

Econ 101, Final, Fall 2007.

Prof. Guse, W & L University

LONGER PROBLEMS. Answer 3 out of 4. Skip exactly one of your choice.

1. A REGULATION PROBLEM. (20 Points)

The diagram below depicts the cost structure over two years (MC and AC) for a monopolist and the market demand it faces. Note well, that on the one hand, demand does *not* change from year 1 to year 2, but that the firm's cost structure *does* change.

- (a) (5 Points) What is the economic term for a market like this? Explain. What sort of good or service might be depicted here?
- (b) (5 Points) Suppose the pricing power of this firm is regulated by a government authority who sets a long term price ceiling of \hat{P} .
 - Identify an area on each graph representing the firm's profit for that year.
 - Identify the quantity of this good supplied to consumers in each diagram for that year.
- (c) (10 Points) In the second year, critics charge that the regulatory authority is letting the firm earn excessive profits and that the price-ceiling should be lowered. Address this criticism.

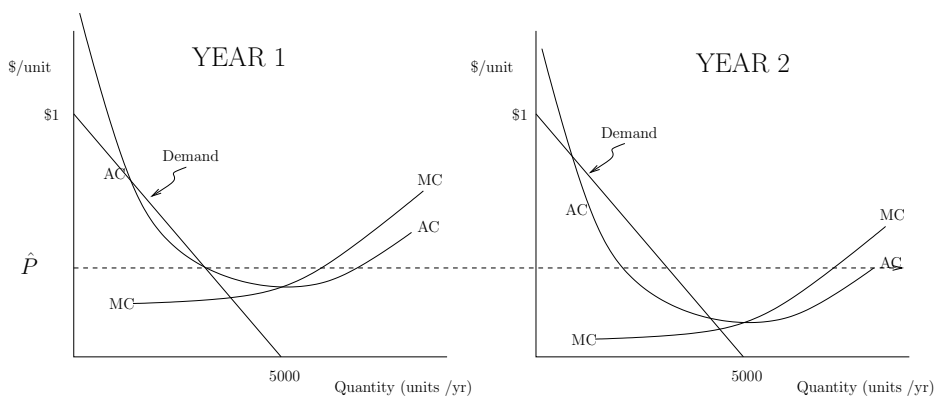


Figure 1.

Extra Space For Your Answer.

2. POTATO AND NUTS. (20 Points)

Paul has income of \$2000 per month. Walnuts are \$10 per lb and cable TV is \$10 per month per channel. (There are at least 200 channels available). At these prices Paul would choose 50 channels and spend the remainder of his income on walnuts.

- (a) (5 Points) draw Paul's budget line, label it $B_{(a)}$ and identify his chosen consumption bundle, $C_{(a)}$.
- (b) (5 Points) The price of walnuts falls to \$5 per pound. Redraw Paul's budget line in the same diagram, labeling it $B_{(b)}$ and identify what his new choice, $C_{(c)}$ might be. (Sketch in some indifference curves, if you like.)
- (c) (5 Points) Sketch Paul's *own-price demand curve* for walnuts for the given income level and price of cable. Be sure that your demand curve accurately depicts Paul's demand at \$10/lb and \$5/lb.
- (d) (5 Points) When the price of walnuts is \$5/lb, and just after Paul signed his cable contract for the month and purchased his walnuts for the month, Sara from the cable company approaches Paul with a deal. She'll give Paul 10 more channels if he'll send her 20 pounds of walnuts. Does Paul take the deal? Explain using the notion of marginal rate of substitution.

3. RENT CONTROL. (20 Points)

Matt (our intrepid dishwasher from the midterm) had been living with his parents, because rent in his city's competitive market for studio apartments was \$400 per month - more than Matt was willing to pay for independence. Recently, however, the city where he lives passed a simple rent-control law that set an unsupported ceiling on studio apartment rent of \$300 per month. This is less than Matt is willing to pay. It was rather difficult finding a place, but he now enjoys his independence at the controlled price of \$300 per month. You may assume that nobody signs a lease who is not willing and able to pay the legal price. Also assume that for landlords, all tenants are equally desirable.

- (a) (12 Points) Using a diagram, if you like, describe the effect of the rent-control law on the city's studio apartment market. What happens to the overall number of apartments for rent? How does the law affect landlords? Does every landlord experience the same change in welfare? How does it affect tenants? Does every tenant experience the same change in welfare?
- (b) (8 Points) What does Matt's experience tell you about the efficiency of rent-controlled unit allocation? (i.e. rationing)

4. A GAS TAX. (20 Points)

The production and consumption of gasoline has many negative side effects whose costs are paid neither by producers or consumers of gasoline. Assume that every gallon has a marginal external cost of \$2 and that it does not matter how the gasoline is produced or consumed.

- (a) (5 Points) Draw a diagram showing an efficient gasoline tax.
- (b) (5 Points) Label an area in your diagram indicating the *loss in consumer surplus* resulting from the tax.
- (c) (5 Points) Label the net social welfare change. Is it a net gain or loss?
- (d) (5 Points) Explain the importance of the assumption that it does not matter how the gasoline is produced or consumed.

Extra Space For Your Answers.