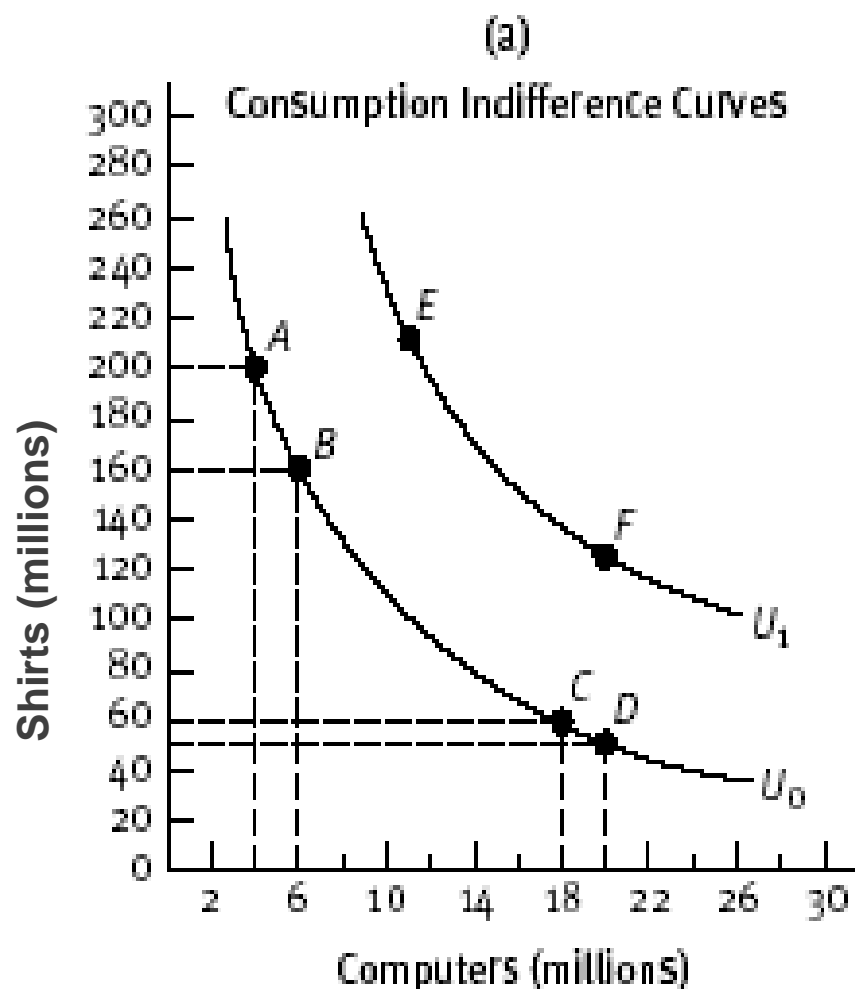


Classical International Trade Theory

- Ricardian Comparative Advantage
 - Explains why economists think trade is good
- Heckscher-Ohlin Theorem
 - Explains why countries produce and export the goods they do
- Stolper-Samuelson Theorem
 - Explains why people in poor countries tend to be more favorable to trade than people in rich countries

Building Blocks of Comparative Advantage: Consumption Indifference Curves



- Different combinations of goods leave people equally happy (“indifferent”).
- Why is the curve convex? (Declining marginal rate of substitution).
- Anything that permits movement to a higher curve (from U_0 to U_1) is a good thing because consumption of both goods increases.
 - Hint: free trade permits such a movement

Building Blocks: Production Possibility Frontiers (PPFs)

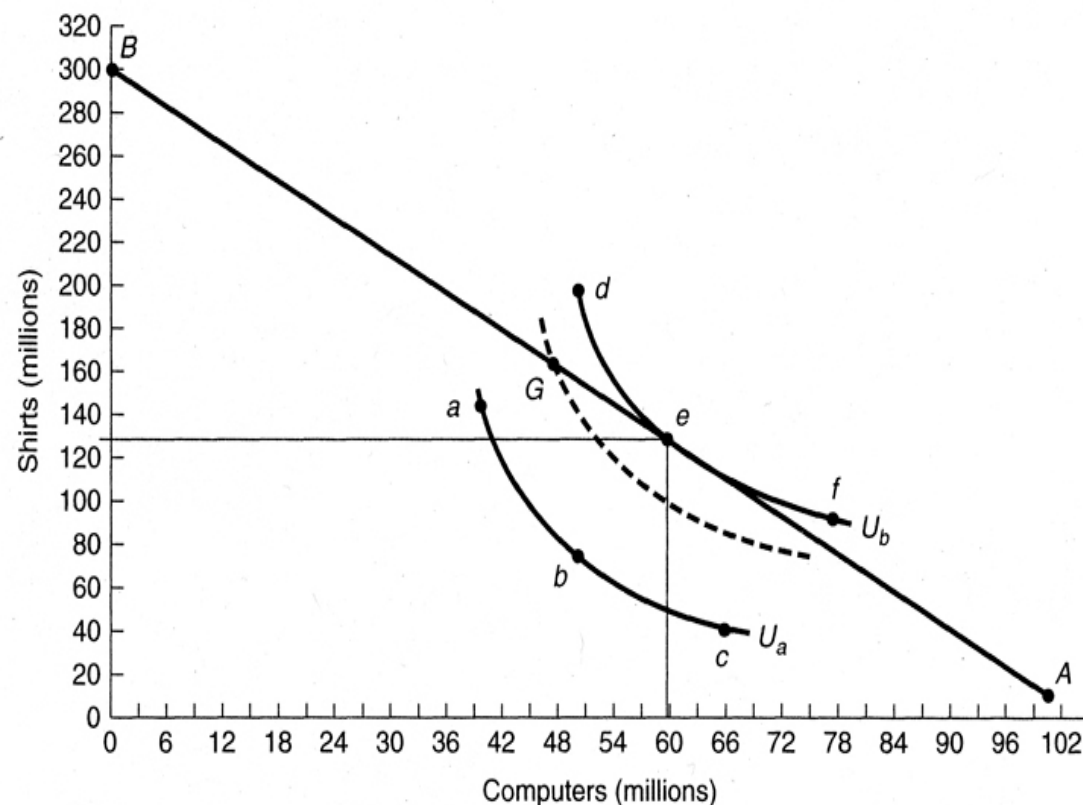


Figure 3.2 U.S. Production Possibility Frontier.

- Combinations of the two goods that can be produced when the U.S. fully uses its resources.
- Slope is negative due to opportunity costs (cost of increasing production of one good measured in terms of foregone production of the other)
- Each computer produced comes at a marginal opportunity cost of 3 shirts ($300/100=3$)

Building Blocks: Optimal production & consumption in autarky

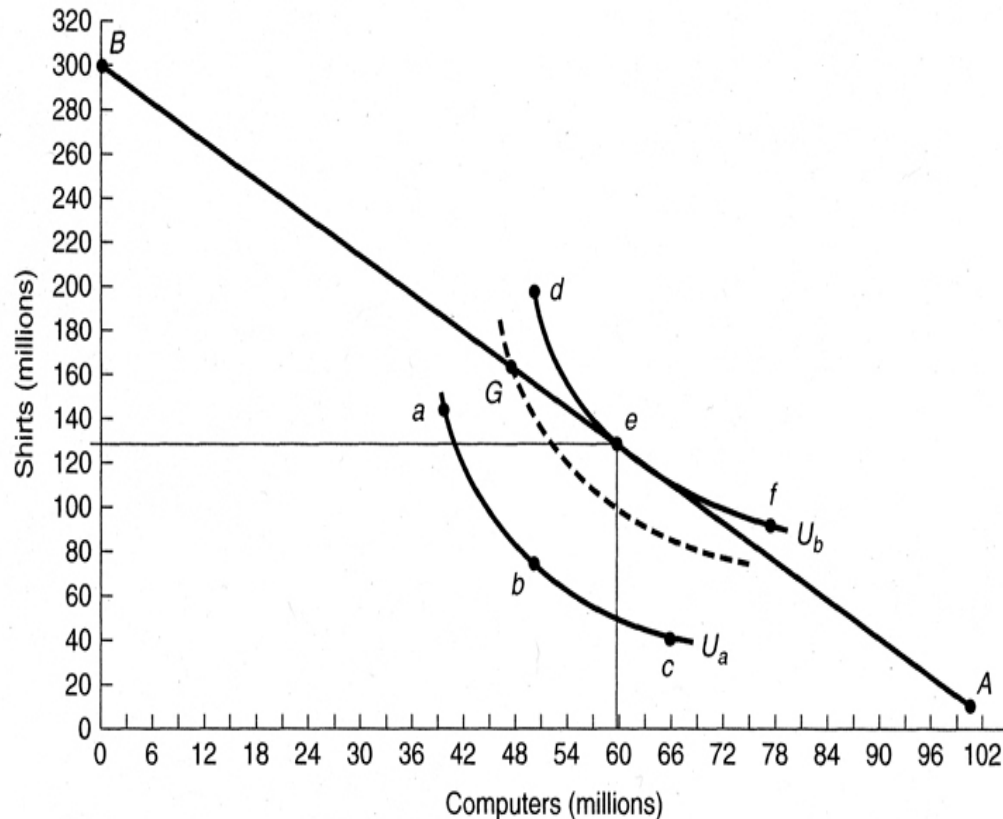
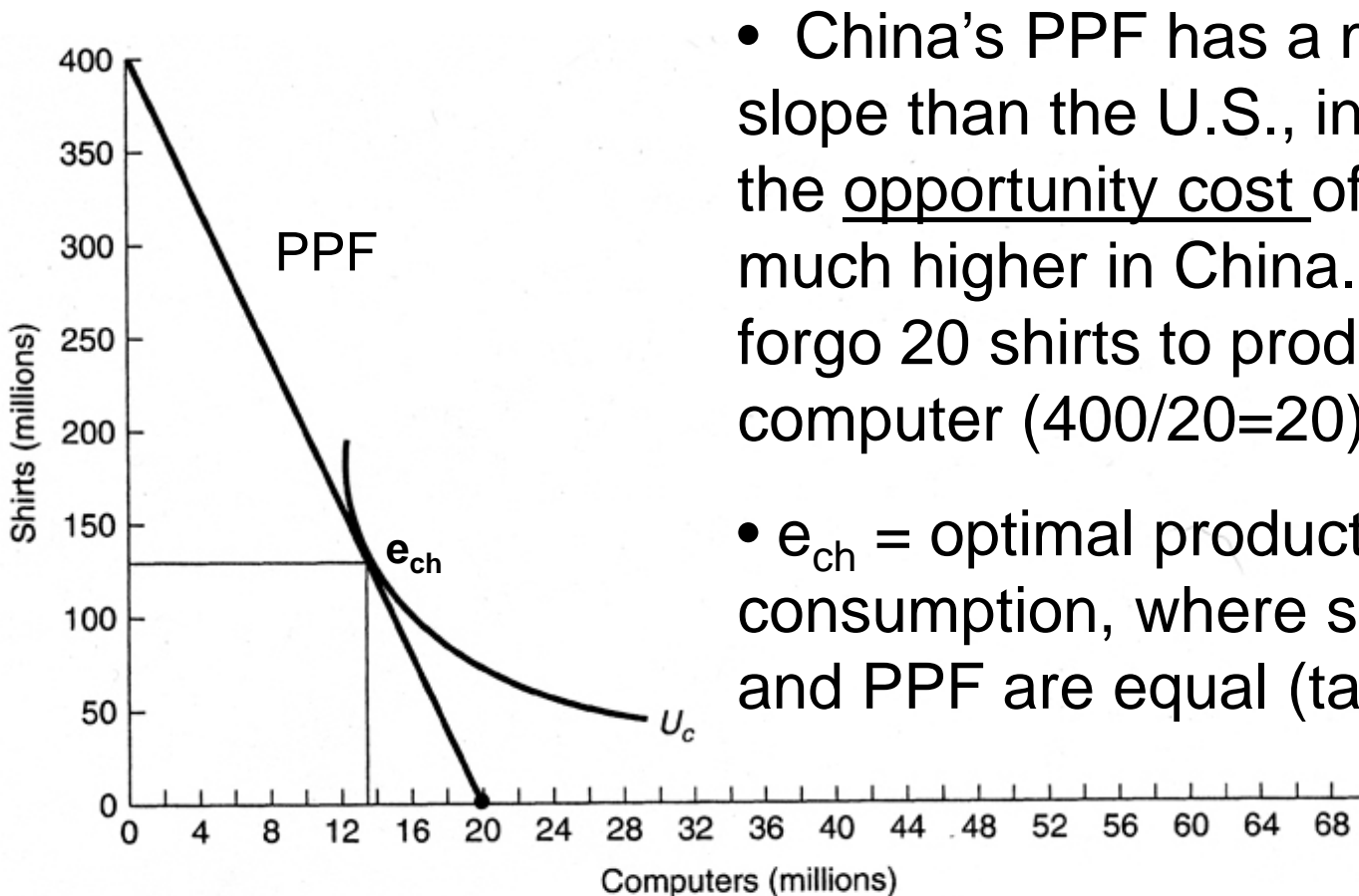


Figure 3.2 U.S. Production Possibility Frontier.

- For the U.S., optimality occurs at e: point of tangency between the production possibility frontier and the highest possible indifference curve.
- Why is this optimal? It efficiently utilizes nation's resources and maximizes consumer happiness

China's Production-Consumption in Autarchy

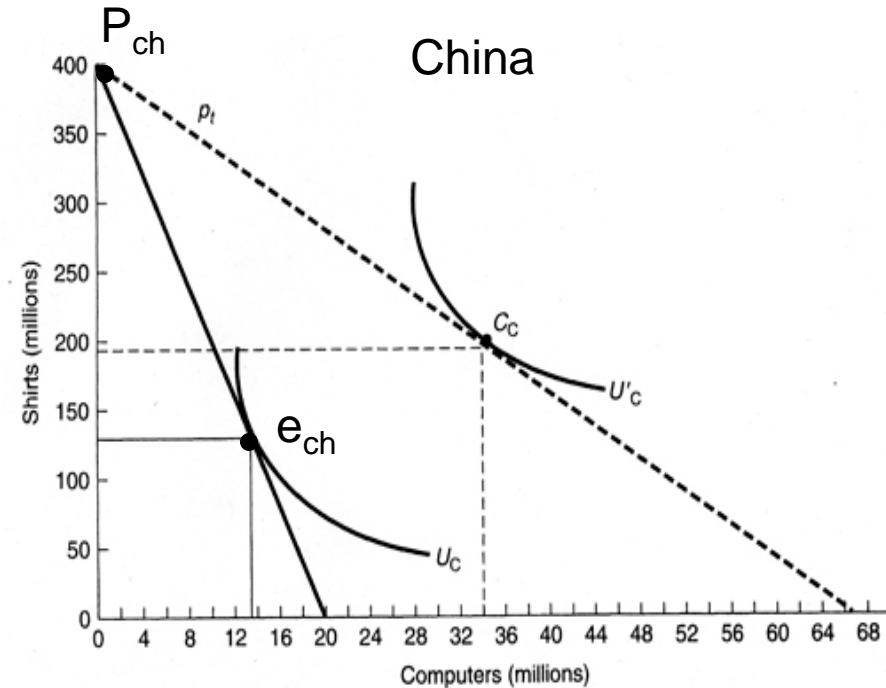
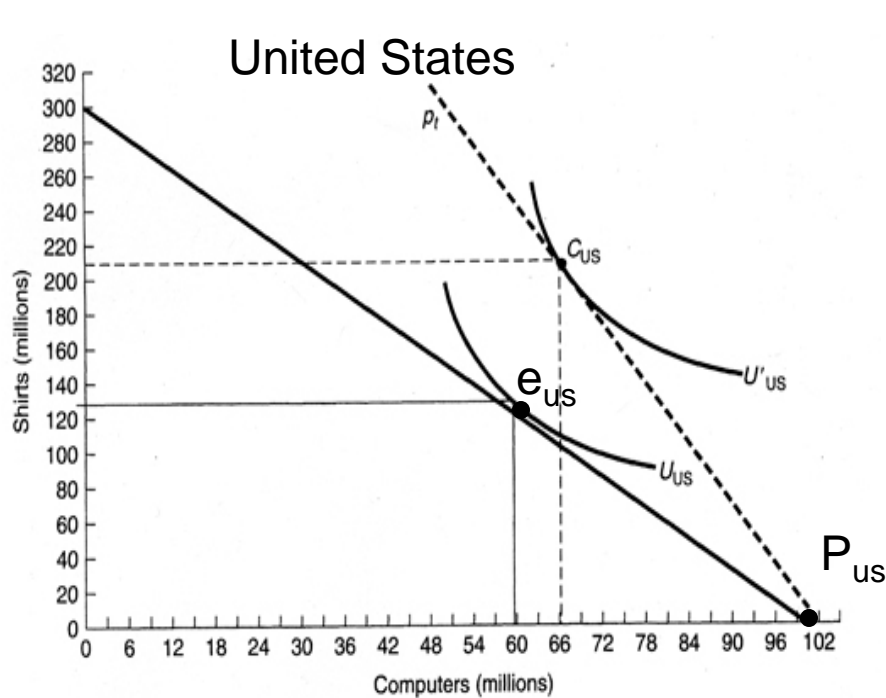


- China's PPF has a much steeper slope than the U.S., indicating that the opportunity cost of a computer is much higher in China. China must forgo 20 shirts to produce another computer ($400/20=20$).

- e_{ch} = optimal production and consumption, where slopes of U_c and PPF are equal (tangent)

Figure 3.3 China's Production Possibility Frontier.

Ricardian Model of Trade



- In autarky, e is optimum consumption for the U.S. and China, respectively.
- With full specialization U.S. moves to P_{us} and China moves to P_{ch}
- Then they trade at a rate of 6 shirts per computer: U.S. imports 150m shirts from China and exports 25m computers to China
- With trade, consumption in the U.S. moves to C_{us} . At this higher indifference curve, U.S. consumes more of both goods. Same holds for China: complete specialization, then trade, leads to improved outcome, C_c

Consumption before and after trade

(A) Autarchy

	Computers	Shirts
U.S.	60m	120m
China	13m	140m
Total	73m	260M

Without trade, U.S. consumes 60m computers and 120m shirts and China consumes 13m computers and 140m shirts

(B) Full Specialization

	Computers	Shirts
U.S.	100m	0
China	0	400
Total	100m	400m

Each nation then fully specializes according to its comparative advantage

(C) Free Trade

	Computers	Shirts
U.S.	75m	150 (imports)
China	25 (imports)	250m
Total	100m	400m

US trades China 25m computers for 150m shirts (6 shirts per computer)

Broader Principle is *Comparative Advantage*

- Every country gains from specializing in goods it produces relatively well and trading for goods it produces relatively less well.
- Where is it relatively cheaper to produce computers in terms of shirts forgone? (in the U.S)
- Where is it relatively cheaper to produce shirts in terms of computers forgone? (in China)

Opportunity Costs		
	1 computer	1 shirt
U.S.	3 shirts	0.33 computers
China	20 shirts	0.05 computers

Comparative Advantage

- Every country gains from specializing in producing goods it produces relatively well and trading for goods it produces relatively less well.
- Gains not dependent on having an “absolute” cost advantage. The U.S. could be better than China at making both computers and shirts.
- But the U.S. has a “comparative advantage” in computers while China has a comparative advantage in shirts due to differences in opportunity costs.
- Truisms: “All countries have a comparative advantage in something. No country can have a comparative advantage in everything.”

Heckscher-Ohlin Theorem

- The HO Theorem explains *why* countries have comparative advantages in certain goods. HO is based on two suppositions:
 1. Countries differ in endowments of factors of production
 - U.S. is a capital-abundant nation while China is labor-abundant).
 2. 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 shirts.

Heckscher-Ohlin Theorem (cont.)

- When something it is abundant it is cheap.
- Hence, the Heckscher-Ohlin Theorem:
“A country will export those goods whose production requires the intensive use of the factor of production that it has in abundance relative to the rest of the world.”

Stolper-Samuelson Theorem

- Illustrates the distributional effects of trade (who wins, who loses).
- Assumptions:
 - Two industries: an exporting industry (computers), an import-competing industry (shirts)
 - Two factors of production (labor and capital)

Stolper-Samuelson effects for the U.S

EXPORTING INDUSTRY: Computers.

Computers are intensive in use of capital, and the U.S. has more capital than China

IMPORT-COMPETING INDUSTRY: Shirts.

Shirts are intensive in use of labor, and the U.S. has less labor than China

With free trade, the price of computers increases, enhancing profits in this industry. To expand output, computer makers draw in factors from the import-competing industry. **But the computer industry requires more capital than labor.**

With trade, the price of shirts falls, decreasing profits in this industry. Shirt producers reduce production and lay off workers. **But the shirt industry sheds more labor than capital, and there are fewer jobs in the computer industry than in the shirt industry.**

Stolper-Samuelson effects for the U.S.

- Free trade thus produces a shortage of capital and a surplus of labor in the U.S.
 - The shortage of capital results from the fact that the computer industry needs more capital than the shirt industry is able to provide.
 - The surplus of labor results from the fact that the shirt industry sheds more labor than can be employed in the computer industry.
 - The returns to capital thus increase and the returns to labor fall.
- STOLPER-SAMUELSON THEOREM: Free trade benefits the factor of production that is relatively abundant (capital in U.S.) and harms the locally scarce factor (labor in the U.S.), 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	Shirt Industry
Labor	Lose	Lose
Capital	Win	Win

Stolper-Samuelson effects for China

	Computer industry	Shirt Industry
Labor	Win	Win
Capital	Lose	Lose

Winners and losers differ across countries because countries differ in their endowments of factors of production.

Lecture Summary

- Comparative Advantage explains why trade is beneficial for all nations
 - The average citizen does not have an understanding of comp. adv., which may explain why he/she is more likely to oppose trade than an economist
- Heckscher-Ohlin Theorem explains why countries produce and trade the goods they do.
- Stolper-Samuelson Theorem explains the winners and losers of trade within countries
 - Accounts for why the average citizen - a worker – is more positive about trade in poor countries than in rich countries