Lecture 4 The Ricardian Model

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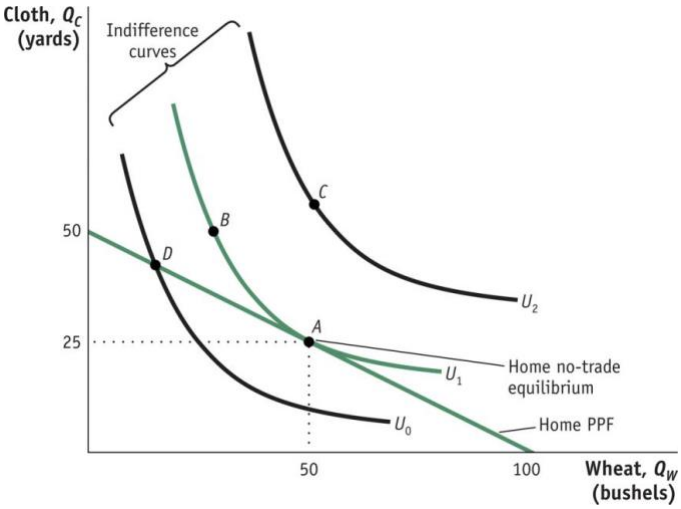
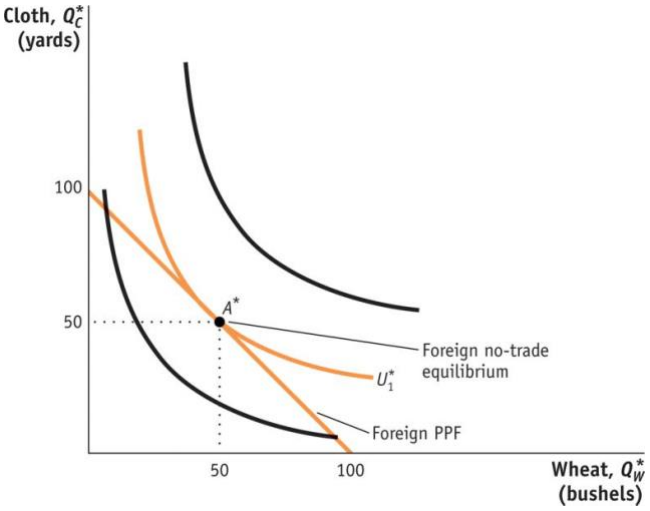
I. Model assumptions (2-2-1)

1. Home country PPF: MPw=4, MPc=2, L=25
2. Foreign country PPF: MPw=1, MPc=1, L=100
3. Regular consumption preferences.
4. No transportation and transaction cost.
5. All markets clear and perfect labor mobility.

II. Autarky equilibrium

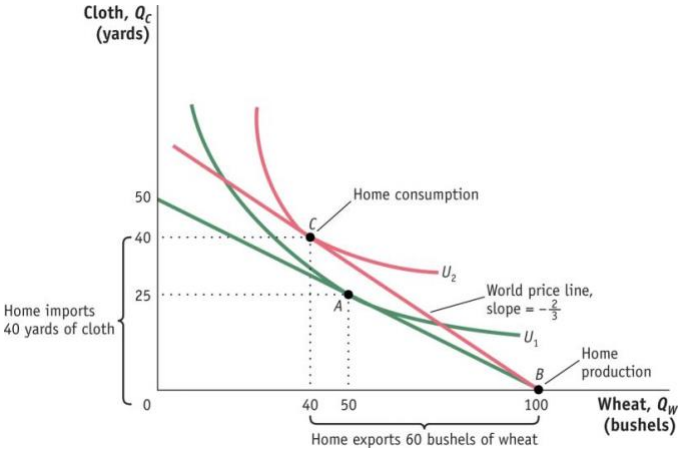


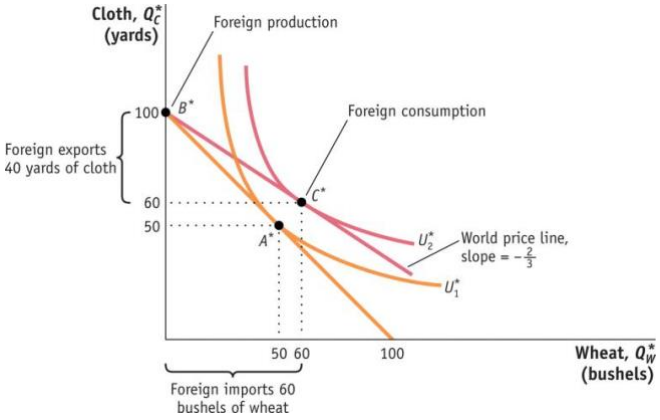
Home (50w, 25c)



Foreign (50w, 50c)

III. Specialization and trade equilibrium



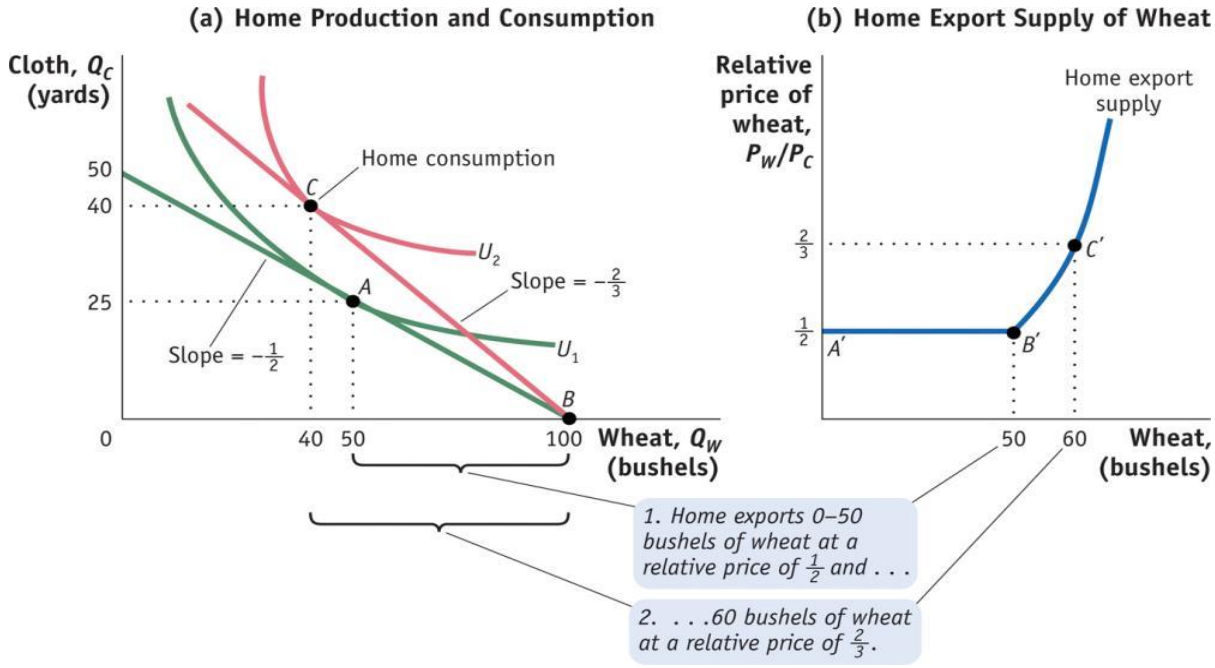


IV. Wage Determination and Income Distribution

1. In autarky, for each country, nominal wage shall be equal across sectors: W=MPwPw=MPcPc. After trade, product market and labor market will adjust, W'=MPwPw'=MPcPc'.
2. With specialization and trade, home country real wage for wheat producers is MPw=4, and real wage in terms of cloth (*measures how many units of cloth the worker can buy with wage earnings*) is W'/Pc'= MPwPw'/Pc' =MPw(Pw/Pc)*=4(2/3)=8/3>MPc=2, where W'and Pc' are new wage level and price of cloth after trade, (Pw/Pc)* is the terms of international trade.
3. For foreign country, whose specialization is in cloth MPc=1, real wage for cloth producers is 1, real wage in terms is W'/Pw'=MPc(Pc/Pw)*=1(3/2)=3/2>MPw=1.
4. Conclusion: 1) through specialization and trade the counterfactual real wage in disadvantaged sector increased compared to autarky production in both countries (borrowing higher productivity from the trading partners); 2) foreign workers earn less than home workers as measured by their ability to purchase either good. This fact reflects home's absolute advantage in the production of both goods; 3) wages are determined by absolute advantage whereas trade patterns is determined by comparative advantage.

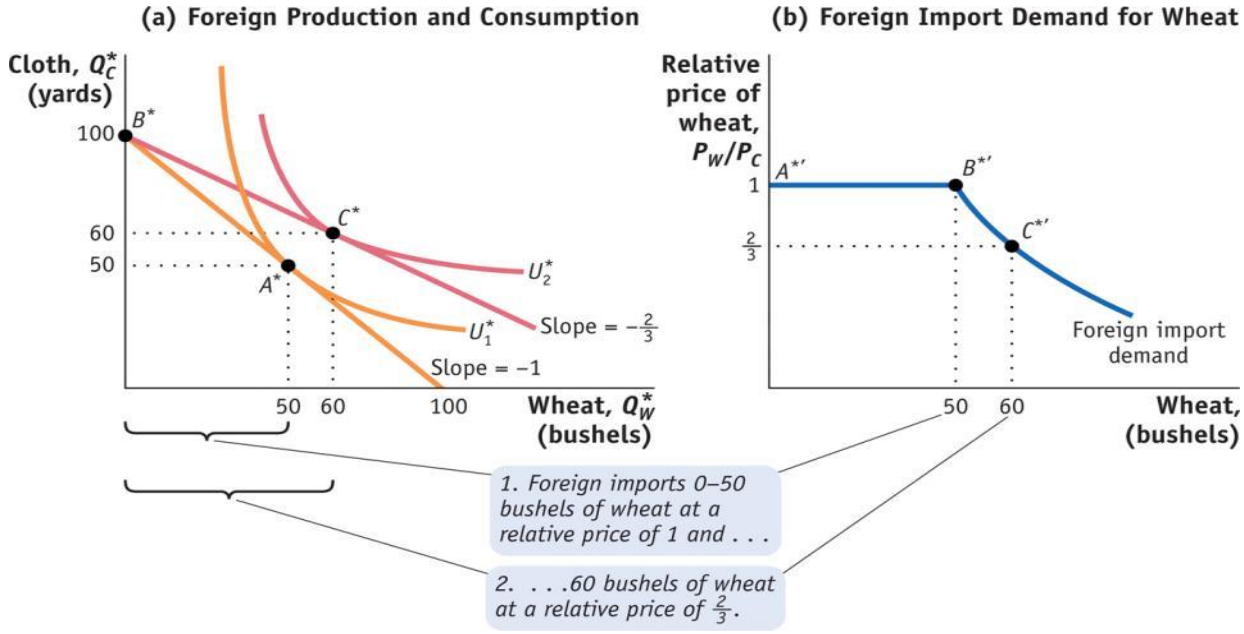
V. International Price and Trade Equilibrium

1. Deriving home country export supply curve

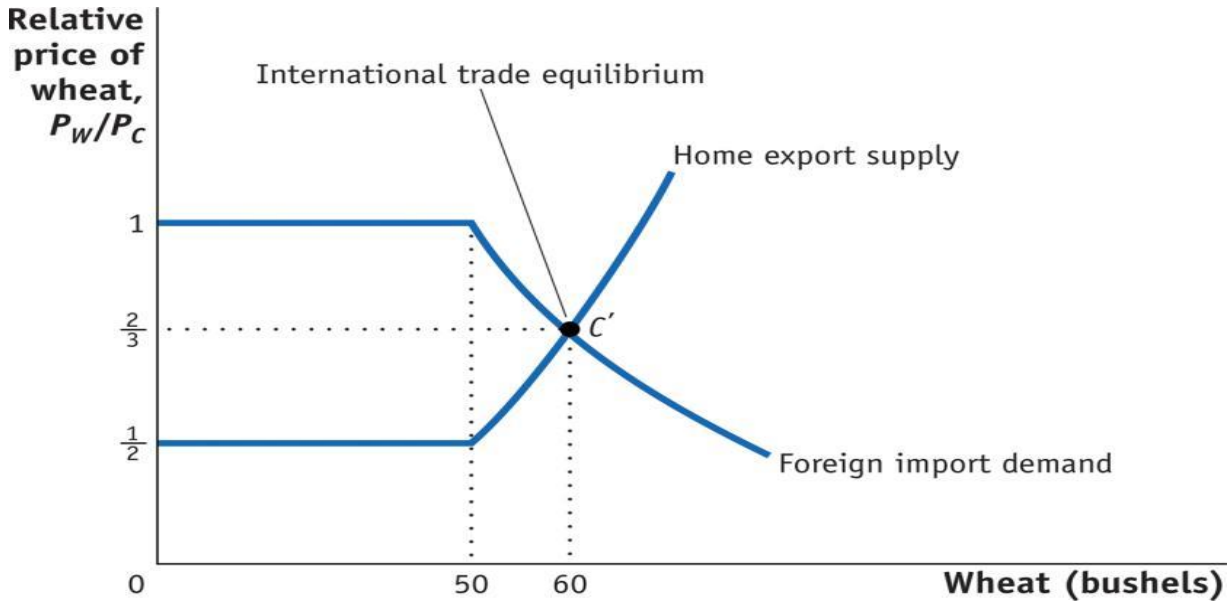


1) In autarky, when Pw/Pc=1/2, home can produce 50 units of wheat; when opening up to trade, as (Pw/Pc)* increases, home will increase supply of wheat. Meanwhile, domestic demand for wheat falls due to higher price of wheat.
2) In term of export supply of wheat, since home country produces 100 units in total, consumes 40 units domestically, exports 60 units to the foreign country in exchange for 40 units of cloth.

2. Deriving foreign country import demand curve



3. International trade equilibrium (P and Q)
    1) International price and quantity in trade equilibrium are simultaneously determined;
    2) Home/Foreign country productivity and consumption preference are matched;
    3) Market clearing condition: total production= total consumption, total export = total import.



VI. Empirical Evidence

1. Gains to consumers and price effect

Bai and Stumpner, "Estimating US Consumer Gains from Chinese Imports," American Economic Review: Insights (forthcoming) https://www.aeaweb.org/articles?id=10.1257/aeri.20180358&&from=f

Abstract: We estimate the size of US consumer gains from Chinese imports during 2004-2015. Using barcode-level price and expenditure data, we construct inflation rates under CES preferences, and use Chinese exports to Europe as an instrument. We find significant negative effects of Chinese imports on US prices. This effect is driven by both changes in the prices of existing goods and the entry of new goods and it is similar across consumer groups by income or region. A simple benchmarking exercise suggests that Chinese imports led to a 0.19 ppt annual reduction in the price index for consumer tradables.

Reference: Feenstra and Taylor, 2017, Ch2 Trade and Technology: The Ricardian Model

Readings