Use of administrative records in Chile's international immigration statistics. Micro and macro data integration

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Data sources: censuses as a traditional source for measuring immigration stocks

Graph 1. Percentage of foreigners and foreign-born population (1854-2017)

Source: Population and housing censuses 1854-2017

Notes: From 1854 to 1952, the indicator represents the total number of foreigners over the total number of people enumerated. From 1960 to 1982, it represents the total number of people born abroad over the total number of people enumerated. From 1992 to 2017, it represents the total number of people born abroad who were habitual residents (excluding temporary residents) over the total of the habitually resident population.

Source: National Statistics Institute of Chile.
1. Significant increase in immigration after 2017 census
2. Different official figures for the stock of immigrants in Chile in 2018
3. Need for information to generate public policies

Source: Own elaboration based on PDI data
Data sources: administrative data for measuring regular immigration flows

There are at least four institutions involved in the management of the migratory flow, which has led to databases with varying concepts, objectives, and quality.

<table>
<thead>
<tr>
<th><strong>SERMIG</strong></th>
<th><strong>MINREL</strong></th>
<th><strong>PDI</strong></th>
<th><strong>SRCeI</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>National Migration Service (Ministry of Interior)</td>
<td>Ministry of Foreign Affairs</td>
<td>Investigations police</td>
<td>Service of Civil Registration and Identification</td>
</tr>
<tr>
<td>Visa registry in Chile</td>
<td>Consular visa registry (outside the country)</td>
<td>Border control registry</td>
<td>Registry of vital events (births, deaths, marriages)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Place of residence**</td>
<td>Identification number</td>
</tr>
</tbody>
</table>

** for cases of visas requested outside the country
Methodology for estimating foreigners residing in Chile (2018-2021)

Census 2017-04-19 "Stock"

Administrative records 2017-04-20 to 2021-31-12 "Flow"

Estimate of foreigners resident in Chile 2021-31-12

Macro integration

Micro integration

- Aging
- Census omission

Visa registry in Chile
Consular visa registry
Border control registry
Deaths

People with residence permits application
Minus people who left the country
Minus people who have died
Linking variables: micro level

Links by national identification number (RUN) in Chile
(Provided by Civil Registry)

Links by Algorithm
(combination of variables)
Table 1. Percentages of linkage of SERMIG and MINREL data with PDI border data, by year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Sermig</th>
<th>Minrel</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>93.7%</td>
<td>72.2%</td>
<td>91.1%</td>
</tr>
<tr>
<td>2020</td>
<td>94.0%</td>
<td>75.6%</td>
<td>91.7%</td>
</tr>
<tr>
<td>2019</td>
<td>93.7%</td>
<td>47.7%</td>
<td>88.5%</td>
</tr>
<tr>
<td>2018</td>
<td>92.6%</td>
<td>78.9%</td>
<td>91.8%</td>
</tr>
</tbody>
</table>

*Source: Sermig*
### Table 2. Processing of the 2018-2021 registration component.

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning</strong></td>
<td>595,205</td>
<td>840,279</td>
<td>874,252</td>
<td>948,844</td>
</tr>
<tr>
<td><strong>Sermig</strong></td>
<td>562,120</td>
<td>744,277</td>
<td>765,363</td>
<td>933,019</td>
</tr>
<tr>
<td><strong>Minrel</strong></td>
<td>33,085</td>
<td>96,002</td>
<td>108,889</td>
<td>115,825</td>
</tr>
<tr>
<td><strong>Subtraction</strong></td>
<td>78,195</td>
<td>174,359</td>
<td>196,615</td>
<td>248,926</td>
</tr>
<tr>
<td><strong>Departures</strong></td>
<td>77,967</td>
<td>173,732</td>
<td>195,323</td>
<td>247,416</td>
</tr>
<tr>
<td><strong>Deaths (Civil Registry)</strong></td>
<td>228</td>
<td>627</td>
<td>1,292</td>
<td>1,510</td>
</tr>
<tr>
<td><strong>Result</strong></td>
<td>517,010</td>
<td>665,920</td>
<td>677,637</td>
<td>699,918</td>
</tr>
</tbody>
</table>

**Source:** Sermig

### Diagram
- **Census 2017:** 782,472
- **Administrative records 2017-2021:** 699,918
- **Estimate of foreigners 2021:** 1,482,390

**Men:** 744,213

**Women:** 738,177
### Some Demographics Results by component

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census</td>
<td>49.7%</td>
<td>50.3%</td>
<td>Census</td>
<td>49.7%</td>
<td>50.3%</td>
</tr>
<tr>
<td>Records</td>
<td>53.9%</td>
<td>46.1%</td>
<td>Records</td>
<td>50.8%</td>
<td>49.2%</td>
</tr>
</tbody>
</table>

- Venezuelans became the largest immigrant group in Chile.

**Note:** for visual purposes other countries (with fewer cases) were left out of this graph.
Some Demographics

Estimate of foreigners by component according to region of habitual residence. 31 December, years 2018 – 2021

- Although the Metropolitan region continues to have the highest concentration of migrants in 2021 (61.5%), the proportion dropped in comparison with the estimate in 2018 (62.6%)
- There was an increase in post-census flows in other regions of the country.

Legend
- Regions with a greater proportion of census data
- Regions with a greater proportion of administrative data
Using micro integration for estimating some of the international migrants with probable irregular status (by Sermig)

Absence of Chilean National ID Number (RUN)
Absence of other identity number variables (passport or other ID number)
Typing errors in the databases
Probabilistic Record linking proposed using:
Names
Surnames
Date of Birth
Sex
Processing using R
Use of Fuzzy matching methods
References


- INE web page on demography and migration (Spanish version): [https://www.ine.cl/estadisticas/sociales/demografia-y-vitaless/demografia-y-migracion](https://www.ine.cl/estadisticas/sociales/demografia-y-vitaless/demografia-y-migracion)

- Sermig web page on statistics (Spanish version): [https://serviciomigraciones.cl/estadisticasmigratorias/](https://serviciomigraciones.cl/estadisticasmigratorias/)