

The Shift in Canadian Immigration Composition and its Effect on Wages

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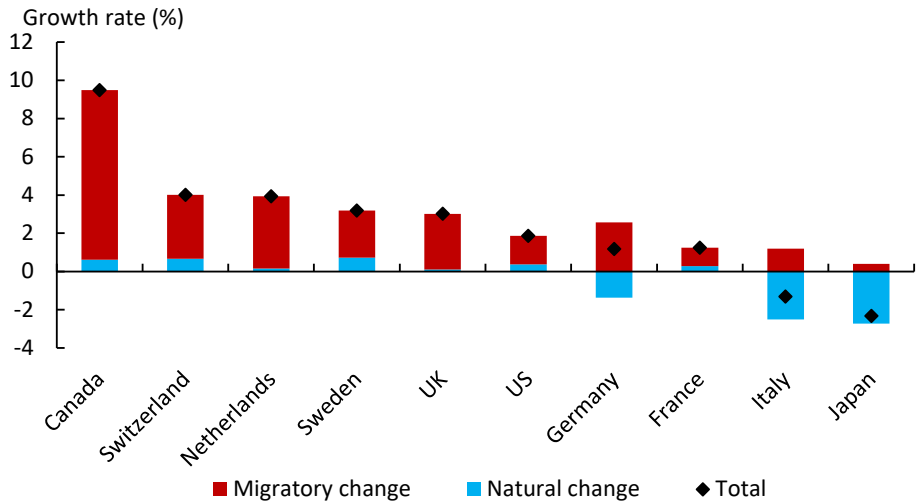
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Motivation



Contributions to population growth, 2019-2024

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Surge in immigration has substantial implications for Canada's labour market and productive capacity:

- ▶ Large increase in *labour supply* became available to firms.
- ▶ But: has the *composition* of immigration changed?
If so, what are the implications for **wages** and **labour productivity** ?

What we do and key takeaways

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- ▶ Since 2015, the immigration increase has been largely driven by:
 - Non-permanent residents (NPR) through work permits not requiring LMAs & student permits.
 - This pattern increased dramatically following Covid pandemic.

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1. Document important **compositional shift** in the Canadian immigrant workforce:

- ▶ Since 2015, the immigration increase has been largely driven by:
 - Non-permanent residents (NPR) through work permits not requiring LMAs & student permits.
 - This pattern increased dramatically following Covid pandemic.
- ▶ Use Canada's Labour Force Survey confidential microdata to assess impact on the **NPR** workforce composition:
 - Younger; less experienced
 - Share of skilled occupations have stalled
 - Higher share from low GDP per capita countries

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 - ▶ Sharp increase in **NPR wage gap** (-22.6% in 2023-24 vs. -9.5% between 2006-14).
 - Changes in relative **observable characteristics** explain most of this change.

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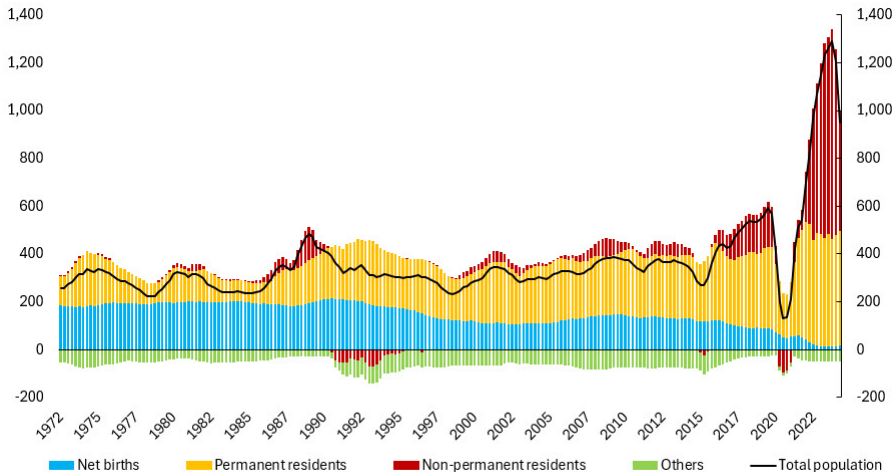
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 - ▶ Sharp increase in **NPR wage gap** (-22.6% in 2023-24 vs. -9.5% between 2006-14).
 - Changes in relative **observable characteristics** explain most of this change.
3. **Counterfactual** exercise: assume NPR avg. observed characteristics at 2006-14 levels.
 - ▶ **7.5%** higher NPR wage in 2023-24; implying **0.7%** higher aggregate wage.

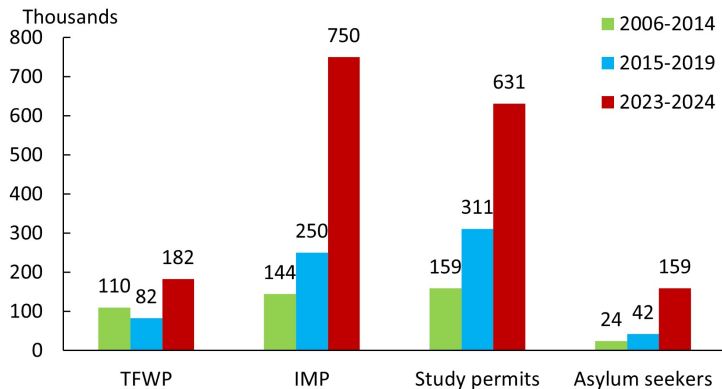
1. Composition Changes in Immigrant Workforce

NPRs have been driving population growth



Contributions to annual population growth

Surge in NPRs mostly reflect non-LMA work permits and students



Stock of NPR permit holders and asylum seekers, by program

Microdata

1. Labour Force Survey (LFS):

- ▶ Monthly household survey covering Canada's working-age population
- ▶ Large variety of socio-economic characteristics, wages and hours worked.
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2. Challenges in covering NPR workforce:

- ▶ Inadequate sampling weights
- ▶ Lower likelihood of being contacted

→ NPRs covered by LFS likely more educated/skilled and earn higher wages.

Summary statistics across sub-periods

	Canadian-born			NPR			PR		
	2006-14	2015-19	2023-24	2006-14	2015-19	2023-24	2006-14	2015-19	2023-24
Share of employment (%)	77.6	73.8	68.1	1.7	2.2	4.4	20.7	24.0	27.5
Age	39.8	40.8	41.1	36.1	34.6	32.6	43.8	44.0	43.7
Years of schooling	13.6	13.8	14.0	14.4	14.7	15.1	14.2	14.6	14.9
Work experience	20.2	21.0	21.1	15.7	13.9	11.5	23.6	23.5	22.8
Female (%)	47.6	47.7	47.9	45.7	44.7	43.1	46.7	47.0	47.3
Student (%)	8.2	7.7	7.8	9.8	13.8	16.4	6.0	5.8	5.9
Skilled occupation (%)	66.0	68.5	72.5	61.5	63.0	61.1	64.0	67.2	71.9
Wage gap (%)	0.0	0.0	0.0	-9.5	-14.2	-22.6	-3.9	-4.8	-3.4

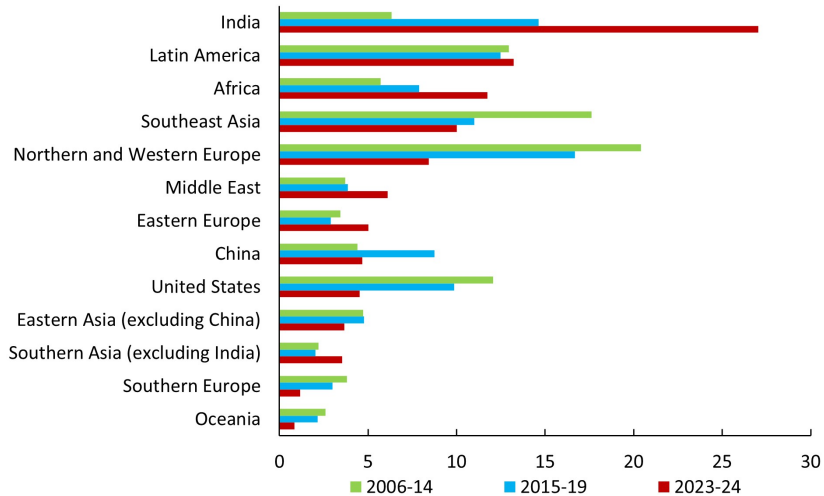
NPR and PR employment shares increased importantly since 2015.

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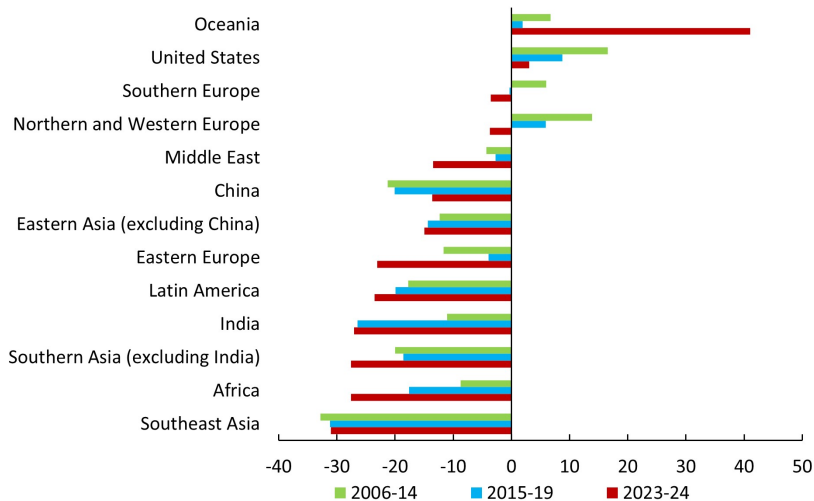
Recent NPRs are younger, less experienced and are not more likely to hold skilled jobs.

Birth regions distribution has shifted



Share of NPR workers, by birth region

Important differences in wage gaps across birth regions / time



NPR-native wage gap (%), by birth region

Summary statistics across sub-periods: Wages

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Dramatic increase in wage gap between Canadian-born and NPR workers.

2. Wage decomposition

Wage setting & Decomposition

Wages are determined by the following Mincer-type regression:

$$\ln w_{i,t} = \alpha + \gamma_t + \delta M_i + X'_{i,t} \beta + \varepsilon_{i,t} \quad , \quad (1)$$

where:

- ▶ $\ln w_{i,t}$ is the log nominal hourly wage.
- ▶ M_i is an immigrant dummy; $X_{i,t}$ is a vector of observable characteristics; γ_t is a time fixed effect.

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Expected difference between immigrants and Canadian-born wages (γ)

$$\gamma \hat{=} \underbrace{\left(\bar{X}'_m - \bar{X}'_{Can} \right) \hat{\beta}}_{\text{Explained } (\hat{\gamma}_X)} + \underbrace{\hat{\delta}}_{\text{Unexplained}} \quad (2)$$

Observable characteristics ($X_{i,t}$)

1. Standard characteristics:

- ▶ Human capital: years of schooling, potential work experience — [Mincer \(1974\)](#)
- ▶ Others: industry, skilled occupation, job tenure, CMA, sex, student status

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2. Human capital quality and self selection:

- 2.1 GDP per capita ratio — [Lagakos et al. \(2018\)](#)
- 2.2 Birth region dummies — [Borjas \(1987\)](#)

Standard observables fail to explain the wage gap

2006-14 period	I	II	III
Difference	-9.5***		
Explained	2.8***		
Unexplained	-12.3***		
Part explained by:			
Potential experience	-1.3***		
Years of schooling	5.7***		
Job tenure	-3.6***		
Skilled occupation	-0.8***		
Industry	-2.5***		
Student	-0.1***		
Female	0.4***		
CMA	4.0***		
GDP			
Region of birth			

Controlling for the birth region

2006-14 period	I	II	III
Difference	-9.5***	-9.5***	-9.5***
Explained	2.8***	-6.4***	-9.5***
Unexplained	-12.3***	-3.1***	0.0
Part explained by:			
Potential experience	-1.3***	-1.3***	-1.3***
Years of schooling	5.7***	5.7***	5.7***
Job tenure	-3.6***	-3.6***	-3.6***
Skilled occupation	-0.8***	-0.8***	-0.8***
Industry	-2.5***	-2.5***	-2.5***
Student	-0.1***	-0.1***	-0.1***
Female	0.4***	0.4***	0.4***
CMA	4.0***	4.0***	4.1***
GDP		-9.3***	
Region of birth			-12.4***

The wage gap has widened significantly

Period	2006–14	2015–19	2023–24
Difference	-9.5***	-14.2***	-22.6***
Explained	-9.5***	-12.0***	-23.1***
Unexplained	0.0	-2.2	0.5
Part explained by:			
Potential experience	-1.3***	-3.6***	-4.4***
Years of schooling	5.7***	6.2***	6.7***
Job tenure	-3.6***	-4.0***	-4.1***
Skilled occupation	-0.8***	-1.1***	-2.5***
Industry	-2.5***	-2.8***	-2.9***
Student	-0.1***	-0.2***	-0.2***
Female	0.4***	0.4***	0.5***
CMA	4.1***	3.1***	2.0***
Region of birth	-12.4***	-10.6***	-18.6***

Implication for aggregate wages

Q. How would have NPR wage in 2023–24 changed if NPR observable characteristics had remained at their 2006–14 averages?

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- ▶ Perform **counterfactual** experiment: “reweighting” idea of Dinardo et al., 1996.
- ▶ Pool 2006–14 and 2023–24 years; Run logit regression using covariates $(X_{i,t})$. Compute propensity scores $\rho^{2006-14}(X_{i,t})$ and $\rho^{2023-24}(X_{i,t})$.
- ▶ Reweighting factor $\omega_{i,t} = \rho^{2006-14}(X_{i,t}) / \rho^{2023-24}(X_{i,t})$.

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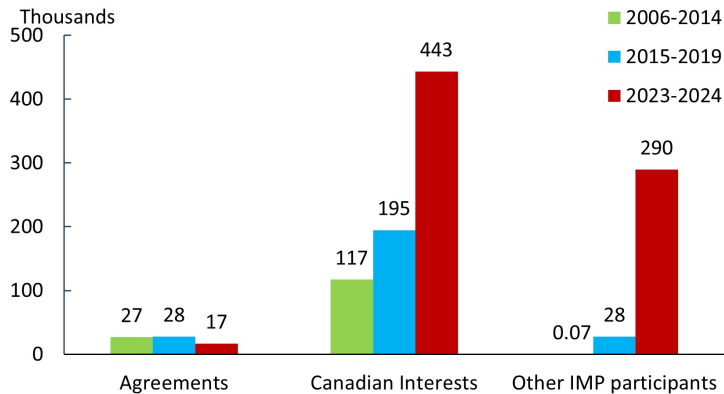
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- ▶ Reweighting factor $\omega_{i,t} = \rho^{2006-14}(X_{i,t}) / \rho^{2023-24}(X_{i,t})$.
- ▶ Using $\omega_{i,t}$, compute **counterfactual NPR wage** in 2023–24:
 - NPR wage **7.5% higher** in 2023–24; implying aggregate wage **0.7% higher**.

Wrap-up

- ▶ Recent Canadian immigration has been characterized by significant composition changes relative to previous decades.
- ▶ NPRs who are younger, less experienced and less likely to hold skilled occupations; and from lower-income regions.
- ▶ These changes have translated into sharp decline in wages relative to Canadian-born workers.
- ▶ These results could have important implications for labour productivity.

Appendix

Rise in IMP permits



Stock of IMP work permit holders, by program

Pattern not observed for PRs landed 5 years ago or less

Period	2006–14	2015–19	2023–24
Difference	-22.5 ^{***}	-20.6 ^{***}	-13.1^{***}
Explained	-18.8 ^{***}	-19.5 ^{***}	-16.0 ^{***}
Unexplained	-3.7 [*]	-1.1	2.9
Part explained by:			
Potential experience	-0.2 [*]	-0.7 ^{***}	-1.5^{***}
Years of schooling	7.4 ^{***}	7.3 ^{***}	8.7 ^{***}
Job tenure	-5.6 ^{***}	-5.3 ^{***}	-4.4 ^{***}
Skilled occupation	-2.4 ^{***}	-2.1 ^{***}	-0.9^{***}
Industry	-2.8 ^{***}	-3.1 ^{***}	-1.1 ^{***}
Student	-0.1 ^{***}	-0.1 ^{***}	0.0 ^{***}
Female	0.5 ^{***}	0.4 ^{***}	0.2 ^{**}
CMA	4.6 ^{***}	3.6 ^{***}	2.3 ^{***}
Region of birth	-20.5 ^{***}	-19.8 ^{***}	-19.6^{***}