Lecture 5: Sources of Comparative Advantage

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Today’s Plan

• Housekeeping
• Reading quiz
• Simon-Ehrlich Wager
• Sources of Comparative Advantage
• Winners and Losers with Countries
Housekeeping

• Next Monday (September 15) 6:30 PM in Doheny 240
  • Jacob Soll V&V talk — extra credit
    • Send a paragraph or two to Josh and myself relating ideas in the talk to concepts in our class.
Reading Quiz (1)

• According to the Factor Endowment Theory:

A) A nation will export a product that uses a locally abundant resource in its production

B) A nation will import a product that uses a locally scarce resource in its production

C) A nation will import a product that uses a locally abundant resource in its production and will export a product that uses a locally scarce resource in its production

D) Both A and B
If the U.S is abundant in human capital (skills) related to scientific/engineering talent, but unskilled labor is scare; and India has a relative abundance in unskilled labor but lacks the skills, then according to the factor-endowment theory:

a) the U.S will export large amounts of high-end electrical machinery and equipment
b) India will export large amounts of high-end electrical machinery and equipment
c) the U.S will export large amounts of apparel and toys
d) India will import large amounts of apparel and toys.
Reading Quiz (3)

• According to Stolper/Samuelson:
  • A. The demand curve moves left when a complementary product increases in price
  • B. When the price of a product increases, so does the income earned by owners of the factor of production used intensely to produce that product.
  • C. Tariffs and quotas are substitutes -- i.e. they achieve very similar effects
  • D. Factors of production decline in productivity according to the marginal rate of transformation
Commodity Prices: Falling or Rising?

- Paul Ehrlich: Author of *The Population Bomb*
  - Predicted mass famines, “age of scarcity”
- Julian Simon: “Cornucopian” theory
  - Shortages -> brief increase in price -> innovation -> low prices
    - ex: copper

- The wager: whether a set of 5 metals would rise or fall in price between 1980 and 1990.
  - Simon won
  - Though over longer time periods and more commodities he likely would have lost
Factor Endowments Theory

• It is efficient to make something when inputs are cheap
• Inputs are cheap when they are abundant
• So countries make a produce efficiently when that product requires factors of production that are locally abundant

• Note: Abundance is relative, rather than absolute.
Factor Endowments Theory

Differences in relative resource endowments ➔ Differences in relative resource prices ➔ Differences in relative product prices ➔ Pattern of comparative advantage
What are the three archetypical factors of production?

• A. Minerals, Oil, and Water
• B. Land, Labor, and Capital
• C. Steel, Tractors, and Factories
• D. Transportation, Housing, and Industry
Who has what?

- What type of countries are capital abundant?
- Answer: Rich countries (especially small, scarcely populated ones)
  - e.g. Lichtenstein, Denmark
- What type of countries are land abundant?
  - Answer: Big countries & natural-resource rich countries (particularly poor and scarcely populated ones)
  - e.g. Mongolia, Sudan
- What type of countries are labor abundant?
  - Populous countries (especially small, poor ones)
  - e.g. Philippines, Bangladesh
Capital Stock per Worker in 1997

<table>
<thead>
<tr>
<th>Industrial Country</th>
<th>1997</th>
<th>Developing Country</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>$77,429</td>
<td>South Korea</td>
<td>$26,635</td>
</tr>
<tr>
<td>Germany</td>
<td>61,673</td>
<td>Chile</td>
<td>17,699</td>
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<tr>
<td>Canada</td>
<td>61,274</td>
<td>Mexico</td>
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<td>France</td>
<td>59,602</td>
<td>Turkey</td>
<td>10,780</td>
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<tr>
<td>United States</td>
<td>50,233</td>
<td>Thailand</td>
<td>8,106</td>
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<tr>
<td>Italy</td>
<td>48,943</td>
<td>Philippines</td>
<td>6,095</td>
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<tr>
<td>Spain</td>
<td>38,897</td>
<td>India</td>
<td>3,094</td>
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<tr>
<td>United Kingdom</td>
<td>30,226</td>
<td>Kenya</td>
<td>1,412</td>
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</tbody>
</table>

*In 1990 international dollar prices*
# Index of Hourly Manufacturing Wages (US = 100)

<table>
<thead>
<tr>
<th>Country</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>173</td>
</tr>
<tr>
<td>Germany</td>
<td>142</td>
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<tr>
<td>Sweden</td>
<td>132</td>
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<td>Austria</td>
<td>130</td>
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<tr>
<td>Canada</td>
<td>109</td>
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<tr>
<td>Japan</td>
<td>83</td>
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<tr>
<td>Hong Kong</td>
<td>24</td>
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<tr>
<td>Brazil</td>
<td>21</td>
</tr>
<tr>
<td>Mexico</td>
<td>11</td>
</tr>
</tbody>
</table>
Why does Russia have a comparative advantage producing wheat?

- A. Because they have abundant labor
- B. Because they have abundant land
- C. Because they have abundant capital
- D. Because all factors of production are scarce there, making them efficient by necessity.
- E. Sputnik
Why does China have a comparative advantage making T-Shirts?

• A. Because they have abundant labor
• B. Because they have abundant land
• C. Because they have abundant capital
• D. A&B
• E. Because all factors of production are scarce there, making them efficient by necessity.
What happens as wages (and wealth generally) rise in China?

• A. Labor becomes comparatively more abundant
• B. Capital becomes comparatively more abundant
• C. They gain a comparative advantage in more capital-intensive goods.
• D. They lose (some of) their comparative advantage in labor-intensive goods.
• E. B & C & D
• F. All of the Above
If wages (and wealth generally) continue to rise in China, what should we expect?

• A. They (mostly) stop making t-shirts.
• B. They make more and more electronics
• C. They start to do more R&D and less manufacturing
• D. Agriculture becomes a larger share of the economy
• E. A, B & C
Political Institutions: Why Politics is Most of This Story

• How do political institutions shape comparative advantage?
• Governments can invest in health (labor), education (human capital), and infrastructure (physical capital)
• Governments provide rule of law
  • Creates comparative advantage in transaction-intensive industries
  • Ex: Britain’s legal services industry
  • Ex: Wall Street
• Also, talented people don’t want to live in repressive states
  • Scientists and intellectuals fled the Soviet Union for Europe and the US
Political Institutions

Figure 1: Democracy\(^*\) and GDP per capita positively correlated—MENA is the exception

Source: IMF, World Economic Forum WEF’s Voice and Accountability Index
Winners and Losers from Trade

• Global price vs. Local price

• Before trade, goods made with locally SCARCE factors of production are really expensive (local price > global price)

• Before trade, goods made with locally ABUNDANT factors of production are really CHEAP (local price < global price)

• When a country opens up to trade, the local price moves toward the global price.
Winners and Losers from Trade (2)

• Trade drives down the domestic price of products made with locally scarce factors of production.

• Trade increases the price of products made with locally abundant factors of production.
Stolper-Samuelson Theory

- An increase in the price of a product:
  - Increases the income earned by the resources used intensively in its production
- A decrease in the price of a product
  - Reduces the income of the resources that are used intensively in its production

- Some people will lose from free trade, even if the country overall is made better off.
Stolper-Samuelson Theory

• Who benefits from trade?
  • Owners of locally abundant factors of production

• Who gets hurt by trade?
  • Owners of locally scarce factors of production
What is the “price” of a factor of production?

- The “price” of labor is...
  - wages
- The “price” of land is...
  - The rental or purchase price of land, or the price of rights to mineral extraction, etc.
- The “price” of capital is...
  - the interest rate
    - What do you have to pay for the money you borrowed to build the factory?
    - OR: What kind of interest would you be earning on your money if it wasn’t tied up in that factory?
When Bangladesh opens up to trade, who benefits and who gets hurt?

- A. Owners of capital benefit, owners of labor (i.e. workers) get hurt.
- B. Owners of labor (i.e. workers) benefit, owners of capital get hurt.
- C. Owners of both capital and labor benefit
- D. Owners of both capital and labor get hurt
- Hint: Bangladesh is labor abundant and capital scarce

• Why?
When Mongolia opens up to trade, who benefits and who gets hurt?

- A. Landowners get hurt, capital owners benefit
- B. Landowners benefit, owners of capital get hurt.
- C. Owners of both capital and labor benefit
- D. Owners of both capital and labor get hurt
Looking Ahead to Thursday

- Name at least 2 interest groups in the US that are generally opposed to free trade. Why would they be opposed?
  - Think about factor Stolper-Samuelson