Death and Taxes
Economics of Tobacco Control

Contrary to long-standing beliefs, tobacco-control policies can lead to huge health benefits without harming economies.

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ABOUT 1.1 billion people worldwide smoke, and, with current trends, the number is expected to rise to more than 1.6 billion by 2025. In high-income countries, the number of smokers has, overall, been declining for decades, although it continues to rise in some population groups. In low- and middle-income countries, by contrast, cigarette consumption has been increasing.

Few people now dispute that cigarette smoking is damaging human health on a global scale. Smoking-related diseases are already responsible for 1 in 10 adult deaths worldwide. By 2030, perhaps sooner, the ratio will be 1 in 6, or 10 million deaths a year, making smoking the largest single cause of death. Until recently, this epidemic of chronic disease and premature death affected mainly the populations of rich countries, but it is rapidly shifting to the developing world. By 2020, 7 of every 10 people who die from smoking-related diseases will be from low- and middle-income countries.

Despite these trends, many governments have avoided taking action to control smoking because of concern about potential economic harm. For example, some policymakers fear that reduced sales of cigarettes would mean the permanent loss of thousands of jobs, particularly in agriculture, and that higher tobacco taxes would result in both lower government revenues and massive cigarette smuggling. Recent research allays these fears.

Health effects of smoking

Smoking has two major health consequences. First, the smoker rapidly becomes addicted to nicotine, whose addictive properties, although well documented, are often underestimated. Second, smoking ultimately causes disabling and fatal diseases, including cancers of the lung and other organs, ischemic heart disease and other circulatory diseases, and respiratory diseases such as emphysema. In regions where tuberculosis is prevalent, smokers also face a greater risk than nonsmokers of dying from this disease. Half of all long-term smokers will eventually die as a result of smoking; of these, half will die during productive middle age. Because the poor are more likely to smoke than the rich, their risk of smoking-related disease and premature death is also greater. In high- and middle-income countries, men in the lowest socioeconomic groups are up to twice as likely to die in middle age as men in the highest socioeconomic groups, and smoking accounts for half of this additional risk. Finally, smoking also affects the health of nonsmokers, such as babies born to mothers who smoke.

Risks and costs of smoking

Modern economic theory holds that consumers are usually the best judges of how to spend their money on goods and services. When consumers bear all the costs of their actions and know all the risks, society's resources are, in theory, allocated as

efficiently as possible. Does this theory apply to smoking? Smokers clearly perceive benefits from smoking, such as the pleasure it provides or the avoidance of withdrawal pains, and weigh these against the private costs of their choice. Defined this way, the perceived benefits outweigh the perceived costs; otherwise, smokers would not pay to smoke. However, the choice to smoke appears to differ from the choice to buy other consumer goods in three important ways.

First, there is evidence that many smokers, particularly in low- and middle-income countries, are not fully aware of the high risks of disease and premature death that their choice entails. In China in 1996, for example, 61 percent of smokers questioned thought that tobacco did them little or no harm. In high-income countries, smokers tend to minimize the personal relevance of these risks. Second, nicotine addiction usually starts in adolescence or early adulthood. Even when they have been given information, young people do not always have the perspective or ability to make sound decisions. Most new recruits seriously underestimate the future costs of smoking—that is, the cost of being unable, later in life, to reverse a youthful decision to smoke, in part because of nicotine addiction. Societies restrict young people in various ways, for example mandating minimum voting and driving ages, and most could justify restricting young people's freedom to smoke and to become addicted to a behavior that carries a very high risk of premature death.

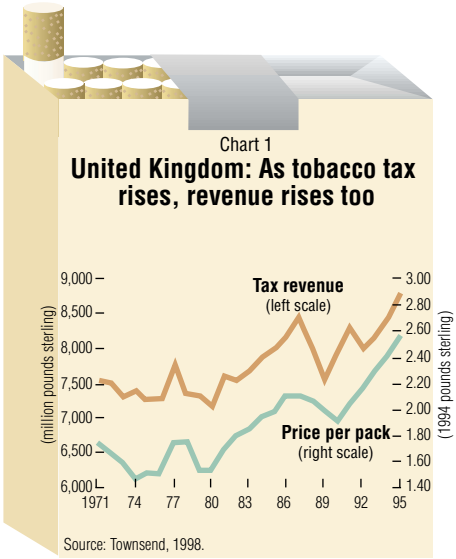
Third, smoking imposes financial as well as other costs on nonsmokers, including health damage and nuisance and irritation from exposure to environmental tobacco smoke. In high-income countries, smoking-related health care accounts for between 6 and 15 percent of all annual health care costs, and nonsmokers bear a significant share of these costs. In any given year, the cost of health care for smokers will exceed that for nonsmokers. Recent studies in high-income countries also suggest that lifetime medical costs are, ultimately, somewhat higher for smokers. However, some analysts have argued that because smokers die earlier, lifetime health care costs may be no greater, and possibly even smaller, for smokers than for nonsmokers. This issue remains controversial. It should also be noted that the higher costs observed in the higher-income countries may not necessarily apply to low- and middle-income countries, where epidemics of smoking-related diseases are at earlier stages and where the coverage of medical care systems may be more limited.

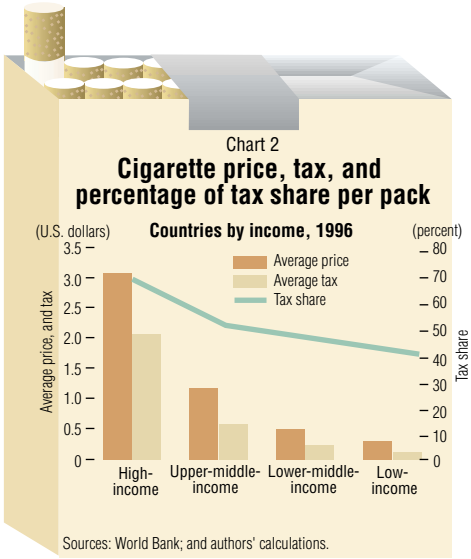
Costs and consequences of tobacco control

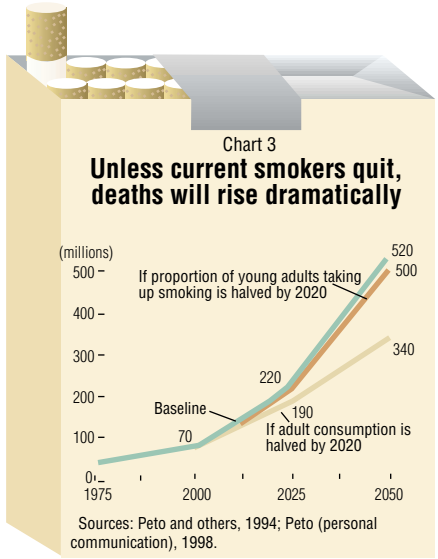
Policymakers traditionally raise several concerns about controlling tobacco. The first of these is that tobacco controls will cause permanent job losses. However, falling demand for tobacco does not necessarily mean a decline in a country's total employment level. Money that smokers once spent on cigarettes would instead be spent on other goods and services, generating new jobs to replace those lost in the tobacco industry. Several independent studies show that most countries would see no net job losses, and that a few would see net gains, if tobacco consumption fell.

There are, however, a small number of countries, mostly in sub-Saharan Africa, whose economies are heavily dependent on tobacco farming. For these countries, reductions in domestic demand would have little impact, but a decline in global demand could result in job losses. Policies to aid adjustment in such circumstances would be essential. Even if demand were to fall significantly, however, it would occur slowly, over a generation or more.

A second concern is that higher tax rates will reduce government revenues. In fact, the empirical evidence shows that an increase in tobacco taxes can raise tobacco tax revenues. One reason is that the proportionate reduction in demand







does not match the proportionate size of the tax increase because addicted consumers respond relatively slowly to price hikes. An econometric analysis concludes that increases in cigarette excise taxes of 10 percent worldwide would increase tobacco tax revenues by about 7 percent overall, with the effects varying by country (see Chart 1 for evidence from the United Kingdom).

A third concern is that higher taxes will lead to a massive increase in smuggling, thereby keeping cigarette consumption high but reducing government revenues. Smuggling is a serious problem, but even where it is widespread, tax increases bring greater revenues and reduce consumption. Therefore, rather than forgoing tax increases and health gains, the appropriate response is to crack down on criminal activity. The U.K. government, for example, recently appointed a "tobacco anti-smuggling czar" to spearhead such efforts.

The potential of tobacco taxation to raise revenues cannot be ignored. In China, for example, conservative estimates suggest that a 10 percent increase in the cigarette tax would decrease consumption by 5 percent and increase revenue by 5 percent and that the increase would be sufficient to finance a package of essential health services for one-third of China's poorest 100 million citizens.

A fourth concern is that higher cigarette taxes will have a disproportionate impact on poor consumers. Existing tobacco taxes do consume a higher share of the income of poor consumers than of rich consumers. Policymakers, however, should be more concerned about the overall distributional impact of the *entire* tax and expenditure system than about the incidence of individual taxes. Also, poor consumers are usually more responsive to price increases than rich consumers, so their consumption of cigarettes will fall more sharply following a tax increase, and their relative financial burden may be correspondingly reduced.

Policy responses

Ideally, government intervention should address each identified problem specifically. Thus, for example, children's imperfect judgments about the health effects of smoking could be addressed by restricting their access to cigarettes or by improving their education and that of their parents. But adolescents respond poorly to health education, perfect parents are rare, and existing restrictions on cigarette sales to the young seldom work, even in high-income countries.

In reality, increasing taxes on tobacco is likely to be the most effective way to deter children from taking up smoking and to encourage those who already smoke to reduce their consumption. This kind of intervention would have a significant impact on the smoking habits of children and adolescents because they are more responsive to price rises than adults. But taxation is a blunt instrument, and higher taxes on cigarettes would also impose costs on adult smokers, many of whom are poor. These costs may be considered acceptable, depending on how highly society values curbing tobacco use by children and on the acceptability of using taxes to improve public health and save lives.

Policies to reduce demand are effective

Evidence from countries at all income levels shows that price increases on cigarettes are highly effective in reducing demand. Higher taxes induce some smokers to quit and deter others from starting. They also reduce the number of ex-smokers who return to cigarettes and reduce consumption among continuing smokers. On average, a price rise of 10 percent on a pack of cigarettes would be expected to reduce demand for cigarettes in the short term by about 4 percent in high-income countries and by about 8 percent in low- and middle-income countries, where lower incomes tend to make people more responsive to price changes. Long-run price responsiveness is estimated to be twice as high. Tax increases that would raise the real price of cigarettes by 10 percent worldwide would cause at least 40 million smokers alive in 1995 to quit, thus preventing a minimum of 10 million tobacco-related deaths. The modeling assumptions on which this result is based are deliberately conservative, and these figures are therefore minimum estimates.

What is the right level of tax? This is a complex question. The size of the tax should depend on such empirical data as per capita income levels and the scale of costs to nonsmokers, which may not yet be available. It also depends on societal values, such as the extent to which children should be protected, and on what a society hopes to achieve through the tax, such as a gain in revenue or a reduction in the disease burden. For the time being, policymakers who seek to reduce smoking should use, as a yardstick, the tax levels adopted as part of the comprehensive tobacco-control policies of countries where cigarette consumption has fallen. In these countries, the tax component of the price of a pack of cigarettes is between two-thirds and four-fifths of the retail cost. Currently, in high-income countries, taxes average about two-thirds or more of the retail price of a pack of cigarettes. In lower-income countries, taxes are no more than half the retail price of a pack of cigarettes (Chart 2).

Governments have employed other effective measures—nonprice regulatory and informational measures—to reduce demand. These include

- comprehensive bans on advertising and promoting tobacco, which can reduce demand by about 7 percent, according to econometric studies in high-income countries;
- mass media counter-advertising, prominent health warning labels, and publication and dissemination of research findings on the health consequences of smoking;
- restrictions on smoking at schools, work sites, and public places; and
- deregulating and increasing access to nicotine-replacement therapy and other remedies for smokers who wish to quit.

Employed as a package, nonprice information measures, used globally, could persuade some 23 million smokers alive in 1995

to quit and avert the tobacco-attributable deaths of 5 million of them. Additionally, wider access to nicotine-replacement therapies could avert several million more deaths. As with the estimates for tax increases, these are conservative estimates.

Reducing supply is generally ineffective

While interventions to reduce the demand for tobacco are likely to succeed, measures to reduce its supply are less promising. This is because, if one supplier is shut down, an alternative supplier gains an incentive to enter the market. The extreme measure of prohibiting tobacco consumption is unwarranted on economic grounds, as well as unrealistic and likely to fail. Crop substitution is often proposed as a way to reduce the tobacco supply, but there is little evidence that it reduces consumption, because the incentives to farmers to grow tobacco are currently much greater than for most other crops. Crop substitution may, however, be a useful strategy for aiding the poorest tobacco farmers in transition to other livelihoods as part of a broader diversification program.

Similarly, the evidence so far suggests that trade restrictions, such as import bans, will have little impact on cigarette consumption worldwide. Instead, countries are more likely to succeed in curbing tobacco consumption by adopting measures that effectively reduce demand and applying those measures symmetrically to imported and domestically produced cigarettes. Likewise, in a framework of sound trade and agricultural policies, the subsidies on tobacco production that are found mainly in high-income countries make little sense. In any case, their removal would have little impact on the total retail price. One supply-side measure that should be part of a strategy to control tobacco is action against smuggling. Effective measures include prominent tax stamps and local-language warnings on cigarette packs, as well as aggressive enforcement and consistent application of tough penalties to deter smugglers. Tight controls on smuggling may also improve the revenue yield to governments from tobacco tax increases.

An agenda for action

Some policymakers will consider that the strongest grounds for intervening are to deter children from smoking. However, a strategy aimed solely at deterring children is not practical and would bring no significant public health benefits for several decades. Most of the tobacco-related deaths that are projected to occur in the next 50 years would be among today's existing smokers (Chart 3). Governments concerned with health gains over the medium term may therefore consider adopting broader measures that help adults quit.

A recent World Bank report on the economics of tobacco control (Jha and others, 1999) recommends, first, that governments that decide to take action to curb the tobacco epidemic adopt a multipronged approach. Tailored to individual country needs, the strategy would include raising taxes to at least two-thirds to four-fifths of the retail price of cigarettes, adopting comprehensive bans on advertising and promotion of tobacco, publishing and disseminating research results on the health effects of tobacco, and widening access to nicotine replacement and other cessation therapies. Second, international agencies should review their existing programs and policies to ensure that tobacco control is given due prominence; sponsor research into the causes, consequences, and costs of smoking and into the cost-effectiveness of local interventions; and address tobacco-control issues that cross borders, including supporting the World Health Organization's new Framework Convention for Tobacco Control.

The health threat posed by smoking is enormous, but so is the potential for reducing smoking-related mortality with cost-effective policies. Modest action could ensure substantial health gains in the twenty-first century. F&D

This article is based on Prabhat Jha and others, 1999, Curbing the Epidemic: Governments and the Economics of Tobacco Control *(Washington: World Bank).*

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