DID YOU KNOW THAT...?

How do your household's spending habits compare to the typical household in Canada? According to Statistics Canada's Survey of Household Spending, released on December 18, 2009, each Canadian household spends an average monthly amount of $1217 on personal taxes: income tax, UI and CPP deductions, and property taxes; $1625 on shelter: rent or mortgage, utilities, supplies, equipment, and furnishings; $810 on transportation: auto-related and public transportation; $620 on food ($155 per week); $340 on recreation ($85 per week); $335 per month on personal insurance payments and pension contributions; $269 on health and personal care; $238 on clothing; $140 on gifts and charitable contributions; $147 on tobacco, alcohol, and games of chance; $98 on education; $90 on miscellaneous items; and $21 on reading materials and printed matter.

The poorest 25 percent of Canadians spend over 52 percent of their total spending on the basics—food, shelter, and clothing. The richest 25 percent of Canadian households spend only 28 percent of their budgets on these three basic items.

Eighty-six percent of households reported owning a DVD player; 79.4 percent own a computer; 73.2 percent own a cellphone; 65.5 percent and 23.7 percent subscribe to cable and satellite TV respectively. Household spending on reading materials—books, magazines, and newspapers—decreased 2.7 percent over the previous year.

The contents of this chapter will help you identify the various factors that both explain and predict the composition of household consumer expenditures.

Source: "Survey of household spending." *The Daily.* Statistics Canada. Dec. 18, 2009. http://www.statcan.gc.ca/daily-quotidien/091218/dq091218b-eng.htm.

3.1 The Law of Demand

Demand The quantities of a specific good or service that individuals are willing to purchase at various possible prices, other things being constant.

Demand has a special meaning in economics. It refers to the quantities of specific goods or services that individuals, either singly or as a group, will purchase at various possible prices, other things being constant. We can, therefore, talk about the demand for microprocessor chips, french fries, CD players, and health care.

Associated with the concept of demand is the **law of demand**, which can be stated as follows:

Law of demand The observation that there is an inverse relationship between the price of any good and its quantity demanded, holding other factors equal.

> **When the price of a good goes up, people buy less of it, other things being equal. When the price of a good goes down, people buy more of it, other things being equal.**

The law of demand tells us that the quantity demanded of any commodity is inversely related to its price, other things being equal. In an inverse relationship, one variable moves up in value when the other moves down. The law of demand states that a change in price causes the quantity demanded to change in the *opposite* direction.

Note that we tacked onto the end of the law of demand the statement "other things being equal." We referred to this in Chapter 1 as the *ceteris paribus* assumption. It means, for example, that when we predict that people will buy fewer CD players if their price goes up, we are holding constant the price of all other goods in the economy as well as people's incomes. Implicitly, therefore, if we are assuming that no other prices change when we examine the price behaviour of CD players, we are looking at the *relative* price of CD players.

The law of demand is supported by millions of observations of how people behave in the marketplace. Theoretically, it can be derived from an economic model based on rational behaviour, as was discussed in Chapter 1. Basically, if nothing else changes and the price of a good falls, the lower price induces us to buy more over a certain period of time. This is because we can enjoy additional net gains that were unavailable at the higher price. For the most part, if you examine your own purchasing behaviour, you will see that it generally follows the law of demand.

Relative Prices versus Money Prices

Relative price Any commodity's price in terms of another commodity.

The **relative price** of any commodity is its price in terms of another commodity. The actual price that you pay in dollars and cents for any good or service at any point in time is called

its **money price**. Consider an example that you might hear quite often around older friends or relatives. "When I bought my first new car, it cost only $1500." The implication, of course, is that the price of cars today is outrageously high because the average new car might cost $20 000. But that is not an accurate comparison. What was the price of the average house during that same year? Perhaps it was only $12 000. By comparison, then, given that houses today average about $200 000, the current price of a new car does not sound so far out of line, does it?

Money price The actual price that you pay in dollars and cents for any good or service at any point in time.

The point is that comparing money prices during different time periods does not tell you much. You have to find out relative prices. Consider a simplified example of the price comparison of prerecorded DVDs versus prerecorded videocassettes between last year and this year. In Table 3–1, we show the money prices of DVDs and videocassettes for two years during which time both have gone up. That means that we have to pay more for DVDs and more for videocassettes in today's dollars. If we look, though, at the relative prices of DVDs and videocassettes, we find that last year, DVDs were twice as expensive as videocassettes, whereas this year they are only 1.5 times as expensive. Conversely, if we compare videocassettes to DVDs, last year they cost only half as much as DVDs, but today they cost about 67 percent as much. In the one-year period, though both prices have gone up in money terms, the relative price of DVDs has fallen (and equivalently, the relative price of videocassettes has risen).

When evaluating the effects of price changes, we must always compare prices per *constant-quality unit*. Sometimes, relative price changes occur because the quality of a product improves, thereby bringing about a decrease in the item's effective price per constant-quality unit.

TABLE 3–1

Money Price versus Relative Price

The money prices of both DVDs and videocassettes have risen. But the relative price of DVDs has fallen (or conversely, the relative price of videocassettes has risen).

	Money Price		Relative Price	
	Last Year	This Year	Last Year	This Year
DVDs	$20	$24	$20 / $10 = 2.0	$24 / $16 = 1.5
Videocassettes	$10	$16	$10 / $20 = 0.5	$16 / $24 = 0.67

The Demand Schedule

Let us take a hypothetical demand situation to see how the inverse relationship between the price and the quantity demanded looks (holding other things equal). We will consider the quantity of rewriteable DVDs demanded *per year* by one person. Without stating the *time dimension*, we could not make sense out of this demand relationship because the numbers would be different if we were talking about the quantity demanded per month or the quantity demanded per decade.

In addition to implicitly or explicitly stating a time dimension for a demand relationship, we are also implicitly referring to constant-quality units of the good or service in question. Prices are always expressed in constant-quality units in order to avoid the problem of comparing commodities that are, in fact, not truly comparable.

In part (a) of Figure 3–1, we see that if the price were $1 per DVD, 50 of them would be bought each year by our representative individual, but if the price were $5 per DVD, only 10 would be bought each year. This reflects the law of demand. Part (a) is also simply called *demand*, or a *demand schedule*, because it gives a schedule of alternative quantities demanded per year at different possible prices.

The Demand Curve

Tables expressing relationships between two variables can be represented in graphical terms. To do this, we need only construct a graph that has the price per constant-quality DVD on the vertical axis, and the quantity measured in constant-quality DVDs per year on the horizontal axis. All we have to do is take combinations *A* through *E* from part (a) of Figure 3–1 and plot those points in part (b). Now we connect the points with a smooth

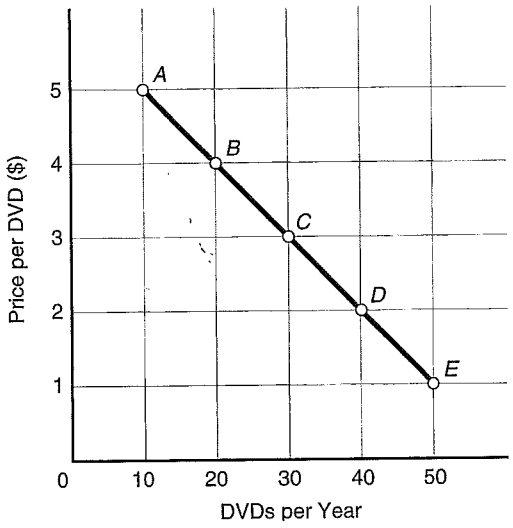
FIGURE 3–1
The Individual Demand Schedule and the Individual Demand Curve

In part (a), we show combinations *A* through *E* of the quantities of DVDs demanded, measured in constant-quality units at prices ranging from $5 down to $1 per DVD. In part (b), we plot combinations *A* through *E* on a grid. The result is the individual demand curve for DVDs.

Part (a)

Combination	Price per Constant-Quality DVD	Quantity of Constant-Quality DVDs per Year
A	$5	10
B	4	20
C	3	30
D	2	40
E	1	50

Part (b)



line, and *voila*, we have a *demand curve*.[1] It is downward-sloping (from left to right) to indicate the inverse relationship between the price of DVDs and the quantity demanded per year. Our presentation of demand schedules and curves applies equally well to all commodities, including toothpicks, hamburgers, textbooks, credit, and labour services. Remember, the **demand curve** is simply a graphical representation of the law of demand.

Demand curve A graphical representation of the law of demand.

Individual versus Market Demand Curves

The demand schedule shown in part (a) of Figure 3–1 and the resulting demand curve shown in part (b) are both given for one individual. As we shall see, determining price in the **market** (all of the arrangements that individuals have for exchanging with one another) depends on, among other things, the *market demand* for a particular commodity. The way in which we measure a **market demand** schedule and derive a market demand curve for DVDs or any other commodity is by adding the individual demand at each price for all consumers in the market. Suppose that the market for DVDs consists of only two buyers: buyer 1, for whom we have already shown the demand schedule in Figure 3–1, and buyer 2, whose demand schedule is displayed in Figure 3–2, part (a), column 3. Column 1 of Figure 3–2, part (a) shows the price, and column 2 gives the quantity demanded by buyer 1 (data taken directly from Figure 3–1). Column 4 states the total quantity demanded at each price, obtained by adding columns 2 and 3. Graphically, in part (d) of Figure 3–2, we add the demand curves of buyer 1 (part (b)) and buyer 2 (part (c)) to derive the market demand curve.

Market All of the arrangements that individuals have for exchanging with one another.

Market demand Determined by adding the individual demand at each price for all the consumers in the market.

There are, of course, millions of potential consumers for DVDs. We will assume that the summation of all of the consumers in the market results in a demand schedule, given in part (a) of Figure 3–3, and a demand curve, given in part (b). The quantity demanded is now measured in millions of units per year. Remember, part (b) in Figure 3–3 shows the market demand curve for the millions of users of DVDs. The "market" demand curve that we derived in Figure 3–2 assumed that there were only two buyers in the entire market. This is why that demand curve is not a smooth line—whereas the true market demand curve in part (b) of Figure 3–3 is—and has no kinks.

You have likely heard about the increased interest in using technology such as radio frequency identification tags (RFID tags) to track items such as manufacturing, wholesale, and retail merchandise; precious jewellery and art; and library books at all times in their life cycle. As Example 3–1 implies, the increased use of RFID tags can be illustrated graphically as a downward movement along the demand curve for RFID tags.

[1]Even though we call them "curves," for the purposes of exposition, we often draw straight lines. In many real-world situations, demand and supply curves will, in fact, be lines that do curve. To connect the points in part (b) with a line, we assume that for all prices in between the ones shown, the quantities demanded will be found along that line.