

Important Things To Know For Exam 2

Production

Revenue= Price x Quantity

- Revenue- Money coming In
- Costs - Expenditures (money going out)

Goal of firms is to maximize profits

- $\pi = TR - TC$

Variable Inputs – inputs that CAN vary in the short run

- Ex. Labor

Fixed Inputs- inputs that CANNOT vary in the short run

- Ex. Capital (number of factories, rented office space, large machinery)

Long-Run vs. Short Run comparison

- Short-run- time frame in which some inputs are fixed
- Long-run- time frame in which no inputs are fixed (all are variable)

Average product of Labor (APL)- average productivity of workers

- $APL = Q/L$

Marginal Product of Labor (MPL) – additional output by adding workers

- $MPL = \Delta Q / \Delta L$
- Decreasing MPL= diminishing returns to labor

Costs

Two types of Costs

- Variable costs (VC)- costs associated with variable inputs (vary as q changes)
- Fixed costs (FC)-costs associated with fixed inputs (do not vary as q changes)
- Total Costs (formula) = FC+VC

$$ATC = TC/q$$

$$AFC = FC/q$$

$$AVC = VC/q$$

$$MC = \Delta TC / \Delta q \text{ or } \Delta VC / \Delta q$$

Profit Maximization and Perfect Competition

Profit Maximization

$$MR = \Delta TR / \Delta q$$

- $MR > MC$ – producing another unit increases revenue more than costs
 - Produce more
- $MR < MC$ – increases costs more than it increases revenue
 - Produce less

Perfect Competition

- 1.) Many firms
 - 2.) Firms are price _____
 - 3.) Identical goods or services
 - 4.) Free entry and exit
- **Firms should produce where $P = MC$**

$$\text{Profit} = TR - TC \text{ or } (P - ATC) \times q$$

- Positive profit = $P > ATC$
- Negative profit = $P < ATC$
- No profit = $P = ATC$

Long Run and Perfect Competition

Shutdown rules

- $TR \geq TC$ – Not losing money so produce
- $TR < TC$, $TR \geq VC$ – produce in the short-run, exit in long run
- $TR < VC$ – shutdown in the short-run, exit in the long-run (still not producing)

Returns to Scale

- Increasing returns to scale
 - LRATC is falling as the scale of operation increases

- Constant returns to scale
 - LRATC are constant as the scale of operation increases
- Decreasing returns to scale
 - LRATC are increasing as the scale of operation increases

Monopoly

- A monopoly occurs when only one firm is supplying goods to the entire market
 - Why? Barriers to entry
- What creates barriers to entry?
 - 1.) Returns to scale
 - 2.) Geography
 - 3.) Legal Provisions
 - 4.) Anti- Competitive behavior
- The marginal cost curve of a monopoly is the same as the market supply curve
 - The monopoly supplies to all consumers

Who do monopoly's maximize profit?

- Choosing the quantity where $MR=MC$

What price do they charge?

- Monopoly's charge the maximum price consumers will pay
 - Height of the demand curve

Monopolists choose q_m where $MR = MC$ then choose price they will charge P_m at the height of the demand curve.

MR of a monopolist

- Marginal revenue decreases as quantity increases
 - Producing more lowers total revenue

SR and LR (produce, shutdown, exit)

- $TR \geq TC$ - produce in both short run and long run
- $TR < TC, TR \geq VC$ - produce in the short run and exit in the long run
- $TR < VC$ - shutdown in the short run and exit in the long run