

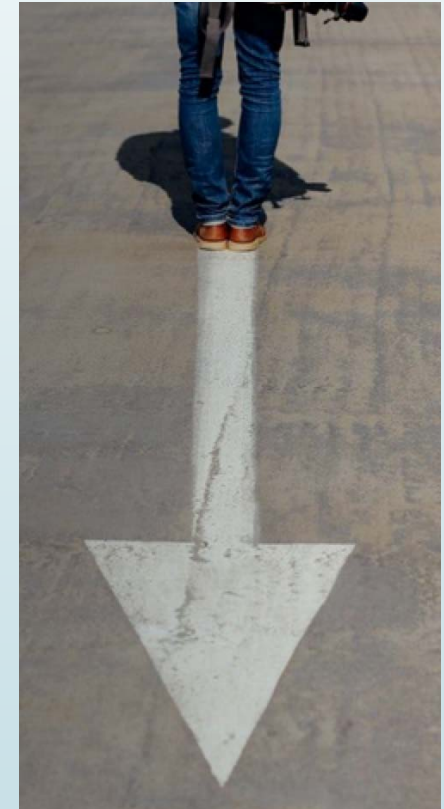
The Impact of Immigration on the Internal mobility of Natives and Foreign-born Residents: Evidence from Italy

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FEEM-IEFE-Bocconi Seminar, 27th September 2018



Background and Motivation

- ▶ European countries (and not only) are a major destination of international migrants (Münz, 2007) and simulations indicate that this will continue in the decades to come (Hanson and McIntosh, 2016; Docquier and Machado, 2017)
- ▶ The main worry about international migrants is always: how will they affect the native population? And, in particular, their **effects on the domestic labour market**

Are immigrants “stealing” the jobs of the natives and displacing them?

Dal Mediterraneo ai ristoranti di Milano, elogio degli "immigrati che rubano il lavoro agli italiani"

La storia di Daouda, ivoriano, che è stato assunto in uno dei migliori ristoranti di Milano grazie al progetto Sprar di Trezzano sul Naviglio. E altri commercianti ora si stanno interessando al progetto

di Lidia Baratta



22 ottobre 2016

Le verità scomode su migranti e lavoro

Una ricerca del Cer sfata un tabù della sinistra europea. Nei Paesi del Sud gli stranieri fanno concorrenza ai locali. Al Nord pesano sul welfare

ENRICO PEDEMONTE

Avvenire

Analisi

Gli stranieri coprono i buchi, non rubano i nostri posti di lavoro

FRANCESCO SEGHEZZI e MICHELE TIRABOSCHI

Gli immigrati rubano il lavoro agli italiani? E per questo motivo è necessario impedire o comunque limitare il loro arrivo? È questa una delle modalità in cui oggi si usa rappresentare l'epocale fenomeno migratorio al quale stiamo assistendo ormai da alcuni anni, alimentando paure, rancori e sentimenti avversi.

A PAGINA 3

ANALISI / COSA DICONO I DATI AL DI LÀ DELLA PERCEZIONE COMUNE

I migranti coprono i buchi non rubano posti di lavoro

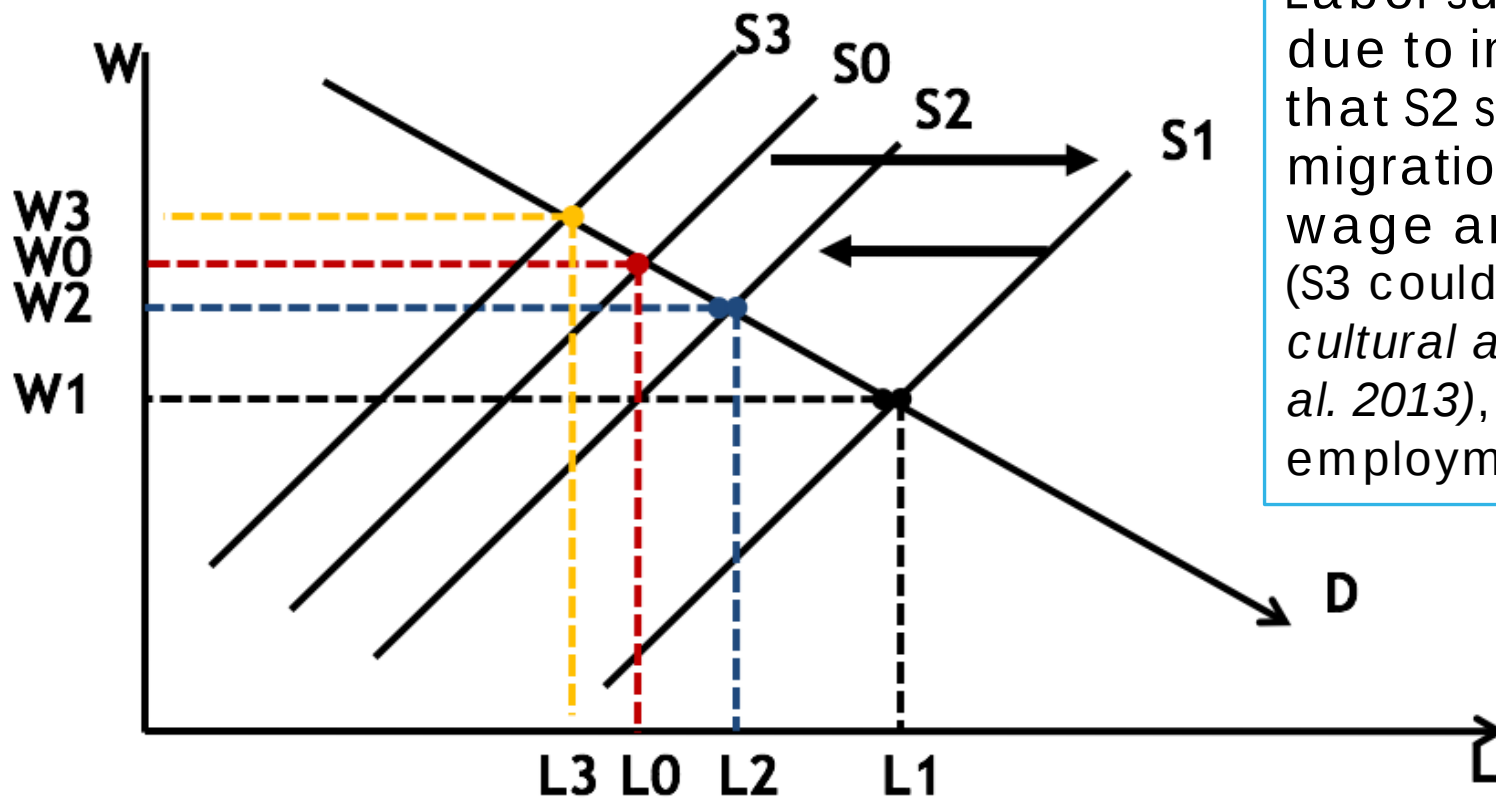
Occupazione e salari, la concorrenza è tra stranieri

studi scientifici in materia confermano un quadro diverso da quello che viene presentato nel dibattito pubblico. In primo luogo i migranti si concentrano spesso e quasi unicamente in mestieri e settori professionali diversi da quelli ambiti e occupati dai lavoratori dei Paesi

di Francesco Seghezzi e Michele Tiraboschi

The political debate often revolves around this question, but the answer depends on our beliefs about the “**degree of substitutability**” between migrants and natives in the labour market

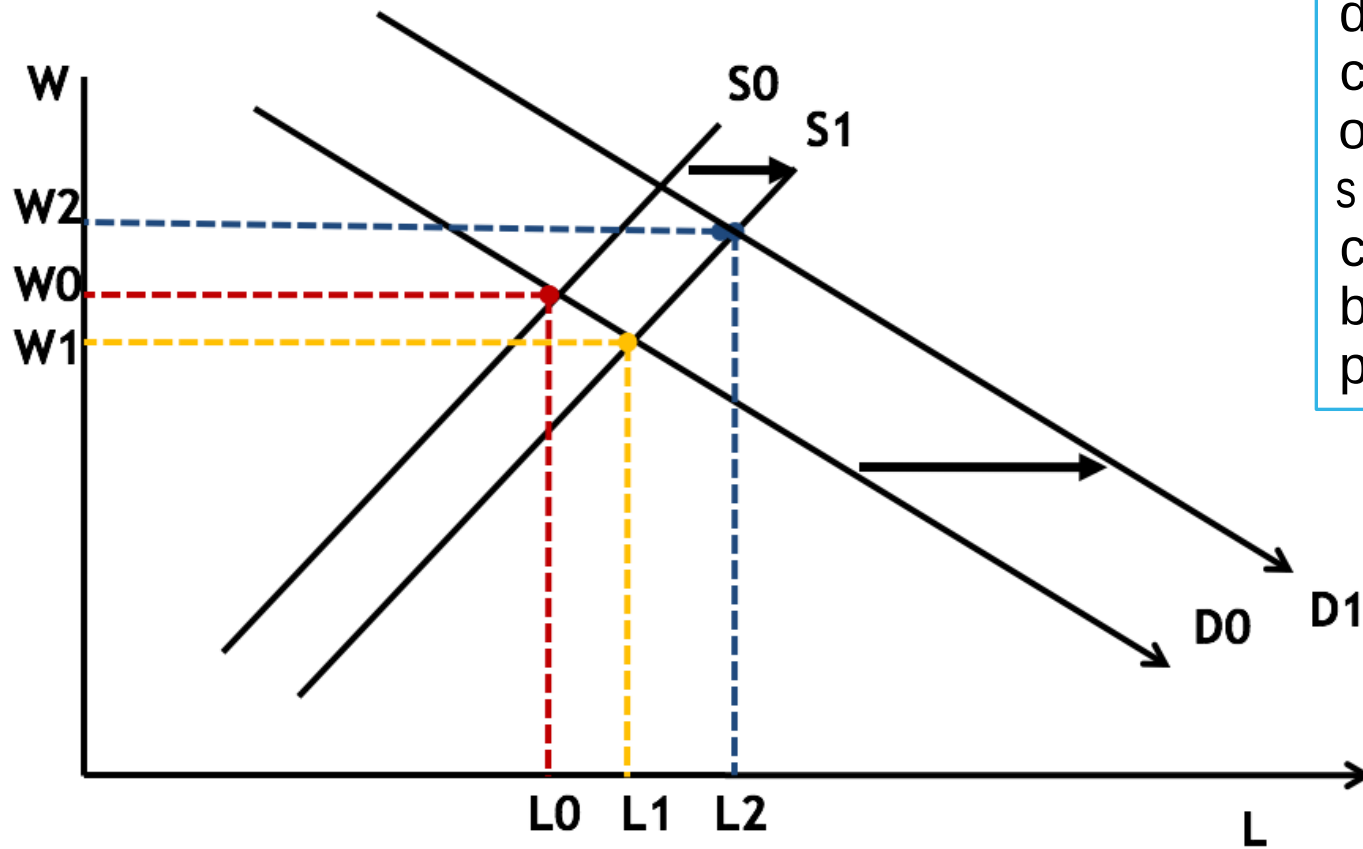
If natives and immigrants are **perfect substitutes** in the labour market, then the increase in labour supply leads to lower wages, which lead to native out-migration (**displacement of natives**)



Labor supply increases from S_0 to S_1 due to immigration. To the extent that S_2 shifts in from domestic out-migration, there are small *ex post* wage and employment effects. (S_3 could occur if there are added *cultural avoidance effects* (Faggian et al. 2013), causing higher wages and less employment).

5

If natives and immigrants are **complements** in the labour market, then the effect could actually be positive on wages and employment leading to internal in-migration rather than out-migration



Labor supply increases from S_0 to S_1 due to immigration. If strong complements, then D_0 shifts to D_1 . The offsetting wage increase could in fact spur in-migration of native workers causing an additional increase in supply beyond S_1 . This causes a highly elastic population response.

Even when immigration is concentrated in few gateway areas, **internal migration flows** allows the effects to spread across the country (**'bathtub model'**, Borjas, 2003 & 2005; Partridge and Rickman 2008, 2009)

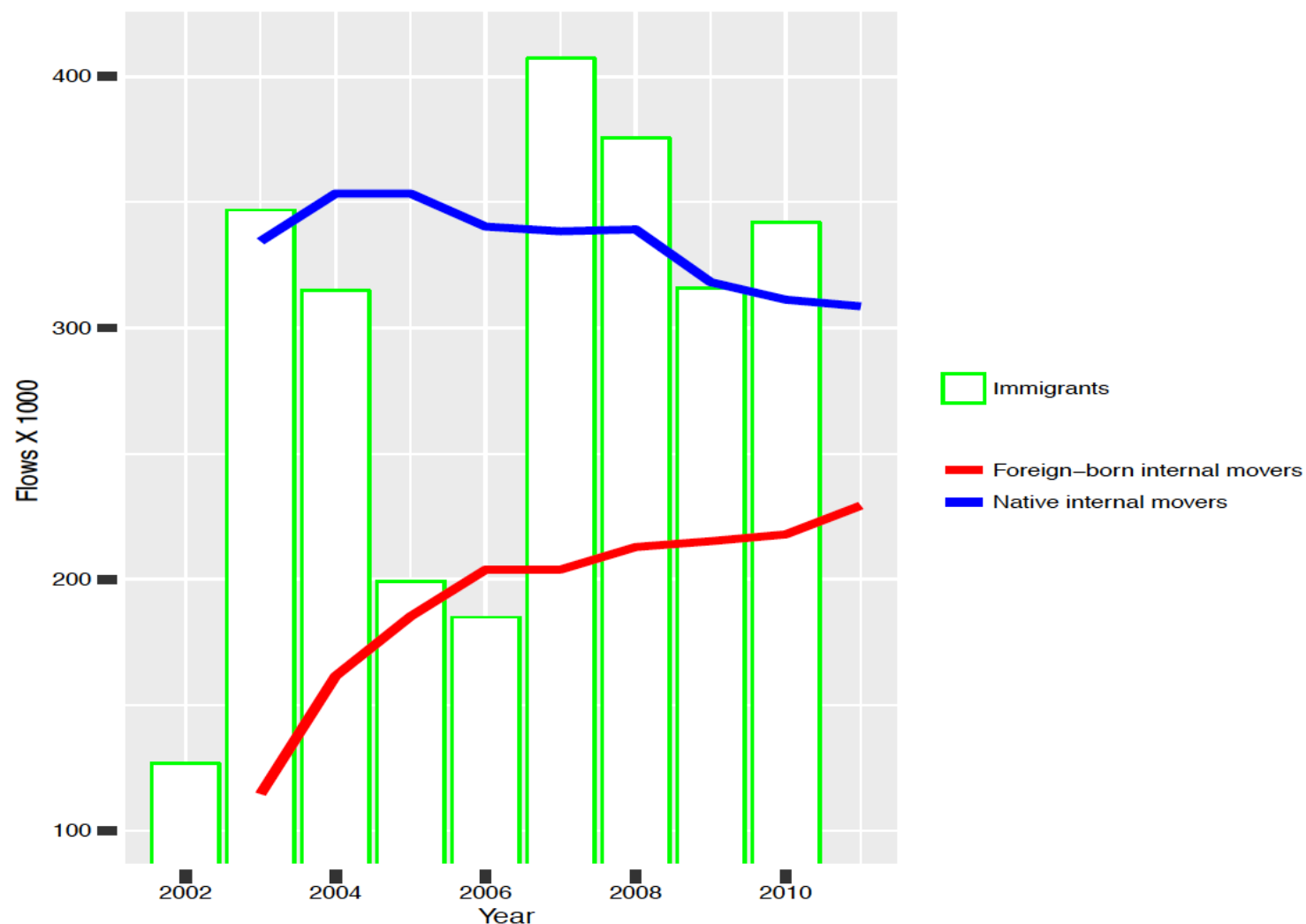
In the USA:

- Borjas (2003) and Partridge et al. (2008, 2009) find strong domestic resident response to international immigration.
- However, Card and DiNardo (2000) Card (2001) and Kritz and Gurak (2001) find that there is little connection between foreign immigration and native out-migration.

Card and DiNardo (2000): they even say that an increase in immigrants in **certain skill groups** lead to a *small increase* in the native population of the similar skill groups (**complementarity**)

- For the case of Italy – similarly to Card and DiNardo - Mocetti and Porello (2010) find that immigration is positively associated with infows of **highly-educated natives (complementarity effect)**, and negatively associated with inflows of **low-educated natives (displacement effect)**
- However, this study (and the previous ones) does not consider the ***effect of foreign immigrants on internal movements of previous immigrant cohorts***, a phenomenon gaining momentum in recent years

Annual flows of foreign immigrants and of interprovincial movements of natives and foreign-born residents



Aim & contribution

Aim: Estimating a gravity model of internal migration across Italian provinces to test the effect of new foreign immigrants on internal movements of **both natives** (with different educational levels) and of **foreign-born residents**

Contribution:

1. We look also at foreign-born residents (hp: different degrees of substitutability with immigrants)
2. We look at a finer spatial scale (NUTS3, rather than NUTS2)
3. We look at a longer time span 2002-2011
4. We propose a different empirical specification (negative binomial) to account for very high overdispersion in the data
5. We control for origin & destination fixed effects simultaneously by including smooth spatio-temporal trends

We use official **data on internal mobility at the province (NUTS-3) level** collected by ISTAT ("Indagine sui trasferimenti di residenza") for the period **2002-2011**.

Four levels of schooling:

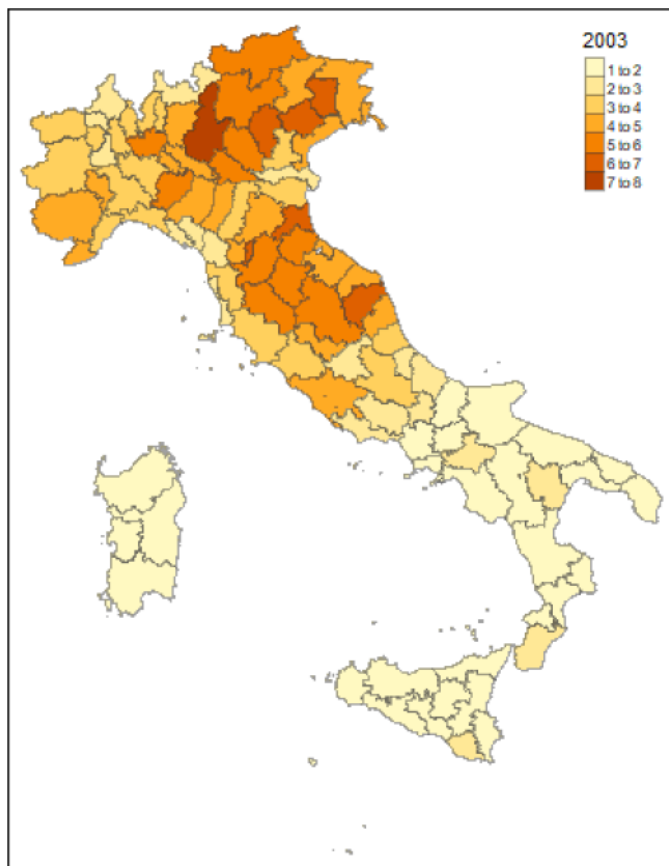
- 1 primary school
- 2 lower-secondary school
- 3 upper-secondary school
- 4 higher (i.e. Bachelor's degree, Master's degree, and PhD)

We select movers in the age class 15-64 years.

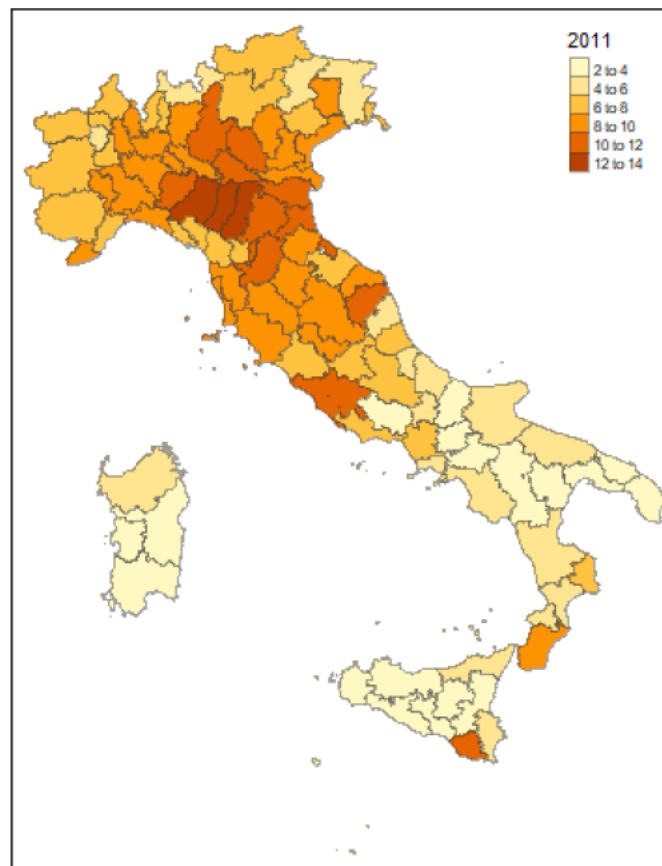
For the case of foreign-born residents and of new immigrants, there is no information on the educational attainment of movers.

Immigration rates from abroad of foreign workers

2003



2011

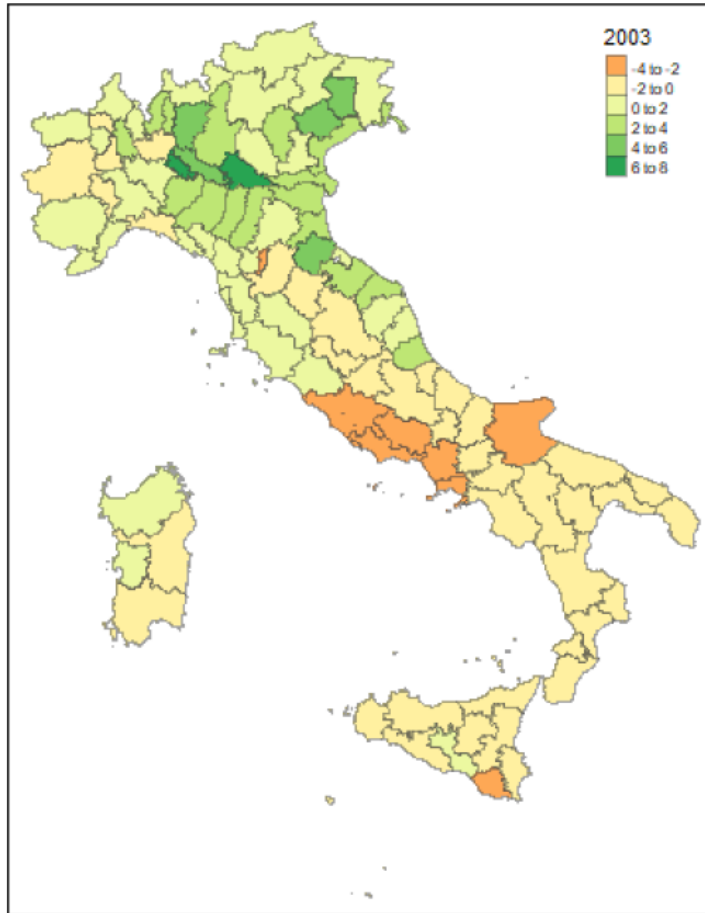


Share of foreign immigrants over total population of the province

Internal mobility rates of foreign-born residents

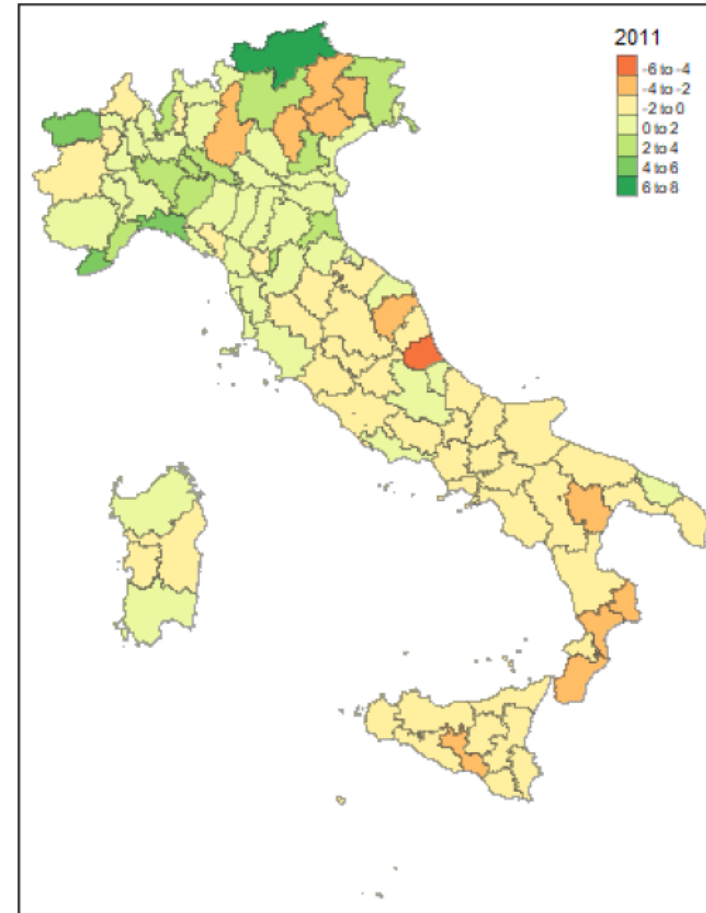
North-South
divide...

2003



But...in 2011 also out-migration from
North-East (industrial districts)

2011



1. **Baseline** specification with explanatory *variables in relative terms*

$$\eta_{jkt} = \log(\mu_{jkt}) = \beta_1 \log\left(\frac{Imm_{kt}}{Imm_{jt}}\right) + \beta_2 \log(\phi_{jk}) + \beta_3 \log\left(\frac{y_{kt}}{y_{jt}}\right)$$

$$\mu_{jkt} = E\left(m_{jkt}^h\right) \quad m_{jkt}^h \sim \text{Logbin}(\mu, \theta)$$

Number of migrants (with educational level h in the case of Italian residents) moving at time t from province of origin j to province of destination k

Variable of interest: foreign immigration

Distance between origin and destination

- Other control variables:
- Disposable income per head
 - Unemployment rates
 - Housing prices
 - Industrial composition

2. Specification including **spatio-temporal trends**

$$\eta_{jkt} = \log(\mu_{jkt}) = \beta_1 \log\left(\frac{Imm_{kt}}{Imm_{jt}}\right) + \beta_2 \log(\phi_{jk}) + \beta_3 \log\left(\frac{y_{kt}}{y_{jt}}\right) + f^j(x_{s1}, x_{s2}, x_\tau) + f^k(x_{s1}, x_{s2}, x_\tau)$$

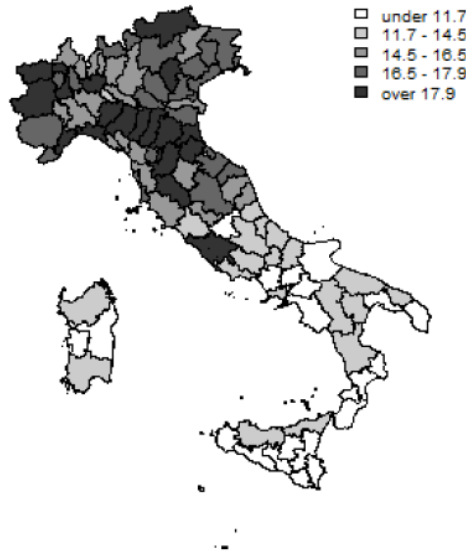
$$\mu_{jkt} = E(m_{jkt}^h) \quad m_{jkt}^h \sim Negbin(\mu, \theta)$$

Problem: In standard gravity models, the way to **correct for relevant omitted variables** (e.g. natural amenities, regional business cycles) is to include **origin and destination fixed effects**. However, in our model including origin-by-year and destination-by-year fixed effects would have meant estimating 2,069 incidental parameters. **With count data models**, this approach is usually **problematic** since negbin with so many parameters can hardly converge....

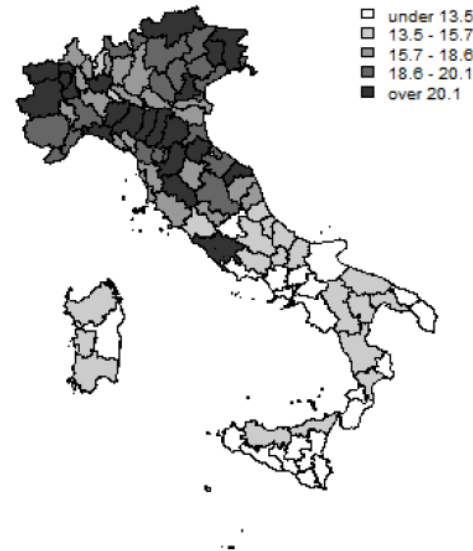
Solution: using smoothing functions that are function of space (latitude and longitude) and time. Alternative to dummies *as long as unobserved heterogeneity is smoothly distributed over space...*

FIGURE 12
Unemployment rates

FIGURE 16
House prices



(f) 2003



(g) 2011

FIGURE 11
Disposable income per capita

- Now, the assumption that unobserved spatial heterogeneity is smoothly distributed over space would be a problem in most countries, but Italy is “special”, because of its famous North-South divide...

Results (1)

TABLE 2

Gravity models of internal mobility in Italy. Testing the relative incidence of foreign immigrants.

Negative Binomial Estimates. Baseline specification (1)

	Italian citizens				Foreign-born residents
	Primary	Lower sec.	Upper sec.	Higher	
<i>Parametric terms</i>	<i>Coefficients (standard errors)</i>				
Intercept	-5.675*** (0.031)	-4.056*** (0.024)	-3.959*** (0.022)	-2.323*** (0.025)	-1.582*** (0.023)
$\log(Imm_{kt}/Imm_{jt})$	-0.037*** (0.014)	0.001 (0.010)	0.064*** (0.009)	0.077*** (0.011)	-0.113*** (0.011)
$\log(Inc_{kt}/Inc_{jt})$	-0.090** (0.040)	0.067** (0.028)	0.300*** (0.027)	0.661*** (0.031)	0.526*** (0.029)
$u_{kt} - u_{jt}$	-0.020*** (0.002)	-0.019*** (0.001)	-0.015*** (0.001)	-0.012*** (0.001)	-0.038*** (0.001)
$\log(House_{kt}/House_{jt})$	0.054*** (0.015)	0.082*** (0.011)	0.082*** (0.010)	0.088*** (0.012)	0.071*** (0.011)
$\log(Agr_{kt}/Agr_{jt})$	0.062*** (0.006)	0.034*** (0.004)	0.015*** (0.004)	-0.027*** (0.005)	0.027*** (0.004)
$\log(Cons_{kt}/Cons_{jt})$	0.024 (0.027)	-0.031* (0.019)	-0.027 (0.018)	-0.044* (0.021)	-0.025 (0.020)
$\log(Man_{kt}/Man_{jt})$	-0.047*** (0.023)	-0.026*** (0.008)	0.004 (0.008)	-0.010 (0.009)	0.021** (0.008)
$\log(\phi_{jk})$	-0.574*** (0.005)	-0.619*** (0.004)	-0.638*** (0.004)	-0.665*** (0.004)	-1.100*** (0.004)

Displacement: lowest educated natives & other foreign-born

Complementarity: more educated natives

TABLE 3

Gravity models of internal mobility in Italy. Testing the relative incidence of foreign immigrants.
 Negative Binomial Estimates. Model specification (2) with spatio-temporal trends

Results (2)

	Italian citizens				Foreign-born residents
	Primary	Lower sec.	Upper sec.	Higher	
<i>Parametric terms</i>	<i>Coefficients (standard errors)</i>				
Intercept	-2.462*** (0.486)	-0.830** (0.399)	-1.269*** (0.323)	-0.914*** (0.284)	-2.552*** (0.229)
$\log(Imm_{kt}/Imm_{jt})$	-0.041** (0.019)	-0.032** (0.014)	0.006 (0.013)	-0.006 (0.016)	-0.130*** (0.014)
$\log(Inc_{kt}/Inc_{jt})$	-0.013 (0.058)	-0.008 (0.043)	0.121*** (0.039)	0.325*** (0.047)	0.020 (0.039)
$u_{kt} - u_{jt}$	-0.012*** (0.003)	-0.011*** (0.002)	-0.010*** (0.002)	-0.011*** (0.002)	-0.023*** (0.002)
$\log(House_{kt}/House_{jt})$	-0.012 (0.019)	-0.004 (0.013)	-0.002 (0.012)	0.042*** (0.015)	0.043*** (0.013)
$\log(Agr_{kt}/Agr_{jt})$	0.044*** (0.009)	0.028*** (0.007)	0.001 (0.006)	-0.041*** (0.007)	0.004 (0.006)
$\log(Cons_{kt}/Cons_{jt})$	0.125*** (0.038)	0.010 (0.027)	-0.027 (0.025)	-0.067** (0.030)	-0.061** (0.025)
$\log(Man_{kt}/Man_{jt})$	0.038* (0.022)	0.010 (0.016)	0.020 (0.015)	-0.072*** (0.017)	0.072*** (0.015)
$\log(\phi_{jk})$	-0.722*** (0.005)	-0.790*** (0.004)	-0.815*** (0.004)	-0.816*** (0.004)	-0.981*** (0.003)
<i>Nonparametric terms</i>					
Spatio-temporal trends (ANOVA specification)	Yes	Yes	Yes	Yes	Yes

With spatio-temporal trends, the displacements effects become even clearer, while the complementarity is not significant any longer...

Endogeneity

We might have endogeneity issues due to omitted variables or reverse causality.

Example of reverse causality: insufficient flows of internal migrants in a given province induce local policy makers or local firms to expand the demand for international workers to compensate...

Lagging the explanatory variables one year partially mitigate reverse causality but might not be sufficient to eliminate it completely if migration variables are persistent over time.

To correct for endogeneity we need external instruments (i.e. variables correlated with the observed immigration flows but not with the error term). To this end, we follow Beine and Coulombe (2018) **control function approach** which consists in exploiting the information on the country of origin of foreign immigrants.

In brief (more details in the paper)... the control function is constructed in four steps:

1. We estimate a negbin model that explains the magnitude of the flows of immigrants from each origin country $\mathbf{c}$ of the world to each province $\mathbf{k}$ for each year $\mathbf{t}$;
2. Based on this estimation, we recover the *predicted bilateral flows for each country-province-year triplet*
3. We *sum these up* across country of origin to get a total predicted flow of immigrants by year and province and we use this as an instrument, i.e. the observed immigration rate is regressed against the predicted immigration rate in a regression model including all other exogenous variables included in the model before.
4. A *smooth function of the residuals*, $\mathbf{f(res)}$, from this model is included in the original model to control for endogeneity.

TABLE 4

Gravity models of internal mobility in Italy. Testing the relative incidence of foreign immigrants. Negative Binomial Estimates. Model specification (2) with spatio-temporal trends, accounting for endogeneity (second step CF approach)

	Italian citizens				Foreign-born residents
	Primary	Lower sec.	Upper sec.	Higher	
<i>Parametric terms</i>	<i>Coefficients (standard errors)</i>				
Intercept	-2.486*** (0.484)	-0.861** (0.398)	-1.328*** (0.322)	-0.954*** (0.304)	-2.557*** (0.221)
$\log(Imm_{kt}/Imm_{jt})$	-0.402*** (0.073)	-0.141*** (0.053)	0.096** (0.049)	0.548*** (0.059)	-0.298*** (0.051)
$\log(Inc_{kt}/Inc_{jt})$	0.165** (0.068)	0.044 (0.049)	0.079* (0.046)	0.057 (0.055)	0.099** (0.047)
$u_{kt} - u_{jt}$	-0.027*** (0.004)	-0.016*** (0.003)	-0.006** (0.003)	0.011*** (0.003)	-0.030*** (0.003)
$\log(House_{kt}/House_{jt})$	0.007 (0.019)	0.002 (0.014)	-0.007 (0.013)	0.010 (0.015)	0.051*** (0.013)
$\log(Agr_{kt}/Agr_{jt})$	0.045*** (0.009)	0.029*** (0.007)	0.001 (0.006)	-0.044*** (0.007)	0.004 (0.006)
$\log(Cons_{kt}/Cons_{jt})$	0.151*** (0.038)	0.017 (0.028)	-0.031 (0.026)	-0.097*** (0.030)	-0.047* (0.026)
$\log(Man_{kt}/Man_{jt})$	0.017 (0.022)	0.003 (0.017)	0.025* (0.015)	-0.036** (0.017)	0.062*** (0.015)
$\log(\phi_{jk})$	-0.723*** (0.005)	-0.789*** (0.004)	-0.814*** (0.004)	-0.814*** (0.004)	-0.978*** (0.003)
<i>Nonparametric terms</i>	χ^2 -test [EDF]				
$f(res)$	28.10*** [2.163]	12.28** [3.096]	14.03*** [3.040]	104.39*** [3.215]	135.27*** [3.956]
Spatio-temporal trends (ANOVA specification)	Yes	Yes	Yes	Yes	Yes

Controlling for endogeneity makes the results on displacement and complementarity effects by level of education of natives stronger.

The displacement effect on other foreign-born is also confirmed and stronger.

The instrument is strong F-stat 24165, p-value=0.000

Discussion and preliminary conclusions

- Our results indicate, in the case of Italy, a displacement effect of the immigrants on the internal mobility of foreign-born residents and of Italian citizens with a low education level, but also a positive impact on the internal mobility of natives with a high education level
- These findings suggest that interregional migration is an important mechanism through which the Italian labor market adjusts to immigration
- They also open up an interesting question: why is the displacement only happening for low educated natives? Is it a “**pure**” **human capital story** (immigrants simply are all low educated) or is it also a **signaling problem** (immigrants cannot “signal” their skills even when they have them)?

Policy Implications

- On the one hand, **incentivizing human capital accumulation** is a viable option to reduce the displacement effect of immigration and, at the same time, to benefit low-skill workers (and the country overall) through increase in their productivity
- On the other hand, the most 'tricky' part is the integration of **foreign immigrants** and the **identification of their skill level**
- The missing ingredient in the integration process is a systematic assessment of the human capital of foreign immigrants. It is wrong to assume all of them have no or low skills.

- Where most (if not all) European countries are lagging behind is in **mapping the skills, education and competences of foreign migrants**
- The mapping and validation of these skills by the government should:
 - be included explicitly in the national dispersal policies to ensure a better matching between demand and supply of labor
 - help with the discrimination faced by humanitarian migrants with local employers often dismissing almost completely their qualifications and/or work experience (Damos de Matos and Liebig, 2014)

Thank you!

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- ANOVA-type decomposition (Lee and Durban, 2011):

$$\begin{aligned} f(x_{s1}, x_{s2}, x_{\tau}) = & f_1(x_1) + f_2(x_2) + f_t(x_{\tau}) + \\ & f_{1,2}(x_1, x_2) + f_{1,\tau}(x_1, x_{\tau}) + \\ & f_{2,\tau}(x_2, x_{\tau}) + f_{12\tau}(x_1, x_2, x_{\tau}) \end{aligned}$$