



Wider effects of immigration; International migration and globalization. *Cont.*

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Study Materials and Reading List

- Slides of the lectures
- All materials provided on: <http://home.cerge-ei.cz/pytlikova/LaborSpring16/>

Compulsory Readings:

- Parrotta, P., Pozzoli, D. and M. Pytlikova (2014): "The Nexus between Labor Diversity and Firm's Innovation." *Journal of Population Economics*. Vol. 27 (2), pp 303-364.
- Bansak, Simpson, Zavadny: The Economics of Immigration, Part IV Other Effects of Immigration

Other Relevant Literature:

- Nathan, M. (2014): The wider economic impacts of high-skilled migrants: a survey of literature for receiving countries. *IZA Journal of Migration* 2014, 3:4.
- Card (2010): Immigration and Inequality. *American Economic Review*.
- Javorcik, B. S., Ç. Özden, et al. (2011). "Migrant networks and foreign direct investment." *Journal of Development Economics* 94(2): 231-241.
- Hunt, J. and M. Gauthier-Loiselle (2010). "How Much Does Immigration Boost Innovation?" *American Economic Journal: Macroeconomics* 2(2): 31-56.
- Kerr, S. P. and W. Kerr (2011). "Economic Impacts of Immigration: A Survey" *NBER Working Paper* 16736. Cambridge, MA, NBER.
- Peri, Giovanni, Kevin Shih, and Chad Sparber (2014), "Foreign STEM Workers and Native Wages and Employment in U.S. Cities", NBER Working Papers 20093
- Parrotta, P., Pozzoli, D. and M Pytlikova (2014): Does Labour Diversity affect Firm Productivity? *European Economic Review*, Vol. 66, February 2014, Pages 144–179.

WIDER EFFECT OF MIGRATION

- LAST LECTURE :
 - Technology and innovation
 - Productivity
- TODAY
 - Housing
 - Prices of goods and services
 - Product diversity
 - FDI (impact on sending too)
 - Trade (impact on sending too)
 - Financial markets
 - Entrepreneurship
 - Remittances (impact on sending too – next lecture)

IMPACT OF IMMIGRATION on housing

- Migration unevenly distributed across space – tend to cluster in cities.
- There may be advantages related to interaction of production and consumption-side effects => cities exhibit returns to economic activity via “matching”, “sharing” and “learning” economies to firms and workers. Clusters of high-value activity may improve flow of ideas, help entrepreneurship.
- BUT there may be also diseconomies of cities – constraints on urban space, crowding and congestion due to immigration can affect housing (Ottaviano and Peri, 2006; Saiz, 2007):
- Economic theory -> if the number of customers of a good increases => a rightwards shift in the demand=> the price of that good increases too. The same holds for housing.
- The effect depends on elasticity of housing supply. If it is relatively inelastic (which is certainly true for e.g. London, Bay area SanFrisco, New York, Vinohrady in Prague?) then the effect on price big. If the housing supply relatively elastic (Brno? Usti n L?) then the effect of higher demand for housing will have less effect on prices.

IMPACT OF IMMIGRATION on housing

- The effect of higher prices:\
 - Positive as it increases the value of natives wealth
 - Negative – if the natives would like to buy a house or pay a higher rent => it may crowd out natives from the housing market.
- Effects on housing market through another mechanism: Immigration could lead to higher out-migration of natives -> ethnic enclaves =>the effect on housing can be dampened or even drive the prices to go down.
- EMPIRICS:
- Saiz (2007) test the hypothesis using U.S. data. Finds that an immigration of 1% of population to large US city leads to a 1% increase in rental and house prices in that city.
- Gonzales and Ortega (2013) analyse housing market boom in Spain over 1998-2008 (immigration has risen from 0,5 mil to 5mil foreigners in the period, and house prices increased by 175%). Find: the immigrants are at least a part of the story – 1,5% in population lead to 2% increase in house prices.

IMPACT OF IMMIGRATION on prices of goods and services

- Immigrants contribute to supply of goods and services
- Immigration may put downward pressure on wages – lower labor costs may translate into lower prices of goods and services, in particular in sectors, in which immigrants are concentrated (e.g. landscaping industry, housekeeping, baby-sitting, ...). This can be particularly true for non-tradable services)
- Cortes (2008) analyse US price data between 1980-2000 and finds that a 10% increase in the share of low-skilled immigrants in landscaping causes a 2% decrease in prices of immigrant-intensive services. Her estimates suggest that US immigrant flow in that period reduced price of immigrant-intensive services by at least 9-11% in average US city.
- Cortes(2008) points that high-skilled US natives are those benefiting most from the price drop because they consume more those services.
- In addition, immigrants increase demand for certain goods and services (food, cell phones..) – may put upward pressure on prices.
- => immigration may have important distributional impacts on natives purchasing power => low-skilled immigration may favor high-skilled natives by reducing prices of services they purchase BUT hurt low-skilled natives by reducing their purchasing power via higher prices and possibly lower wages.

IMPACT OF IMMIGRATION on product diversity

- Immigrants add to variety of products and services,
- add to diversity and quality of food. Large immigrant cities have e.g. one of the best restaurants..
- (1) Immigrants form a consumer base and maybe increase demand for ethnic goods => encourages producers to supply the goods => then available to native consumers as well.
- (2) Immigrants are suppliers of the ethnic goods too
- => more ethnic goods => variety in goods,
- Ottaviano and Peri (2006) study consumption variety due to immigration: if natives prefer more variety and diversity in their consumption, then immigration improves overall welfare.
- Mazzolari and Neumark (2012) focus on Californian restaurants and retail industries. They find that increase in immigrant share increases a share of ethnic restaurants, and that the supply effect is larger than the demand effect. They find less diversity in the retail industry due to immigration, as retail industries are much less immigrant-intensive, and immigrants with their lower incomes tend to increase demand for large big-box retailers.

IMPACT OF IMMIGRATION on FDI

- Example of empirical evidence using panel country data

DIASPORAS AND FOREIGN DIRECT INVESTMENTS

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Still preliminary...

Research question and motivation

- We study whether outward migration can help countries attract FDI, using a unique dataset on international migration into the OECD.
- Background: Large increase of migration into the OECD
 - Not much research on consequences of migration for origin countries, focus has been on brain drain
 - Are there positive effects of outward migration for the origin countries, which might mitigate brain drain?
- Do different forms of globalization feed on each other?

Contribution

- We examine how migration can spur FDI on a much larger scale than previous studies
 - We have a very large panel of countries and a long time period
 - Most of the previous studies focus on one country, there are two studies with a cross-section of countries
- This large data set allows a much more precise identification strategy
 - We can deal with unobserved factors that might drive both migration and FDI
 - We have good, time-variant instruments for migration (and FDI), allowing us to sort out the causality.
 - Result: There is large two-way causality, but only small correlation

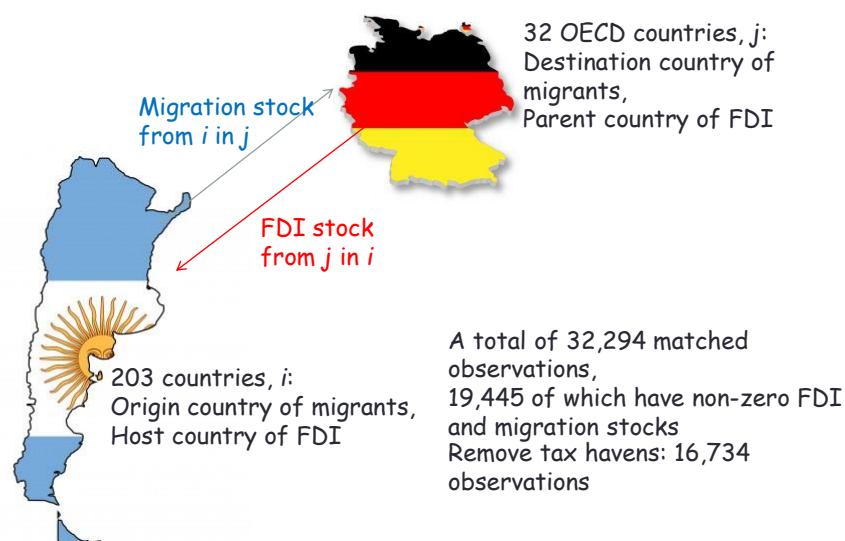
Identification strategy

- Migrants might help attract FDI to their origin countries by making investors aware of business opportunities or by helping with contract enforcement
- Major identification issue: Unobserved pair-specific variables (cultural similarities, historical ties, ...)
 - There is a lot of Swedish immigrants in Denmark, and a lot of Danish investment in Sweden.
 - That might be because
 - Migration causes FDI
 - Denmark and Sweden are right next to each other, speak similar languages
 - ... and have cultural and historical ties. These ties are hard to measure.
- Our study is the first to deal with this identification problem
 - We do as much as we can to measure cultural ties directly
 - Our data also allow us to include country-pair fixed effects

Data on migration and FDI

- Our database of international migration has been collected by Mariola Pytlikova
 - Flows and stocks of foreigners in 34 destination countries from 223 origin countries, yearly data from 1980 to 2010
 - For Korea, Mexico and Turkey: the data come from the OECD International Migration Database.
 - For Estonia, Latvia, Lithuania and Slovenia: the data is collected from Eurostat
 - For the remaining 27 OECD countries: National statistical offices in each country
 - Coverage, migration stocks: 91,311 observations (out of 226,440 possible), coverage is better in later years
- FDI data from the OECD database: 34 parent countries, 203 destination countries, yearly data from 1985 to 2010.

Illustration of matched sample



Measuring cultural similarities directly

- The Levenstein Linguistic Distance
 - A continuous measure: Analyzes 40 “meanings” in every language and the phonetic dissimilarities between the words expressing these meanings.
- Genetic distances, from Spolaore and Wacziarg (2009QJE)
 - Measures differences between populations in the *allele* frequencies in their genes. Based on 42 historic population groups.
 - In practice: How long time has passed since the two populations separated.
 - Spolaore and Wacziarg show that a country’s genetic distance to the United States can predict that country’s level of development.
 - If two populations interact, they might also interbreed, giving us a proxy for historical ties.

Estimation equation

- We estimate a gravity equation of FDI stocks, augmented with migration stocks
 - Javorcik, Özden, Spatareanu and Neagu (2011JDE) worry that FDI might cause migration. To deal with this concern,
 1. we lag the migration stock, treating it as predetermined.
 2. Use IV
- Our estimation equations:

$$\begin{aligned} \log(\text{FDI}_{ijt}) = & \gamma \log(\text{mig.stock}_{ijt-1}) + \beta_1 \log(\text{distance}_{ij}) + \beta_2 \text{border}_{ij} + \beta_3 \text{language}_{ij} + \beta_4 \text{genetic}_{ij} \\ & + \beta_5 \text{cur.colony}_{ij} + \beta_6 \text{past.colony}_{ij} + \beta_7 \text{same.country}_{ij} + \beta_8 \text{RTA}_{ijt} + \beta_9 \text{EU}_{ijt} \\ & + \beta_{10} \text{BIT}_{ijt} + \beta_{11} \log(\text{gdp.pc})_{it-1} + \beta_{12} \log(\text{gdp.pc})_{jt-1} + \beta_{13} \log(\text{pop})_{it-1} \\ & + \beta_{14} \log(\text{pop})_{jt-1} + c_i + c_j + c_t + \varepsilon_{ijt} \end{aligned}$$

$$\begin{aligned} \log(\text{FDI}_{ijt}) = & \gamma \log(\text{mig.stock}_{ijt-1}) + \beta_8 \text{RTA}_{ijt} + \beta_9 \text{EU}_{ijt} + \beta_{10} \text{BIT}_{ijt} + \beta_{11} \log(\text{gdp.pc})_{it-1} \\ & + \beta_{12} \log(\text{gdp.pc})_{jt-1} + \beta_{13} \log(\text{pop})_{it-1} + \beta_{14} \log(\text{pop})_{jt-1} + c_j + c_t + \varepsilon_{ijt} \end{aligned}$$

Table 1. The correlation between outward migration and inward FDI

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Dependant variable: $\log(\text{outward FDI stock}_{ijt}),$ the stock of FDI that country j owns in country i at time t .

| Specification | (1, no FE) | (2, country FE) | (3, country FE) | (4, pair FE) |
|---|--------------------------------|--------------------------------|-------------------------------------|-------------------------------------|
| $\log(\text{inward migration stock}_{ijt-1}),$ lagged | 0.301 ^a (0.010) | 0.290 ^a (0.012) | 0.251^a (0.012) | 0.093^b (0.039) |
| $\log(\text{distance}_{ij})$ | -0.406 ^a (0.023) | -0.827 ^a (0.030) | -0.869 ^a (0.033) | |
| Common border _{ij} | 0.277 ^a (0.060) | 0.087 (0.061) | 0.104 ^c (0.059) | |
| Common language dummy _{ij} | 0.614 ^a (0.053) | 0.465 ^a (0.051) | | |
| Linguistic distance index _{ij} | | | -1.550 ^a (0.076) | |
| Genetic distance index _{ij} | | | 1.129 ^a (0.186) | |
| [remaining controls] | ... | ... | ... | ... |
| Observations | 16,734 | 16,734 | 15,867 | 16,514 |
| R ² | 0.654 | 0.773 | 0.781 | 0.464 (within) |

OLS regressions. Robust standard errors in parentheses.

Lags are one-year. ^a significant at 1%. ^b Significant at 5%. ^c Significant at 10%.

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Results vs. previous studies

Table 1. The correlation between outward migration and inward FDIDependant variable: $\log(\text{outward FDI stock}_{ijt}),$ the stock of FDI that country j owns in country i at time t .

| Specification | (1, no FE) | (2, country FE) | (3, country FE) | (4, pair FE) |
|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| $\log(\text{inward migration stock}_{ijt-1}),$ lagged | 0.301 ^a (0.010) | 0.290 ^a (0.012) | 0.251 ^a (0.012) | 0.093 ^b (0.039) |

Without lagging: **0.114^a**
(0.042)

Javorcik, Özden, Spatareanu and Neagu
(2011JDE) for the US: **0.39-0.67**
Ligthart and Singer (2011wp) for the
Netherlands: **0.64**

Kugler and Rapoport (2011wp): **0.14-0.20**
Leblang (2010AmPolScRev): **0.15-0.17**
on cross-sections

Correlation or causality? Instrumenting migration

- Reverse causality is possible: Affiliates operating abroad may be channels for jobs, for example at parent companies
- To check, we need an instrument for migration which is
 - Time variant
 - Not related to FDI
- Candidate: “The share of population in emigrants’ origin countries which is between 15 and 29 years old.” Peri and Ortega (2011wp)
 - A strong instrument. First stage regression, with pair fixed effects:
coefficient: 0.99 t-stat: 13.24 F-stat 175.22

Table 2: The effect of outward migration on inward FDI,
instrumenting migration with the share of young people in origin.

Dependant variable: $\log(\text{outward FDI stock}_{ijt})$, the stock of FDI that country j owns in country i at time t .

| Specification | (5, IV pair FE) |
|--|--------------------|
| $\log(\text{inward migration stock}_{ijt-1})$, lagged | 1.375 ^a |
| <i>Instrument</i> : Share of population in origin aged 15 to 29 _{it} | (0.195) |
| <i>[controls: Bilateral investment treaties, regional trade agreements, EU, gdp per capita, populations]</i> | ... |
| Observations | 16,514 |
| R ² | 0.196 (within) |

IV regressions, country-pair fixed effects. Standard errors in parentheses. ^a significant at 1%.

Conclusion

- migration has a large causal effect on inward FDI
 - Elasticity: 1.38, treated group: countries with large changes in the number of young people

- This study of the link between migration and FDI is...
 - on a much larger scale than previous studies
 - the first to deal convincingly with unobserved pair-specific variables (such as cultural ties), which might drive both FDI and migration.
 - the first to use instruments that are invariant to this problem

IMPACT OF IMMIGRATION on trade

- Effects on net exports (exports-imports), and trade surpluses/deficits
- Immigrants – as consumers and producers - can affect both imports and exports
- Egger, Nelson and von Ehrlich (2012) analyze effect of immigration on imports from their country of origin – they find a positive effect until there are about 4.000 immigrants from a specific country of origin, after that point, there is no effect.
- Link between immigration and exports, e.g. Peri and Requena, (2010) find a positive effect of immigrants in Spain on exports. For US, an increase in the immigrant population in the US leads to an increase in that state's exports to the country of origin (Herander and Saavedra, 2005).
- The effect on net exports depends on which effect prevails. Head and Ries (1998) find that immigration has a larger effect on imports in Canada.
- Effects of ethnic diversity on trade – Parrotta, Pozzoli (Pytlikova) and Sala, wp 2014, see *the tex presentation...*

IMPACT OF IMMIGRATION on financial markets

- Immigration may facilitate financial flows across countries,
- Financial investors exhibit “home bias” preferring to invest in their home country – because of information barriers for investing abroad, even though the returns are potentially higher abroad.
- Kugler, Levintal and Rapoport (2013) find immigration having large positive effect of immigration on financial flows between large set of countries between 1990-2000 with the largest effects for countries in which information problems are the most acute.

IMPACT OF IMMIGRATION on entrepreneurship

- Looking at the 2003 US National College Survey, Hunt (2011, 2013) finds that skilled immigrants are more likely to start companies than similar native. Analysis of the 2009 and 2010 American Community Surveys suggests that immigrants from the highest income countries are the best and brightest workers (Hunt, 2013),
- Kahn et al. (2013) use survey data on US scientists, finding that immigrants are more likely to become science entrepreneurs even after controlling for preferences, education, study field, demographics and time effects.
- For Denmark, Marino, Parrotta and Pozzoli et al (2012) find that workforce ethnic diversity leads to entrepreneurship in financial and business services.
- A positive link using data from London - Nathan and Lee (2013)

OUR NEXT LECTURE – Tuesday 23.2.2016, 9.00-10.30

*Emigration and source countries; Brain drain and brain gain;
Remittances*