

# Immigrant Job Search Assimilation in Canada

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## Economic Assimilation of Immigrants

- ▶ In the economics of immigrant assimilation literature, most researchers have adopted a human capital approach (Chiswick 1978, Borjas 1999, Abbott and Beach 2011, Green and Worswick 2010, Xue 2010, Baker and Benjamin 1999, Skruterud and Su, 2012).
- ▶ Differences in job search behavior/environment between immigrants and natives have been largely neglected, but are getting more attention lately. (Daneshvary et al. 1992, Goel and Lang 2012, Frijtiers et al. 2005, Chassamboulli and Palivos 2010, Ortega, 2000, Liu 2010, Gupta and Kromann 2013)

- ▶ Likely new immigrants face different job search conditions from natives.
  - ▶ Lower proficiency in English or French.
  - ▶ Problem of qualification recognition
  - ▶ Difference in networks
- ▶ These differences are likely to generate differences in job search outcomes between natives and immigrants.  
In particular, lower likelihood of receiving job offers for immigrants.
- ▶ Through labour market experience in the host country, immigrants may learn to search for jobs more effectively, which leads to higher job offer arrival rates and growth in earnings through job-to-job transitions.

## This paper

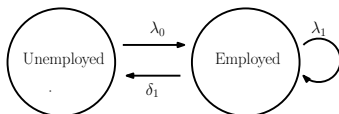
- ▶ Develops a search model to study immigrant assimilation through search assimilation.
- ▶ Estimates the model parameters using the Canadian Survey of Labour and Income Dynamics (SLID).
- ▶ Uses the estimates to determine how long it takes immigrants to assimilate to the native search process.
- ▶ Studies the implications for immigrant assimilation in earnings.

## The Model

- ▶ Burdett-Mortensen (1998) equilibrium job search model
  - ▶ All workers are either employed or unemployed, and search for jobs in both states
  - ▶ Firms post wages
- ▶ Extended to include 2 groups of workers (natives and immigrants) in a single labour market (Zhang, 2011)

## Native-born Workers

Figure: Diagram of Natives' Labour Market Transition

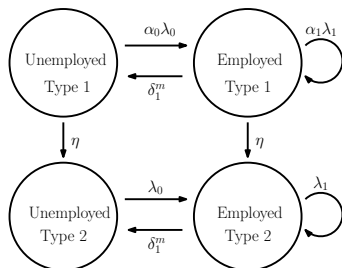


- ▶ Consist of measure  $1 - \mu$  in the labour market.
- ▶ Enter labour market unemployed
- ▶ Job offer arrival rates
  - ▶  $\lambda_0$  while unemployed
  - ▶  $\lambda_1$  while employed
- ▶ Job destruction rate:  $\delta_1$

## Immigrant Workers

- ▶ Consist of measure  $\mu$  of the labour force
- ▶ There are two groups of immigrants: type 1 immigrants & type 2 immigrants
- ▶ Job offer arrival rates for type 1 immigrants
  - ▶  $\alpha_0 \lambda_0$  when unemployed ( $0 < \alpha_0 < 1$ )
  - ▶  $\alpha_1 \lambda_1$  when employed ( $0 < \alpha_1 < 1$ )
- ▶ Job offer arrival rates for type 2 immigrants
  - ▶  $\lambda_0$  while unemployed
  - ▶  $\lambda_1$  while employed
- ▶ Each enters the labour market unemployed and initially as a type 1 immigrant
- ▶ A type 1 immigrant becomes a type 2 immigrant at the rate of  $\eta$ .
- ▶ Job destruction rate:  $\delta_1^m$

Figure: Diagram of Immigrants' Labour Market Transition





# Firms

- ▶ Each firm has a constant returns to scale technology with labour service being the only input
- ▶ Each firm posts wage  $w$  to attract workers to maximize the steady state profit flow
- ▶ Assume both native and immigrant workers are equally productive within firms
- ▶ Firms offer the same wage to both natives and immigrants.

## Model Implications for Earnings for Natives and Immigrants

If  $\delta_1 = \delta_1^m$  and all wage offers are acceptable to all workers,

- ▶ The immigrant earnings distribution is first-order stochastically dominated by the native earnings distributions due to the lower job offer arrival rates.
- ▶ As immigrants age, their distribution of earnings converges to that of natives of the same age as a result of job search assimilation.
- ▶ Earnings for natives are lower due to the presence of immigrants in the labour market.

## Identification and Estimation Strategy

- ▶ Two-stage MLE procedure in Bowlus, Keifer and Neumann (1995, 2001)
- ▶ Identify the model parameters from earnings, spell duration and transition data of natives and immigrants.

# Data

- ▶ The proposed estimation procedure requires labour market histories recording individual unemployment and job spells, and earnings.
- ▶ SLID meets the data requirements.
- ▶ SLID is a household panel survey containing a wide range of information on labour market experiences, education, and demographic characteristics of individuals in Canada.
- ▶ SLID has several waves, each of which is 6 years long. Two waves overlap with each other for 3 years.

- ▶ Data source: SLID's 3rd (1999-2004) and 4th (2002-2007) waves.
- ▶ To avoid problems with macroeconomic fluctuations, we use data from 2002 on in both waves.
- ▶ Weighted with 2002 cross-section weight.
- ▶ Males aged 20–55 in 2002 with post-secondary education (above high school diploma, below master's).
- ▶ Immigrants who immigrated to Canada at age 20 or higher.

## Summary Statistics from the Estimation Sample

Table: Summary Statistics

	Natives	Immigrants
1 Number of observations	3649	228
2 Fraction of individuals initially unemployed	0.053	0.134
3 Mean unemployment duration (in month)	5.06	6.84
4 Fraction of censored spells among unemployment spells	0.15	0.07
5 Mean job duration (in month)	35.59	30.21
6 Fraction of censored spells among job spells	0.75	0.70
7 Fraction of completed job spells ending with a job-to-job transition	0.40	0.23
8 Mean monthly earnings	4021.24	3510.50
9 Mean monthly earnings in the 1st job out of unemployment	2907.32	2463.59

## Comments on Summary Statistics

- ▶ The immigrant sample has longer unemployment durations and lower job-to-job transition rate.
- ▶ The immigrant sample has a higher unemployment rate and shorter job durations.
- ▶ Both samples have high censoring rates for job durations.
- ▶ In 2002, the monthly earnings gap is approximately \$500 between the employed native and immigrant workers.
- ▶ The earnings gap is approximately \$450 between native and immigrant workers accepting jobs from unemployment.

# Model Parameter Estimates

Table: Parameter Estimates

Parameter	Estimate	Std Error
$\lambda_0$	0.1546	0.0094
$\lambda_1$	0.0086	0.0010
$\delta_1$	0.0044	0.0002
$\delta_1^m$	0.0075	0.0017
$\alpha_0$	0.6471	0.2100
$\alpha_1$	0.0702	0.1453
$\eta$	0.0064	0.0010
$\delta_2$	0.0024	
$\mu$	0.2120	
Avg. Productivity	7526.56	

Note: Bootstrap standard errors are shown.  
Log-likelihood: -37391.24



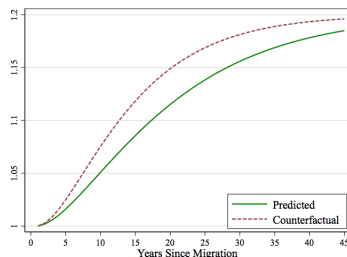
## Interpretation of Estimates

- ▶ The job offer arrival rate while unemployed for type 1 immigrants is approximately 60% of native workers' value.
- ▶ The job offer arrival rate while employed for type 1 immigrants is less than 10% of native workers' value.
- ▶ The job destruction rate for immigrants is nearly twice the native rate.
- ▶ On average, it takes an immigrant about 13 years to acquire the native search parameters.

## Model Implications for Immigrant Earnings Growth

- ▶ Baseline prediction: earnings increase 5% and 18% over 10 and 40 years since migration, respectively.
- ▶ Counterfactual prediction with  $\eta$  doubled: the same 18% earnings increase would be achieved in 30 years since migration instead.

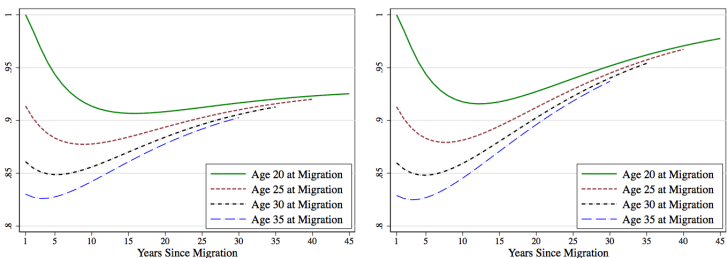
Figure: Predicted Immigrants' Earnings Growth



## Model Implications for Earnings Convergence Between Immigrants and Natives

- ▶ Baseline prediction: Immigrants earnings fail to catch up with natives' because of the estimated differences in job separation rates
- ▶ Counterfactual prediction with  $\delta_1^m$  decreased to  $\delta_1$ : Immigrant earnings still do not catch up due to the slow assimilation process.

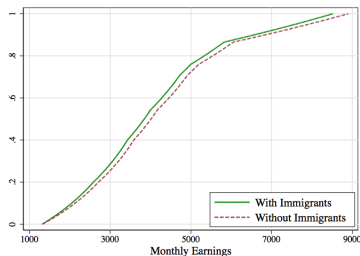
**Figure:** Predicted Immigrant Earnings Relative to Native Earnings (Left: Baseline prediction; Right: counterfactual prediction)



## Model Implications for Native Earnings

- ▶ Counterfactual prediction with  $\mu = 0$ : produces a 4% increase in the average earnings of natives.

Figure: Predicted Native Earnings Distributions



## Concluding Remarks

- ▶ The paper uses a search model to study immigrant assimilation through acquiring knowledge of the host country's job market.
- ▶ Substantial differences in job offer arrival rates and job destruction rates are found between natives and immigrants.
- ▶ It takes immigrants about 13 years to acquire the native job search parameters.
- ▶ The estimated job search process generates 18% earnings growth over 40 years since migration.

## Future Research

- ▶ The modest size of the immigrant sample did not allow us to analyze possible differences among immigrants from different backgrounds.
- ▶ The degree of similarity between the source and host countries' labour markets may be related to the initial job offer arrival rates of immigrants
- ▶ A next step is to confirm and extend the current results by using an alternative data set such as the Longitudinal Survey of Immigrants to Canada.