WHO MIGRATES? SELECTIVITY IN MIGRATION

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Study Materials and Reading List

- Slides of the lectures

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

Compulsory Readings:

- Borjas (1987):" Self-selection and the earnings of immigrants" *American Economic Review*, 77 (4), pp. 531-553.
- Chiswick (1999): Are Immigrants Favourably Self-selected*? American Economic Review*, pp.181-185.http://www.jstor.org/stable/117103.
- Bansak, Simpson, Zavodny: The Economics of Immigration, Part 2, Chapter 4 Selection in Immigration

Other Relevant Literature:

- McKenzie and Rapoport (2010): "Self-selection patterns in Mexico-U.S. migration: The role of migration networks". *Review of Economics and Statistics* 92 (4), pp. 811-821
- Chapter 4: "Who Immigrates? Theory and Evidence" In Bodvarsson, Ö. and H. van den Berg (2013): *The Economics of Immigration – Theory and Policy*
- Grogger and Hanson (2011): "Income maximization and the selection and sorting of international migrants" *Journal of Development Economics*, 95 (1), 42-57.
- Borjas, G.J. and Bratsberg B. (1996): "Who leaves? The outmigration of the foreing-born" RESTAT 78(1), pp.165-176.

WHO MIGRATES? SELECTION PROCESSES IN MIGRATION

Two Approaches: **Borjas** VS **Chiswick** debate on selectivity

In line with the **"Human capital investment"** there are higher "returns to migration" for young, healthy with greater abilities/education (Chiswick, 1999, 2000).

Different selectivity for different types of migrants:

- Economic migrants
- Tied movers – family re-union
- Refugees
- Illegal migration
- Short-term migrants

WHO MIGRATES??

- **"self-selection model"** (Borjas, 1987) based on Roy's model - immigrants skill differentials in relation to the variance in the wage distribution.

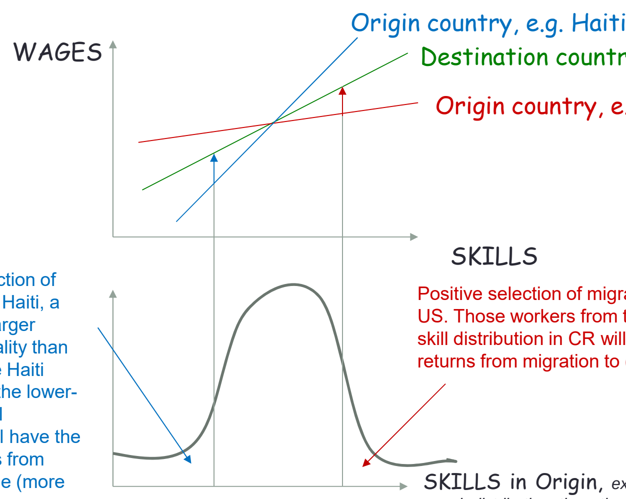
Positive selection

To countries with big wage dispersion from countries with relatively lower dispersion

Negative selection

To countries with relatively lower wage dispersion

Borjas self-selection model implications, example of US and CR income inequality and positive selection (assuming high skill transferability)



Negative selection of migrants from Haiti, a country with larger income inequality than the US. Those Haiti workers from the lower-part of the skill distribution will have the largest returns from migration to the (more equal) US

Positive selection of migrants from CR to the US. Those workers from the upper-part of the skill distribution in CR will have the largest returns from migration to (more unequal) US

SKILLS in Origin, *example of Czech rep (more equal distribution than the destination/US) and Haiti (country with more unequal distribution compared to the destination/US)*

SELF-SELECTION model (Borjas, 1987)

- Application of The Roy Model (Roy, 1951) to migration

Core of Roy's model is to ask how the distribution of earnings is affected if individuals purposively self-select into occupation.

Setup of the Roy's model:

Two occupations: hunting and fishing. Goal was to understand self-selection:

- Will the individuals best suited for fishing choose to fish?
- Will the individuals best suited for hunting choose to hunt?

The core idea of the model is to take seriously the idea that in a market economy individuals will not randomly sort themselves across the two occupations. In markets where non-random sorting is important, comparing (for example) the wage gap between hunters and fishermen will reflect not only a "real" difference in potential earnings (that would exist even if individuals were randomly distributed across occupations), but will also be a function of which individuals select into hunting and fishing.

Roy's model has many applications, here the (self) selection of international migrants (Borjas 1987 influential model).

SELF-SELECTION model (Borjas, 1987)

The model is written from the perspective of an immigrant who is thinking of migrating from her home (non-US) country to the US.

The idea is that individuals compare their potential income in the US with their income in their home country, and make their migration decision based on this income differential (net of migration costs). This type of decision rule induces self-selection which then gives empirically testable predictions:

- if the US has higher returns to skill than the home country (higher income inequality), then migrants will be disproportionately drawn from the top of the home country's skill distribution;
- in contrast, if the US has lower returns to skill than the home country (lower income inequality), then migrants will be disproportionately drawn from the bottom of the home country's skill distribution.

SELF-SELECTION model (Borjas, 1987)

- *Set-up of the model:*

Two country model of migration:

0 – country of origin

1 – destination country

The wage of individual *i* in country *0* is:

$$\ln(w_{i0}) = \mu_0 + \varepsilon_{i0} \qquad (1)$$

If everyone from country 0 were to migrate to the host country, their earnings would be:

$$\ln(w_{i1}) = \mu_1 + \varepsilon_{i1} \qquad (2)$$

Where ε_{i0} and ε_{i1} are jointly normally distributed, and $\sigma_{0,1}$ denotes cov $(\varepsilon_{i0}, \varepsilon_{i1})$:

$$\begin{pmatrix} \varepsilon_{i0} \\ \varepsilon_{i1} \end{pmatrix} \sim N \left[\begin{matrix} 0 \\ 0' \end{matrix} \begin{pmatrix} \sigma_0^2 & \sigma_{1,0} \\ \sigma_{0,1} & \sigma_1^2 \end{pmatrix} \right]$$

Borjas assumes that μ_1 also gives the earnings of the average native worker in the US.

We can think of these expressions as decomposing earnings into the part explained by observable characteristics such as age and completed education (μ_0 and μ_1) and a part due to **unobserved characteristics** (ε_{i0} and ε_{i1}).

SELF-SELECTION model (Borjas, 1987)

- Let $\rho_{0,1}$ denote the correlation coefficient of ε_0 and ε_1, which represents the correlation of productive ability in the home country with productive ability in the US (skill transferability):
- $\rho_{0,1} = \frac{\text{cov}\,(\varepsilon_{i0}, \varepsilon_{i1})}{\sigma_0 \sigma_1} = \frac{\sigma_{0,1}}{\sigma_0 \sigma_1}$ (3)

This correlation coefficient can range from 1 to -1. Bigger numbers in absolute value mean a stronger relationship between earnings in the origin and the destination.

If ρ is positive, then people who have higher-than-average earnings in the origin also have higher-than-average earnings in destination; and people with lower-than-average earnings in the origin have lower-than-average earnings in the destination -> in case of skills that are valuable in origin being valuable in destination too (Indian IT expert in India and the US; …). The more similar the countries are, the higher ρ is likely to be.

If ρ is negative, then people who have higher-than-average earnings in the origin have lower-than-average earnings in the destination. ρ can be negative for immigrants moving from some developing countries to industrialized countries.

Migration Decision

Let C denote the cost of moving. Borjas defines C = πw_0 so that moving costs are expressed relative to the home country wage; π = C/w_0. Borjas calls π a "time-equivalent" measure of migration costs.

People choose to migrate if their earnings will be higher in the destination than in the origin, net migration costs, (or an individual *i* will choose to migrate if I > 0):

$$I = ln\left(\frac{w_1}{w_0 + C}\right) = \ln(w_1) - \ln(w_0 + C) =$$
$$\ln(w_1) - \ln(w_0 + \pi w_0) = \ln(w_1) - \ln\big(w_0(1 + \pi)\big) =$$
$$\mu_1 + \varepsilon_1 - \mu_0 - \varepsilon_0 - \ln(1 + \pi) \approx (\mu_1 - \mu_0 - \pi) + (\varepsilon_1 - \varepsilon_0)$$

Where we use the first order Taylor approximation to approximate $\ln(1 + \pi) \approx \pi$.

Define $\upsilon = \varepsilon_1 - \varepsilon_0$. Since migration occurs if I > 0, we can write the migration rate P as:

$$P = Pr[I > 0] = Pr[(\mu_1 - \mu_0 - \pi) + (\varepsilon_1 - \varepsilon_0) > 0] =$$
$$Pr[(\varepsilon_1 - \varepsilon_0) > -(\mu_1 - \mu_0 - \pi)] =$$
$$Pr[\upsilon > -(\mu_1 - \mu_0 - \pi)] =$$
$$Pr[\upsilon > (\mu_0 - \mu_1 + \pi)] \qquad (4)$$

Migration Decision

Define $z = \frac{\mu_0 - \mu_1 + \pi}{\sigma_\upsilon}$, and let Φ denote the CDF of the standard normal distribution. Note that υ has a normal distribution, as the sum of two normal distributions is also normal and $\frac{\upsilon}{\sigma_\upsilon}$ has a standard normal distribution (joint normality). Therefore we can rewrite equation 4 as:

$$P = Pr\left[\frac{\upsilon}{\sigma_\upsilon} > \frac{\mu_0 - \mu_1 + \pi}{\sigma_\upsilon}\right] =$$
$$1 - Pr\left[\frac{\upsilon}{\sigma_\upsilon} \leq \frac{\mu_0 - \mu_1 + \pi}{\sigma_\upsilon}\right] =$$
$$1 - \Phi\left[\frac{\mu_0 - \mu_1 + \pi}{\sigma_\upsilon}\right] = 1 - \Phi[z] \qquad (5)$$

For higher values of z, P is lower - implying migration is less likely. The migration rate P is:

- increasing in mean US wages $\left(\frac{\partial P}{\partial \mu_1} > 0\right)$,
- decreasing in mean home country wages $\left(\frac{\partial P}{\partial \mu_0} < 0\right)$, and
- decreasing in moving costs $\left(\frac{\partial P}{\partial \pi} < 0\right)$.

Borjas assumes that $P < 1$, so that at least part of the population in the country of origin is better off not migrating. He also assumes $\mu_1 \approx \mu_0$.

Some Properties

Deriving Borjas's expressions for self-selection requires applying some properties of the normal distribution and a version of the law of iterated expectations:

Property1: *If a vector of random variables* $X \sim N(\mu, \Sigma)$, *then* $AX + b \sim N(A\mu + b, A\Sigma A')$

Property2: *If* $\begin{pmatrix} X \\ Y \end{pmatrix} \sim N\left(\begin{pmatrix} \mu_x \\ \mu_y \end{pmatrix}, \begin{pmatrix} \sigma_x^2 & \sigma_{X,Y} \\ \sigma_{X,Y} & \sigma_y^2 \end{pmatrix}\right)$, *then* $(Y|\, X = x) \sim N\left(\mu_y + \rho_{X,Y}\left(\frac{\sigma_Y}{\sigma_X}\right)(X - \mu_x), \sigma_y^2 (1 - \rho_{X,Y}^2)\right)$

Property3: Law of iterated expectations: *For any non-stochastic function* $f(.)$ *and* $X = f(W)$, $E(Y|\, X) = E(E(Y|\, W)|\, X)$

Property4: Inverse Mills Ratio: *Let* $\varphi(z)$ *and* $\Phi(z)$ *denote the PDF and CDF of the standard normal distribution respectively. If* $\frac{\upsilon}{\sigma_\upsilon} \sim N(0,1)$, *then* $E\left[\frac{\upsilon}{\sigma_\upsilon} | \frac{\upsilon}{\sigma_\upsilon} > z\right] = \frac{\varphi(z)}{1 - \Phi(z)}$. *We refer to this expression as the Inverse Mills Ratio. Because* $\varphi(z) = \varphi(-z)$ *and* $1 - \Phi(z) = \Phi(-z)$, *we can also write Inverse Mills Ratio as* $\lambda(z) = \frac{\varphi(-z)}{\Phi(-z)}$

Selection

Given propositions 1-4 we can now analyze self-selection. We want to derive expressions that let us compare $E(\ln(w_0)|I > 0)$ and $E(\ln(w_1)|I > 0)$; i.e. for individuals who immigrate we'd like to compare average log earnings in country 0 and average log earnings in country1. Let's start with home country:

$$E(\ln(w_0)|I > 0) = E\left[\mu_0 + \varepsilon_0 | \frac{\upsilon}{\sigma_\upsilon} > z\right] =$$

$$\mu_0 + E\left[\varepsilon_0 | \frac{\upsilon}{\sigma_\upsilon} > z\right] = \mu_0 + \sigma_0 E\left[\frac{\varepsilon_0}{\sigma_0} | \frac{\upsilon}{\sigma_\upsilon} > z\right] \quad (6)$$

First, note that ε_0 and υ are jointly normally distributed and using property1

$$\begin{pmatrix} \varepsilon_0 \\ \upsilon \end{pmatrix} \sim N\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \sigma_0^2 & \sigma_{0,1} - \sigma_0^2 \\ \sigma_{0,1} - \sigma_0^2 & \sigma_0^2 + \sigma_1^2 - 2\sigma_{0,1} \end{pmatrix}\right) \quad (7)$$

Second, given that ε_0 and υ are jointly normally distributed, applying property2 we can show that:

$$E(\varepsilon_0|\upsilon) = \rho_{0,\upsilon}\left(\frac{\sigma_0}{\sigma_\upsilon}\right)\upsilon \quad (8)$$

Further using the fact that $\rho_{0,\upsilon} = \frac{\sigma_{0,\upsilon}}{\sigma_0\sigma_\upsilon}$, we can simplify equation 8 further:

$$E(\varepsilon_0|\upsilon) = \frac{\sigma_{0,\upsilon}}{\sigma_0\sigma_\upsilon}\frac{\sigma_0}{\sigma_\upsilon}\upsilon = \frac{\sigma_{0,\upsilon}}{{\sigma_\upsilon}^2}\upsilon \quad (9)$$

Selection

Third, applying property3 we can show that:

$$E\left[\frac{\varepsilon_0}{\sigma_0} | \frac{\upsilon}{\sigma_\upsilon} > z\right] = E\left[E\left(\frac{\varepsilon_0}{\sigma_0} | \frac{\upsilon}{\sigma_\upsilon} > z\right) | \frac{\upsilon}{\sigma_\upsilon} > z\right] \quad (10)$$

Finally, Let $s = \frac{\upsilon}{\sigma_\upsilon} \sim N(0,1)$. Applying property2 and equations (8) and (9):

$$E\left[\frac{\varepsilon_0}{\sigma_0} | \frac{\upsilon}{\sigma_\upsilon}\right] = \frac{1}{\sigma_0} E[\varepsilon_0|s] = \frac{1}{\sigma_0}\frac{\sigma_{0,s}}{{\sigma_s}^2} s =$$

$$\frac{1}{\sigma_0}\frac{cov\left(\varepsilon_0, \frac{\upsilon}{\sigma_\upsilon}\right)}{{\sigma_s}^2}\frac{\upsilon}{\sigma_\upsilon} = \frac{1}{\sigma_0}\frac{\frac{1}{\sigma_\upsilon}cov(\varepsilon_0, \upsilon)}{1}\frac{\upsilon}{\sigma_\upsilon} =$$

$$\frac{\sigma_{0,\upsilon}}{\sigma_0\sigma_\upsilon}\frac{\upsilon}{\sigma_\upsilon} =$$

$$E\left[\frac{\varepsilon_0}{\sigma_0} | \frac{\upsilon}{\sigma_\upsilon}\right] = \rho_{0,\upsilon}\frac{\upsilon}{\sigma_\upsilon} \quad (11)$$

Selection

Returning to equation (6), now we have:

$$E(\ln(w_0)|I > 0) = \mu_0 + \sigma_0 E\left[\frac{\varepsilon_0}{\sigma_0} | \frac{v}{\sigma_v} > z\right]$$

$$= \mu_0 + \sigma_0 E\left[E\left(\frac{\varepsilon_0}{\sigma_0} | \frac{v}{\sigma_v} > z\right) | \frac{v}{\sigma_v} > z\right] \qquad (we\ used\ equation\ 10)$$

$$= \mu_0 + \sigma_0 E\left(\rho_{0,v}\frac{v}{\sigma_v} | \frac{v}{\sigma_v} > z\right) \qquad (we\ used\ equation\ 11)$$

$$= \mu_0 + \sigma_0\rho_{0,v} E\left(\frac{v}{\sigma_v} | \frac{v}{\sigma_v} > z\right)$$

$$= \mu_0 + \sigma_0\rho_{0,v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \qquad (we\ used\ property 4)$$

$$E(\ln(w_0)|I > 0) = \mu_0 + \sigma_0\rho_{0,v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \qquad (12)$$

We can derive a similar expression for $E(\ln(w_1)|I > 0)$:

$$E(\ln(w_1)|I > 0) = \mu_1 + \sigma_1\rho_{1,v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \qquad (13)$$

Selection

Now let us further simplify equations 12 and 13. We will start with equation 12. Using that $\sigma_{0,v} = cov(\varepsilon_0, v) = E(\varepsilon_0[\varepsilon_1 - \varepsilon_0]) = E(\varepsilon_0\varepsilon_1) - E(\varepsilon_0\varepsilon_0) = \sigma_{0,1} - \sigma_0^2$:

$$E(\ln(w_0)|I > 0) = \mu_0 + \sigma_0\rho_{0,v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) =$$

$$\mu_0 + \sigma_0\frac{\sigma_{0,v}}{\sigma_0\sigma_v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) =$$

$$\mu_0 + \frac{\sigma_{0,v}}{\sigma_v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) = \mu_0 + \frac{\sigma_{0,1} - \sigma_0^2}{\sigma_v}\left(\frac{\varphi(z)}{1-\Phi(z)}\right) =$$

$$\mu_0 + \frac{\sigma_0\sigma_1}{\sigma_v}\left(\frac{\sigma_{0,1}}{\sigma_0\sigma_1} - \frac{\sigma_0}{\sigma_1}\right)\left(\frac{\varphi(z)}{1-\Phi(z)}\right) =$$

$$E(\ln(w_0)|I > 0) = \mu_0 + \frac{\sigma_0\sigma_1}{\sigma_v}\left(\rho_{0,1} - \frac{\sigma_0}{\sigma_1}\right)\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \qquad (14)$$

Analogously for equation 13, destination country:

$$E(\ln(w_1)|I > 0) = \mu_1 + \frac{\sigma_0\sigma_1}{\sigma_v}\left(\frac{\sigma_1}{\sigma_0} - \rho_{0,1}\right)\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \qquad (15)$$

Selection

Define income differential Q and $\mu_j + Q_j$ as the expected wage of migrants in country j. In order to understand the position of migrants in the distribution of workers in each country (that is, whether migrants are positively or negatively selected), we want to know the signs of Q_0 and Q_1:

$$Q_0 \equiv E(\varepsilon_0 | I > 0) = \frac{\sigma_0 \sigma_1}{\sigma_\upsilon}\left(\rho_{0,1} - \frac{\sigma_0}{\sigma_1}\right)\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \quad (16)$$

$$Q_1 \equiv E(\varepsilon_1 | I > 0) = \frac{\sigma_0 \sigma_1}{\sigma_\upsilon}\left(\frac{\sigma_1}{\sigma_0} - \rho_{0,1}\right)\left(\frac{\varphi(z)}{1-\Phi(z)}\right) \quad (17)$$

Note that the Inverse Mills Ration is always positive, as well as $\frac{\sigma_0 \sigma_1}{\sigma_\upsilon}$, hence the sign depends only on $\rho_{0,1} - \frac{\sigma_0}{\sigma_1}$ and $\frac{\sigma_1}{\sigma_0} - \rho_{0,1}$.

Three Cases of Immigrant Selection

Positive selection: $Q_0 > 0$ and $Q_1 > 0$ Migrants are positively selected relative to either country's income distribution $\Leftrightarrow \rho_{0,1} > \frac{\sigma_0}{\sigma_1} \Rightarrow \frac{\sigma_1}{\sigma_0} > 1 \; as \; \rho_{0,1} \leq 1$. This requires a high correlation between the value of skills in countries 0 and 1, and that income is more dispersed in the US than in country 0. Borjas's example is high-skilled migration from Western Europe.

Negative selection: $Q_0 < 0$ and $Q_1 < 0$. Migrants are negatively selected relative to either country's income distribution$\Leftrightarrow \rho_{0,1} > \frac{\sigma_1}{\sigma_0} \Rightarrow \frac{\sigma_0}{\sigma_1} > 1 \; as \; \rho_{0,1} \leq 1$. This requires a high correlation between the value of skills in countries 0 and 1, and that income is less dispersed in the US than in country 0. Borjas's example is the US social safety net drawing low-skilled immigrants from countries with less of a social safety net.

Refugee sorting: $Q_0 < 0$ and $Q_1 > 0$. Migrants are negatively selected relative to the home country income distribution, but fall in the top of the US income distribution $\Leftrightarrow \rho_{0,1} < min\left\{\frac{\sigma_0}{\sigma_1}; \frac{\sigma_1}{\sigma_0}\right\}$. This requires a low correlation between the value of skills in country 0 and in country 1. Borjas argues this may be the case for (communist) countries/countries that have recently experienced a Communist takeover.

No fourth case: $Q_0 > 0$ and $Q_1 < 0$. Mathematically, this case is ruled out because it would require $\rho_{0,1} > 1$. To see this note that $Q_0 > 0$ implies $\rho_{0,1} > \frac{\sigma_0}{\sigma_1}$ and, hence,$\frac{\sigma_0}{\sigma_1} < 1 \Rightarrow \frac{\sigma_1}{\sigma_0} > 1$ and $Q_1 < 0$ implies $\rho_{0,1} > \frac{\sigma_1}{\sigma_0}$ but this is not possible as $\frac{\sigma_1}{\sigma_0} > 1$.

WHO MIGRATES? Chiswick's model application to migrant selectivity

Model of why migrants can be "favourably" or "unfavorably" selected

- The rate of return in line with HC framework can be rewritten as:

$$r = \frac{W_b - W_a}{C_f + C_d}$$

- Where Cf are foregone earnings and Cd direct out of pocket money, Wb represents earnings in destination, Wa in origin.
- Migration occurs if the rate of return from the investment in migration (r) >= the interest rate for investment in HC (i)
- Suppose, two groups of workers, low and high ability; lets assume wages are e.g. 100k percent higher for more able:

$$W_{b,h} = (1+k)W_{b,l}$$
$$W_{a,h} = (1+k)W_{a,l}$$

It is assumed that direct costs do not wary with ability, but ability raises the value of foregone earnings:

$$C_{f,h} = (1+k)C_{f,l}$$

The rate of return to high-ability person:

$$r_h = \frac{(1+k)W_{b,l} - (1+k)W_{a,l}}{(1+k)C_{f,l} + C_d} = \frac{W_{b,l} - W_{a,l}}{C_{f,l} + (C_d/(1+k))}$$

Thus $r_h > r_l$ as long as earnings increase with ability (k > 0) and there are positive out of pocket costs of migration => selectivity of those people to migrate.

If there were no out-of-pocket costs ($C_d = 0$), then $r_h = r_l$ and there would be no selectivity in migration on basis of ability OR if there were no labor-market premium for higher level of ability (i.e. k=0), then $r_h = r_l$ and there is no selectivity in migration on basis of this dimension of ability.

Now, Chiswick (1999) adds further an assumption that more able are more efficient in migration,

The more able need less time *t* to accomplish the task, and greater efficiency gives greater returns in migration.

If the more able may also be more efficient in utilizing out-of-pocket expenditure, then the difference in the rate of return to migration is even greater.

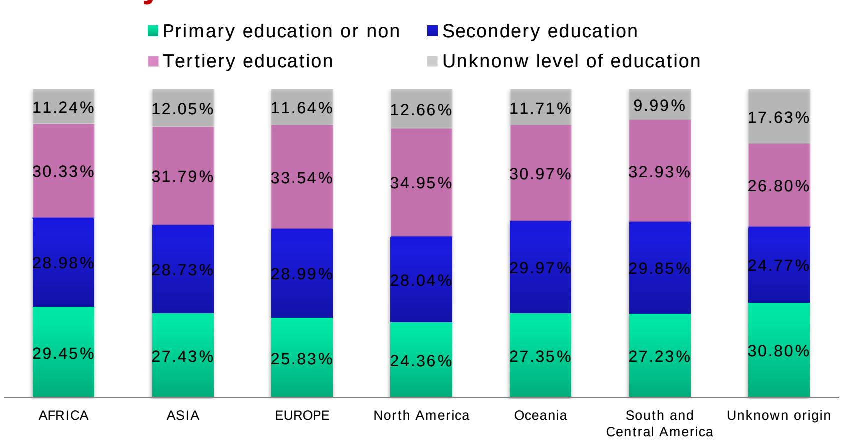
If $C_{d,h} = (1+\gamma)C_{d,l}$, where γ is a direct cost-efficiency parameter, and $\gamma < 0$, then:

$$r_h = \frac{W_{b,l} - W_{a,l}}{C_{f,l} + \frac{C_{d,l}(1+\gamma)}{(1+k)}}$$

Thus, there are several implications from the model: the larger out-of-pocket costs of migration, the lower is the propensity to migrate, but also the lower is the return migration rate and the **greater the propensity for favorable selectivity in migration**. This propensity for favorable selectivity is intensified if those who are more able in the labor market are also more efficient in the migration and adjustment process.

Empirical evidence on selection – globally, immigrants tend to be positively selected from source countries

Educational attainment of foreigners, by region of birth around year 2000



Source: own calculations, using DIOC-E 2.0 dataset

Empirical evidence on Selection - who moves

- Earlier studies limited due to lack of data – some early studies are in line with the self selection (Borjas 1987) model, e.g. they find immigrant's (in the US) wages are negatively related to income inequality in origins (Borjas, 1987; Cobb-Clark, 1993).
- More recently, when the data become available, a number of studies in odds with Borjas 1987 model predictions:
  - Belot and Hatton (2012) examine the education levels of immigrants from 70 source countries to 21 OECD countries. They find that immigrants tend to be positively selected in terms of education as the difference in wages between high- and low-educated workers, as a proxy for the relative return to skills, widens between the destination and the source country, i.e as the return to skill increases in the destination relative to the origin, selection becomes more positive. This result is present only after controlling for poverty rates in the source countries – poverty prevents low-skilled from migrating from countries with high returns to skills.
  - Grogger and Hanson (2011) study the selection of immigrants from 100 source countries to 15 high-income OECD destinations. They find that immigrants to those countries are positively selected, although for many countries they should be negatively according to Borjas (1987) model. They find that bigger differences in the relative return to skill between the destination and the origin decreases selectivity -> the opposite of the Borjas (1987) model. The as well argue that liquidity constrains/poverty constrains prevent low-skilled people from migrating.

Empirical evidence on Selection - who moves – other mechanisms..

- Migration costs and cultural factors shape selectivity as well: research finds that the bigger the distance between the destination and origin (distance=proxy for migration costs), the more educated immigrants are (in line with Chiswicks 1999 HC model predictions).
- Linguistic proximity is usually positively related to immigrants educational levels => when skills are more transferable (or ρ is higher) immigratns are more positively selected.
- Interestingly, historical colonial relationship between source and destination is associated with more negative selectivity.
- NETWORKS – immigrants selectivity tends to decrease as migrant networks grow – bigger immigrant networks are associated with more negative selection of immigrants (Bertoli and Rapoport, 2013). Immigrant networks tend to be most important pull factor in migration in particular for migrants coming from poor countries and countries with low educational levels (Pedersen, Pytlikova and Smith, 2008).
- IMMIGRATION POLICY - selective (Canada point system, Australia..recently Denmark, Germany)

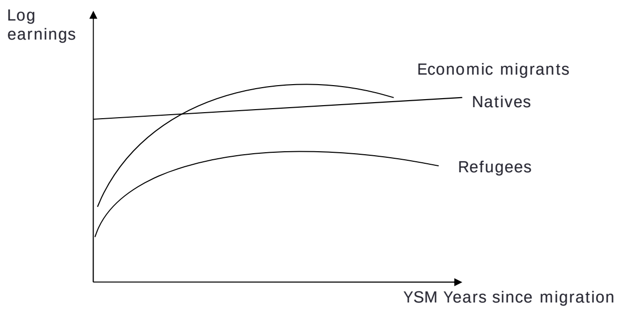
Selection in other outcomes

- Selection on health (studies usually find a positive selection on wealth, see e.g. Kennedy et al., 2006)
- Return migration (see Borjas and Bratsberg, 1996 Roy model application to selection in return migration);

ADJUSTMENT OF IMMIGRANTS

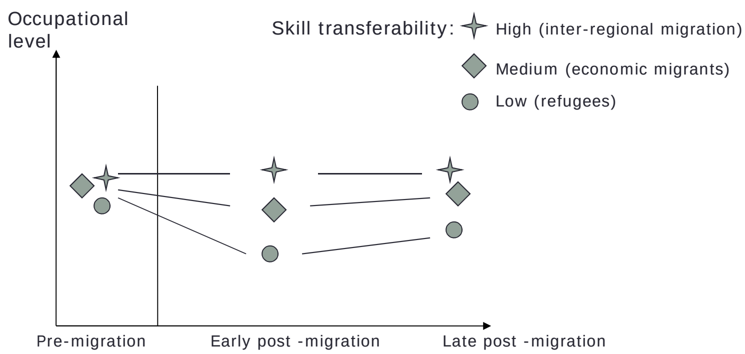
- Earnings (used by economists)
- Occupation (used by sociologists)

Different types of immigration – impact on adjustment



ADJUSTMENT OF IMMIGRANTS

- u-shape pattern of occupational mobility



ADJUSTMENT OF IMMIGRANTS

? Which occupations have high/low skill transferability ?
TPS: Think-pair-share

Example

To sum-up - Important:

Selectivity,

Skills transferability & transferability of occupation,

Investment into post-migration training.

ADJUSTMENT OF IMMIGRANTS

- More on immigrant assimilation and integration; and performance of second generations of immigrants during the next lectures
- *Now an example of how do CEE migrants fare..*

How do CEE migrants fare? Post-enlargement evidence

- Main sending countries:
  - **UK**: Poland, Slovakia, Lithuania,
  - **Ireland**: Poland, Lithuania, Latvia
  - **Sweden**: Poland, Lithuania, Estonia
- Sectoral distribution of immigrants:
  - **UK**: hotels and restaurants, manufacturing, agriculture/construction
  - **Ireland**: construction, manufacturing, hotels and restaurants
  - **Sweden**: health care, trade, manufacturing

How do CEE migrants fare? Post-enlargement evidence

- Characteristics of post-enlargement immigrants:
  - **UK**:
    - young,
    - males,
    - single,
    - rel. highly educated (with qualifications),
    - higher empl. rate than of natives and non-EU migrants.
    - Earn less than natives, later arrivals earn less than earlier arrivals.

How do CEE migrants fare? Post-enlargement evidence

- Characteristics of post-enlargement immigrants:
  - **Ireland**:
    - high Labour Force Participation rate (90%),
    - higher empl. rate than of natives and non-EU migrants.
    - No earnings data for Irish vs. foreign workers

How do CEE migrants fare? Post-enlargement evidence

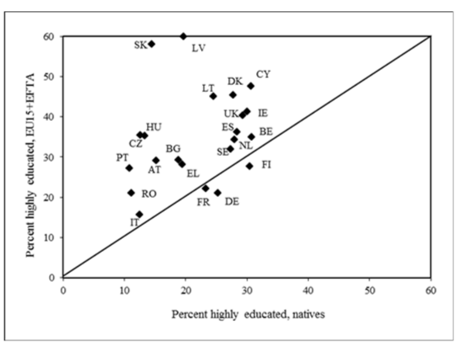
Characteristics of post-enlargement immigrants:

- **Sweden**:
  - Immigration of males increased more than females (previously more females),
  - secondary and higher education,
  - lower empl. rate and hours worked than of natives, but higher than of non-EU migrants (partly explained by lags in registration of returning migrants)
  - Monthly earnings are 10% less than of natives. Later arrivals earn less than earlier arrivals
  - CEE are not overrepresented in the welfare state schemes (which was the focus of the pre-enlargement debate in Sweden)

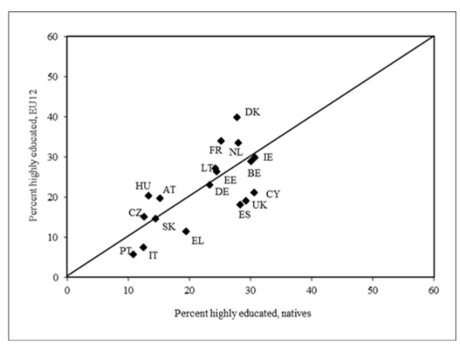
Post-enlargement migrants: education

- Relatively well educated:

EU15+EFTA



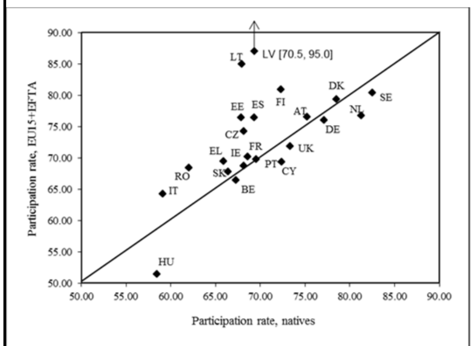
EU12



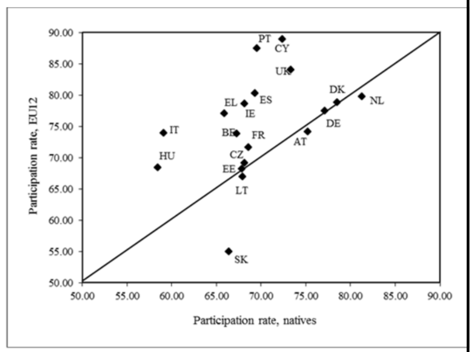
EU12 migrants relatively well educated, EU15 migrants more educated than natives (EU LFS, 2010)

…and they come to work

EU15+EFTA



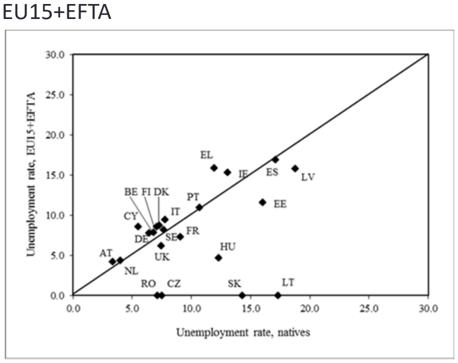
EU12



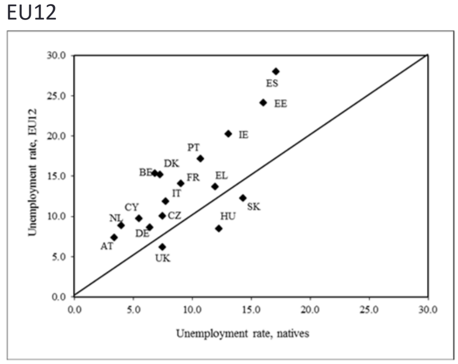
EU15 and EU12 migrants exhibit rather high activity rates, significantly higher than the natives (EU LFS, 2010)

…but not always successful – unemployment

EU15+EFTA



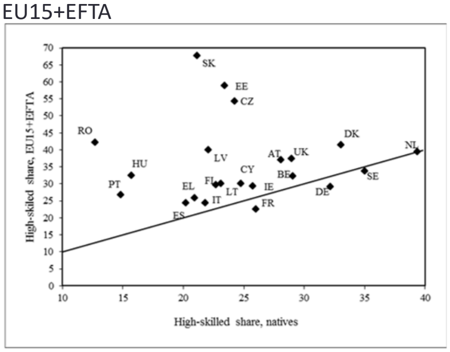
EU12



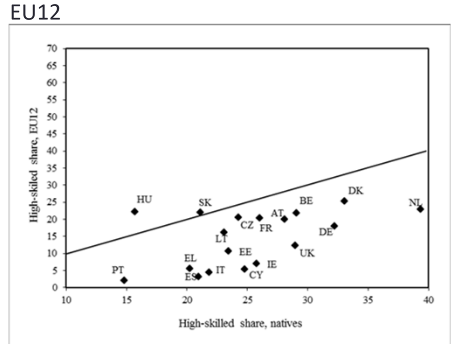
EU12 immigrants have a higher probability of unemployment than the natives, EU15 doing well (EU LFS, 2010)

…and even if have a job – downskilling likely

EU15+EFTA



EU12



EU15 migrants doing well, but EU12 migrants downskilling

OUR NEXT LECTURES

- ***Immigrant performance, assimilation and integration; the second generation***
- ***Impact of immigration, Immigration policy***

THE NEXT LECTURES

- *Immigrants and innovation; International migration and globalization;*
- *Diversity - Impacts of workforce diversity on firms and economies*
- *Emigration and source countries; Brain drain and brain gain; Remittances*