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

Mariola Pytliková

CERGE-EI and VŠB-Technical University Ostrava,

CReAM, IZA, CCP and CELSI

Info about lectures: https://home.cerge-ei.cz/pytlikova/LaborSpring16/
Office hours: by appointment

Contact:
Email: Mariola.Pytlikova@cerge-ei.cz
Mobile: 739211312

https://sites.google.com/site/pytlikovaweb/

Study Materials and Reading List

- Slides of the lectures

- All materials provided on: http://home.cerge-ei.cz/pytlikova/LaborSpring16/

Compulsory Readings:
- Docquier, F. and Rapoport, H (2012) "Globalization, brain drain, and development" *Journal of Economic Literature* 50 (3), pp. 681-730.
- Bansak, Simpson, Zavodny: The Economics of Immigration, Part IV Other Effects of Immigration

Other Relevant Literature:
- Dustmann, Ch, Frattini, T. and A. Rosso (2015) "The Effect of Emigration from Poland on Polish Wages". *Scadinavian Journal of Economics* Vol 117 (2), pp. 522-564.
- Gibson, J. McKenzie, D (2011) "Eight questions about brain drain". *Journal of Economic Perspectives* 25(3), pp. 107-128.
- Yang, D (2011): "Migrant remittances" *Journal of Economic Perspectives* 25(3), pp. 129-152.

OUTLINE

- Effects of emigration on sending countries – wages, employment of stayers, and overall welfare

- Brain-drain; brain-gain

- Remittances

Emigration and source countries;

- migration has labor market implications in both sending and receiving countries. For the sending country, migration by workers decreases labor supply in origin.
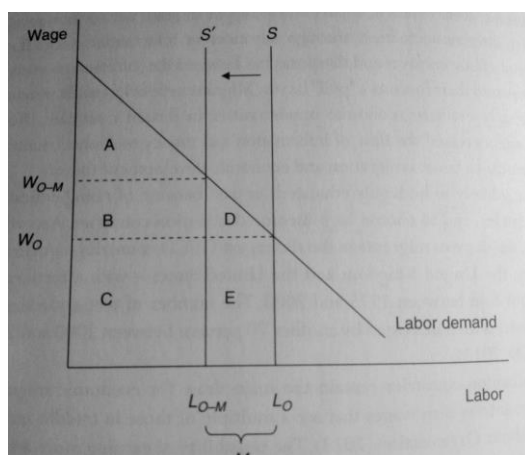
- assumption of identical workers (labor supply perfectly inelastic),

- wage rise for the workers that remain in the country o.

- although a global welfare gain, there is a welfare loss in origins

- before migration workers earn C+E, and firms A+B+D

- after M workers leave, the remaining workers Lo-m earn B+C, and firms A

- Migration leads to a transfer of area B from firms to workers, and to a social welfare loss of D =>the sending country suffers on net, while the world as a whole gains.

Emigration and source countries - Empirics

● Dustmann, Frattini and Rosso, SJE 2015 – analyse effects of emigration from Poland on Polish wages during period 1998-2007 using household data. By estimating region-specific emigration rates they find that emigration led to a slight increase in wages for high- and medium-skilled workers, which are the two groups with the largest relative outmigration rates.

● Mishra (2007) finds that out-migraton from Mexico leads to hgher wages - 10% decrease in the number of Mexican workers (in a given schooling and experience group) increases the average wage in that skill group by approx 4 %. Aydemir and Borjas (2006) also concluded that there is an increase in the average wage of natives Mexicans how stayed behind.

● Gangnon (2011) also discovered a wage increase between 1.3% and 3.3% for non-migrants of Honduras, when the emigration rate to US increases by 10%.

● Unfortunately, these models do not include the decrease in taxes, the effects on trade and production in Mexico, or other elements that might offset the wage increase.

Emigration and source countries - Empirics

● In an article simulating the effects of emigrants on the wages of non-movers in the source country, Docquir et al. (2010) divided the emigrants by skill endowments and showed that for all European countries emigration lowers the average wages of non-movers. Still, it appears that the effects are different for high-skilled (positive effect) and low-skilled workers (negative effect on wages of non-movers).

The Economic Impact of East-West Migration on the EU

Martin Kahanec and Mariola Pytliková

Preliminary

Aims

- costs and benefits of recent migration from the EaP, EU8 and EU2
- Focus on key economic variables in the EU: GDP per capita, total GDP, employment rate, capital stock, total factor productivity, capital to labour ratio, and output per worker
- Use of new international migration dataset compiled for this purpose and advanced econometric methods to evaluate the the effects of immigration from the new EU members and from the EaP Countries on the receiving EU economy.

Data & models– Flows and stocks of migrants

- New dataset on immigration flows and foreign population stock into 42 OECD countries from all world countries.
- Collected by writing to national statistical offices.
- Period: 1980 to 2010.
- Unbalanced panel.
- Improvement w.r.t. to other sets:
  - Both flows and stocks
  - Comprehensive in origins and time
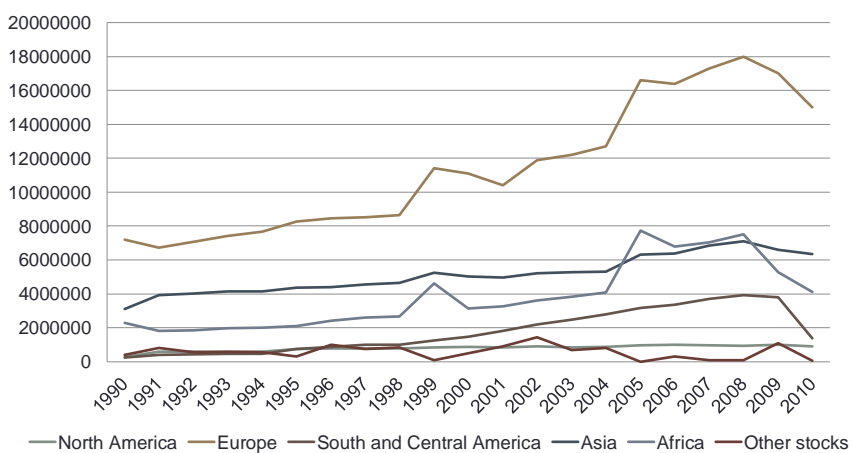- Besides other variables collected from OECD, Eurostat or WDI

Migration flows to EU27 destination countries by regions of origin, 1990-2010
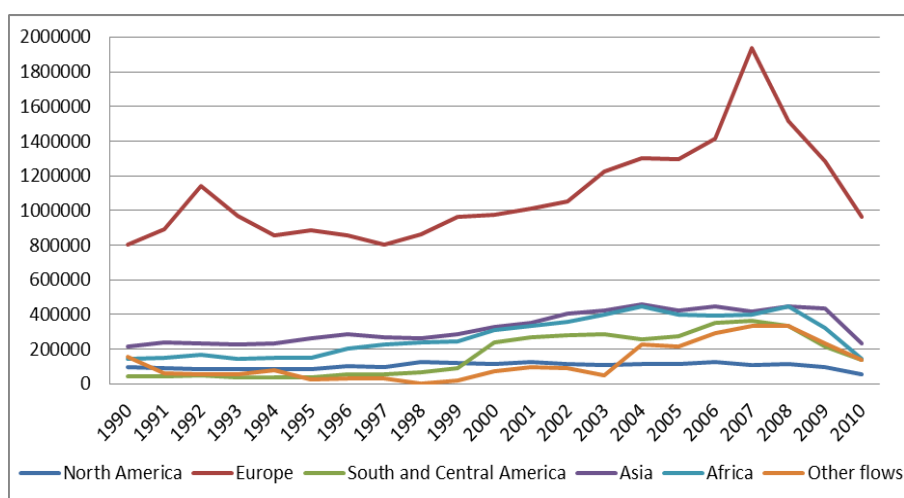
Migration flows to EU27 destination countries from Europe, by European regions of origin, 1990-2010.
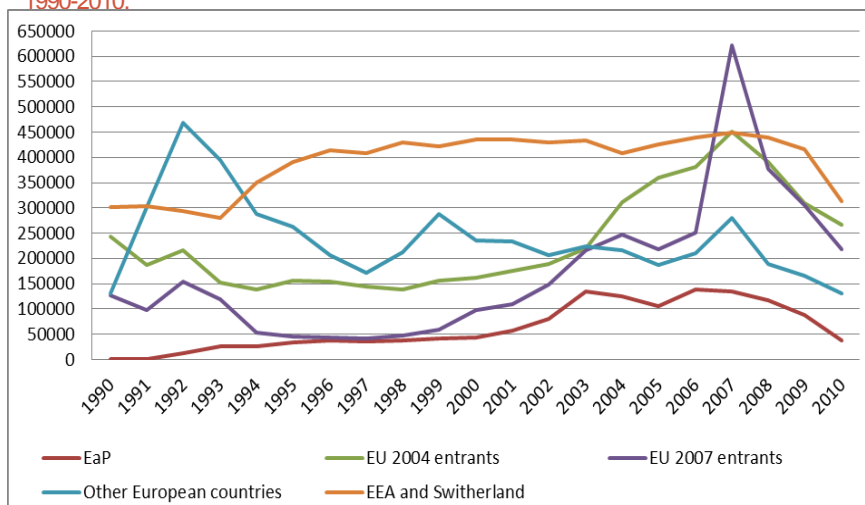
Foreign population stocks living in EU27 destination countries by regions of origin, 1990-2010

Foreign population stocks living in the EU27 destination countries from Europe, by European regions of origin, 1990-2010.
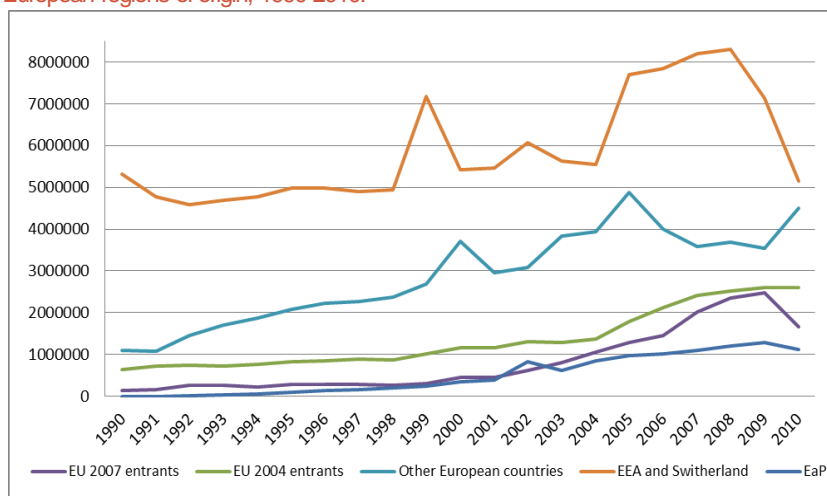
Methodology

- we follow an aggregate production function framework, similarly as in Ortega and Peri (2009) and Docquier et al (2010). The starting point of our analyses is the Cobb-Douglas production function:

$$Y_{jt} = A_{jt} \cdot K_{jt}^{\alpha} \cdot L_{jt}^{1-\alpha}$$

Where Y represents the total output, K physical capital input, L labor input and A the total factor productivity. Parameter α represents the capital income share. Subscripts j and t indicate destination country and year, respectively. We use a logarithmic transformation of derivatives over time, and the linear form of equation (1) can be then written as:

$$\ln Y_{jt} = \ln A_{jt} + \alpha \ln K_{jt} + (1-\alpha)L_{jt}$$

- Using equation (1) the average wage in country c, at time t can be calculated as the marginal product of labor:

$$w_{jt} = \frac{dY_{jt}}{dL_{jt}} = A_{jt} \cdot \left(\frac{K_{jt}}{L_{jt}}\right)^{\alpha} \cdot (L_{jt})^{\alpha}$$

Using the same transformation as in the case of equation (2), it follows that the percentage change in average wages depends on total factor productivity, but also on the capital-labor ratio and the labor growth rates:

$$\ln w_{jt} = \ln y_{jt} = \ln A_{jt} + \alpha(\ln k_{jt} - \ln L_{jt})$$

Where k is capital to labor ratio, and y GDP per worker

7

Methodology

- This implies estimating the following set of models:

$$\ln X_{jt} = D_t + \gamma \ln s_{jt} + \upsilon_j + \theta_t + \delta_r * \theta_t + \varepsilon_{jt}$$

- where *X* represents one of the following:
  - *employment rate and labour force participation* (to account for the labor input),
  - *capital services* and *capital to labor ratio* (to account for the capital input),
  - *total factor productivity* (calculated as a Solow residual),
  - *output per worker* (to account for the average wage) and
  - *output per capita*.
- we account for country-specific FE and time fixed effects interacted separately with region dummies in our main specifications, in order to capture other factors determining the economic outcomes of our interest that cannot be attributed to the changes in stock of foreigners per population. The robust error term is clustered by country.
- The explanatory variable of our interest is foreign population stock from particular regions of origin relative to the total population in destination country *j*.

Identification

- To deal with the potential endogeneity problems mentioned above, we apply instrumental variable (IV) technique.

- For our IV we use a model of determinants of bilateral migration in the first step in order to obtain predicted stock of migrants.

$$\ln s_{ijt} = \gamma_0 + \delta_{ij} + \lambda_i * \theta_t + \varepsilon_{ijt}$$

- Such predicted stock of migrants serves as an instrument for the possibly endogenous stock of migrants in the second step regression.

8

Table 5: Consequences of foreign population on production factors, productivity and factors per worker in the EU15 economies

To EU15	Effects of immigration from 2004 EU entrants		Effects of immigration from 2007 EU entrants		Effects of immigration from EaP group	
Dependent variable	OLS FE	2SLS FE	OLS FE	2SLS FE	OLS FE	2SLS FE
Log (GDP per Capita)	-0.001	0.03**	-0.0021	0.055*	-0.00486***	-0.0130***
	(0.002)	(0.01)	(0.001)	(0.03)	(0.00135)	(0.00501)
Log (Total GDP)	-0.00073	0.0529***	-0.00108	0.092**	-0.00589***	-0.0144**
	(0.00343)	(0.01657)	(0.00181)	(0.04367)	(0.00173)	(0.0062)
Log (Labour force participation)	0.0005*	0.0005	0.0005*	0.0009	0.00049*	-0.00134
	(0.0003)	(0.002)	(0.0003)	(0.003)	(0.00027)	(0.00154)
Log (Employment rate)	-0.0004	0.02***	-0.0002	0.03***	-0.00061	-0.00993***
	(0.00105)	(0.003)	(0.0006)	(0.01)	(0.00056)	(0.00348)
Log (Capital stock)	-0.00006	-0.0001	-0.00007	-0.0003	-0.00002	-0.00196***
	(0.0002)	(0.0006)	(0.00009)	(0.001)	(0.00009)	(0.00063)
Log (Total factor productivity)	0.00004	-0.004	0.00007	-0.007	-0.00015	-0.00247*
	(0.0004)	(0.002)	(0.0005)	(0.006)	(0.00031)	(0.00143)
Log (Capital to labour ratio)	0.001	-0.017	0.001	-0.018	-0.00389**	0.033***
	(0.003)	(0.01)	(0.0016)	(0.02)	(0.00153)	(0.01038)
Log (Output per worker)	-0.001	-0.03**	-0.0022*	-0.06***	-0.00452***	0.00544
	(0.002)	(0.01)	(0.0012)	(0.02)	(0.00113)	(0.00574)
No of Observations	225	183	225	183	225	161
F-test		7.88		11.08		11.39

Results

- positive and significant effects of post-enlargement migration flows from the new EU member states on GDP, GDP per capita, and employment rate, rate and negative effect on output per worker in the EU15

- negative effects of migration from the Eastern Partnership countries on GDP, GDP per capita, employment rate, and capital stock in the EU15, but a positive significant effect on capital to labour ratio.

- the coefficients to income imply that 10 per cent increase in the number of immigrants coming from the 2004 and 2007 EU member countries per destinations population increases the destinations income per capita by 0.3 and 0.55 per cent, respectively. In contrast, 10 per cent increase in share of immigrants coming from the EaP lowers income per capita in the EU15 countries by 0.13 per cent.

Conclusions

- With due respect to data limitations, we interpret the results of this comparative analysis based on the past immigration to EU15 between 1995 and 2010 as indicating a generally positive effect of migration on receiving countries' economies, which is conditioned by economic integration and free labour mobility (and the prospect thereof).

Brain-drain, brain-gain

- Migration of the most talented highly educated from poor to rich countries
- Traditionally understood s detrimental to poor countries due to human capital externalities, affecting its development especially in the long-run, but also in the short-run, by having a shortage of highly educated labor, and fiscal shortfalls.
- BUT some evidence pointing towards positive effects on source country human capital. Using a cross-country dataset, Beine et al.(2008) show that a doubling of emigration rate increases in the human capital formation of natives by 5%.
- Docquier&Rapoport (2009) show that, depending on specific conditions, migration of the highly skilled can have a positive effect (the case of Indian IT sector), a mixed effect (the case of African medical staff) or a negative effect (the case of European researchers) on source countries.
- Also strong networks and return migration may benefit source countries through better access to capital, technology and ideas.

Educational attainment of foreigners, by region of birth around year 2000
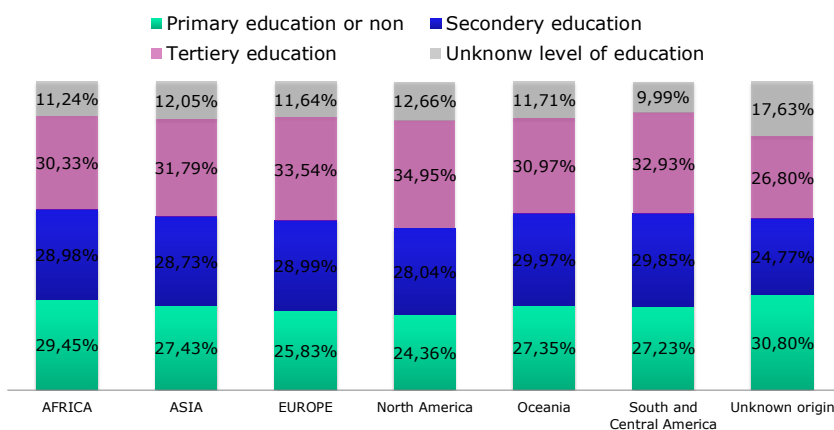
Source: own calculations, using DIOC-E 2.0 dataset

Brain-drain, brain-gain

- Also strong networks and return migration may benefit source countries through better access to capital, technology and ideas.
- migrants' diaspora has a positive effect on the source country, creating an economic connection between the sending and receiving country (Ratha et al, 2011),
- in particular emigrants may increase exports for the source country by generating foreign demand for national products, but also by establishing business networks (Hanson, 2008) or generating foreign investments (Ratha et al, 2011).

Remittances

- Consensus among researchers that *remittances* contribute positively on the source country economies..
- Remittances increase the income of non-migrants families leading to an increase in domestic saving as well as an increase in the household's spending on education and health (Ratha et al, 2011),
- remittances may increase business formation in the source country, helping households to overcome the credit market restrictions (Ratha et al, 2011, Hanson, 2008).
- Remittances seem to elevate poverty problems as advocated by Ratha et al, 2011 in their survey of the literature regarding the impact of migration for the sending and receiving countries.

Remittances

- Remittances & Growth
- Remittances and poverty
- Remittances and inequality:
- Shen et al. (2010) analyzed empirically the effects of emigration and remittances on the inequality of the sending country and find that the relationship between remittances and inequality has an inverse U-shape, which unifies the previous work in this area. It has been shown that remittances can have both a positive and a negative effect on the sending country, depending on the initial state of inequality in the country. The high initial inequality will be increased in the short-run by remittances, but the effects will spread from the families of migrants to the entire economy and will reduce inequality in the long-run.

OUR NEXT LECTURE – Monday 29.2.2016, 15.00-16.30

Family and work; Family policies