ECN 221 Chapter 7: The Profit Maximization Rule for a Perfectly Competitive Firm

In this chapter, we’re going to build on the basics of profit, cost, and production that we developed in chapters 7 and 8, to study the way perfectly competitive firms behave in markets. Different types of markets have different conditions, or structures, that dictate the way firms make price and quantity decisions. Recall that there are 4 basic market structure models that we study in economics: Perfect (Pure) Competition, Pure Monopoly, Monopolistic Competition, and Oligopoly. As is the case with all models, each represents a simplification of reality. The most simplified of these is the model of perfect competition. The perfectly competitive market is essentially an “ideally functioning market”. We will use this model as a basis for comparison as we study other market structures.

Recall that a perfectly competitive (PC) market exists when:

1. There are many sellers and many buyers of the good or service in question,
2. The good or service is homogenous across firms,
3. Each firm has a small market share that is not threatened by any other firm,
4. There is free and unrestricted entry into and exit from the market.

→ Why are perfectly competitive firms regarded as “price takers”?

→ What does the demand curve for the product of any single PC firm look like?

Consider the following data for farmer Bob who sells corn in a perfectly competitive market. Assume the market price is $8.00 per bushel, and costs change with quantity as given below.

<table>
<thead>
<tr>
<th>Q (bushels)</th>
<th>TR (P·Q)</th>
<th>MR (∆TR/∆Q)</th>
<th>TC</th>
<th>ATC (TC/Q)</th>
<th>MC (∆TC/∆Q)</th>
<th>Profit (TR - TC)</th>
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<tbody>
<tr>
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</table>

→ How many bushels of corn should farmer Bob produce? Why?

→ What is marginal revenue equal to for each quantity? Will this be true for all types of firms?
→ In the top graph below, plot TR and TC. In the lower graph, plot profit.

→ How can you represent profit on the top graph?

→ Where is the profit max point on the bottom graph?
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Using the handout from last time, consider the top graph where we show total revenue and total costs:

1. Notice that total revenue is represented by a straight line.

→ What does this imply about the slope of the total revenue line?

→ Write an expression for the slope of total revenue:

→ Write an expression for the slope of total costs:

2. Notice that when the distance between total revenue and total costs is the largest, profit (TR- TC) must be at its maximum.

→ What can you say about the slopes of the total revenue and total cost lines when the distance between them is the highest?

→ What does this imply about marginal revenue and marginal costs when profit is maximized?

Now consider the bottom graph where we show total profit:

→ Write an expression for the slope of the profit line.

→ What can you say about the slope of the profit line when profit is at its maximum point?

→ Would a firm ever want to be at a point where marginal profit is > 0? Explain.

→ Would a firm ever want to be at a point where marginal profit is < 0? Explain.

WRITE AN EXPRESSION FOR THE PROFIT MAXIMIZING CONDITION FOR A PERFECTLY COMPETITIVE FIRM: