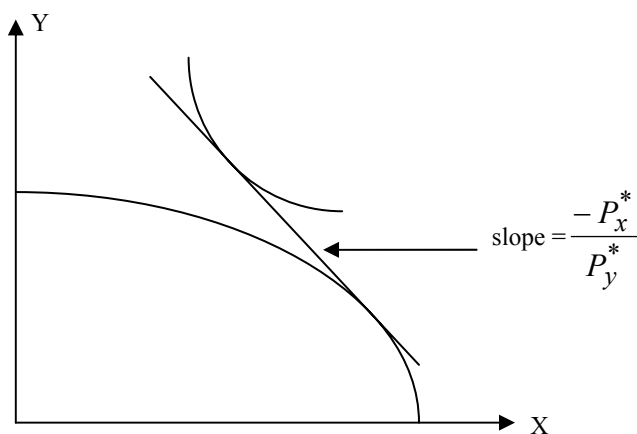


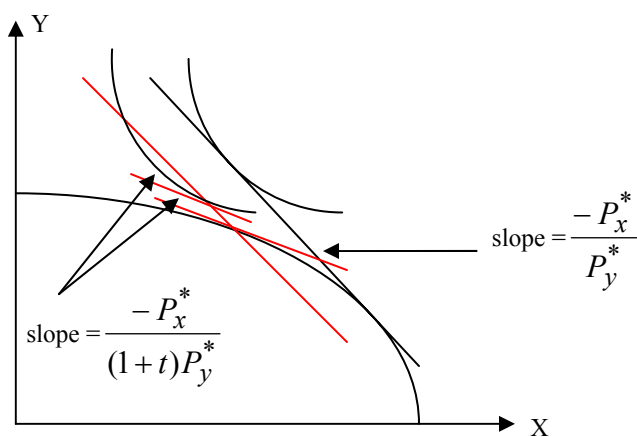
**Extra Practice Problems: Economics 404W**  
Prof. Tybout

1. Suppose that the agricultural sector of a country uses land and labor, while the industrial sector uses capital and labor. Labor can move across sectors when economic conditions change, but land and capital cannot. Finally, suppose that the industrial sector is import-competing, so that domestic consumers buy more industrial products than are produced at home.

- a) Draw a diagram showing the free trade equilibrium for this economy.

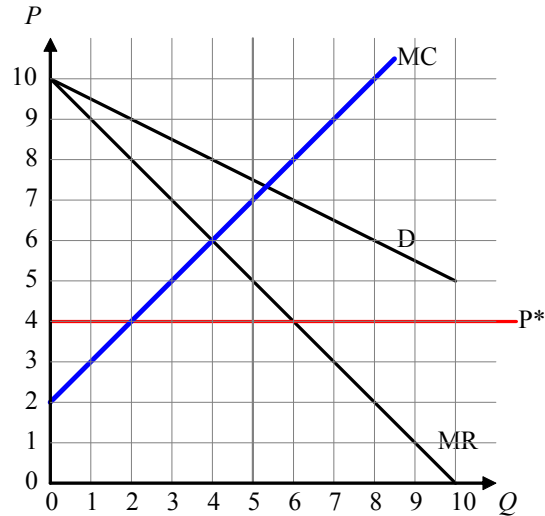


- b) Add the relevant modifications to your graph to show what happens to consumption and production if the government protects the industrial sector with a tariff. (Refer to lecture 22 for details.)



- c) Who are the winners and losers from this trade policy?  
**Owners of capital win, owners of land lose, and labor may or may not win (refer to lecture 22, page 3). Overall, the economy is worse off because it is on a lower social indifference curve.**

2. The diagram below depicts the market for motorcycles in a developing country. There is only one domestic supplier; its marginal cost schedule is  $MC = 2 + Q$  (refer to graph). If there were no trade barriers, imported motorcycles would be available at a price of \$4.



- a) If there is a 100% tariff rate on imports (i.e.,  $t = 1.0$ ), what is the domestic price of motorcycles? 8 How many are produced? 4 How much profit (surplus) does the domestic earn? 16 How much surplus do consumers reap? 4

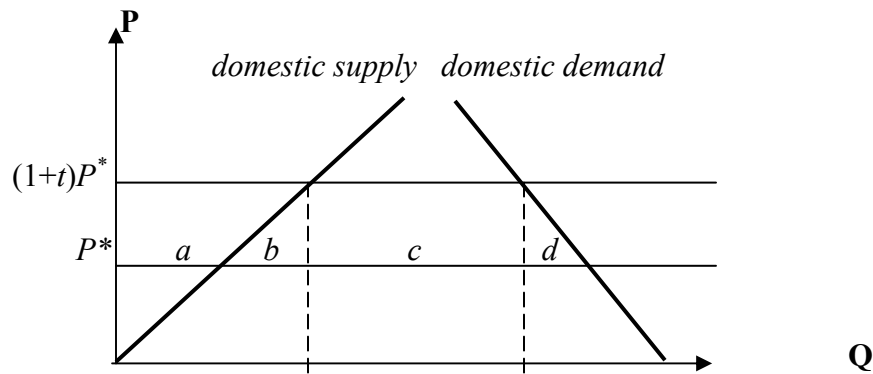
Producer surplus is the area above the marginal cost curve and below the price.  
Consumer surplus is the area above the price and below the demand curve.

- b) Now assume that the tariff rate has to fallen to 50 percent (i.e.,  $t = 0.50$ ) and answer the following questions. What is the domestic price of motorcycles? 6 What quantity is produced domestically? 4 What quantity, if any, is imported? 4 How much profit (surplus) does the domestic earn? 8 How much surplus do consumers reap? 16 Is the economy as whole better off or worse off than when the tariff rate was 100 percent? Explain.

**The economy is better off in the sense that total surplus with the 50 percent tariff is 24, while total surplus with the 100 percent tariff is 20.**

- c) Relative to the initial equilibrium, in which the tariff rate was 100 percent, would an increase in the tariff rate induce more domestic production, less production, or have no effect on domestic production? no effect Would a small decrease in the tariff rate (say, to 75 percent) induce more domestic production, less production, or have no effect on domestic production? increase Briefly explain the economic forces behind your answers.

- 3) The diagram below depicts the domestic market for bicycles in the presence of a tariff. (Many domestic bicycle manufacturers compete in the domestic market, so monopoly power is totally absent.) The world price of bicycles is identified as  $P^*$ , and the tariff rate is  $t$ :



Which of the following statements concerning this diagram is correct?

- a. The tariff generates revenues for the domestic government represented by area  $c$ .
- b. The area  $a+b+c+d$  represents the deadweight loss to the economy induced by the tariff.
- c. The tariff has driven up the world price of bicycles.
- d. Relative to free trade, this tariff has discouraged some domestic production.