

MICROECONOMICS I

Exercises (B)

- [*Harvard exercise by G. Mankiw*] Consider the US market for brie cheese, a snacking favorite of the “thirtysomething” crowd. Demand is given by the equation $Q_d = 1,000 - 20P$, and supply is given by the equation $Q_s^{US} = 40P - 200$. The French, who have a much longer history of making brie than their American counterparts, can supply it according to the following equation: $Q_s^{France} = 60P + 200$. However, the French don’t eat brie at all.
 - Without any cheese trade between the two countries, what does the US market for brie look like, graphically? What are the equilibrium price and quantity in the US?
 - Assume that cheese trade opens between the US and France. Draw the resulting equilibrium. What are the price and quantity? In equilibrium, how much will US cheesemakers supply? How much will French cheesemakers supply?
 - Show, on a diagram, US consumer surplus, US producer surplus, and US total surplus with no trade and with free trade.
- Frank works for an important firm and receives a high wage for his services. Recently, after the end of a meeting, he decided to walk back to his office, instead of taking a cab. The walk took him 70 minutes, while the cab ride would have taken 10 minutes and costed 20 euros. His boss harshly complains about Frank’s decision, telling him that it was not cost-effective. Frank replies that his decision made the firm save money. Who is right, Frank or his boss? Under which assumption about Frank’s hourly wage?
- Why is the opportunity cost of a woman with a college education having a child different from the opportunity cost of a woman with just a high school education having a child? What kind of public policy could eliminate this difference? What do you think about the distributional (or equity) effect of such a policy?
- The next table shows the production possibilities of a closed economy. We are assuming that this economy can produce only two goods: X and Y .

	A	B	C	D	E	F
Good X	0	1	2	3	4	5
Good Y	25	22	18	13	7	0

Draw the production possibilities frontier (PPF) of the economy. Build a table with the opportunity cost of X in terms of Y at the different points on the PPF. What’s happening to this opportunity cost as the production of X increases?

- Federica has a given budget that she can use to buy either books or CDs. At most, she can buy 10 CDs, or 30 books. Draw her budget constraint (with books in the horizontal axis). What is the relative price P_{book}/P_{CD} ? What is the opportunity cost of an additional book in terms of CDs?
- [*Textbook exercise by J. Stiglitz*] Many government programs deliver benefits in kind to people. For example, food stamps can only be used to buy food. Economists often argue that cash transfers are better. Assume that the typical food stamp recipient (e.g., a homeless) has \$200 per week in income in addition to \$80 per week in food stamps.
 - Draw the budget constraint (with the consumption of books in the horizontal axis and the consumption of other goods in the vertical axis).
 - One proposal is to substitute \$80 in cash for the food stamps. Draw the budget constraint that results from this proposal.
 - What would the recipient prefer? Why? On what grounds could government food stamps be justified?

7. Assume that the army recruit labor supply is given by the equation: $W = 10 + \frac{1}{4}L$, where W is the wage, and L the number of volunteer soldiers enrolled in the army.
- Draw the graph of this labor supply.
 - Assume that the government introduces conscription and draft 200 people to work as soldiers for a wage equal to 30. What is the army budget in this case?
 - Find the budget that the government should pay to build an army of the same size without draft.
 - What size would the professional army without draft have in case the government wanted to spend the same budget of point b?
8. In Cabot Cove and Florence, people undertake only two activities: fishing lobsters, or producing olive oil. In Cabot Cove, four working hours are needed to produce one liter of oil, and six to fish one lobster. In Florence, only one hour is needed to produce one liter of oil, and two to fish one lobster. Assuming that a special import-export service (called “Fuz Trade”) allows the two towns to exchange the two goods, which town should specialize in the production of lobsters? Why?
9. Japan and China only produce two goods: rice and cars. Labor is the only factor of production. Each Chinese worker can produce 9 tons of rice or 3 cars every year. Each Japanese worker can produce 10 tons of rice or 5 cars every year. Is labor more productive in one country than the other? Are there gains from trade? Which country should specialize in the production of rice?
10. Consider the market for last-generation mobile phones in Spain. Demand is equal to: $Q_d = 500 - 2P$. Supply is equal to: $Q_s = 3P$.
- Show the market equilibrium in a graph. What are the equilibrium price and quantity?
 - The government introduces a subsidy equal to 50 euros to buy a mobile phone. Which curve is affected by this policy? What are the after-subsidy price and quantity in the market?
 - Going back to the initial equilibrium in point a, assume that the government introduces a price ceiling of 80 euros. What could motivate this policy? What effect will produce?
 - Going back to the initial equilibrium in point a, assume that the government introduces a price floor of 120 euros. What could motivate this policy? What effect will produce?