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#### METHODS TO IMPROVE ESTIMATES OF MIGRATION FLOWS

### **COMPARING INTERNATIONAL MIGRATION FLOWS BETWEEN SENDING AND RECEIVING COUNTRIES: LESSONS OF A RECENT COOPERATION BETWEEN BELGIUM AND THE NETHERLANDS\***

Submitted by the Netherlands

#### I. INTRODUCTION

1. Following the recommendations of UNECE and Eurostat, Belgium and the Netherlands have started cooperation on international migration data. Comparing data from both countries will help in improving data quality and reliability in both countries.

2. Both the Netherlands and Belgium have fully computerized register-based population statistics. International migrations are registered into the system by the municipalities based on self-report by the persons concerned. A commonly known problem with international migration is the underreporting of emigration. Reasons include unfamiliarity with the rules, absence of strict rules, and the absence of real incentives to deregister (like compulsory insurances and taxes while registered). Municipalities are responsible for discovering unreported emigrants and to deregister them, but in these cases the country of destination is unknown. By using information

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\* This paper has been prepared by Elma van Agtmaal-Wobma and Han Nicolaas (Statistics Netherlands), and Michel Poulain and Luc Dal (GeDAP UCL, Belgium) at the invitation of the secretariat.

on country of birth or citizenship, estimates can be made for unreported emigration to a certain country. This has been done in the Netherlands for emigration to Belgium and in Belgium for emigration to the Netherlands. Comparing the (reported and estimated) emigration data in one country with data on immigration in the other one can help improve the estimates made by fine-tuning the use of background variables. Doing so, the following contribution aims to prove that comparing data provided in both countries helps to validate the methodologies used to improve statistics on migration in each country.

## II. INTERNATIONAL MIGRATION STATISTICS IN THE NETHERLANDS

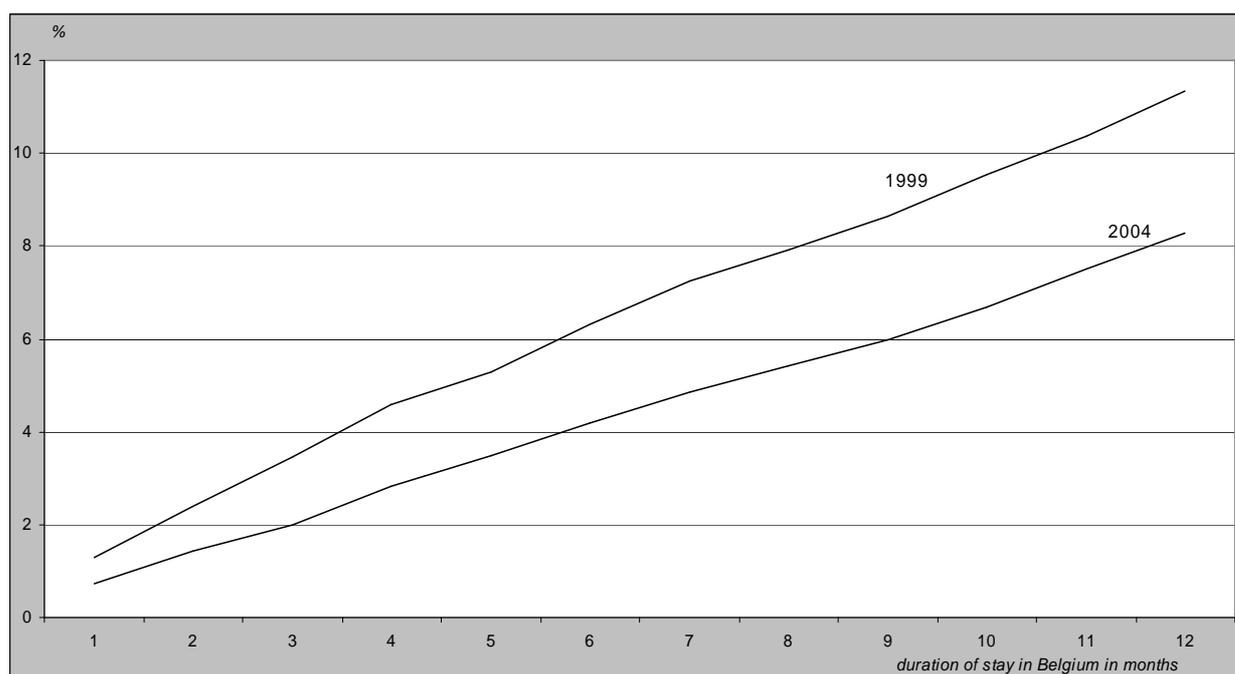
3. Population statistics in the Netherlands are based on the automated municipal population registers. In these registers information is stored on every inhabitant of the municipality. When an inhabitant undergoes a demographic event that is up-dated in the register, Statistics Netherlands is informed directly by means of an electronic message. These messages are the building stones for the population statistics.

### A. DEFINITIONS

4. Everybody who intends to stay in the Netherlands for at least four of the forthcoming six months, should notify the population register immediately after arrival in the country. Thus, *immigration* relates to all individuals arriving in the Netherlands, of whom the arrival is recorded in a municipal population register. Asylum seekers are considered as immigrants after having received a residence permit or after six months of legal stay in the Netherlands. People leaving the Netherlands with an intended stay of at least eight of the forthcoming twelve months, should notify the population register and are registered as *emigrants*.

5. These definitions are different from the UN and EU definitions, where an (intended) stay or absence of at least 12 months is used as a criterion for both immigration and emigration. The 12-months criterion can only be determined on an *ex-post* base. Calculations show that about 10 percent of all registered emigrants from the Netherlands return within 12 months, so are not considered to be emigrants by international criteria. For emigrants to Belgium, this return percentage is roughly the same, varying from 8 percent in 2004 to 11 percent in 1999 (*figure 1*).

Figure 1. Returning immigrants who emigrated to Belgium in 1999 and 2004 (cumulative percentage)



6. The ex-post calculations also show that 3 percent of emigrants to Belgium return within three months, the immigration criterion for Belgium. If these emigrants don't show up in the Belgian immigration statistics, this may explain part of the differences in migration flows between the Netherlands and Belgium.

#### B. UNREPORTED MIGRATION IN THE NETHERLANDS

7. In the Netherlands, unreported migration is registered by administrative corrections, either removals or entries.

8. An *administrative removal* takes place when a municipality decides to no longer include a person in its population, once it has established the address of the person is unknown, the person cannot be contacted and probably no longer resides in a municipality in the Netherlands. Once a person is removed administratively, in general he or she can only be included in a municipal population register by means of an administrative entry (arrival with unknown country of origin) or immigration (arrival with known country of origin).

9. When a municipality decides, at the request of the person concerned, to add that person to its population register while it has no knowledge of birth, immigration or establishment of that person from another municipality in the Netherlands, an administrative entry takes place.

10. The *net* administrative corrections (administrative entries minus administrative removals) relate to persons who have been removed from the population registers administratively without ever being registered by means of an administrative entry or immigration afterwards. In the migration statistics of Statistics Netherlands, *net administrative corrections* are dealt with as *non-reported emigration* and are added as such to

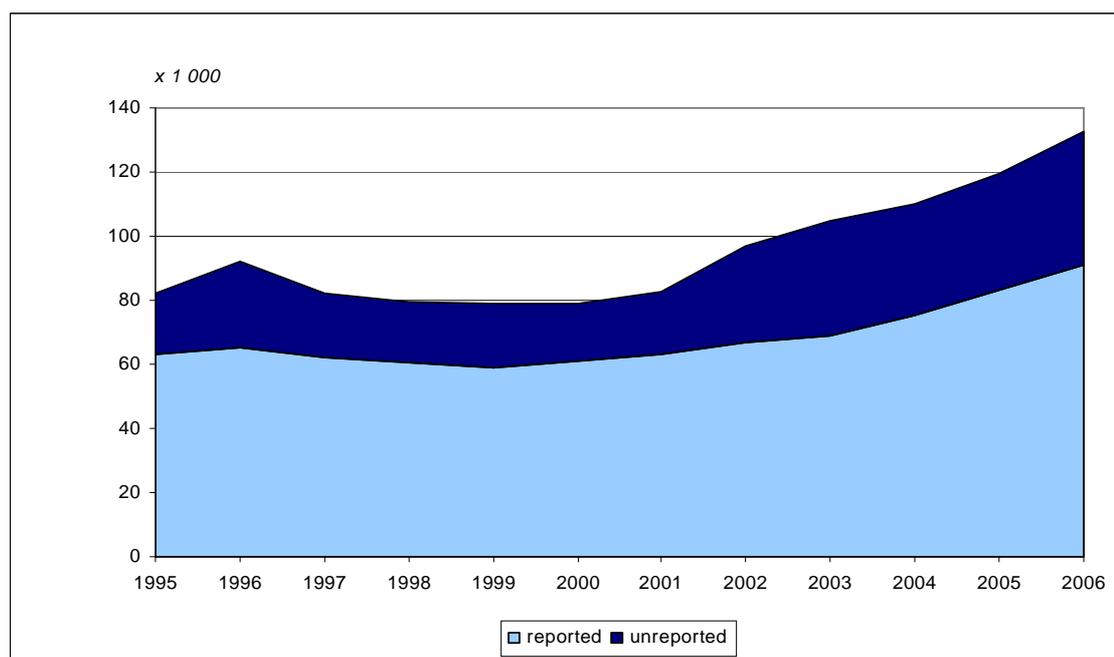
the 'real', registered emigration in order to get an overall picture of the total number of departures from the Netherlands.

11. However, Statistics Netherlands does not know for sure whether the total number of net administrative corrections has to be considered as non-reported emigration. It is possible that part of the net administrative corrections relates to persons who, without being registered, reside in the Netherlands. So, net administrative corrections can be interpreted in a broader way: persons who have been removed from a population register (apart from death) and whose place of residence is unknown. The place of residence can be either within the Netherlands or abroad.

### C. TOTAL ESTIMATED MIGRATION BASED ON ADMINISTRATIVE CORRECTIONS

12. Since the 1990s, the unreported emigration measured as negative *net administrative corrections* increased considerably, from 19 thousand in 1995 to 41 thousand in 2006 (figure 2). The share of the unreported emigration in the total emigration (including corrections) rose from almost one-quarter in 1995 to almost one-third in 2006.

Figure 2. The increasing share of unreported migration in total emigration in the Netherlands (SN)



13. This is especially due to an increasing number of administrative *removals*. There are several reasons for this increase. One is a decreasing discipline among citizens to report their departure. Another reason might be the unfamiliarity of foreigners with the current legislation. Lastly, the increasing number of asylum seekers in the 1990s might have influenced the number of the (net) administrative corrections: asylum seekers whose requests are refused often fail to report their departure. It is estimated for instance, that on average one in three of the asylum seekers arriving in the period 1983-1994 were recorded in the administrative corrections two years later.

14. The group of registered emigrants differs from the non-reported emigrants on several demographic variables. Net administrative corrections include a higher share of males, people between 15 and 30 years, and never-married (*figures 3 and 4*).

Figure 3. Total reported and non-reported emigration from the Netherlands by age, 1995 to 2006 (SN)

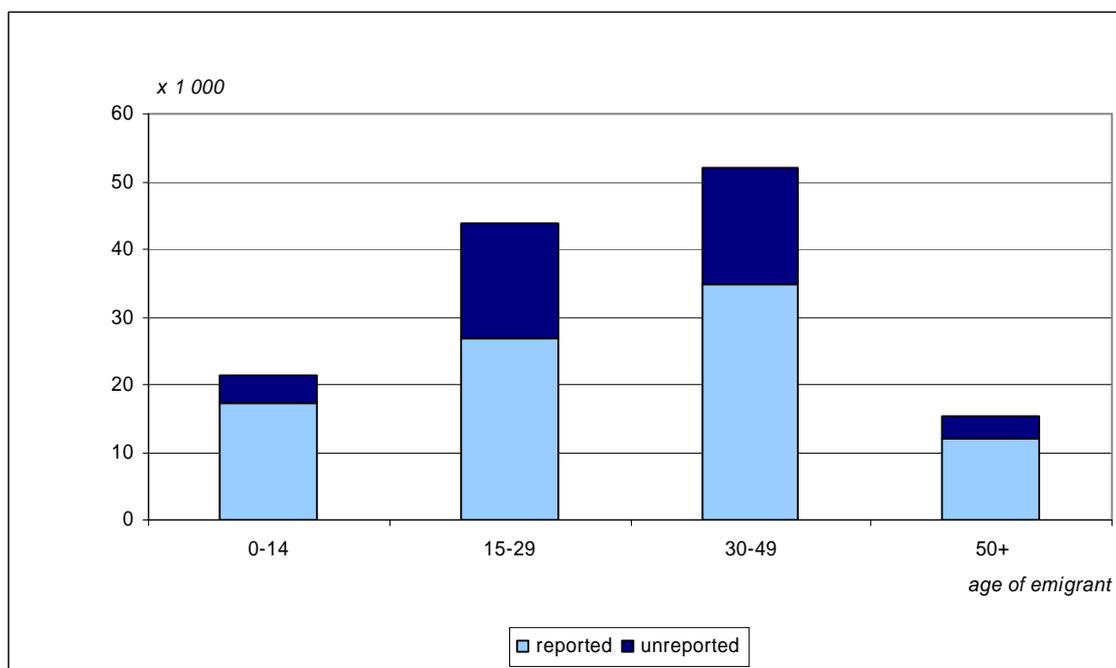
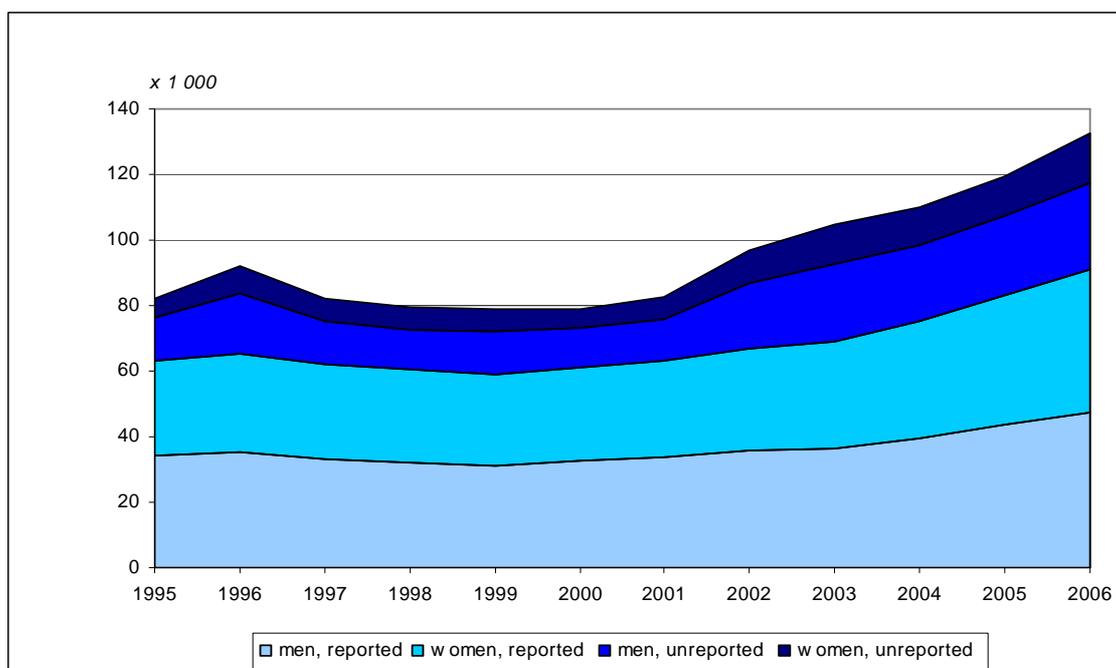


Figure 4. Total reported and non-reported emigration from the Netherlands by sex, 1995 to 2006 (SN)



#### D. ESTIMATING NON-REPORTED EMIGRATION FROM THE NETHERLANDS TO BELGIUM

15. In presenting data on emigration by country of destination, only reported emigration can be taken into account, as no country is known in the non-reported migration. As a consequence, the registered (reported) emigration to Belgium will be an underestimate of the total (reported and unreported) emigration to Belgium.

In order to get a full picture of the total emigration to Belgium, Statistics Netherlands has made estimates of the unreported emigration to Belgium. Part of the net administrative corrections has been attributed to emigration to Belgium.

16. A simple, straightforward method to do this would be to assume that the share of *unreported* emigration to Belgium in the *total* unreported emigration (net administrative corrections) would be equal to the share of *reported* emigration to Belgium in the *total* reported emigration. If, for example, 10 per cent of the registered emigrants leave to Belgium in a certain year, we might assume that the same percentage of the unreported emigrants will leave for Belgium too. However, this method does not take into account the structure of the emigrant population. Many emigrants leaving for Belgium are born in the Netherlands or Belgium. On the other hand, very few emigrants are born in, for instance, Albania or Nigeria. So the share of the reported emigration of native-born emigrants to Belgium has a much deeper impact on the total share of emigration to Belgium than the share of the reported emigration of persons born in Albania or Nigeria. Besides, the distribution of the total emigration by country of birth has an effect too. Therefore, we assume that the share of unreported emigration to Belgium *by country of birth* is equal to the share of reported emigration to Belgium by country of birth. If, for example, 20 per cent of the registered Dutch-born unreported emigrants leave for Belgium too.

17. Statistics Netherlands made these calculations for the period 1995-2006. *Table 1* gives an example of this method for the year 2000. The results are presented in *table 2* and in *figure 5*. For convenience of the reader, the (negative) net administrative corrections are presented as absolute numbers. It turns out that for the period 1995-2006, some 13 percent of all registered emigrants left for Belgium, whereas the estimated, unreported emigration to Belgium accounts for 9 per cent of the total unreported emigration. The difference is due to the population structure of the emigrant population.

**Table 1**  
**Estimate of unreported emigration from the Netherlands to Belgium based on reported emigration to Belgium, by country of birth, 2000**

Country of birth	Registered, reported emigration			Estimated unreported emigration		
	total	of whom to Belgium		total	of whom to Belgium	
		<i>absolute</i>	%		<i>absolute</i> (calculated)	%
<b>Total</b>	61201	8006	13,08	17776	1505	8,5
Netherlands	32749	6204	18,9	4665	884	18,9
Germany	3369	117	3,5	612	21	3,5
United Kingdom	2192	44	2,0	1161	23	2,0
Netherlands Antilles and Aruba	1867	33	1,8	576	10	1,8
United States of America	1797	35	1,9	692	13	1,9
Belgium	1161	909	78,3	214	168	78,3
Japan	1023	12	1,2	132	2	1,2
Somalia	986	2	0,2	844	2	0,2
Turkey	939	49	5,2	219	11	5,2
France	935	57	6,1	333	20	6,1
Former Yugoslavia	844	11	1,3	420	5	1,3
Suriname	793	33	4,2	480	20	4,2
Spain	736	9	1,2	275	3	1,2
Indonesia	629	64	10,2	223	23	10,2
Italy	603	21	3,5	251	9	3,5
Morocco	584	68	11,6	522	61	11,6
Poland	547	11	2,0	181	4	2,0
South Africa	504	10	2,0	176	3	2,0
Australia	424	6	1,4	127	2	1,4
Former Soviet Union	396	14	3,5	271	10	3,5
Canada	387	4	1,0	124	1	1,0
Sweden	370	12	3,2	101	3	3,2
China	280	32	11,4	223	25	11,4
Finland	269	6	2,2	82	2	2,2
Denmark	263	8	3,0	63	2	3,0
India	259	7	2,7	158	4	2,7
Portugal	258	10	3,9	182	7	3,9
Switzerland	256	8	3,1	41	1	3,1
Brazil	255	3	1,2	91	1	1,2
Greece	227	4	1,8	182	3	1,8
Austria	204	6	2,9	49	1	2,9
Other	5095	197	3,9	4106	159	3,9

Source: Statistics Netherlands.

18. As shown in table 2, the share of unreported emigration to Belgium in the total emigration to Belgium (22 percent) is lower than the share of unreported emigration in the total emigration to all countries (28 percent). In the period 1995-2006, however, for Belgium, this percentage has increased more rapidly than for all countries. This is due to the fact that the reported emigration to Belgium showed a relatively sharper rise (from 7.5 thousand to 12.0 thousand, *figure 5*) than the reported emigration to all countries in this period (from 63.3 thousand to 91.0 thousand).

**Table 2**  
Emigration by country of destination (reported and unreported emigration), 1995-2006

	All countries				Belgium			
	Registered (reported) emigration	Net administrative corrections (unreported emigration)	Total emigration	Share of unreported emigration in total emigration	Registered (reported) emigration	Estimate of unreported emigration	Total emigration	Share of unreported emigration in total emigration
1995	63313	18874	82187	0,23	7493	1310	8803	0,15
1996	65318	26620	91938	0,29	8684	1903	10587	0,18
1997	62206	19755	81961	0,24	7049	1400	8449	0,17
1998	60433	18848	79281	0,24	7115	1300	8415	0,15
1999	59013	19756	78769	0,25	6953	1518	8471	0,18
2000	61201	17776	78977	0,23	8006	1528	9534	0,16
2001	63318	19248	82566	0,23	8588	1712	10300	0,17
2002	66728	30190	96918	0,31	9270	2770	12040	0,23
2003	68885	35946	104831	0,34	9284	3448	12732	0,27
2004	75049	35186	110235	0,32	9467	3324	12791	0,26
2005	83399	36326	119725	0,30	10603	3895	14498	0,27
2006	91028	41442	132470	0,31	12008	4777	16785	0,28
1995-2006	819891	319967	1139858	0,28	104520	28885	133405	0,22

Source: Statistics Netherlands.

19. Please note that by calculating unreported emigration to Belgium in the above-mentioned way, the total number of net administrative corrections is considered to be unreported emigration. It is, as explained before, possible that part of the net administrative corrections relate to persons who still reside in the Netherlands and are not to be considered as emigrants. So, the estimates presented here can be looked upon as an upper limit of unreported emigration to Belgium.

Figure 5. Emigration from the Netherlands to Belgium: registered, estimated unreported emigration and total (reported and unreported), 1995-2006 (SN)

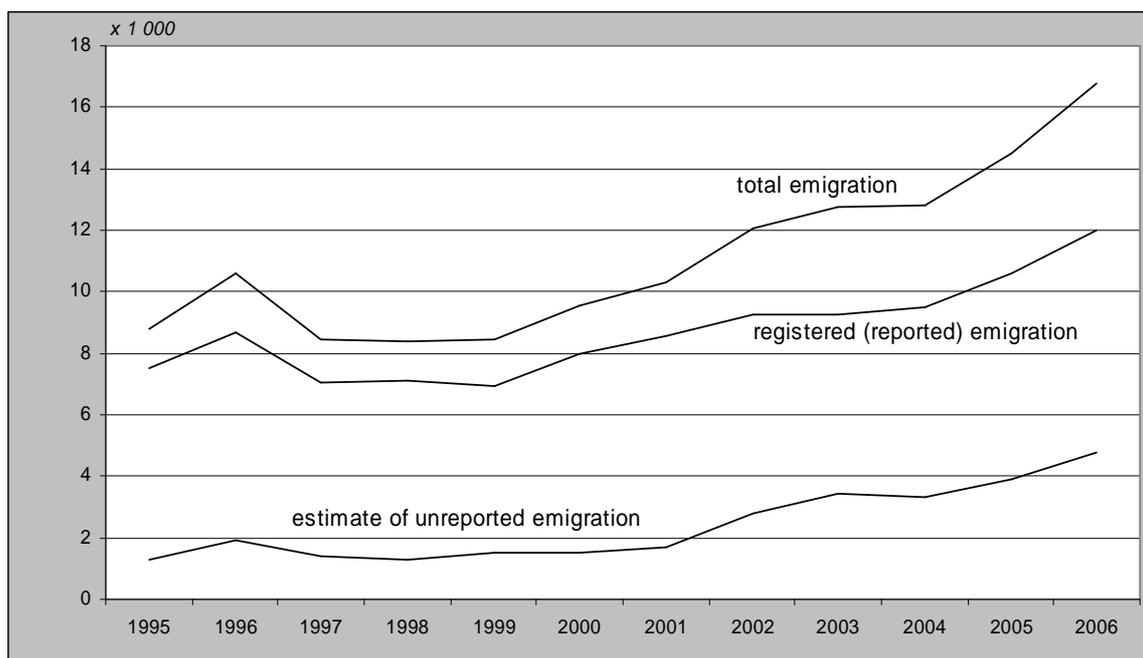
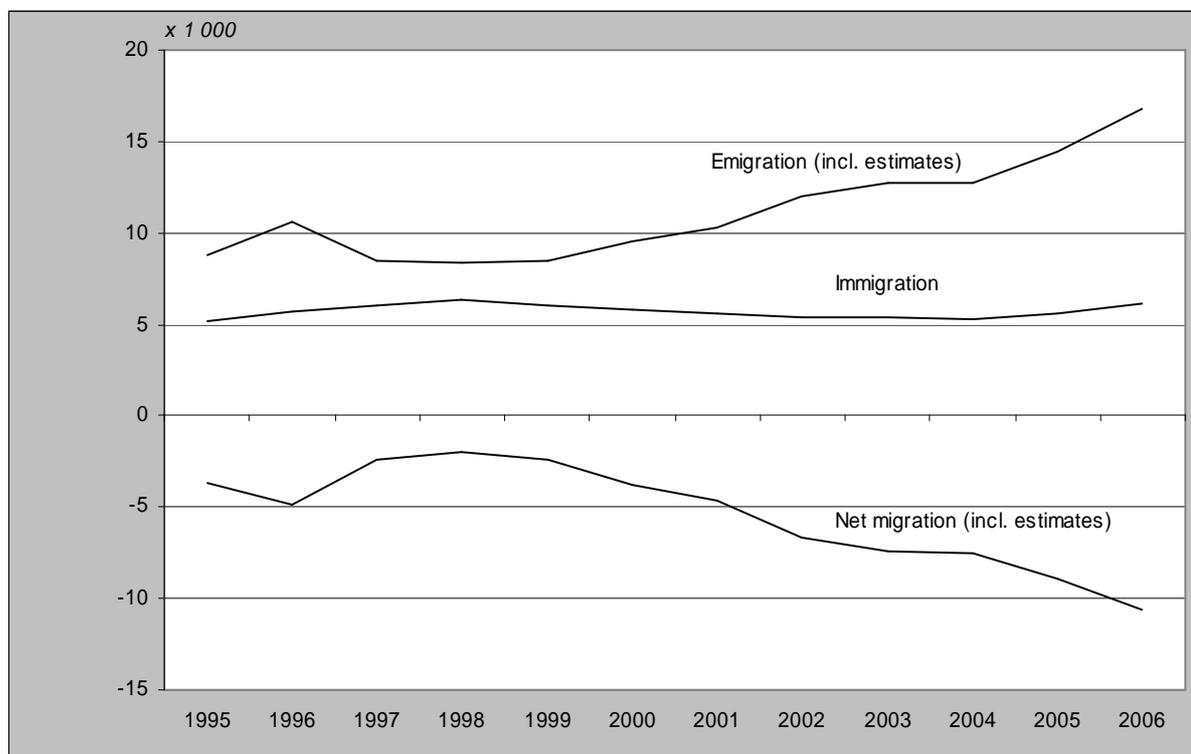


Figure 6. Immigrations and corrected emigrations in the Netherlands from and to Belgium (SN)



### III. INTERNATIONAL MIGRATION STATISTICS IN BELGIUM

#### A. DEFINITIONS

20. The National Register is the main data source for demographic data on international migration. It is a centralised population register under the responsibility of the Federal Public Service of Interior. The information is primarily collected for administrative purposes. However, it is also used secondarily to produce statistics. In Belgium, the concept of administrative place of residence is supposed to correspond to the concept of usual place of residence. All Belgian citizens and foreigners holding a residence permit valid for more than three months are considered as residents and counted from the first day of their stay in Belgium. However a foreigner entering Belgium with or without visa (depending on bilateral or international agreements) has the right to stay in Belgium for up to 3 months without being registered in the population register. If s/he has the right to reside longer in Belgium and intends to do so s/he must be registered and the timing of this registration (maximum 8 days after arrival) will decide when s/he will start to be counted in the resident population.

21. In Belgium the statistical definitions of “immigrants” and emigrants” are linked to these administrative registrations and deregistrations in the National Register. A person arriving from abroad is identified as immigrant when s/he reports arrival and is registered in the National Register. This report is compulsory within eight days if s/he intends to stay in the country for more than three months. An emigrant is an individual who intends to leave for abroad for more than three months and is reporting this emigration. These administrative definitions exclude undocumented migrants and asylum seekers from the legal population and at the same time from the registration of international migrations. The concept of “duration of stay” is also defined according to the administrative registration. However, a condition to be registered as an international migrant is a minimum duration of stay of three months. As a consequence, stays shorter than 3 months are not recorded.

#### B. PRACTICAL ASPECTS OF THE DATA COLLECTION

22. In practise the situation is quite different from that ideal situation. Immigration of foreigners who do not need a residence permit are not fully covered mostly as far as EU citizens are concerned. Moreover the immigrations of returning citizens do not include those citizens that did not report their emigrations. Accordingly there is no possibility to collect statistical information on these missing immigrations. As municipalities have to find and register all persons living usually on their territory these persons may be registered afterwards and theoretically the country of origin would be known. Unfortunately, for all reported immigrations, the country of origin is often unknown as the system only allows registering the next place or country of residence but not the previous one. There are exceptions if the concerned persons were already registered in the National Register and have emigrated before to come back in Belgium. As a consequence immigrations in Belgium coming from the Netherlands are largely underestimated in the National Register and no statistics is officially proposed by Statistics Belgium.

23. As far as emigrations are concerned, like in the Netherlands, Belgium also experiences a large number of unreported emigrations. Municipalities are in charge to discover all persons who

left their place of residence without reporting and to deregister them. For those who left for another Belgian municipality, the information will be transferred at the time of registration in the new place of residence. But for those who left for abroad this procedure cannot apply. Therefore the municipalities have to deregister *ex officio* the concerned persons for an unknown destination. These unreported emigrations corresponding to administrative deregistrations may count for about half of the total estimated number of emigrations. In addition, starting from mid-2003 the country of destination is no more available for statistical purpose and the reason for that is still problematic. In conclusion it means that neither immigrations statistics by country of origin nor emigrations statistics by country of destination are officially available in Belgium. Accordingly an estimation procedure will be needed in order to follow the recent EU Regulation and the comparative exercise with the Netherlands is essential to improve the quality of the proposed estimations.

24. Belgium also introduces some statistical adjustments in their population statistics. These adjustments are the results of all demographics events that have not been recorded within six weeks after the year of occurrence. For example a death occurring in November abroad and only registered in March of the following year due to long transfer of documents will not be statistically considered as a death neither for the previous year nor for the year of registration. Accordingly this event will be collected with all late reported events in a so-called 'black box' or administrative corrections. Late reported emigrations or late discovered emigrations represent that larger part of these events but we cannot identify these without special investigation and moreover late reported births and immigrations are counted positively while late reported deaths and emigrations are counted negatively. The net number of administrative corrections is hopefully less important compared to the Netherlands and even if it may be appropriate to consider these as being mostly late reported or non reported emigrations discovered by local authorities, we did not take these into consideration in our estimations for Belgium.

#### C. A PROPOSAL TO ESTIMATE THE MIGRATION FLOWS BY COUNTRY OF ORIGIN OR DESTINATION

25. In order to propose statistical figures for immigrations and emigrations from and to the Netherlands we propose very simply to add immigrations and emigrations for which the country of origin and destination is well known respectively with immigrations and emigrations done by Dutch citizens where no country of origin or destination is known. All the figures are proposed in table 3 hereunder and shown in figures 7 and 8.

Table 3. Observed, corrected and total immigration and emigration flows for Belgium from or to the Netherlands (estimation by Michel POULAIN based on data from the National Register but not official data published by Statistics Belgium)

YEARS	Recorded immigrations from the Netherlands	Additional immigrations: Dutch entering with unknown country of origin	Estimated total of immigrations	Recorded emigrations to the Netherlands	Additional emigrations: Dutch leaving with unknown country of destination	Estimated total of emigrations
1991	1345	5712	7057	4025	870	4895
1992	1507	5967	7474	3967	734	4701
1993	1395	6085	7480	4040	733	4773
1994	1473	5982	7455	4166	698	4864
1995	1451	6034	7485	4071	981	5052
1996	1577	7268	8845	4602	781	5383
1997	1520	5758	7278	4940	921	5861
1998	1424	5788	7212	4869	879	5748
1999	1486	5658	7144	5010	937	5947
2000	1651	6576	8227	4566	700	5266
2001	1672	7588	9260	4583	794	5377
2002	1825	7818	9643	4486	824	5310
2003	1925	7948	9873	3348	1892	5240
2004	1566	8389	9955	2	4481	4483
2005	1422	9813	11235	20	4710	4730

Figure 7. Recorded and additional immigrations in Belgium from the Netherlands

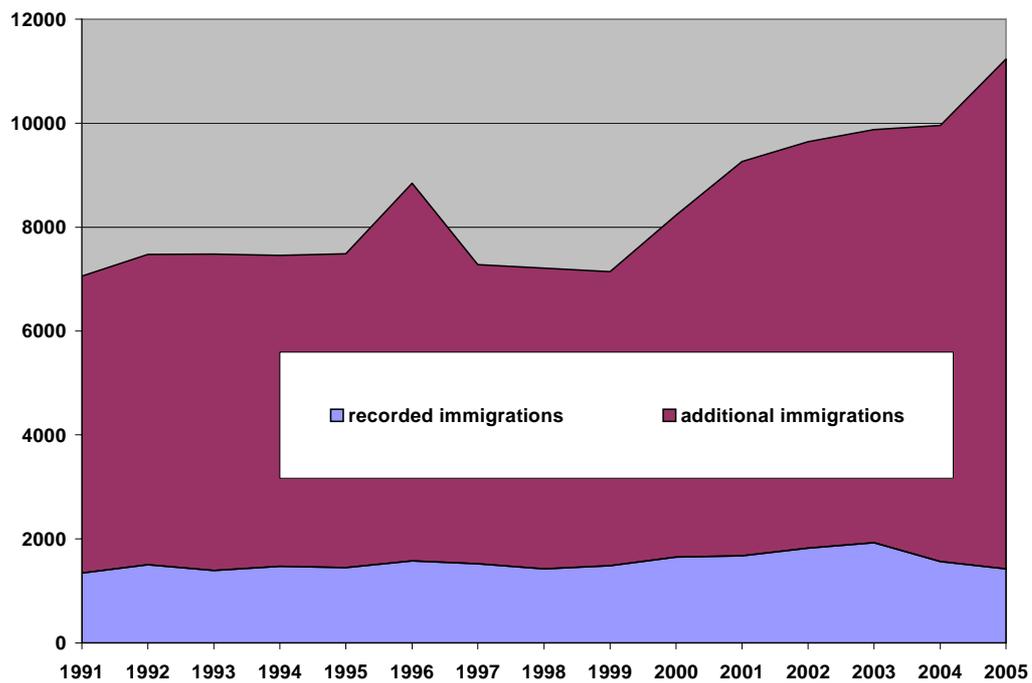
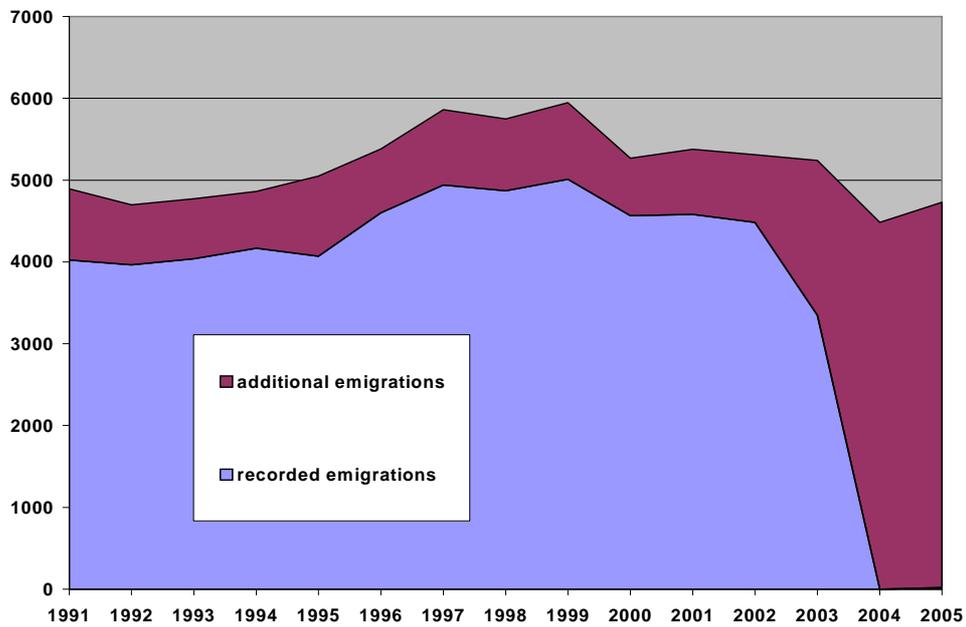


Figure 8. Recorded and additional emigrations from Belgium to the Netherlands



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