

# 3

## Markets

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The demand and supply of goods are affected by variables other than own price. In this chapter, we will examine these other determinants and how changes in their values affect market price. This will provide an understanding of how product markets work and permit us to examine applications to media industries.

After studying this chapter, you should be able to answer the following questions: Why did a decrease in the newsstand price of *The Times* newspaper affect sales of *The Independent*? Why did the decrease in the newsstand price affect the rate *The Times* could charge for advertising? How would we expect a decrease in the price of computers to affect the demand for Internet access? Does the availability of videos and DVDs decrease or increase demand for cinema viewing of movies? How does a price reduction in television advertising rates affect demand for newspaper advertising? Why did the slump in incomes in Asia in 1998 affect Disney's sales of home videos in the region? Why does commercial advertising revenue earned by broadcasters fluctuate considerably depending on general economic conditions? Why is the U.S. market the world's largest for entertainment goods even though the populations of China and India are much greater? Why does possessing the largest domestic market provide the United States with a competitive advantage in film and television? Why did the decline in value of the Canadian and Australian dollars lead to more U.S. "runaway" productions in these countries? Why is there never a good time to buy a computer? Why don't we see many Western

movies any more? Why do viewers in most countries prefer domestic television programs? Why are geographically large countries now able to support national newspapers? How is the Internet affecting the supply of information-based media goods and services? Why was owning a commercial television broadcasting license “like having a licence to print your own money” (Braddon, 1965, p. 240)? Why would a change in policy to permit the BBC to carry advertising be expected to decrease the price of television advertising spots in the United Kingdom? Why does the demand for cultural subsidies exceed the supply?

### 3.1 Change in Demand

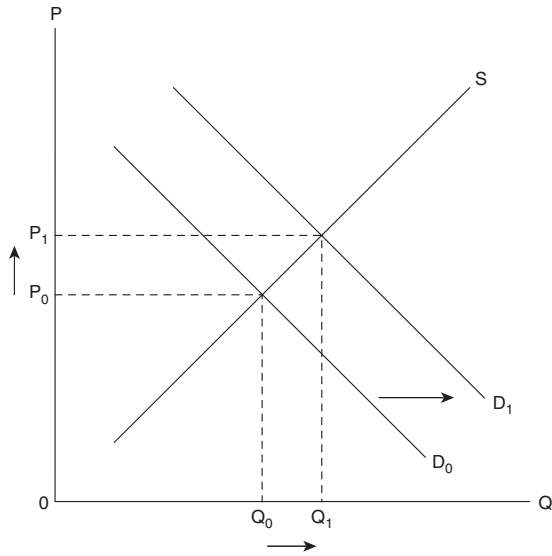
If there is a change in the value of one of the other determinants of demand, such as income or the price of a substitute good, this causes a *change in demand*. Economists use this term to avoid confusion with *change in quantity demanded*, which is caused by a change in the price of the product itself. If there is a change in demand, this causes a shift of the entire demand curve. If there is an increase in demand, the demand curve will shift to the right, as more will be bought than before at any given price. If there is a decrease in demand, the demand curve will shift to the left, as less will be bought at any given price.

### 3.2 Effect of a Change in Demand on Price and Quantity

Before we consider further the various reasons for a change in demand, we will examine the effects on equilibrium price and quantity. Figure 3.1 shows an increase in demand, with the demand curve shifting from  $D_0$  to  $D_1$ . Given supply curve  $S$ , the increase in demand causes the equilibrium price to increase from  $P_0$  to  $P_1$  and the equilibrium quantity to increase from  $Q_0$  to  $Q_1$ .

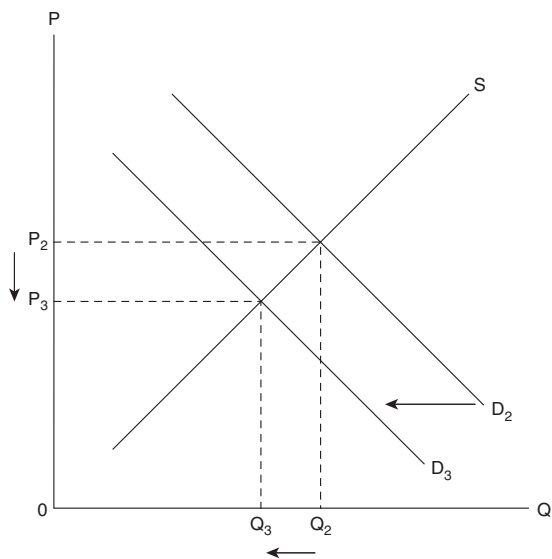
Figure 3.2 shows the effect of a decrease in demand, a shift of the demand curve from  $D_2$  to  $D_3$ . The equilibrium price falls from  $P_2$  to  $P_3$ , and the equilibrium quantity decreases from  $Q_2$  to  $Q_3$ .

To summarize, a change in demand causes both the equilibrium price and the equilibrium quantity to change in the same direction.



**Figure 3.1** An Increase in Demand

Note: D indicates demand curve; P, price; Q, quantity; S, supply curve.



**Figure 3.2** A Decrease in Demand

Note: D indicates demand curve; P, price; Q, quantity; S, supply curve.

### 3.3 Causes of a Change in Demand

A change in demand is caused by a change in value of any determinant of demand other than own price. Typically, these determinants will include *prices of demand-related products, income per capita, number of potential buyers, expected future price* for the product, and *consumer tastes*.

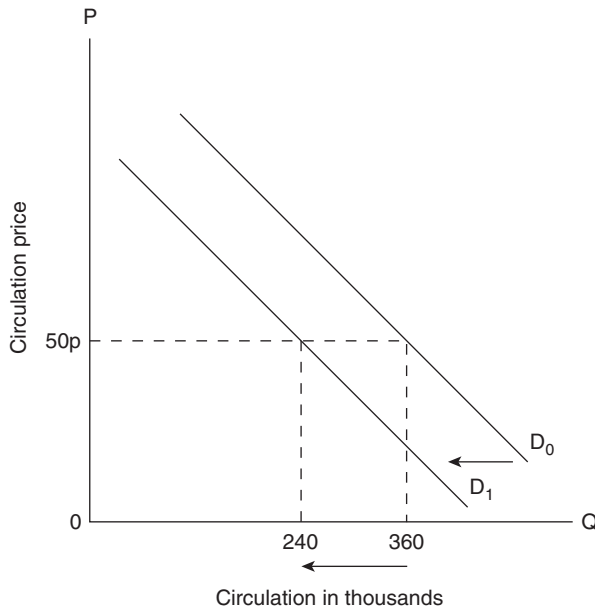
#### 3.3.1 Price of a Demand-Related Product

Demand-related products fall into two groups, substitutes and complements. A *substitute good* is an alternative good that the consumer can purchase to fulfill the same need. A Sony television receiver is a very good substitute for a Panasonic model, as it performs exactly the same function. Stereo systems are a substitute, albeit not a close one, for TV receivers. They satisfy the same broad wants of consumers for entertainment.

There is a positive relationship between the demand for a good and a change in the price of a substitute. The demand for Sony TV receivers will increase if the price of Panasonic television receivers increases, as some people who would have bought Panasonic switch to buying Sony. If the price of Panasonic falls, then demand for Sony will decrease.

As a change in the price of a substitute causes a change in demand, it will result in a change in price and output. An increase in the price of Panasonic television receivers shifts the demand curve for Sony to the right. As we see from Figure 3.1, this will lead to an increase in the equilibrium price and quantity of Sony television receivers. Similarly, the effect of a decrease in the price of Panasonic television receivers is to shift the demand curve for Sony to the left. This is the situation depicted in Figure 3.2, which would result in a decrease in the equilibrium price and quantity of Sony television receivers.

*The Times* case, introduced in chapter 2, provides an application. A decrease in the circulation price of *The Times* was reported to cause sales of *The Independent*, a rival quality newspaper, to crash from 360,000 to 240,000. The effect is shown in Figure 3.3. At a circulation price for *The Times* of 45 pence (p), the demand curve for *The Independent* was  $D_0$  and the circulation 360,000 at *The Independent's* price of 50p. The decrease in the price of *The*



**Figure 3.3** Demand for *The Independent*

Note: D indicates demand curve; P, price; Q, quantity.

*Times* to 30p shifted the demand curve for *The Independent* to the left, to  $D_1$ . At an unchanged price for *The Independent*, circulation was now 240,000. There was a decrease in demand for *The Independent*.

*Complementary goods* are those that are used in conjunction with one another. There is a negative relationship between the demand for a good and a change in price of a complement. Computers and Internet access are complementary goods. There will be an increase in demand for Internet access if the price of computers falls. How does this come about? The decrease in price for computers increases the quantity demanded of computers. With more people owning a computer, the demand for Internet access and bandwidth will increase. Thus a decrease in the price of computers shifts the demand curve for Internet access to the right and, as illustrated in Figure 3.1, this results, other things being equal, in an increase in the equilibrium price and quantity of Internet access.

Similarly, following Figure 3.2, an increase in the price of computers would shift the demand curve for Internet access to the left and decrease the equilibrium price and quantity.

The demand relationship between prerecorded movies on videocassette or DVD and theatrical exhibition of movies is an interesting one. To the extent that people watch the movie on their VCR or DVD player instead of going to the movies, they are substitutes. But there is reason to suppose that they are more complementary than substitutes. The film distributors use the VCR and DVD market as another exhibition window. Good theatrical box office for a movie feeds the aftermarket where people watch the movie at home. The demand relationship between the VCR and DVD player and television programming is also complex. To the extent that people watch a prerecorded, rented (or purchased) movie instead of watching a television program, they are substitutes. But when people use the VCR or DVD player for time shifting, this is complementary because it enables them to view programs they would otherwise miss because they are out or watching another program.

The strength of demand relationship between goods is measured by the *cross elasticity of demand*, designated by  $\eta_{xz}$  where

$$\eta_{xz} = \frac{\text{Percentage change in quantity demanded of good X}}{\text{Percentage change in the price of good Z}}$$

$\eta_{xz}$ , the cross elasticity of demand for X with respect to Z, will be positive if X and Z are substitutes and negative if they are complements. Thus for cross elasticity, unlike price elasticity, it is vital to indicate the sign.

As we have seen, a reduction in the price of *The Times* from 45p to 30p was said to be responsible for the decrease in demand for *The Independent* from 360,000 copies to 240,000 copies. Assuming this is correct, we can calculate the cross elasticity of circulation demand for *The Independent* with respect to *The Times*. The reduction in circulation of *The Independent* was 40% of the average quantity. The reduction in price of *The Times* was 40% of the average price. Hence the cross elasticity is 1.00. The products are good substitutes.

Cave and Swann, in a study commissioned by the Peacock Committee (1986) in the United Kingdom, provide another example. They estimated the cross elasticity of demand for press advertising

with respect to television advertising to be 0.25. That is, a price reduction of 1% in television advertising would lead to a reduction in demand for newspaper advertising of 0.25%. As the cross elasticity is positive, the products are substitutes, although the relatively low number indicates that they are not very close substitutes. The Peacock Committee was interested in the cross elasticity because the members wanted to know the possible impact on newspapers of permitting the BBC to sell advertising.

### 3.3.2 Income Per Capita

An increase in income allows people to increase their aggregate expenditures on goods and services, whereas a decrease in income means they have to cut back. Hence, as one would expect, demand for most products is positively related to income per capita (per person) or income per household. Goods whose demand is positively related to income are known as *normal goods*. For example, in 1998, Disney's lower home video sales in Asia were attributed to the slump in incomes there (McClennan, 1998). Thus, as one would expect, home video is a normal good.

For normal goods, an increase in income causes more of a good to be bought at any given price. Hence the demand curve shifts to the right. As we saw in Figure 3.1, the consequence of such an increase in demand will be an increase in equilibrium price and quantity. Similarly, a decrease in income will shift the demand curve to the left and lead to a decrease in equilibrium price and quantity.

For a few goods, called *inferior goods*, demand is negatively related to income. For such goods, a rise in income and the increase in consumption expenditures this permits persuade some people to switch to purchasing a preferable alternative they previously could not afford. For example, in the early 1970s, an increase in income would probably have caused some poor families considering replacement of their old black and white television receiver to switch to the preferred color receiver, causing a decrease in consumption of black and white TV receivers.

The strength of the relationship between quantity demanded of a good and income per capita is measured by the *income elasticity of demand*,  $\eta_y$ , where

$$\eta_y = \frac{\text{Percentage change in demand}}{\text{Percentage change in income per capita}}$$

$\eta_y$  will be positive for normal goods and negative for inferior goods. Luxury goods will have a high positive income elasticity.

Most of the studies commissioned by the Peacock Committee (1986) estimate the income elasticity of demand for television advertising to be around 2.0. This is fairly high. One implication is that advertising revenues earned by broadcasters will be volatile and vary considerably with the state of the economy. Thus a disadvantage of expecting a public broadcasting organization to rely heavily on advertising is that this source of funds is unstable.

In the U.S. studies summarized by Wenders (1987, p. 58), the mean income elasticity of demand for long-distance telephone service was 0.39 in the short run and 1.33 in the long run.

## Number of Potential Buyers

For consumer products, the population served by a market is a good indicator of the number of potential buyers. The greater the population in a market, other things being equal, the greater the demand. It should be no surprise that the United States, the developed country with the largest population, has the largest domestic market for theatrical movies, television programs, television receivers, video hardware and software, and many other media industry-related products (Hoskins, McFadyen, & Finn, 1997, p. 39). As we shall see later, U.S. market size provides a crucial competitive advantage in production of entertainment and cultural goods.

But why is it that India and China, both with much larger populations, do not comprise an even greater market for media products? The secret is differences in income levels. Recall that demand depends on income per capita as well as population. The population of both China and India may dwarf that of the United States, but the positive effect of their population size on demand is more than offset by the negative effect of their much lower per capita income.

For producer goods (goods sold to other companies), the number of potential purchasing firms, as well as population, is relevant. For example, television programs are sold to television services, such as broadcasters and cable specialty channels. In Canada, the large increase in the number of television services, mostly cable or



DBS-delivered specialty channels, is credited with stimulating demand for documentaries.

### 3.3.3 Expectations Regarding Future Price

If a purchase decision can be postponed (as it can be for consumer durables), demand in the current period is affected by expectations regarding future price levels. A change in expectation to reflect a lower future price (and often better reliability or features) will cause some people to delay purchase and thus decrease demand in the current period. This is certainly relevant to demand for innovative electronic hardware. When VCRs, aimed at households rather than industry professionals, were introduced by Sony and Japan Victor (JVC) in the mid-1970s, prices were well in excess of \$2000, but now VCRs can be bought for as little as \$50. How many people are delaying the purchase of an HDTV television now in the expectation that the price will fall by 50% or more in the next 18 months? As the saying goes, "there is never a good time to buy a computer." Early adopters, though, will value the benefits from ownership, perhaps the pride at owning the latest consumer electronic device, highly enough that they are not prepared to postpone their purchase.

### 3.3.4 Tastes

Consumer tastes change over time. The small number of Westerns and World War II movies now compared to the number in the 1950s can be largely attributed to changing tastes.

Tastes vary between people in different countries and regions. For example, it is well documented that viewers generally prefer domestic television programs to foreign programs, and hence demand is greater for the domestic product (Tracy & Redal, 1995). A particular television program (or other media good) rooted in one culture, and thus attractive in the home market where viewers share a common knowledge and way of life, will have a diminished appeal elsewhere, as viewers may find it difficult to identify with the style, values, beliefs, history, myths, institutions, physical environment, and behavioral patterns. If the program is produced in another language, its appeal will be further reduced by the need to employ dubbing or subtitling. Even if the language is the same,

accents or idioms may still cause problems. The reduction in appeal of the foreign program relative to a domestic equivalent has been labeled the *cultural discount*.

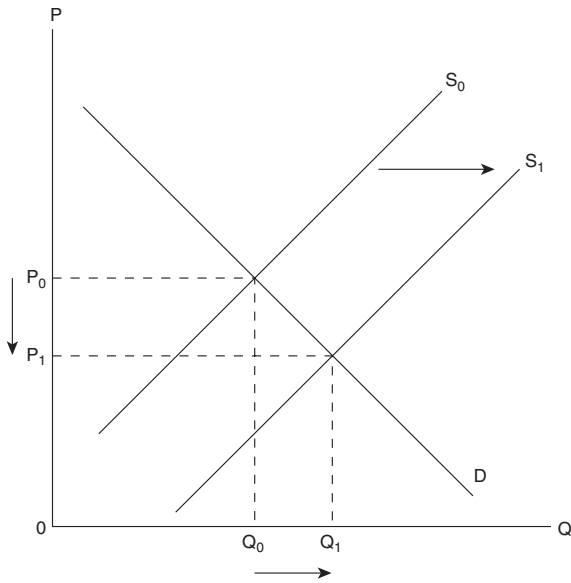
In each country, the cultural discount provides a barrier to the entry of competing programs from foreign producers. This translates into a competitive advantage for domestic producers. Given that the United States is the country with the largest domestic market in the world, the cultural discount provides U.S.-based producers with favored access to the world's wealthiest market. This constitutes a global competitive advantage for the U.S. film and television program production industry. This is considered further in chapter 14.

### 3.4 Change in Supply

A change in the value of one of the determinants of supply other than own price causes a *change in supply*. Economists use this term to avoid confusion with *change in quantity supplied*, which is caused by a change in the price of the product itself. If there is a change in supply, this causes a shift of the entire supply curve. If there is an increase in supply, the supply curve will shift to the right, as more will be supplied than before at any given price. If there is a decrease in supply, the supply curve will shift to the left, indicating that less will be supplied at any given price.

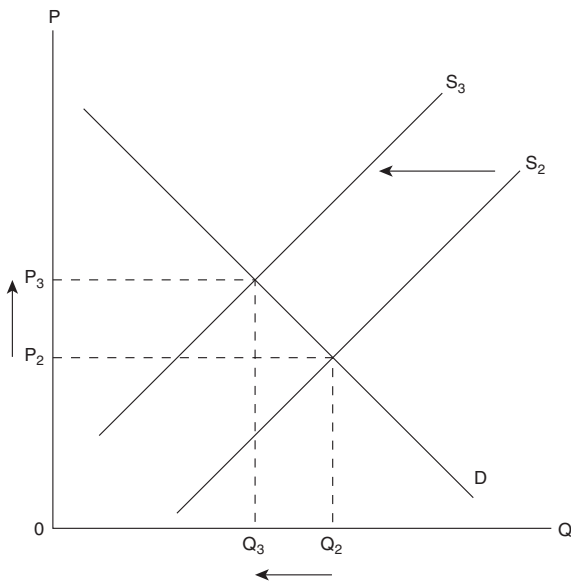
### 3.5 Effect of Change in Supply on Price and Quantity

A change in supply causes the equilibrium price to change in the opposite direction to the change in supply. In contrast, the equilibrium quantity changes in the same direction as the change in supply. Figure 3.4 illustrates an increase in supply from  $S_0$  to  $S_1$ , resulting in a decrease in equilibrium price from  $P_0$  to  $P_1$  and an increase in equilibrium quantity from  $Q_0$  to  $Q_1$ . Figure 3.5 shows a decrease in supply from  $S_2$  to  $S_3$ , causing the equilibrium price to increase from  $P_2$  to  $P_3$  and the equilibrium quantity to decrease from  $Q_2$  to  $Q_3$ .



**Figure 3.4** An Increase in Supply

Note: D indicates demand curve; P, price; Q, quantity; S, supply curve.



**Figure 3.5** A Decrease in Supply

Note: D indicates demand curve; P, price; Q, quantity; S, supply curve.

## 3.6 Causes of a Change in Supply

A change in supply is caused by a change in the value of any determinant other than own price. Key determinants are the *prices of inputs*, the *state of technology*, and the *number of suppliers*.

### 3.6.1 Prices of Inputs

Input prices directly affect the cost of producing the industry output. A decrease in input price makes it less expensive to produce output, and firms will be willing to supply more at any given product price. Hence a decrease in input price will increase supply and shift the supply curve to the right, as in Figure 3.4. Similarly, an increase in input price will decrease supply and shift the supply curve to the left, as in Figure 3.5. As an example, the decrease in the value of the Canadian dollar and the Australian dollar (relative to the U.S. dollar) over a number of years prior to 2003 meant a decrease in input prices (in U.S. dollars) for Hollywood studios producing films and television programs in these countries. This led to an increase in supply, with more and more Hollywood “runaway” productions being shot in Canada and Australia. According to the California Entertainment Industry Development Corporation, Toronto and Vancouver are now the third and fourth largest centers in North America for U.S. film (includes television) productions, with \$1 billion split almost equally between them. These cities trail only Hollywood, with \$20 billion, and New York, with \$2.2 billion (“California to lure,” 1997, p. A14).

### 3.6.2 Technology

A change in technology that results in a better way of producing a product will lower costs of production by either allowing a given level of output to be produced using fewer inputs than before or by permitting substitution of a less expensive factor for a more expensive factor in the production process. Such a change in technology will increase supply, resulting in a shift of the supply curve to the right, as shown in Figure 3.4.

For example, distribution of newspapers used to involve printing copies at a central plant and then physically shipping the copies to market. The cost of shipping and time taken (there is not much of a

market for day-old newspapers) was such that it was uneconomic to distribute a newspaper beyond a radius of 200 miles or so from the plant. Only geographically small countries, such as the United Kingdom, had national dailies. New technology, whereby the content is delivered by satellite to distant printing presses, changed this. Dow Jones and Company, which began distance printing of the *Wall Street Journal* in Orlando, Florida, in 1975, pioneered the technology.

The new technology meant that publishers were willing to offer many more copies at the existing price ( $P_0$  in Figure 3.4). But to entice consumers to purchase more copies, they had to eliminate some of the “distant market” price premiums previously charged. With competition, subscription prices tended to fall from  $P_0$  to  $P_1$ , and circulation of these now national newspapers increased from  $Q_0$  to  $Q_1$ .

The Internet is a new information technology that offers many opportunities to increase the supply of information-based entertainment or cultural products. The innovations introduced by Amazon.com have revolutionized book retailing, bringing consumers more books at lower prices. Similar changes in the distribution of music are fast occurring with Apple’s iTunes Music Store, and television programs and feature films may not be far behind, with lower costs and increased supply translating into more product in the hands of consumers at lower prices.

### 3.6.3 Number of Suppliers

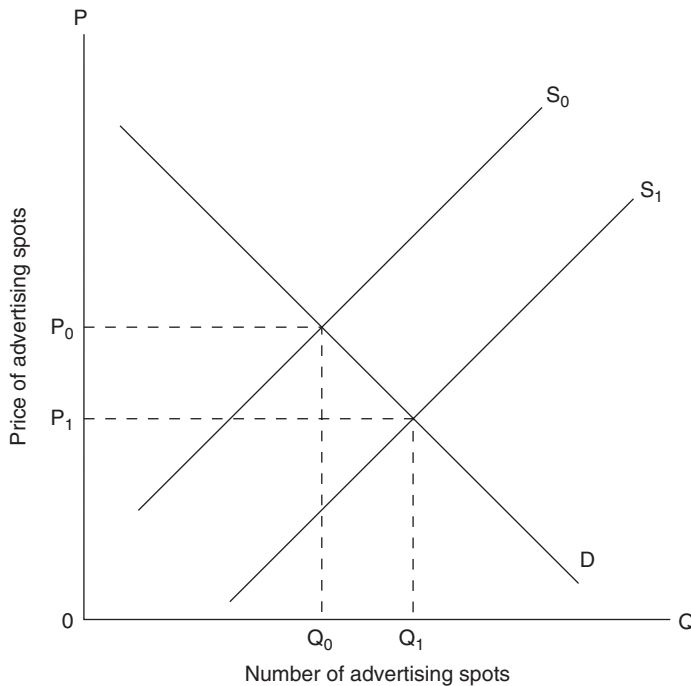
In the long run, capacity is not fixed. Firms can enter or exit the industry. The entry of new firms will shift the short-run supply curve to the right, as, with the increased number of firms, more will be supplied than before at any given product price. Similarly, the exit of firms will shift the supply curve to the left. Entry or exit of firms usually depends on the level of profit obtainable in this industry compared to the best alternative opportunity. The profit available from the best alternative opportunity is called a *normal profit* or *zero economic profit*. A zero economic profit is just sufficient to induce existing firms to remain in the industry. If existing firms are earning positive economic profits, then opportunities are better than elsewhere and new firms will be attracted into the industry. If existing firms are earning negative economic profits, then opportunities are not as good as elsewhere and some firms will exit the industry.

Although there has been a trend toward partial deregulation, broadcasting is a regulated industry in most countries. Commercial broadcasting has been highly profitable. Lord Thomson, after being awarded the Scottish Television commercial broadcasting license, said: "It's just like having a licence to print your own money!" (Braddon, 1965, p. 240). Why is a commercial operation so profitable in a regulated environment? Don't we usually think of regulation controlling and restricting profits? We examine this question in Figure 3.6, which shows the market for advertising spots, as this is the product commercial off-air broadcasters sell. Assume that initially the supply curve is  $S_0$ , the demand curve is  $D$ , the equilibrium price is  $P_0$ , and the output is  $Q_0$ . Suppose that, at this price, broadcasters earn positive economic profits. What would normally occur under these circumstances is that these economic profits would attract new entrants. As new broadcasters entered the market, the supply curve would shift to the right and price would fall. This process would not stop until supply curve  $S_1$  was established, where, at the new lower equilibrium price ( $P_1$ ), firms would only be able to earn zero economic profits. If this had occurred, the commercial television broadcasting industry would not have been "like having a licence to print your own money."

Regulation of television broadcasting, whether in Britain, Canada, or Australia, has prevented or restricted the market entry of new television broadcasters and preserved the positive economic profits of established broadcasters. There are a number of reasons why entry of new television broadcasters, or at least sufficient entry, did not occur. So long as television signals were broadcast using the earth's electromagnetic spectrum, the limited availability of spectrum frequencies provided a rationale for restricting the number of television broadcasters. But when cable, satellite, and other delivery methods became available, these restrictions on entry continued. For example, for years the Canadian Radio-television and Telecommunications Commission (CRTC) strictly limited the number of signals cable could deliver and then delayed the introduction of direct-to-home (DTH) satellite delivery. In Australia, cable introduction was delayed until 1995, DTH satellite was licensed with limited programming, and further entry is blocked until 2005 to give existing broadcasters time to gear up for the transition to digital. In both countries, cultural rationales have often been advanced to justify protection of the economic

position of existing broadcasters. As a quid pro quo, it is hoped that broadcasters will spend much of their enhanced profits on domestic programming. Perhaps an unstated expectation is that the favor will be repaid through positive news and public affairs coverage come election time. We will return to regulation in chapter 13.

In chapter 2, we promised we would explain later the basis for the Peacock Committee's prediction that permitting the BBC to carry advertising would lead to a decrease in price for advertising spots. With reference to Figure 3.6, we can now do so. In this case, the supply curve ( $S_0$ ) can represent the supply, with the BBC not permitted to sell advertising spots, and the equilibrium price and output is  $P_0$  and  $Q_0$ , respectively. If the BBC were permitted to sell advertising, it would enter this market and shift the supply curve to  $S_1$ . This would result in the market price for an advertising spot price falling to  $P_1$ .



**Figure 3.6** The Market for Television Advertising

Note: D indicates demand curve; P, price; Q, quantity; S, supply curve.

## 3.7 Further Applications

There are many additional media applications of supply and demand analysis and elasticity. Those examined here are the Principle of Relative Constancy, auctioning of the electromagnetic spectrum, and the allocation of subsidies. Other illustrations appear throughout the text. For example, in chapter 14, we use supply and demand analysis to examine the effects of domestic content regulations for television programming.

### 3.7.1 Principle of Relative Constancy

The Principle of Relative Constancy, put forward by McCombs (1972), states that the spending on mass media comprises a relatively constant proportion of national income. This principle has received considerable attention in the media economics field. It implies an income elasticity of demand of 1.00 because, for it to hold, any change in income must be matched by an equal change in demand. It also implies that new media growth is at the expense of old media. There is no theoretical reason why this should be the case, so the justification for the principle has to be empirical. From the 1930s to the early 1970s, there did appear to be considerable supporting evidence. The growth of spending on audio and visual media almost exactly offset the decline in spending on print media. Within the visual media, the growth of spending on television almost exactly offset the decline in spending on movies. But, as Lacy and Noh (1997) report, the share of consumer spending on the mass media increased from 2.15% of disposable personal income in 1975 to 3.69% in 1987. This increase has been attributed to the diffusion of VCR and cable TV during this period. Growing expenditure on these new media did not result in a corresponding decrease in spending on preexisting media. As we argued in section 3.3.1, there is reason to believe the demand relationship between the VCR and movies is more one of complements than substitutes.

### 3.7.2 Auctioning of Electromagnetic Spectrum

Communication signals transmitted through the atmosphere must be sent on different frequencies to avoid interference—such as is experienced when the signal of a distant radio station breaks up because of interference from a more powerful station. But there



are only a limited number of such frequencies that are physically available in nature. Because there are many competing potential users for each spectrum frequency, they are a scarce economic resource. But the allocation of scarce resources among competing uses is what the market system of supply and demand does best. The United Kingdom and United States have recognized this by instituting an auction process for spectrum frequencies.

In the United Kingdom, a system of competitive tendering has been used to allocate new commercial television licenses for Channel 3 and Channel 5. A pure tender system would award the license to the highest bidder, that company willing to offer the highest price for the license. However, in the U.K.'s case, this was amended to the highest *qualified* bidder, and the Independent Television Commission (the regulatory authority) was delegated considerable discretion in determining whether a bid met a threshold defined in terms of programming plans, consumer protection, and financial viability (Cave & Williamson, 1991).

In the United States, auctions begun in 1994 of a relatively small portion of the spectrum yielded approximately \$23 billion in 4 years, and the U.S. government received just over half of this (Robinson, 1998). Spectrum frequencies have been allocated in this way for personal communication services, direct-broadcast satellite (DBS), local multipoint distribution, and other services.

Canada (like many other countries) has been slow to use price to allocate scarce spectrum frequencies to potential broadcasters. The result has been an excess in demand, with a corresponding need for some other mechanism to decide which competing buyer wins a license. The norm has been for the CRTC (the regulatory agency) to make a choice based on its evaluation of the program commitments and financial plans submitted by the applicants. This has been likened to a beauty contest and has not been particularly successful, as program commitments are not really commitments but promises, and these promises have often not been kept. Besides this, the government has foregone an opportunity to earn considerable revenue. The government of Canada seems to have belatedly seen the light: It conducted its first spectrum auction, for wireless services, in October 1999.

### 3.7.3 Allocating Subsidies

Many countries, such as Canada, Australia, and France, subsidize the production of movies and TV programs. It should be no surprise

that the demand for subsidies exceeds the supply. There is no price paid by the recipient of a subsidy other than the resources used in the process of applying for the subsidy. Some method of allocating funds between competing eligible projects is thus necessary. The \$200 million Canada Television Cable Production Fund exhibits two alternative approaches. The Equity Investment Program component of the fund is allocated by Telefilm Canada using cultural and commercial criteria. The Licence Fee Program component, administered by a board composed predominantly of industry participants, is allocated on a first come, first served basis. (This method of allocating scarce goods was, of course, the favorite of communist regimes.) In April 1998, the strange sight of producers lining up for grants might have been seen. There was consternation when it was realized that many of the television programs widely perceived as most deserving had failed to receive any of the money.

### 3.8 Summary

This chapter examined changes in demand and supply and how product markets work.

A change in demand occurs when there is a change in the value of a determinant of demand other than own price. An increase in demand shifts the demand curve to the right and causes price and quantity to rise. A decrease in demand shifts the demand curve to the left and causes price and quantity to fall. Thus the change in price and quantity are in the same direction as the change in demand.

Changes in demand are caused by a change in a determinant of demand, such as the price of a demand-related good, income per capita, the number of potential buyers, the expected future price, and consumer tastes.

Demand-related goods are either substitutes or complements. A substitute is a good that fulfils the same need. The cross elasticity of demand, defined as (percentage change in demand for product X) / (percentage change in the price of Z), is positive if X and Z are substitutes. Complementary goods are those that are used in conjunction with one another. The cross elasticity of demand for complementary goods is negative.

Demand is positively related to income per capita for normal goods and negatively related for inferior goods. Income elasticity of

demand, defined as (percentage change in demand) / (percentage change in income) is thus positive for normal goods and negative for inferior goods.

A change in supply occurs when there is a change in a determinant of supply other than own price. Whatever direction supply changes, the equilibrium quantity changes in the same direction and the equilibrium price changes in the opposite direction.

A change in supply is typically caused by a change in an input price, technology, or the number of suppliers.

There are a host of applications of supply and demand analysis and of the elasticity concept in the media industries. Those examined in this chapter included the effect of permitting the BBC to advertise, the Principle of Relative Constancy, the recent trend to auction the electromagnetic spectrum, and the market for subsidies.

