Chapter 1

Introduction to Managerial Economics

1 What is Managerial Economics?

Coca Cola and PepsiCo are the world's two pre-eminent soft-drink manufacturers. Coca Cola and Pepsi manufacture only concentrate, which they ship to networks of regional bottlers distributed throughout the United States and elsewhere in the world. The bottlers mix the concentrate with sweetener and water to produce the final product, which then is distributed to retailers, food service providers, restaurants, and other customers.[1]

Early in 1999, Pepsi spun off its American bottling operations as an independent company, the Pepsi Bottling Group. In this regard, Pepsi followed Coke, which had long been separate from its American bottlers. Coke's largest bottlers were Coca Cola Enterprises and the Coca Cola Bottling Company.

In early November 1999, following three years of vigorous competition for market share, Coca Cola announced that it would increase its price for concentrate to 7%. Later the same month, Pepsi made a similar announcement. Both Coke and Pepsi emphasized that they would step up expenditure on advertising and other marketing support in conjunction with the price increases.

Industry analysts predicted that the 7% increase in the price of concentrate would result in the $1.99 retail price of a 12-pack rising to $2.49 or higher. By contrast, the Pepsi Bottling Group estimated that the retail price would rise by 1 cent per can. The price increases were welcomed by *Beverage Digest* Editor, John Sicher, who remarked: "At this point, both systems need to improve margins and improve the overall profitability of the category." Other analysts, however, questioned the extent to which retail demand would fall as a result of the price increase. Sanford C. Bernstein analyst Bill Pecoriello concluded: "It's positive for the industry, but it's not without risk."

[1] The following discussion is based, in part, on *Standard & Poor's Industry Surveys: Foods & Nonalcoholic Beverages*, 166, no. 22, section 1 (June 3, 1999), p. 3; "Pepsi to Increase Concentrate Prices by 6.9% Next Year," *Wall Street Journal*, November 22, 1999, p. B8; and "Following Coke, Pepsi will Raise Prices," *New York Times*, November 22, 1999, p. C2.

The November 1999 episode of price announcements presents several questions of business strategy. If Coke raises its price by 7%, should Pepsi follow? How would the price increase affect consumer demand? How should advertising expenditure be related to pricing? Pepsi's earlier decision to spin off its bottling group presents an organizational question: was it correct to follow Coca Cola to separate the bottling business from that of manufacturing concentrate?

Further, the profitability of Coke and Pepsi depends not only on their pricing and advertising, and the sensitivity of consumer demand to price increases. It also depends on the cost of sweeteners – sugar, corn syrup, aspartame – and other inputs. While Coke and Pepsi loom large in the market for soft drinks, they have a relatively smaller influence in the markets for some of their inputs. What price should Coke and Pepsi pay for these inputs? How are they affected by shifts in these markets?

Managerial economics is the science of directing scarce resources to manage more effectively.

All of these are questions of managerial economics. **Managerial economics** is the science of directing scarce resources to manage cost effectively. Wherever resources are scarce, a manager can make more effective decisions by applying the discipline of managerial economics. These may be decisions with regard to customers, suppliers, competitors, or the internal workings of the organization. It does not matter whether the setting is a business, nonprofit organization, or home. In all of these settings, managers must make the best of scarce resources.

Pepsi has limited financial, human, and physical resources. Pepsi managers seek to maximize the financial return from these limited resources. They should apply managerial economics to develop pricing and advertising strategies, design their organizations, and manage purchasing. The same is true of Coca Cola.

In commercial jets, Airbus and Boeing are the world's two leading manufacturers. While Boeing is a publicly-traded company, Airbus is organized more like a cooperative with a tax-free status. Despite the differences in organization, the principles of managerial economics apply to Airbus and Boeing. Each needs to understand how they can influence the demand through price and advertising, how to compete effectively against the other, and what is the best organizational architecture.

Managerial economics also applies to the "new economy." Many of the challenges that confront management in the "new economy" are the same as those in the "old" economy. Consequently, the economic analysis and appropriate managerial solutions are similar. For instance, in pricing, airlines use differences in fare conditions to segment their market between business travelers and leisure passengers. Some analysts claim that the Internet is the ultimate segmentation tool: using online auctions, a seller can charge a different price to every buyer.

In competitive strategy, when Coke announces increases in price and advertising, Pepsi must consider whether to follow. Similarly, in the "new economy," when, in mid-1999, Microsoft threatened a price war in Internet access, America Online had to decide how to respond.

In organizational architecture, Airbus expects to generate several hundred million euros in profit by transforming itself from a marketing joint venture into a fully-

integrated corporation. In the new economy, Amazon.com faced a similar issue: it decided to vertically integrate from being a "virtual retailer" and spent hundreds of millions of dollars on warehouses.

Given the many similarities, how then does the "new" economy differ from the old? The most obvious is the essential role of network effects in demand – the benefit provided by a service depends on the total number of other users. Network effects explain the growth of the Internet from an academic curiosity to a ubiquitous business platform in just five years. When only one person had email, she had no one to communicate with. With 100 million users online, the demand for email, ICQ, and other communications services mushroomed. Another reason for the feverish growth of the Internet was its open technology, which freely admitted developers of content and applications.

The other distinctive feature of the new economy is the importance of scale and scope economies. A recurring theme in the new economy is "scalability" – the degree to which the scale and scope of a business can be increased without a corresponding increase in costs. The information in Yahoo is eminently scalable: the same information can serve 100 as well as 100 million users. It is, in economic language, a "public good." To serve a larger number of users, Yahoo needs only increase the capacity of its computers and communications links. By contrast, a traditional library is less scaleable: a library must incur a relatively higher cost to serve a larger number of readers than the cost that Yahoo incurs to serve more users.

Managerial economics consists of three branches: competitive markets, market power, and imperfect markets. This book is organized in three parts, one part for each branch. Before discussing these three branches, let us first develop some background.

Progress Check 1A How is the managerial economics of the "new economy" different from that of the "old economy"?

Progress check

2 Preliminaries

To appreciate when and how to apply managerial economics, we should understand the scope and methodology of the discipline. We also need to understand several basic analytical concepts that are used throughout the three branches of managerial economics. This preliminary background is a necessary first step toward mastering the discipline.

Microeconomics is the study of individual economic behavior where resources are costly.

Scope

First, we should distinguish managerial economics from **microeconomics** and **macroeconomics**. Microeconomics is the study of individual economic behavior where resources are costly. It addresses issues such as how consumers respond to

Macroeconomics is the study of aggregate economic variables.

changes in prices and income and how businesses decide on employment and sales. Microeconomics also extends to such issues as how voters choose between political parties and how governments should set taxes. Managerial economics has a more limited scope – it is the application of microeconomics to managerial issues.

By contrast with microeconomics, the field of macroeconomics focuses on aggregate economic variables. Macroeconomics addresses such issues as how a cut in interest rates will affect the inflation rate and how a depreciation of the U.S. dollar will affect unemployment, exports, and imports. While it is certainly true that the whole economy is made up of individual consumers and businesses, the study of macroeconomics often considers economic aggregates directly rather than as the aggregation of individual consumers and businesses. This is the key distinction between the fields of macroeconomics and microeconomics.

Some issues span both macroeconomics and microeconomics. For instance, energy is such an important part of the economy that changes in the price of energy have both macroeconomic and microeconomic effects. If the price of oil were to rise by 10%, it would trigger increases in other prices and hence generate price inflation, which is a macroeconomic effect. The increase in the price of oil would also have microeconomic effects; for instance, power stations might switch to other fuels, drivers might cut back on using their cars, and oil producers might open up new fields.

Methodology

Having defined the scope of managerial economics, let us now consider its methodology. The fundamental premise of managerial economics is that individuals share common motivations that lead them to behave systematically in making economic choices. This means that a person who faces the same choices at two different times will behave in the same way at both times.

An **economic model** is a concise description of behavior and outcomes.

If economic behavior is systematic, then it can be studied. Managerial economics proceeds by constructing models of economic behavior. An **economic model** is a concise description of behavior and outcomes. By design, the model omits considerable information, so as to focus on a few key variables. In this regard, economic models are like maps: a map with too much detail is confusing rather than helpful. Imagine driving around Toronto with a map that included every pothole on the street. The map could not fit into the car! To be useful, a map must be less than completely realistic.

Economic models are like maps in another way. Different maps of Toronto serve different purposes: street maps for drivers, guides to main attractions for tourists, and charts of underground utility lines for builders. Likewise, there may be different economic models of the same situation, each of them focusing on a different issue.

Models are constructed by inductive reasoning. For instance, inductive reasoning suggests that the demand for new software increases with the amount that the publisher spends on advertising. We can build a model in which the demand for a product depends on advertising expenditure. The model should then be tested with

actual empirical data. If the tests support the model, it can be accepted; otherwise, it should be revised.

Marginal vis-à-vis Average

In managerial economics, many analyses resolve to a balance between the marginal values of two variables. Accordingly, it is important to understand the concept of a **marginal value**. Generally, the marginal value of a variable is the change in the variable associated with a unit increase in a driver. By contrast, the **average value** of a variable is the total value of the variable divided by the total quantity of a driver.

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The **average value** of a variable is the total value of the variable divided by the total quantity of a driver.

What is a *driver*? To explain, consider the following example. Alan and Hilda are clerks at the Luna Store. The store pays each clerk \$10 per hour for a basic eight-hour day, \$15 per hour for overtime of up to four hours, and \$20 for overtime exceeding four hours a day. Suppose that Alan works 10 hours a day. Then he earns \$10 per hour for eight hours and \$15 per hour for two hours of overtime, which adds up to a total of $(\$10 \times 8) + (\$15 \times 2) = \$110$.

With respect to Alan's pay, the driver is the number of hours worked. Hence, Alan's marginal pay is the amount that he could earn by working one additional hour. His marginal pay is \$15 per hour. By contrast, Alan's average pay is his total pay divided by the total number of hours worked, which is $\$110/10 = \$11$ per hour. The marginal pay exceeds the average pay because the store pays higher rates for additional hours beyond the basic eight. Since the marginal pay is the pay for an additional hour of overtime, it is higher than the average pay.

Note that the marginal and average pay depend on the number of hours worked. Suppose that Hilda works 14 hours a day. She earns \$10 per hour for eight hours, \$15 per hour for the first four hours of overtime, and \$20 per hour for the fifth and sixth hours of overtime, which sums to $(\$10 \times 8) + (\$15 \times 4) + (\$20 \times 2) = \$180$. Her marginal pay is \$20 per hour, while her average pay is $\$180/14 = \$12.86$ per hour. Hilda's marginal pay exceeds Alan's because she works four hours longer, which puts her into the \$20 per hour overtime bracket.

Generally, the marginal value of a variable may be less than, equal to, or greater than the average value. The relation between the marginal and average values depends on whether the marginal value is decreasing, constant, or increasing with respect to the driver.

A **stock** is the quantity of a given item at a specific point in time.

Stocks and Flows

A **flow** is the change in a given item over a period of time.

Another important distinction in managerial economics is that between **stocks** and **flows**. A stock is the quantity at a specific point in time. By contrast, a flow is the change in a

stock over some period of time. While stocks are measured in units of the item, flows are measured in units per time period.

Every manager must understand the distinction between stocks and flows. A balance sheet represents the financial status of a business at a specific point in time, hence the items on a balance sheet – assets and liabilities – are stocks. By contrast, the income statement reports changes in the financial status of a business. The items in an income statement – receipts and expenses – are flows. An annual income statement reports flows over a year, while a quarterly income statement reports flows over three months.

Let us illustrate the distinction between stocks and flows with several other examples. The world's oil reserves at the beginning of the current year is a stock. This stock may be measured in billions of barrels. By contrast, the world's current production of oil is a flow. This flow may be measured in millions of barrels per day. Coca Cola Enterprises' inventory of concentrate on January 1, 2002 is a stock while its purchases and sales of concentrate during the period January 1–7, 2002 are flows.

Other Things Equal

Holding **other things equal** is the assumption that all other relevant factors do not change, made so that changes due to the factor being studied may be examined independently of those other factors.

The third basic concept in managerial economics is the device of holding **other things equal**. At any one time, the environment of business may be changing in several different ways. It would be difficult to analyze the implications of all the various changes together. The difficulty is compounded if the separate changes have conflicting effects. An alternative approach is to simplify the problem by analyzing each change separately, holding other things equal. Having analyzed the separate effects, we can then put them together for the complete picture.

For instance, a silver mine may be confronted with an increase in the price of electricity, a drop in the price of silver, and a change in labor laws, all on the same day. How should the mine adjust its production? The most practical way to address this question is to consider each change separately, holding "other things equal." Having understood each of the separate effects, the next step is to assemble them to get the complete picture.

Either explicitly or implicitly, almost every piece of managerial economics analysis holds other things equal. This usage is so close to being universal that we will not explicitly state the proviso. Nevertheless, it is always important to bear the proviso in mind when applying the results of some analysis to a practical managerial issue.

3 Organizational Boundaries

Throughout this book, we will take the viewpoint of an organization, which may be a business, nonprofit, or a household. All managers face the same issue of how to effectively manage costly resources. Since our analysis focuses on the organization, we first must identify the boundaries of the organization. We briefly discuss this issue here, while leaving the detailed analysis to chapters 7 and 13.

Vertical boundaries delineate activities closer to or further from the end user.

The activities of an organization are subject to two sets of boundaries. One is **vertical**, which delineates activities closer to or further from the end user. Members of the same industry may choose different vertical boundaries. For instance, the vertical chain in the automobile industry runs from production of steel and other materials, electrical and electronic components, tires and other parts to assembly of the vehicle to distribution. Both General Motors (GM) and Toyota are principally manufacturers of automobiles. Toyota did not produce electrical and electronic components, while GM did until 1999. Then, GM spun off Delphi Automotive Systems, which manufactures automotive components, systems and modules.

The vertical chain in the Internet runs from provision of content such as information, entertainment, and e-commerce, to Internet access, and to the telephone or cable service over which users access the Internet. America Online merged with Time Warner to become a provider of the entire vertical chain, including content, Internet access, and cable service. By contrast, Yahoo provides Internet content, but neither telephone nor cable service.

Horizontal boundaries define the scale and scope of an organization's operations.

An organization's other set of boundaries is **horizontal**. The organization's horizontal boundaries are defined by its scale and scope of operations. Scale refers to the rate of production or delivery of a good or service, while scope refers to the range of different items produced or delivered. Just as members of the same industry may choose different vertical boundaries, they may also choose different horizontal boundaries.

For instance, in the sale of personal computers, Compaq and Dell operate on a much larger scale than the numerous small businesses that advertise generic machines in *PC Week*. Hence, in terms of scale, Compaq and Dell have wider horizontal boundaries than the generic suppliers. At the time of writing, however, Compaq and Dell differ in scope. Compaq manufactures a wide range of computers, including large highly fault-tolerant machines, servers, workstations, as well as personal computers, and it also provides consulting services. By contrast, Dell focuses on selling servers and personal computers. Accordingly, in terms of scope, Compaq has wider horizontal boundaries than Dell.

Progress Check 1B Explain the difference between the vertical and horizontal boundaries of an organization.

Progress check

The organizational boundaries of Coke and Pepsi

Historically, Coke was vertically separated: the Coca Cola Company, headquartered in Atlanta, owned the brand and sold concentrate to Coca Cola Enterprises, Coca Cola Bottling Company, and other franchised bottlers. By contrast, PepsiCo had been vertically integrated. Then, in March 1999, PepsiCo spun off the Pepsi Bottling Group (PBG) and shrunk its vertical boundaries. Following the spin-off, PepsiCo managed the brand and sold concentrate, while PBG used the concentrate to manufacture soft drink for sale in supermarkets and other distribution channels.

While the industry as a whole was vertically separating between concentrate production and bottling, the bottling part was consolidating horizontally. In 1978, Coke had 370 bottlers in the United States. By the end of 1998, that number had fallen to under 100. Likewise, one of Pepsi's leading bottlers, Pepsi Cola General Bottlers, acquired many smaller bottlers. Standard and Poor's Food and Beverage analyst remarked: "The recent spin-off of the . . . Pepsi Bottling Group is expected to further the trend towards consolidation."

Source: *Standard & Poor's Industry Surveys: Foods & Nonalcoholic Beverages*, 166, no. 22, section 1 (June 3, 1999), p. 3.

⏪ 4 Markets

A **market** consists of the buyers and sellers that communicate with one another for voluntary exchange.

One basic concept of managerial economics – the market – is so fundamental that it appears in the names of each branch of the discipline. A **market** consists of the buyers and sellers that communicate with one another for voluntary exchange. In this sense, a market is not limited to any physical structure or particular location. The market extends as far as there are buyers or sellers who can communicate and trade at relatively low cost.

Consider, for instance, the market for cotton. This extends beyond the New York Board of Trade to growers in the Carolinas and textile manufacturers in East Asia. If the price on the Board of Trade increases, then that price increase will affect Carolina growers and Asian textile manufacturers. Likewise, if the demand for cotton in Asia increases, this will be reflected in the price on the Board of Trade.

In markets for consumer products, the buyers are households and sellers are businesses. In markets for industrial products, both buyers and sellers are businesses. Finally, in markets for human resources, buyers are businesses and sellers are households.

By contrast with a market, an **industry** is made up of the businesses engaged in the production or delivery of the same or similar items. For instance, the consumer electronics industry consists of all consumer electronics manufacturers, and the semiconductor industry consists of all semiconductor manufacturers. Members of an industry can be buyers in one market and sellers in another. The consumer electronics industry is a buyer in the semiconductor market and a seller in the consumer electronics market.

An **industry** consists of the businesses engaged in the production or delivery of the same or similar items.

Competitive Markets

The global silver market includes many competing producers and thousands of buyers. How should a mine respond to an increase in the price of electricity, a drop in the price of silver, or a change in labor laws? How will these changes affect buyers? The basic starting point of managerial economics is the model of competitive markets. This applies to markets with many buyers and many sellers. The market for silver is an example of a competitive market. In a competitive market, buyers provide the demand and sellers provide the supply. Accordingly, the model is also called the *demand-supply model*.

The model describes the systematic effect of changes in prices and other economic variables on buyers and sellers. Further, the model describes the interaction of these choices. In the silver mine example, the model can describe how the mine should

The extent of e-commerce markets

A bricks-and-mortar bookstore serves a geographical area defined by a reasonable traveling time. By contrast, an Internet bookstore serves a much larger market – defined by the reach of telecommunications and the cost of shipping. In March 2000, Stephen King launched *Riding the Bullet*, which he described as "a ghost story in the grand manner," in digital format over the Internet. Readers paid $2.50 to download the 16,000-word story (about 33 printed pages). With digital distribution, Internet bookstores would be able to dispense with the logistics of shipping physical product. They would need only the telecommunications network.

In early 2000, the market value of Internet bookstore Amazon.com was ten times greater than that of America's leading bricks-and-mortar bookstore, Barnes and Noble. The vast disparity reflected the stock market's assessment of the difference in the long-term profitability of the two companies. An e-commerce business can reach a much larger market than a traditional bricks-and-mortar retailer. Further, by avoiding the costs of inventory and store rental, the e-commerce business may achieve lower costs.

Source: "E-Books King: Stephen the First," *Wired News*, March 14, 2000.

adjust prices when the price of electricity increases, the price of silver drops, and labor laws change, all on the same day. These changes affect all silver mines. Hence, the model also describes the interaction among the adjustments of the various mines and how these affect buyers.

Part I of this book presents the model of competitive markets. It begins with the demand side, considering how buyers respond to changes in prices and income (chapter 2). Next, we develop a set of quantitative methods that support precise estimates of changes in economic behavior (chapter 3). Then, we look at the supply side of the market, considering how sellers respond to changes in the prices of products and inputs (chapter 4). We bring demand and supply together and analyze their interaction in chapter 5, then show that the outcome of market competition is efficient (chapter 6).

Market Power

In a competitive market, an individual manager may have little freedom of action. Key variables such as prices, scale of operations, and input mix are determined by market forces. The role of a manager is simply to follow the market and survive. Not all markets, however, have so many buyers and sellers to qualify as competitive. **Market power** is 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 use advertising to influence demand. A buyer with market power will be able to influence the supply of products that it purchases.

Market power is the ability of a buyer or seller to influence market conditions.

A business with market power must determine its horizontal boundaries. These depend on how its costs vary with the scale and scope of operations. Accordingly, businesses with market power – whether buyers or sellers – need to understand and manage their costs.

In addition to managing costs, sellers with market power need to manage their demand. Three key tools in managing demand are price, advertising, and policy toward competitors. What price maximizes profit? A lower price boosts sales, while a higher price brings in higher margins. A similar issue arises in determining advertising expenditure. With regard to other businesses, what are the benefits of cooperating rather than competing?

Part II of this book addresses all of these issues. We begin by analyzing costs (chapter 7), then consider management in the extreme case of market power, where there is only one seller or only one buyer (chapter 8). Next, we discuss pricing policy (chapter 9) and strategic thinking (chapter 10).

Imperfect Markets

Businesses with market power have relatively more freedom of action than those in competitive markets. Managers will also have relatively more freedom of action in markets that are subject to imperfections. A market may be imperfect in two ways:

when one party directly conveys a benefit or cost to others or where one party has better information than others. The challenge for managers operating in **imperfect markets** is to resolve the imperfection and, so, enable the cost-effective provision of their products.

In an **imperfect market**, one party directly conveys a benefit or cost to others or one party has better information than others.

Consider the market for residential mortgages. Applicants for mortgages have better knowledge of their ability and willingness to repay than potential lenders. In this case, the market is imperfect owing to differences in information. The challenge for lenders is how to resolve the informational differences so that they can provide loans in a cost-effective way.

Managers of businesses in imperfect markets need to think strategically. For instance, a residential mortgage lender may require all loan applicants to pay for a credit check, with the lender refunding the cost if the credit check is favorable. The lender might reason that bad borrowers would not be willing to pay for a credit check because they would fail the check. Good borrowers, however, would pay for the check because they would get their money back from the lender. Hence, the credit check requirement will screen out the bad borrowers. This is an example of strategic thinking in an imperfect market.

Differences in information can cause a market to be imperfect. The same imperfection can arise within an organization, where some members have better information than others. Accordingly, another issue is how to structure incentives and organization.

Part III of this book addresses all of these issues. We begin by considering the sources of market imperfections – where one party directly conveys a benefit or cost to others (chapter 11) and where one party has better information than others (chapter 12), then the appropriate structure of incentives and organization (chapter 13). Finally, we consider how government regulation can resolve market imperfections (chapter 14).

◂◂ 5 Global Principles

We have mentioned that a market extends as far as there are buyers or sellers who can communicate and trade at relatively low cost. Owing to the relatively high costs of communication and trade, some markets are local. Examples include grocery retailing, housing, and live entertainment. The price in one local market will be independent of prices in other local markets. For instance, an increase in the price of apartments in New York City does not affect the housing market in Houston.

By contrast, some markets are global because the costs of communication and trade are relatively low. Examples include financial services, minerals, and shipping. In the case of an item with a global market, the price in one place will move together with the prices elsewhere. For instance, when the price of silver increases in London, the price will also rise in Tokyo.

We emphasize that, whether a market is local or global, the same managerial economics principles apply. For instance, when the price of fresh vegetables in Britain increases, consumers will switch to frozen vegetables. The same will be true in Japan, the United States, and any other place. An airline with market power in France will

use that power to raise prices above the competitive level. The same will be true all over the world. A mortgage lender in Australia will act strategically to resolve the difference in information relative to borrowers. Again, the same will be true all over the world. Throughout this book, we shall give examples from different parts of the world to reiterate that managerial economics applies globally.

A related point is that the costs of and barriers to transport, communication, and trade have systematically fallen over time. This trend has caused many markets to become relatively more integrated across geographical boundaries. For instance, Canadian insurers sell life insurance and mutual funds in Asia, Israeli growers ship fresh flowers by air to Europe, and U.S.-based callback services offer cheap international telephone calls throughout the world.

As a result of the trend toward integration, managers need to pay increasing attention to markets in other places. Some markets may be similar, while others are different. In all cases, managers must not allow their planning to be limited by traditional geographical boundaries.

Global sourcing

Global integration means not only the opportunity to sell in new markets but also the opportunity to secure supplies from new sources. Foreign sources may provide cheaper skilled labor, specialized resources, or superior quality. These advantages allow a manufacturer to reduce production costs and improve quality.

Dell Computer manufactures personal computers at Austin, Texas, and Nashville, Tennessee. A typical Dell system might include a keyboard made in China, a monitor from Taiwan, and a mouse manufactured in Mexico.

⏪ 6 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 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
microeconomics
macroeconomics
economic model
marginal value
average value
stock
flow
other things equal
market
vertical boundaries
horizontal boundaries
industry
market power
imperfect market

Review Questions

1. Amazon markets books and recorded music over the Internet, and delivers them by conventional means such as the United Parcel Service. Which of Amazon's activities are scaleable?
2. Explain the relation among the number of cars in service on January 1, 2002, the number in service on January 1, 2003, and the production, imports, exports, and scrappage of cars. Which of the variables are stocks and which are flows?
3. Using relevant examples, explain the distinction between macroeconomics and microeconomics.
4. "Managerial economics uses less than completely realistic models." Is this necessarily bad?
5. Kokusai Denshin Denwa (KDD) is Japan's leading provider of international telephone services. In November 1998, KDD's standard rate for calls from Japan to Singapore was ¥210 (yen) for the first minute and ¥120 for each subsequent minute. Yoko makes a five-minute call.
   (a) What is the average price per minute of Yoko's call?
   (b) What is the price of Yoko's marginal minute?
6. Which of the following are stocks and which are flows?
   (a) Monthly usage of laser printer toner cartridges.
   (b) Number of technicians on the payroll as of January 1.
   (c) Number of workstations in inventory as of July 31.
7. Explain the difference between
   (a) The market for electricity.
   (b) The electricity industry.
8. True or false?
   (a) In every market, all the buyers are consumers.
   (b) In every market, all the sellers are businesses.
9. Describe the vertical and horizontal boundaries of your university. In what ways could the vertical boundaries be expanded or reduced? What about the horizontal boundaries?
10. Why do economies of scale affect the horizontal boundaries of an organization?

11. Does a new economy business like Amazon need to consider its organizational boundaries?

12. Which of the following manufacturers has relatively more market power in its market?
- (a) Intel, which accounts for more than 50% of worldwide production of microprocessors for personal computers.
- (b) Compro, which has less than a 1% share of the global market for personal computers.

13. Managers operating in an imperfect market must (choose a or b)
- (a) Set high prices to make up for the imperfection.
- (b) Act strategically to resolve the imperfection.

14. Which of the following are consequences of the falling costs of international communication and trade?
- (a) Buyers can obtain products from a wider range of suppliers.
- (b) Sellers can market their products to a wider set of customers.

15. Explain the distinctions among the three branches of managerial economics.

Discussion Questions

1. Russell'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. Russell has just received a gift of $10,000 from his mother. His 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 Russell deposits the additional $10,000 in the savings account and qualifies for the higher interest rate.
- (b) Calculate the average interest rate if Russell 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 Russell deposits the additional $10,000 in the savings account.
- (d) Calculate the marginal interest rate if Russell deposits the additional $10,000 in the money market fund.
- (e) From the viewpoint of maximizing his total interest income, where should Russell deposit the additional money?

2. Refer to the financial statements of any publicly listed company. Taking any page at random, identify which of the financial data are stocks and which are flows.

3. In each of the following instances, discuss whether horizontal or vertical boundaries have been changed, and whether they were extended or shrunk.
   (a) General Motors divested Delphi Automotive Systems, which manufactures automotive components, systems, and modules.
   (b) Internet content and service provider America Online (AOL) merged with Time Warner, a producer of films and music, and provider of cable television services.
   (c) The National Collegiate Athletic Association's (NCAA) Western Athletic Conference for basketball split into two smaller conferences.
   (d) DaimlerChrysler took over the import and wholesale distribution of Mercedes Benz cars in Hong Kong and Singapore from independent agencies.

4. Referring to the definition of a *market*, consider whether the following groups of buyers and sellers are part of the corresponding market.
   (a) After Iraq invaded Kuwait in August 1990, the United Nations banned Iraq from exporting oil to the rest of the world. During the ban, was Iraq part of the world market for oil?
   (b) Prisoners cannot freely work outside the jail. Do prisoners belong to the national labor market?

5. The recorded music industry is undergoing a transition from the compact disc (CD) to MP3 and other digital formats for online delivery. CDs are pressed from masters created from the original soundtrack and distributed through retailers and other channels. By contrast, MP3 titles can be delivered directly to consumers over the Internet. In 1999, the leading British publisher EMI decided to close all CD manufacturing facilities in North America in favor of contracting with specialist manufacturers to produce its CDs.
   (a) By considering the relative costs of transporting CD masters and pressed CDs, explain why music publishers arrange for CDs to be pressed in various regional centers throughout the world rather than in one central factory.
   (b) How would the shift from CDs to online digital delivery affect the extent of the market that EMI can economically serve from Britain?
   (c) Relate the changes in EMI's vertical boundaries to your discussion in (b).