

Modern Trade Theory

Historical Development

- The Mercantilists
 - Concern: Regulation of domestic and international affairs to promote national interests
 - Solution: Strong foreign-trade sector
 - Favorable trade balance
 - Advocated government regulation of trade

Historical Development

Continued

- Criticism of Mercantilist policies
 - David Hume's **price-specie-flow** doctrine
 - Favorable trade balance possible only in the short run; over time it would automatically be eliminated
 - Adam Smith's "The Wealth of Nations"
 - Challenged the static view of wealth
 - Dynamic view
 - International trade increases the level of productivity within a country, which in turn increases world output

Why Nations Trade?

Absolute Advantage

- Adam Smith
 - Free trade and international division of labor
 - Cost differences govern movement of goods
 - Productivities of factor inputs represent the major determinant of production cost
 - Determination of competitiveness from the supply side of the market
 - Concept of cost: Labor theory of value
 - Labor is the only factor of production and is homogeneous
 - Cost depends on labor requirements

Absolute Advantage - Smith

- Principle of absolute advantage
 - Import goods in which a nation has an absolute cost disadvantage
 - Export those goods in which it has an absolute cost advantage
 - Canada exports Maple Syrup
 - Brazil Exports sugar

- David Ricardo: Comparative Advantage
 - Mutually beneficial trade **can** occur even when one nation is absolutely more efficient in the production of all goods
 - Less efficient nation: Specialize in and export the good in which it is relatively **less inefficient**
 - More efficient nation: Specialize in and export that good in which it is relatively **more efficient**

Adam Smith's Example

Absolute Advantage

	In the United States	In the Rest of the World
Productivity:		
Units of cloth per labor hour	0.25	1.0
Units of wheat per labor hour	0.5	0.4
Labor hours to make:		
1 unit of cloth	4.0	1.0
1 unit of wheat	2.0	2.5

Comparative Advantage

- The Ricardian model says differences in *productivity of labor* between countries cause productive differences, leading to gains from trade.
 - Differences in productivity are usually explained by differences in *technology*.
- The Heckscher-Ohlin model says differences in *labor, labor skills, physical capital and land* between countries cause productive differences, leading to gains from trade.

- Assumptions of Ricardo's model:
 - World consists of two nations, each using a single input to produce two commodities
 - Labor is the only input
 - Labor can move freely among industries within a nation but is incapable of moving between nations
 - Level of technology is fixed for both nations
 - Costs do not vary with level of production and are proportional to the amount of labor used

- Assumptions of Ricardo's model (cont.):
 - Perfect competition prevails in all markets
 - Free trade occurs between nations
 - Transportation costs are zero
 - Firms make production decisions to maximize profits; consumers maximize satisfaction through consumption decisions
 - There is no money illusion
 - Trade is balanced, no flows of money between nations

Ricardo's Example: No-Trade Relative Prices

	In the United States	In the Rest of the World
With no international trade:		
Price of cloth	2.0 W/C	0.67 W/C
Price of wheat	0.5 C/W	1.5 C/W

Production Possibilities Schedules

- Used to explain comparative advantage
 - Shows production combinations of two goods when all factor inputs are used most efficiently
 - Illustrates the maximum output possibilities
 - Opportunity Cost (Marginal rate of transformation)
 - Amount of one product a nation must sacrifice to get one additional unit of the other product

Trading Under Constant-Cost Conditions

- Principle of comparative advantage under constant opportunity costs
 - Basis for trade and direction of trade
 - Gains from trade
- Two reasons for constant costs:
 - Factors of production are perfect substitutes for each other
 - All units of a given factor are of the same quality

Trading Under Constant-Cost Conditions

Continued

- Basis for trade and direction of trade
 - Relative costs ([Figure 2.1](#))
 - Point A – U.S: 40 autos and 40 bushels of wheat
 - Point A' – Canada: 40 autos and 80 bushels of wheat
 - Relative cost of producing an additional auto
 - 0.5 bushels of wheat for the United States
 - 2 bushels of wheat for Canada
 - Direction of trade
 - United States specializing in and exporting autos
 - Canada specializing in and exporting wheat

Misconceptions About Comparative Advantage

1. Free trade is beneficial only if a country is more productive than foreign countries.
 - But even an unproductive country benefits from free trade by avoiding the high costs for goods that it would otherwise have to produce domestically.
 - High costs derive from inefficient use of resources.
 - The benefits of free trade do not depend on absolute advantage, rather they depend on comparative advantage: specializing in industries that use resources most efficiently.

Misconceptions About Comparative Advantage (cont.)

2. Free trade with countries that pay low wages hurts high wage countries.

- While trade may reduce wages for *some* workers, thereby affecting the distribution of income within a country, trade benefits consumers and other workers.
- Consumers benefit because they can purchase goods more cheaply (more wine in exchange for cheese).
- Producers/workers benefit by earning a higher income (by using resources more efficiently and through higher prices/wages).

Misconceptions About Comparative Advantage (cont.)

3. Free trade exploits less productive countries.

- While labor standards in some countries are less than exemplary compared to Western standards, they are so with or without trade.
- Are high wages and safe labor practices alternatives to trade? Deeper poverty and exploitation (e.g., involuntary prostitution) may result without export production.
- Consumers benefit from free trade by having access to cheaply (efficiently) produced goods.
- Producers/workers benefit from having higher profits/wages—higher compared to the alternative.

Trading Under Constant-Cost Conditions

Continued

- Production gains from specialization
 - Refer ([Figure 2.1](#))
 - United States moves from production point A to B, totally specializing in auto production
 - Canada totally specializes in wheat production by moving from A' to B'
 - Summary of production gains ([Table 2.4a](#))

Trading Under Constant-Cost Conditions

Continued

- Consumption gains from trade ([Figure 2.1](#))
 - Specialization and trade
 - Achieve consumption points outside domestic production possibilities schedules
 - Terms of trade: Rate at which its export product is traded for the other country's export product
 - Determines the set of posttrade consumption points
 - Defines the relative prices at which two products are traded
 - Trading possibilities line: Line tt represents the international terms of trade for both countries

Trading Under Constant-Cost Conditions

Continued

- Consumption gains from trade ([Figure 2.1](#))
 - Trade triangle: The triangle BCD ($B^1 C^1 D^1$ for Canada) showing the U.S.
 - Exports (along the horizontal axis),
 - Imports (along the vertical axis), and
 - Terms of trade (the slope)
 - Consumption gains from trade for each country and the world as a whole ([Table 2.4b](#))
 - Complete specialization
 - Exception: One of the countries is too small to supply the other with all of its needs

Trading Under Constant-Cost Conditions

Continued

- Distributing the gains from trade
 - Domestic cost conditions ([Figure 2.2](#))
 - Domestic cost ratios set the outer equilibrium terms of trade
 - Domestic cost-ratio line: The no-trade boundary
 - International terms of trade has to be better than or equal to the rate defined by domestic price line
 - Region of mutually beneficial trade is bounded by cost ratios

Trading Under Constant-Cost Conditions

Continued

- Equilibrium terms of trade
 - Mill's theory of reciprocal demand
 - Within the outer limits of the terms of trade, the actual terms of trade is determined by the relative strength of each country's demand for the other country's product ([Figure 2.2](#))
 - Importance of being unimportant
 - Larger nation attains fewer gains from trade while the smaller nation attains most of the gains

Trading Under Constant-Cost Conditions

Continued

- Terms-of-trade estimates
 - Commodity terms of trade (barter terms of trade)

$$\text{Terms of Trade} = \frac{\text{Export Price Index}}{\text{Import Price Index}} \times 100$$

- Improvement: Rise in export prices relative to import prices over a time period
- Deterioration: Rise in import prices relative to export prices over a time period
- Commodity terms of trade for selected countries ([Table 2.5](#))

Transportation Costs and Non-traded Goods

- The Ricardian model predicts that countries should completely specialize in production.
- But this rarely happens for primarily 3 reasons:
 1. More than one factor of production reduces the tendency of specialization (chapter 4)
 2. Protectionism (chapters 8–11)
 3. Transportation costs reduce or prevent trade, which may cause each country to produce the same good or service

Transportation Costs and Non-traded Goods (cont.)

- Non-traded goods and services (e.g., haircuts and auto repairs) exist due to high transportation costs.
 - Countries tend to spend a large fraction of national income on non-traded goods and services.
 - This fact has implications for the gravity model and for models that consider how income transfers across countries affect trade.

Empirical Evidence

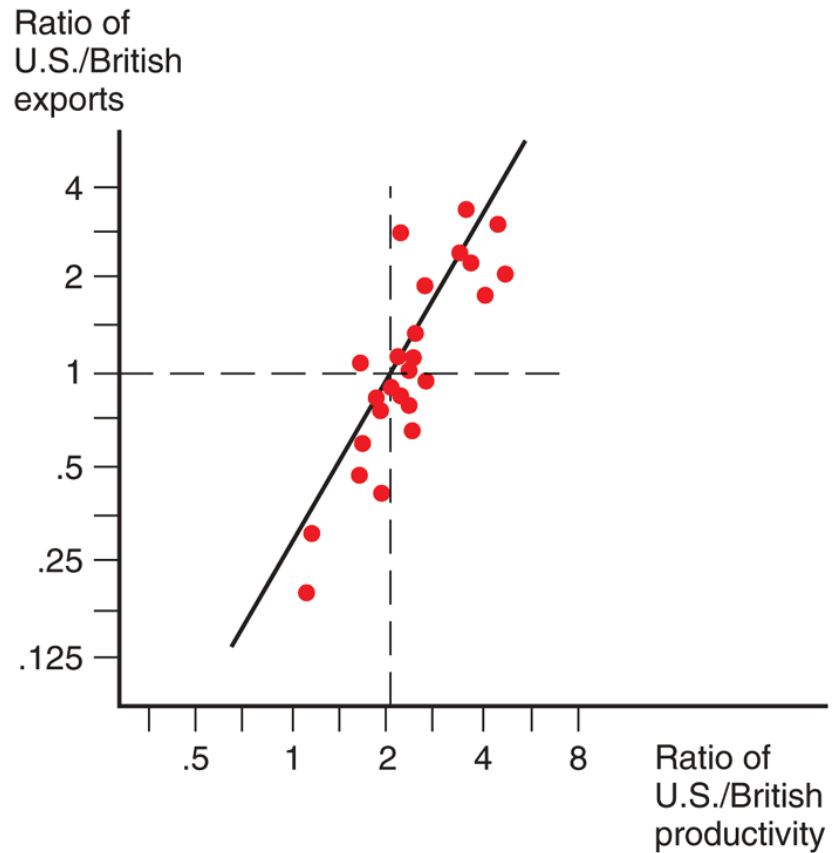
- Do countries export those goods in which their productivity is relatively high?
- The ratio of US to British exports in 1951 compared to the ratio of US to British labor productivity in 26 manufacturing industries suggests yes.
- At this time the US had an absolute advantage in *all* 26 industries, yet the ratio of exports was low in the least productive sectors of the US.

Empirical Evidence (cont.)

Figure 3-6

Productivity and Exports

A comparative study showed that U.S. exports were high relative to British exports in industries in which the United States had high relative labor productivity. Each dot represents a different industry.



Trading Under Increasing-Cost Conditions

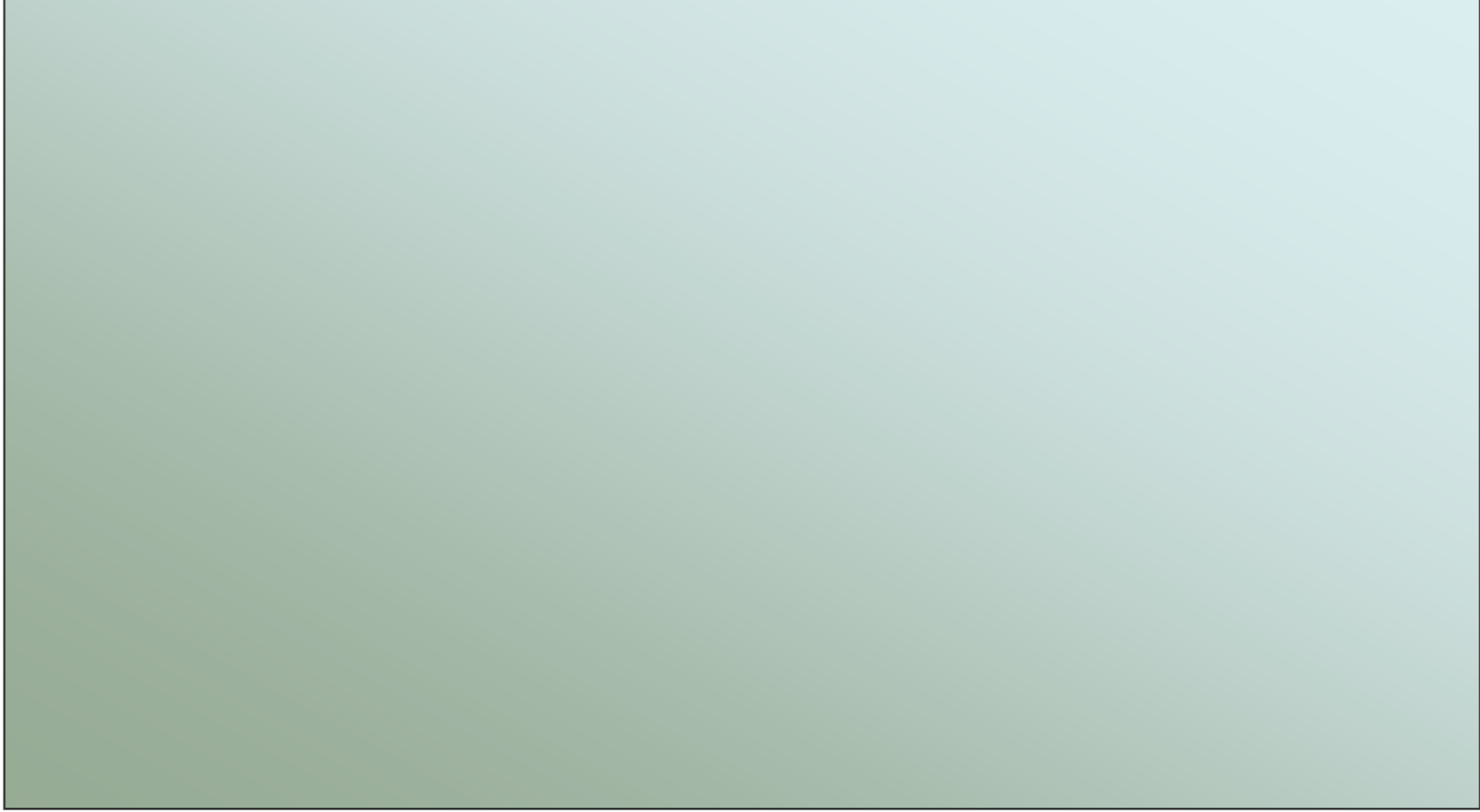
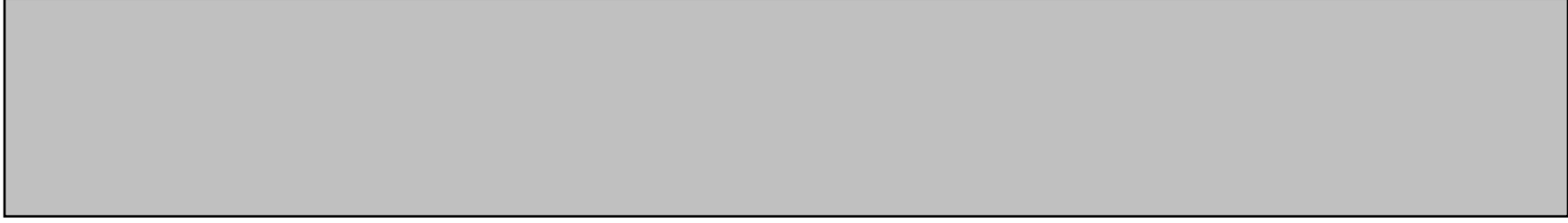
- Increasing opportunity costs
 - Concave production possibilities schedule ([Figure 2.4](#))
 - Principle of diminishing marginal productivity
 - Supply factors as well as demand factors have to be considered

Empirical Evidence on Comparative Advantage Continued

- Ricardo's theory: Limitations
 - Labor is not the only factor input
 - Allowance should be made for production and distribution costs where appropriate
 - Differences in product quality also explain trade patterns in certain industries

Comparative Advantage: Job Outsourcing

- Movement of factors of production around the globe
 - Weakens comparative advantage
 - Developments that caused major changes:
 - Strong educational systems produce skilled workers in developing nations, who work at lower cost
 - Internet technology
 - New political stability that permits free movement of technology and capital
 - American workers will encounter direct world competition at almost every job category



Summary

1. A country has a comparative advantage in producing a good if the opportunity cost of producing that good is lower in the country than it is in other countries.
 - A country with a comparative advantage in producing a good uses its resources most efficiently when it produces that good compared to producing other goods.
2. The Ricardian model focuses only on differences in the productivity of labor across countries, and it explains gains from trade using the concept of comparative advantage.

Summary (cont.)

3. When countries specialize and trade according to the Ricardian model; the relative price of the produced good rises, income for workers rises and imported goods are less expensive for consumers.
4. Trade is predicted to benefit both high productivity and low productivity countries, although trade may change the distribution of income within countries.
5. High productivity *or* low wages give countries a cost advantage that allow them to produce efficiently.

Summary (cont.)

7. Although empirical evidence supports trade based on comparative advantage, transportation costs and other factors prevent complete specialization in production.