CHAPTER 13

Production and Cost Analysis II

Economic efficiency consists of making things that are worth more than they cost.

— J. M. Clark

McGraw-Hill/Irwin

Chapter Goals

- Distinguish technical efficiency from economic efficiency
- Explain how economies and diseconomies of scale influence the shape of long-run cost curves
- State the envelope relationship between short-run cost curves and long-run cost curves
- Explain the role of the entrepreneur in translating cost of production to supply
- Discuss some of the problems of using cost analysis in the real-world

Entrepreneurial Activity and the Supply Decision

- An **entrepreneur** is an individual who sees an opportunity to sell an item at a price higher than the average cost of producing it
  - Entrepreneurs organize production
  - They visualize the demand and convince the owners of the factors of production that they want to produce those goods

Using Cost Analysis in the Real World

- Some of the problems of using cost analysis in the real-world include the following:
  - Economies of scope
  - Learning by doing and technological change
  - Many dimensions
  - Unmeasured costs
  - Joint costs
  - Indivisible costs
  - Uncertainty
  - Asymmetries
  - Multiple planning and adjustment periods with many different short runs
  - And many more

Using Cost Analysis in the Real World

Economies of Scope

- The cost of production of one product often depends on what other products a firm is producing
- There are **economies of scope** when the costs of producing goods are interdependent so that it is less costly for a firm to produce one good when it is already producing another
- Firms look for both economies of scope and economies of scale
- Globalization has made economies of scope even more important to firms in their production decisions

Using Cost Analysis in the Real World

Learning by Doing and Technological Change

- Production techniques available to real-world firms are constantly changing
- **Learning by doing means** that as we do something, we learn what works and what doesn't, and over time we become more proficient at it
- **Technological change** is an increase in the range of production techniques that leads to more efficient ways of producing goods and the production of new and better goods
- These changes occur over time and cannot be predicted accurately

Using Cost Analysis in the Real World

Many Dimensions

- Most decisions that firms make involve more than one dimension, including:
  - Quality
  - Packaging
  - Shipping
- The level of output is the only dimension in the standard model
- Good economic decisions take all relevant margins into account

Using Cost Analysis in the Real World

Unmeasured Costs

- Economists include opportunity costs while accountants use explicit costs that can be measured
- Economists include the owner's opportunity cost which is the forgone income that the owner could have earned in another job
- In measuring the costs of depreciable assets, accountants use historical cost which is what a depreciable item costs in terms of money actually spent for it as the cost basis
- If the depreciable asset increased in value, an economist would count its increased value as revenue

The Standard Model as a Framework

- The standard model can be expanded to include these real-world complications
- Despite its limitations, the standard model provides a good framework for cost analysis
- Introductory cost analysis provides a framework for starting to think about real-world cost measurement

Chapter Summary

- An economically efficient production process must be technically efficient, but a technically efficient process may not be economically efficient
- The long-run average total cost curve is U-shaped because economies of scale cause average total cost to decrease; diseconomies of scale eventually cause average total cost to increase
- Marginal cost and short-run average cost curves slope upward because of diminishing marginal productivity

Chapter Summary

- The long-run average cost curve slopes upward because of diseconomies of scale
- The envelope relationship between short-run and long-run average cost curves reflects that the short-run average cost curves are always above the long-run average cost curve, except at just one point
- An entrepreneur is an individual who sees an opportunity to sell an item at a price higher than the average cost of producing it

Chapter Summary

- Once we start applying cost analysis to the real world, we must include a variety of other dimensions of costs that the standard model does not cover
- Costs in the real world are affected by:
  - Economies of scope
  - Learning by doing and technological change
  - Many dimensions to output
  - Unmeasured costs, such as opportunity costs