

Intro 100 at BMCC – Mid-Term Exam

Directions: You will have one hour to complete this exam. Read each question carefully and think your way through each problem. Don't lose points due to carelessness. **Points will be deducted for irrelevant information and/or if your answer is incomprehensible.**

Part I – 40 points – Suppose that the US economy produces only two goods – food and tires – and that the production possibilities frontier exhibits increasing opportunity cost. Assume further that the US currently produces both food and tires.

Last month, Pres. Obama imposed high tariffs on imported Chinese tires. Answer the following questions using the assumption that the tire tariffs will cause the relative price of tires to rise in America, but will NOT affect the relative price of tires on world markets.

1. (10 points) Will the US economy produce more or less tires after the tariffs are imposed? Will the US economy produce more or less food? **Explain.**
2. (10 points) Given your answers to the previous question, do you think the tire tariffs will help or hurt American tire manufacturers? Will the tariffs help or hurt American producers of food? **Explain.**
3. (20 points) Will Americans (as a whole) be able to purchase more tires and more food after the tariffs are imposed? **Explain** your answer in words and illustrate your answer with a diagram.

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Part II – 30 points – Suppose that Americans could purchase all the tires they want on the world market for \$100 per tire and at that price, they buy 75 million tires from American manufacturers and 50 million tires from Chinese manufacturers. For simplicity, assume that no other country produces tires.

Suppose further that – after Pres. Obama's tire tariffs have been imposed – the price of tires in the United States will rise to \$135 per tire, Americans will purchase 100 million tires from American manufacturers and will not purchase any tires from Chinese manufacturers.

4. (10 points) Placing price on the vertical axis and quantity on the horizontal axis, graph the American demand curve, the American supply curve and the World supply curve.
5. (10 points) On the same graph, show the quantity of tires demanded by American consumers at the world market price (i.e. \$100 per tire) and show the quantity of tires supplied by American tire manufacturers at that price.
6. (10 points) On the same graph, illustrate the effect that tariffs have on the price of tariffs in the United States, on the quantity of tires supplied by American tire manufacturers at the new price and on the quantity of tires purchased by American consumers at the new price.

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Part III – 30 points – Suppose there are many tire manufacturers in America and that they are all too small to affect the market price of tires. Once again, assume that Americans could purchase all the tires they want on the world market for \$100 per tire, but after Pres. Obama's tire tariffs have been imposed, the price of tires in the United States will rise to \$135 per tire.

Finally, assume that an American tire manufacturer faces the following cost functions:

$$MC = \frac{Q}{2000} \quad \text{and} \quad AC = \frac{Q}{4000}$$

7. (10 points) Prior to the imposition of the tariff, how many tires should the firm produce to maximize its profit? What would the firm's total profit be? **Show your work and/or explain your answer.**
8. (10 points) After the tariffs are imposed, how many tires should the firm produce to maximize its profit? What would the firm's total profit be? **Show your work and/or explain your answer.**
9. (10 points) How will the tariffs affect the quantity of labor demanded by American tire manufacturers? **Explain.**

