Vesela Kovacheva and Dita Vogel

The size of the irregular foreign resident population in the European Union in 2002, 2005 and 2008: aggregated estimates

Hamburg Institute of International Economics. Database on Irregular Migration.
Working Paper No.4/2009
http://irregular-migration.hwwi.net/

Author: Dr. Dita Vogel is head of and Vesela Kovacheva is a researcher in the research area Irregular Migration at the Hamburg Institute of International Economics
Contact: vogel@hwwi.org, kovacheva@hwwi.org

Hamburgisches WeltWirtschaftsInstitut gGmbH (HWWI)
Hamburg Institute of International Economics
Heimhuder Str. 71
D-20148 Hamburg
Database on Irregular Migration (http://irregular-migration.hwwi.net)

Despite the political relevance of irregular migration, assessments of the size of the irregular migrant population are often vague and of unclear origin. This website aims at increasing transparency in this sensitive field. The database provides an inventory and a critical appraisal of data and estimates in the European Union and in selected member states. It contains estimates on the size of irregular migrant populations and indicators of their composition with regard to gender, age, nationality and sector of economic activity. The summarizing tables are designed to give users the best possible overview of quantitative data in the countries, in a simplified form. The researchers involved in the creation of this database are aware that irregular migration is a complex issue. Therefore, quantitative information is accompanied by substantial background materials, both on issues of general concern and on the situation in individual countries.

The database was created in the context of "CLANDESTINO: Counting the uncountable – data and trends across Europe", a project funded by the European Commission, DG Research, Sixth Framework Programme. CLANDESTINO started in September 2007 and will conclude in 2009 (http://clandestino.eliamep.gr/). The Hamburg Institute of International Economics (HWWI) hosts the database and aims at complementing and updating it in the coming years.

Working Paper Series

The working paper series aims at publishing papers supporting the aim of increasing transparency in the field of irregular migration. Particularly, it provides a format for documentation of new estimates which are not suitable for journal publication. If you want to propose a working paper, please go to http://www.irregular-migration.hwwi.net/Contact.2559.0.html.

All Working Papers are available at http://www.irregular-migration.hwwi.net/Working_papers.6066.0.html.
Table of content

1 Introduction .................................................................................................................. 4
2 Data and methods ..................................................................................................... 4
   2.1 Which country estimates are included? ................................................................. 4
   2.2 How are estimates adjusted? .................................................................................. 6
3 Results ......................................................................................................................... 9
4 Final remarks ............................................................................................................ 11
References .................................................................................................................... 12
Annex ............................................................................................................................ 13
1 Introduction

How many irregular migrants are living in the European Union at a specific point in time? There are no secure answers on this question, but the estimates in the Database on Irregular Migration aim at delivering the best possible answer, taking the current state of knowledge in individual countries into account. When this paper was prepared, there were only outdated rule-of-thumb estimates for the European Union level, and no methodological tool seemed to be applicable in all EU countries in order to conduct a standardized estimate. In this situation, an aggregation of country specific estimates seemed to be the best choice of methodology. The EU estimates were developed in the framework of the European research project CLANDESTINO. In this report, we shortly summarize key results and describe the general procedure for including numbers in the aggregate estimate and for adjusting numbers for an approximate comparability. A more detailed analysis of results and of the rationale behind this estimate can be found in a manuscript that will be submitted to a journal (Vogel, Kovacheva and Prescott 2009).¹

While we cannot avoid using low quality country estimates, we raise awareness of this issue and aim at a scientific debate². This was also the purpose of publishing a first version of the 2005 estimate in February 2009 in the Database on Irregular Migration. With regards to the adjustment of country estimates, we have not received many suggestions, so we assume that no better approximations are available at present. However, some new country estimates were brought to our attention. The aggregated estimates needed to be updated in response to this new information. Thus, there may be differences between the results you find in this paper and in the calculation tables in the Annexes. For example, the first estimate for 2005 from 2.8 to 6 million irregular migrants differs from the updated 2005 estimate included in this paper. The presented EU estimates are open to continuous improvement in the scientific dialogue.

2 Data and methods

This paper contains a technical account of the aggregation method used for gaining EU estimates on irregular migration (more in Vogel, Kovacheva and Prescott 2009).

2.1 Which country estimates are included?

The European estimate is based on the aggregation of minimum and maximum estimates for individual countries. In this section, it is explained how estimates were collected and chosen, and what was done when there was no estimate.

Collection of country estimates: To achieve a European Union level estimate, country specific estimates were aggregated. For the twelve member states covered by the CLANDESTINO project, we included estimates from the CLANDESTINO country reports³. For the rest of the EU member states, we systematically checked different sets of reports that included questions

¹ We are grateful to Hannah Prescott for her collaboration in the development of the estimates. We also would like to acknowledge that we profited from comments on earlier versions of the paper and the tables. We would like to thank all who contributed and in particular Manh Cuong Vu. If you discover a mistake or see further room for improvement, please let us know.

² The aggregate estimates will be updated on an ongoing basis. If you have a comment or suggestion related to country estimate or rules of adjustments, do not hesitate to contact us at: http://irregular-migration.hwwi.net/Contribute_to_scient.5931.0.html

³ Countries: Austria, the Czech Republic, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Slovakia, Spain and the United Kingdom
on irregular migration in the frame of: REGINE, Undocumented Worker Transitions (UWT), European Migration Network (EMN), POLITIS and Migration Policy Group.

When collecting the country estimates, we were confronted with a lack of estimates for some of the countries, in particular Central and Eastern European countries where irregular migration is only recently becoming an issue. In cases in which the search for country estimates was futile and we did not find any indications for quantification of the phenomenon, we decided to calculate an estimate using a population multiplier from a country with roughly similar conditions. We extrapolated the percentage of the irregular migrant population in the reference country to the country for which we did not have an estimate. For example, as no estimate for Ireland has been found, we used a population multiplier from the United Kingdom mainly because of the similarity in the geographical location and language, although the migration history of both countries is not comparable. Being aware that this choice of multiplier is a discretionary decision, alternative suggestions are highly welcome. Such multiplier estimates were only made for small countries.

Definition: There is no common shared definition of irregular migration on EU and national levels. For an approximate comparability of country estimates, we chose two broad definitions of irregular migrants – irregular foreign workers and irregular foreign residents. Irregular foreign workers include persons who work without the required work permit, but who are not necessarily illegally in the country, such as asylum seekers and EU citizens under the transitional rule. The aggregate EU estimates only include irregular foreign residents, defined as foreign nationals without any legal resident status in the country they are residing in, and persons violating the terms of their status so that their stay may be terminated, which basically concerns ‘working tourists’ from non-EU countries. Accordingly, the EU estimates exclude EU citizens with a regular residence status who work without work permit and include aged people and children who do not participate in the labour market. In some cases, it was not feasible to find out the exact definition used for an estimate. They were nonetheless included when no better estimates were available.

Time: The stock of irregular foreign residents on the EU level was estimated for three years: 2002, 2005 and 2008. We took the EU enlargement into consideration as ten new member states joined the European Union in 2004, followed by Romania and Bulgaria in 2007. The main reason is that the EU accession had a considerable legalisation effect in some of the older EU countries. It resulted in large groups of formerly irregular residents becoming EU citizens, although these citizens may still be working irregularly and may still have similar problems as irregular third country nationals.

Another reason for only estimating at three points in time within almost a decade is that estimates in this field are scarce and the available estimates are scattered over the years. Therefore, we defined three wide time frames with reference to the EU size: 2000 to 2003 for the estimate in 2002, 2004 to 2006 for the estimate in 2005, and 2007 to 2008 for the estimate in 2008. Ideally, we used country estimates for the year of estimation. If not possible, we used estimates from the same time frame without adjustment arguing that the number of irregular migrants remained relatively stable in the period. For example, if there was no estimate for 2002, we used other estimates from the same period, for example an estimate for 2001 or 2003. Policy measures such as regularization programmes do have an impact on the stock of irregular migrants. If such programmes were launched in the period concerned, we controlled for this eventuality and took into consideration the probable impact on the stock of irregular migrants.

---

4 See a list with full title and links in the references section of this paper
5 More details in the database http://irregular-migration.hwwi.net/Definitions.6154.0.html
Stock estimates should ideally be for a specific point in time. We have chosen January 1 as a reference point because official EU population data are also presented for that date. However, many country estimates are rough or it cannot be assessed for which point in time they are exactly estimated. In many countries, the estimation method relies on data collected throughout the year, so it comes close to estimating a yearly average. In those cases in which we have only expert assessment without documentation, the upper estimate may well refer to a seasonal peak and the lower estimate to a Christmas minimum, rather than indicating some sort of reliability assessment.

Quality\(^6\): A key problem concerning estimates on irregular migration is their quality. Vogel (2008) suggested quality classifications following “method assessment logic”. Looking at validity, reliability and documentation of the estimates the HWWI team categorized them into three quality classes: high quality, medium quality and low quality (Vogel and Kovacheva 2008: 5). As a rule, ‘traffic light logic’ has been applied to a visualization of the quality: ‘green’ for high quality, ‘yellow’ for medium quality, and ‘orange’ for low quality. Whenever there were several estimates available for the same country at the same point in time, we preferred the higher quality estimates to the lower quality estimates. Low quality estimates with a plausibility warning, which are likely to be seriously misleading, are not used for the calculation of the EU estimates (see figure 1).

Country estimates used for the EU estimates differ widely with regard to the definition of the estimated population, the degrees of documentation, reliability and validity. The quality of estimates was assessed according to the information provided in the specific reports. In nearly all cases, according to the reviewed summary reports, no sophisticated country estimates were available, so we relied on this assessment and classified the estimates as low quality. In two cases, detailed descriptions of the estimation procedure were available which were reviewed (van Meeteren (2007) for Belgium; Gordon (2009) for the UK). In two other cases, estimates were produced for the database on irregular migration, which were designed to fulfill all criteria to be considered as medium quality (Jandl 2009, Vogel 2009).

2.2 How are estimates adjusted?

All adjustments are clearly documented in calculation tables with explanations for 2002, 2005 and 2008, attached as Annex to this paper. Therefore, if new studies should indicate better adjustment rules or a new country estimate, the aggregate estimates can be changed.

Definition: Methodological difficulties occur with regards to definition when estimates do not include an important group of irregular migrants, e.g. children or important nationalities. In Italy, the ISMU foundation provides high quality estimates of the irregular foreign population (HWWI 2009a). However, as the estimate does not include children, we adjusted it taking available indicators into account. For the minimum estimate, we assumed a percentage of zero children in the irregular foreign resident population. For the maximum estimate, we assumed a percentage of 10% of the IFR population after having considered the percentage of children in the regular population and official control data. In the regular population, 20% are minors and official control data indicates a percentage of 6% among all apprehended persons (Fasani 2008:61, 85). While we can be relatively sure that the value is between those two percentages, the concrete value was chosen discretionarily. In other cases, important nationalities are missing. In the Dutch case, the estimates based on the capture-recapture method do not include Eastern Europeans who are an important group of irregular migrants (HWWI 2009b). Therefore, we adjusted the maximum estimate taking police apprehension data as an

---

\(^6\) The quality criteria and the quality classes are described in detail in the Classification report published as Working paper No.1 in the Database on Irregular Migration at: http://irregular-migration.hwwi.net/Working_papers.6066.0.html
indicator. In cases in which we made considerable discretionary adjustments, no ‘green’ high quality classification was given.

**Figure 1 Composition of the European Union estimate for 2008**

Source: Own compilation
**Time:** Although we chose three wide time frames for collecting country estimates (2000-2003, 2004-2006 and 2007-2008), in many cases, existing estimates have to be adjusted for time in order to achieve an approximate comparability between countries.

Three major indications of changes in stocks were taken into account: the legalization effect of EU enlargement in 2004 and 2007; national regularization programs and internal police apprehension numbers. For instance, for the 2005 aggregate estimate, we made a backward adjustment of the Hungarian estimate available after the EU accession in 2007. The number of Romanian applicants in a regularization programme was taken as an indicator for adjustment.

Updates of older estimates for the EU accession were made in the case of large countries with high absolute level of EU citizens from the new member states and/ or high number of irregular migrants. For instance, a 2005 estimate for France was adjusted for 2008 taking the accession of Bulgarian and Romania into account. We did not adjust the maximum estimate, assuming no legalization effect. For the minimum estimate, we took the probable legalization effect of the last EU enlargement into account using a multiplier from Spain and Italy. We reduced the estimate by 11 percent, assuming a legalization effect according to the percentage of the registered Romanian and Bulgarian populations in Italy and Spain in 2005, where a considerable number already had the opportunity to regularize before.

We assume that the development of the regular Romanian and Bulgarian population is due to different factors. It only partly reflects new migration under the new conditions but also different incentives to register as regular. Unfortunately, it is not entirely clear (and dependent on the conditions in the individual countries) whether there are more or less incentives to register as regular. A part of the irregular migrant population from Romania and Bulgaria may have used the opportunity to regularize the stay by registering, for example, as self-employed. On the other hand, there is less of a need to register, as non-registration is only a minor offence for EU citizens. This type of update was limited to large countries where taking over older estimates without adjustment may be seriously misleading. For countries with a low absolute level of the Romanian and Bulgarian population, low numbers of irregular migrants and/ or substantial ranges of previous estimates, taking over older estimates without adjustment seemed to be the better choice. Furthermore, in many cases the range of the original estimate was so large that possible adjustments seemed minor compared to the margin of error, e.g. in Sweden. In these cases, the original estimate was taken over without adjustment, as well as in cases in which we did not have indications of major changes in numbers since the last available estimate.

**Calculation of ranges:** Another concern appears in relation to the reliability of estimates. In some cases, there is only a central estimate without any indications of reliability. For the calculation of the aggregate EU estimates, we decided to calculate the range – i.e. the minimum estimate by subtracting 20% and the maximum estimate by adding 20% of the central estimate. Looking at high quality estimates given as ranges, the assumed range of +/- 20% seemed plausible. However, as this decision is discretionary, it is open for suggestions of better indicators for adjustments.

Table 1 documents which types of adjustment were made for which countries. This paper was finalised in September 2009. Please note whether there were updates of the calculation after this month.
### Table 1 Overview of aggregation conditions and types of adjustment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium quality estimate available for the given year or another year in the time frame</td>
<td>United Kingdom, Spain (maximum), Austria</td>
<td>Germany, Spain, Greece, Austria</td>
<td>Germany, United Kingdom, Spain, Greece, Austria</td>
</tr>
<tr>
<td>Medium quality estimate, after discreet adjustment of high quality estimate to include missing groups</td>
<td>Netherlands</td>
<td>Italy, Netherlands</td>
<td>Italy</td>
</tr>
<tr>
<td>Low quality estimate available for the given year or a year in the time frame</td>
<td>France, United Kingdom, Poland, Portugal, Czech Republic, Denmark, Slovakia, Cyprus</td>
<td>Hungary, Bulgaria, Slovakia</td>
<td></td>
</tr>
<tr>
<td>Only central low quality estimate was available. Range was calculated as +/-20% of central estimate</td>
<td>Greece, Sweden, Finland</td>
<td>Italy, Belgium, Sweden, Finland</td>
<td>Italy, Belgium, Sweden, Finland</td>
</tr>
<tr>
<td>Low quality estimate discreetly adjusted to reflect legalization effect of EU accession of Romania and Bulgaria</td>
<td>-</td>
<td>Hungary</td>
<td>France, Netherlands</td>
</tr>
<tr>
<td>Low quality estimate of different time frame was used without adjustment</td>
<td>Denmark</td>
<td>Estonia</td>
<td>Poland, Portugal, Belgium, Czech Republic, Sweden, Denmark, Finland, Estonia, Cyprus</td>
</tr>
<tr>
<td>Low quality estimate calculated by HWWI based on population multiplier from other countries</td>
<td>Ireland, Luxembourg</td>
<td>Ireland, Lithuania, Latvia, Slovenia, Luxembourg, Malta</td>
<td>Romania, Ireland, Lithuania, Latvia, Slovenia, Luxembourg, Malta</td>
</tr>
</tbody>
</table>

Source: Own calculation based on tables for 2002, 2005 and 2008 (Vogel and Kovacheva 2009a, b, c).

### 3 Results

With all the difficulties involved with estimating the size of undocumented populations, it should not be forgotten that it is also not easy to get exact population numbers of the regular population. We used regular population numbers to calculate the percentage of estimates to the total population and to the total foreign national population. In nearly all cases, we were able to use data from Eurostat, the statistics database of the European Union. However, the numbers of foreign national citizens were not always available in Eurostat. In a few cases, we had to take them from national sources. Table 2 includes the reference values which are used for calculations of the estimates in the tables.
### Table 2: Reference values for the European Union in 2002, 2005 and 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Countries in the EU</th>
<th>Total population in the EU</th>
<th>Total foreign population in the EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>EU 15</td>
<td>380,609,744</td>
<td>21,109,000</td>
</tr>
<tr>
<td>2005</td>
<td>EU 25</td>
<td>461,603,958</td>
<td>26,421,727</td>
</tr>
<tr>
<td>2008</td>
<td>EU 27</td>
<td>497,481,657</td>
<td>28,931,683</td>
</tr>
<tr>
<td></td>
<td>EU 25</td>
<td>468,312,792</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of EU 27</td>
<td></td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>EU 15</td>
<td>394,160,807</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of EU 27</td>
<td></td>
<td>79%</td>
</tr>
</tbody>
</table>

Source: Eurostat population data for individual countries as of January 1 of the year. Total: own calculations, based on calculation tables 2002, 2005 and 2008 (see Annexes 1, 2 and 3)

It shows the growth of the European Union population from 380 million in 2002 to nearly 500 million in 2008, mainly because of EU enlargement. The foreign national population grew much slower from 21 million to 27 million. The EU15 population of 2002 accounts for 79% percent of the EU27 population of 2008, but even for 95 percent of the foreign national population.

Table 3 contains the main results of the aggregated country estimates in millions for 2002, 2005 and 2008 for those 15 states that were EU members already in 2002 (EU15) and an estimate for the enlarged European Union with 27 member states in 2008. Data are presented in absolute numbers, as percentage of population and as percentage of foreign population.

### Table 3: Aggregated estimate of the irregular foreign resident population in the European Union in 2002, 2005 and 2008 (last update 3 Sept 2009)

<table>
<thead>
<tr>
<th>Year</th>
<th>Absolute population numbers in Mio persons</th>
<th>As percentage of population</th>
<th>As percentage of foreign population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minimum</td>
<td>maximum</td>
<td>Minimum</td>
</tr>
<tr>
<td>2002</td>
<td>3.1</td>
<td>5.3</td>
<td>0.8%</td>
</tr>
<tr>
<td>2005</td>
<td>2.2</td>
<td>4.8</td>
<td>0.58%</td>
</tr>
<tr>
<td>2008</td>
<td>1.8</td>
<td>3.3</td>
<td>0.46%</td>
</tr>
</tbody>
</table>

**EU 27**

| 2008 | 1.9 | 3.8 | 0.39% | 0.77% | 7% | 13% |

Source: Own calculations, based on calculation tables 2002, 2005 and 2008 (see Annexes 1, 2 and 3)

The aggregated country estimates show a clear decline in the stocks of irregular resident populations, whether we keep the geographical or the political region constant. Estimates
declined from 3.1 to 5.3 million in 2002 to 1.8 to 3.3 million (for the EU15), and respectively to 1.9 to 3.8 million (for the EU27).

On a national level, a declining or relatively stable irregular resident population is estimated for most member states with the notable exception of the UK for which the reasons for the decline cannot be analyzed in detail only by aggregating estimates. The analysis of complementary information indicates that the decline of the irregular migrant population on the EU level is strongly influenced by outflows into legality, particularly through the legalization effects of the EU accession and legalization programs in Southern Europe, which were not outnumbered by new inflows into illegality. It should be noted that EU citizens were only regularized with respect to their residence status, not necessarily their work status.

It cannot be excluded that part of the decline reflects methodological changes, but this is unlikely to dominate the result. Whereas the 2002 estimate relies on low quality estimates for member states encompassing about two thirds of the EU population, there were medium quality estimates for member states encompassing more than half of the EU population in 2008.

4 Final remarks

Being aware of the difficulties in estimating the size of irregular migrant population, it is not surprising that the estimate presented for the EU level is classified as low quality estimate. However, it is the first fully documented transparent European estimate of the irregularly residing foreign population: by aggregating country estimates and seeking approximate comparability and reliability. We do not have a high level of trust in the exact numbers, but we consider this estimate to be more trustworthy than any figures which were presented earlier for the European level.

Most importantly, it can be improved in the future. Researchers can provide more medium and high quality estimates in order to increase the reliability of the total EU estimate. We propose to classify the EU estimate as medium quality estimate under two conditions: First, there should be at least medium quality estimates for member states encompassing at least 70 percent of the EU population. Second, there should be no indication that any of the remaining member states hosts an irregular resident population that would considerably influence the total results. The second criterion is chosen because of the observation that member states where the topic is of little relevance rarely engage in sophisticated estimations.

How this type of effort can lead to improvements can be exemplified in the Austrian case. Originally, there were only estimates for 2003. As Austria was considerably affected by the legalisation effect of the EU accession of Eastern European countries, it was not possible to use old estimates in calculations for later periods without any adjustments. Firstly, we made a discreet adjustment, assuming that the representation of new member state citizens was the same in the regular and the irregular foreign resident population. Later, researchers in the CLANDESTINO project took the initiative to make a new consistent estimation of the Austrian irregular foreign resident population, using a multiplier technique with minimum and maximum assumptions (Jandl 2009). Similarly, the German estimate was revised (Vogel 2009). Thus with more medium quality estimates on the country level, the European estimate could soon become medium quality as well. Medium quality estimates for France, Belgium, Portugal and Sweden are needed in particular.
References


Annexes


List of reports checked for country estimates


