Canadian Employer-Employee Dynamics Database

Telling Canada's story in numbers

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Canada

Background on employer-employee data

- Integration of individual-level and firm-level data is important for a better understanding of labor market and firm/industry/economic dynamics.
    - Workers' mobility is affected by firm-level characterises: wage setting, benefits, training, HR practices.
    - Workforce characteristics (gender/age/skill composition) have implications for firms: productivity, profitability, growth and survival.
- Employer-employee matched database have been developed in many countries since the late 1990s.
    - U.S. : Longitudinal Employer-Household Dynamics Program (LEHD)
    - France: the Déclarations Annuelles des Données Sociales (DADS)
    - Germany: Linked Employer/Employee Data (LIAB)
    - United Kingdom: Workplace Employment Relations Survey (WERS)
    - New Zealand: Linked Employer-Employee Database (LEED)
    - Denmark: Integrated Database for Labor Market Research (IDA)
    - Norway and Finland.

Employer-employee data at Statistics Canada

- Workplace and Employee Survey (WES), 1999 to 2006
    - Survey-based
    - Establishments were followed over time until 2006.
    - Up to 24 employees within an establishment were followed for 2 years
    - Discontinued after 2006

- Longitudinal Worker File (LWF), 1983-
    - T1, T4, Record of Employment (ROE) and Longitudinal Employment Analysis Program (LEAP)
    - Focus on job separation, and have only limited information on firms from LEAP
    - 10% random sample

Data gap to be filled

- Limited information on business
  - LWF: only industry, employment size, province.
- Little information on the social-economic characteristics of individuals such as immigration status and family background.
- No information on business ownership
  - Business ownership: import driver of job creation, innovation, and productivity growth
  - Dynamics of business ownership
  - Different types of business ownership: immigrant, youth, senior, female, and indigenous business ownership
- Insufficient sample to support local labor market or firm-level analyses.

Canadian Employee-Employer Dynamics Database (CEEDD)

- The CEEDD was created to fill those data gaps by linking across various administrative tax files.

- Spans from 2001 to 2015 and updates annually.

- Covers the universe of:
  - Individual tax filers and their families
  - Employees who receive T4 slips
  - Unincorporated businesses and corporations
  - Unincorporated business owners who report self-employment income
  - Owners of private corporations (mostly Canadian-controlled Private Corporations)
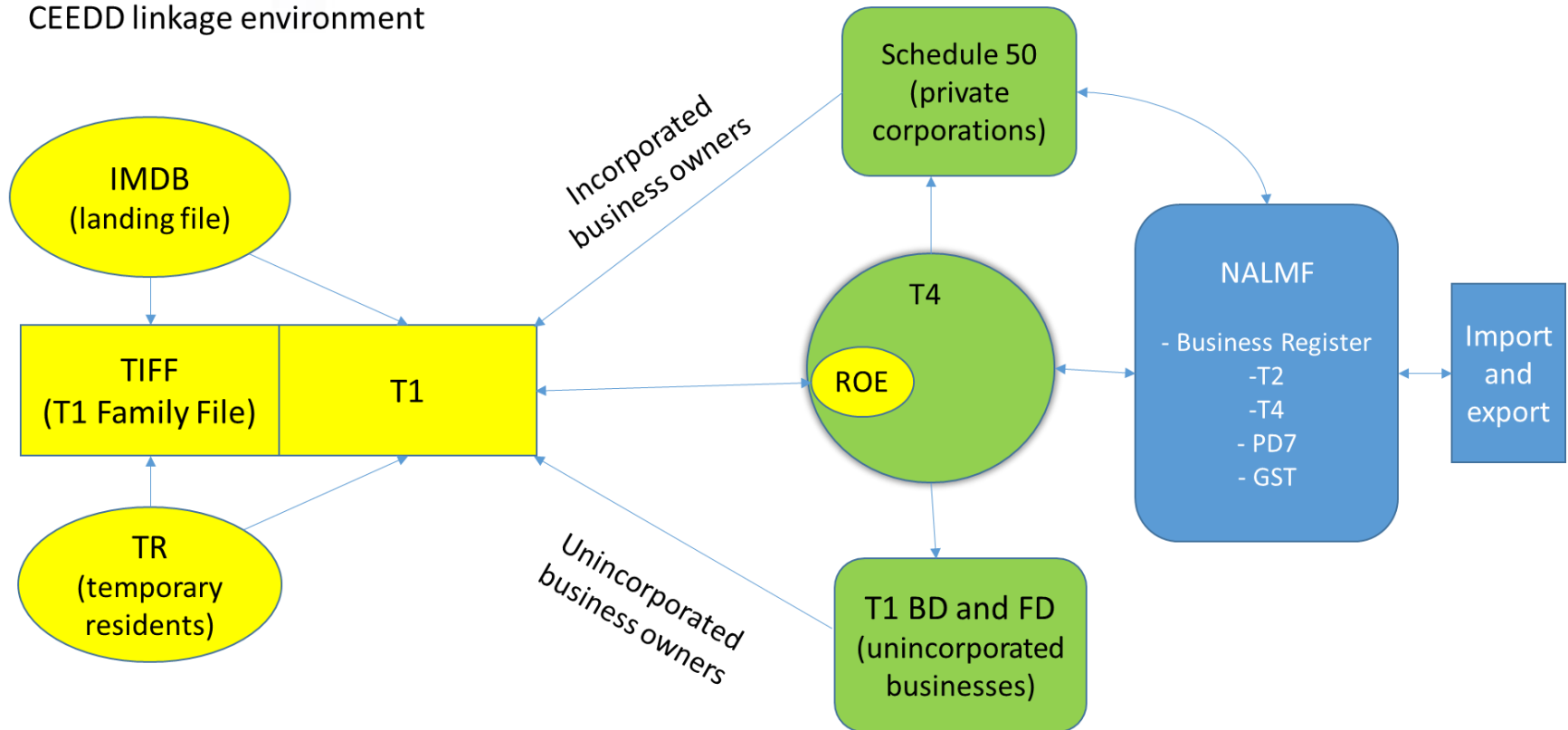
CEEDD-source files

1. T1 Personal Master File (T1PMF)
2. T1 Historical Personal Master File (T1H)
3. T1 Family File (T1FF)
4. T1 Financial Declaration File (T1FD)
5. T1 Business Declaration File (T1BD)
6. T2 Schedule 50
7. T4 Statement of Remuneration Paid Files (T4)
8. Record of Employment (ROE)
9. National Accounts Longitudinal Microdata File (NALMF)
10. Trade by Exporter Characteristics (TEC)
11. Longitudinal Immigration Database (IMDB)
12. Temporary Residents File (TR)

CEEDD – linkage environment

CEEDD linkage environment

Legend:
- Individual and family identifiers (yellow)
- Business identifiers (blue)
- Individual and business identifiers (green)

Diagram elements:
- IMDB (landing file)
- TIFF (T1 Family File)
- T1
- TR (temporary residents)
- Schedule 50 (private corporations) — Incorporated business owners
- T4 / ROE
- T1 BD and FD (unincorporated businesses) — Unincorporated business owners
- NALMF
  - Business Register
  - T2
  - T4
  - PD7
  - GST
- Import and export

CEEDD: main components

- Contains information for 3 main components:
  - Employees: demographic (age, gender, marital status, immigrant status), family information (spouses and children), employment (earnings, job separation, workplace)
  - Firms: detailed information on income and balance sheets (revenue, expense, assets, liabilities etc), employment, payroll, productivity, R&D, export (product-level), industry, workforce characteristics
  - Business owners: demographic, ownership type (sole proprietorship, partnership, incorporated), ownership share, income from business, characteristics of owned businesses

CEEDD: data structure

- CEEDD is set of linkable files from different sources instead of being a single gigantic linked file containing all variables.

- Using the unique personal and/or firm identifiers available on each linkable file, information at the employee and firm level can be linked across different component files over time.

CEEDD-data availability

Output Analytical Files	Source Files	Latest vintage (2017)
Individual-level data		
T1 Personal Master Files	T1 PMF	2001 to 2015
T1 Historical Files	T1 H	2001 to 2013
IMDB Files	Landing Files & Temporary Residents Files	1980 to 2015
Family-level data		
T1 Family Files	T1 PMF, T4, Canada Child Tax Benefit (CCTB) Files	2001 to 2015
Job-level data		
Edited T4 Files	T4	2001 to 2015
Raw T4 - ROE - LEAP	T4, ROE, LEAP	2001 to 2015
Edited T4 - ROE - NALMF	Edited T4, ROE, NALMF	2001 to 2015
Business owners' module	T1 H, T1FD, T1BD, T2 Schedule 50, T2, T4, IMDB	2001 to 2013 2005 to 2013
Firm-level data		
NALMF	BR, T2, T4, PD7, GST	2001 to 2015
Export Files	Trade by Exporter Characteristics	2010 to 2015
Geography data		
Sub-provincial indicators	Postal code information from the T1, T4, NALMF,T1BD	2001 to 2015

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Current use of CEEDD

- Facilitates research on labor market and firm dynamics
    - Firm-level productivity dispersion and wage dispersion
    - Labor market impact of merger and acquisition
    - Labor market spillovers and entrepreneurship on a fine spatial scale
    - Time until first hiring for Canadian entrepreneurs
    - Previous employment history and start-up performance
- Facilitates research on immigrants
    - Immigrants' initial firm allocation and earnings growth
    - Immigrant careers and network
    - Immigrant business ownership: what drive immigrants become business owners
    - Immigrant-owned firms: job creation, productivity, survival, financial constraints, import and export
- Help government evaluate and improve programs and polices on gender equality and local employment and economic growth
    - Hires and layoffs at Economic Region level
    - Business ownership by gender, age, immigrant status, and marital status for Atlantic provinces
    - Indicators for women-owned enterprises

CEEDD access

- Access through CDER

  - Research proposals with detailed data request.

  - CDER can provide researchers with a list of variables of different source files and evaluate feasibility.

  - Final data linkage can be done either by researchers themselves or CDER staffs for complex linkages.

  - Personal and firm identifiers will be scrambled and provided to researchers.

Future development

- Data development:
  - CEEDD and Census cohorts linkage: education and occupation information
  - Business ownership indicators by gender, age group, immigrant status, indigenous status, and family status: attached to every business where ownership information is available
  - Longitudinal firm identifiers

- Documentation: data dictionary and user guide

- Updating schedule:
  - Annual update: every fall and winter, a new vintage of CEEDD available at the end of every March
  - Vintage: 2017 vintage is currently being updated, covering data up to 2015 (t-2).

CEEDD-contacts

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Questions, comments, suggestions

Thank you!