The Efficacy of High Skilled Immigration Policies

Mathias Czaika and Chris Parsons

University of Oxford

International Migration Institute IMI | University of Oxford

Motivation

- "…if Europe really wants to have a knowledge based economy, if it wants to play a leading role in innovation and research, if it wants to be competitive in the global economy, it needs to do much more to attract the smartest and the brightest."

  (Cecilia Malmstroem, EU Commissioner, April 2012)

- "To lead the world in this new economy, we need the most talented and hardest-working people, we need to train and attract the best."

  (Mark Zuckerberg, founder of Facebook, April 2013)

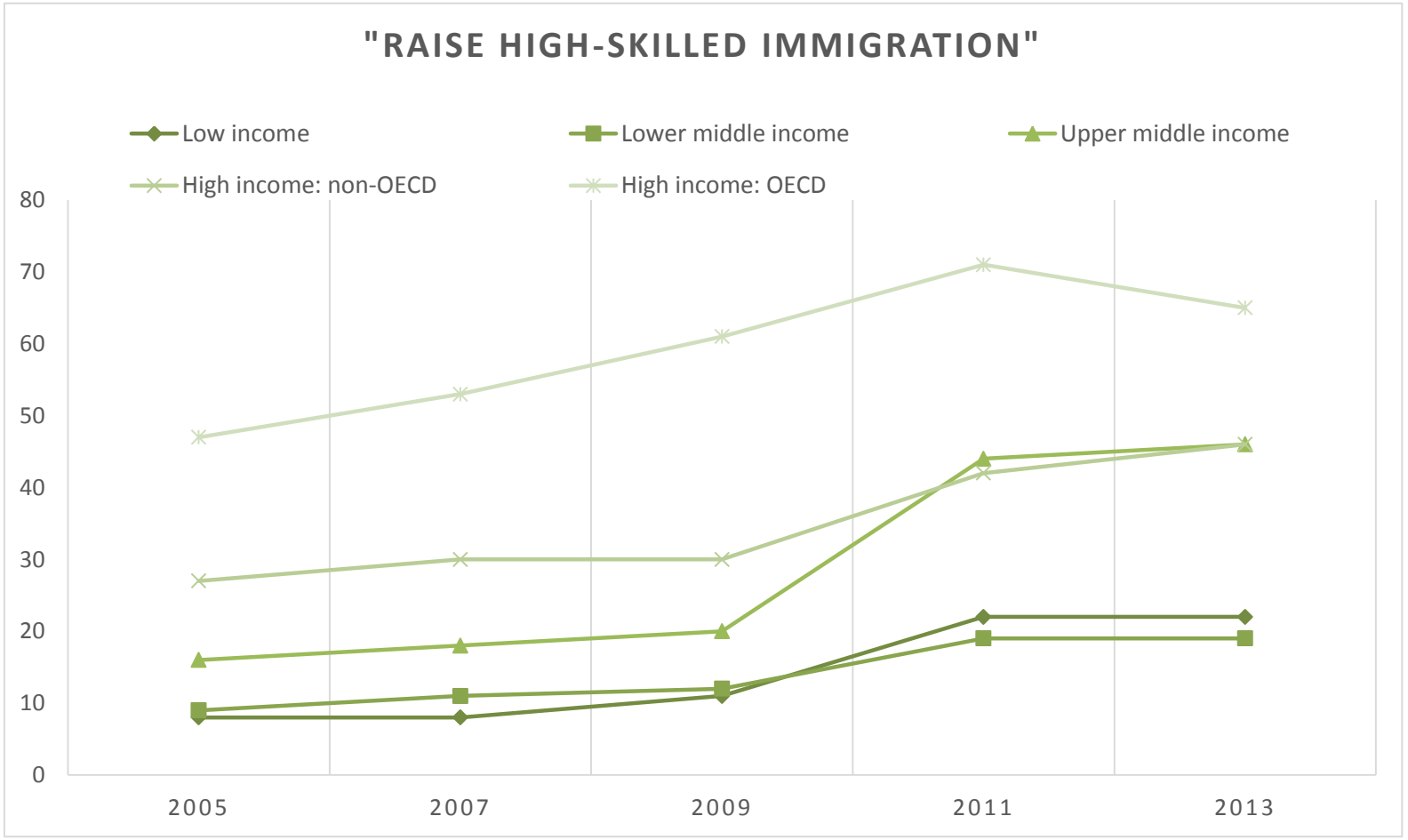
International Migration Institute IMI

UNIVERSITY OF OXFORD

Motivation

- Why HS Migration?
  - Innovation, entrepreneurship
  - Economic growth, trade, investment
  - Diffusion knowledge, productivity spillovers
- Destination country responses?
  - In 2005-2013, 22-40% of 172 UN member states declared explicit interest to increase level of high-skilled
    - Attracting foreign talent/retaining native talent
  - Highly developed nations at vanguard of trend

Motivation


"RAISE HIGH-SKILLED IMMIGRATION"
Low income
Lower middle income
Upper middle income
High income: non-OECD
High income: OECD
80
70
60
50
40
30
20
10
0
2005
2007
2009
2011
2013

Contributions

- First test of efficacy of HS migration policies
  - Panel data set of bilateral flows disaggregated by skill
    - 10 OECD destinations, 193 origins, 2000-2012
    - Harmonized definitions (of skill)
      - Can exploit both within and between variation
      - Need to since relatively short panel
  - Panel data set of unilateral immigration policies
  - Panel data set of bilateral immigration policies
- Micro-founded pseudo-gravity model (RUM)
- Well-specified estimation
  - Comprehensive explanatory variables (at destination)
- Examine policy *combinations*

International Migration Institute IMI

UNIVERSITY OF OXFORD

Flow data

- Immigrant flow data disaggregated by skill are rare
- Focus on labour/economic migrants
- Occupation vs. education
- Nationality vs. country of birth
- Duration of stay
- Sources:
  - Administrative files (AUS, CAN, ISR, NZL)
  - Employment visas (KOR)
  - Work/residence permits (CHE, GBR, SWE)
  - Population and employment registers (NOR, SWE)

Measure of skill

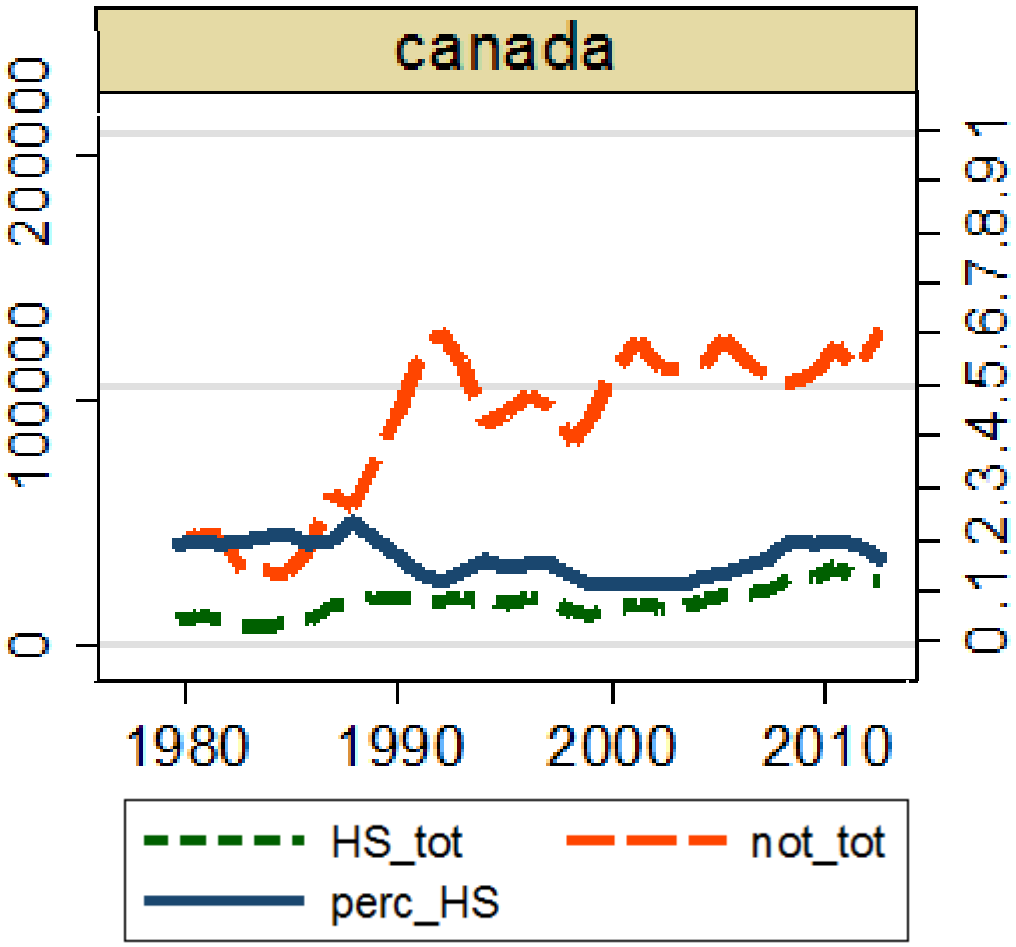
- Harmonize data by occupation (1-5 digits) to ISCO08 major groups:
  1. Managers, senior officials and legislators
  2. Professionals
  3. Technicians and associate professionals

Concordances

Switzerland
Occupational Classification: Swiss Standard Classification of Occupations 1990
Categories counted as highly skilled: • Minor Group 291: Engineers • Minor Group 292: Technicians • Minor Group 293: Technical Drawing Occupations • Minor Group 294: Technical Personnel • Minor Group 321: Banking and Insurance Professionals • Minor Group 322: Advertising and Marketing Occupations • Minor Group 324: Accountants and Financial Advisers • Minor Group 325: Brokers, Lenders and Auctioneers • Sub-Major Group 33: Large Organization and Administration Occupations • Minor Group 362: Legal and Judicial Occupations • Sub-Major Group 37: Media and Related Occupations • Minor Group 381: Musicians • Minor Group 382: Entertainment Occupations • Minor Group 383: Artistic Creators • Sub-Major Group 42: Health Occupations • Sub-Major Group 43: Social and Spiritual Assistance and Education Occupations • Sub-Major Group 44: Teaching and Education Occupations • Sub-Major Group 45: Science Occupations (Both Social Sciences & Natural Sciences)

United Kingdom
Occupational Classification: U.K. Standard Occupational Classification 2000
Categories counted as highly skilled: • 521 individual 2-4 digit occupational names individually assigned (concordance is available on request from the author)

Flow data


canada
0
100000
200000
0.1.2.3.4.5.6.7.8.9.1
1980
1990
2000
2010
HS_tot
not_tot
perc_HS

Flow data

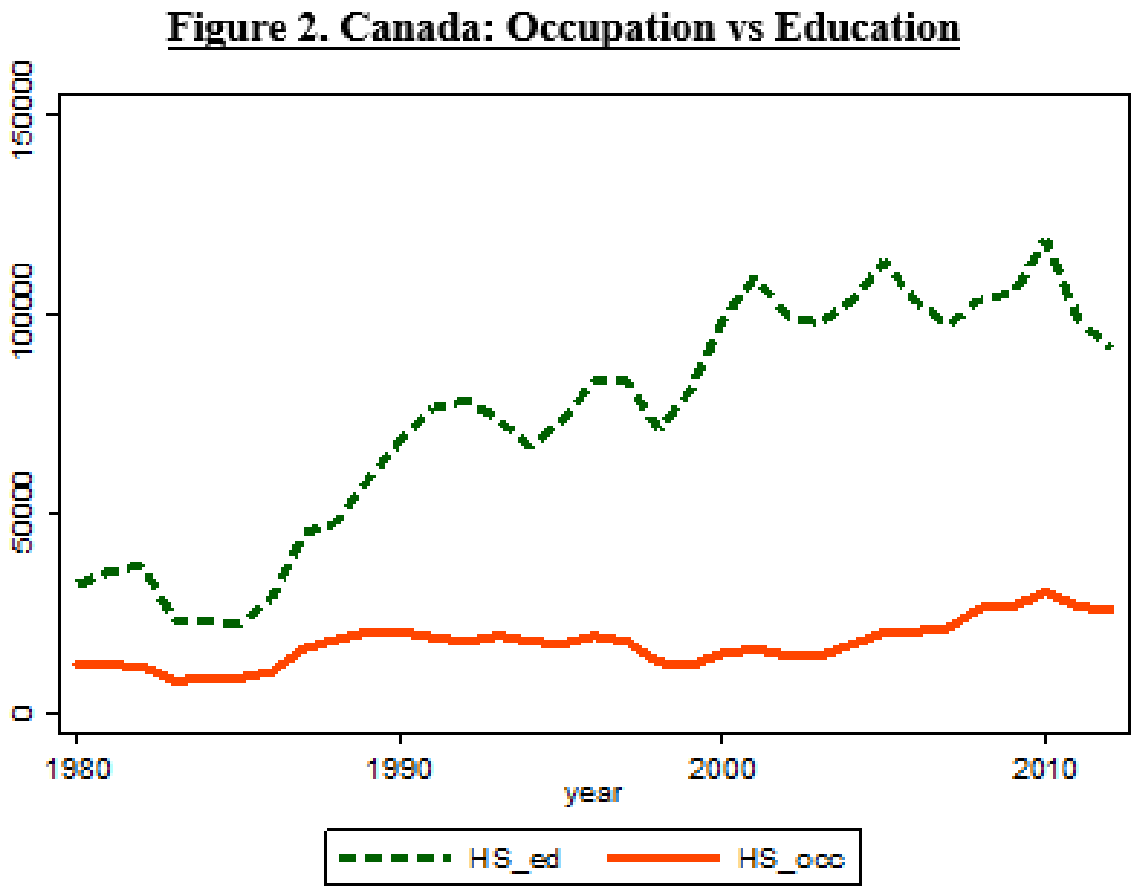


Figure 2. Canada: Occupation vs Education
150000
100000
50000
0
1980
1990
2000
2010
year
HS_ed
HS_occ

Unilateral Policies

- Policies – dummy variable approach as opposed to index
  - No need to anchor changes to initial position (levels)
- Demand vs. supply – hybrid systems
  - Job offer
  - Labour market test
    - "Is there a mechanism in place to attempt to ensure the position cannot be filled by domestic workers?"
  - Shortage list
  - Points based system
  - Permanency
  - Financial Incentives

Bilateral Labour Agreements

- Double taxation agreements
  - Avoidance double taxation on income/capital/inheritance
  - Also aim to prevent fiscal evasion
- Recognition of diplomas
  - Recognition of foreign degrees/qualifications to facilitate entry into partner country's labour market
- Social security agreement
  - Regulate benefits/rights regarding equality of treatment, payment of benefits (e.g. pension, disability support) abroad, pension portability

The Model

- Pseudo-gravity model derived from underlying RUM

$$m_{odt}^{z} = \beta_1' A_{dt} + \beta_2' P_{dt} + \beta_3' C_{odt} + \beta_4' x_{ot} + \beta_5' x_{od} + \beta_6' x_{ot} + \varepsilon_{jkt}^{z}$$

- A_{dt}: Wages (high skill), economic variables, amenities
- P_{dt}: Destination country unilateral policies
- C_{odt}: Bilateral agreements, networks
- x_{od}: Time-invariant and dyad-specific: language, contiguity, distance and colonial ties
- x_{ot}: Vector controls (origin-time FE)
  - RUM consistency – distributional assumptions error term
- Pseudo-Poisson Maximum Likelihood estimator

DV: HS flows	(1)	(2)	(3)	(4)	(5)
Destination controls					
HS wages (log)	0.503***	0.248***	0.573***	0.295***	-0.022
	(0.088)	(0.088)	(0.082)	(0.082)	(0.032)
Unemployment (log)	-0.884***	-0.726***	-0.919***	-0.692***	-0.021
	(0.109)	(0.136)	(0.107)	(0.129)	(0.082)
Population (dest, log)	1.085***	0.830***	1.138***	0.785***	3.012***
	(0.124)	(0.164)	(0.123)	(0.158)	(0.426)
Dyadic controls					
Network size (log)	0.377***	0.381***	0.353***	0.360***	0.028
	(0.017)	(0.020)	(0.016)	(0.019)	(0.018)
Contiguity	0.117	0.137	0.196	0.233***	-
	(0.124)	(0.114)	(0.123)	(0.108)	-
Common language	0.695***	0.616***	0.688***	0.642***	-
	(0.091)	(0.075)	(0.092)	(0.075)	-
Distance (log)	-0.330***	-0.275***	-0.351***	-0.261**	-
	(0.034)	(0.034)	(0.034)	(0.034)	-
Colony	0.698***	0.695***	0.546***	0.554***	-
	(0.083)	(0.084)	(0.063)	(0.065)	-
Unilateral Policies					
Job offer	-	-2.232***	-	-2.298***	-1.768**
	-	(0.176)	-	(0.163)	(0.778)
LM test	-	-0.184	-	-0.213	-0.360***
	-	(0.174)	-	(0.163)	(0.090)
Shortage list	-	-0.449***	-	-0.465***	-0.330***
	-	(0.083)	-	(0.079)	(0.074)
Points based system	-	2.003***	-	1.898***	1.199
	-	(0.123)	-	(0.113)	(0.812)
Permanency	-	0.842***	-	0.849***	0.237**
	-	(0.117)	-	(0.114)	(0.103)
Financial incentive	-	0.179***	-	0.188***	0.234***
	-	(0.079)	-	(0.071)	(0.072)
Bilateral Agreements					
Double taxation	-	-	-0.345***	-0.373***	-0.042
	-	-	(0.047)	(0.044)	(0.049)
Diploma recognition	-	-	0.201***	0.259***	0.416***
	-	-	(0.082)	(0.080)	(0.071)
Social security	-	-	0.426***	0.491***	-0.010
	-	-	(0.069)	(0.065)	(0.100)
Origin*Time FE	yes	yes	yes	yes	yes
Dyad FE	no	no	no	no	yes
No. of obs.	19,558	19,558	19,558	19,558	19,558
R-sq	0.739	0.765	0.772	0.802	0.944

International Migration Institute IMI

UNIVERSITY OF OXFORD

Motivation

- Interact unilateral policy combinations
- Strategy helps identify whether unique policy effects (Table 1) reinforced by concurrent policies
- Interactions – can examine unique effect of policy (in combination with another) on sub-sample:
- E.g. Financial incentives sig. larger effect in demand-driven system:
  - No PBS: 0.400
  - Job offer: 0.311
  - LM test: 0.268
  - + PBS: 0.089

Results (2)

Unilateral Policies					
LM test	-0.192	-0.259	-0.158	-0.258*	-0.348***
	(0.157)	(0.159)	(0.170)	(0.148)	(0.178)
Shortage list	-0.417***	-0.464***	-0.480***	-0.286***	-0.307***
	(0.079)	(0.076)	(0.081)	(0.076)	(0.074)
Points based system	1.873***	1.957***	1.625***	1.691***	1.619***
	(0.117)	(0.110)	(0.121)	(0.113)	(0.127)
Job offer	2.322***	2.372**	2.287***	2.165***	2.117***
	(0.165)	(0.166)	(0.164)	(0.157)	(0.177)
Permanency	0.951***	0.857***	0.968***	1.115***	0.655***
	(0.137)	(0.111)	(0.120)	(0.118)	(0.150)
Financial incentive	0.169**	0.142*	0.045	-0.005	-0.066
	(0.075)	(0.075)	(0.072)	(0.076)	(0.075)
Bilateral Agreements					
Double taxation	-0.364***	-0.371***	-0.315***	-0.300***	-0.299***
	(0.045)	(0.043)	(0.044)	(0.042)	(0.041)
Diploma recognition	0.254***	0.309***	0.271***	0.361***	0.426***
	(0.080)	(0.080)	(0.072)	(0.069)	(0.069)
Social security	0.492***	0.458***	0.450***	0.398***	0.341***
	(0.065)	(0.064)	(0.064)	(0.062)	(0.064)
Amenities					
Net-of-tax	-0.377	-	-	-	2.033***
	(0.284)	-	-	-	(0.610)
Global City appeal	-	0.190***	-	-	0.178***
	-	(0.038)	-	-	(0.038)
Educational quality	-	-	0.025***	-	0.027**
	-	-	(0.004)	-	(0.013)
ICT coverage	-	-	-	1.311***	0.958***
	-	-	-	(0.131)	(0.346)
Origin*Time FE	yes	yes	yes	yes	yes
Dyad FE	no	no	no	no	no
No. of obs.	19,558	19,558	19,558	19,558	19,558
R-sq	0.802	0.806	0.802	0.812	0.808

Going forward

- Composition if flows
- Examine effects of specific policy changes
- Migration policy packages

International Migration Institute

IMI

UNIVERSITY OF OXFORD

Thank you