"International labor mobility and inequality across nations"
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Immigration, Search Frictions and Redistribution

A Quantitative Welfare Analysis

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The Economic Effects of Immigration on Natives

Welfare and distribution effects of exogenous labour mobility

- **Wage effects**
  Borjas, 2003; Ottaviano and Peri, 2012, ...
  No labour market frictions or redistribution

- **Employment effects**
  Felbermayr et al., 2010; Chassamboulli and Palivos, 2014
  Reduced form, no fiscal redistribution

- **Fiscal effects**
  Razin et al. 2011; Dustmann and Frattini, 2013
  No complementarity effects, no interaction between labour market effects and redistribution.

Outline and Findings

1. **Data**: cross-country heterogeneity in labour market outcomes and relevant institutions

2. **Flexible unified G.E. framework** : search frictions, factor complementarity, redistribution
   - $\Longrightarrow$ Immigrants can grease the wheels of labour market
   - $\Longrightarrow$ Negative fiscal effects can be compensated by beneficial effects on labour market

3. **Quantitative analysis for 20 OECD countries**, capturing strong cross-country heterogeneity
   - $\Longrightarrow$ Highly heterogeneous effects for natives
   - $\Longrightarrow$ Labour market frictions are important
   - $\Longrightarrow$ Positive migration effects despite redistribution

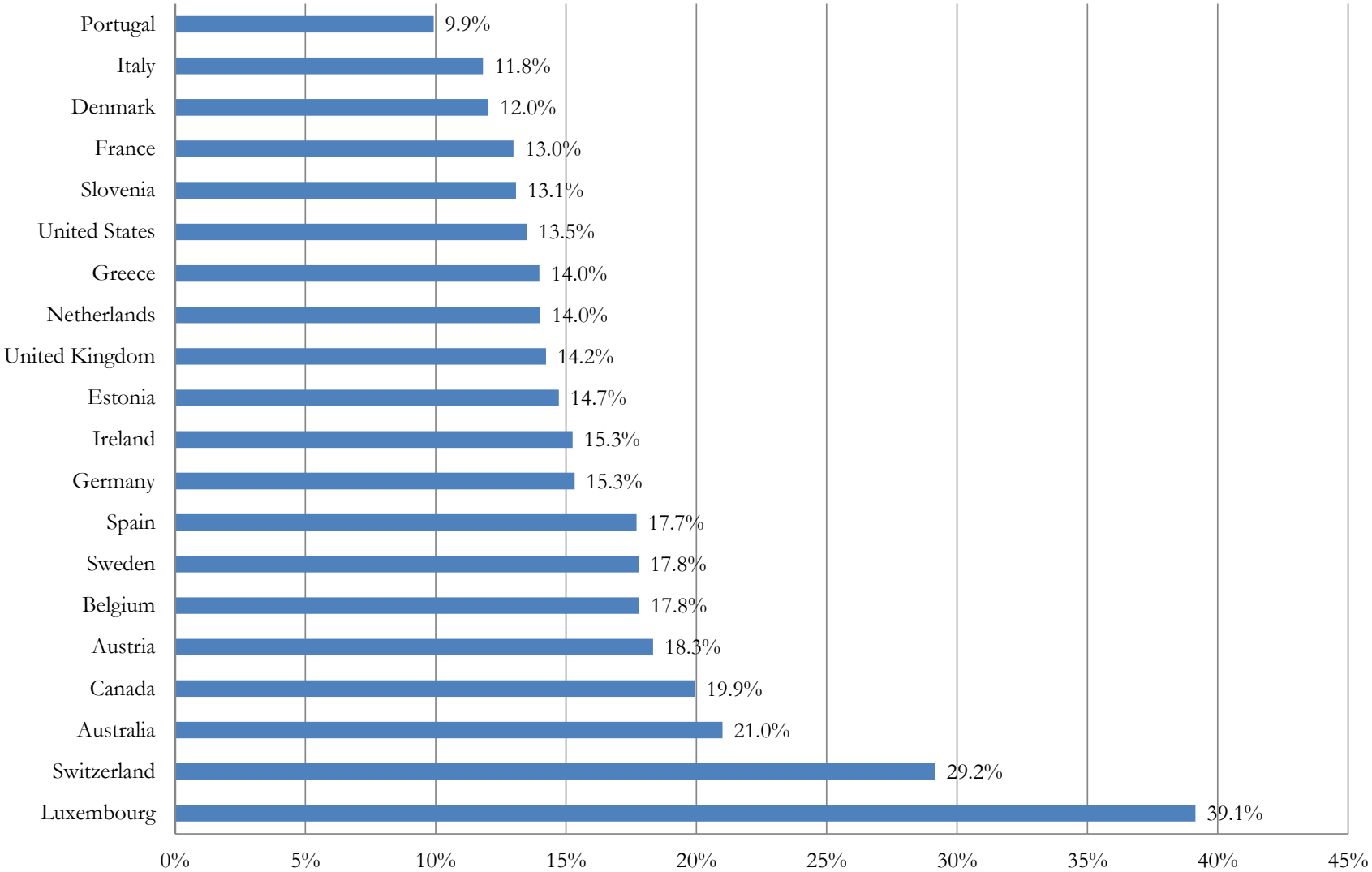
Our Data

We use data from 20 OECD countries: 16 EU countries, plus the US, Canada, Australia and Switzerland. On average:

- (Legal) immigrants are 17 percent of the labour force
- The immigrant wage gap is 18 percent
- Large heterogeneity

Heterogeneity in Migrant Share

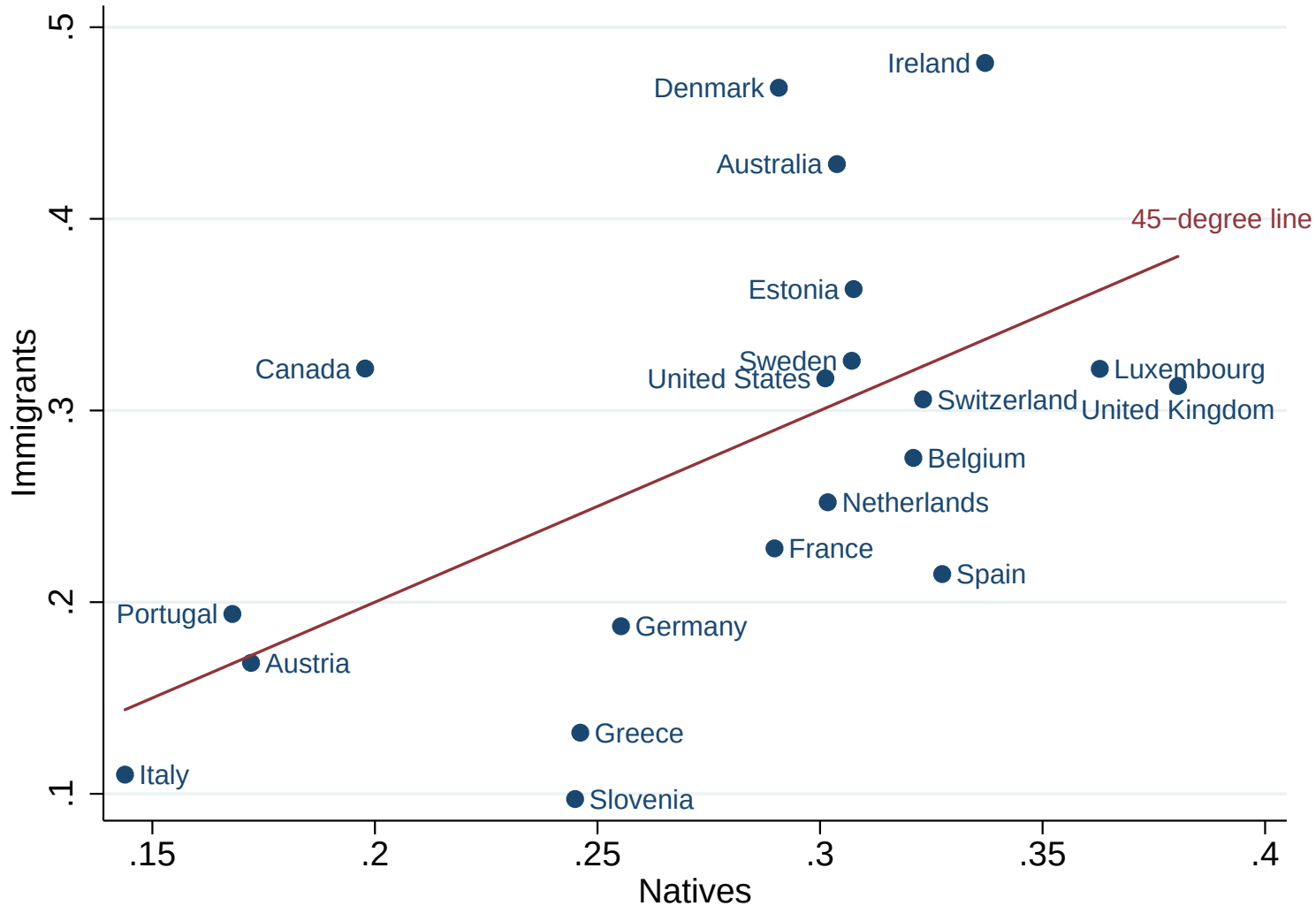
Share of foreign born in the labour force



Data sources: Eurostat, Canadian and US Census, HILDA.

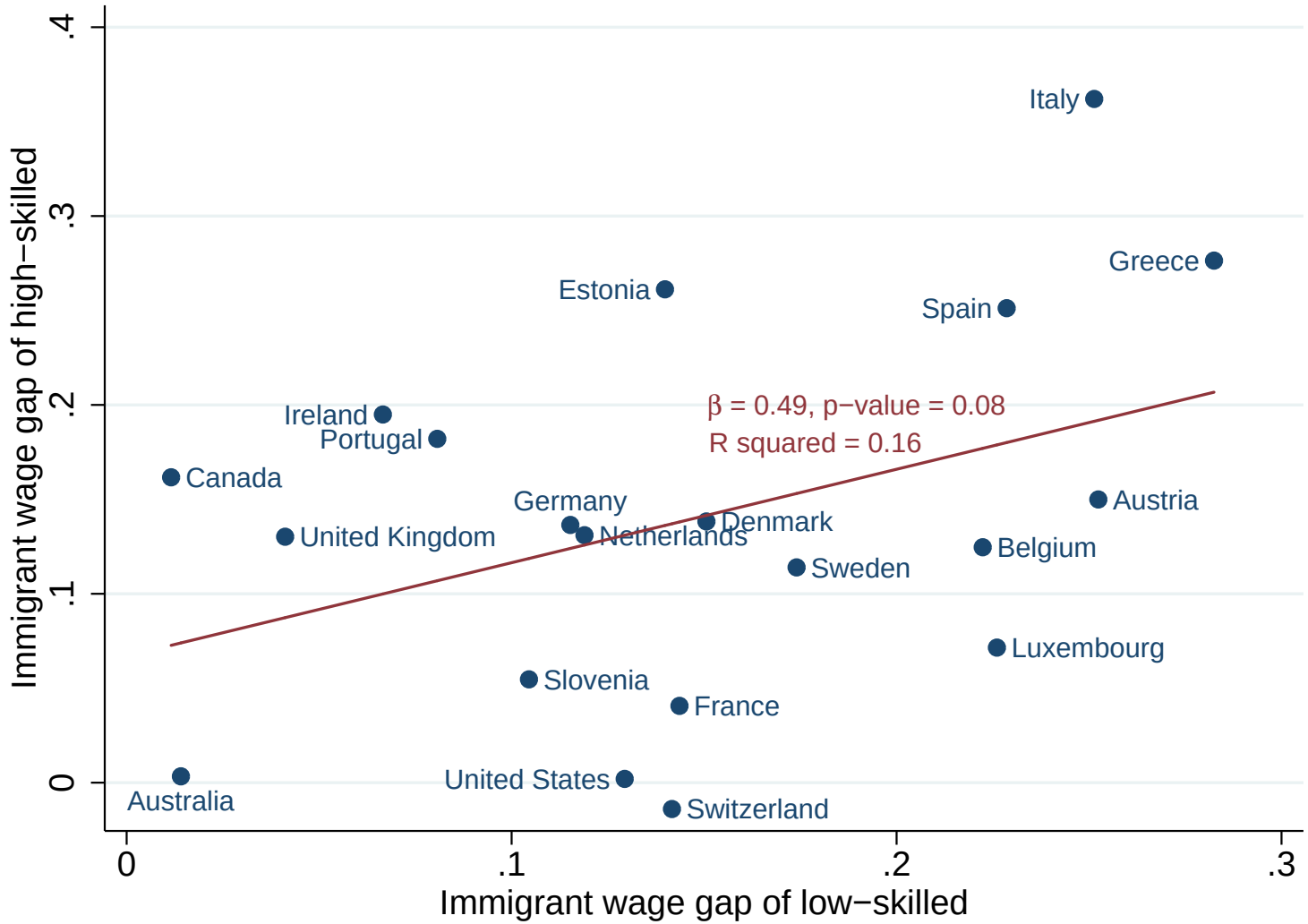
Heterogeneity in Skill Composition

Share of high skilled workers



High-skilled are ISCED 5+6; shares in labour force. Sources: LFSs, US Census, HILDA.

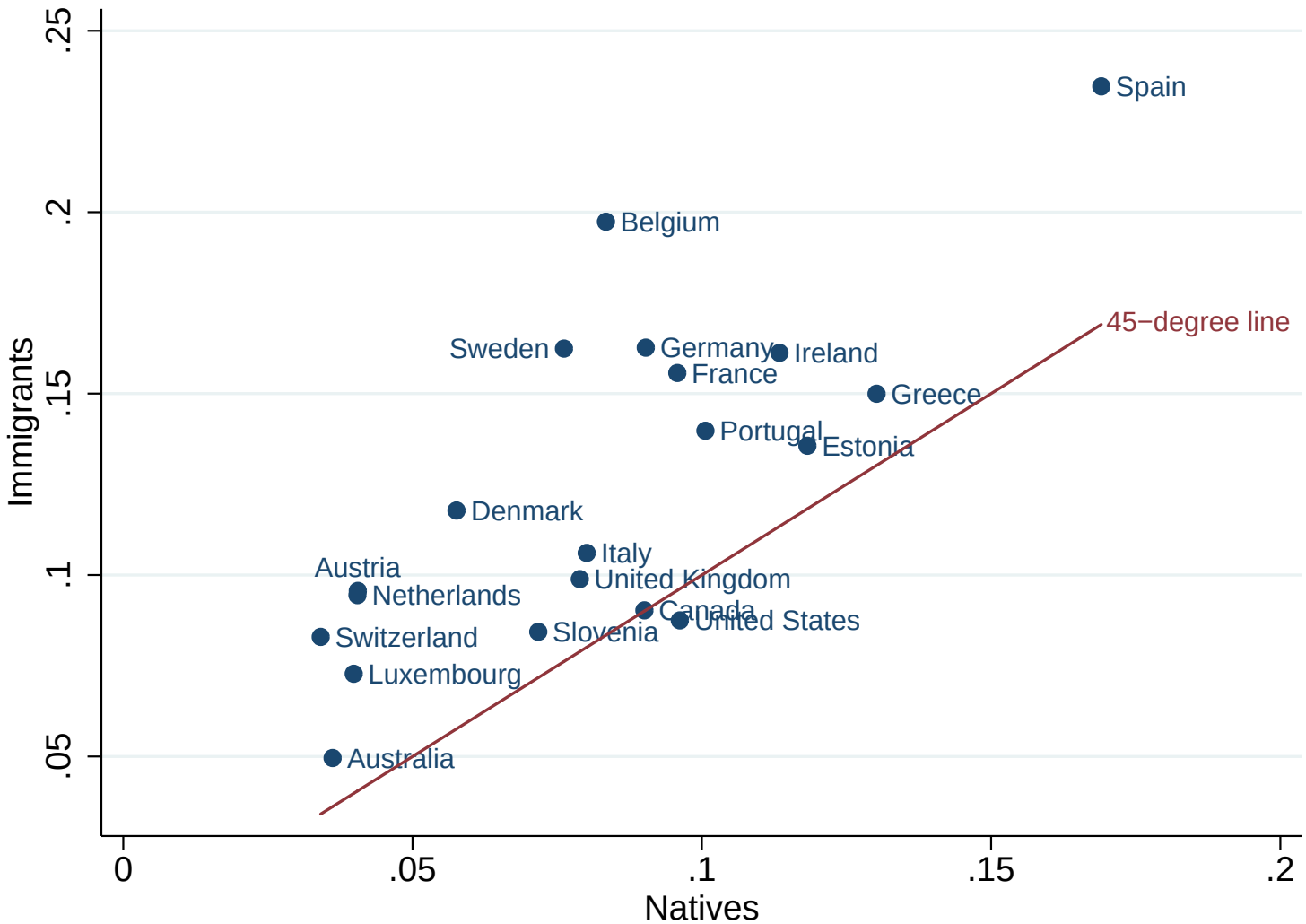
Heterogeneity in Wage Gaps



2005-2011 averages. Sources: EU-SILC, US and Canadian Census, HILDA

Heterogeneity in Unemployment Rates

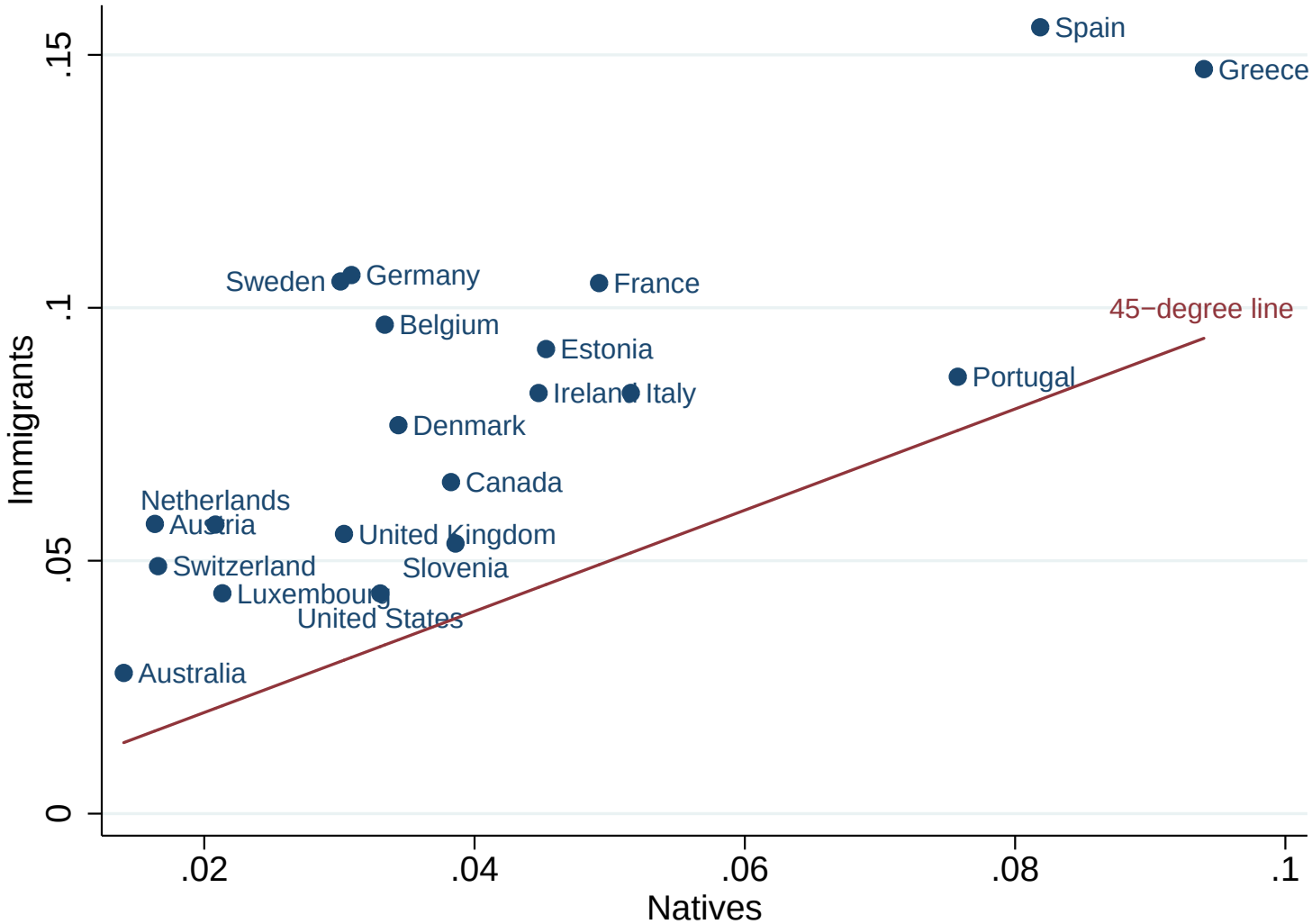
Low skilled workers



2005-2011 averages. Sources: LFSs, US Census, HILDA.

Heterogeneity in Unemployment Rates

High skilled workers



2005-2011 averages. Sources: LFSs, US Census, HILDA.

Making sense of this heterogeneity
Conventional wisdom

- Immigration into 'sclerotic' labour markets drives up unemployment
  - Nowhere wages are really fully rigid
  - In imperfect labour markets, immigrants may actually 'grease the wheels' of the labour market
- High-skilled immigration is always preferable
  - Notion derived from a purely fiscal view of immigration
  - 'Diversity effect' and 'fiscal burden' effects should both been taken into account
- Existence of native welfare gain implies existence of losers
  - Notion derived from a pure production side view
  - Pareto gains possible in presence of distortions

Our Model: Production

Production similar to Acemoglu 2001 and others

Perfect competition in **production**.

- Cobb Douglas production function between capital K and input Z:

$$Y = AK^{\alpha}Z^{1-\alpha}, \alpha \in (0,1)$$

- Input Z: CES production function of intermediate inputs

$$Z = \left[xY_L^{\rho} + (1-x)\, Y_H^{\rho}\right]^{1/\rho}, \rho \in (0,1), x \in (0,1)$$

- Linear production of intermediate inputs

$$Y_i = \sum_j (1-u_{ij})\, Q_{ij}, i = \{H, L\}, j = \{N, I\},$$

Our Model: Labour

Random matching à la Mortensen & Pissarides (1994)

N and I equally productive, but with different flow value of leisure $b_{ij} + h_{ij}$, with $h_{iN} = 0, h_{iI} \leq 0$ and split rates s_{ij}

▸ Asset equations

Free entry condition For each skill $i \in \{H, L\}$

$$\underbrace{\frac{c_i}{q(\theta_i)}}_{[1]} - \sum_{j \in \{N,I\}} \underbrace{\phi_{ij}}_{[2]} \underbrace{\frac{p_i - w_{ij}}{r + s_{ij}}}_{[3]} = 0$$

[1] Expected hiring costs, increasing in θ_i

[2] Probability that the match is with either N or I

[3] Expected job rent from the match.

$\Longrightarrow$ Migration may affect expected job rents and hence incentives for job creation

Our Model: Wages

- Share of β of surplus going to the workers
- Wage a weighted average of gross surplus p_i and outside option $(b_{ij} + h_{ij})$

$$w_{ij} = \beta \tilde{D}_{ij}(\theta_i) p_i + (1 - \beta) D_{ij}(\theta_i) (b_{ij} + h_{ij})$$

where

$$\begin{aligned} D_{ij}(\theta_i) &\equiv \frac{r + s_{ij}}{(r + s_{ij})(1 - t + t\beta) + \beta \theta_i q(\theta_i)} \\ \tilde{D}_{ij}(\theta_i) &\equiv D_{ij}(\theta_i) \left(1 + \frac{\theta_i q(\theta_i)}{r + s_{ij}}\right) \end{aligned}$$

with $D'_{ij}(\theta_i) < 0$, and $\tilde{D}'_{ij}(\theta_i) > 0$ since $[\theta_i q(\theta_i)]' > 0$

Our Model: Government and Welfare

- Proportional tax on labour income to finance unemployment benefits and public good provision:

$$t\left(\sum_i\sum_j(1-u_{ij})Q_{ij}w_{ij}\right)\geq\sum_i\sum_j b_{ij}u_{ij}Q_{ij}+G$$

where $G\equiv g\sum_i\sum_j Q_{ij}$

- Average welfare of native workers

$$\mathcal{W}_N=\underbrace{y_N}_{[1]}+\underbrace{R_N}_{[2]}+\underbrace{\tilde{g}}_{[3]}$$

where

[1] y_N is net employment and unemployment income
[2] R_N is capital income
[3] $\tilde{g}=g+v(\bar{G})$ with $v(\bar{G})$ normalized to zero

Equilibrium

Our model has ten equilibrium conditions

- two free entry conditions
- two market clearing conditions
- one condition for capital returns
- four wage equations
- one government budget constraint

pinning down ten endogenous variables

- two prices p_i
- two market tightness parameters θ_i
- the level of the capital stock
- four wages w_{ij}
- one tax rate t

How immigrants affect natives?

1. **Complementarity Channel** (Borjas 2003): Immigrants increases native real income since marginal productivity is lower than their average contribution.

2. **Job Creation Channel** (Chassamboulli and Palivos 2014): Immigrants and natives have different wages and unemployment rates. Migration affects vacancy creation.

3. **Fiscal Channel** (Dustmann and Frattini 2013): Immigrants pay taxes, receive transfers and public goods.

Quantitative Exercises

Parameterisation:

- Parameters from data and literature ▸ Parameters
- 11 Matched Moments for each country ▸ Matched Moments
- 11 country-specific Parameters ▸ Calibrated Parameters

Counterfactual Scenarios:

1. **Ex ante scenario:** Incremental immigration. What if the stock of migrants increased by 1 percentage point?
2. **Ex post scenario:** Gains from immigration. What if the existing stock of migrants were zero?
3. **Actual flows:** Effects of 2000-2011 flows (see draft)

Ex ante Scenario

Adding 1 percentage point

After calibrating the model, we increase the stock of immigrants by one percentage point, for different models. We look at welfare effects of natives (and immigrants)

	US			France		
	$\mathcal{W}_N$	$\mathcal{W}_{LN}$	$\mathcal{W}_{HN}$	$\mathcal{W}_N$	$\mathcal{W}_{LN}$	$\mathcal{W}_{HN}$
Model 1: complementarity	0.00	0.01	-0.02	0.00	-0.05	0.09
Model 2: + wage gaps	0.04	0.08	0.00	0.07	0.04	0.12
Model 3: + unempl. gaps	0.04	0.08	0.00	0.03	-0.01	0.08
Model 4: + b_{ij}	0.05	0.08	0.01	0.04	0.00	0.10
Model 5: + g	0.05	0.06	0.03	0.02	0.00	0.05

▸ All countries

Ex post Scenario: Total Gains from migration

Here we compare status quo with a hypothetical autarky scenario, for our 20 countries (model 5):

Countries	$\mathcal{W}_N$	$\mathcal{W}_{LN}$	$\mathcal{W}_{HN}$
Australia	0.24	1.26	-1.72
Canada	1.19	1.79	-0.57
France	0.77	0.52	1.27
Germany	0.31	-0.07	1.23
Italy	1.87	1.64	2.97
Spain	1.90	0.96	3.43
United Kingdom	0.35	-0.22	1.10
United States	0.80	0.97	0.53
Average	1.08	1.00	1.25
Median	0.99	1.10	1.19

▸ All countries

Lessons from our Quantitative Exercises

- Incremental immigration benefits natives on average in most countries
- In the majority of countries, Pareto gains
- Total gains are positive, 1.1 percent on average
- 'Greasing' effect is quantitatively important, can outweigh negative 'fiscal burden' effect

Monte Carlo-type Simulations

- Create 10,000 artificial economies, i.i.d. drawing from (truncated) $\mathcal{N}\left(\mu^k, \sigma^k\right)$ where k denotes a given moment X_k and μ^k, σ^k are sample statistics
- Calibrate our model for each economy to match the moments, outcome for ex ante scenario
- Run 'moment' regressions

$$\mathcal{W}_{iN} = \sum_k \beta_k \ln X_{ik} + u_i$$

Native Welfare Gains: Moment regression

Dependent variable: Welfare Gains of Natives from one 1% point increase in immigrant stock			
	(1) All	(2) Low skilled	(3) High skilled
Low Skilled Immigrant Wage Gap	0.062***	0.057***	0.062***
	[6.50]	[6.04]	[7.38]
High Skilled Immigrant Wage Gap	0.024**	0.019**	0.034***
	[2.52]	[2.03]	[3.98]
Unemployment Rate: Low Skilled Natives	0.166***	0.128***	0.227***
	[17.24]	[13.70]	[26.91]
Unemployment Rate: Low Skilled Immigrants	-0.100***	-0.067***	-0.172***
	[-10.41]	[-7.13]	[-20.34]
Unemployment Rate: High Skilled Natives	0.055***	0.039***	0.082***
	[5.74]	[4.21]	[9.70]
Unemployment Rate: High Skilled Immigrants	-0.030***	-0.027***	-0.027***
	[-3.14]	[-2.86]	[-3.17]
Share of immigrants	-0.108***	-0.089***	-0.139***
	[-11.30]	[-9.53]	[-16.44]
Share of Low Skilled among immigrants	-0.098***	-0.244***	0.362***
	[-10.24]	[-26.01]	[42.81]
Share of Low Skilled among natives	0.076***	0.161***	-0.186***
	[7.89]	[17.19]	[-21.94]
Replacement Rate	0.042***	0.028***	0.065***
	[4.34]	[3.04]	[7.72]
Government Expenditures	-0.034***	-0.030***	-0.026***
	[-3.56]	[-3.18]	[-3.10]
Per capita GDP	0.064***	0.062***	0.055***
	[6.68]	[6.59]	[6.48]
Observations	10,000	10,000	10,000
R^2	0.082	0.126	0.288

All regressors are in natural logarithms.
Standardized beta coefficients; t statistics in brackets; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Artificial economies obtained with i.i.d. sampling.

Moment Regression

- Positive effects of higher replacement rates
- Native unemployment makes immigration more beneficial, immigrant unemployment the opposite
- Generous public goods provision lowers advantages from immigration, but effects are small
- Non-linearity: negative marginal returns (Collier 2013)

▸ Parameter Regression

▸ Joint sampling

Native Welfare Gains: Variance Decomposition

	(1) All Natives	(2) Low skilled	(3) High skilled
Wage Gaps	4.83%	2.42%	1.63%
Unemployment Rates	52.46%	19.21%	31.39%
Migrant Share and Skills	34.21%	74.28%	63.80%
Public Policy	3.38%	1.16%	1.85%
GDP, premia, cap.share	5.21%	2.92%	1.32%

R^2 is set to one in each of the columns, so that rows add up to one.

Artificial economies obtained with i.i.d. sampling.

- Heterogeneity in unemployment rates and skill composition are very important
- Crucial to consider labour market frictions and public policy when analysing effects of migration

Thank you very much
for your attention

Our Model: Asset Equations

Along steady state

- Filled and vacant jobs (J_{ij}^F and J_i^V, respectively)

$$\begin{aligned} rJ_i^V &= -c_i + q(\theta_i)\left[\sum_j \phi_{ij} J_{ij}^F - J_i^V\right] \\ rJ_{ij}^F &= p_i - w_{ij} - s_{ij}\left[J_{ij}^F - J_i^V\right] \end{aligned}$$

with $\phi_{ij} \equiv \frac{U_{ij}}{\sum_k U_{ik}}$

- Employment $\left(J_{ij}^E\right)$ and unemployment $\left(J_{ij}^U\right)$

$$\begin{aligned} rJ_{ij}^U &= b_{ij} + h_{ij} + m(\theta_i)\left[J_{ij}^E - J_{ij}^U\right] \\ rJ_{ij}^E &= w_{ij}(1-t) - s_{ij}\left[J_{ij}^E - J_{ij}^U\right] \end{aligned}$$

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Parameters taken from available data or the literature

	Description	Mean	s.d.	Source
Parameters without country variation				
β	worker bargaining power	0.5	n.a.	Petrongolo and Pissarides (2001)
ε	matching elasticity	0.5	n.a.	Petrongolo and Pissarides (2001)
ρ	substitution elasticity	0.5	n.a.	Ottaviano and Peri (2012)
r	interest rate	0.004	n.a.	Chassamboulli and Palivos (2014)
δ	depreciation rate	0.006	n.a.	Chassamboulli and Palivos (2014)
c_L	cost of low-skilled vacancy	0.421	n.a.	Chassamboulli and Palivos (2014)
Parameters varying across countries				
ϱ	replacement rate	0.39	0.13	OECD Benefits and Wages
α	capital share	0.35	0.05	OECD Unit Labor Cost Indicators
Q_{LN}	share of low skilled natives	0.72	0.07	Eurostat, Census, HILDA
Q_{HN}	share of high skilled natives	0.28	0.07	Eurostat, Census, HILDA
Q_{LI}	share of low skilled immig.	0.15	0.08	Eurostat, Census, HILDA
Q_{HI}	share of high skilled immig.	0.06	0.05	Eurostat, Census, HILDA

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Matched moments

Moment	Source	Mean	S.d.
Native wage premium, low-skilled	EU-SILC, Censuses, HILDA	1.18	0.11
Native wage premium, high-skilled	EU-SILC, Censuses, HILDA	1.18	0.15
Return to skill, native workers	EU-SILC, Censuses, HILDA	1.54	0.23
Unempl. rate low-skilled natives	LSFs, CPS, HILDA	0.08	0.04
Unempl. rate low-skilled immigrants	LSFs, CPS, HILDA	0.12	0.05
Unempl. rate high-skilled natives	LSFs, CPS, HILDA	0.04	0.02
Unempl. rate high-skilled immigrants	LSFs, CPS, HILDA	0.08	0.03
Avg. job dur., low-skilled (quarters)	CP (2014)	29.4	n.a.
Avg. job dur., high-skilled (quarters)	CP (2014)	52.6	n.a.
Government Expenditures	IMF	0.45	0.06
Real GDP, US=1 (PPP)	World Bank WDI	0.82	0.29

All shares refer to working age population, aged 15-64.

All the moments above are constructed for each of our 20 countries.

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Calibrated Model Parameters

Country-specific parameters

Parameter	Description	Mean	S.d.
ξ	Match Efficiency Parameter	0.42	0.18
A	Total Factor Productivity	0.57	0.11
x	Low Skill Share in Production of Intermediates	0.51	0.05
c_H	Cost of high skill vacancy	0.72	0.55
G	Public expenditures	0.36	0.12
s_{LN}	Break-up rate, low skilled natives	0.03	0.00
s_{LI}	Break-up rate, low skilled immigrants	0.05	0.01
s_{HN}	Break-up rate, high skilled natives	0.02	0.00
s_{HI}	Break-up rate, high skilled immigrants	0.03	0.01
h_{LI}	Value of Leisure Discount for low-skilled Immigrants	-0.97	1.09
h_{HI}	Value of Leisure Discount for high-skilled Immigrants	-1.60	1.25

Calibrated from moments of the data of our 20 countries, full model.

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Ex Ante Scenario

Countries	Model 1			Model 2			Model 3			Model 4			Model 5		
	N	LN	HN	N	LN	HN	N	LN	HN	N	LN	HN	N	LN	HN
Australia	0.01	0.08	-0.13	0.01	0.09	-0.12	0.00	0.08	-0.13	0.00	0.08	-0.13	0.01	0.06	-0.08
Austria	0.00	0.00	0.01	0.08	0.09	0.07	0.05	0.05	0.04	0.04	0.04	0.04	-0.03	-0.03	-0.03
Belgium	0.00	-0.04	0.06	0.09	0.07	0.12	0.03	0.01	0.06	0.03	0.01	0.07	-0.02	-0.03	-0.01
Canada	0.01	0.09	-0.20	0.04	0.11	-0.13	0.03	0.10	-0.14	0.03	0.10	-0.14	0.04	0.08	-0.08
Denmark	0.01	0.14	-0.22	0.09	0.21	-0.13	0.05	0.17	-0.17	0.07	0.19	-0.16	0.06	0.11	-0.05
Estonia	0.00	0.04	-0.06	0.09	0.12	0.05	0.07	0.10	0.03	0.08	0.11	0.03	0.05	0.07	0.02
France	0.00	-0.05	0.09	0.07	0.04	0.12	0.03	-0.01	0.08	0.04	0.00	0.10	0.02	0.00	0.05
Germany	0.00	-0.05	0.11	0.07	0.03	0.17	0.02	-0.03	0.12	0.02	-0.02	0.12	-0.01	-0.03	0.04
Greece	0.01	-0.09	0.19	0.15	0.07	0.31	0.13	0.05	0.29	0.15	0.06	0.31	0.07	0.02	0.18
Ireland	0.01	0.11	-0.13	0.07	0.15	-0.04	0.04	0.13	-0.07	0.05	0.15	-0.08	0.05	0.10	-0.03
Italy	0.00	-0.02	0.10	0.14	0.12	0.25	0.13	0.10	0.23	0.13	0.11	0.24	0.07	0.05	0.14
Luxembourg	0.00	-0.02	0.04	0.03	0.02	0.06	0.02	0.00	0.05	0.02	0.00	0.05	-0.02	-0.03	-0.01
Netherlands	0.00	-0.04	0.06	0.06	0.03	0.12	0.03	0.00	0.09	0.03	0.00	0.09	-0.01	-0.03	0.02
Portugal	0.00	0.02	-0.06	0.08	0.08	0.06	0.05	0.06	0.04	0.08	0.09	0.04	0.08	0.09	0.07
Slovenia	0.01	-0.11	0.27	0.07	-0.04	0.30	0.06	-0.05	0.29	0.06	-0.05	0.30	0.02	-0.04	0.17
Spain	0.01	-0.09	0.13	0.13	0.04	0.25	0.08	-0.01	0.19	0.09	0.01	0.21	0.04	-0.01	0.12
Sweden	0.00	0.01	-0.02	0.08	0.10	0.04	0.02	0.04	-0.01	0.02	0.04	-0.01	-0.02	-0.01	-0.04
Switzerland	0.00	-0.01	0.02	0.02	0.03	0.02	0.00	0.01	0.00	-0.01	-0.01	-0.01	-0.04	-0.03	-0.04
UK	0.00	-0.06	0.07	0.05	-0.02	0.12	0.03	-0.04	0.11	0.03	-0.03	0.11	0.00	-0.03	0.05
United States	0.00	0.01	-0.02	0.04	0.08	0.00	0.04	0.08	0.00	0.05	0.08	0.01	0.05	0.06	0.03
Average	0.00	0.00	0.01	0.07	0.07	0.08	0.05	0.04	0.05	0.05	0.05	0.06	0.02	0.02	0.03
Median	0.00	-0.02	0.03	0.07	0.08	0.06	0.04	0.05	0.04	0.04	0.04	0.04	0.02	0.00	0.02

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Countries	$\mathcal{W}_N$	$\mathcal{W}_{LN}$	$\mathcal{W}_{HN}$
Australia	0.24	1.26	-1.72
Austria	1.77	1.74	1.94
Belgium	1.70	1.37	2.30
Canada	1.19	1.79	-0.57
Denmark	1.90	2.39	0.86
Estonia	1.47	1.47	1.46
France	0.77	0.52	1.27
Germany	0.31	-0.07	1.23
Greece	2.02	1.40	3.51
Ireland	1.77	2.30	0.95
Italy	1.87	1.64	2.97
Luxembourg	0.72	0.45	1.15
Netherlands	0.48	0.23	0.98
Portugal	1.27	1.23	1.41
Slovenia	0.52	-0.20	2.30
Spain	1.90	0.96	3.43
Sweden	0.63	0.77	0.34
Switzerland	-0.14	0.04	-0.46
United Kingdom	0.35	-0.22	1.10
United States	0.80	0.97	0.53
Average	1.08	1.00	1.25
Median	0.99	1.10	1.19

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Parameter Regression, i.i.d. sampling

Dependent variable: Welfare Gains of Natives (linear)				
	(1)	(2)	(3)	(4)
h_{LI}	0.129***	0.072***	0.068***	0.057***
	[12.94]	[6.58]	[5.95]	[9.59]
h_{HI}	0.041***	0.028***	0.025**	0.016***
	[4.15]	[2.62]	[2.26]	[2.75]
ξ		-0.004	0.000	0.029***
		[-0.37]	[0.00]	[4.28]
s_{LN}		0.109***	0.109***	0.114***
		[8.03]	[8.05]	[16.26]
s_{LI}		-0.076***	-0.079***	-0.093***
		[-5.23]	[-5.34]	[-12.22]
s_{HN}		0.025**	0.024**	0.033***
		[2.09]	[2.01]	[5.37]
s_{HI}		-0.032**	-0.033***	-0.048***
		[-2.55]	[-2.67]	[-7.43]
g			0.013	-0.028**
			[1.11]	[-2.34]
A				0.006
				[0.73]
x				0.840***
				[164.34]
K				-0.015
				[-1.44]
Observations	10000	10000	10000	10000
R^2	0.020	0.048	0.049	0.748

All regressors are in natural logarithms.
Standardized beta coefficients; t statistics in brackets
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Moment Regression, Joint Sampling

	(1) All	(2) Low skilled	(3) High skilled
Low Skilled Immigrant Wage Gap	0.151***	0.132***	0.107***
	[12.57]	[12.12]	[14.30]
High Skilled Immigrant Wage Gap	0.076***	0.044***	0.087***
	[6.86]	[4.33]	[12.58]
Unemployment Rate: Low Skilled Natives	0.347***	0.280***	0.283***
	[17.12]	[15.21]	[22.27]
Unemployment Rate: Low Skilled Immigrants	-0.364***	-0.258***	-0.356***
	[-19.65]	[-15.33]	[-30.61]
Unemployment Rate: High Skilled Natives	0.057***	0.042***	0.055***
	[3.55]	[2.89]	[5.42]
Unemployment Rate: High Skilled Immigrants	0.009	-0.030	0.079***
	[0.44]	[-1.53]	[5.87]
Share of Immigrants	-0.236***	-0.161***	-0.231***
	[-12.55]	[-9.40]	[-19.57]
Share of Low Skilled among Immigrants	-0.229***	-0.673***	0.725***
	[-17.29]	[-55.88]	[87.14]
Share of Low Skilled among Natives	0.113***	0.384***	-0.436***
	[8.20]	[30.62]	[-50.26]
Raplacement Rate	0.148***	0.110***	0.129***
	[15.25]	[12.45]	[21.24]
Government Expenditures	-0.007	0.003	-0.026***
	[-0.48]	[0.19]	[-2.82]
Per capita GDP	-0.124***	-0.112***	-0.068***
	[-7.36]	[-7.32]	[-6.44]
Observations	10000	10000	10000
R^2	0.349	0.463	0.744

All regressors are in natural logarithms.
Standardized beta coefficients; t statistics in brackets. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$
Artificial economies obtained with sampling from joint normal.

Parameter regression, Joint Sampling

	(1) All	(2) Low skilled	(3) High skilled
h_{LI}	0.079***	-0.046***	0.273***
	[6.97]	[-4.02]	[29.34]
h_{HI}	0.070***	0.088***	-0.009
	[7.13]	[9.04]	[-1.13]
ξ	-0.085***	0.082***	-0.349***
	[-7.84]	[7.63]	[-39.60]
s_{LN}	0.311***	0.408***	-0.075***
	[19.30]	[25.32]	[-5.70]
s_{LI}	0.035*	0.187***	-0.295***
	[1.96]	[10.37]	[-19.98]
s_{HN}	-0.069***	-0.191***	0.213***
	[-5.36]	[-14.79]	[20.22]
s_{HI}	-0.250***	-0.309***	0.028**
	[-17.39]	[-21.60]	[2.41]
g	0.190***	0.446***	-0.357***
	[7.12]	[16.77]	[-16.43]
A	-0.192***	-0.413***	0.314***
	[-12.14]	[-26.19]	[24.37]
x	-0.013	-0.015*	-0.002
	[-1.49]	[-1.76]	[-0.33]
K	-0.430***	-0.318***	-0.433***
	[-18.57]	[-13.76]	[-22.91]
Observations	10000	10000	10000
R^2	0.282	0.286	0.522

All regressors are in natural logarithms.
Standardized beta coefficients; t statistics in brackets
*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

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