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Producing timely experimental estimates of interprovincial labour mobility

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Introduction

Interprovincial labour mobility serves as a useful mechanism for advancing labour market adjustment across Canada. By enabling workers to relocate to provinces and territories experiencing strong economic growth or significant labour shortages, it helps alleviate regional hiring pressures and supports a more efficient allocation of labour. At the same time, it expands employment opportunities for individuals residing in jurisdictions with comparatively high unemployment rates. Interprovincial labour mobility thus functions as an essential mechanism through which the Canadian labour market responds to regional economic disparities, and it strengthens overall labour market efficiency.

Despite its significance, interprovincial labour mobility remains relatively uncommon. Several Statistics Canada sources, drawing on different datasets, indicate that about 1% to 2% of the working-age population moves between provinces each year.

An early but still widely cited 2007 paper by Grady and Macmillan documents the three primary barriers to interprovincial labour mobility: residency requirements, occupational licensing and certificates, and the non-recognition of qualifications (Grady and Macmillan, 2007). Zaman (2020) found little evidence that existing interprovincial agreements significantly increased labour mobility. Institutional barriers remain large despite trade and labour mobility agreements.

Another important consideration, emphasized in the *Free Trade and Labour Mobility in Canada Act (Bill C-5, 2025)* is “to promote free trade and labour mobility by removing federal barriers to the interprovincial movement of goods and provision of services and to the movement of labour within Canada while continuing to protect the health, safety and security of Canadians, their social and economic well-being and the environment.” With respect to labour mobility, the regulations focus on the recognition of occupational authorizations. This underscores the importance of understanding labour mobility patterns across occupational groups, making the development of timely and reliable statistics on occupation-specific migration flows increasingly relevant to inform policy.

The current paper contributes to this discussion by using linked census and administrative data to measure interprovincial labour mobility at the four-digit National Occupational Classification (NOC) 2021 level. By comparing the province of residence on May 9, 2021, reported in the 2021 Census long-form questionnaire with the province of residence recorded on December 31, 2022, in the T1 tax file, it is possible to identify individuals who migrated between jurisdictions during this period. These statistics can be further disaggregated by four-digit NOC 2021 occupational group, available from the census.

Definition and methodology

While linked census and administrative data allow for detailed estimates of interprovincial labour mobility, these estimates can be produced only in census years. To generate more timely indicators, this work produces predicted experimental mobility estimates by updating the 2021 and 2022 reference estimates from the linked census–administrative file with more current demographic information from the Labour Force Survey (LFS). To produce timely experimental estimates at the occupational level, the proposed approach uses a two-step strategy.

First, logit parameters for the probability of migration by occupational group are estimated using linked census and administrative data. Second, these reference-year migration parameters are updated to reflect more recent periods by computing average predicted mobility based on current annual demographic control variables from the LFS.

A central assumption of this two-step approach is that workers' mobility behaviour—captured by the vector of response parameters estimated in the reference year—remains stable over time. If mobility behaviour shifts in subsequent years, altering the parameters that govern migration decisions, the predicted average mobility will likely diverge more substantially from the actual mobility rates.¹

Using the 2021 Census as the reference year,² the steps that guide this approach are outlined below.

Step 1: Using 2021 and 2022 data from the 2021 Census long-form questionnaire and 2022 T1 tax data, estimate a logit model based on NOC 2021 that measures the likelihood that worker i in occupation k has a province of residence in the tax data that differs from the province reported in the census:

$$P_{ik20212022} = f: X_{ik2021}, Y_k, \beta_{20212022} \quad (1)$$

where Y_k is a vector of occupation indicators, X_{ik2021} is a vector of control variables observed in 2021 (age, sex and self-employment status), and $\beta_{20212022}$ is a vector of response parameters estimated using 2021 and 2022 data.

Step 2: Using the 2022 LFS, which also includes NOC 2021 occupation codes, combine

- a) the estimated migration likelihood response parameters $\beta_{20212022}$ obtained in Step 1
- b) x_{ik2022} , the 2022 LFS values of the control variables.

Use this combination to compute the estimated average predicted probability that workers in occupation k ($y_k = 1$ and $y_{k'} = 0$) change provinces from 2022 to 2023³ using the LFS information:

$$\text{avg for } y_k=1 (P_{ik20222023}) = \text{avg for } y_k=1 \text{ of } (f: x_{ik2022}, y_k = 1, \text{estimated } \beta_{20212022}). \quad (2)$$

Using the LFS for 2023, 2024 and 2025, and repeating Step 2 for each year, it is possible to generate estimates of the average predicted probability that workers in occupation k move to a different province from 2023 to 2024, from 2024 to 2025 and from 2025 to 2026.⁴

1. This key assumption suggests that the current approach may not be well suited to examine the impacts of a policy change between census years (since by construction the behaviours are assumed constant).
 2. Another factor is that macroeconomic conditions in the reference year may also influence the baseline migration estimates. For example, when the 2021 Census is used as the baseline, migration patterns may reflect the COVID-19 pandemic context. This should be considered when interpreting predicted probabilities for other years using 2021 as the reference year.
 3. $y_{k'}$ is a vector of occupations other than k .
 4. The predicted labour mobility rates for 2022 to 2023, 2023 to 2024, 2024 to 2025 and 2025 to 2026 were released in Common Output Database Repository table 14-10-0452-01 on March 31, 2026.

Validation between baseline and predicted estimates

One way to assess the quality of the predicted labour mobility rates is to compare them with the observed rates of interprovincial mobility. To obtain both predicted and observed labour mobility rates, the most recent census year that can be used is 2021. The observed interprovincial mobility rates by occupation from 2021 to 2022 can be calculated directly by comparing the province of residence reported in the 2021 Census with the province reported in the 2022 T1 tax data. For the predicted estimates, however, the two-step approach will be needed, using the 2016 Census as the reference year in Step 1 and the 2021 LFS in Step 2.

Chart 1 presents a comparison of predicted and observed interprovincial mobility rates for selected three-digit NOC 2016 occupational groups.⁵ Overall, the predicted mobility rates are generally somewhat lower than the observed rates. Percentage differences between predicted and actual interprovincial mobility rates are also examined.⁶ Of the 133 occupational groups analyzed, 16 exhibit percentage differences of 5% or less, 56 fall within the range of larger than 5% to 25% and 53 show differences of larger than 25% to 50%. The remaining eight three-digit NOC 2016 occupational groups display percentage differences exceeding 50%.⁷ Overall, these findings highlight the potential for using predicted mobility rates across the majority of occupational groups to address data gaps between census years.

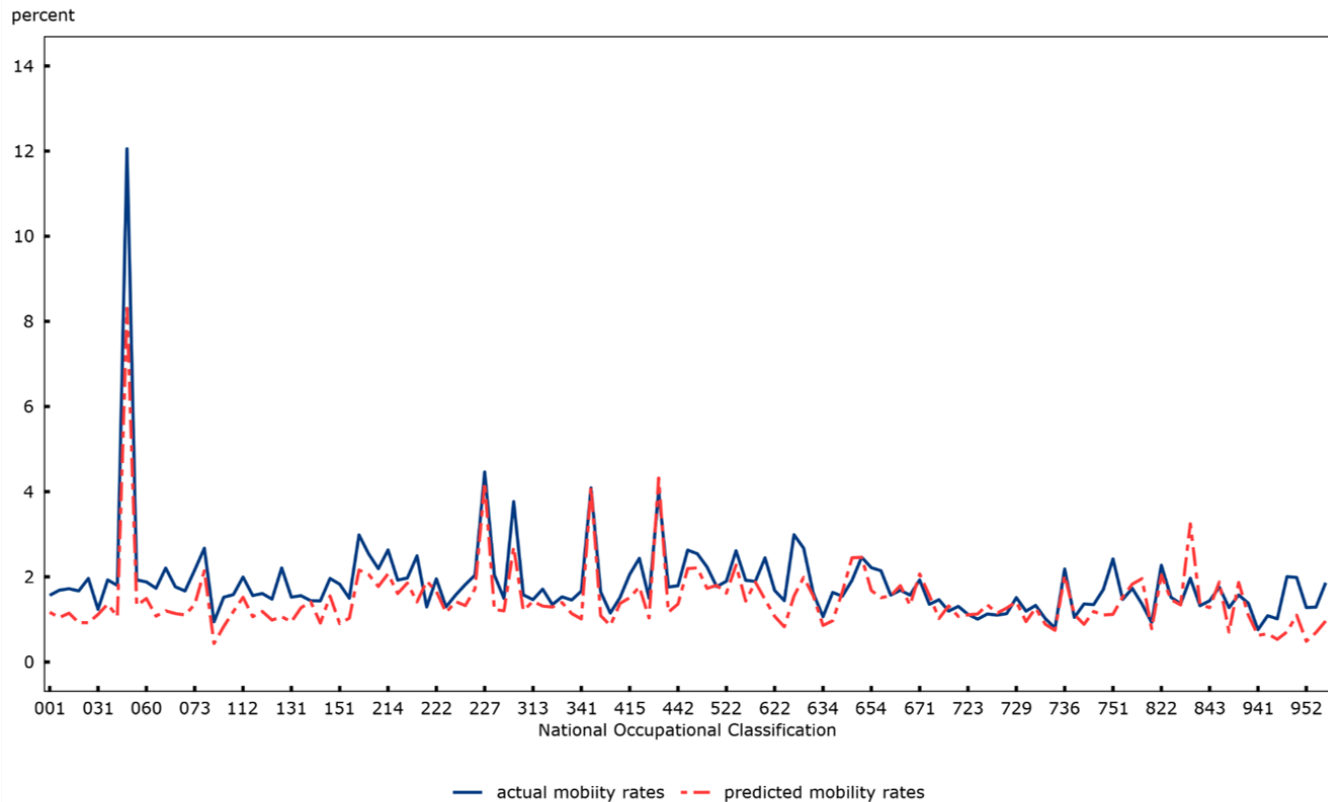
5. A total of 140 three-digit NOC 2016 occupational groups can be identified in the 2021 Census. Among them, seven cannot be released under the current release requirements: tourism and amusement services occupations (653); supervisors, logging and forestry (821); contractors and supervisors, mining, oil and gas (822); logging machinery operators (824); fishing vessel masters and fishermen/women (826); other workers in fishing and trapping and hunting occupations (844); and printing equipment operators and related occupations (947). As a result, the analysis includes 133 three-digit NOC 2016 groups presented in Chart 1.

6. Percentage differences are calculated as (actual rate – predicted rate)/actual rate.

7. The eight three-digit NOC 2016 occupational groups for which the percentage difference between the predicted and actual interprovincial mobility rates exceeds 50% are managers in engineering, architecture, science and information systems (021); managers in agriculture, horticulture and aquaculture (082); court reporters, transcriptionists, records management technicians and statistical officers (125); mail and message distribution occupations (151); motor vehicle and transit drivers (751); mine service workers and operators in oil and gas drilling (841); machine operators and related workers in textile, fabric, fur and leather products processing and manufacturing (944); and mechanical, electrical and electronics assemblers (952).

Chart 1

Predicted mobility rates and actual mobility rates of selected occupational groups by three-digit National Occupational Classification 2016 code, 2021 to 2022



Notes: Column 1 is calculated on the 2021 Labour Force Survey control variables and the estimated response parameters $\beta_{20162017}$. Column 2 is mobility rates adjusted for age, sex and class of worker by three-digit National Occupational Classification 2016 code, using the 2021 Census and the 2022 T1 analytical file.

Sources: Statistics Canada, Census of Population, 2016 and 2021 and T1 analytical files, 2022 and Labour Force Survey, February 2021 to December 2021.

Conclusion

In summary, the significance of interprovincial labour mobility—both as a mechanism for labour market adjustment and as a policy priority reinforced by recent legislative developments—highlights the need for timely occupational-level mobility statistics. The methodology outlined in this paper offers a practical approach for producing such predicted indicators on an ongoing basis and for tracking emerging mobility patterns across Canada's labour market. This approach supports more informed labour market analysis across regions.

Under the current framework, migration parameters are estimated using a logit model. A logical extension of this work would involve examining alternative flexible modelling frameworks to improve the two-step estimation process. Applying this approach to earlier census periods could also uncover any notable shifts in mobility patterns over time. Such extensions have the potential to enhance predictive performance by capturing more complex relationships among worker characteristics, occupation and mobility behaviour.

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