Adding Immigrant Admission Category to the Canadian Census of Population

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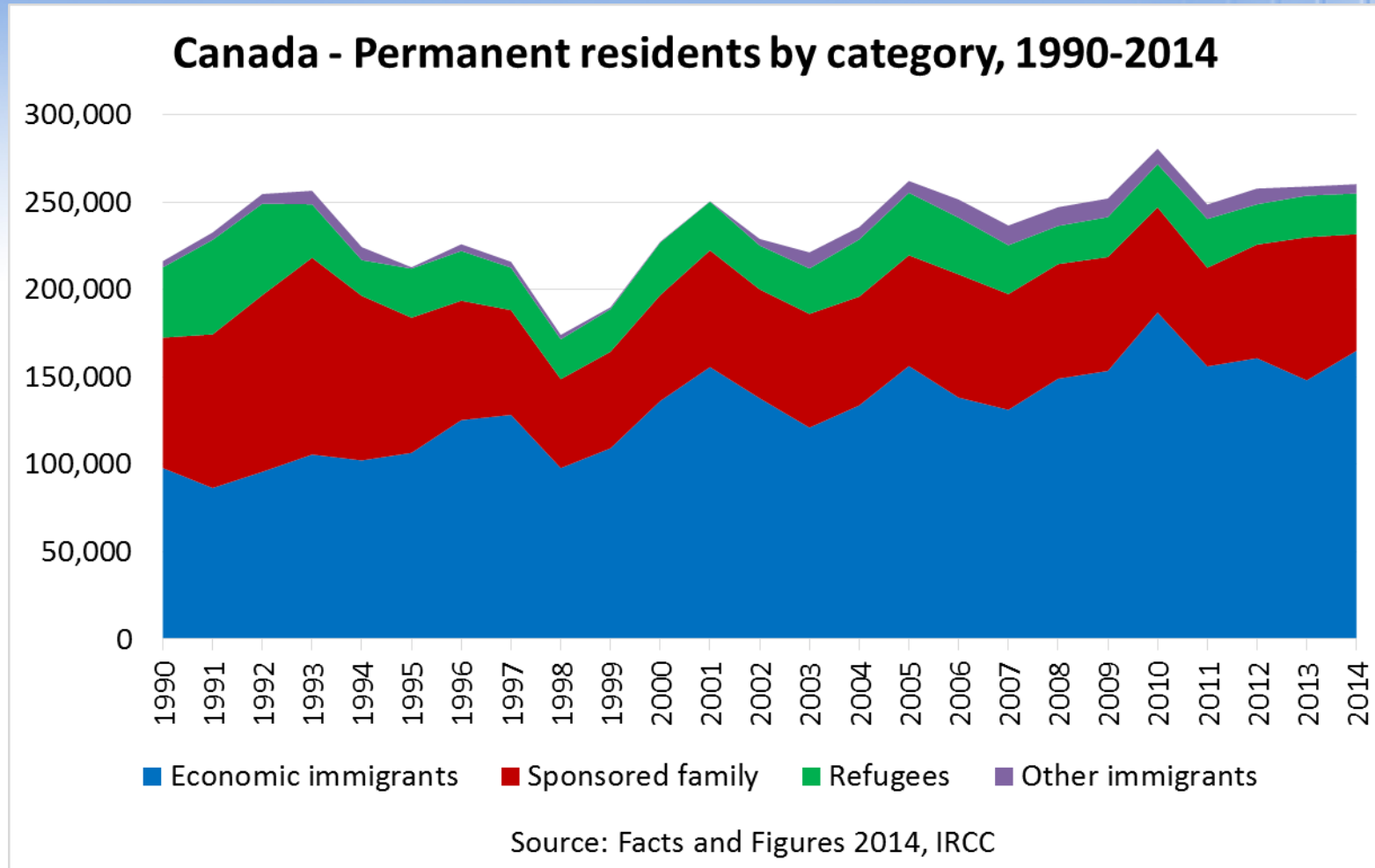
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- **2016 Census of Population**
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  - Addressing inconsistencies between census responses and linked administrative values

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Immigrant admission category

- **Immigrants are admitted into Canada for different reasons**
  - Economic immigrants: Contributing to Canada's economy
    - Skilled workers
    - Business class
    - Canadian experience class
    - Provincial nominees
    - Caregivers
  - Sponsored family: Reuniting with family members
  - Refugees: Seeking protection and escaping persecution

- **The conditions under which they immigrate are associated with the level of support required after landing**

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Immigrant admission category

Canada - Permanent residents by category, 1990-2014

Source: Facts and Figures 2014, IRCC

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Immigrant admission category

- **Question: What are the socio-economic outcomes of immigrants by admission category?**

  - Immigrant admission category not collected on most surveys
    - Administrative concept
    - Recall error
    - Unknown to respondents

  - Information captured administratively by **Immigration, Refugees, and Citizenship Canada**

Immigrant landing file (ILF)

- **Prepared by Immigration, Refugees, and Citizenship Canada (IRCC) using administrative records of immigrants 'landing' in Canada**

  - Covers all immigrants who landed in Canada from 1980 to present
  - Does not account for deaths or out-migration – provides administrative census of all immigrants who landed in Canada since 1980
  - Includes characteristics of immigrants as collected at the time of immigration, such as admission category

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Longitudinal Immigration Database (IMDB)

- **Record linkage between ILF and annual tax files**
  - Covers tax years from 1982 to present
  - Permits detailed and longitudinal analysis of economic outcomes of immigrants in Canada by admission characteristics
    - Income sources and values
    - Annual mobility

- **Data gaps remain**

Census of Population (and 2011 NHS)

- **Primary data source for detailed information on immigrants living in Canada**
  - Large sample household survey takes place every 5 years
    - Permits local level analysis
    - Permits analysis of specific subpopulations
  - Immigration variables include immigrant status, year of immigration and place of birth
  - Other variables include:
    - Citizenship
    - Education
    - Labour (including labour force status, current occupation, etc.)
    - Housing
    - Languages (and other ethnocultural variables)
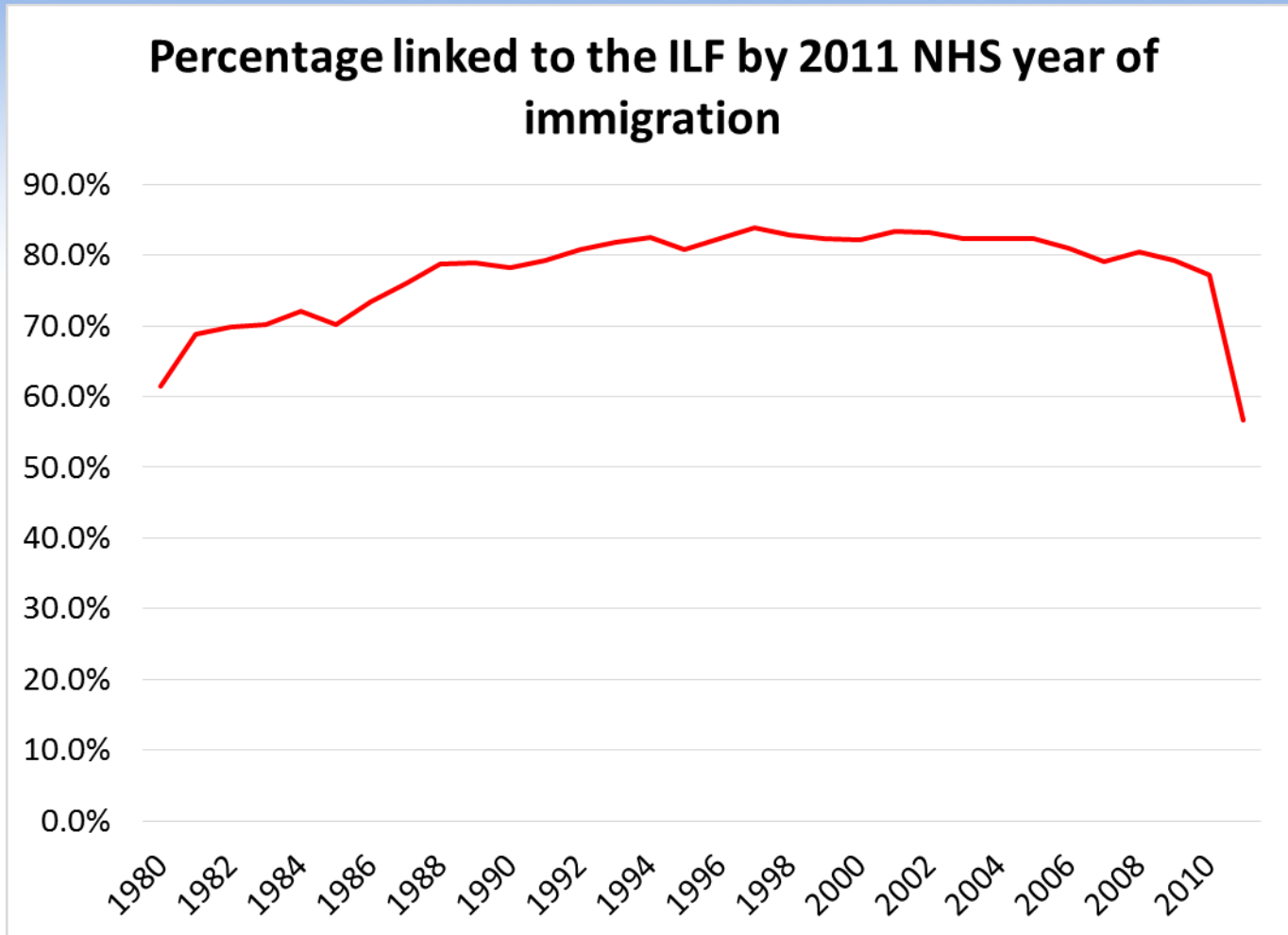   - Living arrangements and mobility
    - Income

Linkage between ILF and Census of Population

- **Record linkage between ILF and 2011 Census / National Household Survey (NHS) undertaken in early 2012**

  - Linkage between ILF and 2006 Census done first to assess feasibility and to develop linkage methods

  - Originally, intended for NHS certification
    - Assess edit and imputation methods for NHS immigration variables
    - Evaluate effects of non-response on immigrant estimates

  - Later IRCC funded record linkage for analytical purposes
    - Including custom tabulations from results

Record linkage quality

- **Approximately 86% of NHS respondents who indicated they were in scope (landed since 1980)**

- **Coverage of linkage defined by NHS characteristics**
  - There were 4,754,435 immigrants who landed between 1980 and 2011 in Canada living in private households according to the 2011 NHS
  - Of these, landing file information is available for 3,765,495 (~79%).

- **Not linked (but should be according to the NHS) include:**
  - Linkage error (false negatives)
  - NHS measurement error (Someone is in scope according to the NHS but, in fact, is not on the landing file and thus cannot be linked)

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Record linkage quality

Percentage linked to the ILF by 2011 NHS year of immigration

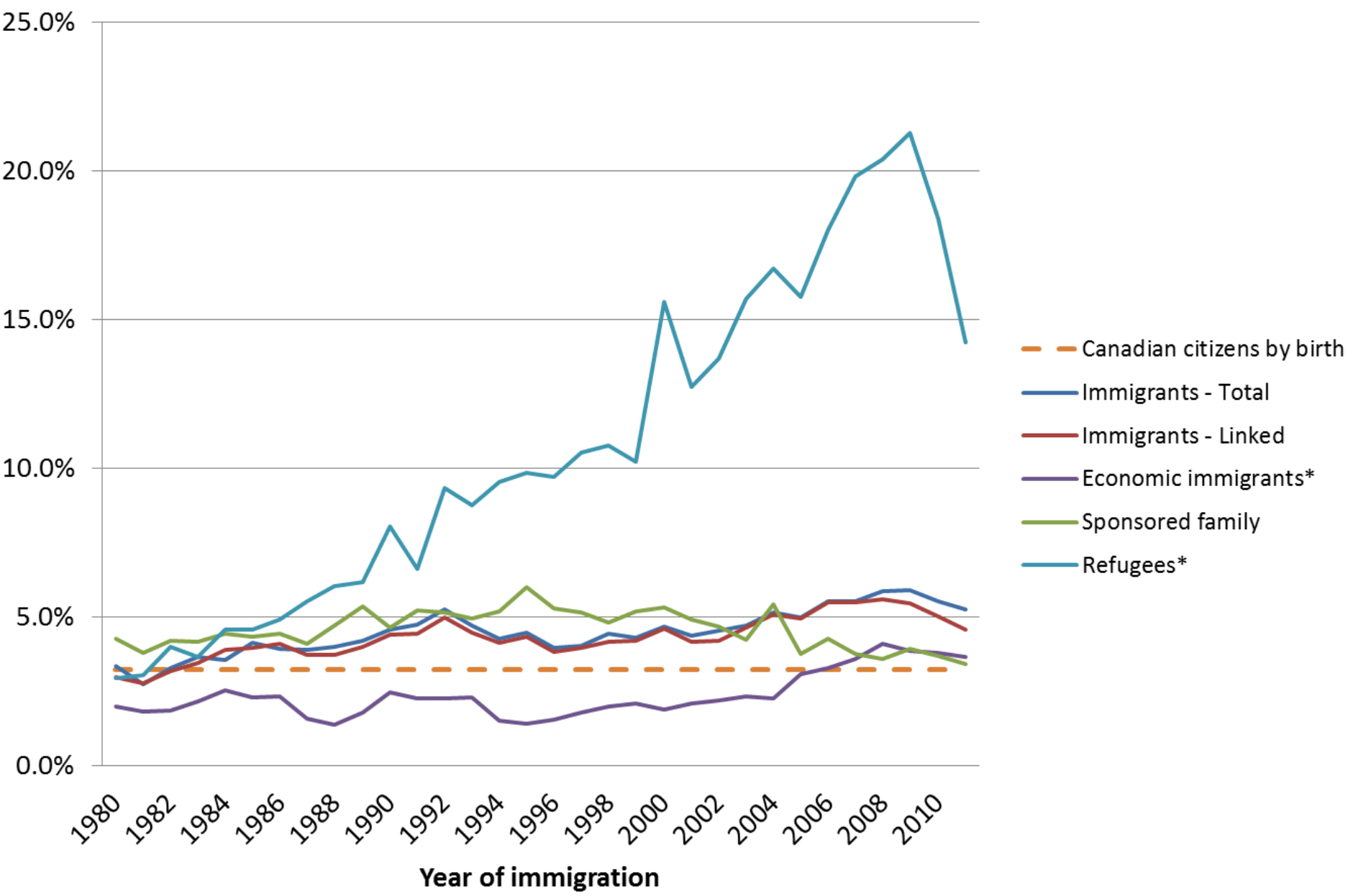Statistics Canada • Statistique Canada

Results

Example: Labour force characteristics by immigrant status, period of immigration and admission category for individuals aged 25-54, May 2011, 2011 NHS – ILF linkage

Immigrant admission category	Unemployment rate %	Employment rate %
Canadian citizens by birth	5.7	82.1
Immigrants landed before 1980	5.0	82.2
Immigrants landed 1980-2005	7.0	78.2
Immigrants landed 2006-2011	12.2	66.5
Linked to immigrant landing file	12.2	67.1
Economic immigrants (linked)	11.6	69.6
Sponsored family (linked)	12.9	63.9
Refugees (linked)	16.0	55.5

Percentage living in subsidized housing by year of immigration, immigrant status, and immigrant admission category, 2011 NHS - ILF linkage

Legend:
- Canadian citizens by birth
- Immigrants - Total
- Immigrants - Linked
- Economic immigrants*
- Sponsored family
- Refugees*

X-axis: Year of immigration (1980–2010)
Y-axis: 0.0% – 25.0%

2016 Census of Population

- **Build on 2011 NHS project by adding Immigrant admission category variables to the 2016 Census database**

  - Broaden access and simplify dissemination process
  - Address inconsistencies between census responses and linked administrative values
    - Business rules enforced for incoherent combinations
    - Imputation for missing values
  - Prepare and publish accessible reference material on the record linkage results

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Challenges and required activities

- **Minimize impact on processing and dissemination of other census variables**
  - Processing conditional on census variables (including year of immigration)

- **Determine final categories to be included in variables**
  - Labels must be easily understood by users but consistent with current legislation and policy
  - Categories reflect changes in immigration policy and data collection over the past 36 years

- **Work with IRCC to communicate differences between administrative in-flow counts and census estimates**

- **Comprehensive certification strategy**
  - Record linkage evaluation
  - Error caused by other variables
  - Processing errors

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Edit and imputation processes

- **CANCEIS (Canadian Census Edit and Imputation System)**

- **Business rules developed**
  - Quality of year of immigration critical to edit rate
  - Family connections need to be accounted for

- **Donor imputation stratified by family composition**
  - Partially linked families
  - Variable selection methods being considered
    - Year of immigration and place of birth
    - Age at immigration
    - Possible selection inputs (education, language)
    - Economic outcomes (sources of income, occupation)
  - Testing methods using 2011 NHS

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Summary

- **Immigrant admission category provides contextual information related to outcomes of immigrants to Canada**

- **Combining administrative data with the Census of Population would permit analysis on socio-economic outcomes of immigrants to Canada by admission category**

- **2016 Census of Population project builds on 2011 NHS linkage by**
  - Adding admission category variables onto the 2016 Census database
  - Addressing inconsistencies between linked administrative values and census responses

- **Quality of imputation will impact success of project**

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