Lecture 10
Migration

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History of Economic Growth and Crises
8 February 2023

Outline of the course

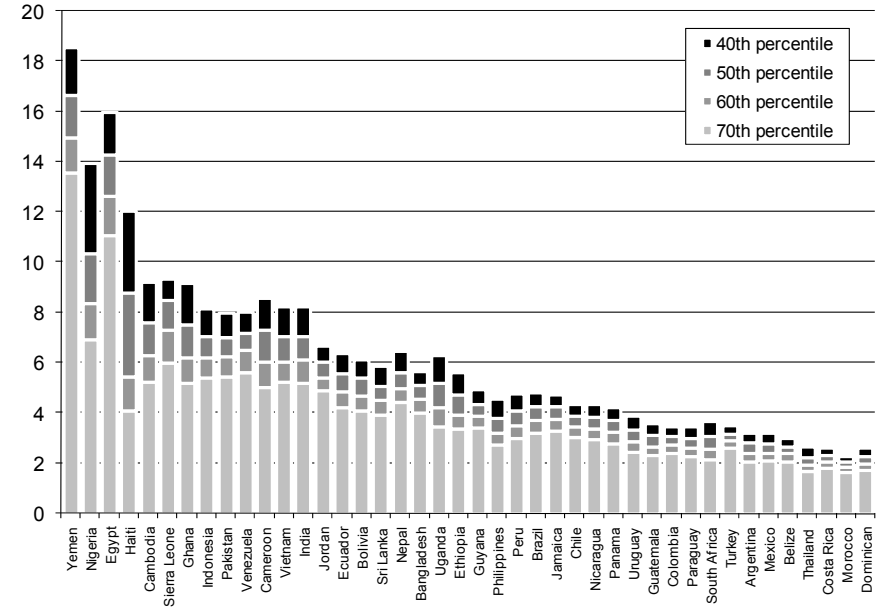
1. The Malthusian Era
2. Fundamental causes of growth
3. Innovation and crises
4. Unleashing talent
    1. **Migration**
    2. Social mobility
    3. Women

Geographical misallocation of labor

- Hypothesis
  - many people live in "wrong" locations in the sense that their productivity would be higher elsewhere
  - if they would move to high productivity locations, income per capita could grow substantially
- This lecture
  - stylized facts
  - a simple Roy model of migration
  - (quasi-)experimental evidence

Fact 1: Large cross-country income differences

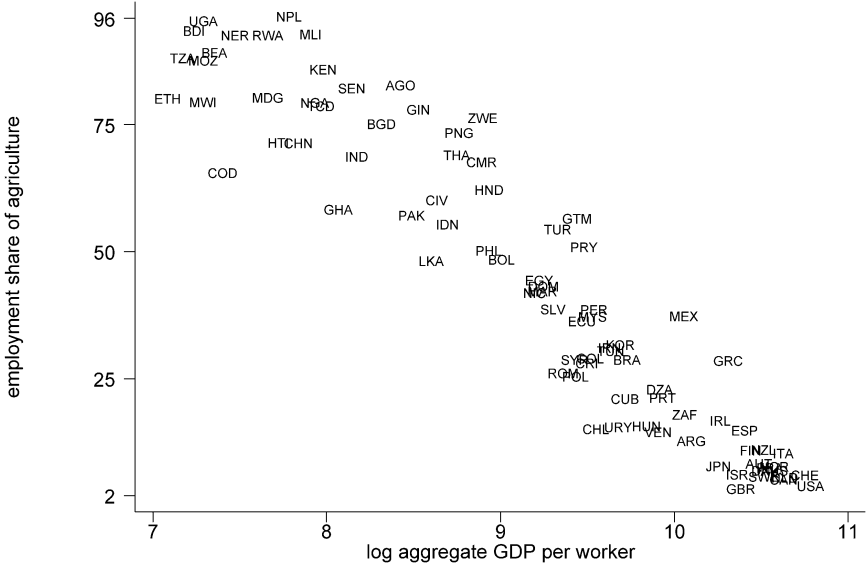
Clemens, Montenegro, Pritchett (2010)



PPP adjusted wage ratios for foreign workers in the United States in comparison to observationally identical workers in the source country (some country of birth, country of education, years of education, work experience, sex, and rural or urban residence). The colors correspond to different assumption about self-selection into migration.

Fact 2: Poor countries have large agri sectors

Employment share of agriculture and GDP per capita in 1996



"[...] in the poorest countries of the world virtually everyone works in agriculture, and in the richest virtually nobody does. It is obvious that this is the most important source of variation in the composition of GDP around the World." (Caselli 2005)

Fact 3: Agriculture has low productivity

Value added per worker in non-agriculture / value added per worker in agriculture

	Raw
Median	3.1
# Countries	72

Gollin, Lagakos and Waugh (2014): In a typical country, value added per worker is 3.1 larger outside of agriculture than in agriculture.

Fact 3: Agriculture has low productivity

Value added per worker in non-agriculture / value added per worker in agriculture

	Raw	Adj.
Median	3.1	1.9
# Countries	72	72

Gollin, Lagakos and Waugh (2014): In a typical country, value added per worker is 3.1 larger outside of agriculture than in agriculture. After adjusting on years of education and hours of work value added in non-agriculture is still 1.9 larger than in agriculture.

F4: ... and the gaps are larger in poor countries

Value added per worker in non-agriculture / value added per worker in agriculture

	Raw	Adj.	Adjusted APG by GDP per capita			
			Rich	Q2	Q3	Poor
Median	3.1	1.9	1.4	2	2.1	2.3
# Countries	72	72	18	16	18	20

Gollin, Lagakos and Waugh (2014): In a typical country, value added per worker is 3.1 larger outside of agriculture than in agriculture. After adjusting on years of education and hours of work value added in non-agriculture is still 1.9 larger than in agriculture. The gaps are larger, the poorer the country.

Stylized facts: summary

- Observationally identical individuals have very different income by country of residence
  - constraining international migration may create a large distortion to the global economy (Clemens 2011, JEP)
- ... and by sector of employment within a country
  - getting workers to the modern sector could increase growth

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  - getting workers to the modern sector could increase growth
- Next: why the stylized facts may give a misleading estimate for returns to migration

Estimating returns to migration: the challenge

Roy (1951), Borjas (1987), Banerjee, Newman (1998), Chiqiuar, Hanson (2005)...

- Think of a world with two locations and wage equations

$$w_{ji} = \mu_j + \delta_j s_i$$

where the (log) wage of individual i in location j is a function of location-specific base wage, μ_j, returns to skill, δ_j, and individual-specific skill, s_i.

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- Individual born in 0 moves to 1 iff $w_{j1} - C_i > w_{j0}$
  - C_i is migration cost (direct costs, amenity differences, networks, risk...)
  - the models differ mainly in their assumptions on what drives the migration costs

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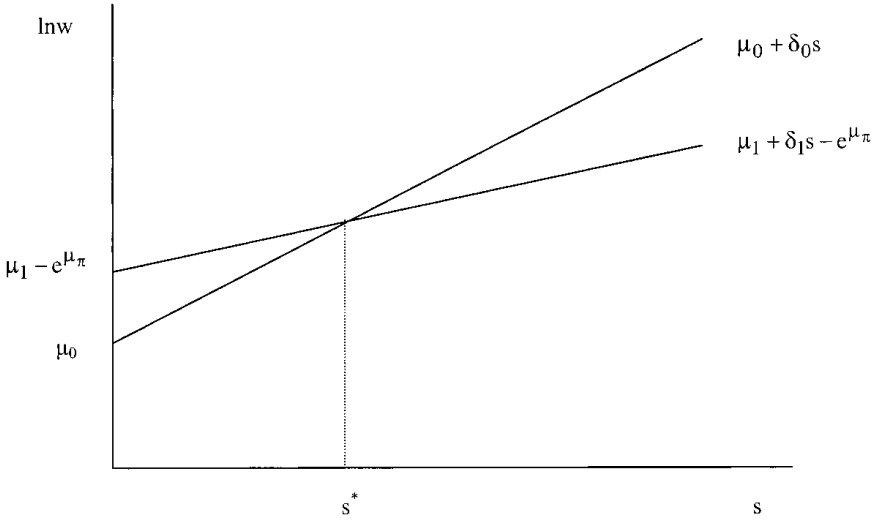
  - C_i is migration cost (direct costs, amenity differences, networks, risk...)
  - the models differ mainly in their assumptions on what drives the migration costs
- Selection into moving is determined by individual's skills, moving costs and locations' wage distributions
  - simple comparison of wages across locations unlikely to measure returns to migration

Selection to migration

Chiqiuar, Hanson (2005)



Negatively selected migration. Location 1 has more equal wage distribution than location 0. As a consequence, everyone with skill levels below s* migrate from 0 to 1 when migration costs are e^{μ_π} (note that wages are in logs, so here migration costs are assumed to be *time-equivalent* across the skill distribution).

Selection to migration

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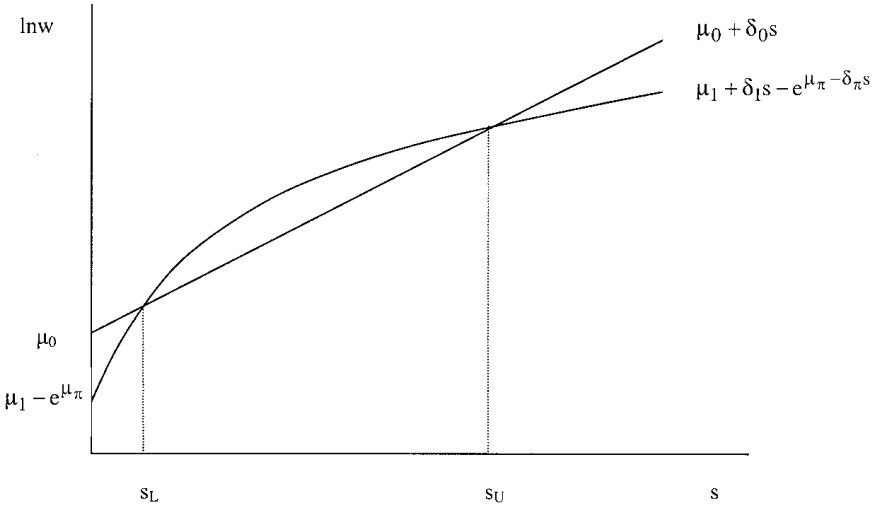

Selection from the middle: everyone with skill levels between s_L and s_U migrate from 0 to 1. Now time-equivalent migration costs are assumed to be decreasing with skill (skilled workers have to work fewer hours to cover the migration costs than non-skilled workers). Credit constraints would yield qualitatively similar selection.

Returns to internal migration

Bryan, Chowdhury, Mobarak (2014)

- Context
  - pre-harvest lean seasons common in Asia, Africa
- Experiment
  - randomly assign an $8.50 incentive to households in rural Bangladesh to out-migrate during the lean season
- Results
  - induces 22% of households to send a seasonal migrant
  - consumption at the origin increases significantly
  - treated households are 8-10 percentage points more likely to remigrate 1 and 3 years after the incentive is removed
- Interpretation
  - migration is risky, mitigating risk requires individual-specific learning, and some migrants are sufficiently close to subsistence so that failed migration is very costly


11% of Finns displaced during WWII and resettled to the remaining parts of the country (more in the habit formation slides)

Papers for essays

- Hornung (2014): Immigration and the Diffusion of Technology: The Huguenot Diaspora in Prussia. *AER* 104(1): 84-122
  - In 1685, religiously persecuted French Huguenots settled in Brandenburg-Prussia and compensated for population losses due to plagues during the Thirty Years' War. This paper finds a substantial long-term effects of Huguenot settlement on the productivity of textile manufactories.
- Moser, Voena, Waldinger (2014): German Jewish Emigres and U.S. Invention. *AER* 104(10): 3222-3255
  - Examine the impact of Jewish émigrés from Nazi Germany on chemical innovation in the U.S. and find that patenting by U.S. inventors increased by 31 percent in émigré fields. Inventor-level data indicate that émigrés encouraged innovation by attracting new researchers to their fields, rather than by increasing the productivity of incumbent inventors.