to stay longer, especially due to their higher ability to assimilate in the host country.

However, this result should be contrasted with the presence of well-established networks in the country of destination. It has been documented that migration networks have an important role in decreasing the integration costs of migrants, although not always favoring their assimilation. Here, we show that their role may be particularly important for undocumented and irregular migrants since the presence of dense networks can help skilled migrants to overcome (at least part) of the skill waste effect that illegality generates.

In many migration policies family reunification can be one of the motives to obtain legal residence in many countries. However, when migration policies become stricter and stricter, they tend to increase also the requirements for family reunions. Our results show that these decisions may not be neutral in terms of skill composition of the undocumented (but likely to become documented) migration.

More exactly, the estimation on the intentions to return of undocumented migrants are generally more likely among the high skilled. However, better perspectives to obtain legal status may change this bias and the presence of a family network can favor it.

References

- [1] Bartel A. P. (1989), "Where do the new US immigrants live?", *Journal of Labour Economics*, vol.7, n. 4: pp.371-391
- [2] Bauer T. K., Epstein G. S., Gang I. N. (2002), "Herd effects or migration networks? The location choice of mexican immigrants in the US", CEPR discussion paper n. 3505.
- [3] Bleakley, Hoyt and Aimee Chin (2004), "Language, Skills and Earnings: Evidence from Childhood Immigrants", *Review of Economics and Statistics* 86 n.2 : 481-496.
- [4] Borjas, George J. and Bernt Bratsberg (1996), "Who leaves? The emigration of the foreign-born", *Review of Economics and Statistics* 78 n.1 : 165-67.
- [5] Borjas, George J., Bronars Stephen G. and Stephen J. Trejo (1992), "Self-Selection and internal migration in the United States", *Journal of Urban Economics* 32 : 159-185.
- [6] Bratsberg, Bernt, Ragan James F. and Zafar M. Nasir (2002), "The Effect of Naturalization on wage growth: A Panel Study of Young Male Immigrants", *Journal of Labor Economics* 20 n.3 : 568-597

Table 4: Marginal Effects of the Probit Model for the Intention to Return in SMM

Regressors	(1)	(2)
<i>English language proficiency</i>	-0.8172** [0.31]	-0.8683** [0.34]
<i>English language proficiency</i> × <i>D(Less than 6 months in the US)</i>		0.6025 [0.80]
<i>US television channels</i>	-0.2900* [0.14]	-0.2866* [0.14]
<i>Family in Mexico</i>	0.4198** [0.10]	0.4189** [0.10]
<i>Age</i>	0.0088 [0.01]	0.0088 [0.01]
<i>Male</i>	0.5948** [0.09]	0.5954** [0.09]
<i>Bank account in the US</i>	-0.1635 [0.15]	-0.1610 [0.15]
<i>state1</i>	-0.1321 [0.15]	-0.1270 [0.15]
<i>state3</i>	0.1041 [0.16]	0.1092 [0.16]
<i>state4</i>	0.2075 [0.19]	0.2108 [0.19]
<i>state5</i>	-0.0371 [0.16]	-0.0353 [0.16]
<i>state6</i>	0.2329 [0.21]	0.2359 [0.21]
<i>mesor2</i>	-0.2397* [0.11]	-0.2395* [0.11]
<i>mesor3</i>	-0.3331 [0.25]	-0.3294 [0.25]
<i>mesor4</i>	-0.6997** [0.25]	-0.6976** [0.25]
<i>mesor5</i>	-0.1386 [0.12]	-0.1369 [0.12]
<i>Observations</i>	925	925
<i>Pseudo R²</i>	0.102	0.102
<i>Log likelihood</i>	-573.5	-573.3

Robust standard errors in brackets

Probability of return (baseline) for (1) = 0.542

Probability of return (baseline) for (2) = 0.541

+ significant at 10%;

* significant at 5% ;

** significant at 1%

- [7] Carrington W.J., Detragiache E., Vishwanath T. (1996), "Migration with endogenous moving costs", *The American Economic Review*, vol.86, n. 4, (1996): pp.911-930
- [8] Chiswick, Barry and Paul Miller (2008), "Why is the payoff to schooling smaller for immigrants?", *Labour Economics* vol. 15, issue 6: 1317-1340.
- [9] Chiuri, Maria Concetta, Coniglio Nicola D. and Giovanni Ferri, (2008) *L'esercito degli invisibili: aspetti economici dell'emigrazione clandestina*, Bologna: Il Mulino.
- [10] Chiuri, Maria Concetta, De Arcangelis Giuseppe, D'Uggento Angela and Giovanni Ferri (2004), "Illegal Immigration into Italy: Results from a Recent Field Survey", CSEF Working Paper n. 121, (<http://www.dise.unisa.it/WP/wp121.pdf>).
- [11] Chiuri, Maria Concetta, De Arcangelis Giuseppe, D'Uggento Angela and Giovanni Ferri (2008), "Features and Expectations of Illegal Immigrants: result of a field survey in Italy", *Studi Emigrazione*.
- [12] Chiuri, Maria Concetta and Angela D'Uggento (2004), "Designing a survey on illegal migration in Italy: methodological issues and preliminary results", Paper presented at the Annual Meetings of the Italian Statistics Society.
- [13] Cobb-Clark, Deborah and Sherrie Kossoudji (2002), "Coming out of the Shadows: Learning about Legal Status and Wages from the Legalized Population", *Journal of Labour Economics* 20 n. 3 : 598-628.
- [14] Coniglio, Nicola D., De Arcangelis Giuseppe and Laura Serlenga (2009a), "Intentions to Return of Clandestine Migrants: The Perverse Effect of Illegality on Skills", *Review of Development Economics*, vol. 13 (4), pp. 641-57.
- [15] Coniglio, Nicola D., De Arcangelis Giuseppe and Laura Serlenga (2009b), "Clandestine Migrants: Do the High-Skilled Return Home First?", *CIDEI Working Paper* n. 80 (<http://www.w3.uniroma1.it/cidei>).
- [16] Constant, Amelie and Douglas S. Massey (2003), "Self-selection, earnings and out-migration: a longitudinal study of immigrants to Germany", *Journal of Population Economics*, vol. 16(4) : 631-653
- [17] DeVoretz, Don J. and Sergiy Pivnenko (2004), "The Economic Causes and Consequences of Canadian Citizenship", *IZA Discussion Paper* n. 1395.
- [18] Dustmann, Christian (2003a), "Children and Return Migration", *Journal of Population Economics* 16 : 815-830.
- [19] — (2003b), "Return migration, wage differentials, and the optimal migration duration", *European Economic Review* 47 : 353-369.
- [20] — (1997), "Return Migration, uncertainty and precautionary savings", *Journal of Development Economics* 52 : 295-316
- [21] — (1996), "Return migration: the European experience", *Economic Policy* 22 : 214-250.

- [22] — and Yoram Weiss (2007), “Return Migration: Theory and Empirical Evidence from the UK”, *British Journal of Industrial Relations*, Vol. 42 (2) : 236-256.
- [23] Galor, Oded and Oded Stark (1990), “Migrants’ savings, the probability of return migration and migrants’ performance”, *International Economic Review*, 31 : 463-467.
- [24] Hanson, Gordon H. (2006), “Illegal Migration from Mexico to the US”, *Journal of Economic Literature* 44 n. 4 : 869-924.
- [25] Hatton, Timothy J. and Williamson, Jeffrey G. (2009), “Vanishing Third World Emigrants?”, *CEPR Discussion Paper* No. 7222, .
- [26] Hoefler, Michael, Rytina Nancy and Bryan C. Baker (2009), “Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2008”, Population estimates, February 2009, Homeland Security, Office of Immigration Statistics.
- [27] International Centre for Migration Policy Development (2006), *2005 Year Book on Illegal Migration, Human Smuggling and Trafficking in Central and Eastern Europe*, Vienna, 2006.
- [28] Jandl, Michael (2004), “The Estimation of Illegal Migration in Europe”, *Studi Emigrazione – Migration Studies* 51 : 141-155.
- [29] Jasso, Guillermina and Mark Rosenzweig (1982), “Estimating the emigration rates of legal immigrants using administrative and survey data: the 1971 cohort of immigrants to the United States”, *Demography* vol. 19 : 279-290
- [30] Jayet, Hubert, Nadiya Ukrayinchuk (2007), “La localisation des immigrants en France : une première approche”, *RERU*, n.4 : pp.625-64
- [31] Jayet, Hubert and Nadiya Ukrayinchuk, and Giuseppe De Arcangelis (2010), “The Localization of Immigrants in Italy: Disentangling Networks and Local Effects”, *Annales d’Economie et de Statistique*, forthcoming.
- [32] Kossoudji, Sherrie and Cobb-Clark Deborah A. (2000), “IRCA’s Impact on the Mobility and Occupational COncentration of Newly Legalized Men”, *Journal of Population Economics* 13 : 81-98.
- [33] — (1996), “Finding Good Opportunities within Unauthorized Markets”, *International Migration Review* 30 n.4 (1996): 901-924.
- [34] McCormick, Barry and Jackline Wahba (2001), “Overseas work experience, savings and entrepreneurship amongst return migrants to LDCs”, *The Scottish Journal of Political Economy*, 48 n.2 : 164-178.
- [35] McKenzie, David and Hillel Rapoport (2006a), “Can Migration Reduce Educational Attainments? Depressing Evidence from Mexico”, Centre for Research and Analysis of Migration (CreAM) Discussion Paper N. 01/06.
- [36] — (2006b), “Migration and Educational Inequality in Rural Mexico”, Inter-American Development Bank, INTAL-ITD Working Paper 23.

- [37] Mattoo, Aadta, Ileana C. Neagu and Çağlar Özden (2008), “Brain Waste? Educated Immigrants in the US Labor Market”, *Journal of Development Economics*, vol. 87 (2), p. 255-69.
- [38] Mesnard, Alice (2004), “Temporary migration and capital market imperfections”, *Oxford Economic Papers* 56 : 242-262.
- [39] Munshi, Kaivan (2003), “Networks in the Modern Economy: Mexican Migrants in the US Labor Market”, *Quarterly Journal of Economics* 118 n.2 : 549-599.
- [40] Orrenius, Pia and Madeline Zavodny (2005), “Self-selection among undocumented immigrants from Mexico”, *Journal of Development Economics* 78 : 215-240.
- [41] OECD (2006), “International Migration Outlook: SOPEMI 2006”, June 2006.
- [42] OECD (2003), “Territorial reviews: Mexico”, 2003.
- [43] Passel, Jeffrey (2005), “Estimates of the Size and Characteristics of the Undocumented Population”, Pew Hispanic Center, Report 21 March 2005 (<http://pewhispanic.org/reports/report.php?ReportID=44>).
- [44] Rauch, James (2001), “Business and Social Networks in International Trade”, *Journal of Economic Literature*, vol. XXXIX : pp. 1177-1203.
- [45] Reagan, Patricia B. and Randall J. Olsen (2000), “You Can Go Home Again: Evidence from Longitudinal Data”, *Demography* 37 n.3 : 339-350.
- [46] Rivera-Batiz, Francisco L. (1999), “Undocumented workers in the labor market: An analysis of the earnings of legal and illegal Mexican immigrants in the United States”, *Journal of Population Economics* 12 : 91-116.
- [47] Sanromá, Esteve, Ramos, Raul and Simón, Hipólito (2008), “The Portability of Human Capital and Immigrant Assimilation: Evidence for Spain” *IZA Discussion Papers n. 3649*.
- [48] Stark, Oded (1992), *The Migration of Labor*, Oxford: Blackwell.
- [49] Stark, Oded, Helmenstein Christian and Alexia Prskawetz (1998), “Human capital depletion, human capital formation, and migration: a blessing or a ‘curse’?”, *Economic Letters* 60 : 363-367.
- [50] Tapinos, Georges (1999), “Clandestine Immigration: Economic and Political Issues”, Part III in SOPEMI, *Trends in International Migration – 1999 Annual Report*, OECD, pp.229-251.
- [51] Venturini, Alessandra and Claudia Villosio (2008), “Labour-market assimilation of foreign workers in Italy”, *Oxford Review of Economic Policy* 24 : 517-541.
- [52] Zhao, Yaohui (2002), “Causes and Consequences of Return Migration: Recent Evidence from China”, *Journal of Comparative Economics* 30 : 376-394.