Selective Migration Policies and Wages Inequality

Anthony EDO[1] Farid TOUBAL[2]

[1]Paris School of Economics & University of Paris I Panthéon-Sorbonne

[2]ENS Cachan & Paris School of Economics

January 23-24, 2014
Ferdi-Cerdi Conference

Motivation

- In Europe, there is a huge debate around "immigration policies" (Hatton, 2008)
- Immigration policy is of particular importance as it might be detrimental to some categories of workers
- Higher levels of immigration should lower the wages of competing workers and increase those of complementary workers
    - Skilled immigration should increase the wages of unskilled natives and decrease those of skilled ones
- A selective policy in favor of high-educated immigration should decrease wage inequality

Main Question

- We investigate the empirical relationship between immigration policies and wage inequality

How the educational composition of immigrants can impact native wage inequality?

- Country of interest: **France**
  - Distribution of immigrants in the labor force by education and year:

Level of Education	1990	1995	2000	2005	2010
High Level	9.7 %	15.8 %	19.4 %	24.1 %	25.8 %
Medium Level	23.5 %	25.9 %	29.5 %	35.3 %	34.4 %
Low Level	66.9 %	58.3 %	51.1 %	40.6 %	39.8 %
Total	100 %	100 %	100 %	100 %	100 %

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Our Empirical Strategy

- Study the distributional effects of immigration on wages
- Simulate the impact of different immigration policies on native wages
- Use a general equilibrium approach (Borjas, 2003; Ottaviano & Peri, 2012)
- **Take wage rigidities into account** (D'amuri & al., 2010)

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Main Literature and Contributions

- Borjas (2003): an immigrant influx has no effect on native wages in the long-run
- Ottaviano & Peri (2012): overall positive impact on native wages by 1% in the long-run
- In the US, immigration mainly decreases the wages of low-educated natives

Contributions:

1. The studies for France only estimate the partial effect of immigration on wages (Ortega & Verdugo, 2012; Edo, 2013)
2. Look at the immigration impact on native wage inequalities along various migrants characteristics: education, citizenship and nationality
3. We use a general equilibrium framework to **quantify the immigration impact on wage inequalities under different scenarios**

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Main Results

The immigrant influx from 1990 to 2010 is estimated to have reduced native average wages by 0.6% in the short-run, and 0% in the long-run

- Wage losses are concentrated within the high educated segment of the labor market (-1%)
- Almost half of the negative impact on highly educated native workers is due to the group of naturalized immigrants

An immigration policy in favor of high-educated immigration reduces the wage dispersion of native workers

- The effect is twice as large under a scenario when we assume a flexible labor market

Outline

Model of the Production Side

We consider a CRS production function: $Y_t = (A_t \cdot K_t^{1-\alpha} \cdot \mathbb{L}_t^{\alpha})$

- **Education:** $\mathbb{L}_t$ is a CES aggregate of two broad education groups: L_H and L_L

$$\mathbb{L}_t = \left[\theta_{Ht} \cdot L_{Ht}^{\frac{\sigma_{HL}-1}{\sigma_{HL}}} + \theta_{Lt} \cdot L_{Lt}^{\frac{\sigma_{HL}-1}{\sigma_{HL}}} \right]^{\frac{\sigma_{HL}}{\sigma_{HL}-1}}, \text{ with}$$

$$L_{Lt} = \left[\theta_{L_1 t} \cdot L_{L_1 t}^{\frac{\sigma_L-1}{\sigma_L}} + \theta_{L_2 t} \cdot L_{L_2 t}^{\frac{\sigma_L-1}{\sigma_L}} \right]^{\frac{\sigma_L}{\sigma_L-1}}$$

- **Experience:** each labor composite L_{bjt} is divided into k experience intervals of five years

$$L_{bjt} = \left[\sum_{k=1}^{8} \theta_{bjk} \cdot L_{bjkt}^{\frac{\sigma_X-1}{\sigma_X}} \right]^{\frac{\sigma_X}{\sigma_X-1}} \quad (1)$$

Model of the Production Side

- **Key 1:** Natives and immigrants may be imperfect substitutes (Ottaviano & Peri, 2006, 2012)

$$L_{bjkt} = \left[\theta_{Nbjkt} \cdot N_{bjkt}^{\frac{\sigma_I - 1}{\sigma_I}} + \theta_{Mbjkt} \cdot M_{bjkt}^{\frac{\sigma_I - 1}{\sigma_I}} \right]^{\frac{\sigma_I}{\sigma_I - 1}} \quad (2)$$

- **Key 2:** Employment effects, rigidities could cause employment rather than wage effects of immigration (Card et *al.*, 1999)
  - When 10 new immigrants join the French labor force, 3 natives lose their jobs (Edo, 2013)
  - Total Wage Effect (as in D'amuri & *al.*, 2010) =
    1. Direct wage effect
    2. The employment effect (attenuates the direct wage effect)

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Equilibrium Native Wages

The percentage wage changes from 1990 to 2010 due to immigrants for natives:

$$\left(\frac{\triangle w^N_{bjkt}}{w^N_{bjkt}}\right) = \left[\frac{1}{\sigma_{HL}}\right]\sum_b\sum_j\sum_k\left(s^M_{bjkt}\cdot\frac{\triangle M_{bjkt}}{M_{bjkt}} + s^N_{bjkt}\left(\frac{\triangle N_{bjkt}}{N_{bjkt}}\right)_R\right)$$
$$-\left[\frac{1}{\sigma_{HL}}-\frac{1}{\sigma_b}\right]\left(\frac{1}{s_{bt}}\right)\sum_j\sum_k\left(s^M_{bjkt}\cdot\frac{\triangle M_{bjkt}}{M_{bjkt}} + s^N_{bjkt}\left(\frac{\triangle N_{bjkt}}{N_{bjkt}}\right)_R\right)$$
$$-\left[\frac{1}{\sigma_b}-\frac{1}{\sigma_X}\right]\left(\frac{1}{s_{bjt}}\right)\sum_k\left(s^M_{bjkt}\cdot\frac{\triangle M_{bjkt}}{M_{bjkt}} + s^N_{bjkt}\left(\frac{\triangle N_{bjkt}}{N_{bjkt}}\right)_R\right)$$
$$-\left[\frac{1}{\sigma_X}-\frac{1}{\sigma_I}\right]\left(\frac{1}{s_{bjkt}}\right)\left(s^M_{bjkt}\cdot\frac{\triangle M_{bjkt}}{M_{bjkt}} + s^N_{bjkt}\left(\frac{\triangle N_{bjkt}}{N_{bjkt}}\right)_R\right)$$
$$-\left[\frac{1}{\sigma_I}\right]\left(\frac{\triangle N_{bjkt}}{N_{bjkt}}\right)_R + (1-\alpha)\left(\frac{\triangle \kappa_t}{\kappa_t}\right) \qquad (3)$$

Data

- Data are drawn from the French LFS from 1990 to 2010
- Provide detailed information about a random and representative sample of 210,000 respondents per year
- Nationality - Age - Level of education - Monthly wage - Hours worked
- Sample:
  - Restrict our attention on men in working age between 1 and 40 years of work experience
  - Exclude individuals who are enrolled at school and self-employed

Wage & Labor Supply Measures

- **Work experience** is computed by subtracting for each individual the age of schooling completion from reported age (Mincer, 1974)
- The price of labor is measured by **hourly wages** (robust to monthly wages)
- **Labor supply** in each cell is expressed as the level of employment (Borjas & *al.*, 2011; D'Amuri & *al.*, 2010)

Outline

Elasticity of Substitution Estimates

Elasticity of substitution between...	**Ours**	Test I	Test II	Test III
Broad education groups, σ_{HL}	4			
Fine education groups, σ_L	10			
Experience groups, σ_X	∞			
Natives/Immigrants, σ_I	∞			

Elasticity of Substitution Estimates

Elasticity of substitution between...	**Ours**	Test I	Test II	Test III
Broad education groups, σ_{HL}	4	4		
Fine education groups, σ_L	10	10		
Experience groups, σ_X	∞	∞		
Natives/Immigrants, σ_I	∞	***20***		

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Broad education groups, σ_{HL}	4	4	***2***	
Fine education groups, σ_L	10	10	***20***	
Experience groups, σ_X	∞	∞	***7***	
Natives/Immigrants, σ_I	∞	***20***	∞	

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Natives/Immigrants, σ_I	∞	***20***	∞	***20***

Outline

Distributional Effects of Immigration on Native Wages

	Perfect Substitutability			Test I
Average Wage Effect	**-0.01**	**0.00**	**-0.01**	**0.06**
Highly Educated	**-0.96**	**-1.13**	**-1.12**	**-0.72**
Direct Wage Effect	-2.22	-2.38	-2.56	-1.60
Employment Effect	1.26	1.25	1.44	0.89
Medium Educated	**0.24**	**0.32**	**0.22**	**0.28**
Direct Wage Effect	0.45	0.58	0.39	0.63
Employment Effect	-0.21	-0.26	-0.17	-0.35
Low Educated	**0.44**	**0.52**	**0.46**	**0.38**
Direct Wage Effect	1.13	1.22	1.18	0.98
Employment Effect	-0.69	-0.70	-0.72	-0.59
Sample/Specification	Male	All	Priv.Sec.	Male

Wage Effects of Immigration by Immigrant Groups

	Perfect Substitutability			Test I
Highly Educated	**-0.96**	**-1.13**	**-1.12**	**-0.72**
Due to European	-0.22	-0.26	-0.25	-0.19
Due to Non-European	-0.28	-0.29	-0.39	-0.23
Due to Naturalized	-0.46	-0.58	-0.48	-0.31
Medium Educated	**0.24**	**0.32**	**0.22**	**0.28**
Due to European	0.04	0.05	0.02	0.03
Due to Non-European	0.04	0.07	0.05	0.05
Due to Naturalized	0.16	0.20	0.15	0.19
Low Educated	**0.44**	**0.52**	**0.46**	**0.38**
Due to European	0.12	0.15	0.13	0.08
Due to Non-European	0.16	0.15	0.19	0.11
Due to Naturalized	0.16	0.22	0.14	0.19
Sample/Specification	Male	All	Priv. Sec.	Male

Migration Policies Targeting Education - Scenarios

Level of Education	1990		**2010**	**2010**	**2010**
	True Shares		**True Shares**	**Scenario I**	**Scenario II**
High Level	9.7 %		25.8 %	50 %	10 %
Medium Level	23.5 %		34.4 %	25 %	15 %
Low Level	66.9 %		39.8 %	25 %	75 %
Total	100 %		100 %	100 %	100 %

Migration Policies Targeting Education - Simulations

	Rigid Labor Market		Perfect Labor Market	
	I. Policy in Favor of High-Educated Immigration			
Average Wage Effect	-0.02	0.09	-0.05	0.23
Highly Educated (I)	-2.22	-1.69	-5.42	-4.09
Medium Educated	0.63	0.65	1.45	1.53
Low Educated (II)	0.88	0.78	2.25	1.95
Differences ($I - II$)	**-3.10**	**-2.47**	**-7.67**	**-6.04**
	II. Policy in Favor of Low-Educated Immigration			
Average Wage Effect	0.01	0.03	0.01	0.11
Highly Educated (I)	0.02	0.01	0.07	0.15
Medium Educated	0.08	0.08	0.23	0.21
Low Educated (II)	-0.09	-0.02	-0.36	-0.04
Differences ($I - II$)	**0.11**	**0.03**	**0.43**	**0.19**
Sample/Specification	Male	Test I	Male	Test I

Conclusion

- Immigration in France has decreased the wages of high-educated natives and increased those of low-educated ones
- The paper shows that immigration policy has strong quantitative implications for wage inequality
  - A policy in favor of high-educated immigration tends to reduce wage inequality

Conclusion

Thank you for your attention