Lecture 10
Migration

Matti Sarvimäki

History of Economic Growth and Crisis
27 March 2014
Outline of the course

1. The Malthusian Era
2. Fundamental causes of growth
3. Innovation and crises
4. Unleashing talent

1. Migration
   1. structural change and (internal) migration
   2. migration to the US in 1850–1913

2. Inequality and intergenerational mobility
3. Marriage, family and work
“[...] 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 2: Agriculture has low productivity
Value added per worker in non-agriculture / value added per worker in agriculture

<table>
<thead>
<tr>
<th>Raw</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>3.1</td>
</tr>
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Gollin, Lagakos and Waugh (forthcoming): In a typical country, value added per worker is 3.1 larger outside of agriculture than in agriculture.
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Value added per worker in non-agriculture / value added per worker in agriculture

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Gollin, Lagakos and Waugh (forthcoming): 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.
F3: ... and the gaps are larger in poor countries
Value added per worker in non-agriculture / value added per worker in agriculture

<table>
<thead>
<tr>
<th></th>
<th>Raw</th>
<th>Adj.</th>
<th>Rich</th>
<th>Q2</th>
<th>Q3</th>
<th>Poor</th>
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<tr>
<td>Median</td>
<td>3.1</td>
<td>1.9</td>
<td>1.4</td>
<td>2</td>
<td>2.1</td>
<td>2.3</td>
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<tr>
<td># Countries</td>
<td>72</td>
<td>72</td>
<td>18</td>
<td>16</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

Gollin, Lagakos and Waugh (forthcoming): 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.
The Misallocation Hypothesis

- Poor countries have large, unproductive agricultural sectors → getting workers to the modern sector increases growth
  
  - to an important extent, this reallocation of workers involves migration from rural to urban areas
The Misallocation Hypothesis

- Poor countries have large, unproductive agricultural sectors $\rightarrow$ getting workers to the modern sector increases growth
  
  - to an important extent, this reallocation of workers involves migration from rural to urban areas

- Consistent with stylized facts, but also raises questions:
  - could farmers really increase their income by moving?
  - if yes, why don’t (more) people move?
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, \( \mu_j \), returns to skill, \( \delta_j \), and individual-specific skill, \( s_i \).
Think of a world with two locations and wage equations

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

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 and moving costs, and locations’ wage distributions

- simple comparison of wages across locations unlikely to measure returns to migration
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 $e^{\mu_1 \pi}$ (note that wages are in logs, so here migration costs are assumed to be time-equivalent across the skill distribution).
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 (2013): Escaping Famine through Seasonal Migration

- **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 such that failed migration is very costly
Returns to internal migration
Sarvimäki, Uusitalo, Jäntti (ongoing work)

- Studies population displacement in 1940s Finland to examine
  - the causal effect of leaving agriculture
  - the role of networks and preferences

- Take-away
  - many farmers could earn much more in the modern sector
  - but lack of dispersed networks and location-specific preferences
  - stop many from taking up these opportunities
11% of Finns forced to move from areas ceded to the Soviet Union due to WWII
The Resettlement Policy
Sarvimäki, Uusitalo, Jäntti (ongoing work)

- Aimed to reconstruct the pre-war situation for farmers
- Provided land and assistance for setting up new farms
  - location determined by source area
  - soil and weather conditions similar to source areas
  - fields expropriated from local landowners, cleared from forest
- Villages resettled together to preserve social connections
- Farmers free to sell their land and to migrate afterwards
Validity as a Research Design
Sarvimäki, Uusitalo, Jäntti (ongoing work)

- Post-war differences between the displaced and non-displaced likely to be caused by the displacement because
  - Everyone living in the ceded area left
  - 1721 border used as a reference point [originally USSR was planning to use 1743 border about 75km further west]
  - Displaced and non-displaced farmers similar in pre-war observable characteristics
Data

Sarvimäki, Uusitalo, Jäntti (ongoing work)

Sources

- Statistics Finland’s 10% microsample of the 1950 Census (includes retrospective questions for 1939)
- Linked to the 1970 Census, 1971 tax records
- ... augmented with municipality-level data on the evacuation and resettlement areas, income, production structure

Estimation sample

- Male farmers born between 1907–1925
  (14–32 years old in 1939; 46–64 in 1971)
- 10,181 farmers of whom 1,267 were displaced
Non-Agricultural Employment in 1970
Share of 1939 farmers working outside of agriculture in 1970

Distance to post-war border in 1939

Area remaining part of Finland
Ceded area
# Impact on non-agricultural employment, 1970

Regression coefficients for displacement status (each from a separate regression)

<table>
<thead>
<tr>
<th>Specification</th>
<th>(1)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>0.154</td>
<td>0.138</td>
<td>0.145</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.015)</td>
<td>(0.015)</td>
</tr>
<tr>
<td>Spatial RD</td>
<td>0.161</td>
<td>0.145</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
<td>(0.030)</td>
<td></td>
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</tbody>
</table>

Controlling for:

- **Latitude, 1939**: no, yes, no
- **Pre-War Characteristics**: no, yes, yes
- **Resettlement Area FE**: no, no, yes

Pre-war characteristics: age, age squared, Swedish speaker, education, socioeconomic status, industry and five categories of taxable income per capita (quintile groups) in the 1939 residence municipality.
1971 Taxable Real Income and 1939 Location
Thousands of *markka* (inc. zeros), deflated by municipality level cost of living index

Distance to post-war border in 1939

Area remaining part of Finland

Ceded area
# Impact on 1971 Taxable Real Income, 1971

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</tr>
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<tr>
<td>Baseline</td>
<td>2.763</td>
<td>1.043</td>
<td>1.330</td>
</tr>
<tr>
<td></td>
<td>(0.423)</td>
<td>(0.437)</td>
<td>(0.477)</td>
</tr>
<tr>
<td>Spatial RD</td>
<td>4.203</td>
<td>3.570</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.923)</td>
<td>(0.887)</td>
<td></td>
</tr>
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Impact of being displaced: summary
Sarvimäki, Uusitalo, Jäntti (ongoing work)

- Leaving agriculture yielded large pecuniary returns
  - if the effect on income was mediated entirely through transitions to non-agriculture, being displaced would be a valid instrument for leaving agriculture
  - the estimates would then imply that leaving agriculture increased income by 40–130%

BUT: being displaced may have had direct effects on income however, if these direct effects were negative, the implied IV estimates would be biased downwards
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- Our take
  - returns to leaving agriculture appear to have been large
  - thus the real question is: why did most farmers choose to stay?
Possible explanations for lack of mobility

1. Selection
   Roy (1951), Lagakos and Waugh (2012)

2. City-specific human capital

3. Local prices/amenities
   Rosen (1979), Roback (1982)

4. Risky urban labor markets
   Harris and Todaro (1970)

5. Networks

6. Preferences

1–4 cannot explain our results because disp/non-disp. farmers identical along these dimensions (not a falsification, but suggest that these models abstract away from quantitatively important mechanisms)

5–6 have more potential in our context
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   - 5–6 have more potential in our context
Immigrants on deck of steamer "Germanic"
Frank Leslie's illustrated newspaper. 1887 July 2. pp. 324-325
Europe’s Tired, Poor, Huddled Masses

Not like the brazen giant of Greek fame,
With conquering limbs astride from land to land;
Here at our sea-washed, sunset gates shall stand
A mighty woman with a torch, whose flame
Is the imprisoned lightning, and her name
Mother of Exiles. From her beacon-hand
Glows world-wide welcome; her mild eyes command
The air-bridged harbor that twin cities frame.
"Keep, ancient lands, your storied pomp!" cries she
With silent lips. "Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tost to me,
I lift my lamp beside the golden door!"

Emma Lazarus, posthumously famous for her 1883 sonnet, "The New Colossus" (above), which is engraved on the base of the Statue of Liberty. She is considered America’s first important Jewish poet.
Returns and selection among Norwegian migrants
Abramitzky, Boustan, Eriksson (2012, AER)

- This paper
  - what was the economic return to migrating?
  - were migrants positively or negatively selected?
  - ... among Norwegian immigrants in the 1880s

- Take-away
  - returns to migration: 70%
  - migrants negatively self-selected
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- Why study this period
  - nearly open borders → possible to observe the underlying economic forces (rather than their mixture with immigration policy)
  - given the magnitude, potentially large implications for economic growth in Europe and the United States
More than 40m Europeans emigrated between 1850–1913
- one of the largest migration episodes in human history
- roughly 30m settled in the United States
- initially from UK, Ireland, Germany
- 1870s: Scandinavians and other northern Europeans
- 1880s: southern and eastern Europeans
- Norway had one of the highest out-migration rates in the 1880s (roughly 200,000 emigrants to the U.S. during this decade)

Drivers of emigration
- technology: cost of migration fell dramatically
- rising incomes: larger share able to pay for passage
Data
Abramitzky, Boustan, Eriksson (2012, AER)

- Link data from
  - Norwegian censuses of 1865 and 1900 (available here)
  - Norwegian-born men in the U.S. in 1900 (from Ancestry.com)

- Information on occupation and earnings
  - observed: occupation when the men are in their 30s and 40s
  - assign mean (PPP-adjusted) income by occupation

- Limitations
  - within-occupation wages unobserved
  - overrepresentation of those with uncommon names
  - excludes those who anglicize their names
  - temporary migrants (can handle well using 1880 census)
The remainder of the paper proceeds as follows. Section I discusses the historical context and related literature on the age of mass migration and migrant selection. Section II describes the data and the procedures we used to match migrants to their birth families in Norway. Section III presents our estimates of the return to migration, while Section IV contains additional direct evidence of migration selection. Section V concludes.

I. Contemporary and Historical Literature on Migrant Selection

A. Migrant Selection in the Roy Model

The Borjas model of migrant selection is both well-known and much-disputed in the migration literature. Borjas (1987, 1991) modified the Roy model (Roy 1951) of occupational choice to generate predictions about the nature of migrant selection.

In this framework, migrant selection is determined by the relative return to skill in the sending and destination economies. If the destination country exhibits higher return to skill than the source country, and therefore greater levels of income inequality, migrants will be drawn disproportionately from the top end of the source country’s skill distribution. If, instead, the destination country offers lower return to skill and is therefore more equal than the source, migrants will be drawn disproportionately from the lower tail of the source country’s skill distribution.

Norway had more unequal income distribution than the United States in 1900. Thus the version of the Roy model discussed above suggest that Norwegian immigrants to the US should be negatively self-selected.
Panel B. Top ten occupations in matched sample, Norwegian-born men living in Norway in 1900

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupation</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General farmers</td>
<td>4,189</td>
<td>22.26</td>
<td>393</td>
</tr>
<tr>
<td>2</td>
<td>Farmer and fisherman</td>
<td>1,522</td>
<td>8.09</td>
<td>321</td>
</tr>
<tr>
<td>3</td>
<td>Merchants and dealers</td>
<td>722</td>
<td>3.84</td>
<td>837</td>
</tr>
<tr>
<td>4</td>
<td>Fisherman</td>
<td>709</td>
<td>3.77</td>
<td>248</td>
</tr>
<tr>
<td>5</td>
<td>Husbandmen or cottars</td>
<td>658</td>
<td>3.50</td>
<td>114</td>
</tr>
<tr>
<td>6</td>
<td>Farm workers</td>
<td>597</td>
<td>3.17</td>
<td>175</td>
</tr>
<tr>
<td>7</td>
<td>Carpenters</td>
<td>505</td>
<td>2.68</td>
<td>312</td>
</tr>
<tr>
<td>8</td>
<td>Shipmasters and captains</td>
<td>459</td>
<td>2.44</td>
<td>298</td>
</tr>
<tr>
<td>9</td>
<td>Cottar and fisherman</td>
<td>412</td>
<td>2.19</td>
<td>321</td>
</tr>
<tr>
<td>10</td>
<td>Seamen</td>
<td>351</td>
<td>1.87</td>
<td>182</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10,124</td>
<td>53.79</td>
<td></td>
</tr>
</tbody>
</table>
Occupations of migrants, 1900
Abramitzky, Boustan, Eriksson (2012, AER)

Panel A. Top ten occupations in matched sample, Norwegian-born men living in the United States in 1900

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<tbody>
<tr>
<td>1</td>
<td>Farmers and planters</td>
<td>1,012</td>
<td>35.81</td>
<td>691</td>
</tr>
<tr>
<td>2</td>
<td>Laborers (general)</td>
<td>256</td>
<td>9.05</td>
<td>373</td>
</tr>
<tr>
<td>3</td>
<td>Carpenters and joiners</td>
<td>174</td>
<td>6.15</td>
<td>630</td>
</tr>
<tr>
<td>4</td>
<td>Farm laborers</td>
<td>101</td>
<td>3.57</td>
<td>255</td>
</tr>
<tr>
<td>5</td>
<td>Painters, glaziers, and varnishers</td>
<td>66</td>
<td>2.33</td>
<td>624</td>
</tr>
<tr>
<td>6</td>
<td>Sailors</td>
<td>60</td>
<td>2.12</td>
<td>467</td>
</tr>
<tr>
<td>7</td>
<td>Saw and planing mill workers</td>
<td>42</td>
<td>1.49</td>
<td>572</td>
</tr>
<tr>
<td>8</td>
<td>Machinists</td>
<td>39</td>
<td>1.38</td>
<td>736</td>
</tr>
<tr>
<td>9</td>
<td>Railroad laborers</td>
<td>36</td>
<td>1.27</td>
<td>460</td>
</tr>
<tr>
<td>10</td>
<td>Salesmen</td>
<td>32</td>
<td>1.13</td>
<td>680</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1,818</td>
<td>64.33</td>
<td></td>
</tr>
</tbody>
</table>

40% of both groups worked in farming, but migrants were much more likely to be owner-occupier farmers (36 percent versus 22 percent). They were also more likely to be general laborers (8 percent versus 1.4 percent).
Occupational distribution of urban migrants, 1900
Abramitzky, Boustan, Eriksson (2012, AER)

Occupations arrayed from lowest- to highest-paid according to US earnings. Farmers omitted. Migrants from urban areas more likely to hold low-paying jobs than non-migrants.
Occupational distribution of rural migrants, 1900
Abramitzky, Boustan, Eriksson (2012, AER)

Men born in rural areas are employed in similar jobs in both countries.
Occupational downgrading
Abramitzky, Boustan, Eriksson (2012, AER)

- ABE document occupational downgrading by imposing the same mean earnings by occupation in both countries
  - on average, urban migrants work in occupations that have 19 log points lower wages than nonmigrants
  - for rural migrants the gap is 5 log points
  - these gaps do not vanish in 20 years-since-migration

- That is, them migrants work in lower rank occupations in the U.S. than the stayers in Norway
  - this does not translate to lower earnings, because average earnings by occupation are higher in the US than Norway
**Earnings of migrants and stayers**

Abramitzky, Boustan, Eriksson (2012, AER)

<table>
<thead>
<tr>
<th></th>
<th>Population (1)</th>
<th>Match 1 (2)</th>
<th>Match 2 (3)</th>
<th>Match 3 (4)</th>
<th>Weighted (5)</th>
<th>Match 1 Iowa data (6)</th>
<th>Add penalty (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In US</td>
<td>0.609</td>
<td>0.606</td>
<td>0.644</td>
<td>0.572</td>
<td>0.641</td>
<td>0.554</td>
<td>0.466</td>
</tr>
<tr>
<td></td>
<td>(0.017)</td>
<td>(0.009)</td>
<td>(0.009)</td>
<td>(0.015)</td>
<td>(0.024)</td>
<td>(0.010)</td>
<td>(0.009)</td>
</tr>
<tr>
<td>N</td>
<td>122,620</td>
<td>17,501</td>
<td>33,641</td>
<td>7,596</td>
<td>14,647</td>
<td>17,352</td>
<td>17,501</td>
</tr>
</tbody>
</table>

Estimates for $\beta_1$ from regression

$$\ln (Earnings_i) = \alpha + \beta_1 Migrant_i + \beta_2 Age_i + \beta_3 Age_i^2 + \epsilon_i$$

Col 1: Norwegian-born men between the ages of 38–50 in Norwegian and US censuses. Col 2: matched sample (name, age, and country of birth). Col 3: alternative matched sample (name, age, and province of birth for nonmigrants). Col 4: yet another matched sample (matches unique within a five-year age band). Col 5: weight to reflect oversampling of urban areas (rare names more common). Col 6: US migrants assigned earnings from the 1915 Iowa census. Col 7: reduce the Cost of Living earnings by 13 log points in each occupation.
Estimating returns to migration
Abramitzky, Boustan, Eriksson (2012, AER)

- The estimates above measure returns to migration if people are selected randomly into migration
  - very unlikely to hold → ABE use two alternative strategies
Estimating returns to migration
Abramitzky, Boustan, Eriksson (2012, AER)

- The estimates above measure returns to migration if people are selected randomly into migration
  - very unlikely to hold → ABE use two alternative strategies
- Approach 1: compare migrants to their non-migrant brothers
  - eliminates selection across households
  - identifying assumption: within-brothers, selection to migration as good as random
The estimates above measure returns to migration if people are selected randomly into migration.

very unlikely to hold → ABE use two alternative strategies

**Approach 1: compare migrants to their non-migrant brothers**

- eliminates selection across households
- identifying assumption: within-brothers, selection to migration as good as random

**Approach 2: IV using sibling composition, birth order**

- first-stage: affect the likelihood of inheriting farmland
- exclusion restriction: no direct effect on occupational choice
Within-brothers estimates
Abramitzky, Boustan, Eriksson (2012, AER)

<table>
<thead>
<tr>
<th>Dependent variable = ln(earnings); Coefficient on = 1 if migrant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>OLS</td>
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<td></td>
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<tr>
<td>Within household</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Chi-squared</td>
</tr>
<tr>
<td>p-value</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Number of migrant-stayer pairs</td>
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</tbody>
</table>

Each cell contains coefficient estimates and standard errors from regressions of ln(earnings) on a dummy variable equal to one for individuals living in the United States in 1900. Regressions also include controls for age and age squared. The first row conducts an OLS regression for the restricted sample of households that have at least two matched members in the dataset and the second row adds household fixed effects. Chi-squared tests are for the null hypothesis that the OLS and within-household coefficients are equal.
### IV estimates

**Abramitzky, Boustan, Eriksson (2012, AER)**

#### Panel A. First stage

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable (= \ln(\text{In US in 1900}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of brothers</td>
<td>0.016 0.011</td>
</tr>
<tr>
<td></td>
<td>(0.006) (0.006)</td>
</tr>
<tr>
<td>2nd brother</td>
<td>-0.000 —</td>
</tr>
<tr>
<td></td>
<td>(0.012) (0.012)</td>
</tr>
<tr>
<td>3rd brother</td>
<td>0.047 0.037</td>
</tr>
<tr>
<td></td>
<td>(0.019) (0.019)</td>
</tr>
<tr>
<td>4th or higher brother</td>
<td>0.076 0.058</td>
</tr>
<tr>
<td></td>
<td>(0.035) (0.036)</td>
</tr>
</tbody>
</table>

#### Panel B. OLS

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable (= \ln(\text{earnings in 1900}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>In US in 1900</td>
<td>0.642</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
</tr>
</tbody>
</table>

#### Panel C. IV

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable (= \ln(\text{earnings in 1900}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>In US in 1900</td>
<td>0.669 0.696 0.668</td>
</tr>
<tr>
<td></td>
<td>(0.436) (0.381) (0.338)</td>
</tr>
<tr>
<td>Over-ID test (p)-value</td>
<td>0.869</td>
</tr>
<tr>
<td>(N)</td>
<td>4031 4031 4031</td>
</tr>
</tbody>
</table>

Note that the IV estimates are very imprecise.
Summary
Abramitzky, Boustan, Eriksson (2012, AER)

- Estimated returns to migration about 70% (0.5 log points)
- Comparison of within-brother ($\beta'_1$) and OLS estimates ($\beta_1$)
  - urban sample: $\beta'_1 > \beta_1$ suggesting negative selection
  - rural sample: $\beta'_1 < \beta_1$ suggesting positive selection
- Additional evidence on selection comparing the fathers of migrants and stayers in the 1865 (next slide)
Father’s outcomes by sons’ migrant status
Abramitzky, Boustan, Eriksson (2012, AER)

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>All households</th>
<th>Coefficient on migrant HH</th>
<th>Households with matched sons</th>
<th>Coefficient on migrant HH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Coef</td>
<td>Mean</td>
<td>Coef</td>
</tr>
<tr>
<td><strong>Panel A. Urban</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occ. &gt; median</td>
<td>0.593</td>
<td>-0.001 (-0.022)</td>
<td>0.583</td>
<td>-0.030 (0.042)</td>
</tr>
<tr>
<td>Assets</td>
<td>0.260</td>
<td>-0.030 (0.018)</td>
<td>0.252</td>
<td>-0.058 (0.035)</td>
</tr>
<tr>
<td><strong>Panel B. Rural</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occ. &gt; median</td>
<td>0.608</td>
<td>0.008 (0.014)</td>
<td>0.577</td>
<td>-0.054 (0.032)</td>
</tr>
<tr>
<td>Occupational income</td>
<td>321.21</td>
<td>6.092 (3.847)</td>
<td>315.30</td>
<td>-9.077 (9.072)</td>
</tr>
<tr>
<td>Assets</td>
<td>0.665</td>
<td>-0.032 (0.012)</td>
<td>0.613</td>
<td>-0.035 (0.028)</td>
</tr>
<tr>
<td>Match tax records</td>
<td>0.130</td>
<td>-0.037 (0.009)</td>
<td>0.134</td>
<td>-0.040 (0.021)</td>
</tr>
<tr>
<td>Property tax bill</td>
<td>2.759</td>
<td>-0.372 (0.307)</td>
<td>2.821</td>
<td>0.044 (0.887)</td>
</tr>
<tr>
<td><strong>N = 1,410; 300</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimates for $\gamma_1$ from regression $Y_{jr} = \gamma_1 MigrantHousehold + \gamma_2 Age_j + \gamma_3 Age_j^2 + \epsilon_{jr}$. 

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.


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.

- Shows that Mexican immigrants to the U.S. are more likely to be employed and to hold a higher paying nonagricultural job when his network is exogenously larger (due to previous rainfall in the origin-community).


- Examine the behavior of Irish depositors in a New York bank during two panics in the 1850s. As recent immigrants, their social network was determined largely by their place of origin in Ireland, and where they lived in New York. During both panics this social network turns out to be the prime determinant of behavior.