

# 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
  - more *production* of goods/services across national boundaries
- caused by
  - decline in transport costs
  - decline in communication costs
  - removal of trade barriers

## Globalization has promised

- prosperity to emerging economies
  - has often delivered: China and India
- to reduce gap between haves and have nots (inequality) in emerging economies
  - has not delivered
- In fact, in many emerging economies, inequality has *increased*
  - including China and India

- Much in news about inequality
  - mostly about growing inequality in *rich* countries
- My concern today is with increased inequality in *emerging* economies
- Why does reducing inequality there matter?
  - egalitarian argument
  - eradication of poverty
  - political stability

- Is rise in inequality in emerging economies 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 emerging economies
- Because that theory is so important, worth reviewing *why* it makes this prediction

- Theory of comparative advantage asserts:  
important difference between countries is in their  
relative endowments of “factors of production”  
i.e., the inputs to production
- Assume 2 factors: high-skill labor and low-skill labor

## Compare rich country with emerging economy

- *ratio* of high-skill to low-skill workers higher in rich country
- so, rich country has *comparative* advantage producing goods requiring high proportion of high-skill workers - - e.g., computer software
- emerging economy has comparative advantage producing goods where skill doesn't matter so much - - e.g., rice

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)

- companies in rich country produce *both* software and rice  
(both demanded by rich country consumers)
- companies in emerging economy also produce both goods
- emerging economy's software production "inefficient"
  - emerging economy's labor force better suited to rice

- low-skill workers in emerging economy *hurt* by that country's software production
  - not needed much for software
  - greatly needed for rice
  - if production diverted from rice to software, demand for low-skill labor *reduced*
  - downward pressure on low-skill wages
- similarly high-skill workers in emerging economy *benefit* from software production
  - puts them in higher demand

Suppose door for trade between rich country and emerging economy opens

- rich country will shift production from rice to software – – will import rice from emerging economy
- emerging economy will shift production from software to rice – – will import software from rich country

So, emerging economy now produces *more* rice and *less* software than before

- raises demand for low-skill workers
  - rice 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 19<sup>th</sup> 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
  - but, relatively little trade between rich industrialized nations and very poorest countries (e.g., Malawi)
- (2) predicts decrease in inequality in emerging economies
  - this has not generally happened

# Alternative theory (in collaboration with M. Kremer)

- globalization = international *production*
  - computers
    - designed in U.S.
    - programmed in Europe
    - assembled in China
- *many* skill levels (not just 2)
  - today: 4 levels

# Two countries - - one rich, one emerging

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

- 

$$A > B > C > D$$

(argument still holds if  $C > B$  )

- wages will depend on how workers of different skill levels “matched” together to produce output



- production process consists of different *tasks*
  - “managerial” task - - sensitive to skill level
  - “subordinate” task - - less sensitive to skill
- output produced by “matching” managers and subordinates
- amount of output depends on skill levels:

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

$M$  = skill-level of manager

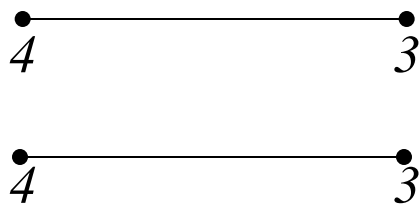
$S$  = skill-level of subordinate

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

- many producers compete to hire workers
  - ensures that matching is efficient
  - ensures that workers paid according to productivity

- 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):

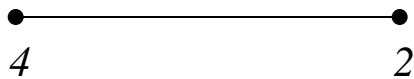


$$\text{total output} = (3^2 \times 3) + (4^2 \times 4) = 91$$

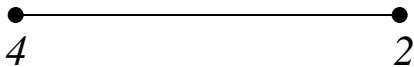
- competition ensures matching pattern maximizes output
- so, in this case, we expect *cross-matching*

- 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
- Matching pattern that arises strikes balance between these two forces
  - depends on available distribution of skills

Apply this to our two countries

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

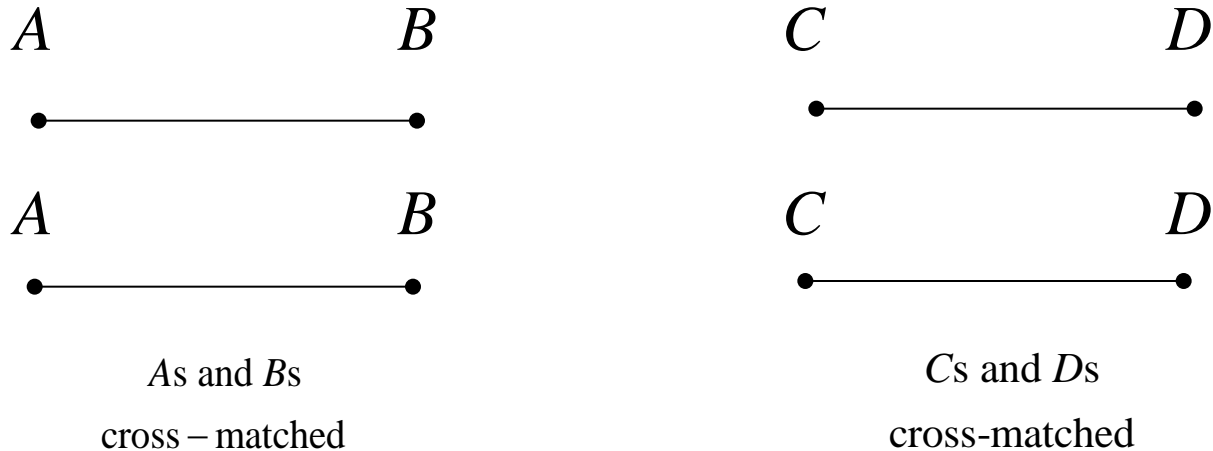
$$A = 13$$

$$B = 8$$

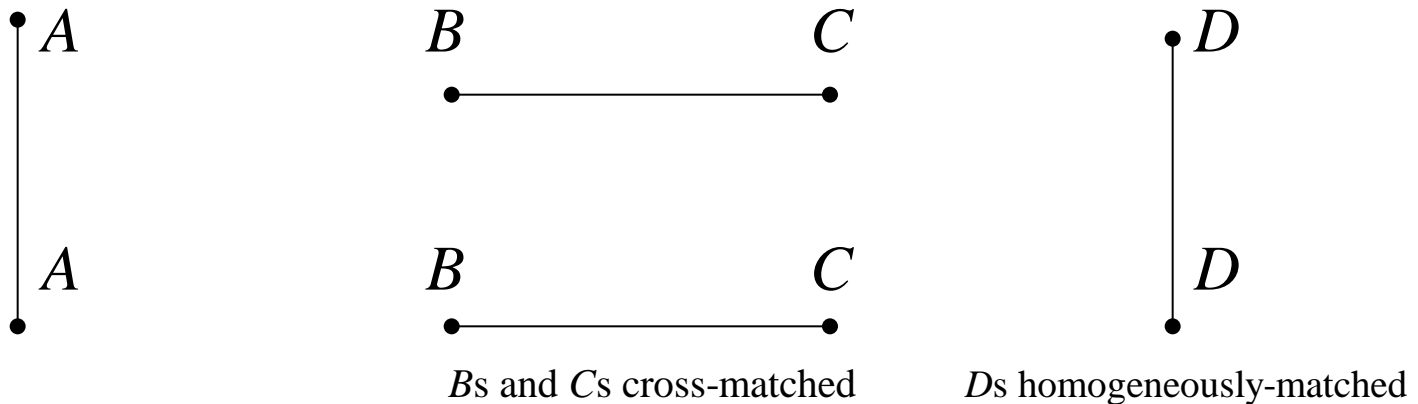
$$C = 6$$

$$D = 4$$

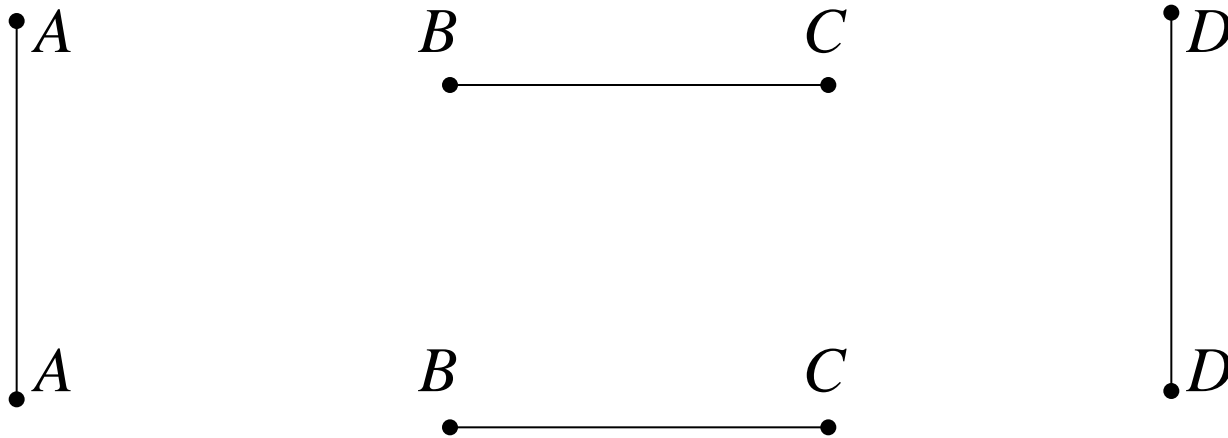
## Pre-globalization (no international production)



## Post-globalization (international production possible)



- Similar conclusion for other skill distributions
  - what's important is that *D*-worker's skill not high enough to match with *B*- or *A*- workers



- 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 emerging country is made *worse*

# Strong policy implication:

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

Who's going to pay?

- not workers themselves
  - probably can't afford to
- not producers
  - training raises workers' productivity
  - but then have to pay higher wages
- 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