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## SELECTED METHODS TO IMPROVE EMIGRATION ESTIMATES

### **SUMMARY REPORT OF THE DATA EXCHANGE EXERCISE\***

Submitted by UNECE/Eurostat Task Force on Measuring Emigration Using Immigration Data

#### **I. INTRODUCTION**

1. International migration flows pose particular challenges to the production and measurement of reliable and widely comparable statistics. In principle, a migration across national borders is recorded twice: once in the country of departure at the time of emigration and once in the country of destination at the time of immigration. However, it can be assumed that people who leave a country are difficult to count in their country of origin because of their absence, while they should be more easily counted in the receiving country. Thus there are generally more difficulties to cover emigration than immigration in most countries.

2. As immigration statistics seem to be more numerous and are also generally considered more reliable it seems reasonable to conclude that for most countries other countries' inflow statistics are a promising potential source of statistics on their outflows – either to estimate missing or to complete partial emigration data. Moreover, deriving emigration data through statistics of host countries is a cheap and fairly efficient way of filling gaps in national migration registration systems.

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\* This paper has been prepared by Marcel Heiniger, Swiss Federal Statistical Office.

3. Based on the above premise the Joint ECE-Eurostat Seminar on International Migration (March 21-23, 2005) proposed the creation of a Task Force to assess the feasibility of using a receiving country's immigration data to measure emigration in a sending country. This proposal was then endorsed by the Bureau of the Conference of European Statisticians at its meeting of October 24-25, 2005.

4. Within the overall objective of improving the use of harmonized concepts and definition of stock of migrants and within the framework of the UN Recommendations on Statistics of International Migration, the Task Force was asked to carry out a pilot project collecting and analyzing migration data from different countries and to develop guidelines on how to measure emigrants through data on stocks and flows in host countries – taking into account issues of data suitability, timeliness and availability. This activity corresponds to the output #4b (Design and administer pilot projects to measure emigration using data collected by the receiving country) of the CES Work Plan to Improve International Migration Statistics (ECE/CES/BUR/2005/13). The Task Force conducted its work between January 2006 and October 2006.

5. This document focuses on the data collection part of the pilot project. The next chapters give an overview of the organization of the data exchange exercise, its use of a specially designed set of tables for the collection of migration data and methodological information from different countries, and the major findings of the analysis of the collected data. These findings in turn provided the basis for the guidelines on the exchange of data on international migration and their use to improve emigration data of sending countries.

## **II. THE DATA EXCHANGE EXERCISE**

### **A. Participating Countries and Organization**

6. The data exchange exercise involved 19 countries which formed four groups lead by Canada, Estonia, Portugal and Switzerland. Four countries were members of more than one group:

Group 1 – Albania, Italy, Switzerland, TFYR of Macedonia

Group 2 - France, Portugal, Spain, United Kingdom

Group 3 - Australia, Canada, Czech Republic, Italy, Norway, Poland, TFYR of Macedonia, United Kingdom, United States

Group 4 - Estonia, Finland, Georgia, Kazakhstan, Norway, Russia

7. Albania and Georgia were not able to provide any data. The Czech Republic represented a special case as data were not provided by the country itself but extracted from Eurostat's NewCronos database.

8. Data collection was carried out first on flows and then, at a second stage, on stocks. Each of the participating countries had to report data on migration flows with or immigrant stock from each of the other countries of the same group. Every country was asked to provide all data available on immigrants/emigrants according to national definitions and sources. If more than one source were available on the same type of data all of them should have been reported. Detailed metadata for each utilized data source were requested as well.

9. The four group leaders were responsible for the drafting of a data analysis report which presented and analyzed the data collected within each group (see Chapter 6). The entire data exchange exercise was supervised and coordinated by the Social and Demographic Statistics Section of UNECE.

## **B. Data Exchange Templates**

10. The data exchange occurred on the basis of common templates, i.e. a set of tables that were prepared taking into account the existence of very diverse data sources across countries.

11. For the first data collection round eight tables were requested for three different types of migration flow statistics. Two tables were based on the residence one year ago concept. Three tables were based on annual immigration flows and three tables were based on annual emigration estimates (for details see Appendix). All sets of tables were – whenever applicable – differentiated by different concepts of 'country of origin' identification. In addition, data were broken down by sex and age groups (under 18, 18-29, 30-49, and 50 years and over).

### 1. Overview of Requested Migration Flow Data

- Tables 1 and 2 referred to data obtained from the question on the place of residence one year ago which is usually included in population censuses. This information may also be available from household surveys and population registers.
- Tables 3, 4 and 5 referred to annual inflow data collected through other sources than the census, generally of administrative nature.
- Tables 6, 7 and 8 referred to annual outflow data generally collected from administrative sources.

12. For the second data collection round two tables on stocks of migrants and their descendants were requested. Both sets of tables were differentiated by different concepts of 'country of origin' identification of migrants, their descendants and their parents (for details see Appendix).

### 2. Overview of Requested Migration Stock Data

- Table 1 referred to stock data collected in household surveys, population censuses and/or population registers and cross-referenced by country of birth and country of citizenship.
- Table 2 referred to stock data cross-referenced by country of birth, country of citizenship and country of birth of parents.

13. Inflow and outflow data were requested by different concepts of 'country of origin' identification:

- (current) country of citizenship
- country of birth
- country of previous or next residence

14. Each one of these related concepts is useful for a comprehensive look at the phenomenon of migration. They allow for a more detailed examination of the characteristics of the migration flows. From a supranational point of view the most relevant concept for the measurement of migration flows between countries is the country of previous residence (in case of immigration) or next residence (in case of emigration). Origin-destination specific data allow identifying and quantifying actual migration flows between different national territories. However, in many countries the focus is often on place of birth or citizenship of immigrants. Consequently, this type of data was also collected with the aim of assessing the differences between data classified by each of these three concepts and answering the question whether one concept can feasibly act as a substitute for another one.

15. Data on outflows were collected to see what emigration data were available in the individual countries and to compare them with corresponding immigration data from receiving countries in order to assess the implications on using another country's immigration data. A systematic comparison and in-depth analysis of differences in flow data between two given countries, however, was not the aim of the emigration data collection.

16. Immigrant stock data should allow a comprehensive monitoring and analysis of the impact of international migration which means that the basic distinction between foreign-born and foreigners is not quite sufficient. Thus data were requested that classify the population stock according to country of birth, country of citizenship, citizenship at time of birth and country of birth of parents and/or a combination of those four variables. This allows for the identification of specific sub-groups relevant to international migration, such as descendants of foreign-born - often referred to as the 'second generation' - or naturalized citizens.

17. Designing the data exchange templates was a crucial first step in the collection process. The better the templates fit the overall objectives the better the data that can be gained from them. It was expected that most countries would not be able to provide all the requested data but the aim was to gather as much information as possible in order to facilitate comparisons across countries. At the same time the data requests were kept relatively simple by deliberately limiting the details of the requested data and by being fully aware of the fact that not all information needs would be completely satisfied.

### **III. DATA RECEIVED FROM INDIVIDUAL COUNTRIES**

18. The following synoptic tables show the type of migration data produced in the individual countries and the different data sources used for compiling national migration statistics. It should be noted that the information in the tables is exclusively based on the data that were supplied for this exercise. They do not necessarily represent all the data that are actually available in the countries.

**Table 1: Distribution of Countries by Type of Migration Data**

<i>Type of Migration Data</i>	<i>Number of Countries</i>
Immigration Data	17
Emigration Data	14
Immigration <u>and</u> Emigration Data	14
Only Immigration Data	3

19. Out of the 19 participating countries 17 were able to provide immigration data. 14 countries also supplied emigration data, with Canada, France and the United States the only three countries that provided no annual data on outflows. At first glance the availability of emigration data seems to be much better than expected which leads to the conclusion that most countries that produce data on immigration flows also have data on emigration. However, the mere availability of such data does not give any indication about the scope, the reliability or the quality of emigration statistics.

**Table 2: Distribution of Countries by Data Received for Each Template**

<i>Data Exchange Templates</i>	<i>Number of Countries</i>
Residence one year ago by country of birth	14
Residence one year ago by country of citizenship	14
Immigrants by country of last residence	16
Immigrants by country of birth	13
Immigrants by country of citizenship	15
Emigrants by country of next residence	13
Emigrants by country of birth	10
Emigrants by country of citizenship	13
Population by country of birth and citizenship	10
Population by country of birth, country of birth of parents and citizenship	2

20. Annual immigration flow data were slightly more frequently supplied than flow data derived from the question about the previous residence. Origin-destination specific data (country of last or next residence) could be supplied by the highest number of countries. For both immigration and emigration flow data the country of birth was least available. Immigrant stock data were less frequent than flow data, with only two countries (Canada, Spain) being able to provide information about immigrants' parents.

21. The following table presents the information already shown in Tables 1 and 2 from a different angle by cross-referencing the type of migration with the definition of migrant origin.

**Table 3: Distribution of Countries by Type of Migration Data and Definition of Migrant Origin**

<i>Definition of Migrant Origin</i>	<i>Type of Migration Data</i>		
	Immigration Flow Data	Emigration Flow Data	Immigrant Stock Data
Country of last/next residence	16	13	...
Country of birth	13 (annual) 14 (residence 1 year ago)	10	...
Country of citizenship	15 (annual) 14 (residence 1 year ago)	13	...
Country of birth <u>and</u> citizenship	...	...	10
Country of birth <u>and</u> citizenship <u>and</u> country of birth of parents	...	...	2

**Table 4: Distribution of Countries by Type of Migration Data and Type of Data Source**

<i>Type of Data Source</i>	<i>Type of Migration Data</i>		
	Immigration Flow Data	Emigration Flow Data	Immigrant Stock Data
Population Census	11	1	7
Population Register	5	5	3
Aliens' Register, Permits of Stay Register or Other Administrative Database	8	5	2
Household Sample Survey	1	1	2
Border Sample Survey	1	1	-
Passenger Cards System	1	1	-

22. Generally, data sources used by the participating countries were quite diverse. In addition, the type of information collected or derived from these sources was different from one country to another. Six major types of data sources were used for both immigration and emigration flows. Stock data on immigrants were derived from four types of sources. The most widely used source for immigration flow data was the population census, followed by administrative registers that usually cover non-nationals only. A majority of countries used multiple data sources to produce immigration data – with the census being one of those sources in 11 countries. Administrative registers were the main sources for outflows. Emigration data mostly relied on one single source, Poland and Portugal being the only two countries which used multiple sources for emigration data. The census again was most frequently used to tabulate immigrant stocks. Surveys occupied a much less prominent role as sources for migration data.

23. The following two tables present the data sources for immigration and emigration data supplied by the participating countries.

**Table 5: Received Immigration Flow Data by Type of Data Source**

<i>Country</i>	<i>Type of Data Source</i>					
	Population Census	Household sample survey	Border sample survey	Population register	Permits of stay register, aliens' register or other administrative database	Passenger cards system
Albania	...	...	...	...	...	...
Australia	x					x
Canada	x				x	
Czech Republic	...	...	...	...	...	...
Estonia	x			x		
Finland				x		
France	x					
Georgia	...	...	...	...	...	...
Italy	x			x	x	
Kazakhstan						
Norway				x		
Poland	x				x	
Portugal	x	x			x	
Russia					x	
Spain	x			x		
Switzerland	x				x	
TFYR of	x				x	

Macedonia						
United Kingdom	x	x	x			
United States		x				
TOTAL	11	3	1	5	8	1

... no data provided for this exercise or data extracted from Eurostat database

Kazakhstan: source for immigration data unknown

**Table 6: Received Emigration Flow Data by Type of Data Source**

Country	Type of Data Source					
	Population Census	Household sample survey	Border sample survey	Population register	Permits of stay register, aliens' register or other administrative database	Passenger cards system
Albania	...	...	...	...	...	...
Australia						x
Canada						
Czech Republic	...	...	...	...	...	...
Estonia				x		
Finland				x		
France						
Georgia	...	...	...	...	...	...
Italy				x		
Kazakhstan						
Norway				x		
Poland	x				x	
Portugal		x			x	
Russia					x	
Spain				x		
Switzerland					x	
TFYR of Macedonia					x	
United Kingdom			x			
United States						
TOTAL	1	1	1	5	5	1

... no data provided for this exercise or data extracted from Eurostat database

Canada, France, United States: no emigration data available

Kazakhstan: source for emigration data unknown

#### IV. THE MAJOR FINDINGS

24. The analysis of the individual country data in the four group reports was primarily guided by one of the main objectives of the work of the Task Force, i.e. to assess the feasibility of using other countries' data to address the needs of sending countries with specific emphasis on (1) whether host countries can adequately measure immigration from a particular country; (2) whether the immigration data of the host country data are consistent with other data sources including emigration data from the sending country; (3) whether different definitions and concepts have an influence on the use of another country's immigration data.

25. Putting all the information on migration data collection and production in the individual countries together results in a very complex and diverse picture. It is therefore extremely difficult to come up with general findings which universally apply to all 19 countries.

26. Immigration data are not uniform across the individual countries as they serve the countries' own policy related goals. The national framework for collecting migration statistics plays a crucial role. In broad terms, the availability of immigration data varies according to statistical sources available in each country. Consequently, the scope and the quality of immigration data derived from different receiving countries vary widely. One of the goals of the data analysis was to determine how to use these not uniform immigration data to the best advantage of a sending country<sup>1</sup>.

##### A. Data sources

27. There was no evidence that any one source of data produced more accurate results than others even though certain sources (e.g. administrative registers covering the whole population), under specific conditions, may be able to provide more comprehensive statistical data than others. Each data source is in some way limited with respect to its coverage of migration. These limitations follow from the diverse nature of international migration today as well as from the multiple purposes these data sources have been designed to serve. In all participating countries emigration is weaker in terms of data sources than immigration.

28. The use of multiple or alternative sources to determine or estimate international migration is still lacking in many countries. Apart from the census mobility question the flow data in a large majority of countries were derived from one single data source only. There were just a few exceptions: e.g. Italy (population register and permits of stay register), Portugal (permits of stay register, emigration survey), the United Kingdom (International Passenger Survey, Labor Force Survey), and the United States (American Community Survey, administrative data). Poland is the only country that uses the census to obtain information on emigration. Relying on several different data sources can provide a wider and more complete coverage of the immigration and emigration streams entering and leaving the country. On the

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<sup>1</sup> The Task Force considered it to be important that the immigration data were as comprehensive as possible and would be inclusive of all groups relevant to international migration (nationals and non-nationals, permanent and non-permanent residents, native-born and foreign-born alike). Only such an all-encompassing immigrant concept can satisfy sending countries' wide and diverging needs for emigration data.

other hand, combining data from different sources to provide a coherent picture can be methodologically challenging due to variations in concepts and definitions.

29. The often made assumption that data on inflows in receiving countries are more complete than those on the corresponding outflows in sending countries cannot be fully endorsed or rejected by the data gathered in this exercise. The results suggest that the type of data source being used in a given country plays a crucial role in determining the scope and the coverage of inflows and outflows.

B. Flow vs. stock data

30. Both flow and stock data are highly relevant for international migration statistics. While annual flow data are, in principle, best suited for the measurement of migratory movements such data may be difficult to obtain as they require a fairly elaborate registration system or data collection tool. Stock data are generally easier to collect. Despite the well known limitations regarding their use for the estimation of international migration (e.g. they show only selective aspects of the outcomes of the migratory process at one or more chosen points in time and represent the cumulative effect of net migration flows over a certain period in the past) stock data can sometimes provide a more comprehensive picture of immigration than annual inflow statistics. This is especially the case in countries where immigration statistics are confined to only those people who have been granted permanent residence permits.

31. Moreover, data on stocks of immigrants can be very useful to give information on stocks of (other countries') emigrants, provided that data on a person's 'immigration background' exist. Given the fact that the (decennial) population census is one of the main sources of stock data such information is generally available even though not necessarily on a timely basis. In most countries, the census uses all three concepts of 'country of origin' identification. However, information on a person's parents seems less frequently obtainable, thus limiting the identification of the group of descendants of foreign-born.

C. 'Country of origin' identification

32. The analysis of the three different concepts of 'country of origin' identification shows that none of these variables may be considered an ideal proxy for another one. It would appear problematic e.g. to consider country of citizenship synonymous with country of last residence as a universal rule. In a given country A, the number of immigration events involving citizens of country B, the number of persons born in country B and the number of immigration events originating from country B may be very different. The relationship between these three concepts is country-specific and may even change over time. While there is a high degree of correlation for some migratory flows it is far less obvious in others. The greater and unrestricted international mobility for EU citizens within the European Economic Area (EEA) for instance and the emergence of new forms of migration, such as transit, circular or return migration, seems to lead to an ever widening gap between these concepts.

D. Immigration vs. emigration data

33. For most countries it is more difficult to collect information about emigration than immigration. In the worst case scenario, the sending country has no or only incomplete flow data

on persons leaving its territory. The receiving country, on the other hand, may in principle have both inflow and stock data on immigrants, i.e. the sending country's emigrants. Therefore, receiving countries can generally provide a more comprehensive picture of emigration than most sending countries.

34. None of the participating countries was able to provide all the requested data and is currently in a position to produce statistics on a regular basis which cover all basic information needs on emigration. Moreover, nowadays the need for reliable and timely emigration data exists everywhere – even in 'traditional' immigration countries such as Australia, Canada and the United States as well as those in Western and Northern Europe.

E. International comparability of migration flows

35. The low degree of comparability of data on international migration flows becomes evident when matching data on flows between pairs of countries that are reported by the country of origin and the country of destination. Emigration data from a sending country were often different from immigration data in a corresponding receiving country. In most cases the two data sets do not match at all. As expected there was one notable exception: Finland and Norway provided data that were almost identical. This is due to the Inter-Nordic Migration Agreement which links the registration and deregistration of migrants between the countries that participate in this coordinated exchange of migration information. The many inconsistencies concerning the same migration flow between other pairs of countries are mainly due to differences in the concepts and definitions, the methods and coverage of the data collection as well as the time lag between the registrations of the same event in the two countries.

F. Terminology and definitions used in international migration statistics

36. It is obvious that despite the myriad efforts towards achieving international comparability and the ongoing discussions at the multilateral level a universal standardized and harmonized terminology used in the collection of international migration statistics is far from a reality. There are many conceptual, theoretical, temporal, methodological and systematic discrepancies between different countries' migration statistics.

37. The major issues that have to be dealt with when using another country's migration data include:

- The use of different concepts or definitions of who is considered an immigrant or an emigrant.
- National data sources that cover different reference periods as well as different population universes (e.g. resident population, present population, legal population).
- The different treatment of nationals and non-nationals (data e.g. are available only for one group and not the other).
- The inconsistency of flow data derived from the census and from administrative registers and the inconsistency between flow and stock data. It is therefore rather the rule than the exception that different national data sources provide different data for the measurement of the same migratory events.

- The inconsistency of origin-destination specific flows between two given countries when the respective national data are compared.

#### G. Metadata

38. Given the lack of uniformity in the definitions of international migrants and in the concepts of international migration flows used in various countries the availability of complete and comprehensive metadata is paramount. The metadata should include complete and detailed information on each data source, including the underlying laws, the practical administrative procedures involved, and the level of coverage. Special emphasis must be paid to any changes in a country's population universe, the data collection process or legal regulations which might affect the way migrants and their movements across borders are defined and counted. A lack of detail in the available national metadata might impede full understanding of observed anomalies, discrepancies and gaps. There is the inherent possibility that data are misinterpreted by another country wishing to use them if the metadata are not fully known and understood – and misguided decisions may be made regarding their use.

### V. **CONCLUSIONS**

39. The data exchange exercise provided empirical evidence of the issues to be confronted and the challenges related to the use of a receiving country's immigration data as a potential source for emigration statistics.

40. Measuring and comparing migration movements of populations in different countries is indeed a challenging task. The conceptual, methodological and definitional problems, which result in differences in the numbers from sending and receiving countries, make the use of another country's immigration data difficult. Another problem involves the combination of data from different receiving countries in light of their varying degrees of quality. It is safe to state that harmonization of international migration statistics won't be reached in the short or even medium term. However, it is possible even now to obtain useful data on nationals or former residents living abroad or having moved abroad from the immigration data of receiving countries.

41. The results of the analysis of migration data collected in the four groups indicate that immigration statistics in receiving countries constitute a relatively good source of information for sending countries on their emigrants. The degree of usefulness depends on the quality of the country's own emigration statistics. Specific data needs are defined by what is already produced by a country's statistical system as well as the kind of information that a country wishes to have. Using other countries' immigration data may be the only available short-term option for countries lacking emigration statistics. For countries with at least some emigration data they could provide benchmarks against which they can evaluate their own available statistics. An increasing reliance on the use of another country's data, however, should not preclude improving emigration data collection at the national level.

42. Depending on the source national statistical offices (NSOs) have different possibilities to influence the collection of essential migration related data. Administrative data are usually amassed by agencies other than the NSO. Therefore it is not likely that statisticians can effect changes in the rules of registration to improve the quantity and quality of data and to facilitate compliance with international recommendations. Population-based data collections (surveys and censuses), however, are usually carried out by NSOs. This, in theory, should help ensure the use of harmonized concepts and definitions and the inclusion of pertinent questions in the data collection exercise.

43. Based on the findings of the data collection exercise some general guidelines were developed which explore the possibilities of using immigration data to compensate for and improve the existing weaknesses of emigration data of sending countries. These guidelines (i) identify the typology and uses of emigration data, (ii) provide guidance on how to use immigration data of receiving countries to get information on emigration, and (iii) propose activities, which would lead to increased availability of emigration data.

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## **APPENDIX**

### ***List of Tables Used in the Data Exchange Exercise***

#### **1) Flow Data**

- Table 1. Population of your country by age group, sex, place of birth, and place of residence one year before data collection
- Table 2. Population of your country by age group, sex, citizenship, and place of residence one year before data collection
- Table 3. Persons who immigrated to your country from country X (where X is country of previous residence) by age group, sex, and single year of entry (the 10 most recent years available)
- Table 4. Persons who immigrated to your country who where born in country X by age group, sex, and single year of entry (the 10 most recent years available)
- Table 5. Persons who immigrated to your country who where citizens of country X by age group, sex, and single year of entry (the 10 most recent years available)
- Table 6. Persons who emigrated from your country to country X (where X is the country of next residence) by age group, sex, and single year of departure (the 10 most recent years available)
- Table 7. Persons who emigrated from your country who where born in country X by age group, sex, and single year of departure (the 10 most recent years available)
- Table 8. Persons who emigrated from your country who where citizens of country X by age group, sex, and single year of departure (the 10 most recent years available)

#### **2) Stock Data**

- Table 1. Population by country of birth and citizenship (as of January 1 of the 10 most recent years available)
- Table 2. Population by country of birth, country of birth of parents and citizenship (as of January 1 of the 10 most recent years available)

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