

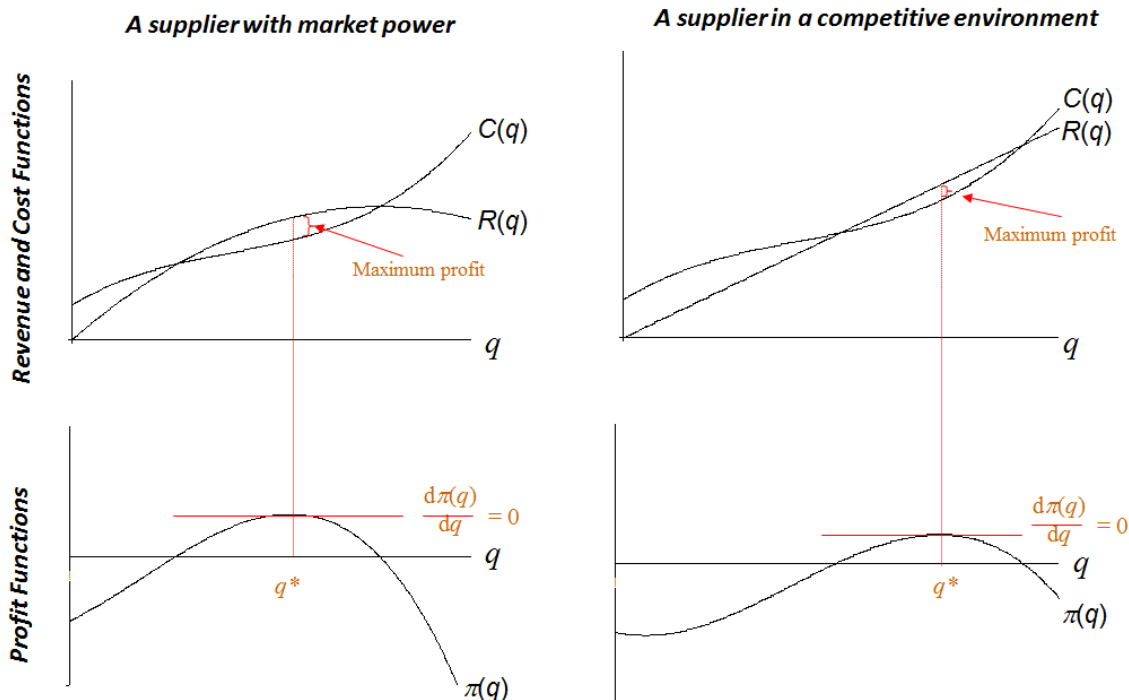
### 1.1: Economic, Normal, and Abnormal Profits

To prepare for this lecture, read Hirschey<sup>1</sup>, chapter 1, pages 3 – 5, 9 – 13, 16 – end (especially the Coke case study). If you are getting back into economics after a break, you may also want to review the chapter(s) on competitive and monopoly markets from any Principles of Economics textbook such as Mankiw, Essentials of Economics (5<sup>th</sup> ed., 2009), chapters 13 and 14; Bade and Parkin, Essential Foundations of Economics (5<sup>th</sup> ed., 2011), chapters 11 and 12; or Hubbard and O'Brien, Essentials of Economics (2<sup>nd</sup> ed., 2010), chapters 8 and 9.

Economic theory predicts that the more competitive a market situation is, the more ephemeral will be economic profits. At the extreme, firms will be able to secure only **normal profit** – that is a level of profit that merely covers the total opportunity costs of resources employed in an economic activity. In such a case, economic profit is zero. Casual perusal of the economic landscape, however, makes it obvious that some firms do secure positive economic profits. Such positive economic profits are sometimes called **abnormal profits** or **abnormal returns**. Correct measurement of these abnormal returns and accounting for their existence is the subject of this lecture.

#### Definition and measurement of economic and abnormal profits

1. Standard (neoclassical) microeconomic approach. In the standard neoclassical economic theory of the firm, profits are defined as the difference between total revenue and total costs, where total costs are taken to include both **explicit and implicit costs**. By making some fairly simple assumptions about revenue and cost behavior, this way of thinking about profits is very abstract and very simple:



<sup>1</sup> All references to Hirschey are to Managerial Economics, 12<sup>th</sup> ed. (2009).

Such an approach is associated with the conceptually useful way of thinking about business firms as entities that maximize a clearly defined objective function. The objective function may be revenue maximization. More commonly, the firm's goal is assumed to be maximization of economic profit as a function of the firm's output level,  $q$ :

$$\max_q \pi(q) = R(q) - C(q)$$

The revenue function may be linear or nonlinear (depending on the market circumstances), and the cost function, which includes both explicit (accounting) and implicit (opportunity) costs, may also be linear or nonlinear depending upon the underlying production technology.

A bit more realistically, we might conceive of this as a maximization problem over time:

$$\max_q \pi(q) = \int_{t=0}^{\infty} \pi(q) dt = \int_{t=0}^{\infty} [R(q) - C(q)] dt$$

Lecture 1.2 will explore this conception of the firm, which is central to what is known at the **neoclassical theory of the firm**, in more detail.

**[?] What do you think of this approach to modeling business firm behavior? What are its strengths and weaknesses? Does the managerial concept of *satisficing behavior* seem more or less realistic?**

2. **Abnormal profits in financial economics.** In the real world, there are other measures of profit. Hirschey (page 10 – 11) discusses one common metric, **return of stockholders' equity (ROE)**. From an economic perspective, one shortcoming of ROE is that it is derived from accounting measures.

Here we will examine a related and fairly standard way of measuring profit – that of calculating the return an investor gets from holding an asset for a specified period of time. The specific asset we are talking about is a share of stock representing an ownership claim on a firm's profits. Owners of stock earn returns in two ways: via payments of dividends and through appreciation of the stock price. Dividends complicate the matter, so we shall calculate returns on asset  $i$ ,  $r_i$ , without dividends, as follows:

$$r_i = (p_{i1} - p_{i0}) / p_{i0}$$

For example, a share of Eli Lilly could be purchased on January 3, 2007 for \$49.52. On December 31, 2007, the share price was \$52.39. An investor who bought a share on January 3 and sold it on December 31 would have earned a return of about 5.8%:

$$r_i = (52.39 - 49.52) / 49.52 = 0.057956 \text{ or } 5.8\%$$

How does this return compare to the investor's opportunity cost of the funds used to purchase the share of stock? Alternative to purchasing a share of stock (which entails some risk), if the investor could have invested funds in a risk-free asset, the return on that asset would represent the investor's opportunity cost of resources. In January 2007, an investor could have purchased a 12-month U.S. government bond with a guaranteed return of about 5%. Thus, the investor's economic return (or economic profit) from holding the share of Lilly stock was 0.8%. It is this 0.8% return that financial economists refer to as abnormal profits or abnormal returns.

### Accounting measures and their relationship to economic returns

Review Hirschey's Table 1.1 and the terminology on pages 10 – 13. We will discuss the relationships between accounting measures and economic performance of firms more fully in lecture 1.4.

### Accounting for Abnormal Returns

Hirschey (pages 12 – 13) elaborates two broad categories of profit theories – disequilibrium and compensatory. In the first category are frictional profits that result from a market being out of equilibrium in the economic sense. By definition, such profits should be short-lived. Since economic theory predicts that positive economic profits (abnormal returns) will be ephemeral, when one observes persistent abnormal returns the first set of questions one should ask is:

1. Is the economic profit real, or is it the result of measurement error?
2. If the profit is real, is it a payment for risk taking, and if so, should the profit estimate be adjusted to reflect the costs of bearing that risk?
3. If the risk-adjusted profit is real, then **what is its source**, and **how transitory** is it likely to be?

Regarding possible sources of abnormal returns and the ability to sustain them, we might consider three potential factors:

1. Market power (and possibly anti-competitive tactics)
2. Superior management skills (resulting in compensatory profit payments for innovation or efficiency)
3. Dumb luck

Determining the sustainability of economic profits is the subject of many business school analytical models. We will look at two such models in lecture 1.3.

**For a thought-provoking follow-up** to this lecture, read Rosenzweig, "The halo effect, and other managerial delusions", The McKinsey Quarterly, (2007:1), pages 77 – 85.

**[?] How do Rosenzweig's admonitions about "the delusion of absolute performance" relate to the subject matter of this lecture?**

**[?] What do you think it means to "see the world through probabilities"?**