Using administrative and statistical data sources for estimating international migration trends for Serbia

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Population projections for the Republic of Serbia

• The Statistical Office of the Republic of Serbia has been producing population projections since the year 1981, based on an estimated population number consistent with the most recent decennial census.

• These are medium-term projections, produced using the cohort-component method, covering a thirty-year period and showing the projected number of population by five-year age groups and sex.
National source of migration data

Bearing in mind the availability of vital events data and different demographic indicators for many decades, it may be considered that the hypotheses of future trends in fertility and mortality are based on good practice.

But, an issue comes with making hypothesis on migration trends

The Ministry of Interior of the Republic of Serbia is the main relevant administrative source of data on migration statistics.

Database on foreigners (residence permits)

Database on registration of residence (persons, with Serbian citizenship who the first time apply for residence in the referent year and citizens that reported temporary residence abroad for more than 90 days)
National source of migration data

The main issues related to databases on migration

• Undercoverage of data collection

• Persons leaving Serbia do not register their stay abroad for more than 90 days, although this is legally prescribed as an obligation

• There is no information on previous residence, reasons nor intended duration of staying in the country when person first time apply for residence in Serbia

What we did in this circumstances...
Assumptions on migration

• Traditionally, the scope of migration movements was estimated using the method of two consecutive population censuses including data on natural population movements in the inter-census period.

• The lack of data on external migration also presents a problem when calculating the estimated population in the after census period. This makes us aware of the fact that the current population estimate does not correspond to the real situation.

• Going towards the new population census 2021, we tried, for the time being, to estimate the extent of migration trends from the year 2011 to the present, using the administrative and statistical data sources.
Assumptions on migration

• It is important to say that this idea was also supported by United Nations Population Fund (UNFPA) who provided a financial assistance for the ad-hoc project entitled "International migration estimation and correction of the population estimates production“

• One of the objectives of this six-month project was to examine all relevant data sources on international immigration and emigration

• The key theme of this presentation is actually to offer an informative review of the activities we have undertaken within this project (without showing the final results, since the project officially ends on November 30).
Mapping data

First step - gathering information

INTERNATIONAL
- Eurostat databases
- OECD
- National statistics
- Other relevant sources/information

NATIONAL
- Ministry of Interior
- Population census
- School enrollment and foreign students
- Live births born abroad
- Central Register of Social Contributions Payers
- Commissariat for Refugees and Migration
Migration data request

- **Next step – request submitted and addressed to the countries recognized as top destination countries according to the statements in population census**

1 Migrants moving to/from the country, to whom Serbia is the country of previous/next usual residence, disaggregated by age and sex

2 Residence permits issued to persons whose previous country of usual residence was Serbia, disaggregated by age and sex

3 The alternative information: number of migrants with Serbian citizenship and Serbia as country of birth, disaggregated by age and sex

...definitions of place of usual residence and international migration, taken from the EU Regulation 862/2007, as regards migration statistics...
<table>
<thead>
<tr>
<th>Country (order by name)</th>
<th>Sent data on request</th>
<th>Summary</th>
<th>Sent info or link</th>
<th>Comment</th>
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<td>All tables completed, lack of emigrants 2016-2018</td>
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<td>Several data from different Canadian sources were obtained; residence permits taken into consideration</td>
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<tr>
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<td>First and all valid residence permits</td>
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<td></td>
<td>We received the answer that the latest data on migration from the Census 2018 will be available in late 2019</td>
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<td>✓</td>
<td>Data on international migration for permanent residence - administrative data only</td>
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<td>Source: Portuguese Immigration and Borders Service - SEF</td>
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<td>Data available only for years 2016 and 2017; response contains the explanation related to data methodology</td>
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<td>RESIDENCE PERMITS (EUROSTAT)</td>
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Assumptions on migration

- Next step – implementation of defined criteria for estimating migration trends in relation to certain country and analysis of all data by individual countries, for the period 2011-2018
Assumptions on migration

- **Next step** – implementation of defined criteria for estimating migration trends in relation to certain country and analysis of all data by individual countries, for the period 2011-2018

- The main criteria:
Assumptions on migration

Next step – implementation of defined criteria for estimating migration trends in relation to certain country and analysis of all data by individual countries, for the period 2011-2018

The main criteria:

1. If data were obtained on the request and relate to migrants whose previous/next residence is Serbia - these data are accepted as components of the migration balance relative to the sending country
Assumptions on migration

**Next step – implementation of defined criteria for estimating migration trends in relation to certain country and analysis of all data by individual countries, for the period 2011-2018**

**The main criteria:**

1. If data were obtained on the request and relate to migrants whose previous/next residence is Serbia - these data are accepted as components of the migration balance relative to the sending country.

2. If the received data do not contain the specified migrant category as it was described in criteria 1, the Eurostat database was consulted – net migration is based on data on migrants by previous/next residence (Tables: MIGR_IMM5PRV, MIGR_EMI3NXT)
Assumptions on migration

3. If only residence permits data were obtained on request (generally identical to the data available in the Eurostat database) and there is no information in Eurostat data compilation (Tables mentioned in criteria 2) for those countries, the decision is to take over the residence permits with length of 12+ months for the emigration from Serbia; and as number of immigrants – the data of the Ministry of Interior from the database of foreigners.
Assumptions on migration

3. If only residence permits data were obtained on request (generally identical to the data available in the Eurostat database) and there is no information on Eurostat data compilation (Tables mentioned in criteria 2) for those countries, the decision is to take over the residence permits with length of 12+ months for the emigration from Serbia; and as number of immigrants – the data of the Ministry of Interior from the database of foreigners.

4. If there is no answer to request but the data on residence permits are available in Eurostat database (first permits by reason, defined validity and citizenship - Table MIGR_RESFIRST, where Serbian citizenship is considered), as in criteria 3, the permits with length of 12+ months were taken as number of emigrants and foreigners in Serbia for immigration part.
Assumptions on migration

Important note for cases 3 and 4: when the figures show a significant increase of the number of residence permits with duration of 12+ months, the decision is to reduce the total number of permits to be taken into account and to submit only those with reason of stay such as family formation, education and work. This is justified by fact that there is a huge undercoverage of persons who is coming back to Serbia, which reflects a large irregularity in the volume of negative migration balance.
Assumptions on migration

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5. If data obtained on request are incomplete or only informative, and if there is no data in the Eurostat database, the migration balance is the result of an analysis of other data sources depending on whether a certain country belongs to the group of destination countries of Serbian emigrants or to the group of countries from which migrants mostly come to Serbia.
Assumptions on migration

• States that were considered under criterion 5

United Kingdom

• UK Source: International Passenger Survey estimates of long-term international migration, citizenship group by sex, age, country of last or next residence (estimates and CI were given in thousands - rounded to the nearest hundred)
• Serbia: Population census 2011 and Ministry of Interior RS
• Eurostat: UK First permits by reason (Family, Education, Work), length of validity (12+ months) and citizenship (RS)

Net migration from UK Source
≈ Census 2011 (arrivals - departures in 2010 and 2011)
≈ Foreigners with temporary residence in Serbia (MI) – Number of First residence permits (Eurostat)

Canada

• CA Source: IRCC, Permananet Residents May 31
  ❑ Work and Study Permits (excluding Extensions) Issued for Applicants with Country of Residence Serbia
  ❑ Permanent Resident Applications Approved for Applicants with Country of Residence Serbia ;
  ❑ Admissions of Permanent Residents from Serbia as Country of Citizenship and Country of Birth, by Age Group and Gender, 2011-2018
• Serbia: Population census 2011 and Ministry of Interior RS

Foreigners with temporary residence in Serbia (MI) – Number Work and Study permits (IRCC)
Assumptions on migration

• States that were considered under criterion 5 (continuation)

United States

  The Yearbook of Immigration Statistics is a compendium of tables that provide data on foreign nationals who are granted lawful permanent residence (i.e., immigrants who receive a “green card”)

• Serbia: Population census 2011 and Ministry of interior RS
  Census 2011 (arrivals of person ever living abroad for more than a year - departures in 2010) ≈ Foreigners with temporary residence in Serbia (MI) – {New arrivals + half Number of adjustment of status} (US)

New Zealand

• NZ answer to request: Data from the 2018 Census will not be available until later this year and that we should contact NZ Immigration for data on residence permits

• OECD source: New Zealand Immigration Service and New Zealand Statistics, Flow data based on residence permits or other sources;
  Inflows: Residence approvals;
  Outflows: Permanent and long term departures (foreign-born persons departing permanently or intending to be away for a period of 12 months or more).

Outflows - Inflows (country of birth/nationality: Serbia, OECD)
Assumptions on migration

• **States that were considered under criterion 5 (continuation)**

**Turkey**

• **On request**: Data for 2016 and 2017 - Immigrants with Serbian citizenship born in Serbia and explanation in addition

• **Source**: TurkStat, Address Based Population Registration System (ABPRS, 2013-2018) "Foreign Population by Sex, Country of Citizenship and the First Year of Residence in Turkey, 2018"


• OECD, Population **Census 2011** (Serbia)

• **Ministry of Interior**: the registration of residence has persons of all ages so that we assumed the families immigrate to Serbia and this corresponds to the volume of emigration of person with Serbian citizenship from Turkey

According to these sources, Serbia mostly has positive migration balance in relation to Turkey on annual bases

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EMIGRATION</th>
<th>IMMIGRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Foreigners (average 2014-2017) ABPRS, Turkey</td>
<td>First residence in Serbia, MI RS</td>
</tr>
<tr>
<td>2012</td>
<td>Foreigners (average 2014-2017) ABPRS, Turkey</td>
<td>First residence in Serbia, MI RS</td>
</tr>
<tr>
<td>2013</td>
<td>Foreigners (average 2014-2017) ABPRS, Turkey</td>
<td>First residence in Serbia, MI RS</td>
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<tr>
<td>2014</td>
<td>Foreigners ABPRS, Turkey</td>
<td>First residence in Serbia, MI RS</td>
</tr>
<tr>
<td>2015</td>
<td>Foreigners ABPRS, Turkey</td>
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<tr>
<td>2018</td>
<td>Foreigners ABPRS, Turkey</td>
<td>First residence in Serbia, MI RS</td>
</tr>
</tbody>
</table>
Assumptions on migration

• **States that were considered under criterion 5 (continuation)**

**Bosnia and Herzegovina and Montenegro**

- **RS Source**: Number of students in referent year
- **Ministry of Interior RS**: Number of first residence of persons with Serbian citizenship born in Bosnia and Herzegovina/Montenegro
- **Ministry of Interior RS**: Number of foreigners whose previous residence was Bosnia and Herzegovina/Montenegro
- **Population Census 2011 (Serbia)**

Bosnia and Herzegovina and Montenegro are the Western Balkan countries that can be considered as the countries with the highest real number of emigrants and potential migrants towards Serbia. Mostly, these are persons who come for study, which is confirmed by the register of enrolled students by academic years. Also, the number of first registrations of residence of persons born in BA/ME, aged 15-39, is almost half of the total number of reported persons. In the case of BA, many students may also be considered as commuters and are not part of the Serbian usual resident population because of the actual time of the year they spend in Serbia. According to the population census 2011, the numbers of arrivals from those countries are comparable with immigrants previously described.

*First residence of persons born in BA/ME + Foreigners from BA/ME – absence from Serbia for more than 3 months*
Assumptions on migration

• States that were considered under criterion 5 (continuation)

France

Components of net migration - Serbia related to France

- Emigration to France (data on request)
- Immigration to Serbia (estimates based on arrivals trend from period 2002-2010, Census data)
Assumptions on migration

• States that were considered under criterion 5 (continuation)

**Germany**

*Source:* Federal Statistical Office, Wiesbaden

Migration between Germany and foreign countries: Germany, years, countries of origin / destination, nationality

Net migration - Serbia relate to Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Net migration based on Germany data</th>
<th>Poly. (Net migration based on Germany data)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2018</td>
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</tbody>
</table>
Assumptions on migration

6. If only data from the MI databases were available, several countries were selected, recognized with a slightly more significant number of foreigners with temporary residence in Serbia and the number of persons who had reported their absence from Serbia for more than 3 months.

General remark on MI databases on residence: the challenge and assignment for future work is to improve the quality and completeness of information and data concerning first residence in Serbia, since the quantity of registered cases represents the great potential as regards number of immigrants who can be included in migration estimates.
# Methodology scheme for migration estimates

| 1 Migration flows (request) | • AU, AT, BY, HU, RO, SI, ES, CH  
|                            | • Exception MK |
| 2 Migration flows (Eurostat) | • BE, BG, HR, DK, EE, FI, IS, IT, LI, LT, NL, NO, SE, CH  
|                            | • Exception SK |
| 3 Residence permits (request) + MI data | • CY, LU, MT, PL, PT |
| 4 Residence permits (Eurostat) + MI data | • CZ, IE  
|                            | • Exception EL |
| 5 Information/data (requests) + Different sources | • UK, CA, US, NZ  
|                            | • FR, DE  
|                            | • BA, ME  
|                            | • TR |
| 6 Ministry of Interior RS | • AL, CN, LY, SY, UA, AE |
Assumptions on migration

Dealing with gaps and extreme values

Exceptions in methodology applied

Given the time when the request was sent to statistical institutes (July 2019), the values for 2018 were mostly unavailable

Common facts about emigration:
(1) data series on emigration have linear trend ⇒ linear regression was applied
(2) data series on emigration have nonlinear trend ⇒ polynomial regression was applied (order 2)

Common facts about immigration:
(3) data series on immigration have no trend ⇒ moving averages are taken
Dealing with gaps and extreme values

**Example 1  Romania**

**Example 2  Iceland**
Exceptions in methodology applied

Exception when applied methodology criteria 1

ex. North Macedonia

Based on the available national sources: Ministry of Interior, the number of students with Macedonian citizenship and the number of arrivals from North Macedonia to Serbia, recorded in the period 2002-2011, according to the statements in the 2011 Census, we consider that the obtained data on emigration to Serbia are incomplete, so we have joined them with data on Macedonians who are staying in Serbia, registered in the database of foreigners and students, taking into account the age-gender structure in all sources in order to avoid double counting.
Exceptions in methodology applied

Exception when applied methodology criteria 2

ex. Slovakia

Comparing data in Eurostat databases: migration flows and residence permits, there is a large difference in the number of persons who go from Serbia to Slovakia and the number of residence permits issued to persons with Serbian citizenship. Also, given the real situation that many Slovaks from Vojvodina emigrate to Slovakia for the reasons of work and education, the number of emigrants was modeled according to the ratio of migration flow data to residence permits data. The foreigners that came from Slovakia and registered in the Ministry of Interior represent our immigration.
Exception when applied methodology criteria 4

ex. Greece

According to information from the 2011 Census, 214 people left Serbia in 2011, which is roughly the total number of residence permits in 2011. Also, annually, about 50 people were coming to Serbia in the period 2002-2010, which is comparable with the annual number of students of Greek citizenship in Serbia. The proposal is that Serbian emigration is represented by the number of permits and immigration by the number of students.
Conclusions

What makes all this very important?

1. The inclusion of the external migration component ensures a more realistic value of the current estimated population.
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1 The inclusion of the external migration component ensures a more realistic value of the current estimated population.

2 These results will facilitate predicting the future migration trends, after the population Census 2021, but at the same time, the Census will be an assessment of the success of the adopted methodology on external migration.
Conclusions

What makes all this very important?

1 The inclusion of the external migration component ensures a more realistic value of the current estimated population.

2 These results will facilitate predicting the future migration trends, after the population Census 2021, but at the same time, the Census will be an assessment of the success of the adopted methodology on external migration.

3 This project can contribute to the official establishment of the survey on international migration at our Statistical Office or, at least, analytical work and collected data can create a good basis for further work and present an example of good practice.
Using administrative and statistical data sources for estimating international migration trends for Serbia

Thank you!