

CHAPTER 3

Do Smokers Know Their Risks and Bear Their Costs?

IN this chapter, we examine the incentives for people to smoke. We consider whether smoking is like other consumption choices, and whether it results in an efficient allocation of society's resources. We then discuss the implications for governments.

Modern economic theory holds that individual consumers are the best judges of how to spend their money on goods such as rice, clothing, or movies. This principle of consumer sovereignty is based on certain assumptions: first, that each consumer makes rational and informed choices after weighing the costs and benefits of purchases, and, second, that the consumer incurs all costs of the choice. When all consumers exercise their sovereignty in this way—knowing their risks and bearing the costs of their choices—then society's resources are, in theory, allocated as efficiently as possible.

Smokers clearly perceive benefits from smoking; otherwise they would not pay to do it. The perceived benefits include pleasure and satisfaction, enhanced self-image, stress control and, for the addicted smoker, the avoidance of nicotine withdrawal. The private costs to be weighed against those benefits include money spent on tobacco products, damage to health, and nicotine addiction. Defined this way, the perceived benefits evidently outweigh the perceived costs.

However, the choice to buy tobacco products differs in three specific ways from the choice to buy other consumer goods:

- First, there is evidence that many smokers are *not* fully aware of the high probability of disease and premature death that their choice entails. This is the major private cost of smoking.

- Second, there is evidence that children and teenagers may not have the capacity to properly assess any information that they possess about the health effects of smoking. Equally important, there is evidence that new recruits to smoking may seriously underestimate the future costs associated with addiction to nicotine. These future costs may be thought of as the costs for adult smokers of being unable to alter a youthful decision to smoke, even if desired, because of addiction.
- Third, there is evidence that smokers impose costs on other individuals, both directly and indirectly. Economists usually assume that individuals properly weigh the costs and benefits of their choices only when they themselves incur these costs and enjoy these benefits. If others bear some of the costs, it follows that smokers may smoke more than they would if they were bearing all the costs themselves.

We consider the evidence for each of these in turn.

Awareness of the risks

People's knowledge of the health risks of smoking appears to be partial at best, especially in low- and middle-income countries where information about these hazards is limited. In China, for example, 61 percent of adult smokers surveyed in 1996 believed that cigarettes did them "little or no harm."

In the high-income countries, general awareness of the health effects of smoking has undoubtedly increased over the past four decades. However, there has been much controversy about how accurately smokers in high-income countries perceive their risks of developing disease. Various studies conducted over the past two decades have produced mixed conclusions about the accuracy of individuals' perceptions of the risks from smoking. Some find that people overstate these risks, others find that the risks are underestimated, and still others find that risk perceptions are adequate. The methodologies employed in these studies, however, have been criticized on multiple grounds. An overview of the research literature recently concluded that smokers in high-income countries are generally aware of their increased risks of disease, but that they judge the size of these risks to be smaller and less well-established than do nonsmokers. Moreover, even where individuals have a reasonably accurate perception of the health risks faced by smokers *as a group*, they minimize the personal relevance of this information, believing other smokers' risks to be greater than their own.

Finally, there is evidence from various countries that some smokers may have a distorted perception of the health risks of smoking compared with other health risks. For example, in Poland in 1995 researchers asked

adults to rate “the most important factors influencing human health.” The factor most frequently chosen was “the environment,” followed by “dietary habits” and “stress or hectic lifestyles.” Smoking trailed in fourth place, and was mentioned by only 27 percent of adults questioned. In fact, smoking accounts for more than one-third of the risk of premature death in middle-aged men in Poland, far more than any other risk factor.

Youth, addiction, and the capacity to make sound decisions

As stated in chapter 1, most smoking starts early in life, and children and teenagers may know less about the health effects of smoking than adults. A recent survey of 15- and 16-year-olds in Moscow found that more than half either knew of no smoking-related diseases or could name only one, lung cancer. Even in the United States, where young people might be expected to have received more information, almost half of 13-year-olds today think that smoking a pack of cigarettes a day will not cause them great harm. Given adolescents’ inadequate knowledge, they face greater obstacles than adults in making informed choices.

Equally important, young people underestimate the risk of becoming addicted to nicotine, and therefore grossly underestimate their future costs from smoking. Among final-year high school students in the United States who smoke but believe they will quit within five years, fewer than two out of five actually do quit. The rest are still smoking five years later. In high-income countries, about seven out of 10 adult smokers say they regret their choice to start smoking. Using econometric models of the relationship between current smoking and past smoking, based on U.S. data, researchers estimate that addiction to nicotine accounts for at least 60 percent of the cigarette consumption in any one year, and possibly as much as 95 percent.

Even teenagers who have been told about the risks of smoking may have a limited capacity to use the information wisely. It is difficult for most teenagers to imagine being 25, let alone 55, and warnings about the damage that smoking will inflict on their health at some distant date are unlikely to reduce their desire to smoke. The risk that young people will make unwise decisions is recognized by most societies and is not unique to choices about smoking. Most societies restrict young people’s power to make certain decisions, although these vary from culture to culture. For example, most democracies prevent their young people from voting before a certain age; some societies make education compulsory up to a certain age; and many prevent marriage before a certain age. The consensus across most societies is that some decisions are best left until adulthood. Likewise, societies may consider that the freedom of young people to choose to become addicted should be restricted.

It might be argued that young people are attracted to many risky behaviors, such as fast driving or alcohol binge-drinking, and that there is nothing special about smoking. However, there are several differences. First, for most of the world, smoking is less heavily regulated than other risky behaviors. Drivers are usually penalized for excessive speed with heavy fines and even loss of license, and there are penalties for dangerous behavior associated with heavy drinking, such as drunk driving. Second, smoking is much more dangerous than most risky activities over a lifetime. Extrapolations based on data from high-income countries suggest that, of 1,000 15-year-old males currently living in low- and middle-income countries, 125 will be killed by smoking in middle age if they continue to smoke regularly, with an additional 125 in old age. By comparison, about 10 will die in middle age due to road accidents, about 10 will die in middle age because of violence, and about 30 will die in middle age of alcohol-related causes, including some road accidents and violent deaths. Third, few other risky behaviors carry the high risk of addiction that is seen with smoking, so most are easier to abandon, and are abandoned, in maturity.

Costs imposed on others

Smokers impose physical costs on others as well as possible financial costs. In theory, smokers would smoke less if they took these costs into account, because the socially optimal level of consumption, in which resources are efficiently distributed in society, is reached when all costs are borne by the consumer. If part of the costs are borne by nonsmokers, then cigarette consumption may be higher than socially optimal. We now briefly discuss the various types of costs imposed on others.

First, smokers impose direct health costs on nonsmokers. The health effects, described in chapter 2, include low birth weight and increased risk of various diseases in the infants of smoking mothers, and disease in children and adults chronically exposed to second-hand smoke. Other direct costs include irritation and nuisance from smoke and the cost of cleaning clothes and furnishings. Although evidence is much more patchy, there may also be a cost from fires, environmental degradation, and deforestation from tobacco growing and processing, and from the consequences of smoking.

Given existing data, the financial costs that smokers impose on others are difficult to identify and quantify. This report does not attempt to provide an estimate of these costs, but instead it describes some of the main areas in which such costs can arise. We first discuss the cost of healthcare for smokers, then the issue of pensions.

In high-income countries, the overall annual cost of healthcare that may be attributed to smoking has been estimated to be between 6 and 15 percent of total healthcare costs. In most low- and middle-income countries today, the

annual costs of healthcare attributable to smoking are lower than this, partly because the epidemic of tobacco-related diseases is at an earlier stage, and partly because of other factors such as the kinds of tobacco-related diseases that are most prevalent and the treatments that they require. However, these countries are likely to see their annual smoking-related healthcare costs rise in the future. Projections performed for this report for China and India suggest that the annual costs of healthcare for smoking-related disease will grow to absorb a larger percentage of gross domestic product (GDP) than today.

For policymakers, it is vital to know these annual healthcare costs and the fraction borne by the public sector, because they represent real resources that cannot be used for other goods and services. For individual consumers, on the other hand, the key issue is the extent to which the costs will be borne by themselves or by others. Again, if some of the costs are likely to be borne by nonsmokers, consumers have an incentive to smoke more than they would if they were expecting to bear all the costs themselves. As the following discussion shows, however, the assessment of these costs is complex, and therefore it is not yet possible to conclude anything about how they may influence smokers' consumption choices.

In any given year, on average, a smoker's healthcare is likely to cost more than that of a nonsmoker of the same age and sex. However, because smokers tend to die earlier than nonsmokers, the *lifetime* healthcare costs of smokers and nonsmokers in high-income countries may be fairly similar. Studies that measure the lifetime healthcare costs of smokers and nonsmokers in the high-income countries have reached conflicting conclusions. In the Netherlands and Switzerland, for example, smokers and nonsmokers have been found to have similar costs, while in the United Kingdom and the United States some studies have concluded that smokers' lifetime costs are in fact higher. Recent reviews that take account of the growing number of tobacco-attributable diseases and other factors conclude that, overall, smokers' lifetime costs in high-income countries are somewhat greater than those of nonsmokers, despite their earlier deaths. There are no such reliable studies on lifetime healthcare costs in low-income and middle-income countries.

Clearly, for all regions of the world, smokers who bear the full costs of their medical services will not be imposing costs on others, however much greater those costs may be than nonsmokers'. But much medical care, especially that associated with hospital treatment, is financed either through government budgets or through private insurance. To the extent that contributions to either of these financing mechanisms—in the form of taxes and insurance premiums—are not differentially higher for smokers, the higher medical costs attributable to smokers will be at least partly borne by nonsmokers.

For example, in high-income countries, public expenditure on health accounts for about 65 percent of all health expenditures, or about 6 percent of

GDP. Thus, if smokers have higher net lifetime healthcare costs, then nonsmokers will subsidize the healthcare costs of smokers. The exact contribution is complex and variable, depending on the type of coverage, and the source of taxation that is used to pay for public expenditures. If, for example, only the healthcare costs of those over 65 are publicly funded, then the net use of public revenues by smokers may be small, to the extent that many require smoking-related medical care and die *before* they reach this age. Equally, if public expenditures are financed out of consumption taxes, including cigarette taxes, then smokers may not be imposing costs on others. Once again, the situation differs in low- and middle-income countries, where the public component of total healthcare expenditure is on average lower than in high-income countries, at around 44 percent of the total, or 2 percent of GDP. However, as countries spend more on health, the share of total expenditure that is met by public finance tends to rise too.

While it is thus a complex issue to assess the relative healthcare costs of smokers and nonsmokers, the issue of pensions has proved at least as contentious. Some analysts have argued that smokers in high-income countries contribute more than nonsmokers to public pension schemes, because many pay contributions until around retirement age and then die before they can claim a substantial proportion of their benefits.¹ However, a quarter of regular smokers are killed by tobacco in middle age, and may therefore die before they have paid their full pension contributions. At present, it is not known whether, overall, smokers in high-income countries do contribute more or less to public pensions than nonsmokers. However, the issue is not currently relevant to many of the low-income and middle-income countries. In low-income countries only about one in 10 adults has a public pension, and in middle-income countries the proportion is between a quarter and half of the population, depending on the income level of the individual country.

In sum, smokers clearly impose direct costs, such as health damage, on nonsmokers. There are probably also financial costs, for example in healthcare, although they are more difficult to identify or quantify.

Appropriate responses for governments

Given the three problems we identify, it appears unlikely that most smokers either know the full extent of their risks or bear all of the costs of their choice. Thus, their consumption choices may result in inefficient allocation of resources. Governments may therefore be justified in intervening to adjust the incentives to consumers so that they smoke less.

Societies may consider that the strongest reason for governments to intervene is to deter children and adolescents from smoking, given the compound problem of their inadequate access to information about tobacco, their risk of

becoming addicted, and their limited ability to make sound decisions. Governments also have a justification for intervening to prevent smokers from imposing direct physical costs on nonsmokers. The justification for protecting others from smokers' financial costs is less strong, as the nature of those costs remains unclear. Finally, some societies would consider that there is a role for government in providing adults with all the information they need to make informed consumption choices.

Ideally, government interventions should address each identified problem with a specific intervention. However, this is not always possible and some interventions may have broader effects. Thus, for example, children's and adolescents' imperfect judgments about the health effects of smoking would most specifically be addressed by improving their education about those effects, and by improving their parents' education. However, in reality, children respond poorly to health education and parents are imperfect agents, not always acting in their children's best interests. In reality, taxation—albeit a blunt instrument—is the most effective and practical method of deterring children and adolescents from smoking. Evidence from a number of studies shows that children and adolescents are less likely to take up smoking, and that their smoking peers are more likely to quit, if the price of cigarettes rises.

The most specific measure to protect nonsmokers would be the imposition of restrictions on where individuals may smoke. While this would protect nonsmokers in public places, it would not reduce the substantial exposure to others' smoke in the home. Thus taxes would be an additional method of making smokers bear the costs that they impose on nonsmokers.

To address the problem of the financial costs imposed on nonsmokers, such as any excess cost of healthcare for smokers, the most direct mechanism would be to make healthcare financing systems reflect individuals' smoking behavior: thus, for example, smokers should pay higher premiums than nonsmokers, or be required to open healthcare savings accounts that reflect their likely higher costs. In practice, an easier way to make smokers contribute more would be to levy a tobacco tax.

In theory, if cigarette taxes are to be used to deter children and adolescents from smoking, then the tax on children should be higher than the tax on adults. Such differential tax treatment would, however, be virtually impossible to implement. Yet a uniform rate for children and adults, the more practical option, would impose a burden on adults. Societies may nevertheless consider that it is justifiable to impose this burden on adults in order to protect children. Moreover, if adults reduce their cigarette consumption, children may smoke less too, given evidence that children's propensity to smoke is influenced by whether their parents, and other adult role models, smoke.

One way to implement a differential tax system for children and adults would be to restrict children's access to cigarettes. In theory, such restrictions

would effectively increase the price that children must pay for tobacco, without affecting the price paid by adults. In practice, however, there is little evidence that existing restrictions work in high-income countries. In low- and middle-income countries, where the capacity to administer and enforce such restrictions is likely to be less, they would be even more difficult to implement. Therefore, to deter children from smoking, the second-best instrument, higher taxes, is favored.

Dealing with addiction

In addition to the need to correct for the inefficiencies that arise from smokers' consumption choices, there is the need to address the problem of addiction. Because of addiction, adult smokers are faced with high costs if they want to reverse decisions that were largely made in youth. Societies may choose to provide interventions that would help would-be quitters to reduce these costs. These interventions include increased access to information that will alert the smoker to the costs of continuing to smoke and the benefits of quitting, and wider access to cessation therapies that would lower the costs of quitting. Clearly, increased taxation may induce some smokers to quit, but it will also impose costs on them. These costs will be the lost perceived benefits of smoking and additional physical costs associated with withdrawal from their addiction. Policymakers could reduce the costs by widening smokers' access to cessation therapies. We discuss the question of withdrawal costs further in chapter 6. For children who have not yet become addicted to nicotine, meanwhile, taxation would be an effective strategy because there would be no withdrawal costs associated with the decision not to smoke.

We turn now to consider some interventions that have already been adopted by some governments to control tobacco. Each of these interventions is evaluated in turn. In chapter 4, we discuss measures intended to reduce the demand for tobacco, and in chapter 5 we evaluate measures intended to reduce its supply.

Note

1. Even if smokers reduce the net costs imposed on others by dying young, it would be misleading to suggest that society is better off because of these premature deaths. To do so would be to accept the logic that says society is better off without its older adults.