

Time: 20 minutes.

Suppose the United States imports steel from the rest of the world at a free-trade price of \$200 per metric ton. U.S. production is approximately 135 million metric tons (MMT) per year, and consumption is 180 MMT. Suppose that economists have estimated that the U.S. would be entirely self-sufficient in steel if the price rose to \$350, and domestic production would rise to 150 MMT.

- a) Using a supply and demand graph for the U.S. steel market, graph the free-trade equilibrium.

Suppose that the steel industry requests a \$100 tariff to provide protection from foreign imports. Using the information above, you quickly estimate this would increase domestic production by 10 MMT, and decrease domestic consumption by 20 MMT, assuming the tariff does not affect the price of steel for the rest of the world.

- b) On the same graph, show the effects of the tariff in this case. Calculate the effect of the tariff on consumer surplus, producer surplus, and government revenue. What is the amount of the deadweight loss?

Suppose, however, that you reconsider your estimate because you decide that the U.S. is not a small country. Instead, you now assume that the \$100 tariff would decrease the world price to \$150 per ton, so the U.S. price would rise to only \$250, U.S. production would only rise to 140 MMT, and U.S. consumption would only fall to 170 MMT.

- c) On a different graph, show the effects of the tariff in this large-country case. Calculate the effect of the tariff on U.S. consumer surplus, producer surplus, and government revenue. What is the amount of the deadweight loss for the U.S.?