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Definitions of population and migration

## **An alternative view on the statistical definition of migration**

**Note by Eurostat\***

### *Summary*

Building upon a short review of the definition of migration in international recommendations and an analysis of its main features, the working paper explores an alternative approach to the statistical definition of migration. The proposal is twofold: on a revised terminology, which is here based on the crossing of the two most relevant characteristics in migration (country of birth and citizenship); and on the discriminant criterion for migration, which uses the new concept of place of 'main residence' instead of the 'usual residence'. The proposed theoretical framework, linked to parallel work on new concepts for future population statistics, fits in the ongoing revision of the UN recommendations of international migration statistics and aims to stimulate discussion.

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The document has not been officially edited and it is released to inform interested parties about ongoing work and to stimulate discussion. The information and views set out in this publication are those of the author and do not necessarily reflect the official opinion of the European Commission / Eurostat.

## I. Introduction

1. It was the year 1922 when the first international report of migration statistics was published by the International Labour Office (ILO) in Geneva, where severe limitations in the quality and comparability of data were already reported (ILO 1922). After almost a hundred years, the statistical community is still struggling to capture international migration in a way such to meet the growing needs of users, that is producing high quality and (very) timely statistics.
2. The issue has not been neglected by the migration specialists though. Several attempts have been made over time to overcome inconsistencies in definitions and data quality issues, as witnessed by the extensive engagement on these matters by ILO and the United Nations (UN) (a.o., see ILO 1932; UN 1949; Statistical Office of the UN – SOUN 1953; UNSD 1976, 1998) as well as by scholars (e.g., Bilsborrow *et al.* 1997), including proposals based on statistical modelling (e.g., Raymer and Willekens 2008, Willekens 2019). Still in 2017, the UNSD has established an Expert Group on Migration Statistics, tasked by the UN Statistical Commission to work also on the revision of the latest international recommendations on migration statistics (UN 2018).
3. It is therefore the right time for a critical review of the definitions recommended for migration statistics, as well as for exploring alternative approaches. The outcome of such review may well be a strengthening or fine-tuning or further development of the current concepts, but that should also benefit from an open comparison with different definitions. This note aims to stimulate such discussion by proposing a new perspective on the statistical definition of migration. The content of this paper can be usefully linked to another document on population definitions (see Lanzieri 2019), being migration and population two intertwined concepts.

## II. A long-term historical perspective of the meaning of migration

4. Migration is inherently part of the human nature: “*the people who live in a particular place today almost never exclusively descend from the people who lived in the same place far in the past*” (Reich 2018). The primordial migrations were most probably slow and progressive explorations of unknown lands over generations and generations of human beings. The concept of migration is here closer to its original meaning of movement of entire populations (even though of limited size to current standards).
5. Several studies have highlighted the relevance of migration in shaping populations in history (a.o., Fisher 2014, Livi Bacci 2014). On a policy level, at the beginning the primary interest was on emigration, rather than immigration: the Peace of Augsburg in September 1555 and later the Peace of Westphalia (namely the Treaty of Osnabrück in 1648) acknowledged the right of the individuals to emigrate (*ius emigrandi*), but no specular right to immigrate (*ius immigrandi*) was ever considered (Sciortino 2017). The concept of migration evolves towards the meaning of cluster of individual moves, sometimes population sub-groups but not necessarily concerning entire populations.
6. The rise of the nation-states increased the interest to control the movements of people across borders, which translated in the first efforts to collect statistical data on international migration

at the beginning of the twentieth century<sup>1</sup>. Migration is here often intended as departure of national citizens and arrival of foreigners.

### III. Current definitions of 'migrant' in the international context

7. According to the current UN Statistics Division (UNSD) international recommendations, a '(long-term) migrant' is *“a person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence. From the perspective of the country of departure the person will be a long-term emigrant and from that of the country of arrival the person will be a long-term immigrant”* (UNSD 1998:10). The same recommendations identify also a '(short-term) migrant' when the duration of stay is between 3 and 12 months, but, as acknowledged in implementing recommendations in preparation (UNSD 2017:8), this latter is a sort of misnomer in the conceptual framework of 'usual residence'.
8. The above is not the only definition of migration from international agencies. For the International Organization for Migration (IOM), a related organization to the UN focussing on migration, 'migrant' is *“an umbrella term, not defined under international law, reflecting the common lay understanding of a person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons. The term includes a number of well-defined legal categories of people, such as migrant workers; persons whose particular types of movements are legally-defined, such as smuggled migrants; as well as those whose status or means of movement are not specifically defined under international law, such as international students.”* (IOM 2019:130). The same IOM defines as well an 'international migrant' as *“any person who is outside a State of which he or she is a citizen or national, or, in the case of a stateless person, his or her State of birth or habitual residence. The term includes migrants who intend to move permanently or temporarily, and those who move in a regular or documented manner as well as migrants in irregular situations.”* (IOM 2019:110).
9. The Organisation for Economic Co-operation and Development (OECD) is another major international player in migration statistics. The migration data they collect and disseminate are based on the national definitions of migrants: *“These data have not been standardised and are therefore not fully comparable across countries. In particular, the criteria for registering persons in population registers and the conditions for granting residence permits, for example, vary across countries, which means that measurements may differ greatly even if the same type of source is being used.”* (OECD 2019:292) Therefore, the implicit definition used in the OECD migration data is that a 'migrant' is who is considered such by the reporting country.
10. The International Labour Organization (ILO), the specialized UN agency dealing with labour issues, consider as international migrants either the foreign-born people, or the foreign citizens (ILO 2018:4). Further, it includes in the 'international migrants workers' persons who are not

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<sup>1</sup> Luigi Bodio (1840-1920), president of the International Statistical Institute from 1909 to 1920, was most probably the very first scholar to make an international comparison of migration data (Gilman 1910, Cappiello 2014).

migrant (the 'non-resident foreign workers'), setting a lexical identity between 'international migrant workers' and 'international migrant and non-resident foreign workers' (ILO 2018:5).

11. The EU regulation in force on migration statistics has definitions of migration and migrants which are in line with the UNSD recommendations, based on the change of the country of 'usual residence'. Nonetheless, the same regulation allows the use of the 'legal' or 'registered' residence instead of the 'usual residence', without defining what the two former concepts actually are. It is as well possible to find policy papers in which the intra-EU migration is labelled 'mobility' and/or migration is identified with the so-called 'third-country nationals', i.e. any person who is not citizen of the EU (including stateless persons).

#### **IV. On the statistical definition of migration and immigration**

12. As described above, the concept of migration has for long – if not always – been linked to a factual move across territories for the sake of changing place of settlement. This view has two implications. The first is related to a “long-term nature” of the migration, whereas “long-term” may take different connotations across time and space: in any case, such a notion excludes “temporary” moves. The second implication is that there must be the crossing of a border, a real change of geographic places of reference. This geographic dimension is therefore a requisite that should remain in a revised statistical definition of migration. Hence, adopting the word 'residence' to express a long-term stay (without further specifications for now) in a geographic place, migration is indeed a 'change of residence'.
13. A migration component so defined seems to cover all changes in a population that are not due to vital events (births and deaths), as expressed in an ordinary demographic balancing equation. However, this applies when the size of the population alone is considered, i.e. mere heads counting without any further feature distinguishing a sub-population. For instance, the size of the population of national citizens can change because of vital events, migrations as well as acquisitions and losses of the national citizenship. Hence, population change can occur also for causes other than the conventional dichotomy “vital events or migration”. This applies to changeable characteristics such as citizenship, education, activity status, socio-economic group, religion, etc.
14. Given that there may be components of population change other than vital events and migration, it is possible to open a reflection on which changes should be classified as 'migration'. Even though each migration is a 'change of residence', not necessarily each change of residence is a 'migration'.
15. At the beginning of internationally comparable migration statistics, the greatest attention has been put on the emigration of national citizens and on the immigration of foreign citizens. Citizenship has always been a fundamental feature in migration policies and it may well play such a role in the future too (see also Bloemraad and Sheares 2017). Several EU policies on migration refer to the 'third-country nationals' alone. From the perspective of the hosting population, citizenship is certainly a criterion by which the laymen identify the “immigrants”, but also in many reports and studies the identity “immigrants = foreign citizens” applies. 'Citizenship' is also one of the characteristics most widely captured in statistical surveys.
16. Migration, however, must be linked to a change of the geographic area of settlement (change of residence), the distinction between international and internal only depending upon the nature of the crossed border, whether between countries or between administrative units within a country. Focussing on the international dimension, the most applied proxy to assess whether

such a change of residence ever occurred in the life of a person is the 'country of birth'. A person born abroad must have moved at least once into the country; at the same time, it is usually perceived as “immigrant” by the population, contrary to the case of somebody born in the country and there returned, who is rather seen as a person simply having been away for a while or as a former “emigrant”. 'Country of birth' is therefore another important feature to be taken into account in re-defining the population changes covered by 'migration'.

17. Merging the two fundamental features described above leads to identify as 'immigrant' in the reporting country all foreign-born foreign citizens<sup>2</sup>. This category represents well what intuitively is considered “immigration” in a country, and splits immigration from close-by categories that, whilst usually melted in the currently wider “migration” concept, can be the target of specific policies: the foreign-born national citizens and the native-born foreign citizens. Those two “mixed” groups are quite different.
18. The native-born foreign citizens are most likely descendants of immigrated persons: they were born in a reporting country where the *jus soli* ("right of the soil", i.e. birth-right citizenship) does not apply but have inherited – in virtue of the *jus sanguinis* (the “right of blood”) – the citizenship(s) of the parent(s)<sup>3</sup>. These persons may be (improperly) labelled as “second (or further) generation of migrants”. It should be noted that this category may well include persons who have never resided abroad and hence – strictly speaking – should not be considered “migrants”.
19. The foreign-born national citizens can instead be composed by two main sub-categories: the descendants of national citizens who were living abroad at the time of the birth of the person, and the foreign-born foreign citizens who have acquired the citizenship of the hosting country. The two sub-groups could be identified by inquiring about the citizenship at birth or about the year and the way the national citizenship was acquired (at birth, by marriage, by naturalization, at the time of a newly created state, etc.): the former would be identified by the national citizenship acquired at birth, the latter by all other cases. To some extent, they can both be considered “new entries” in the community of national citizens living in the reporting country, hence the label of '*new citizens*' which could be attributed to them.
20. The remaining combination of country of birth and citizenship, i.e. the native-born national citizens can be labelled 'natives' in short.
21. A clear terminology may play an important role in avoiding confusion and possibly misleading analyses based on different figures. For instance, the answer to a simple question about migration in the EU may turn out to be quite a challenge. The Table 1 resumes the situation in a year, the 2013, selected because of the occurrence of a particularly high statistical adjustment (not the norm though). The first issue is whether the question on migration concerns stock or flows, as this may be not straightforward from the wording. Migration flows can be summarized in a single measure (the net migration) which may however return different values depending on the way it is computed, as difference between flows or as residual

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<sup>2</sup> More precisely, in order to include stateless persons as well, reference should be made to 'non-national citizens'. For the sake of simplicity, however, in the text it will be kept the label 'foreign citizens', even though that category may include stateless persons and/or persons with unknown citizenship.

<sup>3</sup> Another case is the one of a native-born national citizen who has lost the citizenship of the reporting country, because of withdrawn by the authorities or naturalization in another country, with which there is no agreement for holding dual citizenship. This category can be assumed to be of marginal size, because the former is rather unusual and for problematic cases, the latter usually implies the move of the person to the new country of citizenship (e.g., marriage).

component from the demographic balance (which includes the statistical adjustments). As for the stocks, here the confusion is bigger because there are different measures commonly adopted, which usually lead to rather different results. To complicate further the matter, the EU can be seen as a geographic entity on its own, or as algebraic sum of its Member States (MS): in the former case, all migration flows between Member States are not counted, which explains the difference in the flows of EU-28 and the sum of MS. Intra-EU immigration and emigration flows should cancel each other out when summed up to the entire EU because – by definition – all the immigration from other EU MS must be equal to all the emigration towards other EU MS: this does not happen in the table (a difference of about 300 thousand person) because of the well-known inconsistency of “mirror” statistics, i.e. the bilateral migration flows between two EU MS are not equal when measured in the two countries involved (thus immigration from B to A is not equal to emigration from A to B). The overall outcome is a puzzle of figures, each of which may be used in practice.

Table 1  
Example of different measures for the EU migration (values in million)

<b>Flows in 2013</b>	<b>Measure</b>	<b>EU-28</b>	<b>Sum MS</b>
Immigration	Country of previous usual residence	1.7	3.4
Emigration	Country of next usual residence	1.4	2.8
Net migration	Difference immigration - emigration	0.3	0.6
Net migration + statistical adjustment	Difference total change – natural change	1.7	1.7
<b>Stocks on 1.1.2014</b>	<b>Measure</b>	<b>EU-28</b>	<b>Sum MS</b>
Foreign-born persons	Country of birth	34.4	52.3
Foreign citizens	Citizenship	19.8	34.1
Formerly resident abroad	Ever resided abroad (censuses 2011)	---	>59.1

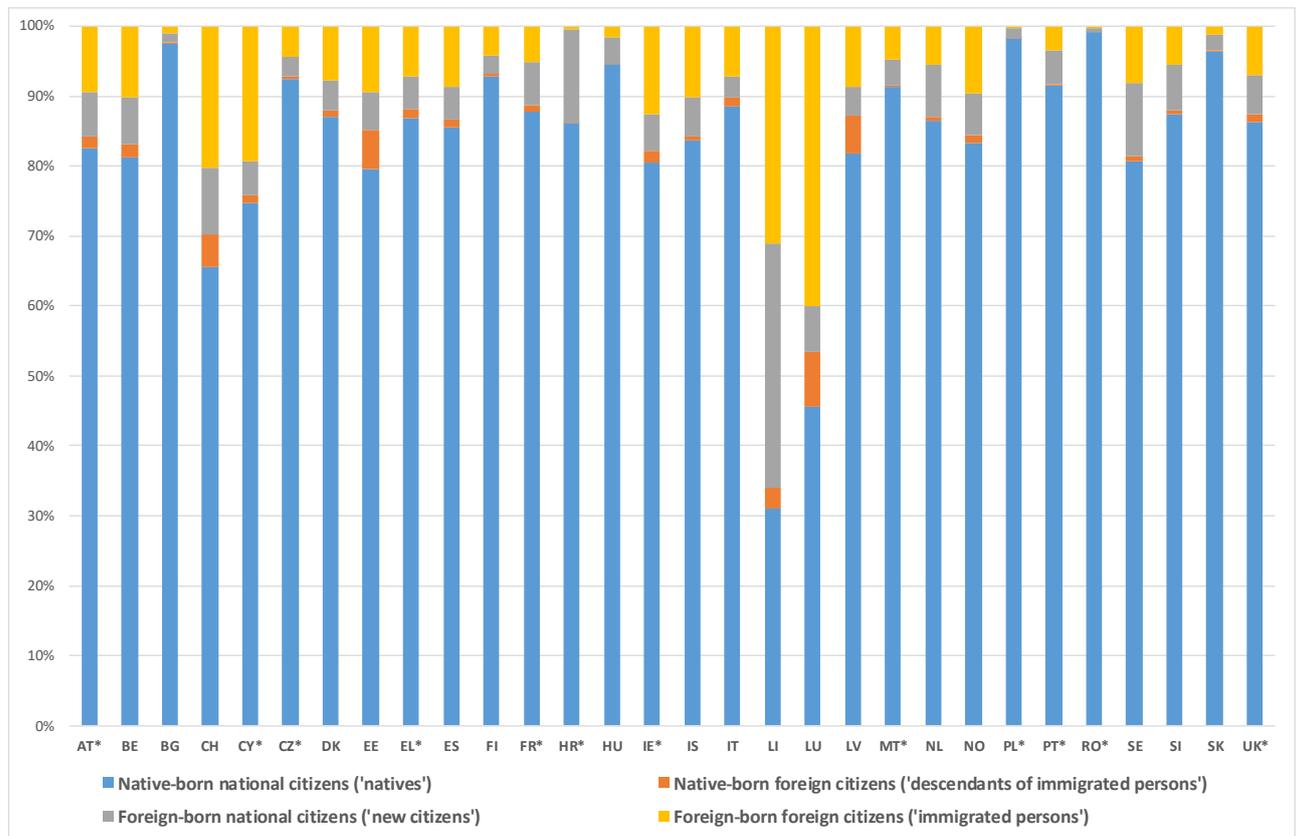
*Note: flows including unknowns; stocks including unknowns and stateless. Residents abroad before 1980 missing for 14 countries. Source: Eurostat.*

22. A first clear distinction in terminology needs then to be made between 'stocks' and 'flows' of migrants. The former group, measured in a specific moment in time, should more properly be called '*immigrated persons*', given that their migration has occurred in the past, possibly also long ago<sup>4</sup>; the latter group, referring to a time period, can be labelled '*immigrants*' or '*emigrants*', depending upon the direction of their move as from the reporting country, because their migration has in fact occurred in the period of reference. Hence, they are 'persons *immigrating* / *emigrating* in the given period', in short '*immigrants*' / '*emigrants*'. This simple lexical distinction would already prevent some potential misunderstanding or misuse of migration figures.

<sup>4</sup> Likewise, there could also be a population group of '*emigrated persons*', composed by all those persons still alive at the reference date who have left the country. The concept of 'emigration' is dealt in more detail in a subsequent part of the note.

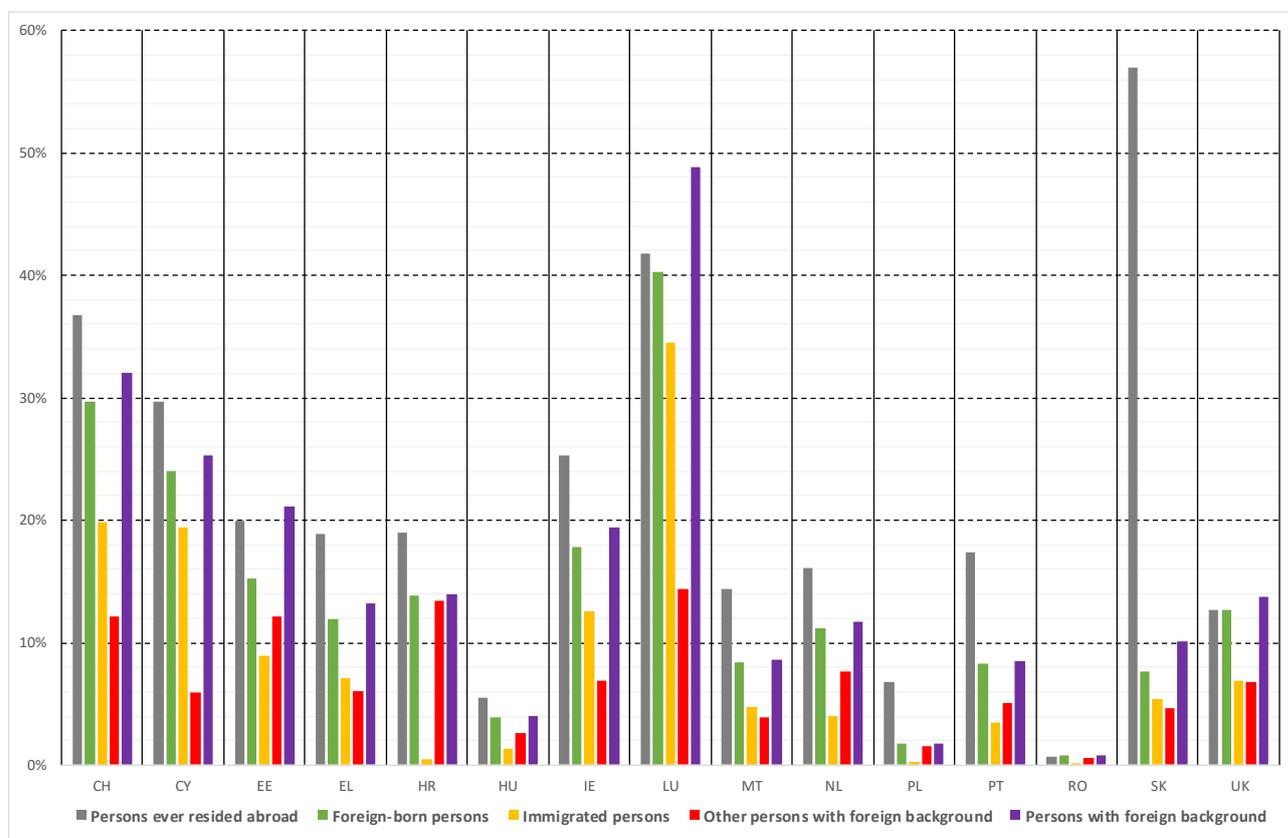
23. The **Figure 1** shows the share of the categories identified above by crossing 'country of birth' and 'citizenship' as measured in a set of countries for which such crossing is available from the latest Eurostat data collection (UNIDEMO 2018) or from the national census in 2011. It may be noted how each of those categories can reach significant shares, the size of which depending on several factors such as the migration history of the specific country, the national policies for the acquisition of the citizenship, and the size of the country.
24. Three out of four categories considered above share a common feature, which is to have a foreign component in their background, either via the country of birth or the citizenship. '*Persons with foreign background*' are therefore all those persons who are either 'immigrated', or 'descendants' of immigrated persons, or 'new citizens' of the reporting country. This definition does not coincide with the one from international recommendations (UNECE 2015:138), where the 'persons with foreign background' are identified by means of the country of birth of their parents, when for both of them is a country other than the reporting one. However, the same international recommendations suggest as alternative way for identifying the foreign background the use of the information about the acquisition of citizenship, in which case the group of foreign-born with national citizenship at birth would be classified as having national background – the only difference compared to the classification here proposed. The current proposal of classifying these latter persons as having foreign background takes better into account their exposure to foreign contexts. Further, the classification based on the crossing of 'country of birth' and 'citizenship' of the single persons does not require the additional collection of information on their parents, which may be problematic and certainly less widespread in statistical surveys than those two main characteristics.
25. To show what the impact would be on actual numbers, the Figure 2 compares different definitions of the “stock of migrants” in a set of European countries using data from the census 2011. The measures are respectively:
- the persons who have ever resided abroad, in accordance with the current international recommendations based on the 'usual residence' concept;
  - the foreign-born persons, which is the most common proxy of the previous variable;
  - the 'immigrated persons';
  - the other persons with foreign background ('descendants' and 'new citizens'), here reported for completeness;
  - and the sum of the two latter, i.e. all the 'persons with foreign background', as proposed in this note.
26. A glance at the Figure 2 may show how the message conveyed by the various definitions may be rather different. The most “correct” figure according to the current recommendations returns usually the highest values; such a figure is however of little policy interest per se. Its most applied proxy, the number of foreign-born persons, is more “on the target” but still it misses the citizenship dimension, of high interest for policy-makers. The size of the groups of foreign-born persons is usually (much) smaller than the previous group (ever resided abroad). The next measure is possibly the cleanest observation of what can be considered the actual “stock of migrants”, as it could be understood by the laymen. The values are, by definition, lower than for the group of foreign-born persons. In case the policy interest is for broader groups of “migrants”, the value of reference would then be the size of the group of persons with foreign background.

Figure 1  
 Percentage of the resident population by country of birth and citizenship in 30 European countries on 1 January 2018



*Note: data for countries marked with a star are from national census 2011; foreign-born persons including persons with unknown country of birth; foreign citizens including stateless persons and unknown citizenship. Source: Eurostat.*

Figure 2  
Percentage of “migrants stock” according to different definitions in 15 European countries at the national census 2011 reference date



Note: foreign-born persons including persons with unknown country of birth; foreign citizens including stateless persons and unknown citizenship. Source: own computations on data from the Eurostat Census Hub.

27. Turning now to the “flows”, the terminology can be simply based on words such as 'inflows' and 'outflows' (or arriving/leaving residents, etc.), which can be further detailed by specifying the group of reference, such as inflow/outflow of 'new citizens'. The general demographic balancing equation would then be expressed as follows:

$$\begin{aligned}
 & \text{population at the beginning of the period} + \text{live births} - \text{deaths} + \\
 & \text{inflows ('natives' + 'new citizens' + 'descendants' + 'immigrants')} - \text{outflows} = \\
 & \text{population at the end of the period}
 \end{aligned}$$

28. In the proposed theoretical framework, the terminology of 'immigrants' would be appropriate only for the people joining the group of 'immigrated persons'. Consequently, 'immigration' is the (in)flow of 'immigrants'. However, before defining the outflows of the 'immigrated persons' as 'emigration', it is necessary a further reflection on the concept of emigration.

## V. On the statistical definition of emigration

29. According to the current international recommendations, emigration is defined in a specular fashion from immigration: flow of persons going to live abroad for a period of at least one year (emigrants) vs persons coming to live in the country for at least one year (immigrants). In principle, these specular definitions ensure a perfect symmetry between emigration and immigration (even though there is a well-known mismatch of actual figures).
30. Under the new theoretical framework, a potential issue is that considering two countries, one of which is the country of birth / citizenship of the person undertaking the migration between these two countries, the change of residence would be considered a 'migration' only in the country other than the one of birth / citizenship. The point here is that whenever personal characteristics are included in the definition of migration, the classification of the individuals depends upon the perspective taken, i.e. from the reporting country. This leads to three main options in defining the mirror event of immigration, i.e. emigration: either it is preserved the consistency in the definition, or in the mirror data, or the perspective of the reporting country prevails. In the first case, the following definitions would apply:
- Option 1: 'Emigration' is the outflow of the 'immigrated persons' (foreign-born foreign citizens) from the reporting country in the period of reference. Consequently, an 'emigrant' is a foreign-born foreign citizen who leaves (the residence in) the reporting country in the period of reference.
31. Alternatively, it may be considered that an emigrant is somebody qualified as immigrant somewhere else. From this perspective, the number of emigrants should be derived from the number of immigrants in another reporting country. An element of complicity here is the use of two variables for defining migration (country of birth and citizenship), which leads to a classification of the individual depending on whether the would-be migrant was born in / holds the citizenship of the receiving country. In this case, the following definitions would apply:
- Option 2: 'Emigration' is the outflow of persons qualified as 'immigration' in another country during the period of reference. Consequently, an 'emigrant' is a (former) resident person of the reporting country who is classified as 'immigrant' in the new country of residence in the period of reference.
32. The third option for defining emigration is instead based on a full intake of the national perspective. In this framework, the following definitions would apply:
- Option 3: 'Emigration' is the outflow of the 'natives' (native-born national citizens) from the reporting country in the period of reference. Consequently, an 'emigrant' is a native-born national citizen who leaves (the residence in) the reporting country in the period of reference.
33. It must be noted that these options do not affect the statistics on the total outflow, but only the way that outflow is broken down in 'emigration' and 'other outflows'. Thus, the total outflow would be composed of 'emigrants' plus those leaving residents not classified as 'emigrants'. To clarify the effect of each option, the Table 1 shows how the leaving resident persons would be classified for each case.
34. Comparing the three options, while the first and the last would be immediately applicable by the reporting country, the second option would require an efficient network of data exchange, which anyway would not cover the entire world. Therefore, even though it is the only option which ensures a perfect consistency of the disaggregated data on flows (i.e., making a

distinction between migration and other flows), the implementation of the 'mirrored' definition of emigration would quite likely suffer for difficulties and limitations. On the other side, the implementation of the other two options for emigration may benefit of the use of citizenship at birth as classifying variable instead of the current citizenship, because it may avoid complications due to multiple citizenships as well as changing citizenship between two migrations.

35. The favourite option in the proposed framework is the Option 3, because from a policy perspective there is usually more attention to the natives leaving the countries than on other population groups (e.g., for the brain drain, i.e. the departure of educated or professional people from one country for better pay or living conditions), even though this comes at the cost of losing the symmetry between immigration and emigration.

## VI. Demographic balances

36. The revised statistical definitions of 'immigration' and 'emigration' must fit in the broader framework of the population change. It is therefore needed to look at whether, under this new theoretical framework, it is possible to link in a consistent fashion stocks to flows.

37. The demographic balancing equation in paragraph 27 can thus be reformulated as follows:

$$\begin{aligned} & \textit{population at the beginning of the period} + \textit{live births} - \textit{deaths} + \\ & \textit{inflows ('natives' + 'new citizens' + 'descendants' + 'immigrants')} - \\ & \textit{outflows ('emigrants' + 'new citizens' + 'descendants' + 'immigrated persons')} = \\ & \textit{population at the end of the period} \end{aligned}$$

38. Demographic balances can be defined for each group of interest, for instance for the “stock of migrants”:

$$\begin{aligned} & \textit{'immigrated persons' at the beginning of the period} - \textit{deaths of 'immigrated persons'} + \\ & \textit{'immigrants' - outflow of 'immigrated persons'} = \\ & \textit{'immigrated persons' at the end of the period} \end{aligned}$$

where it can be noted that there are not – by definition – live births of 'immigrated persons', as they should be classified as 'descendants'. The equation above is however not yet complete, because it should also take into account changes of status, namely acquisitions and losses of citizenship. This leads to the following equation for the “stock of migrants”:

$$\begin{aligned} & \textit{'immigrated persons' at the beginning of the period} - \textit{deaths of 'immigrated persons'} + \\ & \textit{'immigrants' - outflow of 'immigrated persons'} + \\ & \textit{former 'new citizens' who lost the national citizenship} - \\ & \textit{former 'immigrated persons' who acquired the national citizenship} = \\ & \textit{'immigrated persons' at the end of the period} \end{aligned}$$

39. Likewise, the demographic balance for 'natives' would be:

$$\begin{aligned} & \textit{'natives' at the beginning of the period} + \\ & \textit{live births from 'natives' + live births from 'new citizens' - deaths of 'natives' +} \end{aligned}$$

*inflow of 'natives' – 'emigrants' +  
former 'descendants' who acquired the national citizenship –  
former 'natives' who lost the national citizenship =  
'natives' at the end of the period*

40. *Mutatis mutandis*, the demographic balance for the 'descendants of immigrated persons' would be:

*'descendants' at the beginning of the period +  
live births from 'descendants' + live births from 'immigrated persons' –  
deaths of 'descendants' +  
inflow of 'descendants' – outflow of 'descendants' +  
former 'natives' who lost the national citizenship –  
former 'descendants' who acquired the national citizenship =  
'descendants' at the end of the period*

where the classification of the live births will depend also on the form of *jus soli* in force in the country – if any.

41. For the last group, the 'new citizens', the demographic balance would be:

*'new citizens' at the beginning of the period –  
deaths of 'new citizens' +  
inflow of 'new citizens' – outflow of 'new citizens' +  
former 'immigrated persons' who acquired the national citizenship –  
former 'new citizens' who lost the national citizenship =  
'new citizens' at the end of the period*

42. Whilst apparently more complicated, these demographic balances would better meet users' needs in having a coherent conceptual framework. Under the current international practices, it is not possible to break down in a coherent way the demographic balance in relevant migration groups because the “stocks” are identified by a different variable (usually the country of birth) than the one for the “flows” (the duration of stay).

43. A factor of complicacy in this new conceptual framework is certainly the use of a changing characteristic ('citizenship'). While this could potentially be solved by resorting to the 'citizenship at birth' (even though with additional technical specifications), it is as well true that the current citizenship is one of the individual features of highest interest for policy makers. Adopting the current citizenship implies as well that the prevailing view in migration statistics is the one of the reporting country, because national citizens holders of other citizenships will however be classified as national citizens, and the same person can actually be a national citizen in more than one country: a price to be paid by the international consistency to the national policy needs.

Table 2  
 Classification of leaving residents according to various definition of emigration

Leaving residents from country A	Classification in country A consistent with definition of migration (option 1)	Classification of persons taking the main residence in country B (used in option 2)	Mirrored classification in country A (option 2)	Classification in country A based on national perspective (option 3)
Native-born national citizen	Other leaving resident	Immigrant	Emigrant	Emigrant
Native-born foreign citizen	Other leaving resident	1. Immigrant (if not B citizenship) 2. Other arriving resident (if B citizenship)	1. Emigrant 2. Other leaving resident	Other leaving resident
Foreign-born national citizen	Other leaving resident	1. Immigrant (if country of birth is not B) 2. Other arriving resident (if country of birth is B)	1. Emigrant 2. Other leaving resident	Other leaving resident
Foreign-born foreign citizen	Emigrant	1. Immigrant (if neither country of birth nor citizenship are B) 2. Other arriving resident (if country of birth and/or citizenship are B)	1. Emigrant 2. Other leaving resident	Other leaving resident

## VII. On the change of residence

44. Migration can be seen as a process, rather than a single event. It may well be the case that movers change over time their initial intention of a temporary stay; or that people feel to have really migrated only once their network and socio-economic linkages in the hosting country are prevailing over those of their country of origin; or that the migration is not a point-to-point move, but rather a multi-segment transition from a place of origin to a place of destination, with temporary stays in intermediate locations.
45. Even though a migration can take different forms such as listed above, from the point of view of the statistical capture and processing, the single-event form of migration is to be preferred, as it makes it immediately clear to which population the would-be migrant belongs. Theoretically, the ideal situation from a statistical point of view is a migratory event occurring in a single point in time. A migration stretched over a time period and/or multiple places may increase the uncertainty as for the moment of the change of residence as well as the likelihood of multiple counting or under-coverage.
46. At any moment in time, the assessment about to which population the would-be migrant belongs depends upon three specific times, either be moments or periods: the time of the migration event  $t_m$ , the reference time of the data  $t_r$ , and the time of the statistical capture  $t_s$ . The regular case is  $t_m \leq t_r \leq t_s$ , i.e. the migratory event occurs before the reference time, which in turn is before the moment of statistical capture.
47. In the theoretical framework of the 'usual residence', based on the duration of stay, it is necessary to introduce a further quantity  $q$ , expressing the time interval after which the mover qualifies as 'migrant'. According to the current international recommendations on migration statistics it is  $q \geq 12$  months, but at national level different durations of stay may be applied.
48. In the case of statistics on migrants 'stocks', i.e. on the number of persons of the population of interest who have experienced a migration, the three times listed above are moments in time and the following cases may occur:
  - a.  $t_m + q < t_r < t_s$ , i.e. the reference time is after the end of the qualification period, usually meaning more than one year after the moment of migration, and its statistical capture is further distant in time.
  - b.  $t_m < t_r < t_m + q < t_s$ , i.e. the reference time is within the qualification period of the migration, but the statistical capture is still outside – at least one year after the event if international recommendations apply.
  - c.  $t_m < t_r < t_s < t_m + q$ , i.e. both the reference time and the statistical capture are within the qualification period of the migration, in general within one year from the time of migration.
49. In the case a, the application of the current international recommendations should not be particularly difficult: at the time of the statistical capture, the migration can be assessed against a period of *actual stay* reaching at least the 12 months. In the case b, the migration can still be assessed based on the actual stay, but some uncertainty can arise whether to measure this latter until the reference time or further until the time of the statistical capture, and if the countries of origin and destination adopt different approaches there would be double counting. In the last case, the assessment of the migration can only be made using (also) the *intention of stay*, which is difficult to capture for register-based statistical systems and – by its own nature – subject to changes over time.

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50. The same relations apply to flow data. In this case, the reference time  $t_r$  represents the end of the reference period. Particularly for migration flows it may also be that  $t_m = t_s$ , i.e. the (would-be) migration is captured at the moment of the event (for instance, a survey of arriving passengers), in which case there is no alternative to the use of the 'intention of stay', regardless of whether the end of reference period  $t_r$  is before or after the end of the qualification period  $t_m + q$ .
51. The real duration of stay can be problematic to measure and possibly not fully comparable across countries (UNECE Task Force 2012). Further, its most objective measure, the 'actual stay', requires that the statistical capture occurs at least one year after the event, which impacts on the timeliness of the data. Even using the 'actual stay', when different implementing rules are applied by the countries of previous and next residence in the assessment of the duration of stay, there is a risk of double counting or under-coverage of the migrants (see also Lanzieri 2019). Hence, whilst nicely neutral, the 'duration of stay' is a criterion that must be revisited.
52. A revision of the definition of migration must tackle at least three main elements: the timeliness of the data; the uncontroversial identification of a (virtual) single moment in which the migration occurs from the statistical point of view, that is the moment in which the migrant is statistically attributed from the country of previous residence to the country of next residence; and the criterion/criteria against which the change of residence is assessed. A further element to be considered is that the definition should honestly describe what is actually covered, and not claiming inclusion of categories that are *de facto* undetected in common practice.
53. A moment in which persons indirectly express their willingness to be recognized part of the population of the hosting country is by declaring their residence to the national authorities. However, there are here two aspects to be considered. The first is that the simple declaration is not sufficient to represent such willingness, because it may be due to legal obligations and not representing a really minded decision. Such declaration must then be accompanied by the qualification that the new residence is indeed the most important place for their personal interests: in short, that this is their '*main*' residence. The second aspect, equally important, is that being willing to establish the main residence in the hosting country is not enough to be included in its population: there must be as well a corresponding acceptance by the pertinent authorities. It is the matching of these two acts – the declaration by the would-be migrant and its recognition by the authorities – that makes a 'migration'; more precisely, it makes a 'change of residence', because this covers not only migrants but also all other flows. It is from the time of the latter act (the acceptance by the authorities) that the person is included in the population of the receiving country, either as 'immigrant' or classified within other inflows. With this approach, there would be a precise date for the change of residence, most likely with an empirical evidence given by the administrative decision of the receiving country.
54. Conversely, the person is not part of the population of the hosting country until the declaration of 'main residence', regardless of how long might be his/her stay in the country. This is coherent with the view that a migration decision may as well develop over a long process, with a slow progressive detachment from the country of origin.
55. However, there is a variety of flows that may be not relevant from the point of view of migration; for instance, it may not be wished to include in its population persons visiting the country for holidays, even though that may meet the formal requirements reported above. In fact, those persons would not establish a new residence, but simply declare a place for temporary stay. In order to remove a large part of these cases, it may be required that the authorities must allow the stay of the person for a period larger than a predefined time interval,

such as 90 days or even one year. Contrary to the duration of stay, that would be a *prospective* time period on the basis of which the would-be migrant is allowed to take residence by the authorities. Lacking such permission, a person would only be a visitor in the country with a place of temporary stay, even though (s)he may have applied for residence. Granting a permission to stay for a period of over 90 days can be considered a sufficient demonstration of recognition by the authorities that, matched with a declaration of 'main' residence, identifies a 'change of (main) residence' at the date of the issuance of the permission. Such a period has no impact on the timeliness of the data, because it only defines the eligibility of the person to become a resident in the new country and not the interval of time that must elapse before being recognized as migrant. In a perfect statistical system fully interconnected with the administrative system of the country, the person could then be immediately counted in the population of the receiving country, and even daily statistics of inflows (including 'immigrants') could be produced.

56. It should be noted that a person may have more than one residence, even within the same country. The qualification of 'main' is thus necessary to identify the principal place of personal interests, which must be unique for each person. In principle, such an identification should be provided by the persons themselves, but alternative approaches could be envisaged, such as the 'main residence' being identified by the national authorities among the possible alternative residences a person may have in the same country. Dropping the requisite of 'main' implies that multiple places of residence are allowed across countries (and within countries) without defining which one is the principal, and consequently double counting the persons. This latter is an issue also in the 'usual residence' framework though.
57. It is at the very same date of the acceptance in the new country of residence that the same person should also be included in the outflows of the country of previous residence and excluded from its population. Like for the usual residence, this is a problematic aspect, as it may be expected that the declaration of 'main residence' is not preceded by a declaration of departure to the authorities of the previous country of residence (note that a residence could be kept in that country, but not the 'main' one). Data exchange can play here an important role, as well as the "mirror" statistics of inflows from other countries (see also UNECE 2010). This aspect is known since very long time to the official statistics community, as already at the end of the nineteenth century a resolution of the International Statistical Institute (ISI 1892:28-29) invited the countries to exchange individual data on foreign citizens after the population census. Nowadays, privacy and security issues are a great concern for the society when it comes to the processing of individual data, but there are examples of European countries which have established an efficient system of data exchange. Alternatively, methods of detection of "signs of (administrative) life" could be developed and applied to infer about the actual presence of the person in the country, but the issue of whether a place is still the 'main residence' remains unresolved. A solution here could be to consider the last declared residence as the main one.

## VIII. On further concepts related to migration

58. Migration is often declined in a large variety of sub-components, reflecting the complexity and multidimensional nature of this phenomenon. There is therefore a number of additional concepts that are generally almost undefined in the current international recommendations, such as return migration, circular migration, forced migration, labour migration, seasonal migration, etc.

59. In the case of *return migration*, the current international recommendations define as 'returning migrants' the “*persons returning to their country of citizenship after having been international migrants (whether short-term or long-term) in another country and who are intending to stay in their own country for at least a year*” (UNSD 1998:94). Under the proposed theoretical framework, that should be translated in the inflows of 'natives' and 'new citizens'. However, because of the above-definition of emigration, that should be more properly identified with the inflow of 'natives' alone: in fact, return migration so defined would be the specular measure of the emigration (which is the outflow of 'natives'). Hence, in the proposed framework, 'return migration' is the inflow of 'natives' in the period of reference.
60. Concepts related to the timing of the migration events would not be implemented differently from the current practice but for the new meaning of immigration and emigration. This would be the case for instance of *circular* and *seasonal immigration / emigration*. The concepts of circularity and seasonality could actually be extended to cover also the other flows not classified as 'migration' (e.g., circular/seasonal flows of 'new citizens'). However, because most likely these particular flows may not be marked by formal changes of residence at each round, they should be better captured with dedicated statistical operations.
61. *Internal migration* is currently understood as the migration flows between geographic areas within a same country. Under the proposed theoretical framework, 'migration' is either the inflow of foreign-born foreign citizens ('immigration') or the outflow of native-born national citizens ('emigration'), without so far specifying whether the crossed border is international or internal to the reporting country. In the latter case, those labels could be further qualified by adding 'internal': thus, 'internal immigration' would be the inflow of foreign-born foreign citizens from another geographic area within the country and 'internal emigration' the outflow of native-born national citizens towards another geographic area within the country. These inflows and outflows should be accompanied by the other flows (both international and internal) to obtain the entire population change due to changes of residence.
62. *Net migration* is a common synthetic measure of the contribution of migration to the population change, although criticized when used for studies of geographic mobility (e.g., Rogers 1990). In the approach here proposed, 'net migration' would keep its value as inner measure of population turnover, where the outflow of 'natives' is compensated by the 'immigrants'. The net impact of all changes of residence on the population change should instead be labelled as '*net flow*', computed as difference between all inflows (including 'immigration') and all outflows (including 'emigration').

## IX. Synopsis of alternative definitions

63. The **Table 3** reports the new terminology in its relation with the classifying characteristics (country of birth and citizenship), where foreign-citizens and foreign-born persons can be considered in their extended meaning covering other remaining categories (respectively stateless persons, persons with unknown citizenship and persons with unknown country of birth).
64. To gain a better understanding of the overall conceptual framework, it may as well be useful to list the various definitions that have been proposed above and to compare them with what is currently recommended. This is shown in the **Table 4** below.

Table 3  
Terminology by classifying characteristics

Stocks	Native-born	Foreign-born
National citizens	Natives	New citizens
Foreign citizens	Descendants of immigrated persons	Immigrated persons

Inflows	Native-born	Foreign-born
National citizens	Return migration	Inflow of new citizens
Foreign citizens	Inflow of descendants	Immigration

Outflows	Native-born	Foreign-born
National citizens	Emigration	Outflow of new citizens
Foreign citizens	Outflow of descendants	Outflow of immigrated persons

Table 4  
Comparison of main migration features in two theoretical frameworks

Migration feature	Current recommendations	Alternative view
Residence	<i>Usual</i> residence: place of daily rest for at least one year	<i>Main</i> residence: place of declared residence that is the most important for the personal interests.
Eligibility to residence	Duration of stay for at least one year	Permission to stay for over 90 days
Assessment	Prospective ( <i>intention to stay</i> ) and/or retrospective ( <i>actual stay</i> )	Prospective
Migration	Change of place of <i>usual</i> residence	Change of place of <i>main</i> residence
Inflow	Arrivals, it may include also non-migrants	<i>Arriving residents</i> : all persons setting the new place of <i>main</i> residence in the reporting country
Immigration	All persons from abroad setting the new place of <i>usual</i> residence in the reporting country (immigrants)	Inflow of foreign-born foreign citizens (immigrants). Sub-group of the total inflow.
Other inflows	Unused	Inflows of residents other than immigrants
Outflow	Departures, it may include also non-migrants	<i>Leaving residents</i> : residents setting the new place of <i>main</i> residence outside the reporting country.
Emigration	Residents setting the new place of <i>usual</i> residence outside the reporting country	Outflow of native-born national citizens (natives). Sub-group of the total outflow.
Other outflows	Unused	Outflows of residents other than emigrants

Migration feature	Current recommendations	Alternative view
Migrant	Either a person undertaking a migration (flow) or a person having experienced a migration (stock)	Either an immigrant or an emigrant, thus only for flows. Not to be used for stocks ( <i>immigrated</i> persons).
Return migration	National citizens returning to their country of citizenship after having been migrants (whether short-term or long-term) in another country and who are intending to stay in their own country for at least a year (thus excluding short-term)	Inflow of native-born national citizens (natives).
Persons with foreign background	Persons whose parents are both born abroad. Alternatively, foreign citizens and persons who have received national citizenship by naturalization or other means.	Foreign-born foreign citizens (immigrants/immigrated persons), foreign-born national citizens (new citizens) and native-born foreign citizens (descendants of immigrated persons).
Presence in the place of residence	Required (continuously or for most of the time).	Not mandatory. The main residence can still be in the country of origin while the person is living abroad.
Empirical evidence of migration	Usually self-declaration in statistical surveys or inferred from administrative decisions (visa, residence permits, etc.). In few cases, inferred from “signs of administrative life”.	Administrative decision of permission to stay on related declaration of residence or other legal act/document. It might be approximated with self-declaration in statistical surveys.
Date of the event	Date of arrival.	Date of recognition by the authorities.

## X. Conclusive remarks

65. The alternative view proposed in this note tries to re-focus the migration statistics on the phenomena of higher policy interest. This is attempted by revising the terminology – nowadays an important source of confusion – and by proposing a new concept of residence. For both of them, the proposals often simply reflect the actual practice: the step ahead done here has been to put those current practices in a coherent theoretical framework and to be more precise in what is covered in reality, making that explicit in the new definitions. Continuing to rely on the “inertia” of past definitions which are not implemented in practice might not be the wiser choice.
66. Whilst the idea that the proposed definition of migration does not cover the entirety of the flows may be shocking at a first sight, it does try to establish a better link between policy and statistics, as well as with the common understanding. Reading migration reports having in mind the new framework might actually show the pertinence of the new definitions. What it is as well important, it is that these proposals are nested in a wider frame of population change. There is no new migration definition without altering the definition of population; however, this does not prevent from identifying new demographic balancing posts (here the “non-migration” flows), which may well be the target of specific policy interests (e.g., integration policies for descendants).
67. Proposing alternative views on the definition of migration is obviously not an easy undertaking, otherwise a satisfactory solution would have been found during the hundred years from the first comparisons of migration statistics. Hence, the new framework would still benefit of further conceptual work; in particular, the relation between presence on the territory and place where the main interests of the person are would deserve further thoughts.

68. The new framework has the potential plus of a much higher timeliness of the data. At the same time, it would benefit of a properly developed statistical architecture including data exchange. This is a new challenging area in which efforts are certainly needed, but where it is possible to take advantage of the experience of some countries. The level of detail at which the information could be exchanged might be designed such to preserve the confidentiality of the data whilst providing the input necessary to the demographic balances in all their disaggregation. This would be the next challenge to tackle.

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