

The Estimation of Illegal Migration in Europe

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Abstract

The author examines available methods and techniques for the estimation of the phenomenon of illegal migration in Europe, illustrated by examples of applied research in the field from a number of European countries and supplemented by his own research. Following an introduction to the debate and a concise discussion of terms and definitions used, a variety of methodologies for estimating the size of hidden populations and clandestine entries is presented and illustrated by concrete examples of research studies into the subject. The methods and examples are then subjected to a critical discussion and review. Dividing the methodologies into those used for estimating stocks of illegal migrants (illegal foreign residence and illegal foreign employment) and those used for estimating illegal migration flows (illegal entries), it emerges that the analytical toolkit for producing estimates on stocks is by far greater and more promising than the techniques available for estimating flows. Finally, the author argues that rational policy making in the field of illegal migration needs to rely more on serious estimation techniques, rather than simple guesswork, and that the methods for doing so are available and tested.

Keywords: illegal migration, illegal foreign residence, illegal foreign employment, illegal entry, methodology, estimation techniques

Introduction

Estimating the number of migrants who enter a country in an irregular or clandestine manner (inflow of illegal migrants over a given period) or the number that reside in the country in an irregular or undocumented situation (stocks of foreign population residing in the country illegally at a given moment) is inherently problematic as, by its very nature, it concerns undocumented and unobservable events. It follows that any description of the nature and extent of the phenomenon has to rely on certain indirect methods, which in turn depend on the availability of alternative statistical indicators in a given country. From the observed statistical indicators conclusions on the dimensions of the unobserved phenomena (illegal entries, illegal residence, illegal employment, etc.) are then drawn, using much guesswork on the linkage between the two sets of variables. Thus, for example, figures on border apprehensions are often used as a basis for estimating the extent of illegal entries, having been adjusted to take account of the number of times that individual migrants attempt to cross and using a presumed ratio of intercepted to total illegal entries. As such, all estimates of irregular migration phenomena are prone to large margins of error, whether they are considered “scientific” or not. However, “scientific” methods do present a considerable advantage in that they specify their methods of calculation, the field covered, the hypotheses used and their statistical biases. For in the end it is this approach, subjecting to comparison the results obtained through a variety of statistical methods, that is the sole means of coming close to an accurate estimate (Tapinos, 1999, p. 234).

Definitions

Most writers on illegal migration skirt the question of what exactly is an “illegal immigrant” or an “illegal border crossing”. A notable exception is the classification by Tapinos (1999, p. 231) who details six important categories of clandestinity. This logical classification can be depicted using a two-dimensional table with a further dimension (illegal work) added as shown in Table 1.¹

	<i>Residence legal</i>	<i>Residence illegal</i>
<i>Entry legal</i>	Work illegal	Work illegal No Work
<i>Entry illegal</i>	Work illegal	Work illegal No Work

¹ The six categories of clandestinity are (from top left to lower right): 1) legal entry, legal residence but illegal work; 2) legal entry but illegal residence and illegal work; 3) legal entry, no work but illegal residence; 4) illegal entry, legal(ized) residence but illegal work; 5) illegal entry, illegal residence and illegal work and 6) illegal entry, illegal residence but no work. The other two possible categories in the table – 7) legal entry, legal residence and no work and 8) illegal entry but legal(ized) residence with no work – do not amount to “clandestinity”. Moreover, it is assumed that legal work can only be carried out when residence is legal (or legalized), and cannot lead to further combinations of “clandestinity”.

However, using the six identified relevant categories of illegality as a starting point presents a number of practical problems. This starts with the fact that a particular person may change his status over time, sometimes more than once. So a person may enter a country legally, but then overstay his visa. First his presence is legal, then illegal. He may later be regularized, thus becoming legal again, and still later fall back into irregularity, becoming an illegal immigrant again (as happens often after regularization programmes in southern European countries).

The question of definitions plagues both the estimates on flows and stocks. As most estimates do not specify their definition of “illegal migrant”, we have to assume a common-sense approach to this question (e.g. “illegal immigration” would comprise illegal entries and legal entries with subsequent illegal residence – visa overstayers, etc., while “illegal residence” would comprise only those residing illegally in a given country but exclude those working illegally while residing legally in the country). However, as will become clear later in the discussion, the methods used to gauge the size of “illegal immigration” or “illegal residence” produce estimates that do not conform to this common-sense approach. For example, estimates of illegal immigration based on border apprehension figures ignore those who enter legally but subsequently become illegal residents. Similarly, estimates on illegal residence based on detection figures of migrants performing illegal work, will also include those migrants residing legally but performing work illegally (e.g. because they do not have a work permit).²

Methodologies

There exist a great deal of references to “estimated numbers” of illegal migrants in Europe.³ However, most of the sources do not reveal their methodologies, presumably because they are too weak to withstand serious scrutiny. This is done, despite the availability of certain statistical methods that would merit serious consideration, especially for the estimation of stocks of illegal migrants. In what follows, therefore, I will confine myself only to those estimation techniques, which clearly specify the methodology used for arriving at their estimates. I will further divide the methods presented into those applicable to the estimation of illegal foreign residence, illegal foreign work and illegal entry.

Estimating the extent of illegal foreign residence

“Residual” estimation techniques

The use of “residual” estimation methods based on the differences between census data and other registries of immigrants, as is regularly done in the U.S. for the stock of

² In the latter case, the detection of illegal work will often lead to a withdrawal of residency rights (e.g. of tourists, students), but not in all cases (e.g. for family members of legal residents, who nevertheless do not (yet) hold work permits).

³ Dividing the estimates into those on stocks (i.e. those residing irregularly in the country) and those on flows (i.e. those entering the country in an irregular fashion), it can be stated that there is much more written material on stocks – both EU-wide and in single European countries – than on flows.

undocumented immigrants⁴, is not usually carried out in European states because the censuses are thought to be seriously undercounting irregular migrants in Europe.⁵

A notable exception to this general observation is an estimation of the size of the illegally resident population in Spain based on recent census results. Here, the census of 2001 placed the number of foreigners registered in Spain at 1.572,017, which means a difference of almost half a million people among those which have a valid residence card or permit (1.109,060) and the foreigners which are registered in the 2001 census (INE, 2002). It should be noted that the Spanish case is special in that all immigrants (regular and irregular) have a strong incentive to register in municipal population registers, as this confers certain benefits such as the free provision of health care, while there are hardly any disincentives connected to registering as these data are not utilized for removing unauthorized residents from the country.

“Multiplier” estimation techniques

Most statistical methods to produce better estimates of undocumented migrants are based on the “multiplier principle”. Basically, these methods must be able to assume that the size of the unknown variable to be estimated (such as the stock of undocumented migrants) has a stable relation to a variable that can be measured (such as the stock of the legally resident migrants), so the problem is redefined as finding the “right” multiplier (Vogel, 2002, p. 70).

Methods that are related to the multiplier principle, but involve more complex computations, include demographic methods (comparing age structures; relating the birth or death rates of illegal residents to the corresponding rates of legally resident foreigners; using hospitalization figures) and other indirect methods (like estimating the usage of electricity or bread). (Delaunay, D. and Tapinos, G. (1998a and 1998b), Wanner 2002). However, I have found only few estimates on illegal residence in European countries using such advanced statistical methods. While such methods are certainly more difficult to apply in smaller countries than in the USA (fewer incidents of observed variables), presumably they could shed some light on the question of the stock of illegal immigrants in European countries.

Even less theoretical work has been done on developing better methods for estimating the flow of illegal immigrants. In theory, if the estimates on the stocks of illegal immigrants over time are reliable approximations of the “true figures”, one could calculate the net flows of illegal immigrants, adjusting for regularizations and presumed death rates. However, as the stock estimates available are extremely vague and unreliable,

⁴ About 8.5 million undocumented immigrants lived in the United States in 2000, according to the best available evidence from estimates that combine data from Census 2000, the Immigration and Naturalization Service, the March 2000 Current Population Survey, the Census 2000 Supplementary Survey, and previous estimates. This figure represents an increase of about 5 million over the estimates for 1990, leading to the conclusion that the annual increase during the 1990s averaged about 500,000. (Passel, 2002)

⁵ Similarly, using census data from sending countries for estimating irregular emigration from a particular country is of little use in the European case as the migrants – mainly due to geographical reasons – are likely to disperse in a large number of receiving states.

conclusions on this basis would be highly speculative. In any case, estimates on the gross volume of one-way undocumented immigration are of interest in their own right.

Survey methods

As mentioned, there are few studies that attempt to estimate the size of the illegally resident population in European countries using more elaborate methods. One particular variant of multiplier methods consists in surveying “experts” on the subject and compiling their own estimations to an appropriate multiplier. This method has been tried out for Switzerland through a survey of employers in particular branches of business (Piguet 2001). The authors carry out a survey of 800 employers in Switzerland, asking them about the estimated percentage of illegally employed foreigners in their own branches of business. Using the survey results, they then calculate the estimated number of illegally employed foreigners in Switzerland. While this method is likely to result in better approximations to the “real value” of multipliers as simple guesswork, the results depend to a large degree on the choice of statistical compilation: if an (adjusted) average of the survey results is used, the calculated number of illegally employed foreigners is 182,556. However, if the median of the survey results is used, the number is only 73,100. The authors conclude cautiously that the likely range is 70,000 – 180,000.

Capture-Recapture Methods

A pioneering study carried out in the Netherlands (Van der Leun et al., 1998) has used the capture-recapture method for estimating the size of the illegally resident population in Dutch cities. This method has its origin in population biology and is used to estimate the size of a population. At two specific moments in time and at one specific location the population is being counted. The amount of the population *not* present at that specific moment and location can be estimated by using the Poisson parameter and so the total population can be counted.⁶ In their study the authors analysed apprehension data of the police of 1995 and on this basis estimated the proportion of the illegally to the legally resident immigrant population for four cities (Amsterdam, Rotterdam, The Hague and Utrecht). The result (on average 7.3 % of 545,152 legally resident immigrants) provides an estimate of a minimum total number of illegal immigrants in the four cities of 40,047.⁷

A more recent study that uses the same methodology has been carried out by Engbersen et al. (2002). The authors analyzed data on police apprehensions from 25 police regions in 1997-2000 and concluded that every year between 65,000 and 91,000 illegal residents from third countries but without people from Eastern Europe were in the Netherlands. In

⁶ To illustrate, consider the following method of counting fish in a pond. First, you catch 1,000 fish, mark them, and let them free again. Then you catch another 1,000 fish and examine them. If 100 of them are marked, then 10 % equals 1,000, so there are – presumably – 10,000 fish in the pond.

⁷ Visser et al. (2000) have extrapolated these numbers to the Netherlands as a whole, which resulted in an estimated 60,000 illegal immigrants.

addition every year between 47,000 and 72,000 illegally resident Eastern Europeans were in the country, giving a total illegally resident population of 112,000 – 163,000.⁸

In principle, the stringency of the capture-recapture method is superior to any of the other methods discussed so far. In evaluating the strengths and weaknesses of the method, however, much depends on the quality of the police records. Moreover, an important assumption in the use of this method is a homogenous population. Heterogeneity (e.g. when capture rates for individuals differ according to sex, age, social status and living area) makes the method more difficult to apply. Capture rates are also dependent upon time, and behavior can change over time (irregular migrants can for example pay less attention or become wiser in avoiding capture).

Evidence based on regularization data

In some southern European countries, regularization programs for undocumented migrants are carried out in more or less frequent intervals. While evidence derived from such regularization processes cannot be counted as separate methods for the estimation of the illegally resident population, the figures do nevertheless provide good indicators for the extent of the phenomenon. We will therefore briefly consider the evidence from regularization programs in Italy, Greece and Spain.

In Italy, informal employment is estimated to be widespread in agriculture, especially in the seasonal activities, such as picking and harvesting, the building sector and certain parts of the service sector (restaurants, cleaning services). During the 1990s the strong demand for cheap labour in these sectors has increasingly been filled with illegal immigrants, and migration policy has responded with frequent regularization programs (1986, 1990, 1997, 1998/99 and 2002 – ongoing). During the three amnesties in the 1990s a total of some 640,000 migrants received a residence permit, while the current amnesty could end up with even more, since at the beginning of 2003 already some 700,000 applications had been made (MNS, 2/2003).

In Greece, indicators of the number of undocumented foreign migrants can be derived from the two migrant registration processes in 1998 and from 2001 onwards. In 1998, a total of 371,641 migrants had registered for residence and work permits, but the National Institute of Labour of Greece estimated that more than 150,000 did not register (Kavounidis J. and Hatzaki L., 2000). Official data concerning the 2001 registration process were not yet available, since the processing of applications has not been finished by the end of December 2002 (in fact in January 2003, the deadline for registration was extended yet again), but the Ministry of the Interior had announced that 351,110 migrants had applied for residence and work permits already in June and July 2001 (MNS 9/2001).

⁸ A more recent estimate done by CBS came to 46,000-116,000 illegal migrants in the Netherlands (Hoogteijling, 2002). The method used is a combination of data on numbers of legal and illegal migrants, rejected asylum requests and deportations. Building on the results of the previous research by Van der Leun et.al (1998), CBS calculated the rate between legal and illegal migrants in different categories, using the previously estimated rate of 7.3 % as a minimum and a rate of 14 % as a maximum.

In the latest round of regularizations in 2000-2001 in Spain, a total of 615,377 applications were presented to the authorities, involving about 350,000 persons, of which about 334,000 applications were approved. In 2002, due to extraordinary processes, the regularization of foreigners has been made through the contingent of foreign workers.

To assess the value of data collected during regularization programs for the estimation of illegal residence several things have to be born in mind. The raw data on applications for regularization or permits granted provide only a limited amount of information on the true extent of illegal residence in the country at any point in time, mainly for three reasons. First, not all illegal immigrants can and will take advantage of regularization programmes. Second, regularized immigrants who are awarded only a limited residence permit or a residence permit connected to employment may frequently fall back into the status of irregularity. Thus, for example, illegal entry as well as “overstaying” at the end of a period of legal residence are both major admission channels to Italy (Pastore, 2002, p.1). A third problem connected to the use of regularization data is that the analysis of such data usually works on a closed-country assumption, while there is some evidence that regularization programs in one country imply also the regularization of some segment of the irregular foreign population in contiguous countries. For example, according to an Italian scholar of the subject, each time Italy has launched such a program, there has been a large presence of foreigners living in France, Switzerland and Austria moving to Italy just for the time of the amnesty (Sciortino, 2003, p.2).

Estimating the extent of illegal foreign employment

Evidence on the presence of undocumented foreigners can also be based on estimates of the participation of migrants in the informal sector of a given country. There are, however, no indications that the resulting estimations are prone to smaller margins of error than those derived from other techniques. To illustrate the point, consider the literature on the extent of irregular foreign employment on the Austrian labour market contrasted to some further calculations on the basis of Austrian apprehension data.

Biffi (2001, p. 360) speaks about 47,000 foreigners working in the informal sector and bases her approximation on the assumption that the share of foreigners in the informal sector does not exceed their ten percent share in overall employment. Schneider (2002, p. 2) estimates that about 85,000 foreigners are working full time in the informal sector, which would suggest that even more aliens were involved, as only few work full time in the informal sector.⁹ This higher number relates to the overview given about the occupational structure of the informal sector in 1989 and 1999, which includes many industries having a high share in alien employment, whereas Biffi is of the opinion that natives have much greater opportunities in the informal sector especially in trade and profession.

⁹ Schneider (2002 and previous studies) estimates the extent of the informal economy using elaborate econometric models of indirect indicators, such as the amount of cash in circulation or the extent of electricity consumption.

Another figure (now somewhat dated) was provided by Pichelmann (1994), who estimated that in the early 1990s between 80,000 and 100,000 foreigners were illegally employed in Austria. However, a closer look at the methodology of producing this estimate provides some insight into the pitfalls of quantifying the phenomenon. Pichelmann based his figures on statistics from the Inspectorate of Labour and extrapolated from a sample of illegally employed foreigner workers found to be present at worksites during routine controls. The problem is that these routine control checks do not constitute a random sample of all workplaces but – due to resource restrictions and low staffing levels – concentrate on “suspicious” workplaces only.

To see what is meant and what can nevertheless be learnt about the extent and the structure of illegal foreign employment in Austria from such statistics, consider the following more recent data from the Inspectorate of Labour.¹⁰ Table 2 lists the number of controls, violations, apprehensions of illegal foreign workers and the share of controlled worksites as a percentage of all worksites in Austria. A simple extrapolation of apprehensions to all worksites in Austria would result in very high multipliers (between 37 and 50) and unrealistically high estimates (indicated in column 5). Such simple extrapolations would be false for at least two reasons. First, as mentioned, the worksites inspected do not constitute a random sample but a selected sample of suspicious worksites, increasing the chance of detecting illegal foreign workers at each inspected worksite.¹¹ Second, any estimate derived from statistics of the inspectorate of labour can cover only part of the labour market, as the inspectorate carries out controls only in workplaces (e.g. construction sites, factories) but not in individual households (where many illegal foreign employees are likely to work in services such as cleaning, cooking, child care and care for the sick and elderly).

Year	1) Number of controls	2) Number of violations	3) Apprehended illegal foreign workers	4) % of all worksites	5) Simple extrapolation (3/4)	6) Apprehensions/ Controls (3/1)
1995	11.513	2.033	4.210	2,0%	211.359	0,37
1996	14.363	2.267	4.083	2,5%	164.309	0,28
1997	14.452	2.060	3.858	2,5%	154.299	0,27
1998	15.537	1.746	2.999	2,7%	111.567	0,19
1999	14.027	1.432	2.550	2,4%	105.076	0,18
2000	13.211	1.425	2.881	2,3%	126.048	0,22
2001	12.765	1.427	3.010	2,2%	136.293	0,24

Source: Ministry of Economy and Labour, Inspectorate of Labour; own calculations

¹⁰ The data from the Inspectorate of Labour are available only until mid-2002, after which there is a break in the series. Starting from July 2002, the tasks of the labour inspectorate have been shifted from the Ministry of Labour to the Central Taskforce for the Prevention of Illegal Foreign Employment at the Ministry of Finance, involving a significant expansion of staff and competencies.

¹¹ In fact, the labour inspectorate estimates internally that they are able to detect only around 10% of all illegal foreign workers present on worksites, which would result in a much lower multiplier of 10. It can further be argued that this also comes close to the likely upper limit of the chances for detection (and vice versa the lower limit for the multiplier) as employers weigh the risks of detection (and associated financial fines) against the benefits of employing illegal foreign labour.

The data are nevertheless useful in a number of ways: First, they indicate that over time illegal foreign employment has probably been decreasing until about 1999, then increasing again. This can be inferred from the number of apprehensions per control check over time (column 6), which first decreases, then increases again. Second, a breakdown of the data by industry indicates the branches most affected by illegal foreign employment – these are mainly construction, catering and small-scale industry / handicraft owned by foreign employers.¹² Third, the data collected by the labour inspectorate give some indications on the nationality of apprehended illegal foreign workers in Austria. Most of them (around 60 %) originate in one of the Central European countries, now ready to join the European Union (Poland, Slovakia) and the successor states of the former Yugoslavia. Around 20 % come from Turkey and a further 10% from the CIS (Commonwealth of Independent States). The rest comes from countries all over the world.

As a further illustration of methods for estimating the amount of illegal foreign employment, three studies on the Netherlands can be cited: Zandvliet et al. (1994) estimated the amount of illegal work in 1994 at 2,150 to 24,850 working years.¹³ Assuming that the amount of people is twice or three times higher than the total amount of working years, estimates of the number of illegal workers are then made (giving a range of 4,000 to 75,000 illegal workers who were in the Netherlands in 1994). Visser et al. (2000) estimated the amount of illegal work in 1999 at 35,000 to 50,000 working years and, following the same reasoning, concluded that in 1999 between 70,000 and 150,000 illegal workers were in the Netherlands. The increase is explained by the changes on the labor market in the years in-between.

The Central Agency for Statistics of the Netherlands provided estimates of the total amount of illegally resident migrants on the basis of the two previous estimates made on the numbers of illegal foreign workers just mentioned (Zandvliet et al., 1994 and Visser et al., 2000). In doing so, the Agency employed the following reasoning. Not all people working illegally also stay illegally in the country and not all illegal residents work. Assuming that 2/3 of the illegal workers stayed illegally in the country and 10% of the total illegal residents had no work at all, the total amount of illegal immigrants was then estimated.¹⁴

Estimating illegal migration flows

The only methodology explicitly used for estimating flows of illegal immigrants to Europe is the projection of border apprehensions. This is done, for example, by Heckmann et al. (2000). Using an assumed ratio of 1:2 border apprehensions to illegal

¹² However, here again it must be born in mind that the labour inspectorate carries out controls only in workplaces but not in individual households.

¹³ One working year denotes one full-time or several part-time equivalents of one person working full-time for one year.

¹⁴ The resulting estimate indicated a rising trend of illegal foreign residents in the Netherlands in the second half of the 1990s: between 3,000 and 55,000 in 1994 and between 50,000 and 100,000 in 1999.

entries to the EU (on the basis of some 260,000 border apprehensions), he estimates annual illegal (gross) immigration of over 400,000. A more elaborate description of his own methodology is outlined in a communication by Widgren (2002). Based on an assumed ratio of border apprehensions to illegal immigrants of 1:2 and using the ratio of asylum seekers who arrived irregularly in European countries, he estimates some 500,000 illegal entries to the EU for 2001.

Having specified this rather simple methodology for estimating flows of illegal migrants, two technical problems with this method immediately come to mind. The first one is the quality and availability of apprehension data in Europe. No valid generalisations about this issue can be given, as much of the statistical material collected by border enforcement agencies is kept secret and only few countries in Europe regularly publish their apprehension data. Thus, analysts and researchers of the subject often have to rely on informal channels to get access to data on which to base their estimations.¹⁵

The second methodological problem is the estimation of the “correct” multiplier. To do so, analysts usually resort to “criminological” methods to estimate the multiplier based on the likely chances of being caught while attempting to cross a border illegally. To illustrate, consider the following calculations for Germany. In 2001, the police had registered 113,000 breaches of the aliens law, concerning 45,000 cases of illegal entry and 68,000 cases of illegal residence. The multiplier can be estimated by looking at other available statistics for certain nationalities. In 2001, for example, there were 17,000 asylum-seekers from Iraq, of which 3,000 had contact with the police before lodging their asylum application. This means that about 14,000 Iraqi asylum seekers managed to come to Germany undetected and stay undetected for at least a while before lodging an asylum application. Given that less than 20 % of Iraqi asylum seekers were detected, while most of them did not possess proper papers and had entered Germany illegally, therefore, it is likely that the “true” number of illegal entries to Germany is a multiple of the 45,000 cases registered for illegal entry by the police. In the case of the Iraqis, the multiplier could be as high as five, while for other nationalities, the “correct” multiplier is likely to be much lower. Depending on the assumptions made and the corresponding size of the (average) multiplier chosen, one can easily see how to arrive at widely varying estimates of illegal entries to one country (in this case Germany) alone.

Estimating the “correct” multiplier becomes even more problematic when generalizing estimated multipliers across countries or even for the whole of the EU. In Greece, for example, data by the Ministry of Public Order indicate that during 2001 a total of 219,598 immigrants were arrested for illegal entry into the country, of whom 167,168

¹⁵ In principle, the European Union has been collecting data on border apprehensions and illegal migration since 1995 in the context of its CIREFI (Centre for Information, Discussion and Exchange on the Crossing of Frontiers and Immigration) working group, but the data collected are kept confidential and are not accessible to the public. Likewise, the data on illegal migration collected by the Inter-governmental Consultations on Asylum, Refugee and Migration Policies in Europe, North America and Australia (IGC) are not publicly available.

were arrested by the Border Guard.¹⁶ Applying the commonly used multiplier of two (“two pass for each one caught”) in this case would almost certainly be misleading due to the high mobility of the Albanian migrants (constituting around 75 % of all apprehended illegal migrants), who may frequently leave the country to return days, weeks, months or years later (so-called “circular migration”).¹⁷ To arrive at “better” estimates, therefore, one has to adjust either the multiplier downward or reassess the statistical base (using, for example, only apprehensions of non-Albanians).

Concluding remarks

There are various rationales for estimating the size of the undocumented (illegally resident) population in European countries, as well as the size of flows of illegal migrants to European countries. In the public sphere, there is a general need to gather reliable information on important social phenomena, to determine whether or not the situation warrants any political action. Once that has been established, even more reliable information is needed to formulate rational policies and to guide the political measures to be taken. For governments, the perceived size of the phenomenon will have an important bearing on the justification for the expenditure of public resources on alternative uses. Finally, when evaluating the impact of political measures, more data on the developments over time would be needed.

Despite these strong arguments for the production of more reliable estimations, in most European countries policy-making in the area of illegal migration is based on guesswork and rumours rather than sophisticated methods of estimation. Moreover, all actors in the field of illegal migration have their own interests in producing certain numbers on illegal migration. Some may deliberately overstate the size of their estimates, others may want to understate it. In the best case, this will render policies on illegal migration merely irrelevant. In the worst case, the lack of reliable information will lead to misguided policies that will aggravate the problem. In any case, there is a strong rationale for governments to engage their statistical services in developing and applying better estimation methods. For example, with the latest round of census-taking recently completed in many European countries, more could be done by comparing national registries of residence permits with census data. Other estimates could be derived from demographic data available within statistical offices but not accessible to the public. More use could also be made of the capture-recapture method applied to apprehension data from the police. As the present paper demonstrates, theoretically a variety of statistical methods are available but in practice they are hardly ever put to use.

¹⁶ Arrests by the border guard thus constituted 76% of the total apprehensions, compared with 50% in 2000. In addition, the Coast Guard arrested 6,864 while the rest was apprehended by the Police (Source: *Eleftherotypia*, 29/5/2002).

¹⁷ Another indicator of the circular nature of illegal migration in Greece is the extraordinary high level of expulsions of those not in possession of valid residence documents. Between 1992 and 1995, these numbered over 225,000 a year and for 2001 it was expected that expulsions would be as high as 270,000 (Baldwin-Edwards, 2001, p.11).

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