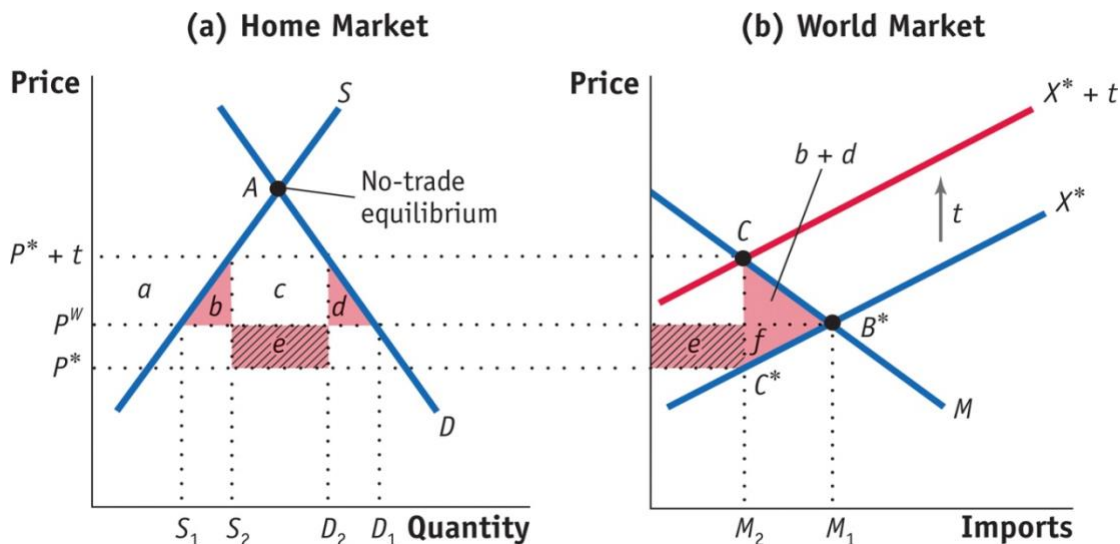


Problem Sets 3

(Due April 24 W in class)

1. Consider a large country applying a tariff t to imports of a good like that represented in the figure below.

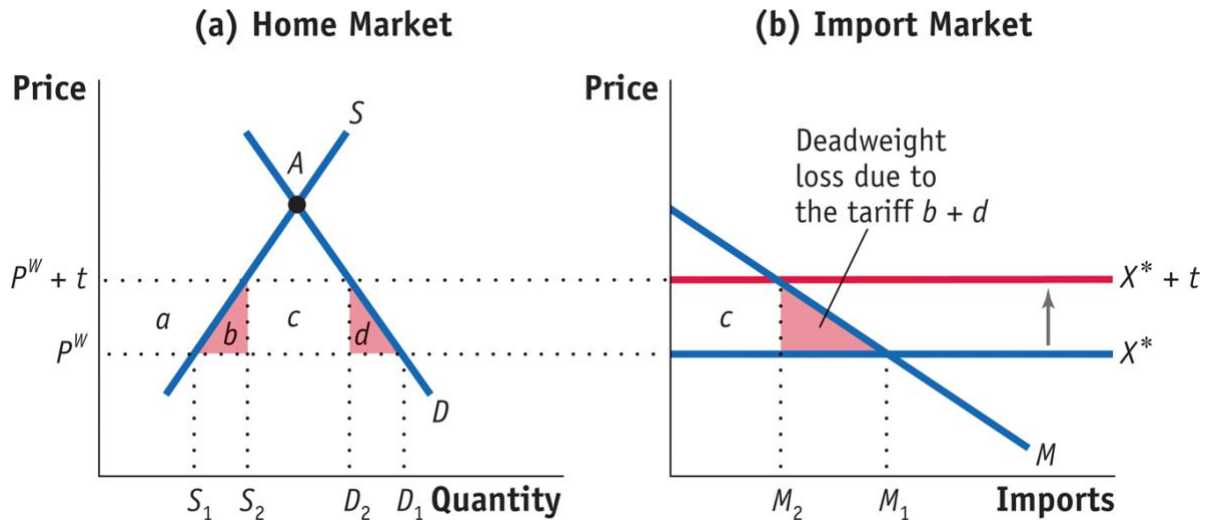


- 1) How does the size of the terms-of-trade gain compare with the size of the deadweight loss when (a) the tariff is very small and (b) the tariff is very large?
- 2) If the foreign export supply is perfectly elastic, what is the optimal tariff Home should apply to increase welfare? Explain.
- 3) If the foreign export supply is less than perfectly elastic, what is the formula for the optimal tariff Home should apply to increase welfare?
- 4) What happens to Home's welfare if it applies a tariff higher than the optimal tariff?
- 5) The following table show the optimal tariffs for steel products (calculated with the elasticity formula) and the actual tariffs set by the U.S. government. Which categories could lead to potential welfare gain to the U.S. from the tariff?

Product Category	Elasticity of Export Supply	Optimal Tariff (%)	Actual Tariff (%)
Alloy steel flat-rolled products	0.27	370	30
Iron and steel rails and railway track	0.80	125	0
Iron and steel bars, rods, angles, shapes	0.80	125	15-30
Ferrous waste and scrap	17	6	0
Iron and steel tubes, pipes, and fittings	90	1	13-15
Iron and nonalloy steel flat-rolled products	750	0	0

Source: Broda and Weinstein, 2006, "Globalization and the Grains from Variety," Quarterly Journal of Economics, 121, 1, 541-585.

2. Consider a small country applying a tariff t . Instead of a tariff on all units imported, however, we will suppose that the tariff applies only to imports in excess of some quota amount M' (which is less than the total imports). This is called a “tariff-rate quota” (TRQ) and is commonly used on agricultural goods, including sugar imports into the United States.



- 1) Redraw a figure, introducing the quota amount M' . Remember that the tariff applies only to imports in excess of this amount. With this in mind, what is the rectangle of tariff revenue collected? What is the rectangle of quota rents? Explain briefly what quota rents mean in this scenario.
- 2) How does the use of a TRQ rather than a tariff at the same rate affect Home welfare? How does the TRQ, as compared with a tariff at the same rate, affect Foreign welfare? Does it depend on who gets the quota rents?
- 3) Based on your answer to (2), why do you think TRQs are used quite often?

3. Rank the following in ascending order of Home welfare and justify your answers. If two items are equivalent, indicate this accordingly.

- 1) Tariff of t in a small country corresponding to the quantity of imports M
- 2) Quota with the same imports M in a small country, with quota licenses distributed to Home firms and no rent seeking
- 3) Quota of M in a small country with quota licenses auctioned to Home firms
- 4) Quota of M in a small country with the quota given to the exporting firms
- 5) Quota of M in a small country with quota licenses distributed to rent-seeking Home firms