Why Haven’t Global Markets Reduced Inequality?

E. Maskin
Institute for Advanced Study, Princeton
• 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
  high-skill workers
  low-skill workers
labor
  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):

    \[
    \begin{array}{c}
    4 \\
    \hline
    3 \\
    \hline
    4
    \end{array}
    \]

    total output = \( 4^2 \times 3 \) + \( 4^2 \times 3 \) = 96

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

    \[
    \begin{array}{c}
    4 \\
    \hline
    3 \\
    \hline
    4
    \end{array}
    \]

    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):

    total output = \( (4^2 \times 2) + (4^2 \times 2) = 64 \)

  – or could have homogeneous-matching

    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

\[ A > B > C > D \]

*rich country* \hspace{1cm} *poor country*

\[ A = 13 \]
\[ B = 8 \]
\[ C = 6 \]
\[ D = 4 \]
Pre-globalization (no international production)

As and Bs 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 \textit{fall}
  – By contrast, $C$-worker wages \textit{rise}
    (because of new international matching opportunity with $B$s)
• So inequality in poor country is made \textit{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