PART TWO

Supply and Demand

Introduction

The tools of **demand** and **supply** are the most basic and useful elements of the economist's kit. Indeed, many economists would argue that the **law of demand**—the lower the price of a good, the greater the quantity of that good demanded by purchasers—is the single most powerful proposition in all of economics. Simply stated, the law of demand has the capacity, unmatched by any other proposition in economics, to explain an incredibly diverse range of human behaviors. For example, the law of demand explains why buildings are taller in downtown areas than in outlying suburbs, and also why people are willing to sit in the upper deck of football stadiums even though lower-deck seats are clearly superior. The great explanatory power of the law of demand is almost matched by that of the **law of supply,** which states that the higher the price of a good, the greater will be the quantity of that good supplied by producers. The law of supply helps us understand why people receive a premium wage when they work overtime, as well as why parking places at the beach are so much more expensive during the summer months than during the winter.

When the laws of demand and supply are combined, they illuminate the enormous **gains from trade** that arise from voluntary exchange. In Chapter 5, "Sex, Booze, and Drugs," we examine what happens when the government attempts to prohibit the exchanges that give rise to these gains. The consequences are often surprising, always costly, and—sadly—sometimes tragic. We find, for example, that when the federal government made alcoholic beverages illegal during the era known as Prohibition, Americans responded by switching from beer to hard liquor and by getting drunk a larger proportion of the times when they drank. We also show that the government's ongoing efforts to prevent individuals from using drugs such as marijuana and cocaine cause the drive-by shootings that occur in many major cities and also encourage drug overdoses among users. Finally, we explain why laws against prostitution help foster the spread of AIDS.

Sometimes, as illustrated in Chapter 6, "Expanding Waistlines," we have to examine both demand and supply to understand a public issue. Obesity is rising in the United States, chiefly as a result of three separate economic forces. First, wages paid in sedentary occupations have risen relative to those in physically demanding jobs, inducing people to spend more of their time exercising their brains on the job rather than their muscles. An even more important factor, however, is that the entry of women into the workforce has increased the demand for prepackaged prepared foods—which have been gladly supplied by producers. This has sharply reduced the **full cost** of eating (especially the full cost of snacks) and so increased the amount of food consumed. Finally, higher taxes and limits on smoking in public have raised the full cost of consuming cigarettes in recent decades. This cost increase has induced people to substitute food for cigarettes. Because expanding waistlines today will almost surely generate adverse health effects in the future, we can expect this issue to become a widely debated one in the years to come.

In Chapter 7, "Is Water Different?" we dispel the myth that the consumption of some goods does not conform to the law of demand. Here we examine the demand for water, that "most necessary of all necessities," and find that—lo and behold—when the price of water is raised, people consume less of it—exactly as predicted by the law of demand. We also see that the law of supply applies to water. One important conclusion of this chapter is that the water shortages and water crises that afflict various parts of the nation are not the result of droughts but in fact are caused by government officials who are unwilling or unable to accept the reality of the laws of demand and supply.

It is distasteful to think in terms of the supply and demand for human beings, yet that is what developments half a world away compel us to do in Chapter 8, "Slave Redemption in Sudan." Nearly a century after human slavery was abolished there by the British, the slave trade reemerged in Sudan, the largest nation in Africa. Following in the tracks of the slave raiders are slave redemptionists, who seek to alleviate the human suffering in Sudan by purchasing freedom for thousands of

enslaved individuals. Yet the efforts of these well-intentioned individuals are having unintended consequences. Indeed, attempts to reduce slavery in Sudan have actually encouraged the slave trade and may even have resulted in more—not fewer—people in bondage. And so we see that sometimes the results of well-intentioned actions are not merely unexpected but tragic.

The cost of a pack of cigarettes in the United States has more than doubled over the last few years, because the federal and state governments have sharply increased cigarette taxes. These tax increases have reduced the supply of cigarettes and so pushed up prices. As we see in Chapter 9, "Smoking and Smuggling," this has led to a host of other developments. The number of smokers and the amount of smoking are both down, as would be predicted by the law of demand. Nevertheless, for people who continue to smoke in the face of higher taxes, things are worse: Not only is a larger share of their income going to the "evil weed," but they are also smoking stronger, more carcinogenic cigarettes. At the market level, higher cigarette taxes have also led to much more widespread smuggling of cigarettes as consumers seek to minimize the costs of the higher taxes.

Our final application of demand and supply analysis comes in Chapter 10, "Bankrupt Landlords, from Sea to Shining Sea." This chapter brings us back to the issue discussed in Chapter 5, the effects of government interference with free markets, in this case in the form of **rent controls**—legal ceilings on the rent that landlords may charge for apartments. Although the effects of rent controls are perhaps less tragic than some of the effects observed in Chapter 5, they are just as surprising and often as costly. We find, for example, that legal ceilings on rents have increased the extent of homelessness in the United States, have led to a rise in racial discrimination, and have caused the wholesale destruction of hundreds of thousands of dwelling units in our nation's major cities. We cannot escape one simple fact: Politicians may pass legislation, and bureaucrats may do their best to enforce it, but the laws of demand and supply ultimately rule the economy.

CHAPTER FIVE

Sex, Booze, and Drugs

Before 1914, cocaine was legal in this country; today it is not. Alcoholic beverages are legal in the United States today; from 1920 to 1933, they were not. Prostitution is legal in Nevada today; in the other forty-nine states, it is not.[1] All these goods—sex, booze, and drugs—have at least one thing in common: The consumption of each brings together a willing seller with a willing buyer, creating an act of mutually beneficial exchange (at least in the opinion of the parties involved). Partly because of this property, attempts to proscribe the consumption of these goods have met with less than spectacular success and have yielded some peculiar patterns of production, distribution, and usage. Let's see why.

When the government seeks to prevent voluntary exchange, it generally must decide whether to go after the seller or the buyer. In most cases—and certainly where sex, booze, and drugs are concerned—the government targets sellers because this is where the authorities get the most benefit from their enforcement dollars. A cocaine dealer, even a small retail pusher, often supplies dozens or even hundreds of users each day, as did speakeasies (illegal saloons) during Prohibition; a hooker typically services three to ten "tricks" per day. By incarcerating the supplier, the police can prevent several, or even several hundred, transactions from taking place, which is usually much more cost-effective than going after the buyers one by one. It is not that the police ignore the consumers of illegal goods; indeed, sting operations—in which the police pose as illicit sellers—often make the headlines. Nevertheless, most enforcement efforts focus on the supply side, and so shall we.

[1]These statements are not entirely correct. Even today, cocaine may be obtained legally by prescription from a physician. Prostitution in Nevada is legal only in those counties that have chosen to permit it. Finally, some counties in the United States remain "dry," prohibiting the sale of beer, wine, and distilled spirits.

Law enforcement activities directed against the suppliers of illegal goods increase the suppliers' operating costs. The risks of fines, jail sentences, and possibly even violence become part of the costs of doing business and must be taken into account by existing and potential suppliers. Some entrepreneurs will leave the business, turning their talents to other activities; others will resort to clandestine (and costly) means to hide their operations from the police; still others will restrict the circle of buyers with whom they are willing to deal to minimize the chances that a customer is a cop. Across the board, the costs of operation are higher, and at any given price, less of the product will be available. There is a reduction in supply, and the result is a higher price for the good.

This increase in price is, in a sense, exactly what the enforcement officials are after, for the consumers of sex, booze, and drugs behave according to the **law of demand:** The higher the price of a good, the lower the amount consumed. So the immediate impact of the enforcement efforts against sellers is to reduce the consumption of the illegal good by buyers. There are, however, some other effects.

First, because the good in question is illegal, people who have a **comparative advantage** in conducting illegal activities will be attracted to the business of supplying (and perhaps demanding) the good. Some may have an existing criminal record and are relatively unconcerned about adding to it. Others may have developed skills in evading detection and prosecution while engaged in other criminal activities. Some may simply look at the illegal activity as another means of thumbing their noses at society. The general point is that when an activity is made illegal, people who are good at being criminals are attracted to that activity.

Illegal contracts are usually not enforceable through legal channels (and even if they were, few suppliers of illegal goods would be foolish enough to complain to the police about not being paid for their products). So buyers and sellers of illegal goods must frequently resort to private methods of contract enforcement, which often entails violence.[2] Hence people who are relatively good at violence are attracted to illegal activities and have greater **incentives** to employ their talents. This is one

[2]Fundamentally, violence—such as involuntary incarceration—also plays a key role in the government's enforcement of legal contracts. We often do not think of it as violence, of course, because it is usually cushioned by constitutional safeguards and procedural rules.

reason why the murder rate in America rose to record levels during Prohibition and then dropped sharply when liquor was again made legal. It also helps explain why the number of drug-related murders soared during the 1980s and why drive-by shootings became commonplace in many drug-infested cities. The Thompson submachine gun of the 1930s and the MAC-10 machine gun of the 1980s were just low-cost means of contract enforcement.

The attempts of law enforcement officials to drive sellers of illegal goods out of business have another effect. Based on recent wholesale prices, $50,000 worth of pure heroin weighs about two ounces; $50,000 worth of marijuana weighs about twenty pounds. As any drug smuggler can tell you, hiding two ounces of contraband is a lot easier than hiding twenty pounds. Thus to avoid detection and prosecution, suppliers of the illegal good have an incentive to deal in the more valuable versions of their product, which for drugs and booze mean the more potent versions. Bootleggers during Prohibition concentrated on hard liquor rather than beer and wine; even today, moonshine typically has roughly twice the alcohol content of legal hard liquor such as bourbon, scotch, or vodka. After narcotics became illegal in this country in 1914, importers switched from the milder opium to its more valuable, more potent, and more addictive derivative, heroin.

The move to the more potent versions of illegal commodities is enhanced by enforcement activities directed against users. Not only do users, like suppliers, find it easier (cheaper) to hide the more potent versions, but there is also a change in relative prices due to user penalties. Typically, the law has lower penalties for using an illegal substance than for distributing it. Within each category (use or sale), however, there is commonly the same penalty regardless of value per unit. For example, during Prohibition, a bottle of wine and a bottle of more expensive, more potent hard liquor were equally illegal. Today, the possession of one gram of 90 percent pure cocaine brings the same penalty as the possession of one gram of 10 percent pure cocaine. Given the physical quantities, there is a fixed cost (the legal penalty) associated with being caught, regardless of value per unit (and thus potency) of the substance. Hence the structure of legal penalties raises the relative price of less potent versions, encouraging users to substitute more potent versions—heroin instead of opium, hashish instead of marijuana, hard liquor instead of beer.

Penalties against users also encourage a change in the nature of usage. Prior to 1914, cocaine was legal in this country and was used openly as a mild stimulant, much as people today use caffeine. (Cocaine was even an ingredient in the original formulation of Coca-Cola.) This type of usage—small, regular doses over long time intervals—becomes relatively more expensive when the substance is made illegal. Extensive usage (small doses spread over time) is more likely to be detected by the authorities than intensive usage (a large dose consumed at once), simply because possession time is longer and the drug must be accessed more frequently. Thus when a substance is made illegal, there is an incentive for consumers to switch toward usage that is more intensive. Rather than ingesting cocaine orally in the form of a highly diluted liquid solution, as was commonly done before 1914, people switched to snorting or injecting it. During Prohibition, people dispensed with cocktails before dinner each night; instead, on the less frequent occasions when they drank, they more often drank to get drunk. The same phenomenon is observed today. People under the age of twenty-one consume alcoholic beverages less frequently than people over the age of twenty-one. But when they do drink, they are more likely to drink to get drunk.

Not surprisingly, the suppliers of illegal commodities are reluctant to advertise their wares openly; the police are as capable of reading billboards and watching TV as potential customers are. Suppliers are also reluctant to establish easily recognized identities and regular places and hours of business because to do so raises the chance of being caught by the police. Information about the price and quality of products being sold goes underground, often with unfortunate effects for consumers.

With legal goods, consumers have several means of obtaining information. They can learn from friends, advertisements, and personal experience. When goods are legal, they can be trademarked for identification. The trademark cannot legally be copied, and the courts protect it. Given such easily identified brands, consumers can be made aware of the quality and price of each. If their experience does not meet expectations, they can assure themselves of no further contact with the unsatisfactory product by never buying that brand again.

When a general class of products becomes illegal, there are fewer ways to obtain information. Brand names are no longer protected by law, so falsification of well-known brands ensues. When products do not meet expectations, it is more difficult (costly) for consumers to punish suppliers. Frequently, the result is degradation of and uncertainty about product quality. The consequences for consumers of the illegal goods are often unpleasant and sometimes fatal.

Consider prostitution. In those counties in Nevada where prostitution is legal, the prostitutes are required to register with the local authorities, and they generally conduct their business in well-established bordellos. These establishments advertise openly and rely heavily on repeat business. Health officials test the prostitutes weekly for venereal disease and monthly for AIDS. Contrast this with other areas of the country, where prostitution is illegal. Suppliers are generally streetwalkers because a fixed, physical location is too easy for the police to detect and raid. Suppliers change locations frequently to reduce harassment by police. Repeat business is reported to be minimal; frequently, customers have never seen the prostitute before and never will again.

The difference in outcomes is striking. In Nevada, the spread of venereal disease by legal prostitutes is estimated to be almost nonexistent; to date, none of the registered prostitutes in Nevada has tested positive for AIDS. By contrast, in some major cities outside Nevada, the incidence of venereal disease among prostitutes is estimated to be near 100 percent. In Miami, one study found that 19 percent of all incarcerated prostitutes tested positive for AIDS; in Newark, New Jersey, 52 percent of the prostitutes tested were infected with the AIDS virus, and about half of the prostitutes in Washington, D.C., and New York City are also believed to be carrying the AIDS virus. Because of the lack of reliable information in markets for illegal goods, customers frequently do not know exactly what they are getting; as a result, they sometimes get more than they bargained for.

Consider alcohol and drugs. Today, alcoholic beverages are heavily advertised to establish their brand names and are carried by reputable dealers. Customers can readily punish suppliers for any deviation from the expected potency or quality by withdrawing their business, telling their friends, or even bringing a lawsuit. Similar circumstances prevailed before 1914 in this country for the hundreds of products containing opium or cocaine.

During Prohibition, consumers of alcohol often did not know exactly what they were buying or where to find the supplier the next day if they were dissatisfied. Fly-by-night operators sometimes adulterated liquor with far more lethal methyl alcohol. In tiny concentrations, this made watered-down booze taste like it had more kick, but in only

slightly higher concentrations, the methyl alcohol blinded or even killed the unsuspecting consumer. Even in "reputable" speakeasies (those likely to be in business at the same location the next day), bottles bearing the labels of high-priced foreign whiskeys were refilled repeatedly with locally (and illegally) produced rotgut until their labels wore off.

In the 1970s, more than one purchaser of what was reputed to be high-potency Panama Red or Acapulco Gold marijuana ended up with low-potency pot heavily loaded with stems, seeds, and maybe even oregano. Buyers of cocaine must worry about not only how much the product has been cut along the distribution chain but also what has been used to cut it. In recent years, the purity of cocaine at the retail level has ranged between 10 percent and 95 percent; for heroin, the degree of purity has ranged from 5 percent to 50 percent. Cutting agents can turn out to be any of various sugars, local anesthetics, or amphetamines; on occasion, rat poison has been used.

We noted earlier that the legal penalties for the users of illegal goods encourage them to use more potent forms and to use them more intensively. These facts and the uncertain quality and potency of the illegal products yield a deadly combination. During Prohibition, the death rate from acute alcohol poisoning (due to overdose) was more than thirty times higher than today. During 1927 alone, twelve thousand people died from acute alcohol poisoning, and many thousands more were blinded or killed by contaminated booze. Today, about three thousand people a year die as a direct result of consuming either cocaine or heroin. Of that total, it is estimated, roughly 80 percent die from either an overdose caused by unexpectedly potent product or an adverse reaction to the material used to cut the drug. Clearly, *caveat emptor* ("let the buyer beware") is a warning to be taken seriously if one is consuming an illegal product.

We noted at the beginning of this chapter that one of the effects of making a good illegal is to raise its price. One might well ask, by how much? During the early 1990s, the federal government was spending about $2 billion a year in its efforts to stop the importation of cocaine from Colombia. One study concluded that these efforts had hiked the price of cocaine by 4 percent (yes, 4 percent) relative to what it would have been had the federal government done nothing to interdict cocaine imports. The study estimated that the cost of raising the price of cocaine an additional 2 percent would be $1 billion per year. More recently, Nobel Laureate Gary Becker and his colleagues have estimated that America's war on drugs costs at least $100 billion per year.

The government's efforts to halt imports of marijuana have had some success, presumably because that product is easier to detect than cocaine. Nevertheless, suppliers have responded by cultivating marijuana domestically instead of importing it or by bringing it in across the relatively open U.S.–Canadian border rather than from elsewhere. The net effect has been an estimated tenfold increase in potency due to the superior farming techniques available in this country and Canada, as well as the use of genetic bioengineering to improve strains.

A few years ago, most states and the federal government began restricting sales of cold medicines containing pseudoephedrine because that ingredient was widely used for making the illegal stimulant methamphetamine in home laboratories. The restrictions succeeded in sharply curtailing home production of "meth." They also led to a huge increase in imports of a far more potent version of meth from Mexico. Overall, it is estimated that neither consumption of nor addiction to methamphetamine was reduced by the restrictions. But overdoses from the drug rose sharply because of the greater purity of the imports.

Consider also the government's efforts to eliminate the consumption of alcohol during the 1920s and 1930s. They failed so badly that the Eighteenth Amendment, which put Prohibition in place, was the first (and so far the only) constitutional amendment ever to be repealed. As for prostitution, it is reputed to be "the oldest profession" and by all accounts continues to flourish today, even in Newark and Miami.

The government's inability to halt the consumption of sex, booze, or drugs does not mean that those efforts have failed. Indeed, the impact of these efforts is manifested in their consequences, ranging from tainted drugs and alcohol to disease-ridden prostitutes. The message instead is that when the government attempts to prevent mutually beneficial exchange, even its best efforts are unlikely to meet with spectacular success.

DISCUSSION QUESTIONS

1. The federal government currently taxes alcohol on the basis of the 100-proof gallon. (Alcohol that is 100 proof is 50 percent pure ethyl alcohol; most hard liquor sold is 80 proof, or 40 percent ethyl alcohol, whereas wine is usually about 24 proof, and most beer is 6 to 10 proof.) How would alcohol consumption patterns change if the government taxed alcohol strictly on the basis of volume rather than also taking its potency into account?

2. During Prohibition, some speakeasy operators paid bribes to ensure that the police did not raid them. Would you expect the quality of the liquor served in such speakeasies to be higher or lower than in those that did not pay bribes? Would you expect to find differences (for example, with regard to income levels) among the customers patronizing the two types of speakeasies?
3. The markets for prostitution in Nevada and New Jersey have two important differences: (1) Prostitutes in New Jersey face higher costs because of government efforts to prosecute them, and (2) customers in New Jersey face higher risks of contracting diseases from prostitutes because the illegal nature of the business makes reliable information about product quality much more costly to obtain. Given these facts, in which state would you expect the price of prostitution services to be higher? Which state would have the higher amount of services consumed (adjusted for population differences)? Explain your answer.
4. According to the surgeon general of the United States, nicotine is the most addictive drug known to humanity, and cigarette smoking kills perhaps 300,000 to 400,000 people a year in the United States. Why isn't tobacco illegal in America?