

# Chapter 1

## Introduction to Managerial Economics

### **CHAPTER SUMMARY**

Managerial economics is the science of directing scarce resources to manage cost effectively. It consists of three branches: competitive markets, market power, and imperfect markets. A market consists of buyers and sellers that communicate with each other for voluntary exchange. Whether a market is local or global, the same managerial economics apply.

A seller with market power will have freedom to choose suppliers, set prices, and use advertising to influence demand. A market is imperfect when one party directly conveys a benefit or cost to others, or when one party has better information than others.

An organization must decide its vertical and horizontal boundaries. For effective management, it is important to distinguish marginal from average values and stocks from flows. Managerial economics applies models that are necessarily less than completely realistic. Typically, a model focuses on one issue, holding other things equal.

### **KEY CONCEPTS**

managerial economics	average value	horizontal boundaries
microeconomics	stock	market
macroeconomics	flow	industry
economic model	other things equal	market power
marginal value	vertical boundaries	imperfect market

### **GENERAL CHAPTER OBJECTIVES**

1. Define managerial economics and introduce students to the typical issues encountered in the field.
2. Discuss the scope and methodology of managerial economics.
3. Distinguish a marginal concept from its average and a stock concept from a flow.

4. Describe the importance of the "other things equal" assumption in managerial economic analysis.
5. Describe what constitutes a market, distinguish competitive from non-competitive markets, and discuss imperfect markets.
6. Emphasize the globalization of markets.

## **NOTES**

1. **Definition.** Managerial economics is the science of directing scarce resources to manage cost effectively.
2. **Application.** Managerial economics applies to:
  - (a) Businesses (such as decisions in relation to customers including pricing and advertising; suppliers; competitors or the internal workings of the organization), nonprofit organizations, and households.
  - (b) The "old economy" and "new economy" in essentially the same way except for two distinctive aspects of the "new economy": the importance of network effects and scale and scope economies.
    - i. network effects in demand – the benefit provided by a service depends on the total number of other users, e.g., when only one person had email, she had no one to communicate with, but with 100 mm users on line, the demand for Internet services mushroomed.
    - ii. scale and scope economies – scalability is the degree to which scale and scope of a business can be increased without a corresponding increase in costs, e.g., the information in Yahoo is eminently scaleable (the same information can serve 100 as well as 100 mm users) and to serve a larger number of users, Yahoo needs only increase the capacity of its computers and links.
    - iii. Note: the term open technology (of the Internet) refers to the relatively free admission of developers of content and applications.
  - (c) Both global and local markets.
3. **Scope.**
  - (a) Microeconomics – the study of individual economic behavior where resources are costly, e.g., how consumers respond to changes in prices and income, how businesses decide on employment and sales, voters' behavior and setting of tax policy.
  - (b) Managerial economics – the application of microeconomics to managerial issues (a scope more limited than microeconomics).
  - (c) Macroeconomics – the study of aggregate economic variables directly (as opposed to the aggregation of individual consumers and businesses), e.g., issues relating to interest and exchange rates, inflation, unemployment, import and export policies.

**4. Methodology.**

- (a) Fundamental premise - economic behavior is systematic and therefore can be studied. Systematic economic behavior means individuals share common motivations and behave systematically in making economic choices, i.e, a person who faces the same choices at two different times will behave in the same way both times.
- (b) Economic model – a concise description of behavior and outcomes:
  - i. focuses on particular issues and key variables (e.g., price, salary), omits considerable information, hence unrealistic at times;
  - ii. constructed by inductive reasoning;
  - iii. to be tested with empirical data and revised as appropriate.

**5. Basic concepts.**

- (a) Margin vis a vis average variables in managerial economics analyses.
  - i. marginal value of a variable – the change in the variable associated with a unit increase in a driver, e.g., amount earned by working one more hour;
  - ii. average value of a variable – the total value of the variable divided by the total quantity of a driver, e.g., total pay divided by total no. of hours worked;
  - iii. driver – the independent variable, e.g., no. of hours worked;
  - iv. the marginal value of a variable may be less than, equal to, or greater than the average value, depending on whether the marginal value is decreasing, constant or increasing with respect to the driver;
  - v. if the marginal value of a variable is greater than its average value, the average value increases, and vice versa.
- (b) Stocks and flows.
  - i. stock – the quantity at a specific point in time, measured in units of the item, e.g., items on a balance sheet (assets and liabilities), the world's oil reserves in the beginning of a year;
  - ii. Flow – the change in stock over some period of time, measured in units per time period e.g., items on an income statement (receipts and expenses), the world's current production of oil per day.
- (c) Holding other things equal – the assumption that all other relevant factors do not change, and is made so that changes due to the factor being studied may be examined independently of those other factors. Having analysed the effects of each factor, they can be put together for the complete picture.

**6. Organizational boundaries.**

- (a) Organizations include businesses, non-profits and households.
- (b) Vertical boundaries – delineate activities closer to or further from the end user.
- (c) Horizontal boundaries - relate to economies of scale (rate of production or delivery of a good or service) and scope (range of different items produced or delivered).

- (d) Organizations which are members of the same industry may choose different vertical and horizontal boundaries.

## 7. **Competitive markets.**

### (a) Markets.

- i. a market consists of buyers and sellers that communicate with one another for voluntary exchange. It is not limited by physical structure.
- ii. in markets for consumer products, the buyers are households and sellers are businesses.
- iii. in markets for industrial products, both buyers and sellers are businesses.
- iv. in markets for human resources, buyers are businesses and sellers are households.
- v. Note: an industry is made up of businesses engaged in the production or delivery of the same or similar items.

### (b) Competitive markets.

- i. markets with many buyers and many sellers, where buyers provide the demand and sellers provide the supply, e.g., the silver market.
- ii. the demand-supply model - basic starting point of managerial economics, the model describes the systematic effect of changes in prices and other economic variables on buyers and sellers, and the interaction of these choices.

### (c) Non-competitive markets – a market in which market power exists.

## 8. **Market power.**

(a) Market power - the ability of a buyer or seller to influence market conditions. A seller with market power will have the freedom to choose suppliers, set prices and influence demand.

(b) Businesses with market power, whether buyers or sellers, still need to understand and manage their costs.

(c) In addition to managing costs, sellers with market power need to manage their demand through price, advertising, and policy toward competitors.

## 9. **Imperfect Market.**

(a) Imperfect market - where one party directly conveys a benefit or cost to others, or where one party has better information than others.

(b) The challenge is to resolve the imperfection and be cost-effective.

(c) Imperfections can also arise within an organization, and hence, another issue in managerial economics is how to structure incentives and organizations.

## 10. **Local vis a vis global markets.**

(a) Local markets – owing to relatively high costs of communication and trade, some markets are local, e.g., housing, groceries. The price in one local market is independent of prices in other local markets.

- (b) Global markets - owing to relatively low costs of communication and trade, some markets are global, e.g., mining, shipping, financial services. The price of an item with a global market in one place will move together with the prices elsewhere.
- (c) Whether a market is local or global, the same managerial economic principles apply.
- (d) Note: Falling costs of communication and trade are causing more markets to be more integrated across geographical borders – enabling the opportunity to sell in new markets as well as global sourcing. Foreign sources may provide cheaper skilled labor, specialized resources, or superior quality, resulting in lower production costs and/or improved quality.

### **ANSWERS TO PROGRESS CHECKS**

1A. The managerial economics of the “new economy” is much the same as that of the “old economy” with two aspects being more important – network effects in demand and scale and scope economies.

1B. Vertical boundaries delineate activities closer to or further from the end user. Horizontal boundaries define the scale and scope of operations.

### **ANSWERS TO REVIEW QUESTIONS**

1. Marketing over the Internet is a scaleable activity. Delivery through UPS is somewhat scaleable: UPS already incurs the fixed cost of an international collection and distribution network; it may be willing to give Amazon bulk discounts for larger volumes of business.
2. Number of cars in service January 2002 + production + imports – exports – scrappage during 2002 = Number of cars in service January 2003. Number of cars in service is stock; other variables are flows.
3. [omitted].
4. No, models must be less than completely realistic to be useful.
5. (a) Average price per minute =  $(210 + 120 \times 4)/5 = 138$  yen per minute. (b) Price of marginal minute = 120 yen.
6. (a) Flow; (b) Stock; (c) Stock.

7. (a) The electricity market includes buyers and sellers. (b) The electricity industry consists of sellers only.
8. (a) False. (b) False.
9. [omitted].
10. If there are scale economies, the organization could produce at a lower cost on a larger scale, which means wider horizontal boundaries; and vice versa.
11. Yes. Horizontal boundaries: how many product categories should it sell? Vertical boundaries: should it operate its own warehouses and delivery service?
12. Intel has relatively more market power.
13. (b).
14. Both (a) and (b).
15. Competitive markets have large numbers of buyers and sellers, none of which can influence market conditions. By contrast, a buyer or seller with market power can influence market conditions. A market is imperfect if one party directly conveys benefits or costs to others, or if one party has better information than another.

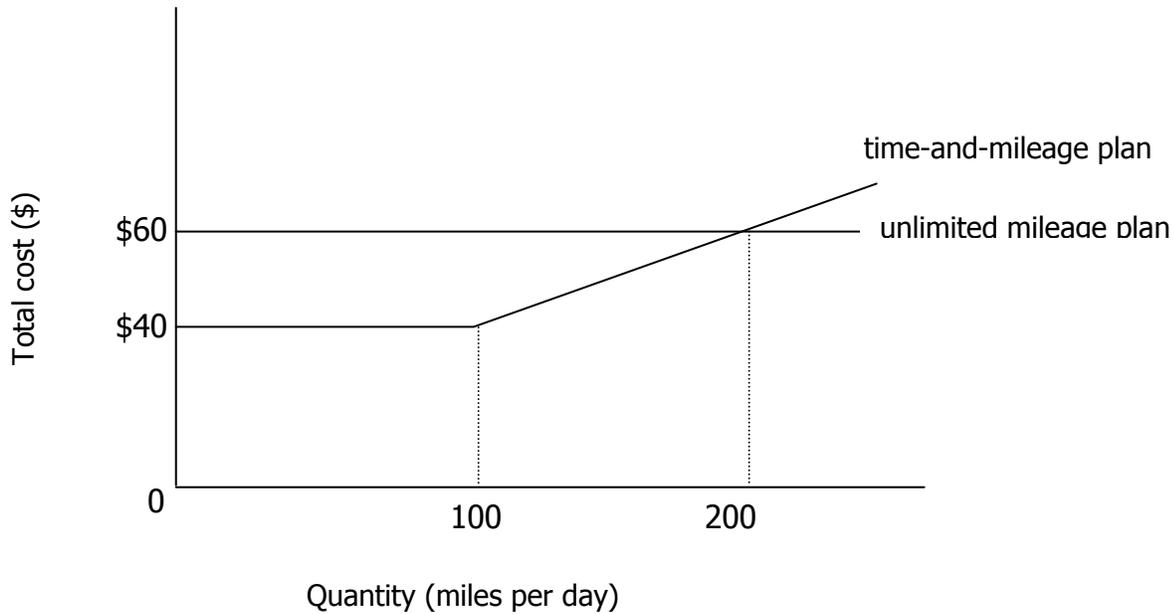
### **WORKED ANSWER TO DISCUSSION QUESTION**

Jupiter Car Rental offers two schemes for rental of a compact car. It charges \$60 per day for an unlimited mileage plan, and \$40 per day for a time-and-mileage plan with 100 free miles plus 20 cents a mile for mileage in excess of the free allowance.

- a. For a customer who plans to drive 50 miles, which is the cheaper plan. What are the average and marginal costs per mile of rental? (The marginal cost is the cost of an additional mile of usage.)
- b. For a customer who plans to drive 150 miles, which is the cheaper plan. What are the average and marginal costs per mile of rental?
- c. If Jupiter raises the basic charge for the time-and-mileage plan to \$44 per day, how would that affect the average and marginal costs for a customer who drives 50 miles?

Answer

- (a) It is helpful to sketch the total rental cost as a function of the mileage (see figure below). The breakeven between the two plans is at 200 miles per day. For 50 miles, the time-and-mileage plan is cheaper. Average cost =  $\$40/50 = 80$  cents per mile. Marginal cost = 0.



- (b) For the 150 mile customer, the time-and-mileage plan is still cheaper. Average cost =  $\$(40 + 0.2 \times 50)/150 = 33$  cents per mile; marginal cost = 20 cents per mile.
- (c) After the increase in the basic charge, the average cost =  $\$(44 + 0.2 \times 50)/150 = 36$  cents per mile, while marginal cost = 20 cents per mile. The increase in the basic charge doesn't affect the marginal cost.