

ECON 1201 Midterm Review

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1 Eat a Peach

Suppose the demand for peaches is described by the function $Q = 20 - 2P$ while the supply of peaches is described by the function $Q = 2P - 4$, where Q is peaches per day and P is dollars. Graph the supply & demand in the usual manner, labeling everything appropriately. Find the equilibrium price and quantity and label them on your graph. What is the total revenue at the equilibrium price? What is the price elasticity of demand at this price? Is this the price at which total revenue is maximized? If not, would the maximum revenue occur at a lower or higher price?

2 Buy Bonds!

In order to finance the war in Afghanistan, Congress authorizes the US Treasury to offer two new investments to patriotic Americans: the Good War Bond (GWB) and the Ordinary Bond Americans May Acquire (OBAMA). Both bonds are risk-free perpetuities whose payments are automatically adjusted for inflation. The GWB pays \$1,000 per year with the first payment one year from today; the OBAMA also pays \$1,000 per year, but with the first payment three years from today. If the real interest rate is 5%, what difference in their prices today will make you indifferent between putting your savings into the GWB and the OBAMA?

3 Cheap Apples?

The market for apples in Storrs is in equilibrium at a price of \$1/apple and a quantity of 1,000 apples/week before the town council passes a law limiting the price of apples to \$0.90 each. Illustrate the effect of this new price ceiling on a graph and describe its effects in terms of social welfare.

4 Les hommes politiques dire les choses darnd-est

NPR recently reported¹ that French President Nicolas Sarkozy plans to levy a carbon tax on households and businesses. They quote him as saying (through a translator) that: “This tax will in no way reduce household income or a business’s competitiveness. We will refund every cent, either through tax deductions or refunds to those who don’t pay taxes.” Imagine that you are an angry French citizen. Explain (en anglais!) to Carla Bruni-Sarkozy’s less famous husband how the carbon tax will make French voters worse off.

5 Let’s Make a Deal

You own a risk-free government bond that pays \$1,000 one year from now and \$11,000 two years from now. I offer you \$10,000 cash today in exchange for the bond. If you expect the real interest rate to be 10% in both of the next two years, should you accept my offer?

6 Greggery Peccary

You own an oil well in Texas on land that is also home to the gregarious peccary (a rare pig-like animal). You can extract the oil today and sell it for a net \$100,000 profit. Your trusty economist predicts that the inflation-adjusted price of oil will be 16% higher one year from now, while the real interest rate is only 3%. However, the EPA will release a study tomorrow, and there is a 10% chance they will declare the peccary endangered; if they do, your property will be worthless. What is the expected value of your property one year from now if you leave the oil in the ground? If you decide to extract the oil today, are you risk neutral, risk averse, or risk loving?

7 Survivor Comparative Advantage

Alice and Bob are stranded on a tropical island, where they must survive on a diet of delicious nuts and succulent roast peccary. (Luckily, neither Alice nor Bob is vegetarian, Jewish, Muslim, or allergic to nuts!) Alice can gather 2 kg of nuts each day, or she can spend 5 days to produce 1 roast peccary. Bob can gather only 1 kg of nuts each day, but he can produce a roasted peccary in only 4 days. What is Alice’s opportunity cost of gathering nuts? What is Bob’s opportunity cost of gathering nuts? In order to maximize food production, who should specialize in gathering nuts?

¹<http://www.npr.org/templates/story/story.php?storyId=121274671>

8 “I Rob Banks”

In the imaginary state of Calitexacut, the average armed robbery results in a five year prison term and the average murder results in a twenty year prison term; but Calitexacut recently passed the Three Strikes Law, which mandates life in prison with no possibility of parole for anyone convicted of three felonies (such as armed robbery or murder). Career bank robber P.B. Floyd lives, loves, and robs banks in Calitexacut and has already been convicted of two armed robberies. Floyd is planning another bank robbery tomorrow despite the Three Strikes law. How does the Three Strikes Law impact Floyd’s decision about whether to shoot the bank guard while robbing the bank?

9 Definitions & Concepts

- the Invisible Hand
- comparative advantage
- opportunity cost
- social welfare
- Pareto efficiency
- factors of production (land, labor, capital, etc.)
- change in demand/supply vs. change in quantity demanded/supplied
- equilibrium
- price ceiling/floor
- price elasticity of demand
- incidence of a tax
- cross-price elasticity
- substitutes/complements (in consumption)
- marginal cost/benefit
- consumers’/producers’ surplus
- present/future value
- deadweight loss
- production possibilities frontier