

Economics 433: Advanced International Trade

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Problem Set 5

Due 1pm on Thursday December 13th, 2007

Please print this problem set out and work directly on it. If necessary, you may attach extra sheets. **Be sure to show your work on all questions that require a numerical response.**

Name _____

EXERCISE 1

Imagine that supply and demand for cars in a *small country* called Monaco are linear. In particular, a 7 dollar increase in the local price for cars leads to a consumption decline of one car, and a 14 dollar increase in the local price of cars leads to an increase in production of one car. Suppose that the world price for a car is \$7000. At that price consumption is 150 cars and production is 20 cars in Monaco.

a) Now imagine that the Ministry of Trade in Monaco imposed a tariff of \$350 per car in Monaco. Draw the graph depicting this situation and calculate net welfare effect of this policy for Monaco?

b) What is the quota that will have the same impact on imports, consumption and production in Monaco as the tariff of \$350?

c) Suppose foreign producers of cars convinced the Monaco government officials to implement the quota as a VER. Calculate the welfare losses from VER.

d) Bonus question (note: the first person to send me this question answered correctly via email will get a 100 grade in the final exam with no need to show up): calculate the domestic price under the quota you calculated in point (b) if the local industry has a unique producer (monopolist) whose marginal cost curve is the supply curve implicit in your calculations in point (a).

EXERCISE 2

Imagine that the U.S. wants to help Nicaragua economically by sending them much needed rice at a discounted price. The international price of rice is \$2 per kilo and Nicaragua is too small to affect that (i.e., the U.S. export supply of rice to Nicaragua is perfectly elastic or flat at \$2). The Nicaraguan demand and supply curves are linear, with the property that an increase in the price by \$1 leads to an increase in the quantity supplied by 500 kilos and a decline in the quantity demanded by 2,000 kilos. Moreover, you know that the autarky price in Nicaragua is \$4.

a) Derive the import demand curve for Nicaragua for international prices lower than \$4 (Draw the graph).

b) Imagine that to help Nicaragua economically, the U.S. enacts a \$0.5 subsidy on exports to Nicaragua. What would be the new domestic price of rice in Nicaragua? Show the appropriate graph. (Hint: in equilibrium U.S. exporters must get the same price – including any subsidy - for exports in any market. Also, assume that Nicaraguans cannot resell the subsidized rice).

c) Using the graph you drew in part b) above, do the efficiency analysis for this policy. What is the efficiency loss associated to this policy? (Hint: compare the cost to the U.S. government versus the gains to Nicaragua).

EXERCISE 3

Consider the market for ethanol in Brazil. The Brazilian supply and demand curves are linear. The international price for ethanol is \$500 per ton. Imagine that Brazil which is a *large country* wants to stimulate its ethanol production by giving an *export subsidy* of \$50 per ton to the industry. Suppose that before the export subsidy the amount of ethanol produced in Brazil was 10000 tons and the amount consumed was 4000 tons. After the export subsidy, the domestic price increases to \$525 in Brazil, consumption falls to 3000 and production rises to 12000 tons.

a) Draw the graph that depicts the situation in the ethanol industry before and after the export subsidy is provided to Brazilian firms. Calculate the deterioration in TOT due to the export subsidy.

b) Calculate the consumer losses, the producer gains, total *export subsidy* paid and the net welfare change in Brazil.

EXERCISE 4

Consider a large country – China. Imagine that the world price for a ton of steel is \$600 dollars. At that price consumption is 300 tons of steel and production is 150 tons of steel in China. When the Chinese government imposes a specific **import tariff** of \$50 for a ton of steel, the price of steel in the world falls to 570 dollars per ton. The local production rises to 200 tons of steel and the local consumption falls to 250 tons of steel. Represent the situation in China before and after the tariff is implemented on the graph. Calculate the gains to China from the improvement in its terms of trade and show that a small tariff can be welfare improving for a large country.