

Methodological Notes for
Inter-jurisdictional Employees

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Inter-jurisdictional Employees¹

Introduction

This document outlines the background and methodology for inter-jurisdictional employees (IJE) in Canada. The basic definition for inter-jurisdictional employees is: paid employment of individuals who maintain a permanent residence in a given province/territory while reporting earnings from a different province/territory. The results are based on the Canadian Employer-Employee Dynamics Database (CEEDD).

In-scope population

The in-scope population for IJEs are Canadian domestic employees aged 18 or older earning at least \$1,000 in 2016 constant dollars within Canada. Results start in 2002, and in 2017, will include results from personal tax files (T1) and statements of remuneration (T4) up to 2014. Updating yearly numbers with the T1 historical files to more accurately present data for this population will be available to 2012 for 2017.

Definition of inter-jurisdictional employees

From the perspective of a province/territory, inter-jurisdictional labour movements have two directions: incoming and outgoing.

If we use Alberta as an example, **IJEs incoming** are individuals who received T4 earnings from Alberta but reported a different province or territory of residence on their T1 tax returns minus all Out-migrants from Alberta. As shown in Figure 1, Out-migrants can be identified as individuals who: (i) had T4 earnings in Alberta in year T but resided in another province/territory at the end of year T; and (ii) who resided in Alberta in the previous year (T-1); and (iii) who were still residing outside of Alberta the following year (T+1).

Figure 1 Example of Out-migrants

	Year T-1	Year T	Year T+1
Province of work		Alberta	
Province of residence	Alberta	Not Alberta	Not Alberta

As a mirror definition of IJEs incoming, IJEs **outgoing** are individuals who, in year T, identified as residing in Alberta but received T4 earnings from a different province/territory in year T minus all In-migrants to Alberta. As shown in Figure 2, In-migrants can be identified as individuals who: (i) had T4 earnings in another province/territory in year T but resided in Alberta at the end of year T; and (ii) who resided outside Alberta in the previous year (T-1); and (iii) who were still residing in Alberta the following year (T+1).

1. Please note that all definitions and data presented for Inter-jurisdictional employees uses the same methodology as previous Statistics Canada publications on Inter-provincial employees; the name change is more inclusive and recognizes the role that such employment plays in the territories.

Figure 2 Example of In-migrants

	T-1	T	T+1
Province of work		Not Alberta	
Province of residence	Not Alberta	Alberta	Alberta

Resident employees are individuals who worked and resided in the same jurisdiction during the entire year (i.e., individuals who **only** resided and **only** worked in Alberta for the reference year).

Data source(s)

The data source for this project is the Canadian Employer-Employee Dynamics Database (CEEDD). The CEEDD is a set of linkable files developed and maintained by the Social Analysis and Modeling Division (SAMD) at Statistics Canada to provide matched data between employees and employers in the Canadian labour market. It is based on processed administrative data sources from multiple government agencies and provides information on workers and business owners, job-level and firm-level information, as well as on specific sub-population groups.

The calculation of the IJEs uses the following components of the CEEDD:

T1 Personal Master File (PMF): Is commonly referred to as the T1 personal tax files, which provides information on the demographic and financial characteristics of individuals.

T1 Historical Personal Master File (T1H): This is an administrative data file comprised of annual personal income tax returns and includes information from T1 late and re-assessed taxfilers. This is of high importance for this project, as IJEs may be more likely to file late due to the mobile nature of their work.

- When T1H data is not available for publication, an estimate is produced by forecasting previous data using a 5-year average from both the T4-T1 and the T4-T1-T1H series of datasets.

T4 Statement of Remuneration (T4): This provides job-level information including province of employment, employment income, employment insurance premiums, pension adjustment amounts, and union dues.

Longitudinal Employment Analysis Program (LEAP): It provides information on annual employment, annual payroll, and industry for all incorporated and unincorporated business enterprises in Canada that have paid at least one employee.

Data accuracy, data quality, and limitations

The estimates of the IJEs have been compiled from various administrative data sources which are subject to change from vintage to vintage (i.e., the yearly production of these numbers). Improvements or changes to the methodology of the data development will make the recent vintage of linked data different from previous ones. This can include changes at the data source level or changes in how IJE is calculated (such as moving from 2002 constant dollars to 2016 constant dollars). Therefore, it is expected that small discrepancies exist when comparing new estimations with the previous ones.

Temporary foreign workers, out-of-jurisdiction students, and other groups are included only if they received T4 earnings in one jurisdiction but resided in another province or territory. This has particular implications for the self-employed. Specifically, unincorporated self-employed individuals cannot be identified or included in the estimates of IJE because they do not issue themselves a T4 slip – the data source from which the jurisdiction of employment is determined. Incorporated self-employed individuals may be included, but only if they issue themselves a T4 slip. Given the information available, it is not possible to distinguish incorporated self-employed individuals from the general population of wage-and-salary employees or to determine the share of incorporated self-employed workers doing business who are included (or excluded) from the analysis. Overall, the estimates of IJE's are considered to be conservative to the extent that unincorporated self-employed workers and an unknown subset of incorporated self-employed individuals cannot be included.

Some areas within Canada will have a higher proportion of IJE's due to their geographic location being located on, or in close proximity to, jurisdictional borders (i.e., the Ottawa-Gatineau area). No adjustments are made in the tabulations to take this into account. Morissette and Qiu (2015) provide evidence on the magnitude of this issue.

What is new in this update?

In the 2017 update (the information is available to tax year 2014):

1. The calculations of earnings is converted from 2002 constant dollars into 2016 constant dollars. In addition, the threshold of sample selection transferred into earning at least \$1,000 in 2016 constant dollars. The drop in the dollar value of the threshold raises the number of inter-jurisdictional employees by less than 1% in all years;
2. The Administrative Data Division revised the 2009 and 2010 T1H data by adding T1 late and re-assessed taxfilers who file in the tax year T+3. As a result, the number of inter-jurisdictional employees in these two years increased compared to previous estimates.

Appendix

Table 1
Selected NAICS values

NAICS code	Description
11	Agriculture, forestry, fishing and hunting
211 and 213	Oil and gas extraction, Support activities for mining, and oil and gas extraction
212	Mining and quarrying (except oil and gas)
22	Utilities
23	Construction
31, 32, 33	Manufacturing
41, 44, 45	Wholesale and Retail trade
48, 49	Transportation and warehousing
51, 52, 53, 55	Information and cultural industries; Finance and insurance; Real estate and rental and leasing; Management of companies and enterprise.
54	Professional, scientific and technical services
61, 62	Education services; Health care and social assistance
72	Accommodation and food services
56, 71, 81	Other services (Administrative and support, waste management and remediation services; Arts, entertainment and recreation; other services (except public administration))
91	Public administration

NAICS: North American Industry Classification System.

Source: Statistics Canada.

References

Morissette, R. and Qiu, H. 2015. *Interprovincial Employment in Canada, 2002-2011*. Economic Insights, no. 047. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.

Laporte, C. and Lu, Y. 2013. *Inter-provincial Employees in Canada*. Economic Insights, no. 029. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.

Laporte, C., Lu, Y., and G. Schellenberg. 2013. *Inter-provincial Employees in Alberta*, Analytical Studies Branch Research Paper Series, no. 350. Statistics Canada Catalogue no. 11F0019M. Ottawa: Statistics Canada.
