TOPIC VI: PROFIT MAXIMIZATION

PROFIT CONCEPTS AND THE GENERAL PROBLEM WHEN FIRMS ARE NONSTRATEGIC IN RESPECT TO OTHER FIRMS

Key concepts

A. Economic profits relative to "IRS or accounting" profits
B. MR= MC as a decision rule
C. The shut down rule

In this section we develop the foundation for analyzing the theory behind how firms maximize profits. The idea is to summarize several key ideas that relate to all firms, independent of the industry structure they face. That is, the ideas developed in this section hold true for all firms, whether they are in highly competitive industries or whether they face minimal competition.

Earlier, we defined profits as “total revenue minus total costs.” Let’s take this definition a step further. For analytical purposes, it is insightful to think of profits at three levels: (1) positive economic profit, (2) a normal profit (zero economic profit), (3) negative economic profit.

Recall, total economic costs include all costs, including opportunity costs. Total accounting costs would not include opportunity costs. Our levels of profits use this distinction.

Positive Economic Profits -- A situation where total revenue exceeds total economic costs.

Zero Economic Profits (Normal Profit) -- A situation where total revenue equals total economic costs.

Negative Economic Profits (Economic Losses)

Case 1: Accounting profits with “economic losses” -- A situation where total revenues exceed total accounting costs, but are less than total economic costs.

Case 2: Negative accounting profits -- A situation where total revenues are less than total accounting costs.

In all cases, we assume the firm is charging the price (or prices) and producing the quantity that either maximizes its profits or minimizes its losses. How does the firm determine the “best price (prices) and the best quantity?”

Basically the theory says the firms consider each extra unit of possible output at the margin and determine whether that unit would be profitable to produce. Profits will increase (losses will decrease) as long as the extra/marginal revenue (MR) from producing an extra unit of output is greater than the extra/marginal cost (MC) from producing an extra unit of output.
**Principle 12** - The firm maximizes profits (minimizes losses) by producing where MR = MC. (Or in other words, produce a greater output as long as the MR from additional units is greater than the MC of those units.)

**Principle 13** - The firm continues to operate as long as it is covering all variable costs.

The idea behind this principle is the following. If the firm can cover all variable costs, anything left over can go to covering any fixed costs (if they exist). Depending on how much revenues cover variable costs, the firm will make above normal profits (economic profits), just a normal profit, or losses while covering some of its fixed costs. If the firm cannot cover its variable costs, it should close down. In that case TVC are zero and the firm’s losses equal its fixed costs.

**THE COMPETITIVE STRUCTURE OF INDUSTRIES**

To further develop the theory behind profit maximization, we must turn to specific “industry” structures. Recall, industry structure relates basically to the degree of competition between firms in the industry. Refer to the figure shown below.

**Industry Structure by Level of Competition**

Monopoly | Oligopoly | Monopolistic Competition | Perfect Competition
--- | --- | --- | ---

Increasing Competition

In the sections which follow, we begin to examine the questions of how market structure affects the pricing and production decisions of the firm. We begin with a market characterized by perfect competition -- the case of S&D. We then consider monopoly, oligopoly, and monopolistic competition.
QUESTIONS

Short Answer

1. At the profit maximizing level of output for a local glass manufacturer, total revenues equal $5,000 and total economic costs equal $6,000. What do we know about the firm’s accounting profits?

2. True/False (explain) -- If the marginal revenue of the last unit of output is $50 and the marginal cost is $75, the firm should close down.

3. True/False (explain) -- Profits are maximized where total costs are minimized.

4. True/False (explain) -- Profits will begin to decline if the MR of extra units of output is falling.

5. Create 4 scenarios; in each case let TR at the profit maximizing output equal $20,000 per week and TFC = $5,000. Choose 4 conditions, by setting TVC, that would yield the 4 possible profit positions.

6. Create 4 scenarios; in each case let TR at the profit maximizing output equal $20,000 per week and TFC = $50,000. Choose 4 conditions, by setting TVC, that would yield the 4 possible profit positions.

Multiple Choice

1. In the short run, a profit maximizing (loss minimizing) firm should continue to operate as long as:
   
   A. the firm can cover its total fixed costs.
   B. the firm can cover its total variable costs.
   C. the firm can cover its total costs.
   D. the firm is making an economic profit.

2. An accounting profit of $0 per month implies the firm is making:
   
   A. Above normal profits.
   B. Above economic profits.
   C. Negative economic profits.
   D. Normal profits.
3. The table below shows MR and MC for a firm. TFC = 0.

<table>
<thead>
<tr>
<th>Q</th>
<th>$MR</th>
<th>$MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>3</td>
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<tr>
<td>3</td>
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<td>4</td>
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<tr>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

Maximum profits for this firm would be:

A. $5  
B. $10  
C. $1  

4. Quinn Buckner left broadcasting at CBS to become the head coach of the Dallas Mavericks. Assume Mr. Buckner was making $500,000 per year at CBS and was making $450,000 per year as a head coach. Using this information only, we would say Buckner, as a head coach, was making:

A. positive accounting and economic profits.  
B. positive accounting and negative economic profits.  
C. negative accounting and positive economic profits.  
D. normal accounting and economic profits.