9781405181594_4_001qxd 10/24/07 2:20 PM Page 1

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 principles 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, stocks from flows, and to consider the timings of actions. 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
microeconomics
macroeconomics
economic model
marginal value
average value
stock
flow
other things equal
discounting
net present value
bounded rationality
market
vertical boundaries
horizontal boundaries
industry
market power
imperfect market
outsourcing

General Chapter Objectives

1. Define managerial economics and introduce students to the typical issues encountered in the field.

9781405181594_4_001qxd 10/24/07 2:20 PM Page 2

2. Discuss the scope and methodology of managerial economics. Distinguish a marginal concept from its average, and a stock concept from a flow. Describe the importance of the "other things equal" assumption in managerial economic analysis.
3. Introduce the importance of timing: static vis-à-vis dynamic model.
4. Discuss organizational boundaries.
5. Describe what constitutes a market, and discuss competitive markets and imperfect markets.
6. Emphasize the globalization of markets.

Detailed Notes

1. Managerial Economics.

(a) Definition. Managerial economics is the science of directing scarce resources to manage cost more effectively.

(b) Application. Managerial economics applies to:

i. Businesses (such as decisions in relation to customers, suppliers, competitors, or the internal workings of the organization), nonprofit organizations, and households.

ii. 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.

1. 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 million users on line, the demand for Internet services mushroomed;
2. Scale and scope economies – scaleability 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 Google is eminently scaleable (the same information can serve 100 as well as 100 million users) and to serve a larger number of users, Google needs only increase the capacity of its computers and links.

iii. Both global and local markets.

2. Preliminaries.

(a) Scope.

i. 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.

ii. Managerial economies – the application of microeconomics to managerial issues (a scope more limited than microeconomics).

iii. Macroeconomics – the study of aggregate economic variables directly (as opposed to the aggregation of individual consumers and businesses),

9781405181594_4_001qxd 10/24/07 2:20 PM Page 3

e.g., issues relating to interest and exchange rates, inflation, unemployment, import and export policies.

(b) Methodology.
   i. 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.
   ii. Economic model – a concise description of behavior and outcomes:
      1. Focuses on particular issues and key variables (e.g., price, salary), omits considerable information, hence unrealistic at times;
      2. Constructed by inductive reasoning;
      3. To be tested with empirical data and revised as appropriate.

(c) Margin vis-à-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 that, 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.

(d) Stocks and flows.
   i. Stock – the quantity of a given item 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 a given item 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.

(e) 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 analyzed the separate effects of each factor, we can then put them together for the complete picture.

3. Timing.

(a) Static/dynamic models
   i. Static model describes behavior at a single point in time, disregarding differences in the sequence of actions and payments.
   ii. Dynamic model explicitly focuses on the timing and sequence of actions and payments.

9781405181594_4_001qxd 10/24/07 2:20 PM Page 4

(b) Discounting is a procedure used to transform future dollars into an equivalent number of present dollars. It is necessary to discount future values so that they can be compared with the present.
(c) Net present value is the sum of the discounted values of a series of inflows and outflows over time.

4. Organization.

(a) Organizations include businesses, non-profits, and households.
(b) Organizational boundaries.
   i. Vertical boundaries – delineate activities closer to or further from the end user.
   ii. Horizontal boundaries are defined by the scale and scope of an organization's operations. Scale refers to the rate of production or delivery of a good or service and scope refers to the range of different items produced or delivered.
   iii. Organizations that are members of the same industry may choose different vertical and horizontal boundaries.
(c) Individual behavior.
   i. Rationality means that, when presented with various alternatives, individuals choose the alternative that gives them the greatest difference between value and cost.
   ii. Human beings behave with bounded rationality because they have limited cognitive abilities and cannot fully exercise self-control.

5. Markets.

(a) Markets.
   i. A market consists of buyers and sellers that communicate with one another for voluntary exchange. It is not limited by any 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. An industry consists of the 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 cotton 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.

9781405181594_4_001qxd 10/24/07 2:20 PM Page 5

(c) Market power.
   i. Market power – the ability of a buyer or seller to influence market conditions. A seller with market power will have relatively more freedom to choose suppliers, set prices, and influence demand.
   ii. Businesses with market power, whether buyers or sellers, still need to understand and manage their costs.
   iii. In addition to managing costs, sellers with market power need to manage their demand through price, advertising, and policy toward competitors.

(d) Imperfect Market.
   i. In an imperfect market, one party directly conveys a benefit or cost to others, or where one party has better information than others.
   ii. The challenge is to resolve the imperfection and be cost-effective.
   iii. Imperfections can also arise within an organization, and hence, another issue in managerial economics is how to structure incentives and organizations.

6. Global integration.

(a) Local vis-à-vis global markets.
   i. 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.
   ii. Global markets – owing to relatively low costs of communication and trade, some markets are global, e.g., commodities, shipping, financial services. For an item with a global market, the price in one place will move together with the prices elsewhere.
   iii. Whether a market is local or global, the same managerial economic principles apply.

(b) Communications costs and trade barriers. Falling costs of international transport and communication, and reduced trade barriers are causing markets to be more integrated across geographical border.

(c) Outsourcing. Outsourcing is the purchase of services or supplies from external sources (domestic or foreign). Foreign sources may provide cheaper skilled labor, specialized resources, or superior quality – resulting in lower production costs and/or improved quality.

Answers to Project Checks

1A. The managerial economics of the “new economy” emphasizes network effects in demand and scalability.

1B. $NPV = 3 - 2/(1.02) = 2/(1.02)2 = -0.880$, or –$880,000.

1C. Vertical boundaries delineate activities closer to or further from the end user. Horizontal boundaries are defined by the scale and scope of operations.

9781405181594_4_001qxd 10/24/07 2:20 PM Page 6

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. No, models must be less than completely realistic to be useful.
3. (a) Average price per minute = (20 + 14.70 × 4)/5 = HK$15.76 per minute. (b) Price of marginal minute = HK$14.70.
4. Number of cars in service January 2007 + production + imports – exports – scrappage during 2007 = Number of cars in service January 2008. Number of cars in service is stock; other variables are flows.
5. False, in general. For a project where the costs come first and the benefits later, the statement is true.
6. The employer can invest an amount now which will accrue a return over time. What the employer requires is that the amount invested now together with the income over time equal $1 million at the time of paying the pensions.
7. [Omitted].
8. With strong economies of scale, the business should produce on a large scale, and hence its horizontal boundaries would be broader.
9. They are subject to bounded rationality owing to limited cognitive abilities and because they cannot fully exercise self-control.
10. (a) The electricity market includes buyers and sellers. (b) The electricity industry consists of sellers only.
11. (a) False. (b) False.
12. (a) Intel.
13. (b).
14. (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.

Sample Answer to Discussion Question

1. Nancy's savings consist of $10,000 in a savings account that yields 2% a year interest and another $10,000 in a money market fund that pays interest of 5% a year. Nancy has just received a gift of $10,000 from his mother. Her bank pays 4% interest on savings accounts with a minimum deposit of $20,000. The money market fund pays 5% interest on investments up to $100,000.
   (a) Calculate the average interest rate (= dollar amount of interest divided by amount of investment) from the savings account if Nancy deposits the additional $10,000 in the savings account and qualifies for the higher interest rate.
   (b) Calculate the average interest rate if Nancy deposits the additional $10,000 in the money market fund.
   (c) Calculate the marginal interest rate (= increase in dollar amount of interest divided by additional investment) from the savings account if Nancy deposits the additional $10,000 in the savings account.
   (d) Calculate the marginal interest rate if Nancy deposits the additional $10,000 in the money market fund.
   (e) From the viewpoint of maximizing her total interest income, where should Nancy deposit the additional money?

9781405181594_4_001qxd 10/24/07 2:20 PM Page 7

Answer:

(a) Note that Nancy will receive the 4% rate on the entire $20,000 deposit. The average interest rate from the savings deposit = 4%.
(b) Average interest rate from money market fund = 5%.
(c) Marginal interest rate from the savings deposit = (800 − 200)/10,000 = 6%.
(d) Marginal interest rate from money market fund = 5%.
(e) Savings account: since it provides a higher marginal interest rate on the additional investment.

9781405181594_4_001qxd 10/24/07 2:20 PM Page 8