

Why Haven't Global Markets Reduced Inequality?

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- Enormous increase in globalization last 20 years
 - more *trade* of goods/services between countries
e.g., fruit and vegetables in your supermarket
 - more *production* of goods/services across national boundaries
e.g., call centers in Delhi
- caused by
 - decline in transport costs
 - decline in communication costs
 - removal of trade barriers (NAFTA, GATT, ...)

Globalization has promised

- prosperity to poorer countries
 - has often delivered: China and India
- to reduce gap between haves and have nots (inequality) in poorer countries
 - has not delivered

Mexico joined General Agreement on Tariffs and Trade in 1985

- tariffs fell by more than 50%
- foreign investment quadrupled
- white-collar wages rose by 13%
- blue-collar wages decreased by 14%

Similar story in many other countries,
particularly in Latin America

Why does reducing inequality matter?

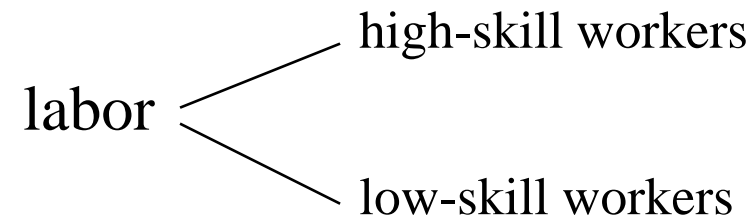
- egalitarian argument
- eradication of poverty
- political stability

- Is increased inequality in poor countries surprising?
- Yes - - contradicts *theory of comparative advantage*
 - goes back 200 years (David Ricardo)
 - has been impressively successful in explaining international trade patterns
 - predicts free trade should *reduce* inequality in poor countries

- Any theory of trade must answer:
Why do countries trade with each other?
- Theory of comparative advantage asserts:
 - trade because of *differences* across countries
 - differences in “factors of production” most important

Factors of production

– inputs into production process



capital (machinery, technology)

land

– focus today on *high-skill* and *low-skill* labor

Compare U.S. with Mexico

- U.S. has *both* more high-skill and more low-skill workers than Mexico (bigger population)
- *ratio* of high-skill to low-skill workers higher in U.S.
- so, U.S. has *comparative* advantage producing goods requiring high proportion of high-skill workers - - e.g., computer software
- Mexico has comparative advantage producing goods where skill doesn't matter so much - - e.g., corn

To see effect of globalization on production:

- look at production patterns *before* globalization (no trade)
- look at production *after* globalization
- compare the two

Before globalization (before trade)

- U.S. companies produce *both* software and corn (both demanded by American consumers)
- Mexican companies also produce both goods
- U.S. corn production “inefficient”
 - American labor force better suited to software (high-skill)
- Mexican software production “inefficient”
 - Mexican labor force better suited to corn

- low-skill Mexican workers *hurt* by Mexican software production
 - not needed much for software
 - greatly needed for corn
 - if production diverted from corn to software, demand for low-skill labor *reduced*
 - downward pressure on low-skill wages
- similarly high-skill Mexican workers *benefit* from software production
 - puts them in higher demand

Suppose door for trade between U.S. and Mexico opens

- U.S. will shift production from corn to software – – will import corn from Mexico
- Mexico will shift production from software to corn production – – will import software from U.S.

So, Mexico now produces *more* corn and *less* software than before

- raises demand for low-skill workers
 - corn uses low-skill workers more intensively than does software
- reduces demand for high-skill workers
- so, low-skill wages *rise* and high-skill wages *fall*
- inequality *reduced*

Theory of comparative advantage remarkably successful historically

- in second half of 19th century
 - Europe - - relative abundance of low-skill labor
 - U.S. - - relative abundance of high-skill labor
- trade between U.S. and Europe increased dramatically
- inequality fell in Europe (and rose in U.S.)

But theory less successful for recent globalization

- (1) predicts that *greater* differences in skill ratios between countries imply *more* trade between them
- difference between U.S. and Chad much greater than that between U.S. and Mexico, and but little trade between U.S. and Chad
 - more generally, relatively little trade between rich industrialized nations and very poorest countries

(2) predicts decrease in inequality in poor countries

- this has not happened
- inequality increases in many countries (e.g., Mexico)
- seized on by anti-globalization movement
- even globalization supporters (e.g., Bill Clinton) argue education essential for low-skill labor to benefit

Alternative theory (in collaboration with M. Kremer)

- globalization = international *production*
 - Delhi call center
 - computers
 - designed in U.S.
 - programmed in Europe
 - assembled in China
- *many* skill levels (not just 2)
 - today: 4 levels
- production process consists of different *tasks*
 - “managerial” task - - sensitive to skill level
 - “subordinate” task - - less sensitive to skill

Two countries - - rich and poor

- rich country
 - workers of skill levels A and B
- poor country
 - workers of skill levels C and D
- $A > B > C > D$

(argument still holds if $C > B$)

- output produced by “matching” managers and subordinates
- amount of output depends on skill levels:

$$\text{Output} = M^2 S$$

M = skill-level of manager

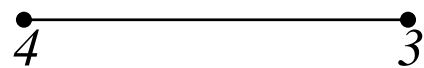
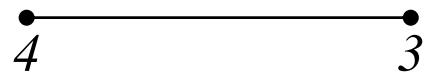
S = skill-level of subordinate

if $M = 4$ $S = 3$, output = $4 \times 4 \times 3 = 48$

- many producers compete to hire workers

- Different ways workers could be matched
- Assume two 3-workers and two 4-workers

- 3s could be matched with 4s (cross-matching):



$$\text{total output} = (4^2 \times 3) + (4^2 \times 3) = 96$$

- or 3 could be matched with 3, and 4 with 4 (homogeneous-matching):

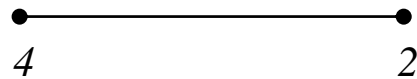


$$\text{total output} = (3^2 \times 3) + (4^2 \times 4) = 91$$

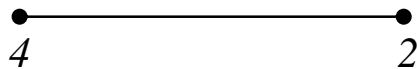
- competition ensures matching pattern maximizes output
- so, in this case, we expect *cross-matching*

- Suppose instead two 2-workers and two 4-workers

- 2 s could be matched with 4 s (cross-matching):



$$\text{total output} = (4^2 \times 2) + (4^2 \times 2) = 64$$



- or could have homogeneous-matching



$$\text{total output} = (4^2 \times 4) + (2^2 \times 2) = 72$$

- here expect *homogeneous-matching*

- because two tasks (managerial, subordinate) *differentially* sensitive to skill, argument for *cross-matching*
 - higher skill in managerial position
 - lower skill in subordinate position
- But if skill levels *too* different, then *homogeneous-matching* better
 - tasks are *complementary*
 - even very high-skill manager has low productivity if matched with very low-skill subordinate

Pattern of matching depends on skill levels of workers

$$\underbrace{A > B}_{\text{rich country}} > \underbrace{C > D}_{\text{poor country}}$$

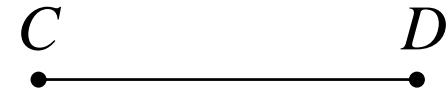
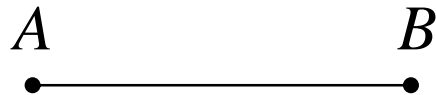
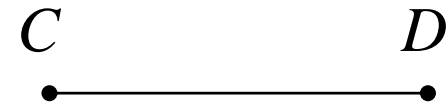
$$A = 13$$

$$B = 8$$

$$C = 6$$

$$D = 4$$

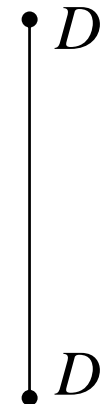
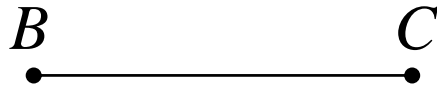
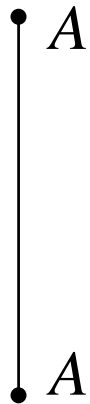
Pre-globalization (no international production)



As and Bs
cross – matched

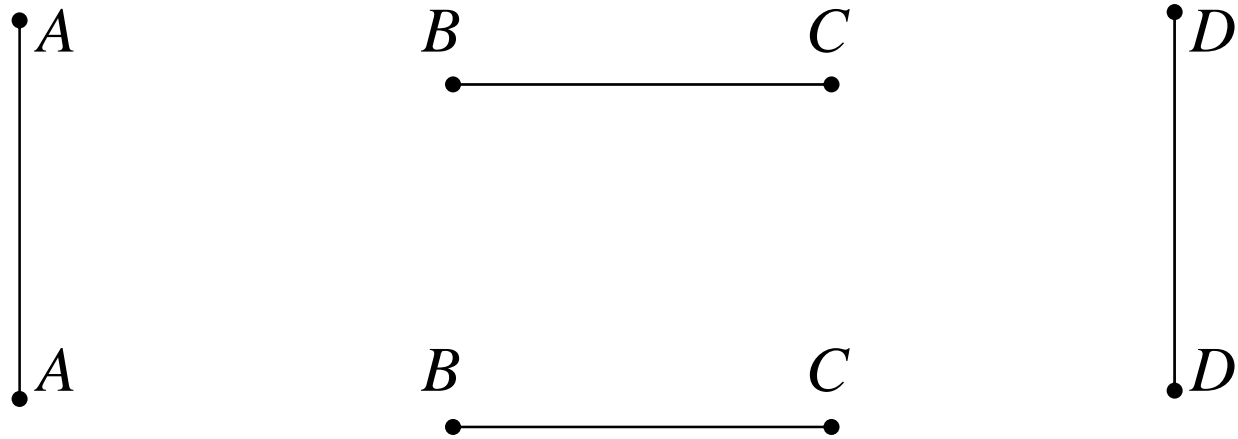
Cs and Ds
cross-matched

Post-globalization (international production possible)



Bs and Cs cross-matched

Ds homogeneously-matched



- What is effect of globalization on wages?
 - Competition implies worker paid according to productivity
 - Before globalization, *D*-workers benefited from being matched with higher-skill *C*-workers (this enhanced their productivity)
 - After globalization, *D*-workers left to homogeneously match
So *D*-worker wages *fall*
 - By contrast, *C*-worker wages *rise*
(because of new international matching opportunity with *B*s)
- So inequality in poor country is made *worse*

Strong policy implication:

Raise skill level (through education) of *D*-workers, so have international matching opportunities too

Who's going to pay?

- not producers
 - education raises workers' productivity
 - but then have to pay higher wages
- not workers themselves
 - can't afford to
- role for investment by *third parties*
 - domestic government
 - international agencies, NGOs
 - foreign aid
 - private foundations

Thus, if theory correct, right course of action:

- *not* to stop globalization

- allow low-skill workers share benefits by investing in their training