

Problem Set 3

Due in Lecture on Monday, March 19th.

1. Starting from the long-run equilibrium without trade in the monopolistic competition model, as illustrated in Figure 6-5, consider what happens when the Home country begins trading with two other identical countries. Because the countries are all the same, the number of consumers in the world is three times larger than in a single country, and the number of firms in the world is three times larger than in a single country.
 - a. Compared with the no-trade equilibrium, how much does industry demand D increase? How much does the number of firms (or product varieties) increase? Does the demand curve D/N^A still apply after the opening of trade? Explain why or why not.
 - b. Does the d_I curve shift or pivot due to the opening of trade? Explain why or why not.
 - c. Compare your answer to (b) with the case in which Home trades with only one other identical country. Specifically, compare the elasticity of the demand curve d_I in the two cases.
 - d. Illustrate the long-run equilibrium with trade and compare it with the long-run equilibrium when Home trades with only one other identical country.

2. Consider the following diagram of the home steel market. Assume the home country is small, and the home steel industry is competitive.

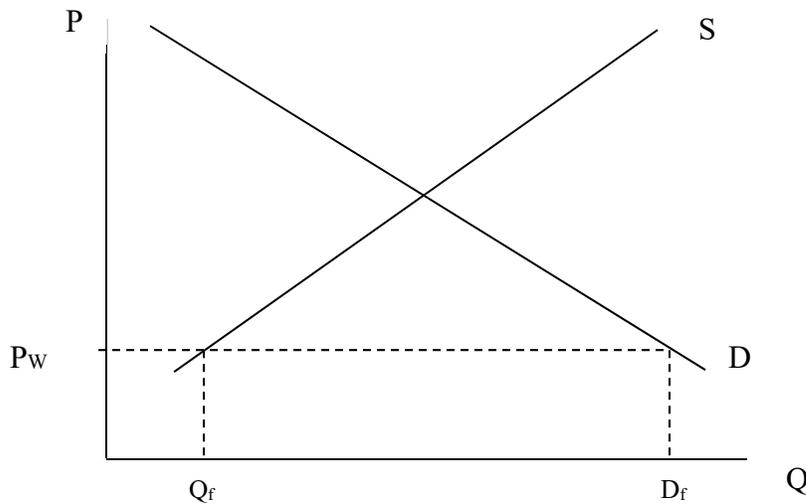


Figure 1

Draw a diagram based upon Figure 1 above.

- a. Indicate the extent of imports under free trade.
- b. Show what happens if a specific tariff of amount t is imposed. Indicate the new quantities produced and demanded at home (Q_τ and D_τ , respectively), and the amount of imports.
- c. What is the amount of tariff revenue?
- d. What is the change in consumer surplus?

- e. What is the change in producer surplus?
- f. What is the net effect on welfare?

3. Consider the following diagram of a small country that exports shirts. (The home shirt industry is competitive.)

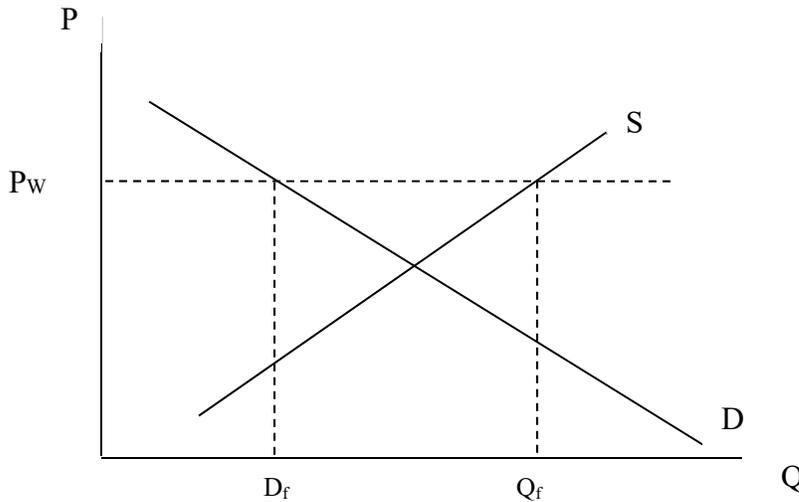


Figure 2

- a. Indicate the extent of exports under free trade.
 - b. Show what happens if an *ad valorem* export subsidy of amount s . Indicate the new quantities produced and demanded at home (Q_s and D_s , respectively), and the amount of exports. Also show the price at which shirts sell at home (P_s)
 - c. What is the expense to the nation's treasury?
 - d. What is consumption side dead weight loss?
 - e. What is the production side dead weight loss?
 - f. What is the overall effect on national welfare?
4. Now reconsider the home steel market with an alternative assumption that the home country has only one steel producer (i.e. monopolist). No other assumptions change.
- a. Draw the equivalent to Figure 1, with each of the curves clearly indicated. Indicate the quantities produced and demanded at home (Q_{ff} and D_{ff} , respectively), and the amount of imports under free trade.
 - b. Suppose that the same tariff as one in question 2 is introduced. Indicate the new quantities produced and demanded at home (Q_t and D_t , respectively), and the amount of imports.
 - c. Let the amount of imports in the previous question be X . Now suppose that the government use a quota of X amount of steel in stead of the tariff. Indicate the quantities produced and demanded at home (Q_{qm} and D_{qm} , respectively), and the amount of imports. In addition, indicate the price at which steel will be priced at, P_{qm} .