# International Trade

# International Trade

- Internal or domestic trade are meant transactions taking place within the geographical boundaries of a nation or region. It is also known as intra-regional or home trade.
- International trade, on the other hand, is trade among different countries or trade across political frontiers.
- Inter-regional also refers to trade transactions within different regions of a country.

# Features

- Immobility of Factors

The degree of immobility of factors like labour and capital is generally greater between countries than within a country. Immigration laws, citizenship, qualifications, etc. often restrict the international mobility of labour.

- Heterogeneous Markets

In the international economy, world markets lack homogeneity on account of differences in climate, language, preferences, habit, customs, weights and measures, etc. The behaviour of international buyers in each case would, therefore, be different.

# Cotnd..

- Different national and political units

International trade takes place between differently cohered groups. The socio-economic and political environment differs greatly among different nations

- Different currencies

Another notable feature of international trade is that it involves the use of different types of currencies. So, each country has its own policy in regard to exchange rates and foreign exchange.

# Theory of Absolute Advantage-Adam Smith

- The trade theory that first indicated importance of specialization in production and division of labor is based on the idea of *theory of absolute advantage* which is developed first by Adam Smith in his famous book *The Wealth of Nations* published in 1776.
- **Absolute Advantage**: If a country or individual absolutely more efficient at production of a good than another country or individual, then we say that she has absolute advantage in the production of that good.

# Assumptions

- Factors of production can not move between countries.
- No barriers to trade in goods.
- Exports must be equal to imports
- Labor is the only relevant factor of production.
- Production exhibits constant returns to scale *Constant Returns to Scale (CRS)*

# Example

| | A | B |
|---|---|---|
| Cheese | 2 | 10 |
| Wine | 8 | 4 |

- A has absolute advantage in production of cheese as it takes fewer hours to produce a unit of cheese in A than in B.
- Since it takes less hours in B to produce wine, B has an absolute advantage in production of wine.

- Adam Smith’s theory: Countries should specialize in the production of goods in which they have an AA.
- So A will be better of it specializes in the production of C and
- B will be better of if it specializes in W.
- So they don’t need to produce both goods at home.

# Theory of Comparative Advantage- David Ricardo

- **Comparative Advantage**: If a country or individual is relatively more efficient in the production of a good than another country or individual then we say that she has comparative advantage in production of that good.
- Adam Smith's theory says that countries will be better of in specializing the good at which they have AA.
- But what happens if one of the countries has AA in production of both goods? Should they abandon trade?

# Example

| | A | B |
|---|---|---|
| Cheese | 6 | 12 |
| Wine | 2 | 18 |

# Contd..

- In this example, A has AA in production of both C and W.
- David Ricardo’s theory of comparative advantage which says that a country has a CA in a good if the good has a lower relative price in autarky than is found in the other country.
- This theory indicates that we need to look at the cost of product in each country before the trade(in autarky) and compare it with trade situation and compute gains/losses from trade.

# Contd..

- In the example above, A is 2 (12/6) times more efficient in production of C than B, while 9 times more efficient in production of W.
- Thus A has more AA in production of W compared to C.
- So, if trade takes place A will tend to produce more W as W is relatively cheaper in A than in B.

# Contd..

- What about B? According to theory of comparative advantage B should expand its production of C as the cheese production in B is relatively less costly.
- According to theory of comparative advantage B should expand its production of C as the cheese production in B is relatively less costly.
- How do we know this? We compare autarky relative prices. What is the relative price of W in autarky in A and B?

# Contd..

$$(\frac{P_W}{P_C})_A = \frac{W_A * 2}{W_A * 6} = 1/3 = 0.33$$

$$(\frac{P_W}{P_C})_B = \frac{W_B * 18}{W_B * 12} = 3/2 = 1.5$$

# Contd..

- So in autarky, W is cheaper in A than in B. Taking the reciprocals of above relative prices w e find the relative price of C in terms of W in A and B respectively.
- As it is clear from the equation above, C is cheaper in B than in A
- Hence, in autarky, opportunity cost of W in A is lower than that in B, indicating that A's producers are relatively more efficient in W rather than in C. The opposite holds true for B's producers. According the law of comparative advantage once trade allowed between the two countries, A should specialize in W and B in C.

# Resources and Trade
# Hecksher- Ohlin(HO)Model

# Introduction

- In the real world, while trade is partly explained by differences in labor productivity, it also reflects differences in countries' resources.
- The **Heckscher-Ohlin theory**:
  - Emphasizes resource differences as the *only* source of trade
  - Shows that comparative advantage is influenced by:
    - Relative **factor abundance** (refers to countries)
    - Relative **factor intensity** (refers to goods)
  - Is also referred to as the **factor-proportions theory**
- **Hecksher-Ohlin Theorem:** *The country that is abundant in a factor exports the good whose production is intensive in that factor*.

# A Model of a Two-Factor Economy

- Assumptions of the Model
  - An economy can produce two goods, cloth and food.
  - The production of these goods requires two inputs that are in limited supply; labor (*L*) and land (*T*).
  - Production of food is *land-intensive* and production of cloth is *labor-intensive* in both countries.
  - Perfect competition prevails in all markets.

# Effects of International Trade Between Two-Factor Economies

- Relative Prices and the Pattern of Trade
  - **Factor Abundance**
    - Home country is *labor-abundant* compared to Foreign country (and Foreign is *land-abundant* compared to Home) *if and only if* the ratio of the total amount of labor to the total amount of land available in Home is greater than that in Foreign:

$$L/T > L^*/T^*$$

      - Example: if America has 80 million workers and 200 million acres, while Britain has 20 million workers and 20 million acres, then Britain is *labor-abundant* and America is *land-abundant*.
    - In this case, the **scarce factor** in Home is land and in Foreign is labor.

# A Model of a Two-Factor Economy

- **Factor Intensity**
  - In a world of two goods (cloth and food) and two factors (labor and land), food production is *land-intensive*, if at any given wage-rental ratio the land-labor ratio used in the production of food is greater than that used in the production of cloth:

$$T_F/L_F > T_C/ L_C$$

    - Example: If food production uses 80 workers and 200 acres, while cloth production uses 20 workers and 20 acres, then food production is *land-intensive* and cloth production is *labor-intensive*.

# Effects of International Trade Between Two-Factor Economies

- Assumptions of the Heckscher-Ohlin model:
  - There are two countries (Home and Foreign) that have:
    - Same tastes
    - Same technology
    - Different resources
      - Home has a higher ratio of labor to land than Foreign does
  - Each country has the same production structure of a two-factor economy.

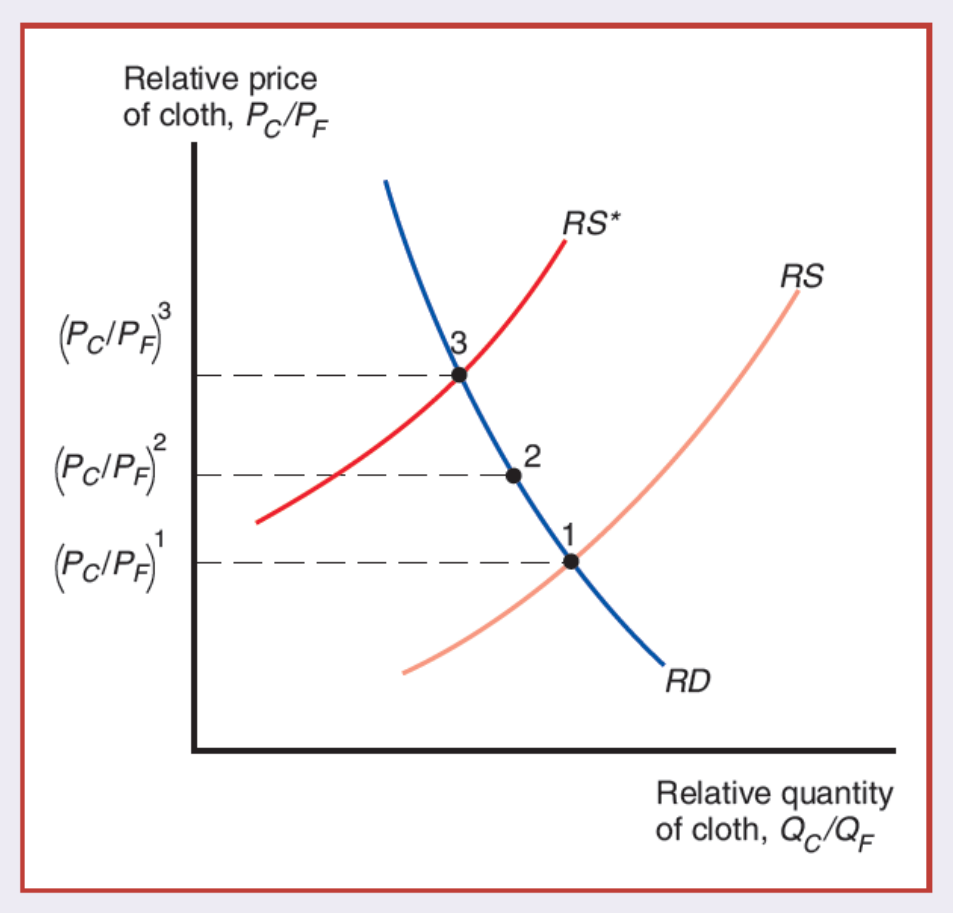
# A Model of a Two-Factor Economy

- An increase in the supply of land (labor) leads to a **biased expansion of production possibilities** toward food (cloth) production.
- The biased effect of increases (decreases) in resources on production possibilities is the key to understanding how differences in resources give rise to international trade.
- An economy will tend to be relatively effective at producing goods that are intensive in the factors with which the country is relatively well-endowed.

# Effects of International Trade Between Two-Factor Economies

- When Home and Foreign trade with each other, their relative prices converge. The relative price of cloth rises in Home and declines in Foreign.
  - In Home, the rise in the relative price of cloth leads to a rise in the production of cloth and a decline in relative consumption, so Home becomes an exporter of cloth and an importer of food.
  - Conversely, the decline in the relative price of cloth in Foreign leads it to become an importer of cloth and an exporter of food.

# Trade Leads to a Convergence of Relative Prices

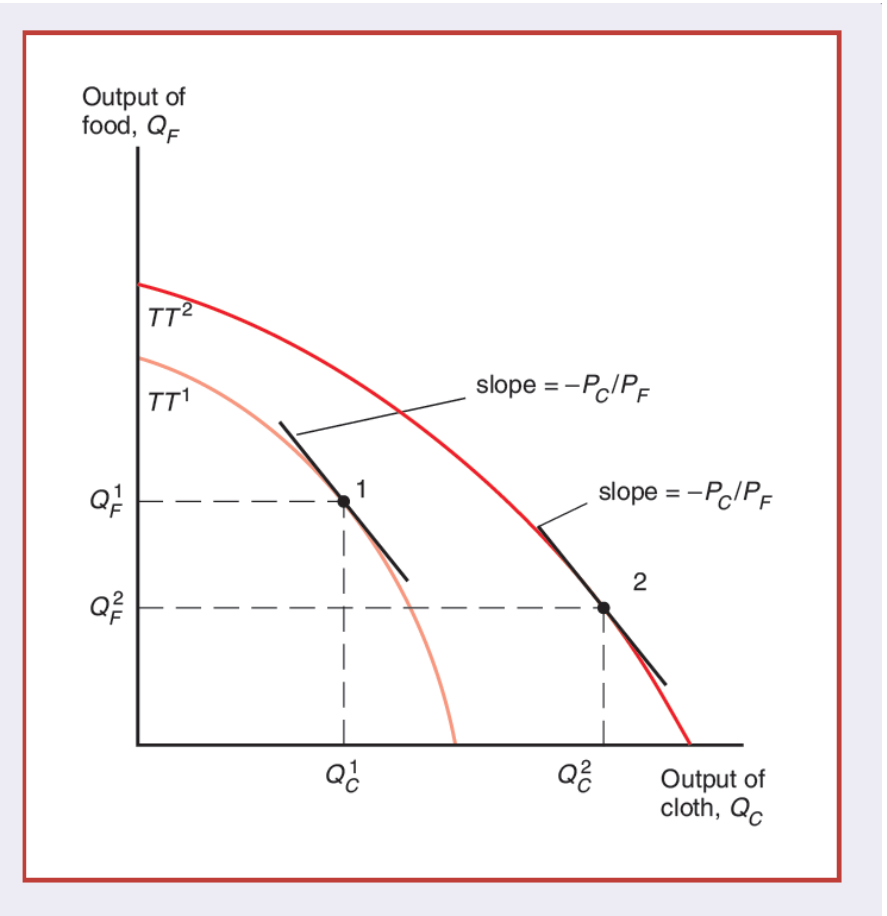



- In the absence of trade, Home's equilibrium would be at point 1, where domestic relative supply *RS* intersects the relative demand curve *RD*. Similarly, Foreign's equilibrium would be at point 3.
- Trade leads to a world relative price that lies between the pre trade prices (*PC* >*PF*)1 and (*PC* >*PF*)3, such as (*PC* >*PF*)2 at point 2.

# Effects of International Trade Between Two-Factor Economies

- **Heckscher-Ohlin Theorem**:
  - A country will export that commodity which uses *intensively* its *abundant* factor and import that commodity which uses *intensively* its *scarce* factor.

# Resources and Production Possibilities




**Resources and Production Possibilities**

- An increase in the supply of labor shifts the economy's production possibility frontier outward from *TT*1 to *TT*2, but does so disproportionately in the direction of cloth production.
- The result is that at an unchanged relative price of cloth (indicated by the slope -*PC*/*PF*), food production actually declines from *QF1* to *QF*2.

# A Model of a Two-Factor Economy

- Factor Prices and Goods Prices
  - **Stolper-Samuelson Theorem (effect)**:
    - If the relative price of a good increases, holding factor supplies constant, then the nominal and real return (in terms of *both* goods) to the factor used intensively in the production of that good increases, while the nominal and real return (in terms of *both* goods) to the other factor decreases.
      - The reverse is also true.

# Effects of International Trade Between Two-Factor Economies

- Trade and the Distribution of Income
  - Trade produces a convergence of relative prices.
  - Changes in relative prices have strong effects on the relative earnings of labor and land in both countries:
    - In Home, where the relative price of cloth rises*:*
      - Laborers are made better off and landowners are made worse off.
    - In Foreign, where the relative price of cloth falls, the opposite happens:
      - Laborers are made worse off and landowners are made better off.
  - Owners of a country's abundant factors gain from trade, but owners of a country's scarce factors lose.

# Effects of International Trade Between Two-Factor Economies

- Factor Price Equalization
  - In the absence of trade: labor would earn less in Home than in Foreign, and land would earn more.
  - **Factor-Price Equalization Theorem**:
    - International trade leads to complete equalization in the relative and absolute returns to homogeneous factors across countries.
    - It implies that international trade is a substitute for the international mobility of factors.

# Empirical Evidence on the Heckscher-Ohlin Model

- Testing the Heckscher-Ohlin Model
  - **Tests on U.S. Data**
    - **Leontief paradox**
      - Leontief found that U.S. exports were less capital-intensive than U.S. imports, even though the U.S. is the most capital-abundant country in the world.
  - **Tests on Global Data**
    - A study by Bowen, Leamer, and Sveikauskas tested the Heckscher-Ohlin model using data for a large number of countries.
      - This study confirms the Leontief paradox on a broader level.

# Empirical Evidence on the Heckscher-Ohlin Model

- **Tests on North-South Trade**
  - North-South trade in manufactures seems to fit the Heckscher-Ohlin theory much better than the overall pattern of international trade.
- **The Case of the Missing Trade**
  - A study by Trefler in 1995 showed that technological differences across a sample of countries are very large.

# Empirical Evidence on the Heckscher-Ohlin Model

- Implications of the Tests
  - Empirical evidence on the Heckscher-Ohlin model has led to the following conclusions:
    - It has been less successful at explaining the actual pattern of international trade.
    - It has been useful as a way to analyze the effects of trade on income distribution.

# Summary

- The Heckscher-Ohlin model, in which two goods are produced using two factors of production, emphasizes the role of resources in trade.
- A rise in the relative price of the labor-intensive good will shift the distribution of income in favor of labor:
  - The real wage of labor will rise in terms of both goods, while the real income of landowners will fall in terms of both goods.

# Summary

- For any given commodity prices, an increase in a factor of production increases the supply of the good that uses this factor intensively and reduces the supply of the other good.
- The Heckscher-Ohlin theorem predicts the following pattern of trade:
  - A country will export that commodity which uses *intensively* its *abundant* factor and import that commodity which uses *intensively* its *scarce* factor.

# Summary

- The owners of a country's abundant factors gain from trade, but the owners of scarce factors lose.
- In reality, complete factor price equalization is not observed because of wide differences in resources, barriers to trade, and international differences in technology.
- Empirical evidence is mixed on the Heckscher-Ohlin model.
  - Most researchers do not believe that differences in resources alone can explain the pattern of world trade or world factor prices.