Immigrant characteristics in low-income countries

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Motivation

Until now studies on immigrant characteristics were focused on high-income countries. This research investigates immigrant characteristics in low-income countries.

Goal

I will try to answer the following questions:

1. How immigrants are selected into low-income countries?
2. What are their occupations?
3. How well do they assimilate?

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Definitions

- *Positive (Negative) selection on skills*: Positive (negative) selection on skills means that immigrants' skills are on average above (below) the mean skill levels of the source-country population.
- *Occupational upgrading (downgrading)*: Occupational upgrading is the term used when immigrants move up (down) an occupational hierarchy.
- *Assimilation*: The rate of convergence in economic outcomes between immigrants and natives in the post-migration period.

Literature

1. **Selection of immigrants:** Chiswick (1987, 1999), Borjas (1987, 1991, 1999), Chiquior and Hanson (2005), Orrenius and Zavodny (2005), Belot and Hatton (2012), Dustman and Glitz (2011), Grogger and Hanson (2011).
2. **Human capital and occupational distribution of immigrants:**
   - *Occupational distribution:* Chiswick et al. (2002), Duleep and Regets (2009), Acresh (2006, 2008), Chiswick and Miller (2008, 2009), Zorlu (2013), Mattoo et al. (2008).
   - *Human capital:* Hendricks (2002), Schoellman (2012), Lagakos et. al (2016), Hendricks and Schoellman (2016).
3. **Assimilation:** Chiswick (1978a, 1979), Borjas (1985, 1987, 1992a), Friedberg (1993, 2000), Schoeni (1997), Bratsberg and Ragan (2002).

Data

- General Census

- of Brazil: 1980, 1990, 2000 and 2010 Population Census;
- of Venezuela: 1981, 1990 and 2001 Population Census;
- of Mexico: 1970, 1990, 2000 and 2010 Population Census.
- of Costa Rica: 1973, 1984, 2000 and 2011 Population Census;
- of Argentina: 1980, 1991, 2001 and 2010 Population Census.

- Two restrictions are made:

1) age (20 and 65)

2) employment status (employed).

Data

Data availability	Countries
Good	Brazil, Dominican Republic
Average	Mexico, Venezuela, Argentina, Costa-Rica, Panama
Poor	Bolivia, Chile, Colombia, Ecuador, El Salvador, Jamaica, Mongolia, Pakistan, Nicaragua, Paraguay, Peru, South Africa

Table: Data availability

Data

	N of immigrants	% of population
Argentina	1 242 570	6.8%
Brazil	430 726	0.5%
Costa Rica	259 380	11.5%
Mexico	265 762	0.5%
Venezuela	955 400	9.4%

Table: Immigrants aged 20 and older

Selection on education

In high-income countries there are two important observations:

- immigrants are positively selected in terms of education.
- selection is stronger for immigrants from lower income countries.

Is that the case in low-income countries as well?

Selection of immigrants on education in USA

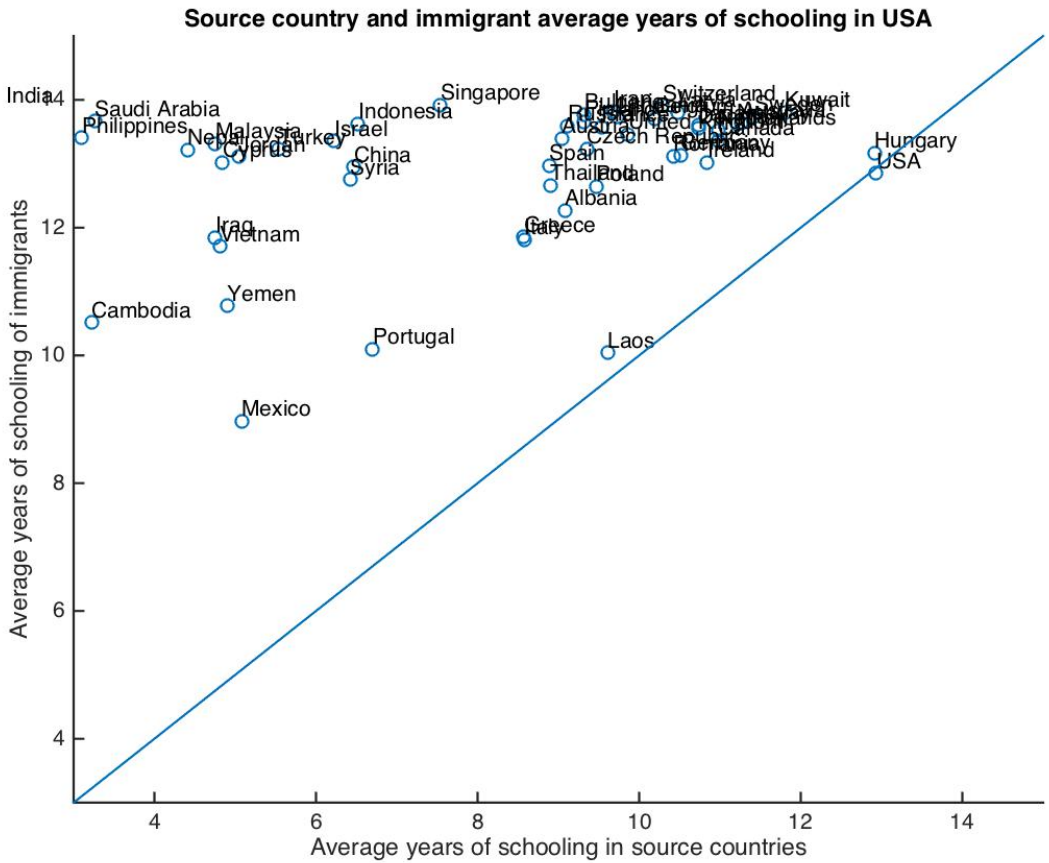


Figure: Average years of schooling at home and among immigrants in USA in 2000

Selection of immigrants on education in Venezuela

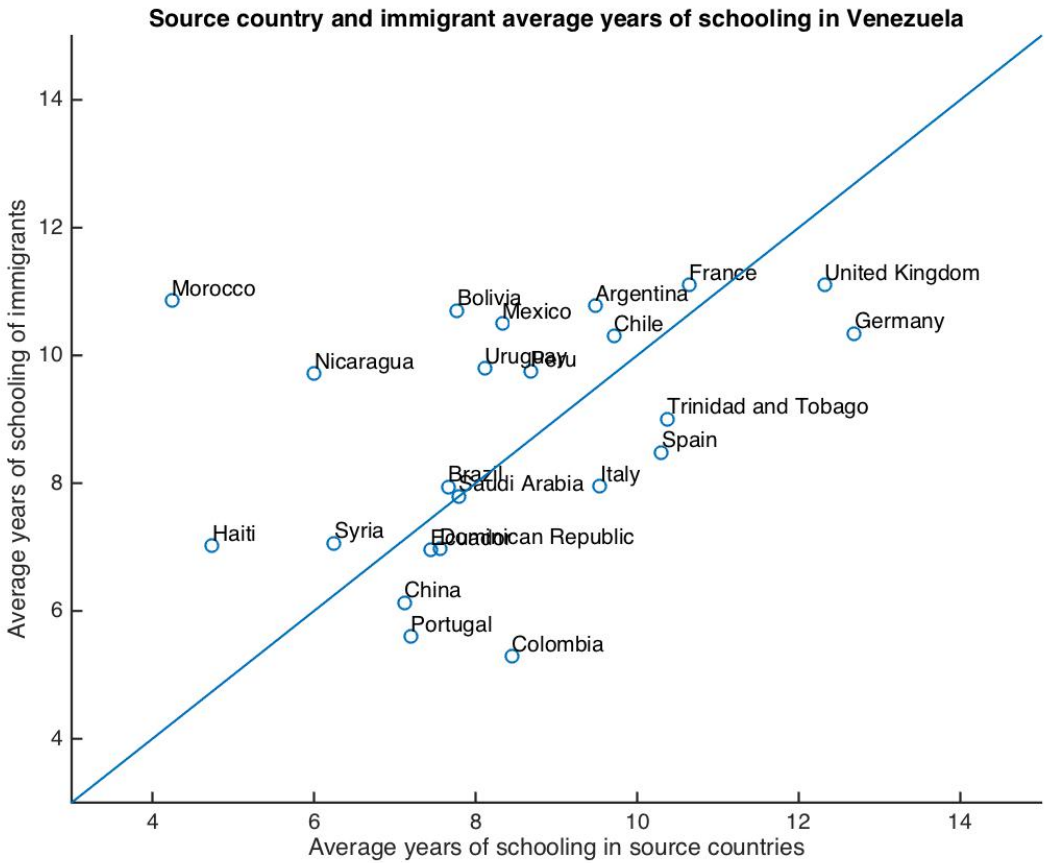


Figure: Average years of schooling at home and among immigrants in Venezuela in 2000

Selection of immigrants on education in Argentina

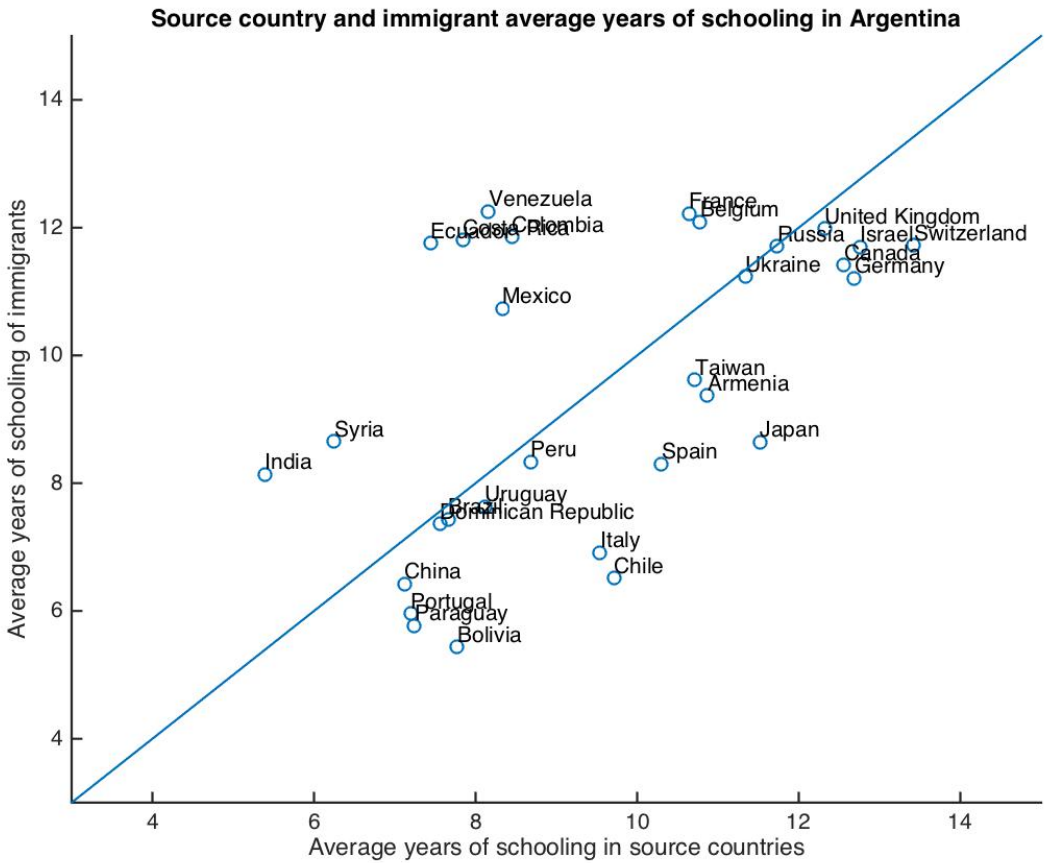


Figure: Average years of schooling at home and among immigrants in Argentina in 2000

Selection of immigrants on education in Brazil

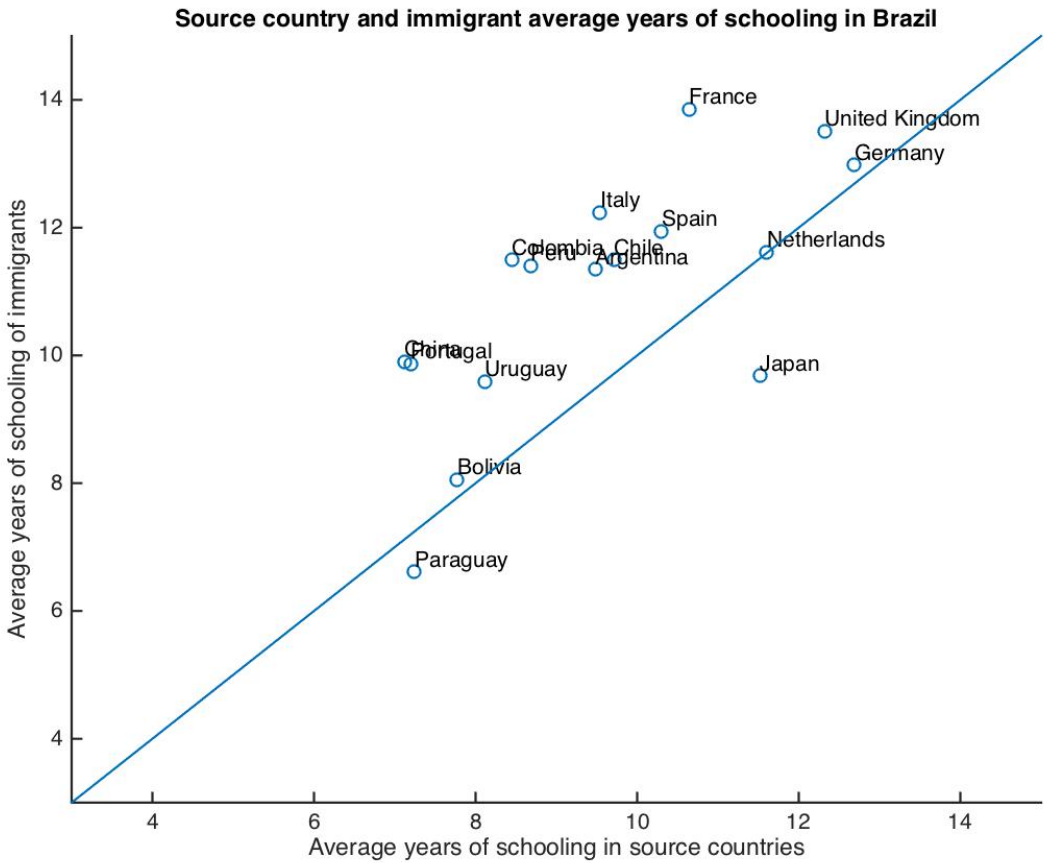


Figure: Average years of schooling at home and among immigrants in Brazil in 2010

Selection of immigrants on education in Mexico

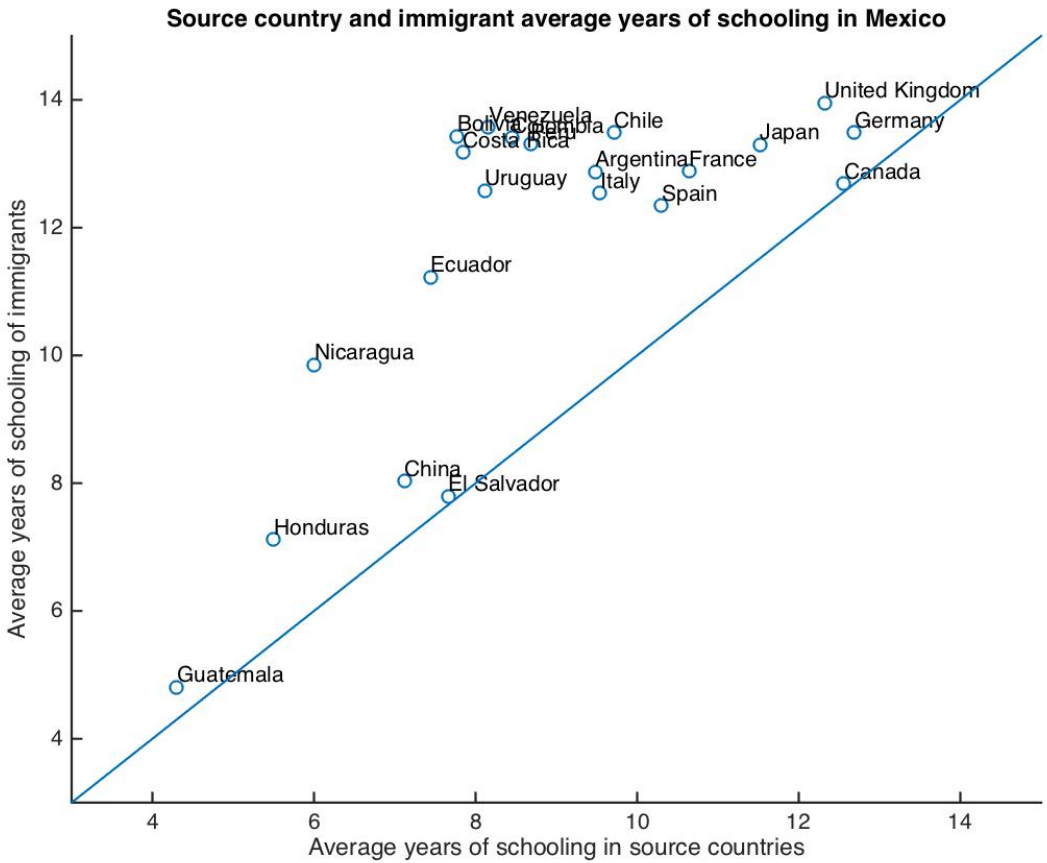


Figure: Average years of schooling at home and among immigrants in Mexico in 2010

Occupational distribution of immigrants

Where do immigrants work?

Occupational distribution of immigrants

Variable name	Occupation groups
OCCISCO	1)Legislators, senior officials and managers 2)Professionals 3)Technicians and associate professionals 4)Clerks 5)Service workers and shop and market sales 6)Skilled agricultural and fishery workers 7)Crafts and related trades workers 8)Plant and machine operators and assemblers 9)Elementary occupations
OCC	200-300

Occupational distribution of immigrants

$$log(wage) = \beta_0 + \beta_1 educ_i + \beta_2 age_i + \beta_3 age_i^2 + \beta_4 age_i^3 + \sum_j \beta_{5j} D_i^j + \epsilon_i$$

D_i^j- dummy that takes the value of one if an individual i is in occupation j

$\Rightarrow \bar{w}^j \quad j = 1...9$

$\Rightarrow sort\ \bar{w}^j$

$\Rightarrow p_j^n = \frac{N_j^n}{\sum_j N_j^n}$ and $p_j^i = \frac{N_j^i}{\sum_j N_j^i}$

$F_j^i(x)$ for $i = i, n$ and $j = 1...9$.

Occupational distribution of immigrants in Brazil

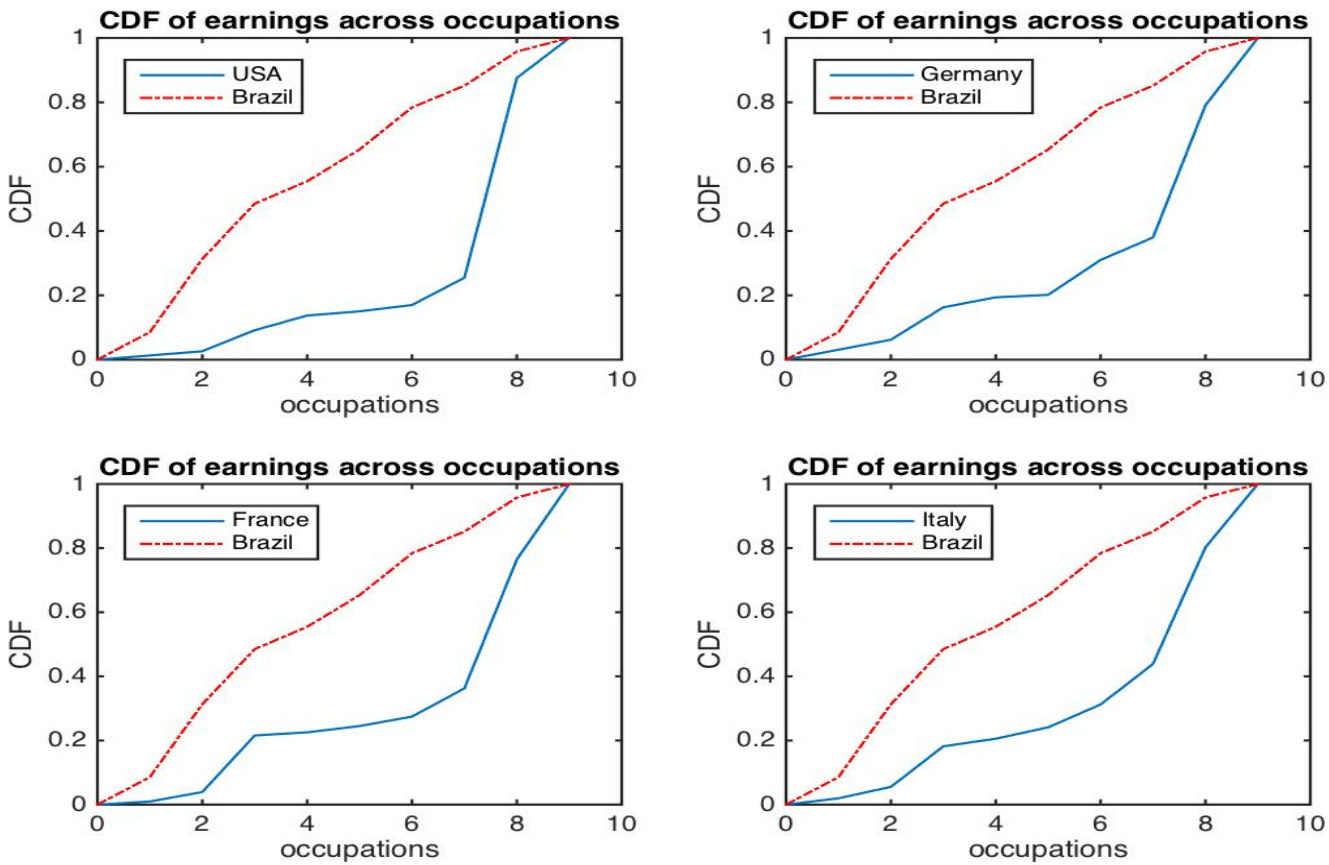


Figure: Occupational distribution of immigrants in Mexico in 2010

Occupational distribution of immigrants in Brazil

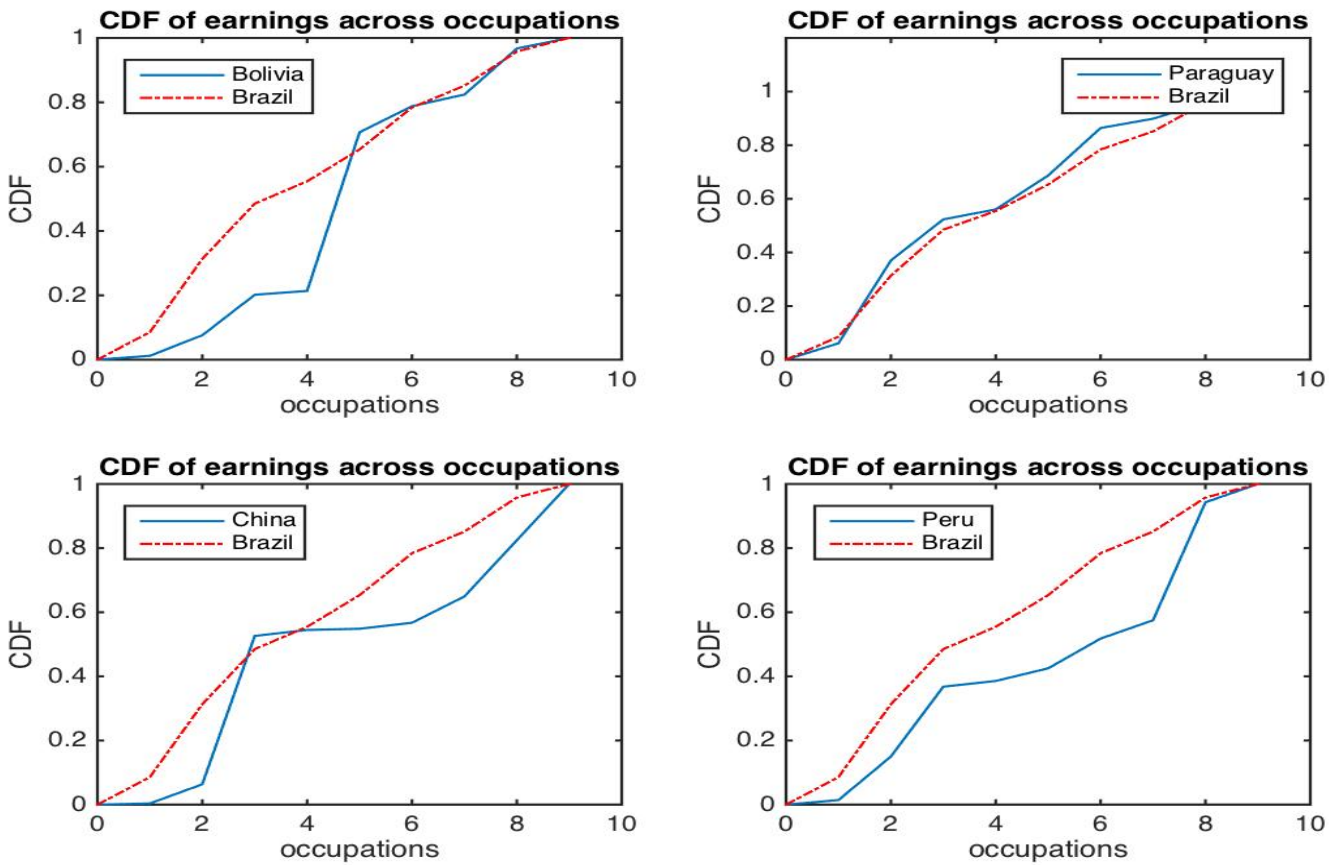
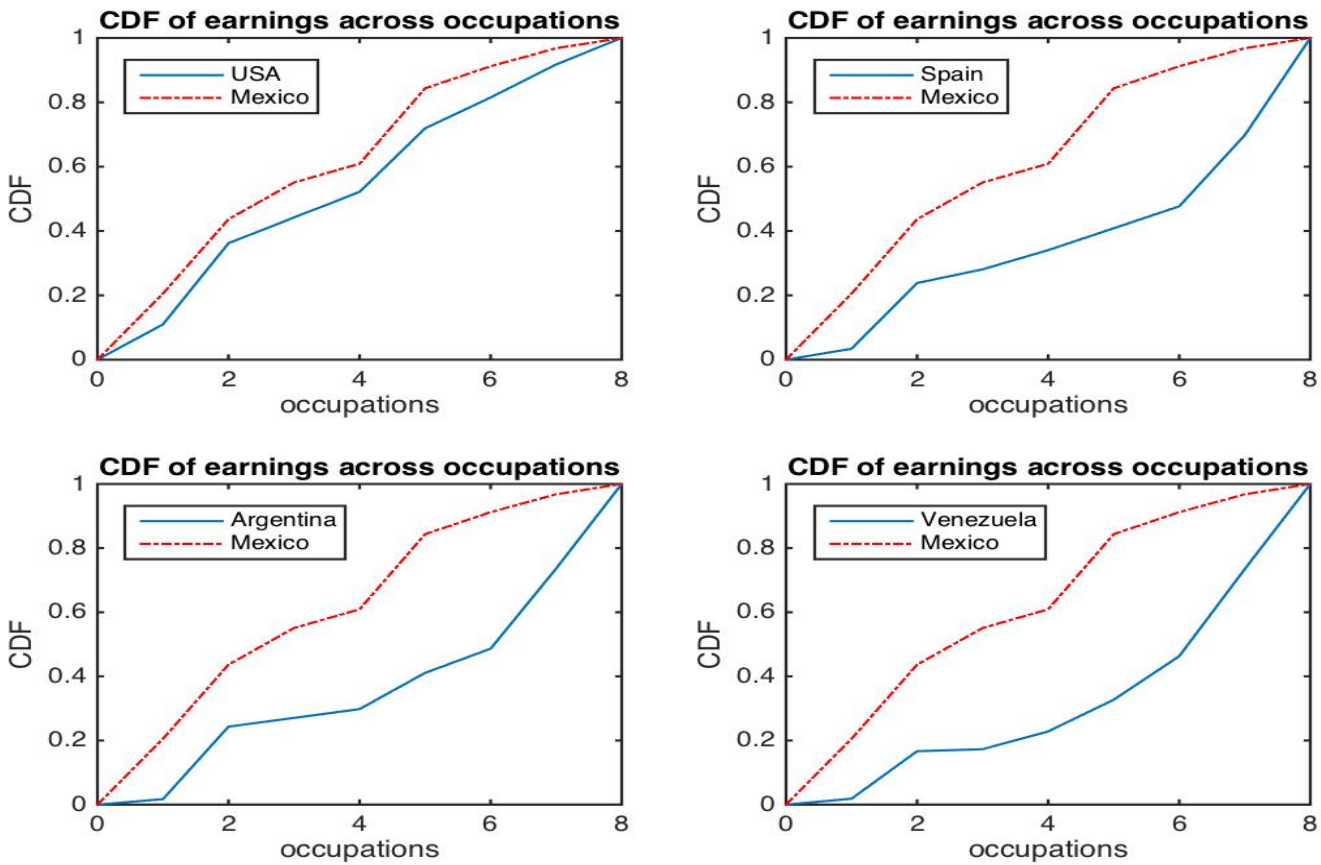


Figure: Occupational distribution of immigrants in Mexico in 2010

Occupational distribution of immigrants in Mexico



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Occupational distribution of immigrants in Mexico

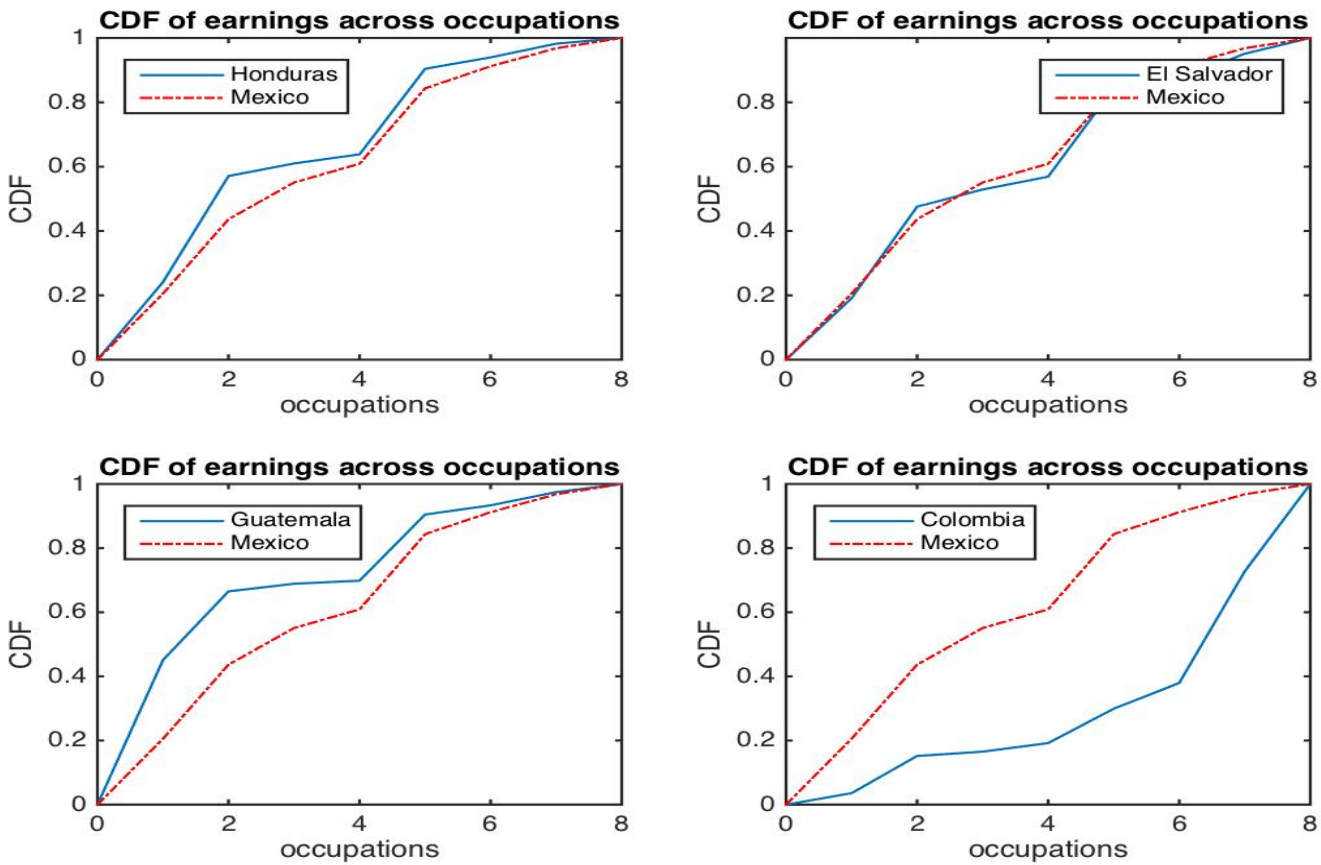


Figure: Occupational distribution of immigrants in Mexico in 2010

Counterfactual experiment: Effect of occupational upgrading (downgrading)

$$\bar{w}^n = \sum_{j=1}^{n} p_j^n w_j^n$$

$$\bar{w}^i = \sum_{j=1}^{n} p_j^i w_j^i$$

$$\bar{w}_c^i = \sum_{j=1}^{n} p_j^n w_j^i$$

$$\bar{w}_c^n = \sum_{j=1}^{n} p_j^i w_j^n$$

$$E^n = log(\bar{w}_c^n) - log(\bar{w}^n)$$

$$E^i = log(\bar{w}_c^i) - log(\bar{w}^i)$$

Counterfactual: Occupational distribution of immigrants in Brazil

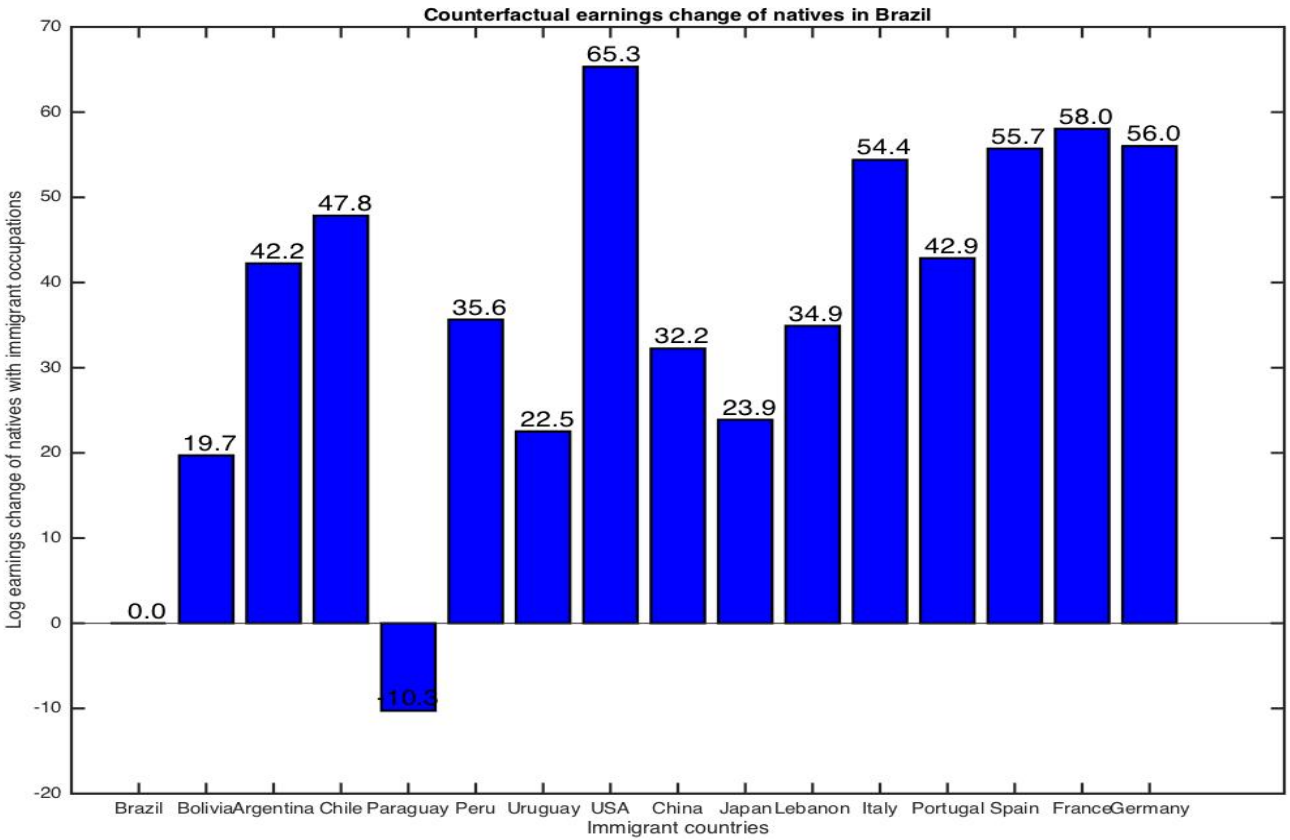


Figure: Counterfactual: Occupational distribution of immigrants in Brazil in 2010

Counterfactual: Occupational distribution of immigrants in Mexico

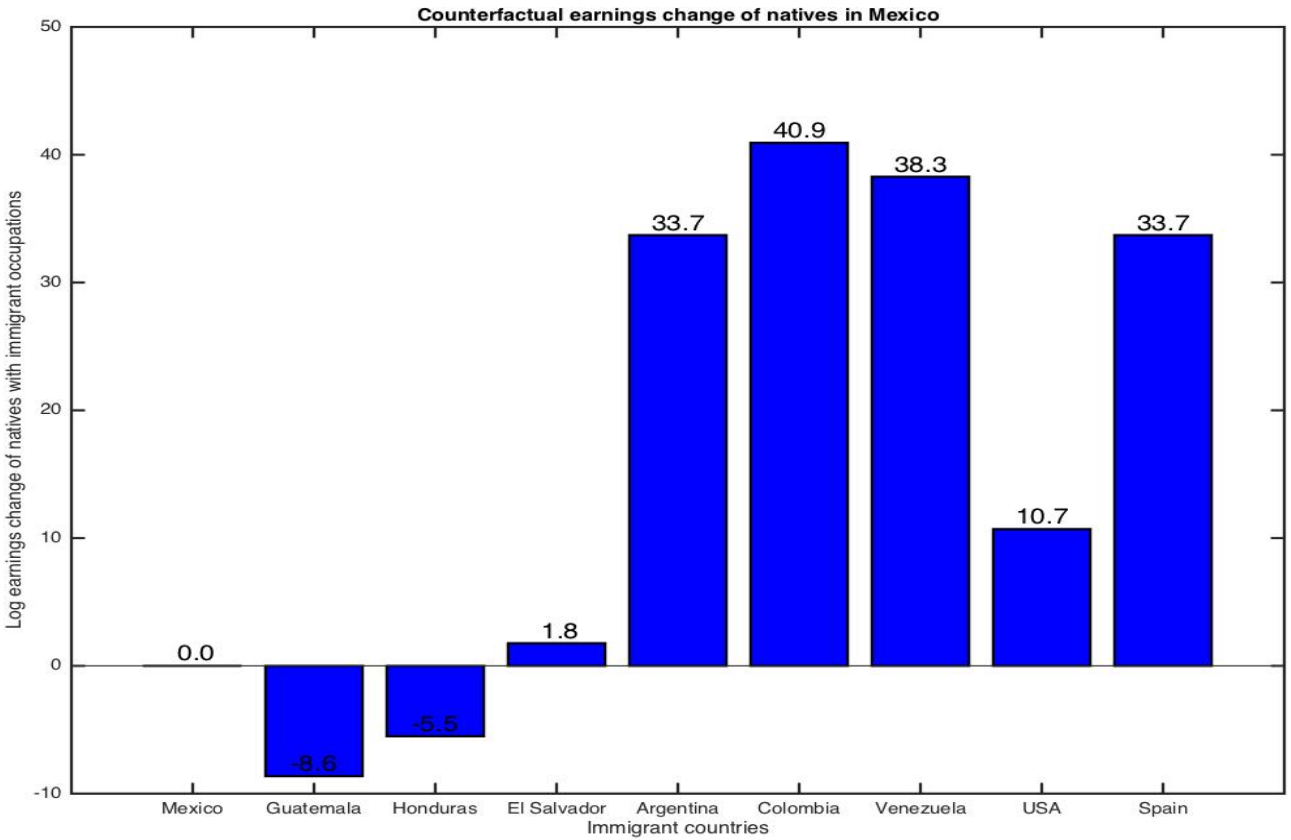


Figure: Occupational distribution of immigrants in Mexico in 2010

Human capital of immigrants

$$\bar{w}^n = \sum_{j=1}^{n} p_j^n w_j^n$$

$$\bar{w}^i = \sum_{j=1}^{n} p_j^i w_j^i$$

$$\bar{w}_c^i = \sum_{j=1}^{n} p_j^n w_j^i$$

$$E_h^i = log(\bar{w}_c^i) - log(\bar{w}^n)$$

Counterfactual: Human capital of immigrants in Brazil

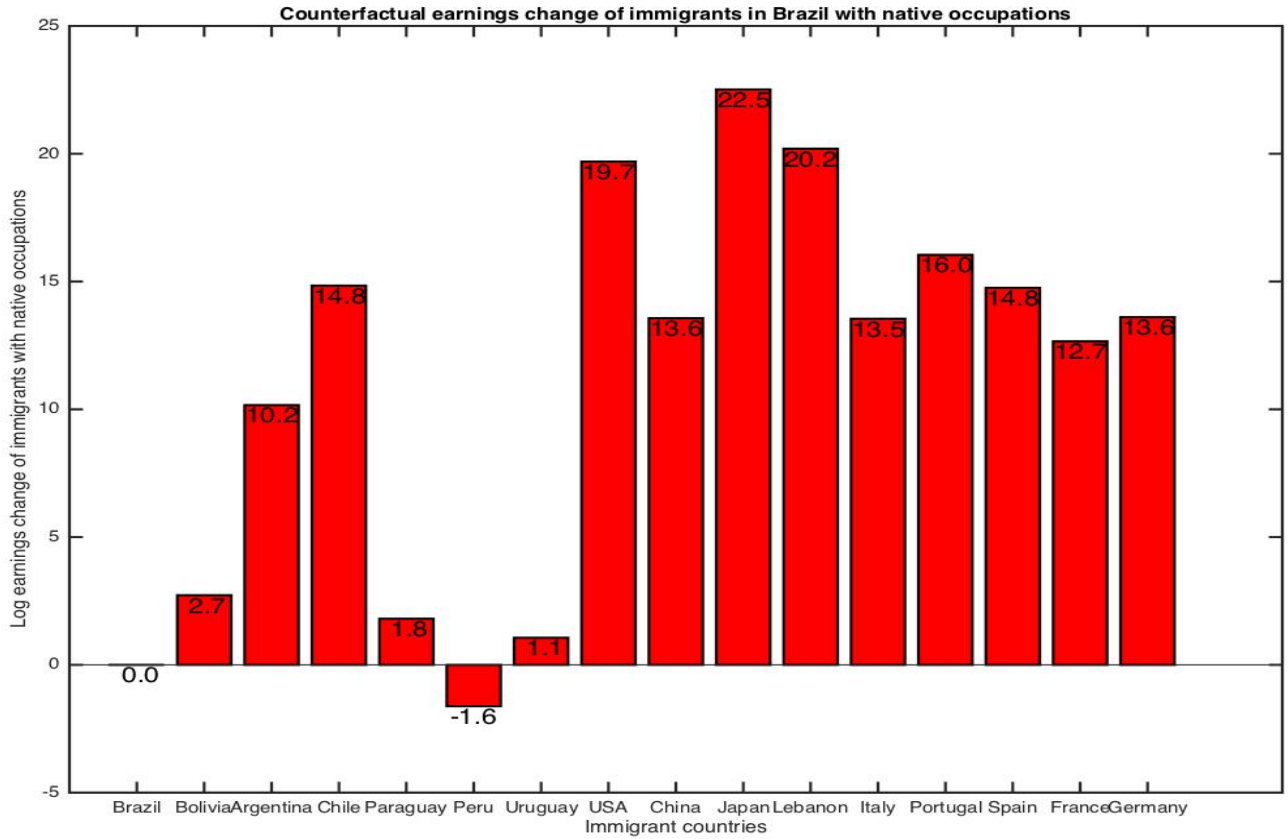


Figure: Counterfactual: Occupational distribution of immigrants in Brazil in 2010

Counterfactual: Human capital of immigrants in Mexico

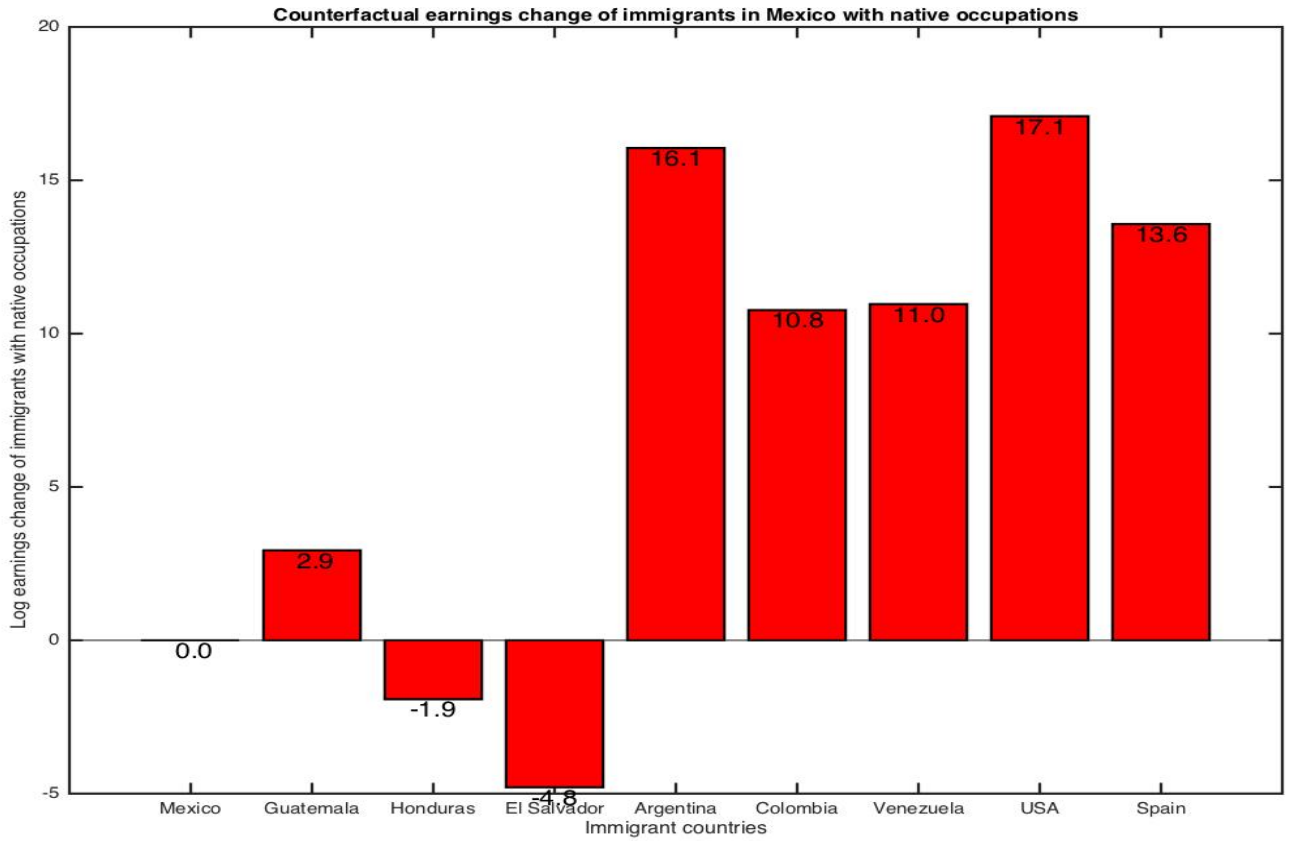


Figure: Occupational distribution of immigrants in Mexico in 2010

Human capital acquired abroad

Studies have established that the national origin of an individual's human capital is a crucial determinant of its return and that immigrants from richer countries have higher level of human capital.

Source country GDP per capita and immigrant earning gap in USA

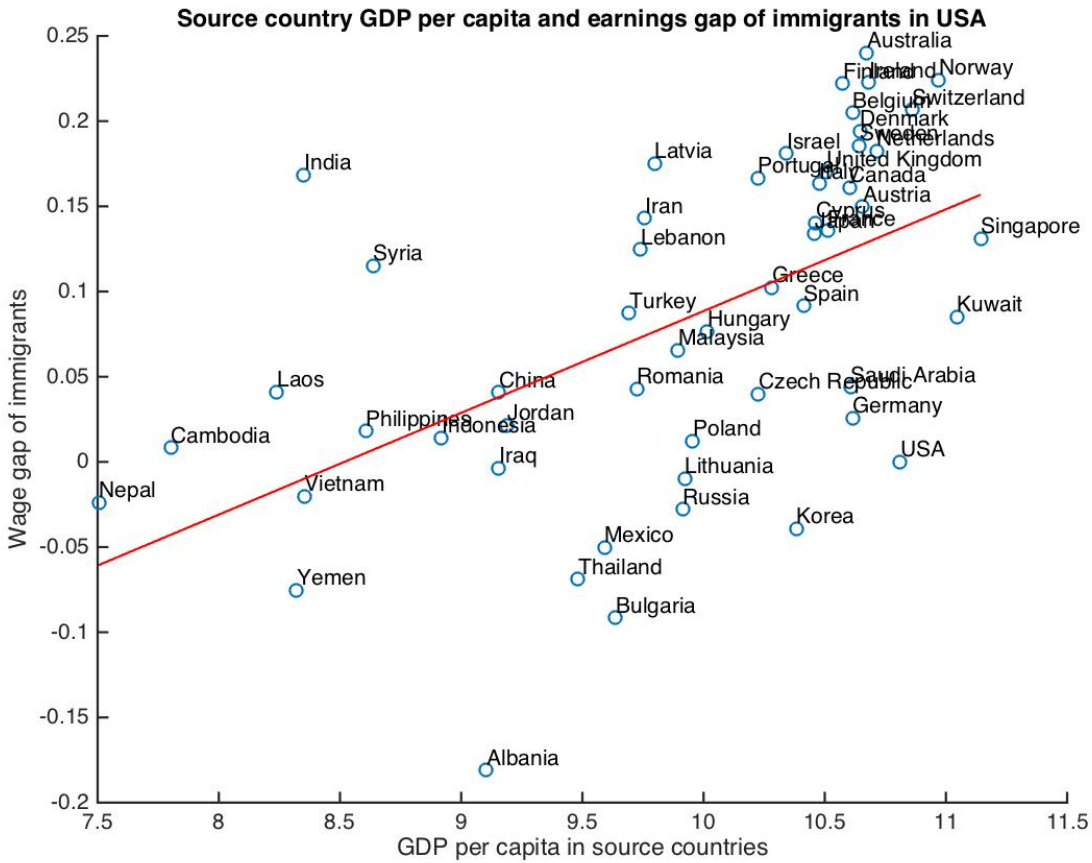


Figure: Source country GDP per capita and immigrant earning gap in USA in 2000

Source country GDP per capita and immigrant earning gap in Venezuela

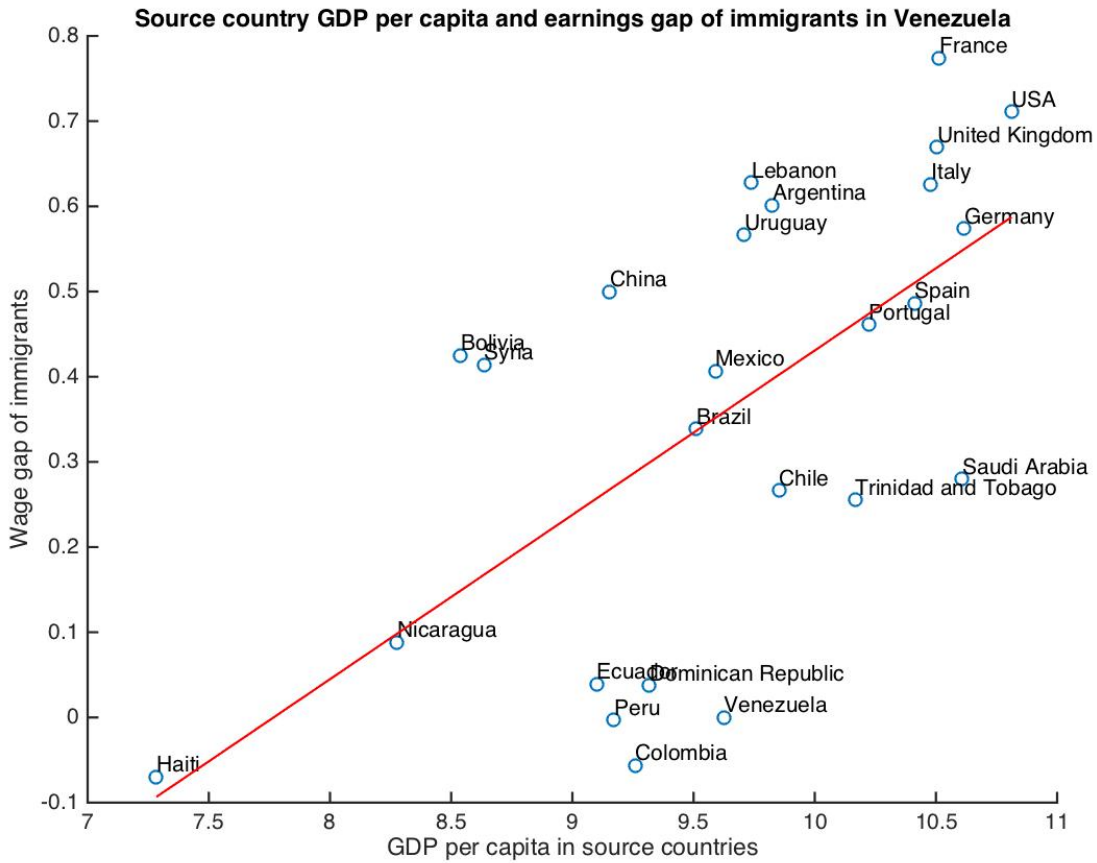


Figure: Source country GDP per capita and immigrant earning gap in Venezuela in 2000

GDP immigrants in Brazil

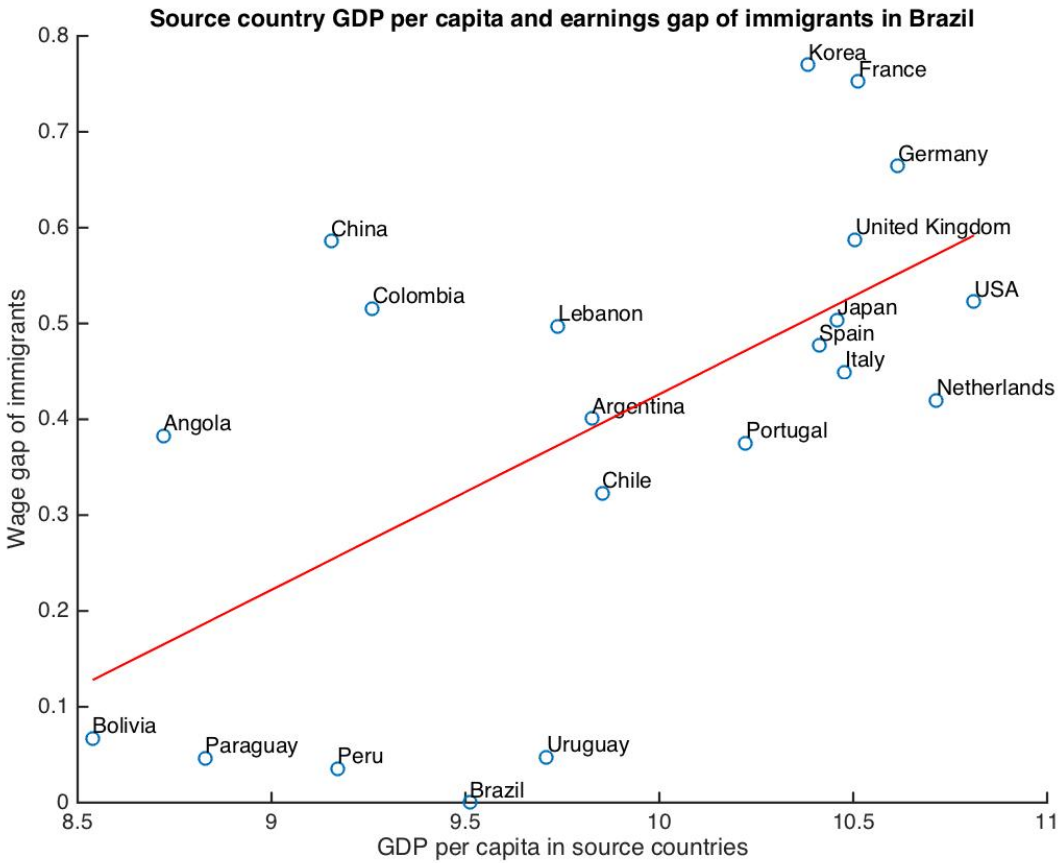


Figure: Source country GDP per capita and immigrant earning gap in Brazil in 2010

Source country GDP per capita and immigrant earning gap in Mexico

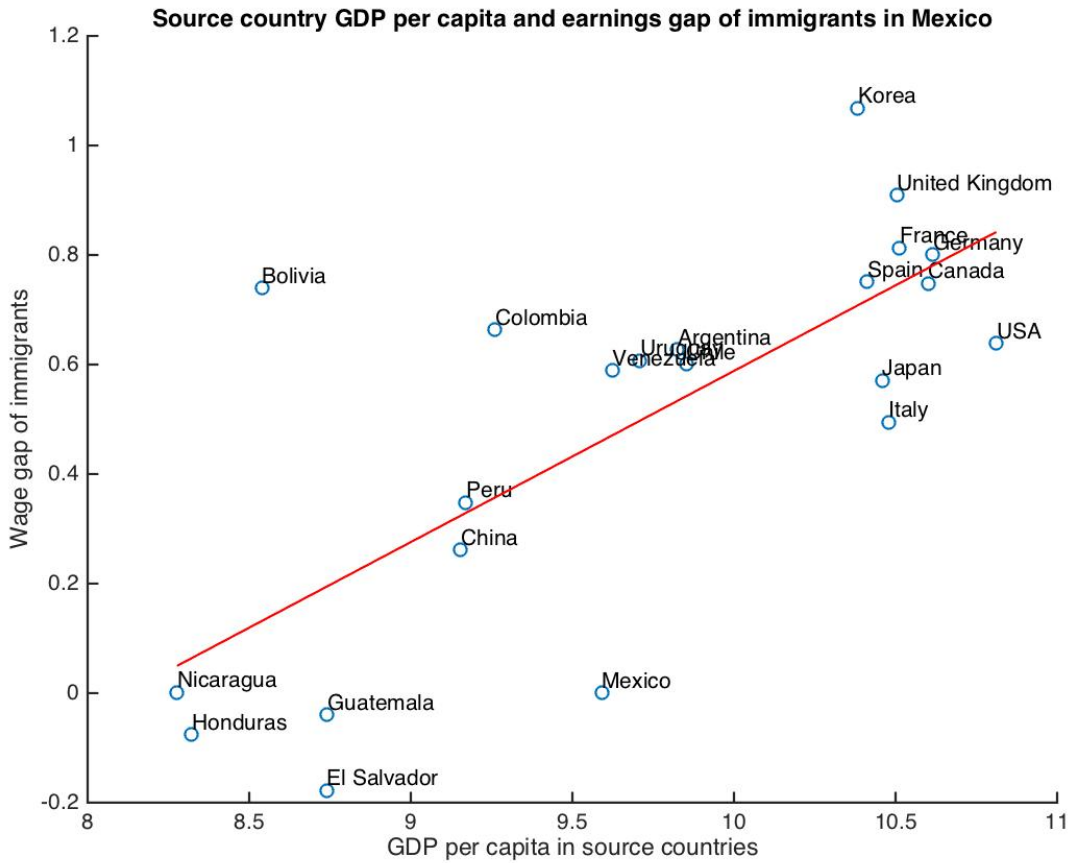


Figure: Source country GDP per capita and immigrant earning gap in Mexico in 2010

Assimilation of immigrants

How well do immigrants assimilate in low-income countries?

Estimation of earnings of immigrants

$$log(wage) = \beta_0 + \beta_1 I + \beta_2 Educ_1 + \beta_3 Educ_2 + \beta_4 (Educ_2 \times I) + \beta_5 Exp_1 + \beta_6 Exp_2$$
$$+\beta_7 (Exp_2 \times I) + \beta_8 (Educ_1 \times Educ_2) + \beta_9 (Educ_1 \times Exp_2) + \epsilon$$

$log(wage)$ - log hourly earnings;

I- Immigrant dummy;

Exp_1- years of experience abroad;

Exp_2- domestic years of experience;

$Educ_1$- years of schooling abroad;

$Educ_2$- domestic years of schooling.

Immigrant earnings and return to human capital in Brazil

	Estimate	Standard error	t-Stat	p-Value
(Intercept)	0.851	0.007	118.4	0
Immigrant	0.599	0.025	24.1	1.74E-128
Education abroad	0.102	0.002	49.8	0
Education in Brazil	0.085	0.001	101.6	0
Experience abroad	0.003	0.001	2.9	0.0038941
Experience in Brazil	0.019	0.001	28.7	7.79E-181
Immigrant $\times$ Education in Brazil	-0.030	0.004	-8.0	1.40E-15
Immigrant $\times$ Experience in Brazil	0.025	0.003	8.0	1.13E-15

Table: Return to human capital

Immigrant earnings and return to human capital in Brazil

High-income countries	1)Norway 2)Switzerland 3)USA 4)Netherlands 5)Ireland 6)Australia 7)Austria 8)Denmark 9)Sweden 10)Germany 11)Belgium 12)Canada13)France 14)United Kingdom 15)Italy 16)Japan 17)Spain 18)Korea 19)Israel 20)Greece 21)Czech Republic 22)Portugal 23)Hungary 24)Poland
Low-income countries	1)Russia 2)Croatia 3)Chile 4)Argentina 5)Lebanon 6)Romania 7)Uruguay 8)Turkey 9)Venezuela 10)Panama 11)Mexico 12)Suriname 13)Brazil 14)Costa Rica 15)Serbia 16)South Africa 17)Colombia18)Jordan 19)Peru 20)China 21)Iraq 22)Ukraine 23)Ecuador 24)Egypt 25)Indonesia 26)Paraguay 27)Morocco 28)Angola 29)Syria 30)Philippines 31)Nigeria 32)Bolivia 33)India 34)Mozambique

Table: Return to human capital

	high-income countries	low-income countries
(Intercept)	0.851	0.851
Immigrant	1.109	0.216
Education abroad	0.082	0.115
Education in Brazil	0.085	0.085
Experience abroad	0.004	0.008
Experience in Brazil	0.019	0.019
Immigrant × Education in Brazil	-0.036	-0.027
Immigrant × Experience in Brazil	0.004	0.039

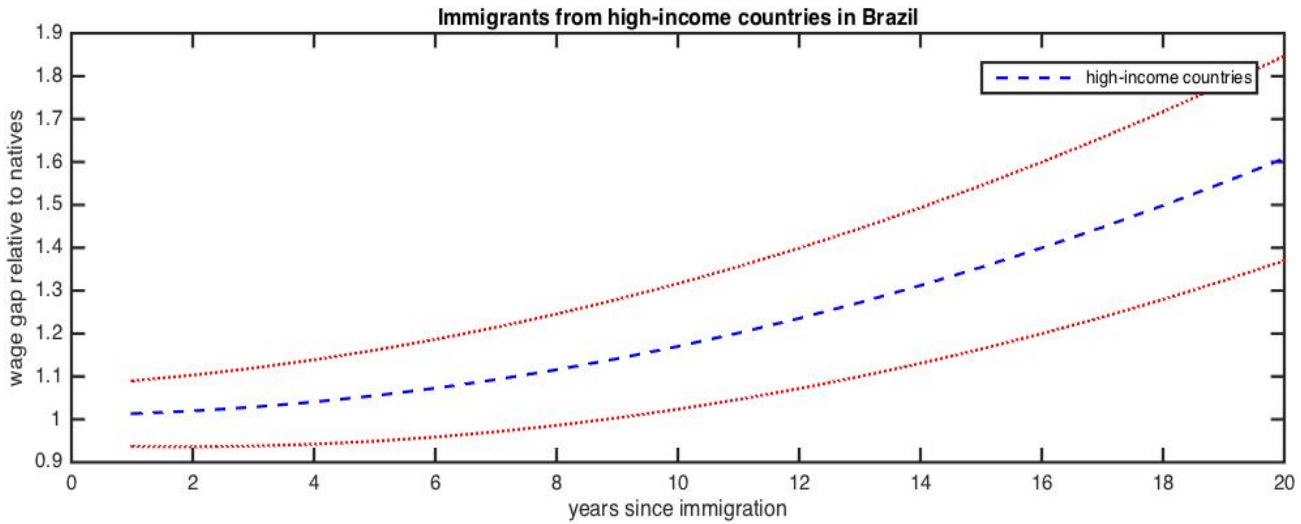
Table: Return to human capital

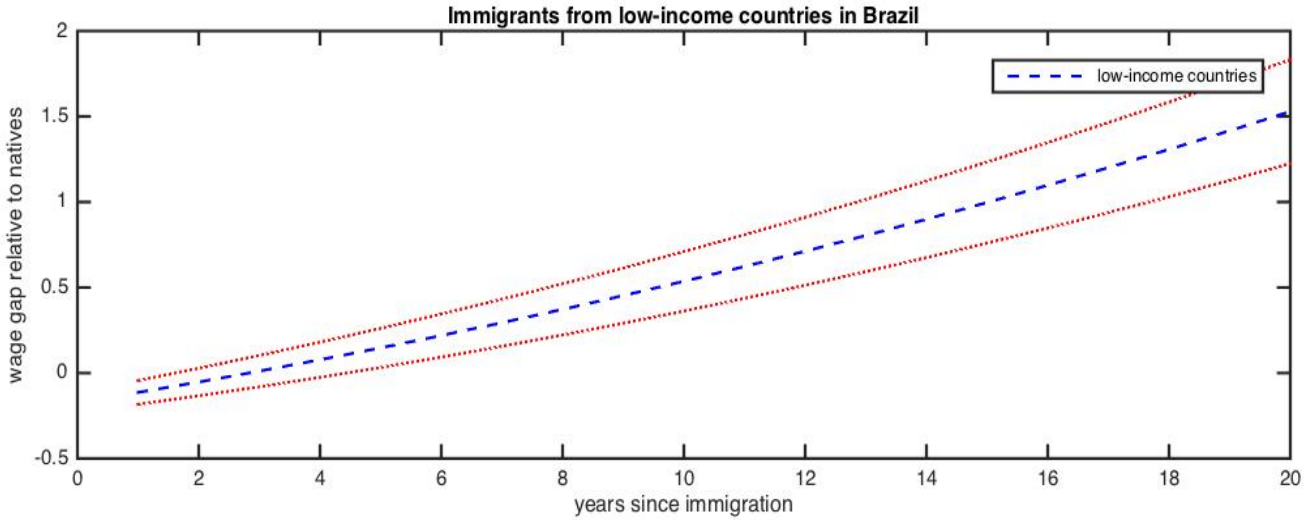
Immigrant earnings and return to human capital (control for language)

	high-income countries	low-income countries
(Intercept)	1.231	1.240
Immigrant	1.013	-0.113
Education abroad	0.066	0.111
Education in Brazil	0.091	0.091
Experience abroad	0.000	0.007
Experience in Brazil	-0.035	-0.036
Immigrant × Education in Brazil	-0.026	-0.027
Immigrant × Experience in Brazil	0.005	0.059

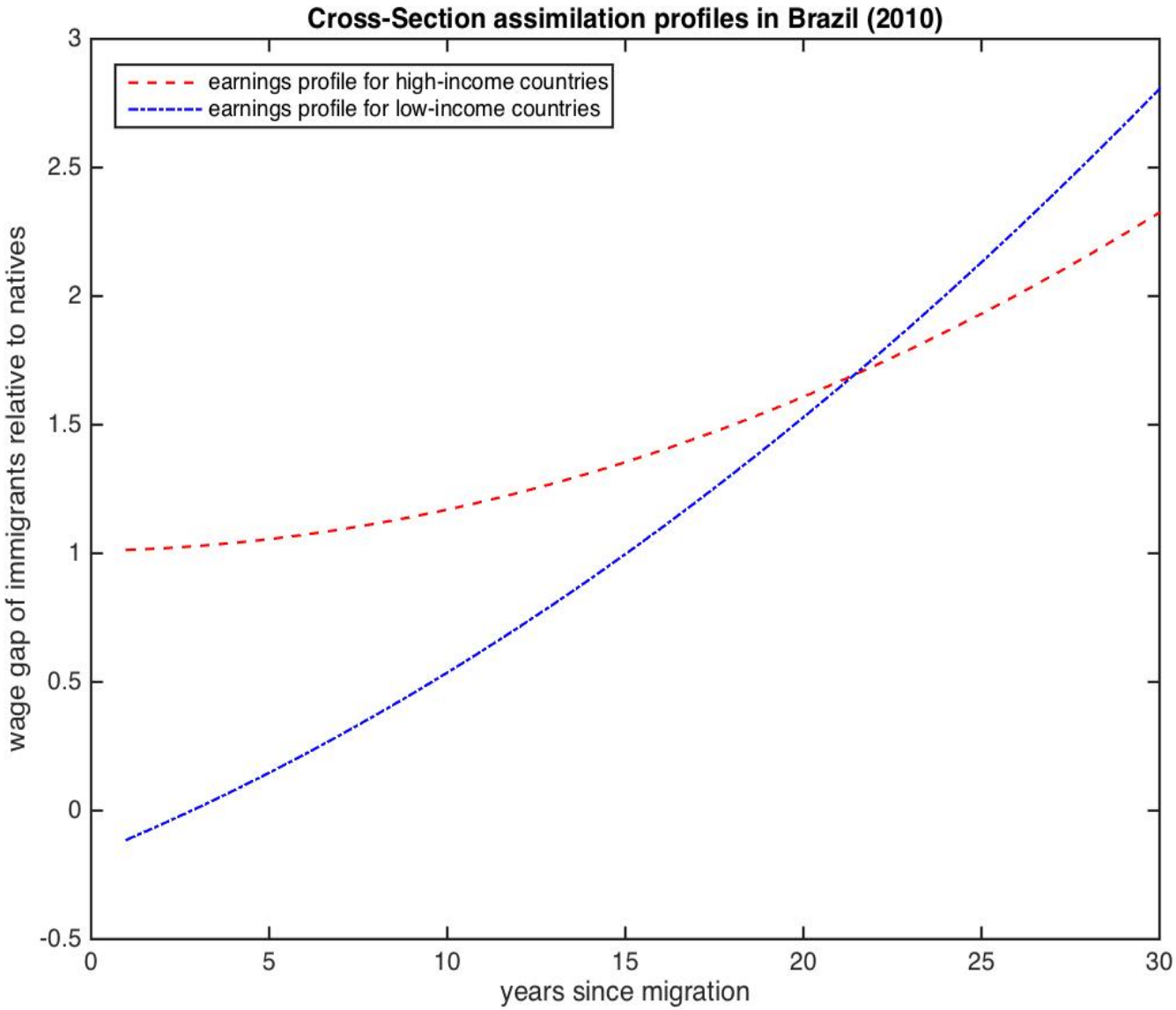
Table: Return to human capital

Assimilation of immigrants in Brazil

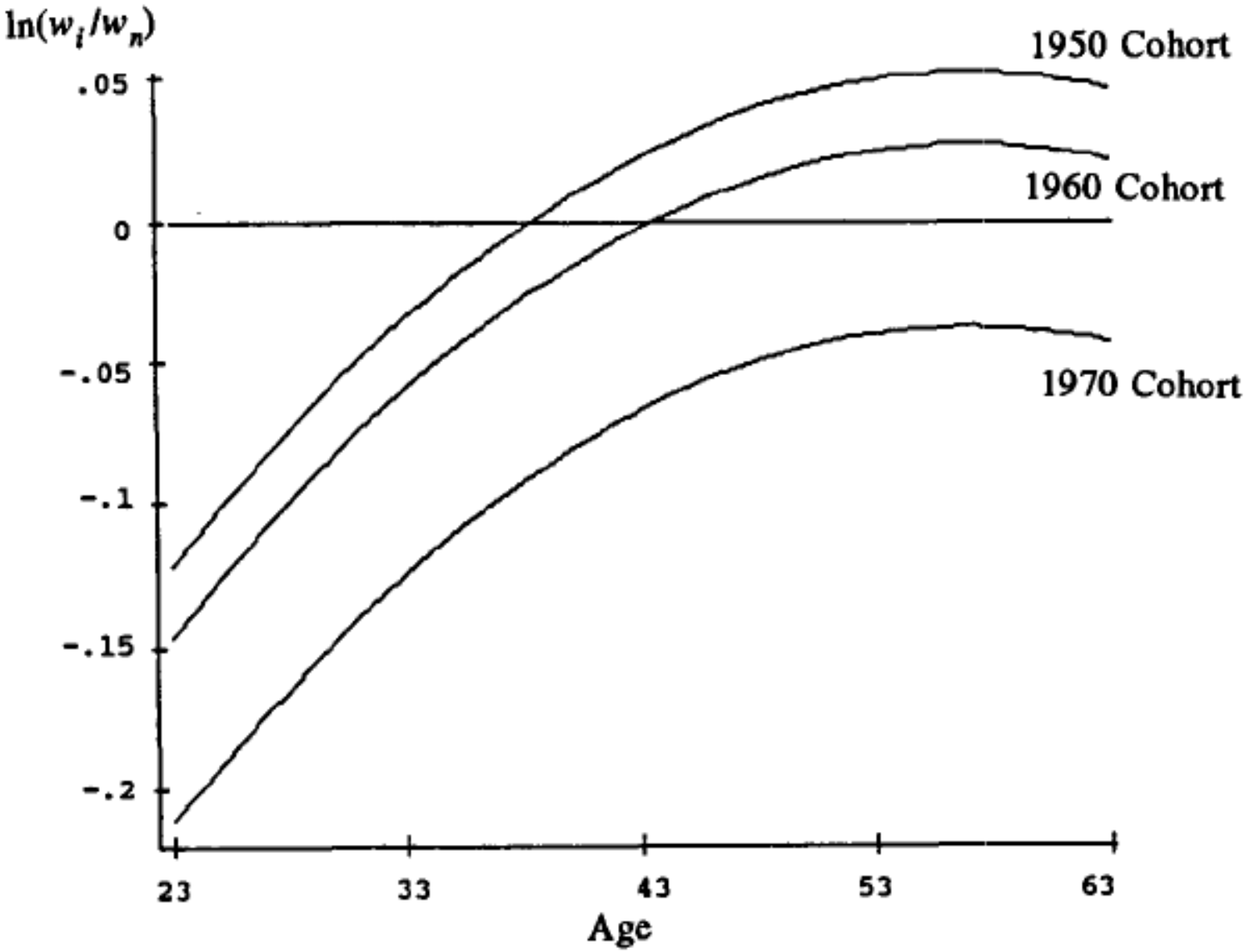




Assimilation profiles of immigrants



Share of groups in high-skilled occupations



Conclusion and further work

- The level of positive selection of immigrants in low-income countries is not as high as in high-income countries;
- Immigrants in low-income countries are occupied in high-skill occupations and have higher starting earnings than natives.

Further work:

- Explain selection on education;
- Occupational analysis with more detailed groups of occupations;
- Improve the identification of assimilation effect.