Economics 462 December 9, 2004
Final Exam Professor Parker

1. (20%) Denmark is a small economy that imports grain at the world price of 300 Euros per metric ton. Assume that Denmark currently produces 1.5 million metric tons (MMT) of grain, and consumes 5 MMT. Government agricultural economists estimate that if Denmark were to become self-sufficient in grain, its market price would have to double to 600 Euros, reducing consumption and increasing domestic production to 3 MMT. Assume that demand and supply are both linear.

a) Suppose that as a result of joining the European Union, Denmark is required by the Common Agricultural Policy (CAP) and the Common External Tariff (CET) agreements to impose a tariff of 100 Euros on grain imports (these come primarily from the United States, and let's pretend the rest of Europe does not produce grain). Using a supply and demand diagram for Denmark, show and calculate the effects of this tariff on consumer surplus, producer surplus, and the government budget. What is the net effect of this tariff on Denmark's economy?

b) Suppose that the EU decided to change the tariff to a direct production subsidy of 100 Euros per metric ton. Using a supply and demand diagram for Denmark, show and calculate the effects of this subsidy on consumer surplus, producer surplus, and the government budget. What is the net effect of this subsidy on Denmark's economy?

c) How would your answer to (a) and (b) change if there was a positive social production externality from grain production, which Denmark's government estimates to be 60 Euros per metric ton?

2. (15%) France is large economy with a comparative disadvantage in grain production. Because French farmers are politically powerful, the French government decides to impose a quota on imports, and grants the right to import grain to a state-owned firm.

a) Assume that this quota has a significant effect on the world grain price. Graphically show the effects of this quota on French grain producer surplus, consumer surplus, and the state-owned grain importer. Does the quota necessarily improve or worsen welfare in France?

b) Assume the U.S. exports grain to France. Show the effects of the French quota on U.S. producer and consumer surplus. Does the quota necessarily improve or worsen welfare in the U.S.? In the world?

c) Assume that the U.S. provides an export subsidy for its grain producers. Show the effects of the subsidy on U.S. producer surplus, consumer surplus, and the government budget. How does this subsidy alter the effects of the French quota?

3. (10%) Suppose a new administration is interested in reducing our dependence on foreign oil, and is considering policy alternatives. Assuming we are a large importer of oil, consider the following alternatives: (a) tariffs, (b) quotas, (c) domestic production subsidies, and (d) consumption taxes. What are the advantages and disadvantages of each? How do these policies affect different interest groups, the government budget, the net economic welfare of the United States, and the net economic welfare of the world. How would your answers change if oil consumption had a significant external social cost?

4. (15%) Suppose that two similarly-sized countries are engaged in free trade, where the home country exports good X to the foreign country, and imports good Y from them. Their governments are each considering whether or not to impose tariffs on the other. If neither imposes a tariff, they both neither gain nor lose. If one country imposes a tariff but the other country does not, the tariff-imposing country will gain $3 billion while the other country will lose $8 billion. If both countries impose tariffs, then each country will lose $5 billion (i.e., $3 billion less $8 billion).

a) Show how this problem leads to a Prisoner's Dilemma if both countries try to maximize their net welfare, taking the actions of the other country as independent or given. What is each country's dominant strategy? What is the Nash equilibrium? What is the social optimum?

b) What is GATT? What are its key rules and basic principles? How did one of these principles help to change the payoff matrix of the Prisoner's Dilemma in the postwar period, and what effect did this have on world trade?

c) What were the weaknesses of GATT? How did the Uruguay Round attempt to address these weaknesses, and what was the result? What is different about the new institution?

5. (20%) Suppose that two similarly-sized countries are engaged in free trade of goods, where the home country exports good X to the foreign country, and imports good Y. Suppose that there are no flows of labor or capital (i.e., foreign savings) between countries, but they have a free market exchange rate between them.

a) Suppose that the foreign country suddenly becomes much more productive in its export sector, so that the goods it exports become much cheaper. Holding the direct exchange rate (i.e., the home country's price of foreign currency) fixed, how would this affect the quantities of their exports and their imports? If the exchange rate adjusted to the new equilibrium, how would it change? How would this affect the terms of trade, the quantity of imports, and the quantity of exports?

b) Suppose that the foreign country suddenly becomes much more productive in its import-competing sector instead. How would your answers to (a) change?

c) Suppose that the foreign country becomes protectionist, and implements both tariffs and non-tariff barriers on their imports. Holding the direct exchange rate fixed, how would this affect the quantities of their exports and their imports? If the exchange rate adjusted to the new equilibrium, how would it change? How would this affect the quantity of both imports and exports?

d) Suppose that the foreign country's central bank announces that is willing to trade its currency for foreign exchange at a fixed price. How would the protectionism in (c) affect its balance of payments? How would this in turn affect the money supply and, in the long-run, the price level? How would this affect the quantity of both imports and exports?

6. (10%) Prior to the Great Depression, Congress had the constitutional authority to regulate international trade. After passage of the Reciprocal Trade Agreements Act in 1934, however, the President became increasingly responsible for determining the details of U.S. trade policy. Using Mancur Olson's theory of collective action, explain how this affected U.S. trade policy, and why. Then use this theory to explain why the President usually requests "fast track" authorization to negotiate trade agreements.

7. (10%) True/False: According to the theory covered in class, which of the following statements are valid?

a) The public often supports protectionism because the jobs lost to imports are more visible than the jobs created by exports.

b) When you import a good, you exchange money for goods, but when you produce the good domestically you get to keep both the money and the goods.

c) Government needs to protect domestic markets from free trade to keep jobs here.

d) The flaw in the infant industry argument is that the change in a firm's relative production costs is usually positively correlated with the relative tariff rate on competing imports.

e) Free trade improves overall welfare when markets are perfectly competitive, but when there are monopolies present free trade can easily reduce overall welfare.

f) Free trade may help some groups of people, but it hurts other groups more.

g) The threat of protectionism can be welfare-enhancing if it induces other countries to reduce their own protectionism.

h) Tariffs are often the best policy when either positive production externalities or negative consumption externalities are present.

i) In less developed economies with urban unemployment problems, import-substitution policies are likely to improve welfare because import-competing industries provide more urban jobs.

j) If a country's domestic savings are less than the amount of its investments, then the country must also be exporting less than it is importing.

Supplemental Question for Graduate Students only: Due Friday Morning

8. (25%) Consider the market for shoes in two similarly-sized and neighboring countries. In both Country A and Country B, demand is given by the following equation:

$$Q_d = 4000 - 50\,P$$

Country A's supply curve is equal to:

$$Q_s^A = 100\,P^A - 2000$$

and Country B's supply curve is equal to:

$$Q_s^B = 200\,P^B - 2000$$

a) Solve for Country A's autarky price P^A and quantity-supplied Q_s^A.

b) Solve for Country B's autarky price P^B and quantity-supplied Q_s^B.

c) Solve for the free trade price and volume of trade.

Assume that the importing country now decides to charge a tariff of T=8.

d) Solve for P^A, P^B, and the volume of trade.

e) Show the effects of the tariff on the importing country. Solve for the change in consumer surplus, producer surplus, and the government budget in the importing country. Is the importing country better off or worse off?

f) Show the effects of the tariff on the exporting country. Solve for the change in consumer surplus, producer surplus, and the government budget in the exporting country. Is the exporting country better off or worse off?

g) Solve for the net change in surplus value in the two countries. Taken together, are the two countries better off or worse off?

Repeat your answers if the tariff doubles to T=16.

h) Solve for P^A, P^B, and the volume of trade.

i) Solve for the change in consumer surplus, producer surplus, and the government budget in the importing country. Is the importing country better off or worse off?

j) Solve for the change in consumer surplus, producer surplus, and the government budget in the exporting country. Is the exporting country better off or worse off?

k) Solve for the net change in surplus value in the two countries. Taken together, are the two countries better off or worse off?