WHY PEOPLE MOVE? DETERMINANTS OF MIGRATION II

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Study Materials and Reading List

- Slides of the lectures (provided one day in advance or on the day of the class)

All materials provided on: http://home.cerge-ei.cz/pytlikova/LaborSpring19/

Compulsory Readings:

- Bodvarsson, Simpson and Sparber: "Migration Theory" in Chiswick and Miller ed. (2015): Handbook of International Migration, Vol, 1A **https://www.sciencedirect.com/science/article/pii/B9780444537645000013**

Study Materials and Reading List

Other Relevant Literature:

- Gorinas, Cedric and Mariola Pytliková (2017): "Do Natives' Attitudes Influence International Migration?" ***International Migration Review,*** Vol 51 (2), pp 416–451.
- Cai Ruohong, Feng Shuaizhang, Oppenheimer Michael and Mariola Pytlikova (2016). "Climate Variability and International Migration: The Importance of the Agricultural Linkage". ***Journal of Environmental Economics and Management,*** Vol. 79, pp. 135-151. September 2016.
- Palmer, John and Mariola Pytliková (2015): "Labor Market Laws and intra-European Migration: The Role of the State in Shaping Destination Choices". ***European Journal of Population,*** 31(2), pp. 127-153
- Mayda, A. M.(2010): "International Migration: A panel data analysis of the determinants of bilateral flows". ***Journal of Population Economics***, 23(4), 1249-1274.
- Karemera, Oguledo, Davis, (2000): "A gravity model analysis of international migration to North America" ***Applied Economics***, 32(13), 1745-1755.
- F. Docquier, G. Peri, I. Ruyssen, (2014): "The cross-country determinants of potential and actual migration", ***International Migration Review*** , 48, 37-99.

WHY DO PEOPLE MIGRATE? Theory I

- ***ECONOMIC FACTORS:***
  - Wage differences (Hicks, 1932; Kuznetz and Rubin, 1954),
  - **Human capital model (Sjaastad,1962; Becker,1964): Move if net discounted future expected benefits>costs of migration** (assumed to be proportional to distance), later formalization of the model – *a starting point to most of the literature on migration determinants.*
    - Within the framework, migration is treated as once-and-for-all decision,
    - Non-monetary gains (amenities such as better climate, stable political, religious environment etc) are not counted among migration returns

Sjastaad's model:

- In discrete time, the present value of the net gain to migration π is (eq1):

$$\pi = \sum_{t=1}^{T} \frac{(W_t^{Dest} - W_t^{Orig})}{(1+i)^t} - \sum_{t=1}^{T} \frac{(CL_t^{Dest} - CL_t^{Orig})}{(1+i)^t} - C(D, X)$$

- Person will retire in T periods
- *W*… earnings per period available in Dest and Orig country
- *CL*…index measuring costs of living at Dest and Orig country
- *i*… discount rate
- *C*…costs of migration

Sjastaad's model:

- In continous time, the present value of the net gain to migration π is (eq2):

$$\pi = \int_{t=0}^{T} \left[W_t^{Dest} - W_t^{Orig} - CL_t^{Dest} + CL_t^{Orig} \right] e^{-rt} dt - C(D, X)$$

- Sjaastad did not specified the equations (only text with general formulations), all empirical and theoretical studies involving human capital model utilize some behavioral model similar to eq. 1 or 2,

Sjastaad's model:

- Limitations:
  - A single period model
  - Individual as the unit of analysis
  - Push and pulls assumed to be symmetrical
  - Perfect information
  - Ignorance of remittances and other factors
- Extensions:
  - Migrants as a consumer (Rosen, 1874; Glaeser and Shapiro, 2003)
  - Migrants networks (sociology; Carrington et al (1996), also see previous lecture a paper by Adsera and Pytlikova, 2015)
  - Uncertainty on migration (employment probabilities, Harris and Todaro (1970), Todaro (1969, 1976) – see previous lecture; incorporating social security (unemployment benefits, pensions)
  - Family decision (Mincer, 1978) – see previous lecture; family diversification portfolio (Stark, 1984, 2001)
  - A relative deprivation approach (Stark, 1991) – see previous lecture
  - A more recent application, see e.g. Grogger and Hanson (2011), Adsera and Pytlikova(2015) – see previous lecture

WHY DO PEOPLE MIGRATE? Theory I

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  - Sjastaad's framework includes features of ***gravity model*** by viewing distance as a proxy for migration costs
    - *GRAVITY MODEL:*

Gravity models

- Application of Newtons gravity law to migration:

$$M_{ij} = P_i P_j / d_{ij}^2$$

- Application from Karemera et al (2010):
- *i*..origin, *j*.. destination
- Migrant flow will depend on potential supply factors *Si*, which is a function of population *n*, and factor endowments

$$S_i = b_o y_i^{b1} n_i^{b2}$$

- Potential demand factors are likewise a function of income and population, representing a pull factor in destinations
- $$D_j = c_o y_j^{c1} n_j^{c2}$$

Gravity models

- Combining S and D yields migration flow equation:

$$F_{ij} = a_o S_i^{a1} D_j^{a2} / R_{ij}^{a3}$$

- Where Rij stands for factors helping or restraining migration, i=1,…,N, j=1,…,N. Taking logs on both sides, and replacing by their equivalents gives:

$$m_{ij} = \alpha_0 + \alpha_1 n_i + \alpha_2 n_j + \alpha_3 y_i + \alpha_4 y_j + \alpha_5 c_{ij} + e_{ij}$$

- Which is in fact similar to the simplest empirical form of migrant flow equation proposed by Sjastaad (1962).

WHY DO PEOPLE MIGRATE? Theory II

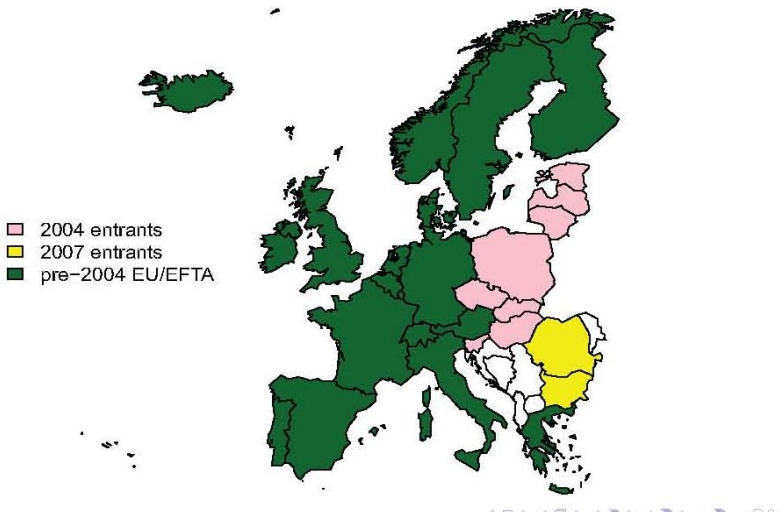
- ***MIGRATION NETWORKS:***
  - **migration networks:** "…sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin" (Massey, 1993)
  - **help to explain persistence in migration**
  - **"herd behavior" effect** (Bauer et al. 2002),
- ***NON-ECONOMIC FACTORS*:**
  - **war, love/marriage, taste for adventure**
  - **education**
  - **Language proximity**
- ***OTHER FACTORS:***
- ***the role of the state = immigration policy, immigrant rights towards employment, naturalization, welfare provision etc,***
- ***The role of natives' attitudes towards migrants***
- ***ENVIRONMENT: Climate variability, natural disasters, pollution***

EMPIRICAL APPLICATIONS

The role of the state:

The effect of EU enlargements and labour market openings on migration

EU/EFTA Enlargement



DIFFERENT TIMING OF LABOR MARKET OPENINGS wrt FREE MOVEMENT OF LABOR

1st EU enlargement towards the East – 2004 enlargement:

- UK, Ireland and Sweden have opened from day one of EU enlargement in May 2004, the rest of "old" EU members imposes restrictions to free movement of workers.
- 2006 - Spain, Portugal, Greece, Italy, Finland and Iceland
- 2007 – the Netherlands and Luxembourg (November2007)
- July 2008 - France
- May 2009 – Belgium, Denmark and **Norway**
- May 2011: Austria, Germany and Switzerland hold a maximum period of restrictions.

DIFFERENT TIMING OF LABOR MARKET OPENINGS wrt FREE MOVEMENT OF LABOR

2nd EU enlargement towards the East – 2007 enlargement:

- Bulgaria and Romania joined the EU on January 1, 2007.
- Restrictions on labour markets possible until 2014;
- **Open doors for 2007 entrants:**
  - 2007 - Finland, Sweden, Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia
  - 2009 - Denmark, Greece, Portugal, Spain
  - 2011 - Spain reimposes restrictions for workers from Romania
  - 2012 – Iceland, Italy
  - 2014 - the rest of EU holds a maximum period of restrictions

Motivation –previous evidence on effects of labor market openings

- many studies trying to forecast migration potential from CEECs prior EU enlargements:

2 different approaches:

A) surveys: 6 - 30% of the CEE populations, see e.g. Wallace (1998), Fassmann and Hintermann (1997).

B) econometric analysis: a long-run migration potential is usually estimated at around 2-5%, net migration potential around 2% of source countries population, see Pytlikova (2006), Dustmann et al. (2003) or Alvarez-Plata et al. (2003).

- Example of a forecast for UK: 5.000–13.000 immigrants per year to UK (Dustmann et al. 2003)

Reality: around 500.000 CEE immigrants between 2004 and 2006!!!

Why so bad forecasts?

Motivation –previous evidence

- out-of-sample historical data on migration;
- and/or past enlargement experience;
- -> extrapolation to predict East-West migration;
- in the EU context: analyses of migration flows into one destination country, specifically Germany;
- On the basis of obtained coefficients forecasts: => problems related to (double) out-of-sample forecasts and the assumption of invariance of migration behavior across a space.

Motivation for analyses

- Use actual numbers of CEE emigrants = true behavior of CEE emigrants,
- Extended time series 1995 – 2010
- Exploit **a "natural experiment":** different timing of lifting of restrictions to the free movement of workers on migration

  ⇒ **Estimate a difference-in-differences DD and triple DDD estimator** on the flow of migrants from 8 CEECs and Bulgaria and Romania into 18 EEA+CH countries .

Differences-in-Differences and DDD

1. Basic idea
2. How to estimate
3. Application on migration data – exploiting labour market openings in connection with the EU enlargements in 2004 and 2007 and migration from the new EU members to Nordic countries.
4. ”Placebo” treatment model and sensitivity analyses

Diff-in-Diff: Basic Idea

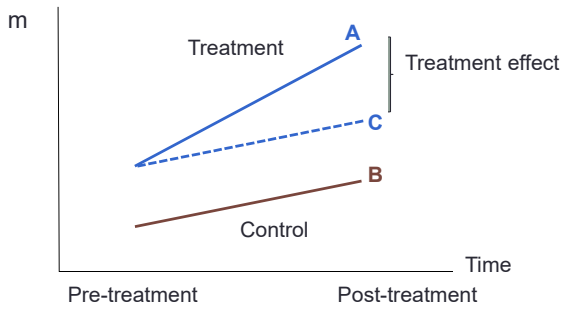
- Evaluate the impact of a program or treatment on an outcome.
- Idea of using differences to estimate causal effects
  - Treatment/control groups in experimental data
  - Individuals - Twins data to deal with ability bias
- would like to find “treatment” and “control” group which can be assumed to be similar all aspects except getting the treatment => This might be difficult => so often a weaker assumption:
- Assume that, in absence of treatment, differences between “treatment” and “control” group are the same over time. With this assumption we can use observations on treatment and control group pre- and post-treatment to estimate a causal effect.

Diff-in-Diff: Basic Idea

- Basic Idea
  - one could use data on treatment and control group before the treatment to estimate a "normal" difference between treatment and control group and then compare this with the difference after the receipt of treatment.

Graphically:

Diff-in-Diff: Basic Idea - graphically



Diff-in-Diff: Basic Idea

- Standard differences estimator is AB
- But "normal" difference estimated as CB
- =>Diff-in-Diff estimate is AC

- =>a key identifying assumption here is that trends in outcome variables are the same for treatment and control groups; Thus treatment induces a deviation from this common trend.
- Although the "treatment" and "control" groups can differ (in my case destination countries) this difference is meant to be captured by the group fixed effect.
- The common trend assumption can be tested using data on with more periods.

Diff-in-Diff: Basic Idea

- Define:

$$\mu_{jt}=E(m_{jt})$$

Where j=0 is control group, j=1 is treatment
Where t=0 is pre-treatment-period, t=1 is post-treatment-period

- Standard 'differences' estimate of causal effect is estimate of:

$$\mu_{11}-\mu_{01}$$

- 'Differences-in-Differences' estimate of causal effect is estimate of:

$$(\mu_{11}-\mu_{01})-(\mu_{10}-\mu_{00})$$

How to estimate it?

Diff-in-Diff: How to estimate it?

- 1. in differences
- Can write D-in-D estimate as:

$$(\mu_{11}-\mu_{10})-(\mu_{01}-\mu_{00})$$

- This is simply the difference in the change of treatment and control groups so can estimate as:

$$\Delta m_j = \beta_0 + \beta_1 Treat_j + \varepsilon_j$$

- This is simply 'differences' estimator applied to the difference
- need of having repeated obs on the same countries/individuals
- an alternative is regression-based estimator

Diff-in-Diff: How to estimate it?

- 2. regression-based estimator

$$m_{ijt} = \beta_0 + \beta_1 Treat_j + \beta_2 Post_t + \beta_3 (Treat_j * Post_t) + \varepsilon_{ijt}$$

- D-in-D estimate is estimate of β_3

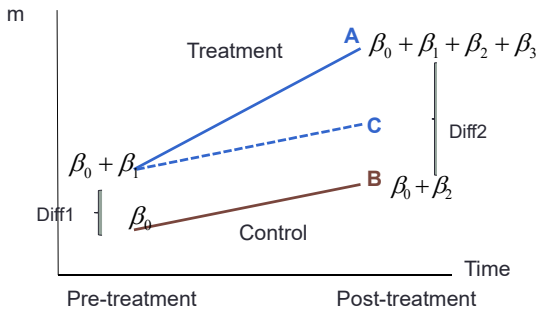
$$p\lim \hat{\beta}_0 = \mu_{00}$$
$$p\lim \hat{\beta}_1 = \mu_{10} - \mu_{00}$$
$$p\lim \hat{\beta}_2 = \mu_{01} - \mu_{00}$$
$$p\lim \hat{\beta}_3 = (\mu_{11} - \mu_{01}) - (\mu_{10} - \mu_{00})$$

- – graphically:

Diff-in-Diff: Basic Idea - graphically

$$m_{ijt} = \beta_0 + \beta_1 Treat_j + \beta_2 Post_t + \beta_3 (Treat_j * Post_t) + \varepsilon_{ijt}$$

Diff-in-Diff=(Diff2-Diff1)= $(\beta_1 + \beta_3) - \beta_1 = \beta_3$



Diff-in-Diff: How to estimate it?

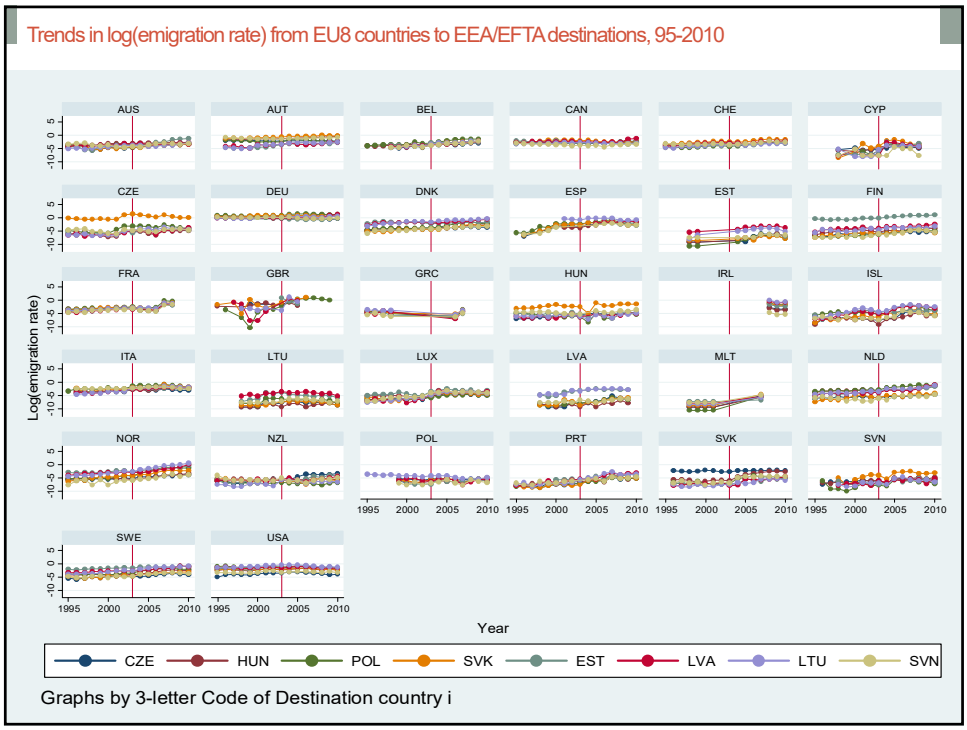
- A Comparison of the Two Methods:
  - Where have repeated observations could use both methods;
  - Will give the same parameter estimates
  - But will give different standard errors
  - "level" regression-based version assumes residuals are independent – unlikely to be a good assumption:
  - One way to deal with this is clustering

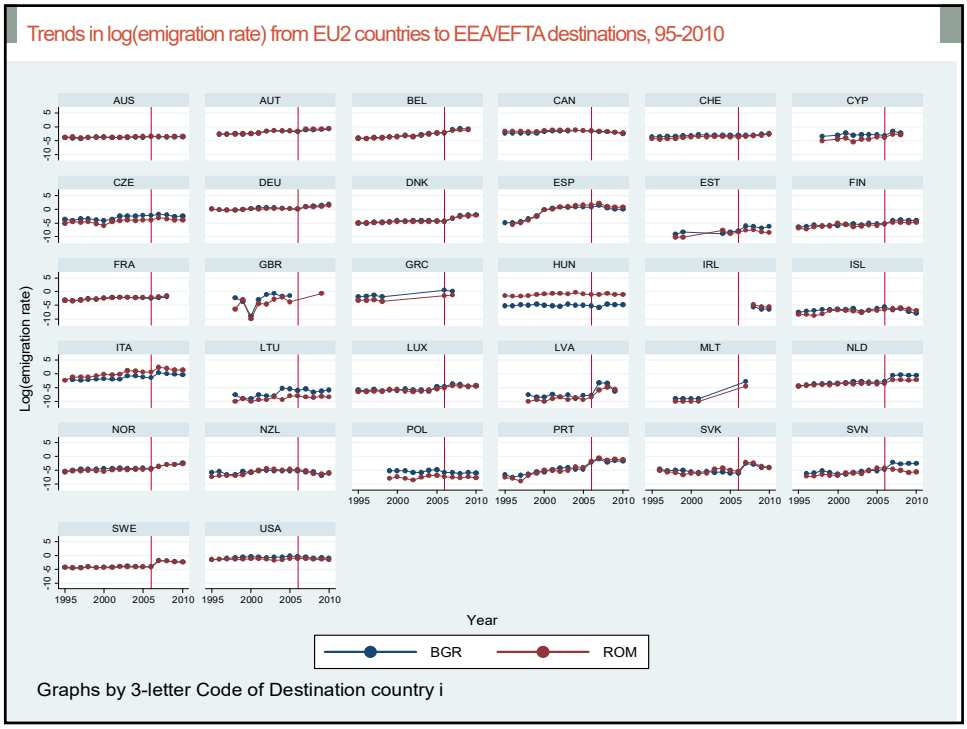
Diff-in-Diff: How to estimate it?

- Other regressors-controls can be put in as well – it helps with the assumption that treatment and control groups have the same trend - but one should think about way in which they enter the estimating equation
  - E.g. if level of $GDPpc_j$ affects level of migration m_{ij} then one should include $\Delta GDPpc_j$ in the differences version
- Multiple groups and time periods:
  - control for each time period
  - control for each "group"
  - = the coefficient on the treatment dummy is the effect we want to estimate.

BACK TO OUR EXAMPLE OF CEE MIGRATION
Data description

- Immigration flows and foreign population stock into 42 destinations from all world source countries.
- For 27 destinations data collected from national statistical offices
- for 6 OECD countries from OECD International Migration Database (Chl, Isr, Kor, Mex, Rus and Tur)
- For 9 others from Eurostat (Bul, Cro, Cyp, Est, Lv, Ltv, Mal, Rom and Slo)
- Period: 1980 to 2010.
- **In this paper – focus on EEA+CH destinations and migration from CEE new EU members over time 1995-2010**
- Additional control variables
  - *Economic variables*
  - *Demographic variables,*
  - *Distance variables:*
    - *Physical – distance in km*
    - *Linguistic proximity constructed by Adsera&Pytlikova (2016) based on Ethnologue (see the last lecture)*
    - *Neighboring dummy*
- Sources: WB-WDI, ILO, OECD
- Unbalanced panel.


Trends in log(emigration rate) from EU8 countries to EEA/EFTA destinations, 95-2010
AUS
AUT
BEL
CAN
CHE
CYP
CZE
DEU
DNK
ESP
EST
FIN
FRA
GBR
GRC
HUN
IRL
ISL
ITA
LTU
LUX
LVA
MLT
NLD
NOR
NZL
POL
PRT
SVK
SVN
SWE
USA
Log(emigration rate)
-10 -5 0 5
1995 2000 2005 2010
Year
CZE HUN POL SVK EST LVA LTU SVN
Graphs by 3-letter Code of Destination country i


Trends in log(emigration rate) from EU2 countries to EEA/EFTA destinations, 95-2010
AUS
AUT
BEL
CAN
CHE
CYP
CZE
DEU
DNK
ESP
EST
FIN
FRA
GBR
GRC
HUN
IRL
ISL
ITA
LTU
LUX
LVA
MLT
NLD
NOR
NZL
POL
PRT
SVK
SVN
SWE
USA
Log(emigration rate)
-10 -5 0 5
1995 2000 2005 2010
Year
BGR ROM
Graphs by 3-letter Code of Destination country i

Model

The basic DD econometric model has the following form:

$$\ln m_{ijt} = \gamma_0 + \delta_j + \delta_i + \theta_t + \gamma_2 OPEN_{ij} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)^2_{t-1} + \\ + \gamma_6 \ln u_{jt-1} + \gamma_7 \ln u_{it-1} + \gamma_8 \ln s_{ijt-1} + \gamma_9 lingprox_{ij} + \gamma_{10} \ln dist_{ij} + \gamma_{11} neighbour + \varepsilon_{ijt}$$

- **mijt -** emigration rate = gross migration flow per source country population,
- **full set of year dummies, and destination and country of origin effects**
- **OPENij -** a Labour Market Opening policy variable, to be equal to 1 if there is a free movement of workers between a particular destination and source country, and 0 otherwise.
- **GDPj, GDPi, GDPi2 -** GDP per capita, PPP, constant 2005 US$
- **Uj, Ui -** unemployment rates
- **Sijt-1** is stock of immigrants per source country population
- **Lingprox**– linguistic proximity index
- **distij** is distance in km
- **Neighbour**
- **Robust st errors clustered** on the level of pair of countries
- All vars in logs except dummies and ling proximity index.

Overview of policy changes with respect to lifting restrictions on the access to labor markets for workers from the new EU 2004 member states

EEA/EFTA countries	Lifting restrictions on free movement of workers	Treatments and Controls	Pre-treatment period	Post-treatment period
Austria	May 2011	Control	1995-2010	-
Belgium	May 2009	Treatment	1995-2008	2009-2010
Denmark	May 2009	Treatment	1995-2008	2009-2010
Finland	May 2006	Treatment	1995-2005	2006-2010
France	July 2008	Treatment	1995-2007	2008-2010
Germany	May 2011	Control	1995-2010	-
Greece	May 2006	Treatment	1995-2005	2006-2010
Iceland	May 2006	Treatment	1995-2005	2006-2010
Ireland	May 2004	Treatment	1995-2003	2004-2010
Italy	July 2006	Treatment	1995-2005	2006-2010
Luxembourg	November 2007	Treatment	1995-2007	2008-2010
Netherlands	May 2007	Treatment	1995-2006	2007-2010
Norway	May 2009	Treatment	1995-2008	2009-2010
Portugal	May 2006	Treatment	1995-2005	2006-2010
Spain	May 2006	Treatment	1995-2005	2006-2010
Sweden	May 2004	Treatment	1995-2003	2004-2010
Switzerland	May 2011	Control	1995-2010	-
UK	May 2004	Treatment	1995-2003	2004-2010

Overview of policy changes with respect to lifting restrictions on the access to labor market for workers from Bulgaria and Romania

EEA/EFTA countries	Lifting restrictions on free movement of workers	Treatments and Controls	Pre-treatment period	Post-treatment period
Austria	January 2014	Control	1995-2010	-
Belgium	January 2014	Control	1995-2010	-
Denmark	May 2009	Treatment	1995-2008	2009-2010
Finland	January 2007	Treatment	1995-2006	2007-2010
France	January 2014	Control	1995-2010	-
Germany	January 2014	Control	1995-2010	-
Greece	January 2009	Treatment	1995-2008	2009-2010
Iceland	January 2012	Control	1995-2010	-
Ireland	January 2014	Control	1995-2010	-
Italy	January 2012	Control	1995-2010	-
Luxembourg	January 2014	Control	1995-2010	-
Netherlands	January 2014	Control	1995-2010	-
Norway	January 2014	Control	1995-2010	-
Portugal	January 2009	Treatment	1995-2008	2009-2010
Spain	January 2009 (Aug 2011)	Treatment	1995-2008	2009-2010
Sweden	January 2007	Treatment	1995-2006	2007-2010
Switzerland	January 2014	Control	1995-2010	-
UK	January 2014	Control	1995-2010	-
Robustness:				
Hungary	January 2009	Treatment	1995-2006	2007-2010
Other EU8 dest	January 2007	Treatments	1995-2006	2007-2010

EU enlargement effect on migration

Model with both, the labour market openings and the EU enlargement effects:

$$\ln m_{ijt} = \gamma_0 + \delta_j + \delta_i + \theta_t + \gamma_1 EUenl_{ij} + \gamma_2 OPEN_{ij} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)^2_{t-1}$$
$$+\gamma_6 \ln u_{jt-1} + \gamma_7 \ln u_{it-1} + \gamma_8 \ln s_{ijt-1} + \gamma_9 lingprox_{ij} + \gamma_{10} \ln dist_{ij} + \gamma_{11} neighbour + \varepsilon_{ijt}$$

- **EUenlij -** the EU enlargement policy dummy,
  - equal to 1 for pairs of 17 EEA destination countries and the EU8 and EU2 source countries for the period after year 2004 and 2007, respectively.
  - equal to 0 for the pre-treatment period for those pair of countries, and for pairs of the non-EU destinations - Australia, Canada, New Zealand, Switzerland and USA - and the EU8- and EU2-source countries.

- In addition, I run the econometric models above with pairs of country fixed effects in order to capture (unobserved) traditions, historical and cultural ties between a particular pair of destination and origin countries:

$$\ln m_{ijt} = \gamma_0 + \delta_{ij} + \theta_t + \gamma_1 EUenl_{ij} + \gamma_2 OPEN_{ij} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)^2_{t-1}$$
$$+\gamma_6 \ln u_{jt-1} + \gamma_7 \ln u_{it-1} + \gamma_8 \ln s_{ijt-1} + \gamma_9 lingprox_{ij} + \gamma_{10} \ln dist_{ij} + \gamma_{11} neighbour + \varepsilon_{ijt}$$

Difference-in-Differences analyses of labour market openings of EU countries on migration flows from new EU10 member states, 22 destinations, years 1995-2010.

VARIABLES	EU8+EU2		EU8		EU2	
LMO	0.378***	0.353***	0.298***	0.348***	0.536***	0.524*
Dest & Origin FE	YES		YES		YES	
Pair of country FE		YES		YES		YES
Constant	-89.043***	-93.528***	-116.716***	-131.480***	456.667	496.926
Observations	2,424	2,424	1,910	1,910	514	514
Adjusted R-sq	0.861	0.905	0.868	0.9111	0.896	0.8976

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; The sample of destinations consists of the "old" 17 EEA countries and 5 non-EU countries: Australia, Canada, New Zealand, Switzerland and the United States.

Difference-in-Differences analyses, Controls for the EU enlargement in order to separate the labour market openings effects from the EU enlargement effects, 22 destinations, years 1995-2010.

VARIABLES	EU8+EU2		EU8		EU2	
LMO	0.290***	0.268***	0.248**	0.282***	0.363**	0.353
EUenl	0.308***	0.334***	0.169	0.246**	0.798***	0.818***
Dest & Origin FE	YES		YES		YES	
Pair of country FE		YES		YES		YES
Constant	-90.909***	-96.769***	-117.518***	-133.533***	425.877	475.934
Observations	2,424	2,424	1,910	1,910	514	514
Adjusted R-sq	0.862	0.9065	0.868	0.9116	0.899	0.9012

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; The sample of destinations consists of the "old" 17 EEA countries and 5 non-EU countries: Australia, Canada, New Zealand, Switzerland and the United States.

Triple difference (DDD) estimator –2004 EU-8

- similarly as in DD, but add:
  - Non-experimental group of source countries:
    - Russia, Croatia, Albania and Ukraine sources
  - post-treatment period varies according to the different time of lifting restrictions

DDD analyses of labour market openings and EU enlargements; Period: 1995-2010. Experimental groups of source countries: Albania, Croatia, Russia and Ukraine.

	EU8+EU2+4CEECs		EU8+4CEECs		EU2+4CEECs	
VARIABLES						
LMO	0.237***	0.338***	0.233**	0.385***	-0.051	0.401*
EUenl	0.594***	0.637***	0.548***	0.596***	1.142***	1.238***
Dest & Origin FE	YES		YES		YES	
Pair of country FE		YES		YES		YES
Constant	-22.903	-35.511**	-4.795	-25.343	-17.699	-27.292
Observations	3,110	3,110	2,596	2,596	1,200	1,200
Adjusted R-sq	0.861	0.9081	0.864	0.9130	0.886	0.9133

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; The sample of destinations consists of the "old" 17 EEA countries and 5 non-EU countries: Australia, Canada, New Zealand, Switzerland and the United States.

TESTING VALIDITY: Placebo tests: period 1995-2003; placebo enlargement year for EU8=1997; placebo for EU2=2000

VARIABLES	EU8+EU2		EU8+EU2	
LMO	0.140	0.093	0.123	0.091
EUenl			0.121	0.018
Dest & Origin FE	YES		YES	
Pair of country FE		YES		YES
Constant	-131.288***	-162.262***	-121.079***	-160.794***
Observations	1,239	1,239	1,239	1,239
Adjusted R-sq	0.856	0.9175	0.856	0.9175

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1

SUMMARY:

- A positive effect of labour market openings on migration:
  - migrants move to countries with greater formal labor market access over those in which their access is restricted.
  - The relationships hold even in the most restrictive models with economic and distance indicators, existing immigrant stocks and country or country pair FE.
    - in models without networks, the coefficients on DD and DDD are always significant positive;
    - It holds also for 32 destinations
    - It holds even if I control for the overall effect of the “EU entry” on migration.
  - the estimated “EU entry” effect is positive and significant in all DD and DDD model specifications, and it is larger than the “labour market opening” effect.

Labor Market Laws and intra-European Migration: The Role of the State in Shaping Destination Choices

By **John Palmer** and **Mariola Pytlikova**

European Journal of Population, 2015

⇒ Use an employment rights index collected by John Palmer to evaluate how *granting employment rights law* influence migration.

⇒ We study immigrants *multiple choices*

⇒ We study potential *mechanisms* behind

⇒ WE FIND:

⇒ migrants are attracted to destinations that give them *greater formal labor market access*.

⇒ Descreasing *restrictions in one destination diverted migrants from other potential destinations*.

⇒The effect of destination labor market access is:

⇒ weaker for destinations with *larger existing co-national networks*, and for migrants from *linguistically closer* countries and from countries with *higher average education*.

The role of the environment:

Climate Variability and International Migration: The Importance of the Agricultural Linkage

Ruohong Cai, *Princeton University*

Shuaizhang Feng, *Shanghai University of Finance and Economics and IZA*

Mariola Pytliková, *CERGE-EI, VSB-Technical University Ostrava, KORA Copenhagen, IZA and CReAM*

Michael Oppenheimer, *Princeton University*

Background

- Climate change has become a global concern *(IPCC, 2007).*
- One possible impact of the climate change is human migration *(Myers, 2002; Stern, 2007; Warner et al., 2009).* Among all climate-induced migrants, those crossing the political borders would be a matter of special concern as both receiving and sending countries are affected.
- Yet, a very few studies on impacts of environmental factors on international migration.
- A need to understand the mechanisms underlying the climate-migration relationship in order to devise policies to identify the potential source and receiving regions and to effectively manage migration flows.

47

Literature

Research quantifying the effect scarce and empirical results so far are mixed –

- Significant relationship between climate change and migration

  (Reuveny & Moore, 2009; Feng, Krueger, & Oppenheimer, 2010; Feng & Oppenheimer, 2012; Marchiori, Maystadt, & Schumacher, 2012; Gray & Mueller, 2012)

- No significant relationship between climate change and migration

  (Mortreux & Barnett, 2009; Naudé, 2010; Beine and Parsons, 2012)

- Previous studies usually rely on one destination data, only recently some using multi-country migration data:
  - Reuveny and Moore (2009) -a cross-sectional data of bilateral international migration flows to 15 OECD destination countries in the late 1980s and 1990s.
  - Beine and Parsons (2012) – based on Özden et al. (2011) data of bilateral migration stocks; they use net flows for 166 destinations from137 origins constructed from stocks from five censuses: 1960, 1970, 1980, 1990, 2000.

- **Here, we use a comprehensive international migration panel dataset, which contain *annual bilateral migration flows and foreign population stocks data for* 42 OECD destinations from 160 origins for period 1980-2009.**

48

Literature

- Migration is driven by income maximization *(Sjastaad; Roy, 1951; Borjas, 1989)*

- The income maximization framework can be extended to utility maximization in order to incorporate other determinants of migration, such as networks of family and friends, educational pulls, social benefits, immigration policies, cultural and linguistic distance, political pressures, conflicts and wars, and country specific amenities *(Adams, 1993; Massey et al., 1993; Borjas, 1999; Clark, Hatton, & Williamson, 2007; Pedersen, Pytlikova, & Smith, 2008; Ortega & Peri, 2009; Mayda, 2010; Adsera & Pytlikova, 2012).*

- Climatic and environmental factors such as sea level rise, environmental degradation, weather-related crop failures, and extreme weather events are likely to play a role too *(Hugo, 1996; Myers, 2002; Warner et al., 2009; Piguet, Pécoud, & De Guchteneire, 2011; Foresight, 2011; Gray & Mueller, 2012).*

Literature

Climate may interact with region-specific factors (socio-economic and environment conditions, culture and lifestyle, social networks, and so on)

The effects of climate on human migration are likely to be heterogeneous and driven by different mechanisms.

We try to uncover some of the mechanisms in our study.

The agricultural channel

1. Literature has detected severe effect of climatic changes on crop yields *(Lobell et al., 2008; Schlenker & Roberts, 2009; Lobell, Schlenker, & Costa-Roberts, 2011).*
2. Agriculture is an important economic sector in many developing countries, where a large proportion of the population still directly depends on agriculture for a living.
3. Other channels are likely to either affect only a specific type of region (such as sea level rise that is only directly relevant to coastal regions), or tend to displace people only temporarily, such as flood or cyclones.
4. Dell et al. (2012) : GDP growth rates are negatively associated with temperature, but only for less developed countries which are more dependent on agriculture. Given that income, usually proxied by GDP per capita in empirical work, is a major determinant of international migration (Borjas, 1989), it is reasonable to expect agriculture to play an important role in the climate-migration relationship.

51

Some theory

1. We build a simple theoretical migration model in Harris&Todaro 1970's and Borjas 1987's models fashion.

2. Then we set up a simple production function, in which we - based on empirical findings of Dell et al. (2012) - assume that climate affects the productivity of agricultural sector but not that of non-agricultural

- According to our model, we have the following results:
- (a) adverse climate change would induce a decline in population, or outmigration from the country;
- (b) For countries that are more agriculture-dependent, an adverse climate change would trigger more outmigration.
- (c) If amenities are not adversely affected by climate, then for non-agricultural countries, changes in climate would not trigger any outmigration.

52

Empirical Model

➢ A reduced-form model:

$$\ln m_{ijt} = \beta_0 + \beta_1 TMP_{it} + \beta_2 PCP_{it} + \delta_1 TMP_{it} * A_i + \delta_2 PCP_{it} * A_i + \phi x_{it} + \varphi z_{jt} + \theta_{ij} + d_i year_t + \varepsilon_{ijt}$$

Migration rate

Temperature

Precipitation

Interactive terms

Control Variables

Country-pair fixed effects

Origin country linear time trend

Data

- dataset on Immigration flows and foreign population stock into 42 OECD countries from 160 countries.
- Collected by writing to national statistical offices (for 30 OECD countries, the rest from OECD source migration).
- Period: 1980 to 2010, unbalanced panel.
- Monthly mean temperature and total precipitation data for 1980-2010 period from NASA MERRA with a resolution of 2/3 degrees in longitude and 1/2 degrees in latitude, aggregated by country and population-weighted;
- In addition, we also constructed a measure of growing season exposed time for both between 10 and 30 °C and above 30 °C using global gridded hourly temperature data
- Share of agriculture value added, population and cereal crops from WDI
- GDP per capita from Penn world tables version 7.
- Other variables such as distance, linguistic proximity, historical past etc. from Adsera and Pytlikova (2015) and CEPII

54

1 °C increase in temp => 5.1% increase in migration rate from agricultural countries Compared to only 0.4% increase in migration rate from other countries

Table 2. Climate and international migration: the reduced-form regression

	Model 1	Model 2	Model 3
Temperature	-0.000	0.001	0.004
	(0.006)	(0.006)	(0.006)
Temperature × Agriculture	0.024*	0.048***	0.047***
	(0.012)	(0.013)	(0.013)
Precipitation		0.000	0.000
		(0.000)	(0.000)
Precipitation × Agriculture		0.001***	0.001***
		(0.000)	(0.000)
GDP variables	No	No	Yes
Country-pair FE	Yes	Yes	Yes
Origin country-specific linear time trend	Yes	Yes	Yes
Observations	92,137	92,137	92,137
Number of origin countries	160	160	160
R^2 (within)	0.1866	0.1868	0.1904
Temperature effect in agriculture-dependent countries	0.024**	0.049***	0.051***
	(0.011)	(0.012)	(0.012)

Notes: Dependent variable is the natural logarithm of migration rate. Agriculture is defined as a dummy based on origin countries, where top 25% agriculture-dependent countries are assigned with "1", and the rest of countries are assigned with "0".

Robust standard errors clustered by country-pairs are reported in parentheses.
*** p<0.01; ** p<0.05; * p<0.1.

Table 3. Robustness checks for the reduced-form model

	Agriculture-dependent countries		
	(1)	(2)	(3)
Baseline specification			
	0.024**	0.047***	0.055***
	(0.012)	(0.013)	(0.014)
Panel A: Controlling for lagged one year temperature and precipitation			
	0.014	0.033**	0.043***
	(0.011)	(0.013)	(0.014)
Panel B: Controlling for lagged temperature and precipitation (up to five years)			
	0.011	0.028**	0.040***
	(0.012)	(0.014)	(0.014)
Panel C: Controlling for lagged migration stock			
	0.014	0.039**	0.051***
	(0.015)	(0.017)	(0.018)
Panel D: Controlling for lagged one year migration rate			
	0.016*	0.025**	0.029***
	(0.009)	(0.010)	(0.011)
Panel E: Controlling for origin country-specific quadratic time trend			
	0.019*	0.035***	0.047***
	(0.011)	(0.013)	(0.013)
Panel F: Controlling for both origin and destination country fixed effects			
	0.020	0.047***	0.048***
	(0.015)	(0.018)	(0.019)
Panel G: Regressions weighted by origin country population			
	0.010	0.026	0.046**
	(0.018)	(0.020)	(0.020)
Panel H: Using the natural log of migration flows as dependent variable			
	0.024**	0.046***	0.053***
	(0.012)	(0.013)	(0.014)
Panel I: Dropping observations with top 5% country pairs by migration flows			
	0.024**	0.050***	0.059***
	(0.012)	(0.014)	(0.014)
Panel J: Dropping observations with top 1% country pairs by migration flows			
	0.025**	0.049***	0.057***
	(0.012)	(0.013)	(0.014)
Panel K: Dropping observations with zero migration flows			
	0.022*	0.045***	0.054***
	(0.012)	(0.015)	(0.015)

Different control variables

Different regression technique

Different dependent variable

Different samples

Conclusions

- We employ a reduced-form model to quantify the effects of weather variations on global bilateral international migration flows.
- Significant climate-induced international migration only happens in a small group of agriculture-dependent countries.
- The temperature–migration relationship is non- linear and resembles the non linear temperature–yield relationship. In particular, extreme heat is bad for agricultural productivity and induces international outmigration. Therefore, among the intermediate links between weather and international migration, agriculture appears to be an important one. Our results are robust to alternative model specifications.
- Climate-induced migration specifically enlarges the flow in already significant migration routes, potentially presenting challenges to major migrant-receiving countries, mostly industrialized countries.

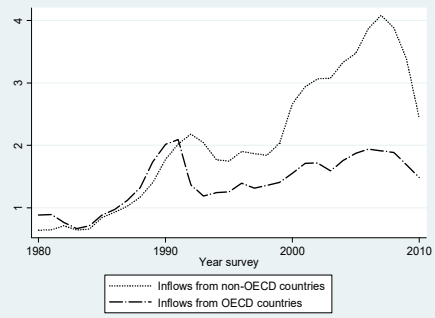
THE INFLUENCE OF ATTITUDES TOWARD IMMIGRANTS ON INTERNATIONAL MIGRATION

CEDRIC GORINAS
MARIOLA PYTLIKOVA

International Migration Review, Volume 51, Issue 2, Summer 2017, Pages 416–451

MOTIVATIONS

- CAN NATIVES' HOSTILITY TO IMMIGRANTS REDUCE THE NUMBER OF IMMIGRANTS IN A COUNTRY?



Natives' opinion in 30 OECD countries:

"I do not want immigrants or foreign workers as neighbors:" **18** pct.

"I agree that employers should give priority to [nation] workers, when jobs are scarce:" **64** pct.

"I think that my government should place stricter limits on the number of immigrant workers or prohibit immigrants to come:" **50** pct.

(Integrated Values Survey 80-2010)

MECHANISMS

- WHY SHOULD NATIVES' HOSTILITY AFFECT IMMIGRATION?

Attitudes influence the integration process of immigrants

- Directly: interethnic conflicts (Dustmann & Preston 2001)
- Indirectly: policies and public debate (Dustmann & Preston 2001; Facchini and Mayda 2008)
- Barriers for labor market (Waisman & Larsen 2007; Constant et al. 2009)
- Might reflect ethnic discrimination (Carlsson & Eriksson 2012)

⇒ Negative attitudes increase migration costs

⇒ Countries with more hostile natives receive fewer immigrants

THIS STUDY

- IS THE FIRST STUDY TO LOOK AT WHETHER NATIVES' ANTI-IMMIGRANT ATTITUDES CAN HINDER IMMIGRATION
- EXPLORES POSSIBLE MECHANISMS
  - Migration policies
  - Types of migrants: e.g., labor-driven migrants
  - Information channels behind mechanisms
- EXPLOITS RICH MULTIPLE-DESTINATION-AND-ORIGIN LONGITUDINAL DATA

RELATED LITERATURE (1/2)

The determinants of international migration

e.g., Hicks (1932), Borjas (1999), Clark et. al (2007), Pedersen et al. (2008), Mayda (2010), Adsera & Pytlikova (2012), Ortega & Peri (2012)

Migration factors include: income differentials; employment opportunities; welfare benefits; geographic and linguistic distance; ethnic networks; immigration policies, etc.

The formation of natives' attitudes toward immigrants

e.g., Bauer et al. (2000); Fertig & Schmidt (2002); Dustmann and Preston (2004); O'Rourke & Sinnott (2006); Facchini & Mayda (2008, 2009); Card, et al. (2012)

RELATED LITERATURE (2/2)

Anti-Immigrant Attitudes and International Migration

Not much evidence.

- Facchini and Mayda (EP, 2008): 1 wave of the ISSP; positive correlation between net migration and pro-immigration opinions
- Wilkes et al. (IMR, 2008): the number of immigrants in a country does not influence anti-immigrant attitudes.

⇒ No study looks at anti-immigrant attitudes as a potential determinant/cost of migration

DATA

- **Bilateral** (destination-origin) data on international migration: **flows** and **stocks** for up to 224 origin and 30 OECD receiving countries (Adsera and Pytliková, EJ, 2015)
- **Survey data** from the Integrated Values Survey: 30 OECD destination countries
  - Averages by country for each wave. Up to 7 waves; linear interpolation for the years with no survey.
- Other time-variant covariates: GDP, U rates, distance, social redistribution, immigration policies, political pressure, etc.

MEASURING NATIVES' ATTITUDES

Measure	Survey questions from the IVS	N	Obs. period	M	SV
No neighbor	"On this list are various groups of people. Could you sort out any that you would not like to have as neighbors?" (1) If a respondent mentions either "immigrants/foreign workers" or "people from a different race," (0) otherwise.	28,224	1981 – 2009	0.18	0.12
Labor discrimination	"When jobs are scarce, employers should give priority to [nation] people over immigrants. Do you: (0) disagree or neither, or (1) agree?"	25,536	1989 – 2009	0.62	0.18
no neighbor	With linear interpolation of the years with no IVS wave	150,080	1981 – 2009	0.18	0.11
Labor discrimination	With linear interpolation of the years with no IVS wave	116,480	1989 – 2009	0.62	0.18

A MODEL OF INTERNATIONAL MIGRATION (IN SHORT)

$$\ln m_{ij} = \gamma_1 + \gamma_2 ln\ Att_{j\,t-1} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)^2_{t-1} + \gamma_6 \ln U_{j\,t-1} + \gamma_7 \ln U_{i\,t-1} + \gamma_8 ln\ pse_{j\,t-1} + \gamma_9 ln\ p_{ij\,t-1} + \gamma_{10} ln\ s_{ij\,t-1} + \gamma_{11} FH_{i\,t-1} + \delta_{ij} + \theta_t + \varepsilon_{ij\,t}$$

with:

- m_{ij} : propensity to migrate from origin *i* to destination *j*
- $Att_{j\,t-1}$: (2 alternative) measures of natives' attitudes toward immigrants: *No_neighbor* & *Labor_discrimination*
- GDP, U rates, share of public social expenditure, population ratios, ethnic networks, political pressure (Freedom House indices)
- Year FE and country-pair FE

- Similar applications in, e.g., Clark et al. (2007); Mayda (2010), Ortega & Peri (2012); Adsera & Pytlikova (2015)

IDENTIFYING THE EFFECT OF ATTITUDES

- Possible reverse causality between migrant inflows and natives' attitudes and other migration factors

⇒ As in Mayda (2010), Ortega & Peri (2012) we use lagged values (t-1) of time-variant variables and treat them as predetermined

⇒ Alternatively: with // without interpolation of the years with no actual survey

⇒ Test for plausible mechanisms

- Indirect effect of immigration policies:

⇒ Control for migrant entry restrictions in a robustness

- Unobserved country-specific and country-pair characteristics:

⇒ Country-pair FE and extensive sets of controls

66

BASELINE RESULTS – DETERMINANTS OF IMMIGRATION

ANTI-IMMIGRANT ATTITUDES AND INTERNATIONAL MIGRATION

	Dep. Var. : Propensity to emigrate from *i* to *j*, *Mijt* = log of the share of emigration flows to country *j* in country *i* total population									
	No interpolation of attitudes measures						Interpolation of attitudes measures			
	OLS estimates				*Beta* standardized coeff.		OLS estimates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No neighbor (t-1)	-0.263***		0.056		0.014		-0.335***		0.041	
	(0.077)		(0.078)				(0.090)		(0.036)	
Labor discrimination (t-1)		-0.695***		-0.357***		-0.065***		-1.055***		-0.096
		(0.113)		(0.119)				(0.111)		(0.059)
N	4,131	4,336	4,131	4,336	4,131	4,336	25,654	23,685	25,654	23,685
Adjusted R-sq	0.157	0.139	0.949	0.950	0.949	0.950	0.011	0.038	0.951	0.952

10% increase in *Labor_discr* yields a 3.6% decrease in migrant inflows.

A s.d. incr in *Labor_discr* yields a 0.07 incr in s.d. of migrant inflows: negligible next to the size of effect of networks or GDP, but bigger than unemployment in j.

ROBUSTNESS – MORE HOMOGENOUS RECEIVING COUNTRIES

	(1) Western destinations: EU15, USA, CAN, AUS				(2) Old destinations: USA, CAN, AUS, UK, FR, NL			
	No Interpolation		Interpolation		No Interpolation		Interpolation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No neighbor(t-1)	0.007		-0.004		-0.265		0.059	
	(0.088)		(0.044)		(0.225)		(0.131)	
Labor discrimination(t-1)		-0.437***		-0.161***		-1.152***		-0.626**
		(0.133)		(0.061)		(0.282)		(0.262)
Constant	-39.146***	-46.304***	-40.590***	-37.856***	-9.020	-47.299**	-58.556***	-60.290***
	(13.779)	(12.369)	(5.223)	(5.460)	(19.777)	(21.066)	(9.812)	(12.651)
N	2,996	3,011	17,585	15,986	756	773	4,041	3,428
Adjusted R-sq	0.940	0.942	0.951	0.953	0.947	0.947	0.938	0.939

⇒ Stronger effect of Labor_discrimination for migrants to EU15, US, CAN, AUS.

MECHANISMS –

1. POSSIBLE INDIRECT EFFECT OF RESTRICTIVE IMMIGRATION POLICIES
2. EFFECT OF ATTTITUDES ON DIFFERENT TYPES OF IMMIGRANTS
   - Proxy for labor motivation
3. INFORMATION CHANNELS
   - Ethnic networks
   - Destination language and medias
   - Out-migration

MECHANISMS – 1. INDIRECT EFFECT OF RESTRICTIVE IMMIGRATION POLICIES?

Dep. Var. : Propensity to emigrate from i to j, $Mijt$ = log of the share of emigration flows to country j in country i total population

	(1) Controls for tightness of immigration policy								(2) Within-EU migration with no entry restriction			
	No interpolation of attitudes measures				Interpolation of attitudes measures				No Interpolation		Interpolation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
No neighbor(t-1)	1.156**		2.056***		-0.160***		-0.139***		-0.055		0.028	
	(0.573)		(0.742)		(0.043)		(0.046)		(0.160)		(0.079)	
Labor discrimination(t-1)		-0.521		-0.521		-0.219***		-0.213***		0.154		-0.276***
		(0.331)		(0.332)		(0.066)		(0.066)		(0.232)		(0.092)
Entry_laws_tight(t-1)	NO	NO	-0.990*	0.000	NO	NO	-0.017**	-0.023**	NO	NO	NO	NO
			(0.517)	(0.071)			(0.008)	(0.009)				
Constant	-93.615***	-11.613	-61.719*	-11.614	-39.231***	-53.923***	-38.704***	-51.911***	-110.426	-110.769	-49.937*	-44.321
	(34.524)	(28.508)	(36.889)	(28.567)	(5.316)	(5.689)	(5.314)	(5.612)	(83.280)	(84.082)	(30.162)	(30.871)
N	1,387	1,514	1,387	1,514	12,550	10,951	12,550	10,951	744	758	4,181	3,995
Adjusted R-sq	0.969	0.969	0.970	0.969	0.959	0.963	0.959	0.963	0.960	0.958	0.938	0.940

Notes: All specifications include year and country-pair fixed effects, and other controls including GDP per capita in the source (in addition to a squared term), GDP per capita in the destination, a measure of public social expenditure, unemployment rate in the destination and the source, a population size ratio, two measures from Freedom House, and the number of migrants from i in j countries at (t-1). Robust standard errors clustered at the country-pair level are given in parentheses. *** p<0.01, ** p<0.05, * p<0.1. See Table A1 and the main text for the definition of the covariates.

⇒ Effect persistent even when controlling for immigration policies

MECHANISMS – 2. EFFECT OF ATTTITUDES ON DIFFERENT TYPES OF IMMIGRANTS

	(1) OECD vs. non-OECD Migrants				(2) Size of the source country's GDP p.cap.			
	No Interpolation		Interpolation		No Interpolation		Interpolation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No neighbor (t-1)					1.702***		0.545**	
					(0.614)		(0.263)	
Labor discrimination (t-1)						2.139**		0.860*
						(0.920)		(0.461)
No neighbor(t-1)_OECD	-0.107		-0.104**					
	(0.093)		(0.048)					
No neighbor(t-1)_NonOECD	0.188*		0.161***					
	(0.097)		(0.047)					
Labor discrim(t-1)_OECD		-0.593***		-0.369***				
		(0.131)		(0.076)				
Labor discrim(t-1)_NonOECD		-0.133		0.127				
		(0.156)		(0.082)				
Attitudes measure x Source country GDP (t-1)					-0.173***	-0.264***	-0.053*	-0.101**
					(0.063)	(0.093)	(0.028)	(0.048)
$ln\ GDPpc_{i\,t-1}$					-0.653**	-0.471**	-0.155	-0.135
					(0.264)	(0.210)	(0.121)	(0.117)
Constant	-26.739***	-26.531***	-30.989***	-28.687***	-40.449***	-41.667***	-30.565***	-30.050***
	(10.008)	(7.894)	(4.071)	(4.369)	(6.942)	(5.927)	(2.869)	(3.072)
N	4,131	4,336	25,654	23,685	4,128	4,332	25,642	23,672
Adjusted R-sq	0.950	0.950	0.951	0.952	0.949	0.950	0.951	0.952

⇒ Economically driven immigrants react more to anti-immigrant attitudes, espec. to the likelihood of labor discrimination

MECHANISMS – 3. INFORMATION CHANNELS

Dep. Var. : Propensity to emigrate from i to j, Mij = log of the share of emigration flows to country j in country i total population

	(1) The ethnic network channel				*(2) The linguistic proximity channel*					*(3) The out-migration channel*			
	No Interpolation		Interpolation		No Interpolation		Interpolation			No Interpolation		Interpolation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
No neighbor (t-1)	0.027		0.051			0.099*		0.052		0.266		0.084	
	(0.095)		(0.047)			(0.058)		(0.040)		(0.267)		(0.063)	
Labor discrimination (t-1)		-0.374***		-0.139*			-0.285***		0.008		0.288		-0.035
		(0.134)		(0.079)			(0.090)		(0.064)		(0.250)		(0.106)
Attitudes measure x Immigrant Stock (t-1)	-0.019	-0.011	0.005	-0.023									
	(0.031)	(0.051)	(0.016)	(0.028)									
$ln\ s_{ij\,t-1}$	0.608***	0.639***	0.542***	0.527***									
	(0.094)	(0.061)	(0.044)	(0.037)									
Attitudes measure x Linguistic Proximity (t-1)						-0.286***	-0.383**	-0.219*	-0.538***				
						(0.108)	(0.194)	(0.115)	(0.166)				
Linguistic Proximity					0.374***	-0.185	0.177	-0.078	0.103				
					(0.076)	(0.248)	(0.153)	(0.252)	(0.122)				
Constant	-25.984***	-24.707***	-30.048***	-27.275***	-17.514***	-29.138***	-28.442***	-23.001***	-18.376***	-43.860**	-41.667**	-40.139***	-36.028***
	(10.056)	(7.828)	(4.098)	(4.268)	(2.906)	(6.526)	(5.770)	(3.982)	(3.498)	(17.834)	(17.172)	(4.110)	(4.435)
N	4,131	4,336	25,654	23,685	27,749	4,131	4,336	25,654	23,685	2,820	2,889	19,278	17,667
Adjusted R-sq	0.949	0.950	0.951	0.952	0.902	0.912	0.911	0.905	0.904	0.876	0.871	0.867	0.869

⇒ Language knowledge (media?): the most plausible information channel

CONCLUSION

- Most robust finding:

Natives' readiness to discriminate against immigrants, when jobs are scarce, influences the location choice of immigrants

- Directly; not only through tighter immigration policies
- Natives' hostility to immigrants: a larger cost for immigrants
  - that are economically driven (i.e., OECD migrants)
  - from countries with a common language/countries linguistically closer

⇒ Political challenge: How to influence natives' hostility when high structural demand for foreign workers?

⇒ Strengthening interpersonal trust across ethnic groups (Putnam 2007; Rustenbach 2010)

BASELINE RESULTS – DETERMINANTS OF IMMIGRATION

Dep. Var. : Propensity to emigrate from i to j, $Mijt$ = log of the share of emigration flows to country j in country i total population

	No interpolation of attitudes measures						Interpolation of attitudes measures			
	OLS estimates				*Beta* standardized coeff.		OLS estimates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No neighbor (t-1)	-0.263***		0.056		0.014		-0.335***		0.041	
	(0.077)		(0.078)				(0.090)		(0.036)	
Labor discrimination (t-1)		-0.695***		-0.357***		-0.065***		-1.055***		-0.096
		(0.113)		(0.119)				(0.111)		(0.059)
$\ln(GDP_j)_{t-1}$			3.229***	2.981***	0.390***	0.375***			2.309***	2.131***
			(0.495)	(0.388)					(0.211)	(0.219)
$\ln(GDP_i)_{t-1}$			-3.799**	-4.099***	-1.565**	-1.692***			-0.324	-0.885
			(1.490)	(1.099)					(0.596)	(0.604)
$\ln(GDP_i)^2_{t-1}$			0.211***	0.221***	1.567***	1.649***			0.016	0.047
			(0.081)	(0.063)					(0.033)	(0.034)
$ln\ pse_{j\,t-1}$			2.484***	2.324***	0.243***	0.217***			0.749***	0.782***
			(0.471)	(0.403)					(0.128)	(0.134)
$\ln U_{j\,t-1}$			-0.146**	-0.201***	-0.032**	-0.044***			-0.072**	-0.044
			(0.070)	(0.066)					(0.036)	(0.036)
$\ln U_{i\,t-1}$			0.166**	0.172**	0.043**	0.045**			0.086***	0.096***
			(0.084)	(0.084)					(0.027)	(0.027)
$ln\ p_{ij\,t-1}$			0.179	0.472	0.155	0.410			0.524***	0.543**
			(0.453)	(0.461)					(0.196)	(0.223)
$FH_{i\,t-1}$ Political Rights			0.028	-0.012	0.008	-0.004			0.083**	0.029
			(0.098)	(0.098)					(0.034)	(0.035)
$FH_{i\,t-1}$ Civil Rights			-0.151	-0.148	-0.038	-0.038			-0.126***	-0.192***
			(0.094)	(0.091)					(0.038)	(0.041)
$ln\ s_{ij\,t-1}$			0.649***	0.644***	0.724***	0.718***			0.532***	0.536***
			(0.063)	(0.060)					(0.039)	(0.037)
Country pair FE	NO	NO	YES	YES	YES	YES	NO	NO	YES	YES
Constant	-4.235***	-4.950***	-26.696***	-29.080***			-4.405***	-5.163***	-30.228***	-26.696***
	(0.350)	(0.133)	(4.313)	(3.978)			(0.362)	(0.128)	(4.071)	(4.313)
N	4,131	4,336	4,131	4,336	4,131	4,336	25,654	23,685	25,654	23,685
Adjusted R-sq	0.157	0.139	0.949	0.950	0.949	0.950	0.011	0.038	0.951	0.952

OUR NEXT LECTURE – Tuesday 22.1.2019, 11.30-13.00

- ***Selectivity in migration, models of migration and empirical evidence***

THE NEXT LECTURES

- *Immigrant performance and integration; the second generation*
- *Immigrants and innovation; International migration and globalization*
- *Impacts of immigration*
- *Immigration policy*
- *Diversity - Impacts of workforce diversity on firms and economies*
- *Emigration and source countries; Brain drain and brain gain; Remittances*