

BURNING ISSUES IN THE TOBACCO SETTLEMENT PAYMENTS: AN ECONOMIC PERSPECTIVE

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Abstract - *The tobacco settlement does not appear to achieve the efficiency objectives of a liability suit, even though it derives from an agreement between the industry and plaintiffs. There is no change in the product, information on hazards is widely available, payments are not made in lump sums because of past behavior, and the financial claims made by the states for recovery of medicaid costs are not justified because additional medicaid costs of smokers are more than offset by savings due to their premature death. As a corrective tax, given the availability of information on hazards and the lack of net external effects on third parties in excess of taxes, the market failure justification rests on suboptimal teenage smoking decisions that do not account fully for the transaction costs of quitting. Recent evidence, however, suggests that teenage participation may be relatively insensitive to price. Moreover, there are costs of introducing a highly regressive tax and of disruption that should be considered as a matter of public policy.*

The tobacco settlement currently being considered by Congress arose from a private settlement reached between the tobacco industry, state attorneys general, and private attorneys in June 1997. Following an initial suit filed by Mississippi, most states have now filed suits to recover medicaid costs for smoking-related illnesses. Four states have reached settlements with the industry. In addition, both class action and individual suits have been filed on behalf of smokers and their families. There are also suits that have been filed with respect to secondhand smoke.

The June settlement imposes annual payments to settle the state suits and to provide a fund to pay individual suits, as well as public programs (smoking cessation programs, antismoking advertising, and child health insurance). These payments average 62 cents per pack of cigarettes and amount to \$15 billion at 1996 price and volumes. Additional penalties would be imposed if certain reductions in teenage smoking do not occur, although these payments are capped. They amount to a maximum of 8 cents per pack. The industry would be subject to greater FDA regulation

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and would restrict advertising. In return, class action and nicotine addiction suits and punitive damages would be precluded, individual lawsuits would have an annual cap and be paid from a fund, and state claims would be settled. A third of the payments would be devoted to each of three purposes: state claims, individual claims, and spending programs (to include \$2 billion for children's health, \$1.5 billion for smoking cessation, and \$1.5 billion for a variety of purposes, such as antismoking advertising, research, regulation, and compensating sporting events).

A bill agreed to by the Senate Commerce Committee would impose even larger payments than originally envisioned by the June 1997 settlement (at least \$1.10 per pack, depending on projected volume in 2003), but the disposition of funds has yet to be determined. Penalties for reducing underage smoking are larger than in the June settlement and are not tax deductible. Some financial analysts have suggested that the total payments would be more than \$2 per pack. This bill caps payments for individual suits but does not provide the immunities from various types of lawsuits.

The settlement debate has been confused because of competing rationales. An apparent rationale was to settle the lawsuits, a justification that has been viewed by many to be enhanced by documents released that claim to show industry knowledge of the health costs of smoking and the addictiveness of smoking and industry attempts to market to underage smokers. Another objective, probably viewed as more important by the public health community, is to reduce smoking, particularly underage smoking, which has increased in recent years. This latter objective has largely been the focus of

administration support for tobacco legislation, while Congressional debate has gone forward within both frameworks.

These two competing rationales are inconsistent. Legal settlements are normally imposed on companies in lump-sum amounts that relate to past behavior. Such settlements would not normally be passed on in price but would fall on stockholders profits, unless they are thought to raise future manufacturing costs through product modification. Such settlements can drive firms into bankruptcy, and temporarily restrict supply and raise price, but that is not normally an efficient outcome. Discouraging smoking through financial payments, however, requires price increases, which is not necessarily the objective of a lawsuit. Which is the proper framework for assessing the settlement, and how does one evaluate the desirability of the settlement given that framework?

The first section of this paper assesses the tobacco settlement in the framework of product liability, and whether, from an economic perspective, the product liability argument stands up to scrutiny. The economic analysis suggests that, in fact, it does not. The second section considers the settlement as a way to correct an economic distortion, mainly that smokers are making suboptimal decisions that would be appropriately corrected with a tax; this section also discusses the accompanying effects on the income distribution, some design issues, and the income tax offset that is important for federal budgeting.

THE PRODUCT LIABILITY FRAMEWORK

There are aspects of the initial settlement that indicate an ostensible

motivation as a product liability settlement. The settlement is an agreement between the plaintiffs (the state attorneys general and some private attorneys) and the defendants (the five tobacco companies), and could, therefore, be viewed as a way to settle a product liability claim through legislation, in order to minimize court costs.

The economic objectives of liability are deterrence and/or risk spreading. There are a number of considerations that suggest the settlement should not be evaluated in a product liability framework, however.

Deterrence

Deterrence, which is the more obvious objective of product liability, induces firms to impose appropriate safety standards and to communicate product hazards to customers. It contributes to economic efficiency by helping to insure that economic exchange takes place between an informed buyer and an informed seller. Where the firm has been negligent in producing the product expected by consumers (for example, when a meat producer provides a product that is handled under inappropriate conditions of sanitation and is tainted) or where a firm fails to inform consumers of known hazards (an automobile manufacturer produces a car with a known safety defect), product liability awards give notice to firms that costs will be imposed. Product liability litigation may not, however, be the most efficient way to insure these objectives; they may, alternatively, be met by regulation.

There are three reasons that the deterrence objective is unrelated to the tobacco settlement: (1) the product will not be changed because of the payments; (2) health warnings are already

prominently displayed on the product and its advertising and these costs are already known to the public; and (3) the payments are not imposed as a fixed cost for past misbehavior or damages, but are imposed as taxes.

The product will not be altered by the payments

While the FDA will be granted regulatory authority to reduce the nicotine content of cigarettes, it is not at all clear that such a move would be carried out, or is advisable if it is. The payments themselves, however, have no effect on alterations of the product by the companies because such alterations will not affect the payments, which will be set at a fixed amount per pack and likely passed on to consumers. Indeed, it is possible that consumers might switch to cigarettes with higher nicotine content if the price per unit increases substantially. But, fundamentally, the product itself will not be altered. Moreover, it is not in the sale of cigarettes that the firms could be viewed as negligent; cigarettes' harmful effects have long been known, and they were and will continue to be licensed for sale by the government.

Knowledge of the harmful effects is already widespread

A related purpose of a product liability suit would be to insure that companies reveal knowledge of any harmful consequences of the product that the consumer does not know, even if consumers would continue to purchase the product. The factors that are most closely related to this rationale are the documents released in court cases that indicate that tobacco companies did not advertise their research regarding health effects and addictiveness of smoking, and that they studied the habits of underage customers.

But, regardless of the behavior of the companies, were customers unaware of

the nature of the product they were consuming? It seems fairly clear that this is not the case. Rather the product is clearly known by smokers to cause health problems, as indicated by any number of surveys. Warnings have been placed by federal legislation on cigarettes and in advertisements for some time. Moreover, there is evidence that smoking has long been perceived as harmful (Viscusi, 1992) and that individuals, especially youngsters, actually exaggerate these health costs. Criticisms of negative health effects of cigarettes can be traced to their invention in the late nineteenth century. A related argument, that smoking is not known to be habit forming, is also belied by survey evidence. Excepting the issue of underage smokers, who are not legally allowed to purchase the product, there is no reason to believe that smokers did not have adequate information on the potential dangers of using tobacco products. And even young people are aware that it is difficult to quit smoking (Viscusi).

The settlement objective most related to this issue is the restrictions on advertising that might reach underage consumers, who might not be able to exercise rational consumption choices. A small portion of the payments may be directed toward smoking education programs that reach young people, but this is not the primary use of the payments. There are also lookback penalties that are imposed if underage smoking does not drop enough; however, this approach is not efficiently addressed through product liability. The manufacturing companies cannot police underage smoking. Since it is retailers who make the final sales, and state and local governments who are responsible for enforcing restrictions on those sales, tobacco manufacturers do not have the tools available to achieve these objects.

Antismoking critics allege that the companies are targeting underage smoking in their advertising. However, the evidence that advertising has an aggregate effect on underage smoking, as opposed to influencing brand preferences, is weak. Indeed, it is possible that advertising restrictions could increase smoking, if firms compete instead with price reductions and young smokers are sensitive to price. Logical ways to increase compliance with underage sales are fines on the retailers, or on the underage customers themselves, but not fines on the manufacturers.

Insurance

Insurance objectives are less likely to be reasonable justifications for product liability suits, but there are problems, in any case, with settlement payments to insure risk spreading. There are two aspects of this problem: spreading risk for smokers across those who get sick and those who do not, and holding collective social insurance harmless for the costs of smoking.

Risk spreading among smokers

Smokers experience various types of risk: higher lifetime health costs, more worker disability and lost days from work, and premature suffering and death. There are several reasons that using the individual product liability suits does not necessarily contribute to efficient risk spreading. These include the existence of private and social collective insurance, the uncertainty with respect to cause of illness for individual smokers, the cost of litigation, the small size of the settlement payments, and the intergenerational transfer. The settlement may, however, contribute to economic efficiency by preventing the widespread use of product liability suits as insurance, which are likely to be an inefficient method of risk spreading.

Most of these risks can be insured against in private markets, and, indeed, the risks of health costs and disability are frequently insured through third party mechanisms. Smokers can purchase life insurance, which frequently includes a premium adjusted for smoking status. Moreover, the risks of health costs and disability are frequently insured through third party mechanisms, and it is not entirely clear that medical expenditures over the lifetime are increased by smoking.

These observations are sufficient to suggest that the failure in private market health insurance is not likely to be much greater for smokers than for nonsmokers. But the most serious problem with using individual product liability suits is the difficulty in proving cause. In an automobile accident, a malpractice case, or an industrial accident, there is generally a clear event to demonstrate causality. Even though statistical studies estimate that 85 percent of lung cancers are caused by smoking, some lung cancers occur in nonsmokers. Smoking is a weaker risk factor for heart disease; only 20 percent of coronary deaths are attributable to smoking. And these two illnesses account for only half of smoking related deaths. There would probably be no way to establish sufficient proof of cause for a death in the case of most of these illnesses. Moreover, if smokers changed brands during their lifetimes, it would be difficult to demonstrate which companies are liable and to what degree. The unwieldy and costly process of establishing cause for individual liability suits suggests that product liability is not a very good mechanism for spreading risk.

Finally, the settlement amounts are far too small to cover the total cost; they will go randomly to certain individuals

and interfere in, rather than advance, risk spreading.

Third party costs

Is a liability suit appropriate to prevent costs from being levied on third parties through collective insurance plans? Perhaps the most important plaintiffs in the case are the state governments: monetary settlements to be paid to the states are for the purpose of compensating state treasuries for the medicaid costs they incur in treating smoking related diseases. There are also suits by private health insurers and discussion of compensating the federal government for costs. First, let us consider the costs to the states.

The most popularly cited numbers for the health costs of smoking are the estimates of \$50 billion per year for 1993 published by the Center for Disease Control (CDC, 1994). This amount measures the estimated additional medical cost attributable to smoking related diseases in 1993 dollars, based on estimates of smoking attributable risk (what share of each disease is due to smoking). The study also indicates the shares paid by various groups: 21 percent by smokers, 33.4 percent by private insurance, 20.4 percent by medicare, 10.2 percent by medicaid, 9.5 percent by other federal programs, 3.2 percent by other state programs, and 2.2 percent by other. The medicaid share thus amounts to \$5 billion.

States, however, pay only a bit over 40 percent of medicaid; assuming that "other" is allocated to the same third-party category as private insurance, we can establish the following approximate amounts of the \$50 billion paid for by different entities in 1993: \$18.1 billion by the federal government, \$3.6 billion by the states, \$17.8 billion by private

insurance and other, and \$10.5 billion by individual smokers. By these numbers, the states have the least claim on compensation, although preliminary updates apparently place medicaid costs at a considerably larger value. (A recent study by some of the same co-authors [Miller et al., 1998] estimated a sum for medicaid that was over twice as large; no reason was given for the much larger estimates of these costs.)

This calculation is, in any case, an incomplete accounting of the costs of smoking; aside from the direct cost of producing the product, there are morbidity and mortality costs that cause more absence from work, and premature death. Indeed, the same CDC report includes an estimate of costs associated with morbidity and premature mortality of \$6.9 and \$40.3 billion, respectively, also in 1993 dollars.

A more complete accounting of the costs of smoking not only increases the size of the costs, but also reallocates costs—and implies net financial benefits for some parties. For example, total medical expenditures due to smoking are reduced by offsetting reductions in costs because of premature death. A person who dies from a smoking related disease causes an increase in medical cost at that time, but medical costs are decreased in the future because that person does not suffer the illnesses otherwise suffered during a longer life. Similarly, the smoker loses retirement benefits in the form of social security, which is a financial saving for the government (since the smokers are generally alive during the contribution period).

The fact of savings from government transfers due to premature death does not imply that there is a social gain from premature death; there is clearly a loss

that accrues to the smoker who is part of society. But it does alter financial effects and the appropriate estimate of compensatory damages. In addition to these health-related financial costs and savings, there is a transfer from smokers to governments because of the cigarette taxes.

Estimates by Manning et al. (1991) updated and categorized for 1993 by Viscusi (1995) can be used to roughly calculate the effects on third parties (federal, state, and private third parties such as insurance companies). These estimates provided a per-pack cost for each effect. The original study included the categories of medical costs, sick days, group life insurance, nursing homes, retirement benefits, effects of fires, and loss of taxes and contributions to these plans. Viscusi further divides the medical costs into those incurred under-65 and over-65. By allocating these categories to the different parties, the general magnitude of these costs is estimated for each group. In the calculations, the federal and state payments and contributions made through the governments' roles as employers are treated as private.

External medical costs (those not paid for by smokers) for the over-65 group are primarily a federal responsibility because of medicare; the federal government is estimated to account for 83 percent, the state 2 percent, and private insurance 15 percent. Under-65 medical care is more heavily financed by private insurance companies who account for 51 percent, with 20 percent allocated to the state and 29 percent to the federal government. Nursing home care is 61 percent federal, 35 percent state, and 4 percent private; pensions are 64 percent federal, 35 percent private, and 1 percent state; contributions to these private and public plans

are 56 percent federal, 10 percent state, and 34 percent private. These shares were developed from a variety of sources on health expenditures, pension income, and taxes.

Manning et al. (1991) discounted payments, with those occurring later in life being valued less; the purpose of that study was to determine what tax would reflect external costs for a new smoker. These numbers would not provide a measure of the current cost, although Viscusi (1995) reports an allocation at a 0 percent discount rate, which would probably be close to how one would measure these current costs. Since these programs generally began when smoking was already in existence, and it has generally declined, measurement of the annual costs should use a growth rate in place of a discount rate. Thus, using a zero discount rate produces a better measure of the costs to the third parties when considering cost from a compensation viewpoint rather than a price correction measurement. With a zero discount rate, each of the external parties actually benefits from smoking.

The following calculations allocate the per-pack costs and then multiply by the number of packs consumed. The federal government saves about \$29 billion per year in net health and retirement costs (accounting for effects on tax payments). These include a saving in retirement (largely social security benefits) of about \$40 billion and in nursing home costs (largely medicaid) of about \$8 billion. Costs include about \$7 billion for medical care under 65 and about \$2 billion for medical care over 65; the remaining \$10 billion cost is the loss in contributions to social security and general revenues that fund medicaid. (Note that medical costs already include offsetting savings for premature

death and thus are much smaller in the aggregate than in the Rice estimates.) The federal government also collects \$5.6 billion in cigarette taxes. This calculation implies that smokers (past and present) currently save the federal government almost \$35 billion per year.

State governments have an overall saving of \$2.1 billion. This takes into account the large saving in nursing home costs financed through medicaid (\$4.8 billion), which exceeds net medical costs of \$1.5 billion. The remaining difference reflects a cost of \$1.8 billion from foregone contributions and a benefit of \$0.6 billion in retirement savings. States also receive about \$7.6 billion of cigarette taxes, for a total saving of almost \$10 billion.

Private third parties also have savings in the amount of \$5.4 billion, largely because a \$22 billion saving in pensions offsets the net costs smokers impose on employer health plans.

Costs are imposed on some segments of society, with or without discount rates (and benefits are received by others). Private health insurance is one example where a net cost occurs. One should not necessarily conclude that lump-sum payments to these firms are appropriate, however, since the higher costs were passed on to subscribers; that is, to the large group of individuals enrolled in private health insurance. It is these individuals, not the stockholders of insurance companies, that have paid the cost, but they are also the same individuals who benefit from smokers' lessened claims on payments from private pension plans and for the general benefit to taxpayers. Indeed, one could think of these third-party private costs as falling on a broad segment of society, so that it makes

some sense to aggregate these external costs. Once all private, federal, state, and local costs are combined, regardless of whether one discounts, the analysis indicates that smokers are transferring financial benefits to nonsmokers.

Thus, whether we examine effects on state finances or the effects in general, there is no reason for payments to be made to nonsmokers or their representatives to compensate them for insurance.

There are uncertainties, of course, about the magnitude of these effects, which might be worth further study. Many of these uncertainties are addressed in Gravelle and Zimmerman (1994). This earlier study also discussed the external costs of passive smoking. The effects of passive smoking, however, were uncertain and likely to occur within families; in any case, they were too small to alter the findings regarding aggregate external costs.

Conclusions

For a number of reasons, the settlement design does not fit into a product liability framework. The best that can be said for framing the settlement as a product liability settlement is that it may be the best outcome from a judicial system that operates imperfectly. It is, after all, government authorities who have brought unjustified financial claims against the industry. Moreover, it is not clear that these claims would have been addressed appropriately, from an economic standpoint, in the judicial system. The judge in the Florida case, which was settled by the industry, would not allow testimony about the financial savings from premature death. Faced with these legal difficulties, it is not surprising that the industry wished to settle claims, particularly through

payments that were made in such a way as to shift the burden from their stockholders to the consumers of tobacco products, and to create an economic environment with some certainty with regard to future claims. Thus, the product liability framework could be seen as a way to correct a failure in the judicial system, particularly if the plan is consistent with an alternative public policy framework.

Policymakers have not, however, explicitly made this choice. For that matter, although a number of economic studies have made the point that smokers do not impose costs on others in the economy, this argument has had little attention and has, indeed, been completely ignored in a Treasury Department study (1998). It reinforces the importance of considering distributional effects, since the imposition of a large tax on smokers is not justified on the grounds of fairness, even if it may be justified on efficiency grounds. Rather, smokers are being made to bear a much heavier tax in order to achieve a policy objective that is stated to be for their own benefit—a case that is not easy to make but which we turn to now.

The Settlement as a Pigovian Tax

The alternative paradigm is that of a corrective tax, which should then be evaluated in the typical framework of taxation. That is, does the tax achieve the goals of efficiency, equity, and administrative feasibility? Is it designed appropriately and are its consequences understood?

Efficiency

The potential efficiency arguments for imposing a tax are variously based on the imposition of medical costs on others and the possibility of suboptimal

decisions by smokers. The latter could be the case if smokers are either (a) uninformed about risk or (b) have made an irrational decision, an argument that is linked to the addictiveness of smoking and the initiation of smoking by teenagers. Moreover, even if there is an efficiency justification, the desirability of corrective taxation should also take into account the price elasticity and the resultant deadweight loss. If smoking is not responsive to price changes within the range of price corrections, then the deadweight loss is either small or cannot be easily altered with the tax mechanism. This latter point is particularly important if there are significant transitional or administrative costs or undesirable distributional effects.

External costs

The external costs of smoking are related to the analysis of the costs imposed on third parties, already discussed, but this cost should use lifetime discounted costs of smoking. The Manning (1991) study, and updates by Gravelle and Zimmerman (1994) and Viscusi (1995), has generally shown that discounted current taxes are larger than discounted external costs, which are small because of the offsetting benefits of premature death.

Suboptimal decisions

In the absence of external costs, the efficiency argument must rest on smokers making suboptimal choices. Making a suboptimal choice cannot merely be inferred from the undertaking of risky behaviors. It is the cornerstone of utility theory that individuals can engage in activities that are risky or costly but whose pleasures outweigh their costs. And there is ample evidence of a plethora of risky or unhealthy activities that individuals engage in.

Rather, the indication of this type of distortion must rest either on imperfect

information with respect to risk or some other complicating factor that causes inefficient decisions to be made. It is probably fair, however, to dispense with the argument that smokers are not making optimal choices because they are not informed of the health risks of smoking. Viscusi (1992) documents clearly that not only are smokers aware of the health costs but they tend to exaggerate the risk, and this exaggeration is even greater among young people. Even the fact that costs that occur far in the future are heavily discounted, as may be the case with young smokers, does not, in and of itself, imply a market failure.

The market failure must, therefore, rest in the addictiveness of smoking. Even that argument, while it may be used to justify a paternalistic intervention, is not a clear-cut reason to identify a market failure. Any habit-forming activity, regardless of whether it is physically addictive, imposes transaction costs in changing behavior. In order for this issue to create an important distortion, there must be significant transaction costs to changing behavior *and* individuals must either be uninformed about the magnitude of these transaction costs or their decision making must be impaired in some fashion. It is the combination of these factors that provides the potential justification for a corrective tax—namely, that transaction costs are significant and that smoking is initiated by young individuals who are not fully aware of the transaction costs of quitting smoking. There is evidence for this argument, in that most smoking is initiated when the smoker is young and these individuals do not have the maturity to appropriately take into account the significant transaction costs. In theory, both of these conditions must hold to generate the externality. If it were easy to quit smoking, then

smoking by teenagers would be of little concern, since they would alter their behavior with increased maturity, with negligible effects on health. And if individuals were aware of the transaction costs, as might be expected of more mature consumers, they would not face a distorted price.

The extent to which these conditions hold is subject to some uncertainty. It is widely known that smoking is habit forming and physically addictive; Viscusi (1992) also presents some evidence that even children know that it is hard to quit smoking. The evidence on the magnitude of transaction costs is also not entirely clear cut. Many smokers say they would like to quit and many people who try fail. On the other hand, these characteristics are associated with many behaviors. And, a lot of smokers have quit.

However, the economic justification for correcting a distortion must lie here—that the problem is largely the initiation of smoking by teenagers who may make a decision to become a smoker without fully taking into account the transaction costs of quitting.

Having identified the potential market failure, the tax mechanism should then be evaluated with respect to its efficacy in reducing smoking by teenagers and by its success in comparison to other approaches, as well as any undesirable consequences, for example, in altering the income distribution.

The focus of the desired behavioral response has been on participation in smoking, with the notion that underage smokers who participate, even if they do not smoke very much, may eventually increase their smoking. Alternative approaches include strict restrictions on sales to minors, public education

programs, restrictions on advertising, restrictions on smoking in public places, and funding of cessation programs. And, of course, another policy alternative is to develop a safer cigarette. (While nicotine is thought to be associated with some health problems, it is the tars that are generally implicated in cancer.)

Much of the initial drive for raising prices to reduce teenage smoking, particularly smoking participation, which reflects the introduction to the habit, was based on a study of Lewit, Coate, and Grossman (1981) that found a significant teenage elasticity: -1.2 for participation, and a total consumption elasticity of -1.4 . This research has examined teenage smoking rates as a function of price across jurisdictions and covered ages 12–17. These elasticities are much higher than those typically estimated for adults, which commonly fall between -0.3 and -0.5 , with most of the response due to participation.

While a number of other studies examined different age groups, including young adults, this was the only study, for a number of years, that focused on underage smokers. A study by Wasserman et al. (1991), which reported an insignificant elasticity with the wrong sign and did not separate participation and quantity effects, did not alter these perceptions, perhaps because the results were viewed as potentially flawed by the lack of control for correlated regulatory restrictions.

Recent research has suggested that participation responses may be much smaller. The difficulty with cross-sectional studies is that smoking rates may also be affected by correlated non-price factors. Where community attitude toward smoking in general and by teenagers in particular is more negative,

Taxes may be larger, and regulatory restrictions (such as limits on smoking in public places or effective enforcement of restrictions on sales to minors) may be stricter.

Chaloupka and Grossman (1996) attempted to measure some of these regulatory restrictions and found that the participation elasticity was lowered as a result, to -0.6 in the case where they also took into account border crossing to control for purchases in neighboring jurisdictions.

Even if regulatory restrictions can be controlled for, there remains an unobserved variable in these studies: community attitude. The potential importance of this unobserved variable is highlighted in two recent studies that use panel data. A recent study by DeCicca, Kenkel, and Mathios (1997) found results similar to those of Chaloupka and Grossman, ranging between -0.5 and -0.75 , although they did not control for border crossing. However, they found an interesting result: when teens who were already smoking in the eighth grade were eliminated from their sample, the participation price elasticity dropped to zero. That is, there was no participation response of high school students who had not already started to smoke before entering high school. While there are some theoretical reasons relating to rational addiction models of smoking that might explain this result, another possibility is that community attitude is correlated with smoking by these younger teens. Indeed, when the three major tobacco producing states were dropped from the study, the participation elasticity also declined to virtually zero across eighth grade smokers.

Evans and Huang (1996) examined within-state variation over time and

found elasticities that ranged from -0.2 to -0.5 , depending on the time period. Their approach allows direct controls for state differences but is subject to the uncertainties of time series.

It is difficult to control for all factors that affect underage smoking, but these recent studies raise some doubts about the responsiveness of underage smoking participation to price changes. In some ways, such a finding might not be so surprising. In theory, underage consumers might be expected to be more price responsive because cigarettes are a larger part of their budget. However, unlike adult smokers, underage smokers may not smoke very often. According to the University of Michigan's Monitoring the Future Survey, while 36.5 percent of high school seniors smoked at least one cigarette in the past month, only 24.6 percent smoked at least one cigarette daily and only 14.3 percent smoked more than ten cigarettes daily. Moreover, the objectives (e.g., status) may be different and maintained by smoking less. Teenagers, in fact, tend to buy higher priced premium brands.

These results cast doubt on the effectiveness of price increases as a tool to prevent smoking initiation by teenagers. They suggest that alternative approaches such as education, restrictions on smoking in public places, and greater restrictions on sales to minors might be more effective. At the same time, they suggest that measures to reduce adult smoking, which might alter the community environment, could be effective. These adult smoking objectives are not, however, likely to be addressed easily through price increases, given the inelastic response of adult smokers. An alternative is assistance with smoking cessation, for example, through counseling and providing coverage under health insurance. Chaloupka and

Grossman (1996) found that there were effects on teenagers of public smoking restrictions; however, the review of the efficacy of these alternative approaches by the Congressional Budget Office (1988) found limitations on all of these methods. Smoking behavior may simply be very difficult to influence, and each approach has offsetting costs in restricting personal freedom and/or direct enforcement costs that might be significant.

Ironically, two aspects of the current proposed settlements might not accomplish the desired objectives and could, at least in theory, increase smoking.

First, it is possible that giving firms immunity from future lawsuits (by restricting class action suits and punitive damages)—provisions that were in the original settlement but were removed in the Commerce Committee's plan—actually helps to discourage smoking. If individuals are rational about their smoking behavior, then in theory the compensation for their potential future illnesses would reduce the effective price of smoking. This is another instance in which lack of a consistent public policy framework has interfered with the design of the initiative. Providing these limits on individual lawsuits would discourage smoking, other things equal.

Second, the restrictions on advertising have uncertain effects. There is little evidence that advertising has much effect on aggregate smoking behavior (as opposed to market share); reducing the venues for advertising may lead to more price competition, particularly if advertising costs fall.

Another efficiency cost that has received some attention is the development of

an international black market in cigarettes, if extremely high taxes are imposed. Canada experienced a surge in the black market when higher taxes were imposed, and various avenues for smuggling exist. Black markets are costly in foregone revenues, enforcement costs, and encouraging disrespect for laws in general.

Distributional effects

A public finance economist might be startled by the virtual lack of discussion during the debate over the tobacco settlement about the distributional effects of taxes on tobacco, particularly given that distributional effects were a high profile issue during consideration of the 1997 tax cut. Although a Congressional Research Service study by Gravelle (1998) first issued in 1997 addressed this issue, neither the Treasury study (1998) nor the recent study by the Congressional Budget Office (1988) even mentioned income distribution.

It is well known that tobacco taxes are among the most regressive taxes, and the large taxes proposed, particularly in the recent Commerce Committee proposal, would impose taxes that are estimated at \$1.10, but may exceed \$2 per pack by 2003 accounting for additional penalties and volume reductions; this amount is in addition to the federal tax of 24 cents per pack imposed by the federal government, increases already scheduled by the 1997 legislation of 15 cents per pack, and state and local taxes that range up to \$1 per pack and average over 30 cents per pack. Moreover, there is some evidence that a dollar in tax leads to slightly more than a dollar in final price. (One reason for this might be a markup by wholesalers and retailers; several potential causes of this markup are legitimate even in a competitive industry since distributors incur additional costs in earnings on

inventory, insurance, and *ad valorem* taxes. Some states also have minimum pricing laws for tobacco, which may be binding in some cases.) For a smoker who smokes a pack a day, a tax of \$2 per pack amounts to over \$730 per year and a tax of \$2.50 per pack amounts to \$912. For a full-time minimum wage worker, the payroll tax (individual share) is \$820.

Tobacco taxes are especially regressive because smokers tend to consume the same amounts regardless of income, and smoking prevalence is greater at lower incomes. According to Viscusi's (1995) data for 1990, for those with incomes of less than \$10,000, which account for the bottom ten percent of the population, smoking prevalence is 31.6 percent; current cigarette taxes are 1.62 percent of median income in this class and 5.1 percent of smoker's median income. Since the cigarette tax would be more than doubled, smokers in this class would pay in excess of five percent of their income in additional taxes under the June 1997 settlement, and far more than this amount under the Commerce Committee proposal.

For the \$10,000–\$20,000 class, constituting the next 18 percent of the population, with a participation rate of 29.8 percent, the current tax is 0.5 percent for all individuals and 1.7 percent for smokers. For the \$20,000–\$35,000 class, constituting the next 22 percent of individuals, the participation rate is 26.9 percent; the tax is 0.25 percent of income for all individuals and 0.93 percent for smokers. In the next group, \$35,000–\$50,000, with a smoking prevalence of 23.4 percent, the tax is 0.14 percent of income for all individuals and 0.6 percent of smokers' incomes. Finally, for the \$50,000 and over class, with a smoking prevalence of 19.3 percent, the taxes are 0.08 percent

of total income and 0.4 percent of the income of smokers.

In sum, for the lowest income families with smokers, the cigarette tax increase even under the more modest increases in the June 1997 proposal is a significant percentage of income and an order of magnitude similar to the individual share of the payroll tax; the Senate proposal would double these effects (and perhaps more than double them).

If prices have a small effect on the participation rates for underage smokers, then this distributional effect on the vast majority of smokers (98 percent) who compose the adult market would seem to be an important offsetting cost for achieving this public policy goal. At the minimum, some consideration of recycling revenues to lower income individuals would be a way to ameliorate this effect. Obvious choices include increases in the earned income tax credit or the allowance of some exemption in the payroll tax.

None of the proposals for disposing of the revenues seem particularly targeted to this lower income group. How the states would actually spend their share is unknown. Proposals to allow deductions for health insurance for individuals not covered by employer plans will benefit middle and upper income classes and leave the lowest income individuals, who do not pay income taxes and who are unlikely to purchase health insurance, unaffected. Some spending programs, such as health care for uninsured children, might benefit lower income individuals, but would exclude smokers who do not have children. Providing cessation assistance would help smokers in general, but would not be targeted to lower income smokers.

Another distributional effect that might be considered is the effect on stockholders if one or more firms is driven into bankruptcy. Some financial analyses have predicted that this effect might occur in the case of RJR, which has experienced some financial problems, particularly if the payments are large.

Design and budgetary issues

Two problems with the design of the settlement payments make them less efficient in achieving the corrective tax objective. Throughout the Congressional debate, there have been proposals to disallow deductibility of settlement payments. While all payments in the June settlement were deductible, the penalties for underage smoking would not be deductible under the Senate proposal. This desire to make the settlements nondeductible seems to derive from both a desire to further punish the tobacco firms and a misunderstanding of how excise taxes should be treated. Any payment that is expected to be passed on in price should be made deductible, in order to offset the increased income taxes on the additional revenues. Without deductibility, firms have the explicit payments and an additional income tax payment. Moreover, while an excise tax is a straight-forward mechanism for altering prices of products, an income tax penalty could cause undesirable consequences, in particular, incentives for firms to move their manufacturing operations abroad and out of the reach of the income tax. Disallowing deductibility also favors imported products, whose producers are not subject to the U.S. income tax.

Of course, while deductibility causes the firm's income tax to remain fixed, there is an overall budgetary cost (assuming a fixed overall price level) because product prices will have to fall slightly across the board to accommodate the higher

tobacco tax; thus, taxable income in the economy will fall. The rule of thumb normally is to reduce excise tax receipts by about 25 percent to account for this effect. This point was not recognized in the June settlement and again illustrates the problems that arise when an inappropriate policy framework is used.

In addition, it is difficult to determine what marginal effects on cost the penalty payments might have. A fixed payment would fall on stockholders; a tax would largely fall on firms. (There has been some discussion of the extent to which tobacco excise taxes are passed on in price, given that the industry is an oligopoly, but most empirical evidence suggests that they are). A fixed payment allocated by market share would alter marginal cost in the same way as a tax if the additional production were expected to displace that of a competitor. If the firm expects to add to total consumption, however, there is only a partial effect on marginal cost. A large firm will increase industry output by its share of the market, causing the payment to have only a partial effect on marginal cost. For example, if a firm produces 50 units out of a market total of 100 and pays half the fixed payment, increasing its units to 51 and increasing the total market sales to 101 will increase its payment by half the unit cost. A firm that produces one unit will increase its share by 99 percent of the unit cost. Of course, the analysis of the effect of penalties is even more complicated because they relate to market share of the underage market. While the rationale behind the penalties is presumably to discourage firms from marketing to underage consumers, firms do not have direct control over these sales.

Finally, as an administrative matter, it would be most efficient to collect these

payments through the same mechanism as the existing excise taxes.

Conclusions

This economic analysis of the tobacco settlement suggests that the public policy issue has not been framed appropriately in the case of the tobacco settlement. The most important consequence of this failure to address the economic repercussions is a redistribution of income, which has been given little or no attention and which will likely harm poor people. Given uncertainties about the efficacy of price increases and the magnitude of the distortion, along with the general preference in the federal tax system for progressive taxation, enacting a highly regressive \$15 or \$20 billion tax is a serious drawback that casts doubt on the desirability of the settlement. Disruptions in the market are also an inevitable consequence of a large tax (the payments in the Senate proposal involve a price increase of over 50 percent), which will impose transitional costs of stockholders and factors of production, including employees of the firm.

This analysis also suggests some possible policy initiatives, including recycling some of the revenues to lower income individuals, considering nontax measures to discourage underage smokers, and phasing in the increases more slowly, that might be desirable.

ENDNOTE

The views in this paper do not necessarily represent those of the Congressional Research Service or the Library of Congress.

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