Table of Contents

Executive Summary

Smoking appears to be a very risky behavior. Indeed, some have suggested that it is one of the riskiest activities that an individual can engage in over a lifetime. This view is reinforced repeatedly in Americans' daily lives, from ads on television to the Surgeon General's warning on cigarette packs.

Yet despite the deluge of information about the hazards of smoking, smoking has not diminished markedly since 1990. Today, approximately 50 million American adults, or roughly one quarter of the adult population, smoke cigarettes. According to data from the Centers for Disease Control, the percentage of Americans who choose to smoke has remained essentially unchanged since 1990.

While many nonsmokers can not fathom the benefits of smoking, we know that smokers freely exchange hundreds of billions of dollars of value each year for the opportunity to smoke cigarettes.

Not content to recite evidence that smoking harms individuals' health, governments and anti-smoking groups have tried to make a public finance argument that smoking inflicts costs on nonsmokers. Principally, these costs are alleged to be the expense of treating smoking-related diseases and the lost productivity attributable to smoking.

But despite the portrayal of smokers as individuals who are imposing tremendous costs on the rest of society, there is actually very little evidence to suggest that this is the case. Rather, the bulk of the public finance literature points in the opposite direction. Not only do smokers bear the individual health costs of tobacco use, but they also bear the burden of current federal and state government fiscal regimes that transfer tens of billions of dollars from smokers to nonsmokers.

Ignoring all of the economic research showing that smokers do not impose net costs on the rest of society, state governments began filing suit against the tobacco

Despite the portrayal of smokers as individuals who are imposing tremendous costs on the rest of society, there is actually very little evidence to suggest that this is the case. Rather, the bulk of the public finance literature points in the opposite direction.

industry in 1994. Rather than take its chances in court, the industry settled with four states individually for $36.8 billion. The remaining suits were settled for $206.0 billion in late 1998. These payments have only increased the transfer of wealth from smokers to nonsmokers. In September 1999, the federal government filed suit against the industry, and if successful this suit would further exacerbate the existing wealth transfer.

I. The Ancillary Costs of Smoking

There are generally said to be two types of cost associated with smoking in addition to the cost of cigarettes. These ancillary costs are listed in Table 1. The first type, direct costs, include medical expenses associated with treating smoking-related diseases. The second type, indirect costs, includes the cost of lost production resulting from premature death and illness attributable to smoking.

The most widely cited figure of the annual direct cost of smoking is $50.0 billion. This figure, an estimate for 1993, was calculated by researchers from the University of California and the U.S. Centers for Disease Control (CDC).[1] Of this amount, 51.9 percent was spent on hospital expenditures, 30.3 percent for physician expenditures, 9.8 percent for nursing home costs, 5.6 percent for home health care, and 2.4 percent for prescription drugs.

The CDC points out that if these direct costs were reflected in the price of cigarettes, the price would rise by approximate-

Not only do smokers bear the individual health costs of tobacco use, but they also bear the burden of current federal and state government fiscal regimes that transfer tens of billions of dollars from smokers to nonsmokers.

ly $2.06 per pack.[2] Using these figures, Jane Gravelle of the Congressional Research Service shows that approximately $18.1 billion of these costs were paid by the federal government, $17.8 billion by private insurance and other entities, $10.5 billion by individual smokers, and $3.6 billion by the states.[3]

The CDC has also estimated the indirect costs of smoking. Its latest study pegged the 1990 cost of morbidity — that is, work loss and bed-disability days — at $6.9 billion.[4] The same study also estimated the loss of productivity resulting from premature death at $40.3 billion. Such estimates, when added to the direct costs of smoking,

Table 1 Latest Estimates of the Ancillary Costs of Smoking ($Billions)	
Direct Costs (1993)	$ 50.0
Hospital Expenditures	26.0
Physician Expenditures	15.2
Nursing Home Expenditures	4.9
Home Health Care	2.8
Prescription Drugs	1.2
Indirect Costs (1990)	$ 47.2
Work Loss and Bed Disability Days	6.9
Premature Death	40.3
Source: U.S. Centers for Disease Control	

imply that the total annual ancillary costs of smoking are roughly $100 billion. If these costs were added to the price of each pack of cigarettes sold in the United States, the price would rise by more than $4.00.

Ancillary Costs v. External Costs

Governments at all levels, anti-smoking groups and the popular press frequently treat these ancillary costs of smoking as though they were akin to what economists refer to as external costs, when in fact they are not. External costs arise when individuals are able to shift some of the costs associated with using a good on to third parties and are consequently inclined to over-consume a good. The following two sections will show that the bulk of the ancillary costs of smoking could in no way be defined as external costs since they are, in fact, borne by smokers.

II. The Decision to Smoke

Smoking appears to be a very risky behavior. Indeed, some have suggested that it is one of the riskiest activities that an individual can engage in over a lifetime.[5] This view is not unfamiliar to the American public. It is reinforced repeatedly in their daily lives. From ads on television to the Surgeon General's warning on cigarette packs, Americans are deluged with messages warning ed by the activities of anti-smoking groups that have spent record amounts in an attempt to stamp out smoking.

Yet such efforts have largely been a failure. Today, approximately 50 million American adults, or roughly one quarter of the adult population, smoke cigarettes. According to data from the CDC, the percentage of Americans who choose to smoke has remained essentially unchanged since 1990.[7] Such figures raise the question of why, in spite of the apparent downside to smoking, tens of millions of Americans choose to smoke. The obvious reason is that for smok-

Table 2
The Decision to Smoke

	t_1	t_2	t_3	Sum	Discounted Benefits and Costs	
					r = 5%	r = 3%
Smoker						
Benefits	$ 600	$ 600	$ 400	$ 1,600	$ 1,461	$ 1,528
Costs	375	400	850	1,625	1,454	1,536
Cigarettes	300	300	150			
Direct	50	50	300			
Indirect	25	50	400			
Nonsmoker						
Benefits	$ 500	$ 500	$ 300	$ 1,300	$ 1,189	$ 1,242
Costs	375	400	850	1,625	1,454	1,536
Cigarettes	300	300	150			
Direct	50	50	300			
Indirect	25	50	400			

them of the hazards of smoking.

Over the past decade governments at all levels, joined by anti-smoking groups, have escalated their war on tobacco. The federal government set a goal of reducing the adult smoking rate below 15 percent by the year 2000.[6] To this end, it hiked cigarette taxes and enacted numerous measures aimed at curbing tobacco use. Likewise, state and local governments have enacted thousands of anti-smoking measures and implemented tax hikes that have sent cigarette prices soaring. These actions have been augment-

ers, the benefits of smoking exceed its costs. While many nonsmokers may find it hard to fathom any benefits arising from smoking (which helps explain why they themselves don't choose to smoke), we know from their actions that smokers tend to feel quite differently. Each year they freely exchange hundreds of billions of dollars of value for the opportunity to smoke cigarettes.

Weighing the Costs and Benefits of Smoking

The decision to smoke is made by weighing the lifetime benefits of smoking against its costs. This decision is complicated somewhat by the fact that while many of the benefits of smoking accrue early in life, many of its costs are borne in later years. Nevertheless, this decision is similar to others individuals make over a lifetime. Decisions such as whether or not to exercise, consume so-called "junk food," or sunbathe all involve similar choices.

The decision to smoke is formally illustrated in the simple three-period model presented in Table 2. The table presents two cases. In the first, the individual decides to smoke. Here, during each of the initial two periods (t_1 and t_2) the subjective valuations that he places on smoking are equal to $600. During the final period (t_3) this amount falls to $400. Therefore, over his lifetime the benefits that the individual obtains from smoking are equal to $1,600. In addition to the benefits, the individual also bears some of the costs of smoking during each of the periods. These costs include the cost of cigarettes as well as the direct and indirect costs described in the first section.

In the first period the total cost associated with smoking equals $375. In the second period it rises to $400. Finally, as a result of the high direct and indirect costs borne during the last period of the individual's life, the total cost rises sharply to $850. Therefore, over the individual's lifetime the cost associated with smoking will equal $1,625.

Since the sum of the lifetime costs of smoking exceeds the sum of the lifetime benefits in this case, it would initially appear as though the individual would choose not to smoke. Before such a determination can be made, however, something must be known about the individual's time preferences. Some individuals would be willing to trade off relatively large amounts of consumption in later periods for the ability to consume in earlier ones. Such individuals would be described as present-oriented.

Others are less likely to make such trade-offs and would be described as more future-oriented.

In order to incorporate a measure of time preference into the simple model illustrated in Table 2, an interest rate is used to discount both the benefit and cost streams. Relatively high discount rates imply that the individual prefers present to future consumption. Lower discount rates imply that the individual is more future-oriented. Here it is assumed that the individual's discount rate is equal to 5 percent. The fifth column in Table 2 shows that for this individual, the discounted stream of benefits is equal to $1,461 while the discounted stream of costs is equal to $1,454. In this case the individual will choose to smoke since the value of the discounted benefits he receives from smoking exceeds the discounted cost. Note, however, that if a discount rate of 3 percent is used, implying that the individual is slightly more future-oriented, the individual's decision will be altered. At such a rate, since the discounted costs of smoking exceed the discounted benefits, the individual will choose not to smoke.

Table 2 also illustrates the case of an individual who chooses not to smoke. Here, when a discount rate of 5 percent is used, the individual's discounted stream of benefits will be equal to $1,189 while his discounted stream of costs will equal $1,454. In this case, since the discounted costs exceed the discounted benefits, the individual will choose not to smoke. Note that when a discount rate of 3 percent is used, he becomes even less inclined to smoke.

As the subjective valuations that individuals place on smoking change over their lifetimes, they will periodically reevaluate their decision to smoke. Changes in the pre-tax price of cigarettes, excise taxes, and medical technology, as well as new information concerning the advisability of smoking, will also influence this decision.

III. Reconsidering the Costs of Smoking

While many opponents of smoking accept the cost-benefit analysis outlined above, they argue that the assumption that smokers pay the full cost of their tobacco use is incorrect. Instead, they argue that smokers are able to foist some of the costs of their habit onto nonsmokers. As a result, this line of reasoning logically leads one to conclude that smokers have an incentive to over-consume cigarettes. In order to correct this perceived situation, some proponents of this view argue for some sort of government intervention in the marketplace to actively discourage smoking.

In order to explore this topic it is necessary to examine the likelihood that smokers are able to shift each of the ancillary costs of smoking. These costs are listed in Table 3 along with a breakdown of the parties who are charged with initially paying these costs. As will be shown, the party assigned with the initial payment of these costs may be different from the one that ultimately bears the burden. The discussion will begin with those costs that would seem to be the least likely to be shifted, namely those that are paid by smokers directly. It will then examine the likelihood that smokers are able to shift some of the other ancillary costs via third party payments for health care.

Individual Costs

There is little doubt that nearly 60 percent of the ancillary costs attributed to smoking is borne directly by smokers. These include the $10.5 billion in direct costs paid by individual smokers as well as the $47.2 billion in indirect costs associated with smoking. When a smoker pays for medical expenses out-of-pocket, he alone bears the cost. Similarly, when smokers forgo wages and retirement benefits in later life for the opportunity to smoke cigarettes in early years, it is the smokers -- not members of society at large -- who bear these costs because they simply do not have the opportunity to shift these burdens to others.

Third-party Payers

Approximately 83 percent of health care expenses in the United States are currently paid by third parties.[8] These third-party payers include both private health insurance as well as government programs. Approximately 41.0 percent of the ancillary costs of smoking were paid by third parties. On the surface, the existence of such third-party payment would appear to create opportunities for smokers to shift some of the costs of their tobacco use onto nonsmokers.

Private Insurance Companies

Private insurance companies and other entities paid approximately $17.8 billion of the direct costs of smoking. One possibili-

	$Billions	Percentage of Total
Table 3		
The Ancillary Costs of Smoking		
Total	$ 97.2	100.0%
Direct Costs (1993)	$ 50.0	51.4%
Federal Government	18.1	18.6
Private Insurance and Other Entities	17.8	18.3
Individual Smokers	10.5	10.8
State Governments	3.6	3.7
Indirect Costs (1990)	$ 47.2	48.6%
Individual Smokers	47.2	48.6
Sources: Gravelle & Tax Foundation		

ty is that these costs are passed onto smokers and nonsmokers alike in the form of higher insurance premiums. Such a scenario would allow smokers to transfer some of the costs of their tobacco use to nonsmokers. The problem with this scenario is that a competitive insurance market offers very strong incentives for firms to prevent this from happening by charging policyholders

premiums based on risk.

To illustrate this point, consider the case of an insurance company that offers the same insurance to two classes of individuals with different risk profiles. On average it costs the company $110 per year to insure a member of Group A and $100 to insure a member of Group B. Assume that the company decides to combine 50 members of each group into a common insurance pool and sell policies for a $105 annual premium. For simplicity, assume that there are no administrative costs associated with issuing these policies. Such a premium would cover the expected costs of the insurance. Under such a plan $250 of wealth would be transferred from members of Group B to Group A via the private health insurance system.

The problem with this scenario is that, given a competitive market, it is not sustainable over the long run. This is because it would create a situation where competing firms could enter the market and offer low-risk individuals the same coverage at a lower price. In this example, a competing firm could draw members of Group B out of the insurance pool by offering the same insurance coverage for less cost. In this case a premium of $100 per year would cover the expected costs of members of this group. As members of Group B leave the insurance pool, the original company would be forced to raise premiums until it covered the expected costs of the remaining members of the pool. Eventually one would expect to see two insurance pools, each with its own premium based on the projected medical costs of individuals in the pool. Therefore, risk-based insurance prevents the shifting of costs and performs the desirable function of forcing individuals engaging in risky activities to bear the full cost of their actions.

If it is true that the workings of a competitive insurance market would prevent cost shifting, why is there so little segregation of smokers and nonsmokers into different risk pools in the U.S. insurance market? Only about 15 percent of health insurers offer discounts to nonsmokers and these discounts tend to be rather small, generally running only 10 to 15 percent.[9] This is in sharp contrast to the market for life insurance, where approximately 90 percent of the companies in the marketplace offer nonsmoker discounts, which can be substantial. This lack of a differential in health insurance premiums is likely a result of smokers having either the same or slightly lower lifetime medical costs than nonsmokers. This conclusion has been reached by several studies on this topic. One of the most interesting studies was conducted by Robert E. Leu and Thomas Schaub.[10] In this study the authors simulated what would have happened to health care expenses in Switzerland in 1976 if smoking had ceased in that country after 1876. Under this scenario the authors found that aggregate health care expenses would have been roughly equal to what they actually were that year. In a 1997 study of the Dutch population published in the New England Journal of Medicine researchers found that the lifetime medical costs of smokers were actually lower than those of nonsmokers.[11]

Government Programs

The prior section illustrated how the private marketplace accommodates a variety of lifestyles by offering risk-based insurance. The existence of such insurance prevents individuals who engage in risky activities from foisting some of the costs of these activities on to individuals who choose to live more sedate lives. Government programs lack such dynamism. Funds are collected in the form of taxes. General services are then provided universally and selective benefits are doled out in accordance with eligibility requirements. Consequently, even if it were the case that smokers placed higher overall demands on government programs than nonsmokers, these programs would have no mechanism for preventing the shifting of costs. It doesn't matter whether an individual smokes or not — his tax obligations and the benefits that he is entitled to are the same.

The lack of any actuarial basis underlying these programs means that, to some de-

gree, wealth will be transferred between smokers and nonsmokers. Conceptually, determining the direction and magnitude of this transfer involves comparing the discounted lifetime tax payments and government expenditures for smokers with those for nonsmokers. While in theory this is a fairly straightforward process, conducting credible research in this area is a difficult task. To illustrate what it entails the next section presents a simple model of wealth transfer via government taxation and spending. The findings of some empirical research in this area will then be presented.

A Simple Model of Wealth Transfer Via Government Health and Retirement Programs

The mechanics involved in determining who receives net benefits under a given tax and spending regime are illustrated in Table 4.[12] Here nonsmokers are assumed to live for three periods. Because of the adverse health effects assumed to be associated with smoking, smokers live for two periods. In this example the government provides health and retirement benefits. During the initial two periods of a nonsmoker's life, it costs $50 per period to provide health benefits. During the final period these costs rise to $75. During this period nonsmokers also receive $75 in retirement benefits. Because of the adverse health effects assumed to be associated with smoking, it costs $100 per period to provide health benefits to smokers. As a result of premature death smokers draw no retirement benefits. Therefore, in this example, while it costs the government $250 to provide health and retirement benefits over the span of a nonsmokers life, it costs just $200 to provide these benefits to smokers.

While it is tempting to simply compare the lifetime costs of providing health and retirement benefits to nonsmokers with those of providing these benefits to smokers, doing so would be inappropriate. Because of the time value of money, funds expended during early periods are worth more than those expended in later ones.

Therefore, all of the figures used in the analysis need to be discounted before being compared. This is done in the final three columns of Table 4 using three different interest rates.

In the initial case where a discount rate of 20 percent is used, the discounted costs that the government incurs providing benefits to nonsmokers ($163) exceed those associated with providing benefits to smokers ($153). In this case, assuming that the tax payments of nonsmokers and smokers are similar, government health and retirement programs transfer wealth ($10) from smokers to nonsmokers. At a discount rate of 30 percent the cost of providing benefits to nonsmokers ($136) is equal to what it costs to provide benefits to smokers ($136). In this case there is no wealth transfer between the two groups. At a discount rate of 40 percent it costs more to provide benefits to smokers ($123) than it does to provide benefits to nonsmokers ($116). In this case government programs transfer wealth ($7) from nonsmokers to smokers.

Cigarette excise taxes can eliminate or exacerbate a wealth transfer. In the case where government fiscal policies transfer wealth from nonsmokers to smokers, this transfer could be eliminated by the application of a 7 cent per pack excise tax (assuming smokers consume 100 packs per period). Application of such a tax in the case where the fiscal regime transfers wealth from smokers to nonsmokers, however, would exacerbate the transfer. In this case the net transfer from smokers to nonsmokers would rise from $10 per period to $17. In the case where government fiscal policies do not transfer income between the two groups, application of the tax would alter this situation and transfer wealth ($7) from smokers to nonsmokers.

Empirical Analysis of the Effects of Smoking on Government Budgets

Determining the direction and magnitude of the wealth transfer under a given fiscal regime is therefore a function of both the amounts and timing of tax and benefit

payments, as well as the discount rate used. Several researchers have built sophisticated models that attempt to determine who benefits and who pays under the current federal and state fiscal regimes in the United States. One of the first models of this type was constructed by a team of researchers led by Willard G. Manning of the Rand Corporation. Research using this model was published in the Journal of the American Medical Association in 1989.[13] In 1994 this model was substantially refined and updated by W. Kip Viscusi of Harvard University.[14]

As was evident from the example presented in Table 4, the results of these models are highly dependent on the discount ing on whether lost income tax revenue was considered a cost, the current federal and state fiscal regimes transferred anywhere from 23 to 53 cents per pack from smokers to nonsmokers. These findings suggest that in 1994, the year in which Viscusi published his findings, government fiscal policies were transferring between $5.3 and $12.2 billion from smokers to nonsmokers even before considering the effects of cigarette excise taxes. Viscusi concluded that "[a]t reasonable rates of discount … the cost savings that results because of premature deaths of smokers … will more than compensate for the added costs imposed by [them]." He went on to note that "[o]n balance there is

Table 4
A Simple Model of Income Tax Transfer Via Government Health and Retirement Programs

	Expenditures				Present Value		
	t_1	t_2	t_3	Sum	r = 20%	r = 30%	r = 40%
Nonsmoker Cost	$ 50	$ 50	$ 150	$ 250	$ 163	$ 136	$ 116
Health	50	50	75	175	120	102	89
Retirement	0	0	75	75	43	34	27
Smoker Cost	$ 100	$ 100	$ 0	$ 200	$ 153	$ 136	$ 123
Health	100	100	0	200	153	136	123
Retirement	0	0	0	0	0	0	0
Net Transfer (from smokers to nonsmokers)					$ 10	$ 0	$ (7)
Health					(33)	(34)	(34)
Retirement					43	34	27
Effect of a 7-cent cigarette excise tax on the transfer (assuming 100 packs consumed per period)					$ 17	$ 7	$ 0

rate used. In general, before taking into account the effect of federal and state cigarette excise taxes, these models show that when a discount rate of 4 percent or less is used government fiscal policies transfer wealth from smokers to nonsmokers. Above this amount the reverse is true. When Viscusi used a rate of 3 percent, which he said corresponded to the U.S. economy's long-run rate of return, he found that, depend a net cost savings to society even excluding consideration of the current cigarette taxes paid by smokers."[15]

As would be expected, inclusion of federal and state excise taxes exacerbates the wealth transfer from smokers to nonsmokers. In 1994, at a time when federal and state cigarette excise taxes accounted for approximately one third of the price of cigarettes, research conducted by Jane Gravelle and

Dennis Zimmerman of the Congressional Research Service estimated that when cigarette excise taxes were considered, the discount rate at which smokers begin transferring income from nonsmokers rose to around 10 percent.[16] When federal and state cigarette excise tax collections are added to the mix, Viscusi's research suggests that during 1994 somewhere between $17.7 and $24.6 billion was transferred from smokers to nonsmokers.

The Effects of Smoking on the Federal Budget

Table 3 shows that the federal government pays $18.1 billion of the direct costs of smoking. The bulk of these costs are said to be borne by the Medicare and Medicaid programs. Medicare is the federal program that pays the medical expenses of Social Security recipients. Medicaid is administered by both the federal and state governments and pays the medical costs of the indigent. Other federal programs, including those administered by the Departments of Veterans Affairs and Health and Human Services also incur smoking-related costs.

In her research on the effects of smoking on the federal budget Gravelle uses a slightly different methodology than that employed by Manning et al. and Viscusi. She points out that in order to produce numbers which are comparable to those produced by the CDC (i.e., those which would reflect the annual budgetary effects of smoking) a growth rate rather than a discount rate should be used. While no comprehensive study has been conducted using this methodology, Viscusi's findings do contain estimates for a discount rate of zero. Using these, Gravelle calculates that, as a result of smoking, the federal government enjoys net savings of approximately $29.0 billion in health and retirement costs annually. In addition to these savings the federal government collects approximately $5.6 billion annually in cigarette taxes. As Gravelle points out, these figures "imply that smokers (past and present) currently save the federal government almost $35 billion

per year."[17] Such results further support the notion that smokers do not impose net costs on nonsmokers via the existing federal fiscal regime. To the contrary, it implies that the current regime transfers tens of billions of dollars from smokers to nonsmokers.

The Effects of Smoking on State Budgets

Table 3 shows that the states incur roughly $3.6 billion annually in medical costs treating smoking related ailments, mostly in the form of state Medicaid payments. Viscusi's research includes comprehensive estimates of the effect of tobacco use on state budgets. He finds that even if

Before taking into account the effect of federal and state cigarette excise taxes, these models show that when a discount rate of 4 percent or less is used, government fiscal policies transfer wealth from smokers to nonsmokers. Above this rate, the reverse is true.

one ignores cigarette excise tax collections, in every state, state programs transfer income from smokers to nonsmokers. When excise taxes are added to this calculation this effect becomes even more pronounced.[18] Gravelle's analysis using a discount rate of zero as a proxy for a growth rate produces similar findings. Her analysis shows that states save approximately $2.1 billion annually as a result of tobacco use. When the $7.6 billion that states collect annually in cigarette taxes is added to this figure it rises to almost $10 billion annually.[19] As is the case with the existing federal fiscal regime, such findings support the notion that smokers do not impose net costs on nonsmokers via the existing state fiscal regimes. To the contrary, these regimes transfer billions of dollars from smokers to nonsmokers.

IV. Conclusion

There is little doubt that the bulk of the ancillary costs of smoking are borne by smokers. Nearly 60 (59.4) percent of these costs are borne by smokers in the form of direct costs associated with treating smoking-related diseases and indirect costs related to lost productivity. There are also very strong theoretical and empirical reasons for

Tobacco settlement payments have only increased the transfer of wealth from smokers to nonsmokers. In September 1999, the federal government filed suit against the industry, and if successful this suit would further exacerbate the existing wealth transfer.

believing that another 18.3 percent of the ancillary costs are borne by smokers in the form of insurance premiums. Federal and state governments pay the balance of these costs. The lack of any actuarial basis underlying government fiscal policies means that,

to some degree, government fiscal policies will transfer wealth between smokers and nonsmokers. Much of the empirical research on this topic shows that, on net, federal and state fiscal policies transfer wealth from smokers to nonsmokers. Consequently, under the existing tax and spending regimes smokers can not be said to impose net costs on nonsmokers. To the contrary, these regimes transfer tens of billions of dollars from smokers to nonsmokers.

Ignoring all of the economic research using comprehensive cost models that showed that smokers do not impose net costs on the rest of society, state governments began filing suit against the tobacco industry in 1994. Rather than taking its chances in court, the industry settled with four states individually for $36.8 billion. The remaining suits were settled for $206.0 billion as part of the Masters Settlement Agreement on November 23, 1998. As would be expected, these payments will only increase the transfer of wealth from smokers to nonsmokers. In similar fashion the federal government filed suit against the industry on September 27, 1999 seeking potentially hundreds of billions of dollars. If successful this suit would further exacerbate the existing wealth transfer.

Endnotes

[1] United States Centers for Disease Control, "Medical-Care Expenditures Attributable to Cigarette Smoking – United States, 1993" *Morbidity and Mortality Weekly Report,* Volume 43, Number 26, July 8, 1994, p. 470.

[2] United States Centers for Disease Control, "Medical-Care Expenditures Attributable to Cigarette Smoking – United States, 1993" p. 470.

[3] Jane G. Gravelle, "Burning Issues in the Tobacco Settlement Payments: An Economic Perspective" *National Tax Journal,* Volume 51, Number 3, September 1998, p. 441.

[4] United States Centers for Disease Control, "Cigarette Smoking-Attributable Mortality and Years of Potential Life Lost – United States 1990" *Morbidity and Mortality Weekly Report,* Volume 42, Number 33, August 27, 1993, pp. 645.

[5] See United States Department of Health and Human Services, *Reducing Tobacco Use: A Report of the Surgeon General,* Atlanta, Georgia: United States Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health, 2000.

[6] United States Centers for Disease Control, "Cigarette Smoking Among Adults – United States, 1997," *Morbidity and Mortality Weekly Report,* Volume 48, Number 43, November 5, 1999, p. 995.

[7] United States Centers for Disease Control, "Cigarette Smoking Among Adults – United States, 1997," p. 995. Also See National Health Interview Survey (various surveys).

[8] Health Care Financing Administration, "National Health Expenditures Projections," http://www.hcfa.gov/stats/NHE-Proj/proj1998/tables/table3a.htm.

[9] Robert D. Tollison, and Richard E. Wagner, *The Economics of Smoking,* pp. 80-81.

[10] Robert E. Leu and Thomas Schaub, "Does Smoking Increase Medical Care Expenditures?" *Social Science and Medicine,* Volume 17, 1983, pp. 1907-14.

[11] Jan J. Barendregt, Luc Bonneux, and Paul J. van der Maas, "The Health Care Costs of Smoking," *New England Journal of Medicine,* Volume 337, Number 15, October 9, 1997, pp. 1052-1057.

[12] Figure adapted from that in Robert E. McCormick, Robert D. Tollison, and Richard E. Wagner, "Smoking, Insurance, and Social Cost" *Regulation,* Volume 20, Number 3, Summer 1997, p. 34.

[13] Willard G. Manning, Emmett B. Keeler, Joseph P. Newhouse, Elizabeth M. Sloss, and Jeffrey Wasserman, "The Taxes of Sin: Do Smokers and Drinkers Pay Their Way?" *Journal of the American Medical Association,* Volume 261, March 17, 1989. For more information on this model, see Willard G. Manning, Emmett B. Keeler, Joseph P. Newhouse, Elizabeth M. Sloss, and Jeffrey Wasserman, *The Costs of Poor Health Habits,* A RAND study, Cambridge, MA: Harvard University Press.

[14] W. Kip Viscusi, "Cigarette Taxation and the Social Consequences of Smoking," *Working Paper Number 4891,* National Bureau of Economic Research, October 1994.

[15] Viscusi, "Cigarette Taxation and the Social Consequences of Smoking," pp. 31-33.

[16] See Jane G. Gravelle and Dennis Zimmerman, *Cigarette Taxes to Fund Health Care Reform: An Economic Analysis,* Congressional Research Service, 1994.

[17] Gravelle, "Burning Issues in the Tobacco Settlement Payments: An Economic Perspective" p. 443.

[18] W. Kip Viscusi, "From Cash Crop to Cash Cow: How Tobacco Profits State Governments," *Regulation,* Volume 20, Number 3, Summer 1997, p. 30-32.

[19] Gravelle, "Burning Issues in the Tobacco Settlement Payments: An Economic Perspective" p. 443.