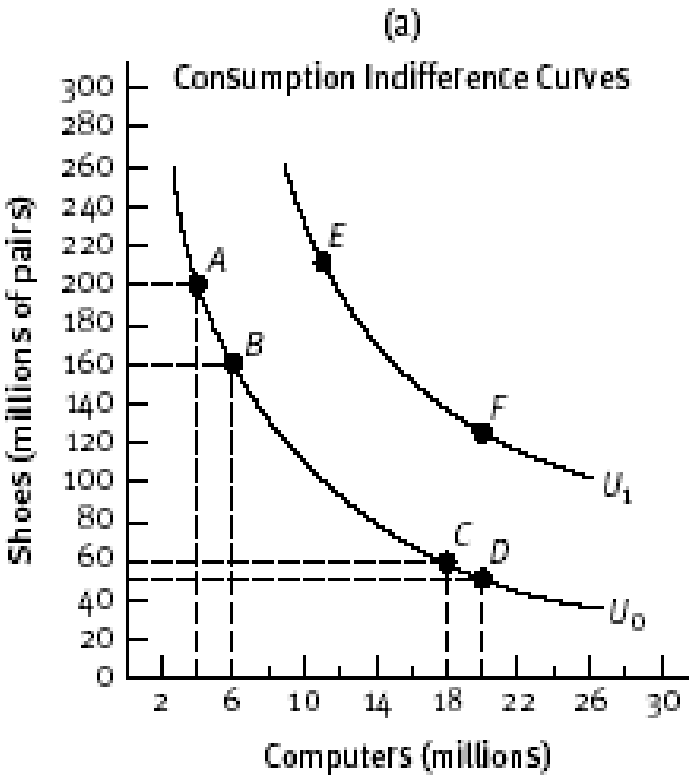
International Trade Theory

Lecture summary

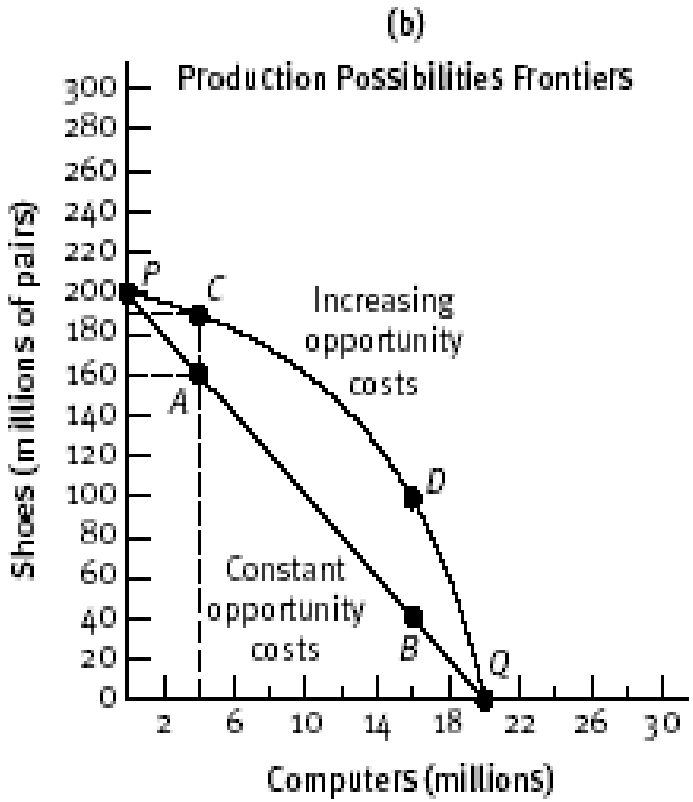
1. Three Building Blocks of Economics
    - Consumption indifference curves
    - Production Possibility Frontiers
    - Optimal production/consumption in autarchy
2. Ricardian Comparative Advantage
3. Neoclassical Model of Trade
    - Increasing opportunity costs
    - Heckscher-Ohlin Theorem
    - Stolper-Samuelson Theorem

1. Consumption Indifference Curves



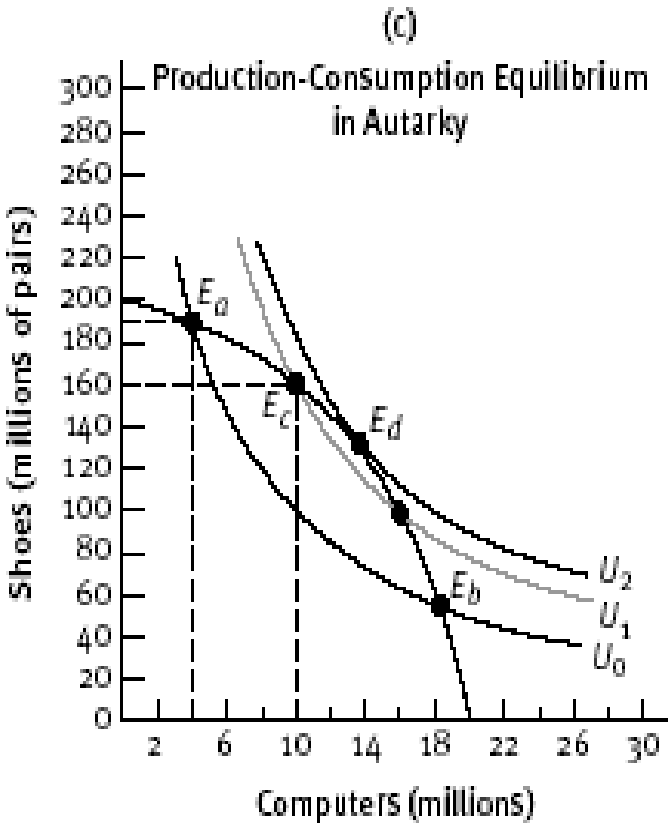
- Different combinations of goods leave you equally happy (indifferent).
- Aggregate all people in the nation, to get a national indifference curve.
- Why is the curve convex? (Declining marginal utility).
- Anything that permits a movement to a higher curve (e.g. from U_0 to U_1) is a good thing .

Production Possibility Frontier



- The frontier depicts the various combinations of goods that a country can produce when it fully exploits its resources.
- The slope is negative due to opportunity costs: the cost of increasing production of one good measured in terms of foregone production of the other.
- Constant vs. increasing opportunity costs (decreasing returns to scale).

Optimal production-consumption



- Optimality occurs at E_d : the point of tangency between the production possibility frontier and the highest possible indifference curve.
- This outcome efficiently utilizes nation's domestic resources and maximizes consumer happiness.
- Movement from E_a to E_c is like a free lunch. People are willing to give up about 90m shoes but only have to give up 30m, to get 6m more computers

2. Comparative Advantage

- Comparative advantage explains *why nations trade*

Hypothetical Output Levels, United States and Brazil

	Output per worker per year		Opportunity cost	
	Computers	*Pairs of shoes*	*1 computer*	*1 pair of shoes*
United States	50	200	4 pairs shoes	.25 computer
Brazil	5	175	35 pairs shoes	.03 computer

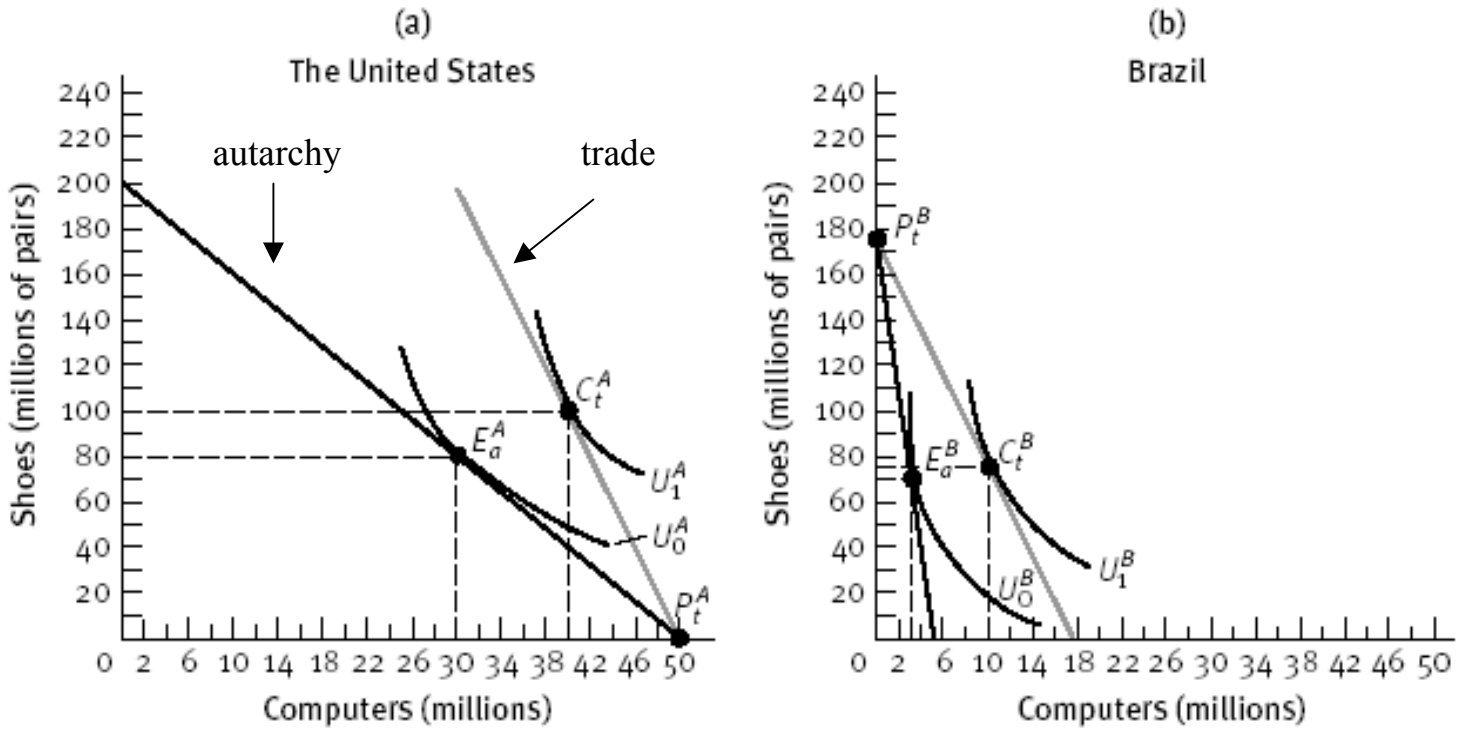
•The U.S. has an "absolute advantage" in both goods.

• But the U.S. has a "comparative advantage" in computers while Brazil has a comparative advantage in shoes.

• Why? Differences in opportunity costs. Ask yourself, "where it is relatively cheaper to produce a computer (or shoes) in terms of forgone production of shoes (computers)?

• Truisms: All countries have a comparative advantage in something. No country can have a comparative advantage in everything.

Ricardian Model of Trade



- E^A_a is optimum production/consumption for the U.S. in autarchy
- With full specialization U.S. moves to P^a_t
- With trade, consumption in the U.S. moves to C^a_t At this higher indifference curve, U.S. consumes more of both goods.
- Same holds for Brazil: complete specialization, then trade leads to improved outcome

Production/consumption before and after trade

(A) Autarchy

	Computers	Shoes
U.S.	**30**	**80**
Brazil	**3**	**70**
Total	**33**	**150**

Without trade, U.S. produces/consumes at E^A_a and Brazil produces/consumes at E^B_a

(B) Specialization

	Computers	Shoes
U.S.	**50**	**0**
Brazil	**0**	**175**
Total	**50**	**175**

Each nation then fully specializes according to its comparative advantage

(C) Trade

	Computers	Shoes
U.S.	**40**	**100 (imports)**
Brazil	**10 (imports)**	**75**
Total	**50**	**175**

US trades Brazil 10m computers for 100m shoes

3. Neoclassical Model

- Neoclassical model explains
  (1) why countries don't fully specialize (see text)
  (2) why they have comparative advantages in particular goods (Heckscher-Ohlin Theorem)
- Compare assumptions:

	Ricardian model	Neoclassical model
Similarities in assumptions		
Number of countries	2	2
Number of goods	2	2
Technology	Similar across countries	Similar across countries
Transportation costs	0	0
Differences in assumptions		
Factors of production	1 (labor)	2 or more (land, labor, capital)
Opportunity costs	Constant	Increasing
Differences in results of trade		
Specialization in production	Complete	Partial
Improved consumption	Yes	Yes

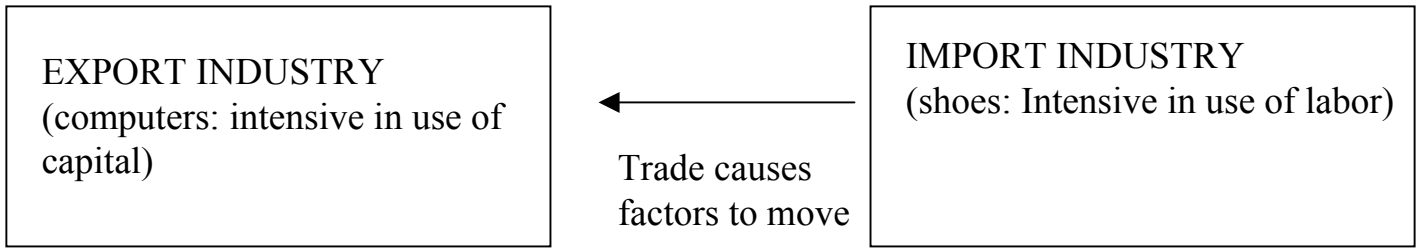
Heckscher-Ohlin Theorem

- The HO Theorem explains *why* countries have comparative advantages in certain goods.
- *Countries* differ in endowments of factors of production (U.S. is a capital-abundant nation while Brazil is a labor-abundant).
- *Goods* differ in their factor intensities (it takes more capital relative to labor to make computers; it takes more labor relative to capital to make shoes).
- When something it is abundant it is cheap.
- Thus, the HO Theorem: A country will export those goods whose production requires the intensive use of the factor of production that it has in relative abundance.

Stolper-Samuelson Theorem

- The SS Theorem shows the distributional effects of trade (who wins, who loses).
- Assume two industries (EXPORT and IMPORT) and two factors of production (LABOR and CAPITAL)
- Assume PERFECT inter-industry mobility of factors of production (Factors can move costlessly between the two industries).
- Then allow a movement to free trade from autarchy…

Stolper-Samuelson effects for the United States



With the move to free trade, the PRICE of computers increases, enhancing profits for firms in this industry. To expand output, export firms draw in factors from the import industry. But the computer industry requires more capital than labor.

With move from autarchy to free trade, the PRICE of shoes falls, decreasing profits for firms in this industry. Import firms contract production and lay off workers. But the shoe industry sheds more labor than capital.

In the overall (two industry) economy, the move to free trade produces a shortage of capital and a surplus of labor. The shortage of capital results from the fact that the export industry needs more capital than the import industry is able to provide. The surplus of labor results from the fact that the import industry sheds more labor than can be employed in the export industry. The returns to capital thus increase and the returns to labor fall.

Hence, the STOLPER-SAMSUELSON THEOREM: Free trade benefits the factor of production that is relatively abundant (capital in United States) and harms the locally scare factor (labor in the United States), regardless of industry in which it is employed.

Stolper-Samuelson Effects for the U.S. and Brazil

Stolper-Samuelson effects for the U.S

	Computer industry	Shoe Industry
Labor	Lose	Lose
Capital	Win	Win

Stolper-Samuelson effects for Brazil

	Computer industry	Shoe Industry
Labor	Win	Win
Capital	Lose	Lose