

Micro 20.1 – Past Exam Questions

Below is a large collection of questions from Mid-term and Final Exams that I gave in past semesters. Don't let the length of this document frighten you. It's a collection of questions. It is not a single exam.

I have also included the directions that I always place on top of the exams.

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.**

Mid-term Exam Questions

Part I – 100 points – Suppose that the US economy produces only two goods – food and clothes – and that the production possibilities frontier exhibits increasing opportunity cost. Assume further that the US currently produces both food and clothes.

During the debate over whether Congress should approve the Central American Free Trade Agreement (CAFTA), some groups argued that Congress should not approve the agreement because farm products aren't adequately protected by the agreement. Calling CAFTA the “Wal-Mart of trade deals,” one critic argued that:

“The poor of Central America will not be buying cheese from Wisconsin or corn from Iowa. ... CAFTA will hurt the American farmer, but funnel money to large agribusiness corporations who do business overseas.”

– Nichols, John. “White House Spins its CAFTA Lies.”
The Capital Times (Madison, WI). Tues. 19 July 2005.

Answer the following questions using the assumption that CAFTA will cause the relative price of food to fall in America.

1. (25 points) Will the US economy produce more or less food after CAFTA is enacted? Will the US economy produce more or less clothes after CAFTA is enacted? **Explain.**
2. (25 points) Given your answers to the previous two questions, do you think CAFTA will help or hurt American farmers? Will CAFTA help or hurt American clothing manufacturers? **Explain.**
3. (25 points) Will Americans (as a whole) be able to purchase more food and more clothes after CAFTA is enacted? Explain your answer in words and illustrate your answer with a diagram.
4. (25 points) Does your answer to the previous question require the American economy to produce at an efficient point along its PPF?
 - If so, then explain how America could reach that efficient point.
 - If not, then explain why your answer to the previous question does not require the American economy to produce at an efficient point along its PPF.

Part II – 100 points – Suppose that the world market price of soybeans is \$4 per bushel, but the US government imposes a tariff on imported soybeans of \$1 per bushel. Suppose further that American consumers purchase 2.5 billion bushels of soybeans from American farmers and another 1.5 billion bushels of soybeans from foreign producers at the domestic price of soybeans.

Suppose that it has been estimated that if the US government were to repeal the tariff on soybeans, American farmers would only sell 2 billion bushels of soybeans to American consumers. Lastly, suppose that it has also been estimated that the American demand curve for soybeans is linear and the price elasticity of demand is equal to -1.25 at the domestic price of soybeans.

Using the information provided above, answer the following questions.

1. (10 points) What is the domestic price of soybeans?
2. (20 points) What is the total number of bushels of soybeans that American consumers would buy at the world market price?
3. (20 points) If the American soybean market supply curve is linear, then what is the price elasticity of American soybean supply at the world market price?
4. (20 points) If the American soybean market supply curve is linear, then what is the price elasticity of American soybean supply at the domestic market price?
5. (30 points) Graph the American supply and demand curves. On your graph:
 - show the quantity of soybeans demanded by American consumers at the domestic market price and at the world market price,
 - show the quantity of soybeans supplied by American farmers at the domestic market price and at the world market price and
 - show the intercepts of the supply and demand curves.



Part III – 55 points – Last July, Pres. George W. Bush and Congress passed a \$14.5 billion energy bill into law. The stated goal of the legislation is to make the United States more energy independent and fuel efficient. In August, Pres. Bush and Congress passed a \$286 billion highway bill into law. The bill provides funding for new highway projects and improvements to the nation's transportation infrastructure.

This part of the exam asks you to evaluate the new legislation's effect on energy consumption in America through an analysis of how some of the provisions of the legislation will affect the supply and demand for various sources of energy.

1. The energy bill provides \$2.6 billion in tax breaks for oil and gas drilling, as well as for expanding pipelines and refineries.
 - a. (5 points) Using supply and demand curves, explain how this provision of the energy bill will affect the price of gasoline and the quantity of gasoline supplied and demanded. **Explain.**
 - b. (10 points) Will this provision of the energy bill make the demand for gasoline more or less elastic? **Explain.**
2. Automakers lobbied fiercely to ensure that the final version of the energy bill did not contain any mention of fuel-efficiency standards for their vehicles. Assume that producing a highly fuel-efficient vehicle tends to cost more than producing a comparable gas guzzler.
 - a. (5 points) How would higher mandated fuel-efficiency standards affect an automaker's marginal cost of producing cars? **Explain.**

- b. (5 points) How would higher mandated fuel-efficiency standards affect the market price of new cars and the quantity of cars supplied and demanded? **Explain.**
- c. (10 points) Considering the fact that automakers lobbied fiercely against higher mandated fuel-efficiency standards, do you think automakers face highly elastic or highly inelastic demand curve for new cars? **Explain.**
3. The National Association of Home Builders (NAHB) praised the passage of the highway bill.
- “Transportation and land use must complement each other. We are pleased that this legislation preserves the prerogatives and flexibility of local governments to plan for the transportation and growth needs of their local communities while encouraging private sector involvement in the planning process.”
- NAHB President David Wilson, a custom home builder from Ketchum, Idaho
- a. (5 points) How would the construction of new roads and highways affect the **quantity** of roadway capacity demanded? **Explain.**
- b. (5 points) How would the construction of new roads and highways affect the effective price of using roadway capacity? **Explain.**
- c. (10 points) Given your answer to the previous question, how do you think the construction of new roads and highways will affect the demand for new custom homes in Ketchum, Idaho? **Explain.**



Final Exam Questions

Part IV – 100 points – Consider an industry in which there are a large number of potential firms. Each firm in the industry has the same production process and produces output using capital and labor. Assume that capital and labor both exhibit diminishing marginal returns, so that capital can be substituted for labor in the production process (and vice versa), but capital and labor are not perfect substitutes.

Assume further that each firm is too small to affect the market wage rate for labor and that each firm is too small to affect the market rental rate on capital. Finally, assume that when the firm uses capital, it discharges pollutants into the local river.

Because the town’s drinking water comes from the local river, the townspeople are concerned about water quality and ask the town council to force the firms to discharge less pollution into the local river.

One councilman responds by proposing a tax per unit of pollution that is discharged into the river.

1. Suppose that each firm in the industry minimizes the cost of producing a given level of output.
 - (5 points) How would such a tax affect the relative wage rate? **Explain.**
 - (5 points) How would such a tax affect the optimal combination of capital and labor that each firm uses to produce output? **Explain.**
 - (5 points) Illustrate your answer to the previous question with isoquants and isocosts.
2. Now suppose that each firm in the industry is free to choose its optimal level of output.
 - (5 points) How would such a tax affect a firm’s marginal cost curve? **Explain.**
 - (5 points) How would such a tax affect a firm’s average cost curve? **Explain.**
 - (5 points) How would such a tax affect the economic profit of firms in the industry? **Explain.**

3. If firms can freely enter and exit the industry, then:
 - (5 points) How would such a tax affect the market supply curve in the industry? **Explain.**
 - (5 points) How would such a tax affect the market equilibrium price of output? **Explain.**
4. (10 points) **Explain** how such a tax would reduce the amount of pollution discharged into the river.

Another councilman suggests that – instead of imposing a tax on pollution discharges – the town should offer firms a subsidy per unit of pollution that they do **not** discharge into the river.

5. Suppose that each firm in the industry minimizes the cost of producing a given level of output.
 - (5 points) How would such a subsidy affect the relative wage rate? **Explain.**
 - (5 points) How would such a subsidy affect the optimal combination of capital and labor that each firm uses to produce output? **Explain.**
 - (5 points) Illustrate your answer to the previous question with isoquants and isocosts.
6. Now suppose that each firm in the industry is free to choose its optimal level of output.
 - (5 points) How would such a subsidy affect a firm's marginal cost curve? **Explain.**
 - (5 points) How would such a subsidy affect a firm's average cost curve? **Explain.**
 - (5 points) How would such a subsidy affect the economic profit of firms in the industry? **Explain.**
7. If firms can freely enter and exit the industry, then:
 - (5 points) How would such a subsidy affect the market supply curve in the industry? **Explain.**
 - (5 points) How would such a subsidy affect the market equilibrium price of output? **Explain.**
8. (10 points) Under what conditions would such a subsidy cause less pollution to be discharged into the river than before? Under what conditions would such a subsidy cause more pollution to be discharged into the river than before? **Explain.**