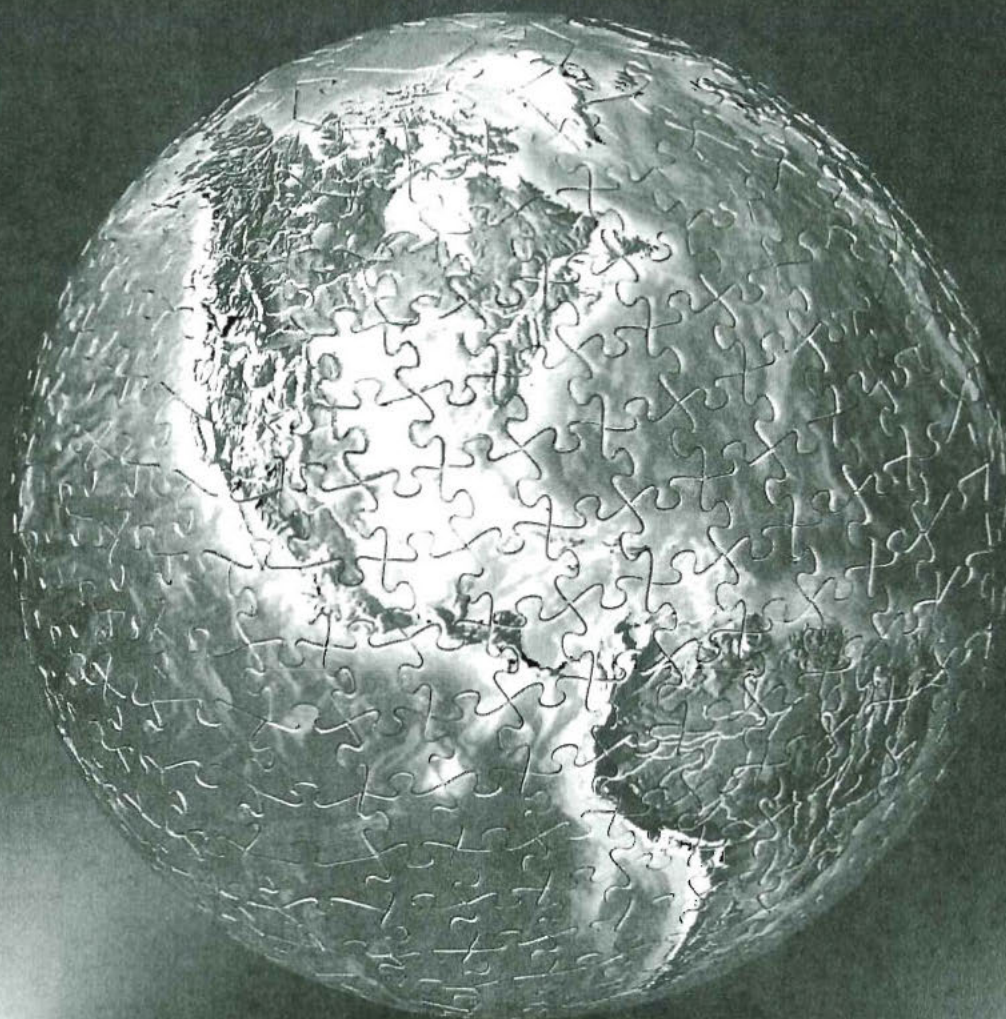


SEVENTEENTH EDITION

# EC NOMICS



SAMUELSON  NORDHAUS



# ECONOMICS

Seventeenth Edition

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customers through the substitution effect. In addition, a price reduction will induce extra purchases of goods by existing consumers through both the income and the substitution effects. Conversely, a rise in the price of a good will cause some of us to buy less.



### The explosive growth in computer demand

We can illustrate the law of downward-sloping demand for the case of personal computers (PCs). The prices of the first PCs were high, and their computing power was relatively modest. They were found in few businesses and even fewer homes. It is hard to believe that just 20 years ago students wrote most of their papers in longhand and did most calculations by hand or with simple calculators.

But the prices of computing power fell sharply over the last two decades. As the prices fell, new buyers were enticed to buy their first computers. PCs came to be widely used for work, for school, and for fun. In the late 1990s, as the value of computers increased with the development of the Internet, yet more people jumped on the computer bandwagon. Worldwide, PC sales totaled about 100 million in 1999.

Figure 3-3 shows the prices and quantities of computers and peripheral equipment in the United States as calculated by government statisticians. The prices reflect the cost of purchasing computers with constant quality—that is, they take into account the rapid quality change of the average computer purchased. You can see how falling prices along with improved software, increased utility of the Internet and e-mail, and other factors have led to an explosive growth in computer output.

### Forces behind the Demand Curve

What determines the market demand curve for cornflakes or gasoline or computers? A whole array of factors influences how much will be demanded at a given price: average levels of income, the size of the population, the prices and availability of related goods, individual and social tastes, and special influences.

- The *average income* of consumers is a key determinant of demand. As people's incomes rise, indi-

viduals tend to buy more of almost everything, even if prices don't change. Automobile purchases tend to rise sharply with higher levels of income.

- The *size of the market*—measured, say, by the population—clearly affects the market demand curve. California's 32 million people tend to buy 32 times more apples and cars than do Rhode Island's 1 million people.
- The prices and availability of *related goods* influence the demand for a commodity. A particularly important connection exists among substitute goods—ones that tend to perform the same function, such as cornflakes and oatmeal, pens and pencils, small cars and large cars, or oil and natural gas. Demand for good A tends to be low if the price of substitute product B is low. (For example, if the price of computers falls, will that increase or decrease the demand for typewriters?)
- In addition to these objective elements, there is a set of subjective elements called *tastes* or *preferences*. Tastes represent a variety of cultural and historical influences. They may reflect genuine psychological or physiological needs (for liquids, love, or excitement). And they may include artificially contrived cravings (for cigarettes, drugs, or fancy sports cars). They may also contain a large element of tradition or religion (eating beef is popular in America but taboo in India, while curried jellyfish is a delicacy in Japan but would make many Americans gag).
- Finally, *special influences* will affect the demand for particular goods. The demand for umbrellas is high in rainy Seattle but low in sunny Phoenix; the demand for air conditioners will rise in hot weather; the demand for automobiles will be low in New York, where public transportation is plentiful and parking is a nightmare. In addition, expectations about future economic conditions, particularly prices, may have an important impact on demand.

The determinants of demand are summarized in Table 3-2, which uses automobiles as an example.

### Shifts in Demand

As economic life evolves, demand changes incessantly. Demand curves sit still only in textbooks.