Measuring International Migration: An Example from the U.S. Census Bureau

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Demographic Analysis and Population Projection Workshop
Arab Institute for Training and Research in Statistics (AITRS)
Amman, Jordan

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Outline

- Common terms
- International migration data
- Methods for measuring migration
- U.S. example
  - National totals
  - Developing subnational estimates
  - Components of NIM
- Conclusion
Common terms

- **International Migration** is the movement of people across a national border.
- **Nativity status** refers to whether a person is native or foreign born.
- The term **foreign born** refers to anyone who is not a U.S. citizen at birth.
- Foreign-born **stock** is the foreign-born population living in the United States.
- Migration **flows** are the number of people moving within a given time period.
Common terms

- **Immigration** is the migration *to* a country
- **Emigration** is the migration *from* a country
- **Net migration** is the combination of immigration and emigration (ins – outs)
- **Gross migration** is a measure of the total volume of migration (ins + outs)
International migration data

- Sources of data
  - Population register
  - Administrative records
  - Population census
  - Household surveys
    - Demographic / labor-force survey
    - Migration-specific survey
International migration data

- Specific variables
  - Place of birth (country)
  - Year of entry
  - Citizenship
  - Residence one year ago (ROYA)
  - Residence five years ago
The U.S. Census Bureau produces annual estimates of net international migration

- Geographic Area (nation, states, and counties)
- Demographic detail (age, sex, race, and Hispanic origin)

These estimates are based in part on data collected in censuses and surveys

Projections of the U.S. population are also made using assumptions about net international migration
U.S. Estimates of NIM

- We estimate international migration in several parts:
  - Foreign-born immigration
  - Foreign-born emigration
  - Net migration between the United States and Puerto Rico
  - Net migration of natives
National Totals

- We develop estimates of the national total for each component of NIM
  - Subnational estimates are controlled to the national totals
    - State
    - County
Sub-national Estimates

- Distributive method is used to produce sub-national estimates for each component of NIM
  - Data from the American Community Survey (ACS)
  - The ACS is a continuous survey of approximately 3.5 million housing units per year
  - Distributions or “proxy universes” from the ACS are used to approximate the population being estimated
Sub-national Estimates

Example:
- Los Angeles County, California
- National total 1,000,000
- Percentage of the proxy universe living in LA County = 10%
- Estimate for LA County = 1,000,000 * 0.10 = 100,000
Components of NIM

Foreign-born immigration

Foreign-born emigration

Net Puerto Rico migration

Net Native-born migration

Net International Migration (NIM)
Foreign-Born Immigration

- The annual *inflow* of migrants who are not a U.S. citizen at birth.
- The largest component of NIM
  - 72.5% of gross migration
- National total estimated using ACS data
  - Foreign-born population whose residence one year ago was abroad (ROYA)
  - Two groups: Mexico and Other Countries
- Proxy universe:
  - Foreign-born population who entered the United States in the past 5 years by the two groups
Annual Estimates of Foreign-Born Immigration to the United States: 2010-2015

Foreign-Born Emigration

- The annual *outflow* of migrants who are not a U.S. citizen at birth.
- Second largest component of NIM
  - 18.1% of gross migration
- National total estimated using 5-year ACS file
  - Residual method for selected immigrant groups
  - 9 place-of-birth, sex, and period-of-entry cohort groups
- Proxy universe:
  - Foreign-born population by the 9 estimation groups
## Foreign-Born Emigration

### Place-of-birth, sex, and period-of-entry cohort groups

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico, males, entered US within last 10 years</td>
<td></td>
</tr>
<tr>
<td>Mexico, females, entered US within last 10 years</td>
<td></td>
</tr>
<tr>
<td>Mexico, entered US more than 10 years ago</td>
<td></td>
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<tr>
<td>Other Latin America</td>
<td></td>
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<tr>
<td>Europe and Canada, entered US within last 10 years</td>
<td></td>
</tr>
<tr>
<td>Europe and Canada, entered US more than 10 years ago</td>
<td></td>
</tr>
<tr>
<td>Asia, entered US within last 5 years</td>
<td></td>
</tr>
<tr>
<td>Asia, entered US more than 5 years ago</td>
<td></td>
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<tr>
<td>All Other, including Africa</td>
<td></td>
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</tbody>
</table>
Foreign-Born Emigration

1. Use the residual method to calculate emigration rates
2. Annualize the rates
3. Apply the rates to at risk populations from the ACS
Net Puerto Rico Migration

- Puerto Rico is an unincorporated territory of the United States
- We estimate net migration between the United States and Puerto Rico
- Third largest component of NIM
  - 3.4% of gross migration
- National total estimated using 1-year ACS and PRCS files
  - ROYA in US and ROYA in Puerto Rico
- Proxy universe
  - The Puerto Rican-born population who entered the U.S. within 10 years of the survey year
Net Native-born migration

- Migration of the population who are U.S. citizens by birth
- Fourth largest component of NIM
  - 3.2% of gross migration
- National total estimated using foreign census method
  - Census and population register data from 84 countries
  - Residual estimate (time1 and time2)
- Proxy universe
  - The non-military, native-born population whose residence one year ago was abroad or in a different state
Conclusion

- The U.S. Census Bureau uses a combination of census and survey data to estimate Net International Migration.
- We produce estimates for the nation, states, and counties by age, sex, race, and Hispanic origin.
- Survey data on residence one year ago (ROYA) is used to estimate foreign-born immigration and net migration between the United States and Puerto Rico.
- Residual (indirect) method is used to estimate foreign-born emigration and net native migration.
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