GLOBALIZATION AND LABOR MARKETS

The Issues

⇒ wage inequality between skilled and unskilled labor
⇒ the effects of globalization and technology on employment levels

FREEMAN: “ARE YOUR WAGES SET IN BEIJING?”

The Stylized Facts

US

⇒ demand for unskilled labor fell sharply in US and others
⇒ wage inequality between skilled and unskilled labor ↑


⇒ the real hourly wages of males w/12 yrs of schooling ↓ by 20%
⇒ hourly wages of males at entry level w/12 yrs of schooling ↓ 30%

Implications of rising wage inequality

⇒ may distort the balance in the society
⇒ makes it more difficult for households in the lowest decile of the wage distribution to make progress

Europe

⇒ institutionally different from US
⇒ strong unions, more government regulations (min wage, benefits, safety etc.)
⇒ demand for unskilled fell sharply in OECD Europe as well
⇒ unemployment ↑ heavily concentrated in the lower end of the wage distribution


1973 ⇒ avg. unemployment : 2.9%
1991 ⇒ avg. unemployment : 9.3%

Bottom-line:

“rise in joblessness in Europe is thus the flip side of the rise in earnings inequality in US”
Graphical approach

America (unskilled labor market)

Europe (unskilled labor market)

unemployment
Question: Is Increased Trade/Globalization Responsible for Rising Wage Inequality?

Due to globalization trade as a percent of GDP increased substantially

<table>
<thead>
<tr>
<th>Country</th>
<th>1913</th>
<th>1950</th>
<th>1970</th>
<th>1987</th>
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<tr>
<td>U.K.</td>
<td>27.7</td>
<td>13.1</td>
<td>16.6</td>
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<td>U.S.</td>
<td>3.9</td>
<td>2.9</td>
<td>4.4</td>
<td>7.4</td>
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<td>Germany</td>
<td>19.9</td>
<td>9.8</td>
<td>17.4</td>
<td>23.3</td>
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- Technological Improvements in transportation
  - 1950 the avg. ship btw 5,000-10,000 tons, today 150,000
  - the use of containers
  - use of long distance jet airliners in transporting products
  - in 1993, 29% of US exports and 21% of US imports traveled by air

- Technological improvements in communications
  - made international transactions and foreign subsidiaries easier
  - intro of faxing, e-mailing, improved telecommunications, teleconferencing, internet communication

- Post War trade liberalization
  - establishment of international organizations to promote trade
  - GATT (General Agreement on Tariffs and Trade)
  - IMF(International Monetary Fund), World Bank

Increased Trade of Advanced Countries with LDCs

  - 1970 ⇒ 14% of US Imports from Less-Developed Countries (LDCs)
  - 1990 ⇒ 35% of US Imports from LDCs

- rising wage inequality in synchronization with increased trade

- Researchers ⇒ Is increased trade the cause of labor market problems?

Economic Theory:

Heckscher-Ohlin Trade Model:

⇒ the pattern of trade is determined by differences in relative factor endowments (ratio of skilled to unskilled labor)
⇒ a skilled labor abundant country like US exports skilled labor intensive goods and imports unskilled labor intensive goods
⇒ an unskilled labor abundant country like Mexico exports unskilled labor intensive goods and imports skilled labor intensive goods

Implication

⇒ US exports scientific instruments, air planes, intellectual property to Mexico
⇒ Mexico exports toys, footwear, and clothing
Question: What happens if trade liberalization takes place (NAFTA)?

US ⇒ increases its imports of unskilled labor intensive goods
    ⇒ demand for unskilled labor in the US ↓
    ⇒ increases its exports of skilled labor
    ⇒ demand for skilled workers ↑
    ⇒ relative wage of skilled increases

Mexico ⇒ increases its imports of skilled labor intensive goods
        ⇒ demand for skilled labor in Mexico ↓
        ⇒ increases its exports of unskilled labor
        ⇒ demand for unskilled workers ↑
        ⇒ relative wage of unskilled increases

Under certain assumptions, the HO models predicts Factor Price Equalization (FPE)
    ⇒ Assumption: identical technology, identical tastes between countries, incomplete specialization
      (i.e., each country produces both skilled intensive and unskilled intensive goods), countries can
differ in terms of their endowments.
    ⇒ trade in goods equalizes relative goods prices
    ⇒ the real wages (i.e. in term of goods and services) for each type of labor will be equalized
      between America and Europe.

Implications of Factor Price Equalization:
    ⇒ national markets cannot be analyzed in isolation
    ⇒ global labor supply and demand conditions matter
    ⇒ your wages are determined in Beijing

FPE (shortcomings)
    ⇒ demanding in terms of assumptions
    ⇒ domestic market conditions matter
      ▪ baby boom generation entered the workforce in 1970s
      ▪ decline in young workers' wages
      ▪ in the US wage differences between states persisted for decades

Bottom-line

FPE ⇒ not the holy grail
    ⇒ alerts us to the possibility that increased linkages btw advanced countries and LDCs may lead
to immiserization of unskilled in advanced countries

Empirical Evaluation:

What is the magnitude of trade’s contribution to increasing wage inequality?

1. Factor Content Analysis

Methodology:
    ⇒ increased imports from Mexico
    ⇒ increasing imports of unskilled labor from Mexico
    ⇒ measure the unskilled labor (in American terms) embodied in Mexican imports
⇒ equivalent to the decline in the demand for unskilled labor in the US
⇒ calculate the effect of falling demand on relative wages

example:
⇒ imports from Mexico ↑ by extra 10 toys
⇒ could have been produced by 5 unskilled US workers
⇒ demand for unskilled shifts left by 5 units

Empirical Results

I. Modest decline in employment
⇒ focusing on import computing industries (textiles, apparel, leather)
⇒ the # of less-skilled workers displaced very small
⇒ one reason: manufacturing workers small % in employment

example:

compare two different cases if displacement rate = 10%
50% of workers in import competing industries ⇒ 5 % of workers
1% of workers in import competing industries ⇒ 0.1% of workers

II. Substantial Decline in Employment
• Wood (1995 JEP) ’s argument: the above methodology is flawed

example:
⇒ US makes high tech toys
⇒ Mexico makes low tech toys
⇒ the products are different; thus the productivity levels are not comparable
⇒ low-tech toy production driven out in the US
⇒ Factor content studies ⇒ low-tech toy imports ↑ by 10 units,
⇒ Let \( AP_L \) stand for average product of labor.
⇒ if \( (AP_L)^{US} = 2 \) ⇒ due to increased imports by 10 units, US labor demand ↓ by 5
⇒ but US does not produce low-tech toys in the first place
⇒ use Mexican labor productivity indicators \( (AP_L)^{MX} = 1 \)
⇒ due to increased imports by 10 units, US Labor demand ↓ by 10

Bottom-line:
⇒ the correction for \( AP_L \) is in the right direction and magnifies the fall in the demand for labor
⇒ but one still needs two offsetting adjustments.
⇒ if produced in US, low tech toy production would have been more capital and technology intensive and thus \( (AP_L)^{US} \) would have been higher; as a result the fall in labor demand would be less.
⇒ if produced in US, prices of low-tech toys would be higher than the case when imported from abroad. So quantity demanded for low tech toys would have been lower. In this case, the low-tech toy industry would be smaller in proportion to the whole economy. Hence, the effects of increased imports would be modest and the fall in labor demand would be less.
2. Price Studies

Stolper Samuelson Theorem

⇒ any change in the wage rate must operate through product prices given tech.
⇒ if one observes a reduction in the relative wages of unskilled labor, this must be generated by a reduction in the prices of unskilled labor intensive goods (holding technology constant)

An illustration

skilled-intensive computers and unskilled-intensive toys
\( P_C/P_T \): relative price of computers
Suppose \( P_C/P_T \uparrow \Rightarrow \) profitability in computer industry \( \uparrow \)
⇒ firms enter ⇒ demand for skilled \( \uparrow \) by 10
⇒ demand for unskilled \( \uparrow \) by 4
⇒ profitability in toy industry \( \downarrow \)
⇒ firms exit ⇒ demand for skilled \( \downarrow \) by 4
⇒ demand for unskilled \( \downarrow \) by 12

skilled labor market ⇒ excess demand for skilled ⇒ skilled wage \( \uparrow \)
unskilled labor market ⇒ excess supply of unskilled ⇒ unskilled wage \( \downarrow \)

Bottom line: an increase the relative price of skilled labor intensive goods (here computers) raises the relative wage of skilled labor (the factor used intensively in the production of computer)

Methodology:

⇒ analyze the price changes in unskilled-labor-intensive products
⇒ focus on industries that intensively use unskilled labor
⇒ when adjusted for changes in total factor productivity

Empirical Evidence:

⇒ prices of unskilled-labor-intensive goods fell modestly
⇒ not enough to account for wage inequality
RODRIK “CONSEQUENCES OF TRADE FOR LABOR MARKETS AND THE EMPLOYMENT RELATIONSHIP”

Main Argument

According to Rodrik, the existing studies place
⇒ too much emphasis on leftward shift of the labor demand, not on elasticity
⇒ too much emphasis on H-O trade as opposed to intra-industry trade and outsourcing

Other trade related models

• intra-industry trade: trade in similar products
⇒ (ex, cars, chemicals, pharmaceuticals, power generating equipment)

• outsourcing: decentralization of the production process
⇒ (ex. Barbie doll)
  → design in US
  → raw materials (plastic, hair) come from Japan and Taiwan
  → assembly in Indonesia, Malaysia, and the Philippines
  → marketing and retailing in US and Europe

Openness of the economy ⇒ more elastic labor demand

⇒ ease of substitution btw domestic and foreign labor market
⇒ integration of good markets
  → increased product elasticity
  → increased labor demand elasticity
⇒ capital and machinery can be found more easily
  → elastic supply of capital increases ⇒ elastic of labor demand increases

Evidence for increased elasticity, Slaughter (1996)

⇒ in industries that exhibit greater levels of international integration
⇒ labor demand became more elastic since 1960s in most two digit manufacturing industries

How Did Globalization Affect the Unionized Workers?

Background:
unions ⇒ operate in imperfectly comp markets
⇒ industries with economic rents

firms and workers ⇒ bargain over wages and employment
⇒ both want a larger chunk of the economic profit

1st Mechanism
⇒ most unions operate in imperfectly comp. markets (durable goods)
⇒ “economic rents”
⇒ union workers bargain for rents and enjoy higher wages
⇒ union workers in that typical sector are mostly high school graduates
⇒ foreign firms entry into the market ⇒ reduce the market power of domestic firms
⇒ foreign firms capture rents
Result:

⇒ rents↓, wages of and employment levels of workers ↓
⇒ displaced workers ⇒ move to competitive sectors with low wages

2nd Mechanism

⇒ increase in the ease of substitution btw foreign and domestic markets
⇒ due to outsourcing and etc.
⇒ unions become weaker

Evidence:

significant decline in the unionization rate over the past 30 years
early 1980s ⇒ radical changes in wage setting behavior
⇒ wage freezes and cuts in many sectors exposed to trade in the early 1980s
⇒ most recently in the Fall of 2003, UAW workers have made big concessions to Big Three (GM, Chrysler and Ford) to keep their jobs.
Skill Biased Technological Change (SBTC):

- trade and globalization cannot account for all the rise in wage inequality something else was going on SBTC


- intensive skill biased tech change

  ⇒ skilled workers becoming more productive at their existing jobs

  **example:** widespread adoption of computers

  engineers ⇒ instead of running experiments to measure with traffic congestion just run simulations
  architects ⇒ instead of building physical models now work with virtual models

- extensive skilled biased tech change

  ⇒ skilled workers becoming more efficient at jobs previously done by the unskilled

  **example:** shift from assembly line to robotics in manufacturing

  ⇒ the use of robotics complicated jobs
  ⇒ demand for skilled workers ↑ ⇒ relative wage ↑
  ⇒ displaced workers transferring to remaining jobs

**Bottom-line:**

extensive skill biased tech change ⇒ increased the relative demand for skilled ⇒ driving up their relative wages

**Question:** Will Tech Change Continue to Raise Wage Inequality?

⇒ reverse of extensive-skill biased tech change
⇒ unskilled labor becoming more productive in jobs previously done by skilled labor

**example:**

⇒ secretaries
⇒ before we need to hire a web master
⇒ now our secretary can handle the web page of the department.

⇒ 19th century workers
⇒ mechanization of factories during the steam age has led to the replacement of highly skilled craftsmen with unskilled labor

**Prediction:**

⇒ as technology matures and becomes more standardized
⇒ the favorable position of the skilled can diminish
⇒ unskilled workers become more familiar with new technology as time goes by