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UMID _____

Final Exam
December 18, 2012
Answers

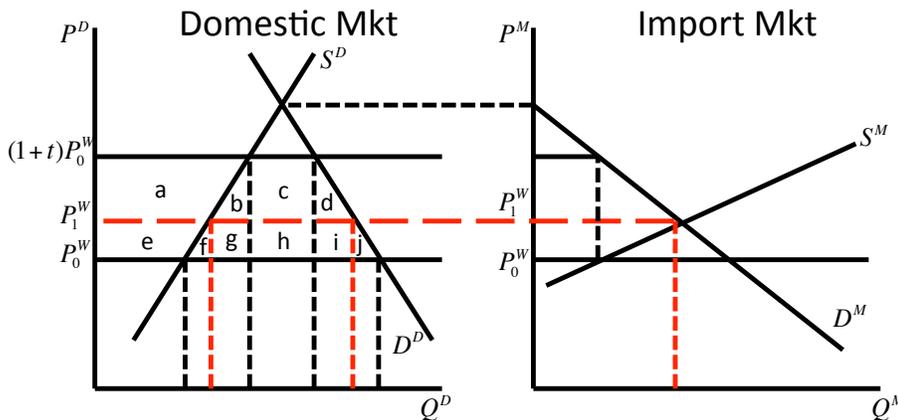
Answer on these sheets. Use the indicated point values as a guide to how extensively you should answer each question, and budget your time accordingly. (Actually, they are all the same, 12 points each; so spend about the same amount of time on each.) The exam has a total of 60 points.

1. (12 points) Your government has a tariff on imports of T-Shirts. It is contemplating removing that tariff completely. A government analyst has used the perfectly competitive model of a small country importing a homogeneous product to estimate the effects of this tariff removal on items (i)-(vii) listed in the table below. How would these results be changed if it were known that the country is large instead of small?

In the space below, draw an appropriate diagram with which to answer this question. Then record in the table whether, if the country were large rather than small, the indicated changes would be larger (+) or smaller (-) in absolute value, or would be no different (0) than the government analyst has calculated. If the change could be either larger or smaller depending on elasticities, then enter a question mark (?).

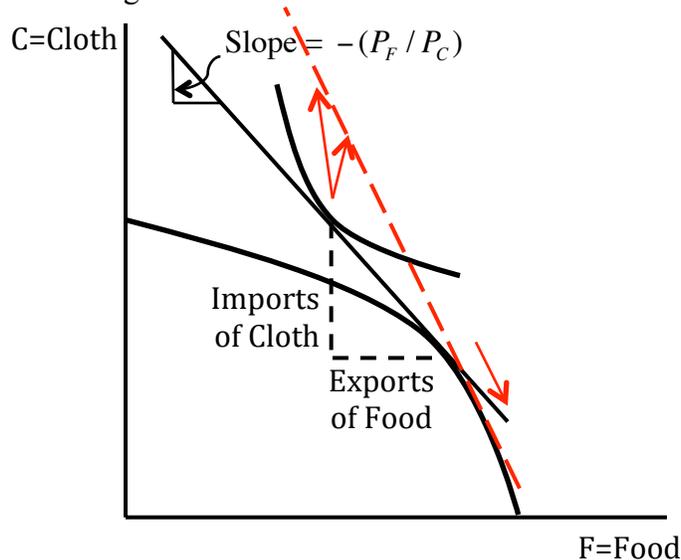
Ans: If the country is small, then price falls to P_0^W . If it is large, world price rises as shown in the Import Mkt, and thus domestic price falls less, to P_1^W . As a result, and as shown in the figure for the Domestic Mkt, imports fall less, domestic production falls less, producers lose less in producer surplus and consumers gain less in consumer surplus. The dead weight loss triangles, which constitute the net gain from tariff removal, also are smaller. The only thing that is unchanged is the loss of tariff revenue, since that goes to zero in both cases.

		Small	Large	L-S	
iv.	Δ revenue	$c+h$	$c+h$	0	0
v.	Δ prod surp	$a+e$	a	$-e$	-
vi.	Δ cons surp	$a+b+c+d+e+f+g+h+i+j$	$a+b+c+d$	$-(e+f+g+h+i+j)$	-
vii.	Δ welfare	$b+d+f+g+i+j$	$+(b+d)-h$	$-(f+g+h+i+j)$	-



i.	Increase in quantity of imports	-
ii.	Decrease in domestic price of imports	-
iii.	Decrease in domestic production	-
iv.	Decrease in government revenue	0
v.	Loss of producer surplus	-
vi.	Gain of consumer surplus	-
vii.	Net gain in welfare of country	-

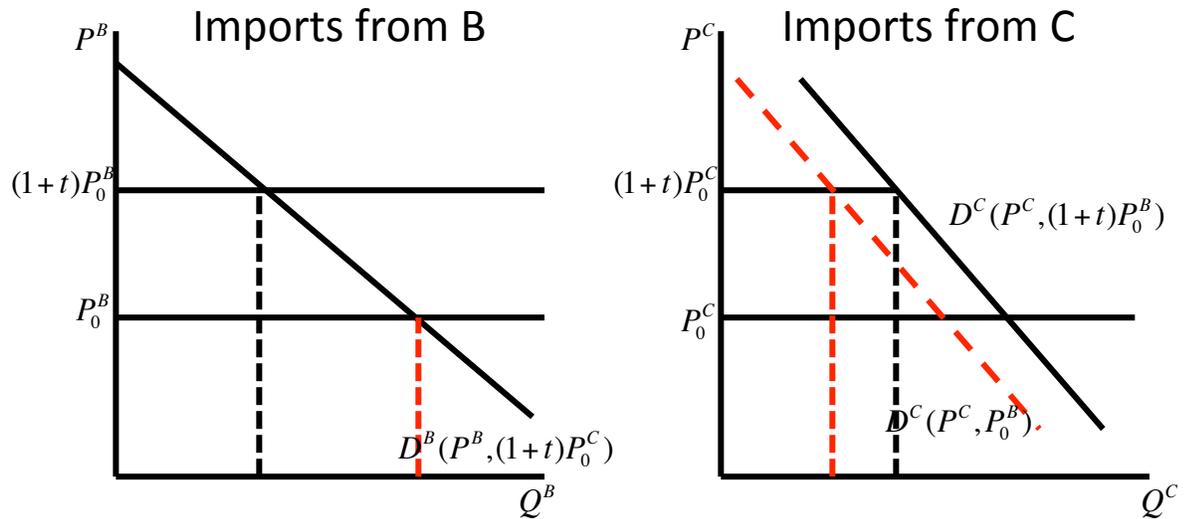
2. (12 points) A small country produces (only) food and cloth and initially, under free trade, it exports food and imports cloth.
- a. Using the diagram of the Standard Model, illustrate this situation, indicating clearly in your diagram the quantities of exports and imports and how the prices of food and cloth enter the diagram.



- b. Suppose now that the world relative price of food rises. What, if anything, will that do to the following? Why?
- i. the domestic relative price of food
Ans: It also rises, since it is equal to the world price.
 - ii. the output of cloth
Ans: It falls.
 - iii. the exports of food
Ans: It probably rises, and it certainly rises if preferences are such that relative demands depend only on relative price (homothetic). Otherwise there is a remote possibility that the positive income effect of the improved terms of trade may increase consumption of food more than production.
- c. Suppose that this were the Heckscher-Ohlin trade model with factors of production land and labor, and that the food sector uses comparatively more land, relative to labor, than is used in the cloth sector. In this context...
- i. ...what would be the reason that the country exports food?
Ans: That its relative endowment of land compared to labor is higher than in the rest of the world – i.e., it is relatively abundant in land.
 - ii. ...how would the domestic price change that you found in part (b) be expected to affect the wage paid to labor and the rental paid to land in the two sectors?
Ans: This rise in the relative price of food will increase the real rental and reduce the real wage, according to the Stolper-Samuelson Theorem.

3. (12 points) Suppose Country A imports from both Country B and Country C a good that it does not produce itself, and that the products of countries B and C are imperfect substitutes with infinitely elastic supplies (horizontal supply curves). Initially, Country A has the same tariff on imports from both countries, but now it eliminates that tariff on imports from B but not from C.
- a. Explain in words and show in diagrams for the two import markets the effects of this tariff removal on prices and quantities of both goods.

Ans: Elimination of the tariff on imports from B lowers their price from $(1+t)P_0^B$ to P_0^B , but leaves the domestic price of imports from C unchanged. Since the price of imports from C is unchanged, demand for imports from B simply moves down its demand curve, increasing its quantity of imports. But the demand curve for imports from C shifts left, as shown, because of the fall in price of its substitute from country B. As a result, even though the price of imports from C does not change, a smaller quantity is demanded and therefore imported.

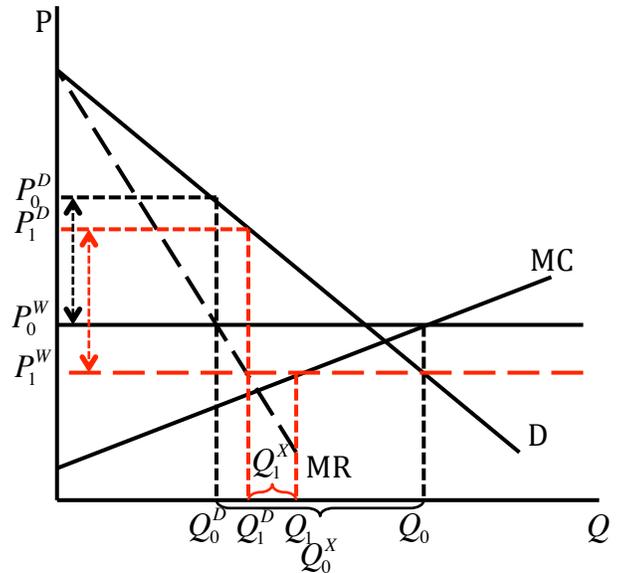


- b. Suppose that the government had been collecting equal total amounts of tariff revenue on the imports from both countries. What can you say about the amount by which its tariff revenue will fall when it eliminates the tariff on imports from Country B?

Ans: The tariff revenue on imports from B falls to zero. The tariff revenue on imports from C also falls due to the decline in quantity of imports. So total tariff revenue falls to less than half what it was before.

4. (12 points) Suppose a firm is the only producer of a good in its home market, where it faces a linear demand curve and is protected by a prohibitive tariff. In addition to selling in its home market, it can export all it wishes at a world price that does not depend on how much it sells. Its marginal cost of production is an increasing function of its output.
- a. Show in a diagram how much it will produce, how much it will sell in its home market and at what price, and how much it will export.

Ans: As shown, the firm will produce Q_0 where marginal cost equals the world price. Since the marginal cost of selling an extra unit on the domestic market is what it could have sold for as an export, it sets domestic sales where marginal revenue, MR, equals P_0^w and charges the price at which that quantity will be demanded on the domestic demand curve, P_0^D . It exports what it doesn't sell domestically: $Q_0^X = Q_0 - Q_0^D$



- b. Suppose now that the world price falls. How will each of these quantities, and the price, change?

Ans: The fall in world price, as shown by the shift to the dashed line at P_1^w , causes the firm to reduce output to Q_1 , moving along its MC curve. But that fall in world price also reduces the marginal cost of selling domestically, so it increases sales to Q_1^D , and that requires that it lower its domestic price, to P_1^D . Since output falls and domestic sales rise, exports fall to Q_1^X .

- c. By what definition is this firm dumping? How does the fall in world price change its dumping margin?

Ans: This is dumping under the price discrimination definition of dumping. That is, the firm is selling its export for a lower price than it charges at home. The dumping margin is the size of this price difference, shown as the arrow in the figure.

When world price falls, the firm reduces its domestic price, but since the MR curve is twice as steep as the demand curve, the drop in domestic price is smaller than the drop in world price. Therefore the dumping margin increases.

5. (12 points) You are the government of a country where a domestic industry is experiencing increased competition from imports. What are some of the policy options that you have for dealing with this, and to what extent are they allowed by your commitments as a member of the WTO?

Ans: Some of the policies that you might consider are the following:

- *Increase your MFN import tariff on the good produced by the industry. This will be legal under the WTO if your country's tariff binding is higher than the applied tariff, and you do not increase the tariff beyond that bound level.*
- *Impose a temporary safeguard tariff on the good, after first confirming that there is sufficient injury caused by imports. This will be legal under the WTO safeguards clause.*
- *Impose an anti-dumping duty on imports of the good, after first confirming that the imports satisfy one of the definitions of dumping and that they are causing injury. This will be legal under the WTO if proper procedures are followed.*
- *Impose a countervailing duty on imports of the good, after first confirming that the imports are subsidized and that they are causing injury. This will be legal under the WTO if proper procedures are followed.*
- *Provide a subsidy to production by the domestic industry. This may or may not be legal under the WTO, depending on the reason that you give for the subsidy. But if it is acknowledged to be in response to the increase in imports, then it is likely to be struck down.*
- *Provide trade adjustment assistance to displaced workers (and firms) in the industry, including extended unemployment compensation, retraining and relocation allowances, etc. This is perfectly OK under the WTO.*
- *Provide "wage insurance" to workers displaced in the industry, paying them a fraction of any fall in wage that they experience when they take another job. This too is OK under the WTO.*
- *Do nothing. That too is allowed, of course.*

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