Globalization

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Econ 102

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Trade theory and comparative advantage

- ► Why should countries trade?
  - Several examples that make sense...
  - The main insight of the model:
    $\rightarrow$ If each country exports the goods in which it has a comparative advantage, then all countries can gain from trade

- ► Why is there comparative/absolute advantage
  - differences in technology and resources
  - differences in economies of scale (market size)

The principle of comparative advantage

- The central element to know whether a country should trade or not is the concept of **opportunity costs**

  $\rightarrow$ Countries always gain from free trade if they specialize in the production that supports the lowest relative cost

- Assumptions
  - Labor is mobile within countries but immobile between countries
  - The industries produce with constant return to scale
  - The model is under perfect competition
  - No trade imbalances (exports pay for all imports), no currencies

- Take an example:
  - two countries US and EU
  - two goods wine and cars

Identifying comparative and absolute advantage

Table: Labor productivity: units of output per worker

	Europe	USA
Wine	6	1
Cars	4	2

► Which country should export wine and which country should export cars?

- To answer this question we need to analyze

  ► Absolute advantage
  ► Comparative advantage

Measuring the opportunity cost

- ▶ How many wine do Europe/USA needs to sacrify to obtain one car?

  - Opportunity cost of wine in Europe?
  - Opportunity cost of wine in USA?
  - Opportunity cost of cars in Europe?
 - Opportunity cost of cars in USA?

- ▶ Who should specialize in what?

Unit labor requirement

- Specialization can be determined by relative productivity (rather than relative costs)

- Measure unit labor requirement

  - Unit labor requirement: Number of hours of labor needed for one unit of output
  - An industry is highly productive if it requires little labor for its output

How does it work?

- ▶ There is only one wage rate in an economy. Firms can raise wage to attract workers
- ▶ If one country specializes in one sector, there needs to be movement of labor from one sector to another
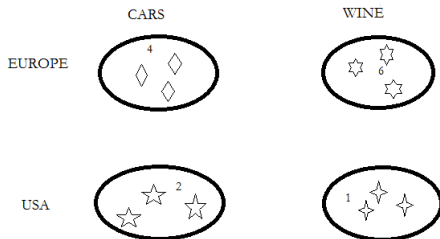
- ▶ There are two wages:
  - ■ a domestic wage in the US: w
  - ■ a foreign wage in Europe:w^*

The price of exchange in the Ricardian model

- ▶ In autarky, every products i are sell at the same price P_i in every country
- ▶ With free trade, there is only one price that holds
  $\rightarrow$ this is often called the law of one price (LOP)
- ▶ Cars: $P = P_c$ and wine: $P = P_w$
- ▶ Under PPC $P = MC \Rightarrow P_c = \alpha_c.w$
- ▶ The world price must be:

$$\frac{\alpha w^*}{\alpha c^*} < \frac{P_w}{P_c} < \frac{\alpha w}{\alpha c}$$

Wage under free trade

- ▶ Similarly, we need to define the intervals under which the relative wage must be.
- ▶ Let's write β the productivity of labor
- ▶ The relative wage must be:

$$\frac{\beta w^*}{\beta w} > \frac{w_{EU}}{w_{US}} > \frac{\beta c^*}{\beta c}$$

$$\frac{\beta w}{\beta w^*} > \frac{w_{US}}{w_{EU}} > \frac{\beta c}{\beta c^*}$$

- ▶ Let's measure under Autarky and Free Trade:
  - ■ wage and prices

Identifying specialization: summary

- ► Compare the opportunity cost $\rightarrow$ each country specializes in the production of the good that requires the lowest opportunity cost

- ► Compare relative productivity $\rightarrow$ each country specializes in the production of the good for which the country is relatively more productive

- ► Compare the relative price in autarky and free trade:

  - If world market price $\frac{P_w}{P_c} > \frac{\alpha w^*}{\alpha c^*}$ Europe specializes in wine
  - If world market price $\frac{P_w}{P_c} < \frac{\alpha w}{\alpha c}$ US specializes in cars

▶ Identify specialization graphically

- We first need to draw the PPF

  The PPF shows the maximum amount of one good that an economy can produce for a given amount of the other.
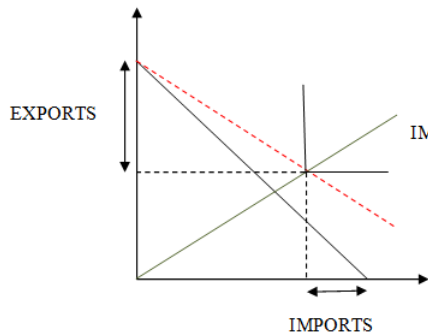
  $$\alpha_c Q_c + \alpha_w Q_w = \bar{L}$$

- We then need to determine the international trade line
  $\rightarrow$ The slope of the international trade line is $\frac{P_w}{P_c}$
- We then need to determine the consumption ray and indifference curves

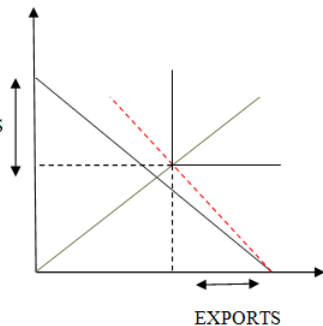# Identifying specialization graphically(2/2)
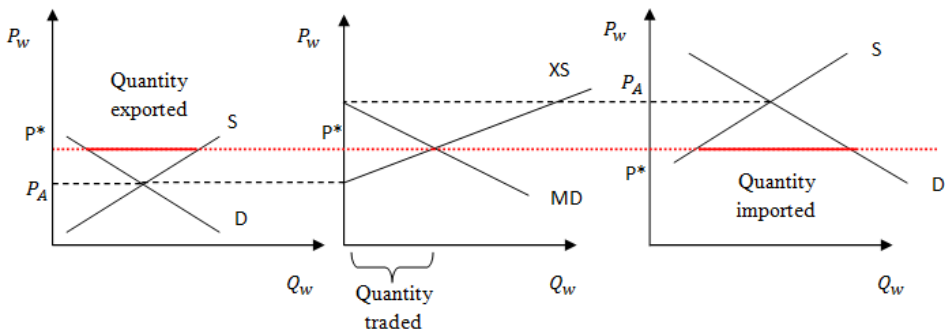
Exports and Imports
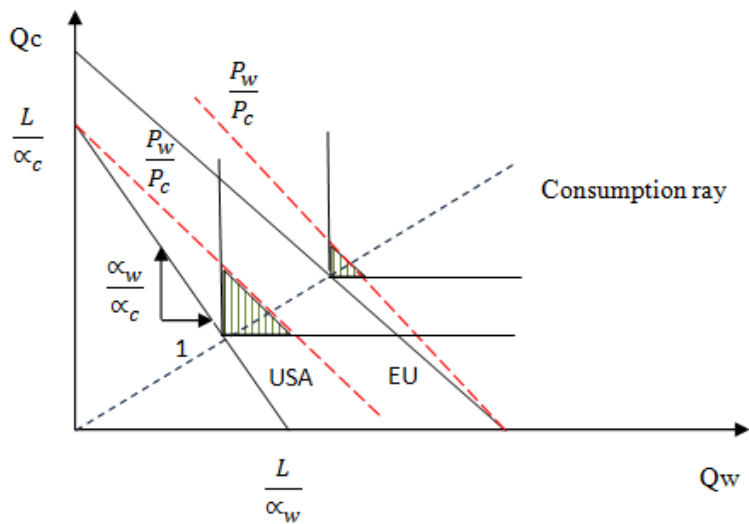
EXPORTS

IMPORTS

IMPORTS

USA

IMPORTS

EXPORTS

EUROPE

Detailed analysis of Surplus

Revealed comparative advantage

- ▶ How can we identify which of an economy have a comparative advantage in the real world?

- ▶ Balassa proposed a measure in 1965

$$RCA^{Country} = \frac{X_i^{country} \big/ \sum_k X_k^{country}}{X_i^{world} \big/ \sum_k X_k^{world}}$$

- ▶ RCA=1 : no comparative advantage/no comparative disadvantage
- ▶ RCA=0: comparative disadvantage
- ▶ $RCA \to \infty$: comparative advantage

Misconceptions about Comparative Advantage

- ▶ Misconception 1: "Free trade is only beneficial if a country is productive enough to compete."
  No. Trade is beneficial if there is a comparative advantage.
  Absolute disadvantage does not matter.

- ▶ Misconception 2: "Free trade is unfair and hurts if it is based in low-wage competition."
  No. Trade is beneficial if there is a comparative advantage.
  Absolute wages do not matter.

Misconceptions about Comparative Advantage

- ▶ Misconception 3: "Free trade worsens the lot of workers in low-wage countries."
  No. Trade is beneficial if there is a comparative advantage. Absolute wages do not matter.

- ▶ Misconception 4: "Free trade closes the income gap between poor and rich countries."
  No. Trade raises every country's welfare beyond autarky welfare. Per-capita income differences remain, and depend on a country's production possibilities.

Conclusion

- **Comparative advantage** is important to determine specialization, not **absolute advantage**

- There are several way to identify which country specializes...

- Trade is beneficial to all countries participating to trade

- ... But there are some limitations of the Ricardo model
  - Only one factor of production
  - Complete specialization is surrealistic and can be dangerous...
  - One single production stage and homogeneous worker

- the following lectures will take into account these recommendations