A COMMISSION REPORT

Cigarette Tax Evasion: A Second Look

Washington, D.C. 20575 • March 1985

**Advisory Commission on Intergovernmental Relations
A-100**

A COMMISSION REPORT

Cigarette Tax Evasion: A Second Look

ACKNOWLEDGMENTS

PREFACE

In 1977 the Advisory Commission on Intergovernmental Relations issued a report on cigarette bootlegging recommending that Congress make smuggling cigarettes across state lines a federal crime. Due, in part, to the Commission's efforts such legislation was passed and signed into law in 1978 (PL 95-575).

In 1983, the House and Senate Committees on Appropriations directed the Commission to develop current estimates of cigarette tax losses, particularly those losses attributable to organized interstate smuggling, and to recommend what actions the national or state governments could take to further reduce these losses.

The Commission notes in this report that the magnitude of commercial interstate smuggling has declined dramatically since the 1970s, largely due to the *1978 Contraband Cigarette Act*. The Commission also notes that tax rate disparities among the states have widened since 1980, suggesting the need for continued federal law enforcement to prevent a resurgence of cigarette smuggling. Finally, the Commission identifies the illegal sale of cigarettes on military bases and Indian reservations as the major sources of current revenue losses for most states—problems that may require legislative or administrative action by the national government.

In this report the Commission seeks to illuminate an issue of intergovernmental concern, both in terms of past actions and future requirements.

Robert B. Hawkins, Jr.
Chairman

CONTENTS

TABLES

MAPS

Chapter I
FINDINGS AND RECOMMENDATIONS

Cigarette tax evasion began to pose serious problems for state tax administrators in the late 1960s. There had always been some casual smuggling across state lines and some problems with mail order sales of cigarettes, but large-scale organized smuggling was practically nonexistent. Organized smuggling emerged as tax rate differentials among the states began to widen in the mid-1960s. In 1965 New York doubled its cigarette tax rate from 5 cents to 10 cents and other states began to follow suit. The cigarette tax became an attractive revenue source for the states in the wake of the 1964 report of the U.S. Surgeon General linking smoking with cancer. Although not a major revenue source it became politically convenient for states to fill small gaps in their budgets with increased cigarette tax revenues. In 1960, cigarette tax rates ranged from 0 in Virginia, North Carolina and Oregon to 8 cents in Texas. The rates for the vast majority of states were between 2 and 6 cents. By 1970, tax rates ranged from 2 cents in North Carolina to 18 cents in Pennsylvania and well over half the states levied rates of 10 cents or more. These tax differentials continued to widen through the mid-1970s.

The large state tax differentials created inviting profit opportunities for independent "entrepreneurs" and organized crime groups. The large profit potential combined with the ease of handling cigarettes, the limited resources allocated by the states to law enforcement, the light penalties imposed by the courts and the lack of federal laws against cigarette bootlegging, resulted in an epidemic of organized cigarette smuggling and illegal

diversion of cigarettes from the legal distribution system by the mid-1970s.

The most visible consequence of cigarette tax evasion is the loss of revenues to state and local governments—estimated by ACIR at about $400 million in 1975. This revenue loss is what most concerns state tax administrators. The consequences of cigarette tax evasion, however, extend beyond the loss of government revenues. The impact on the tobacco industry has been particularly severe. Thousands of wholesalers and retailers in the high-tax states have gone out of business and jobs have been lost because of their inability to compete with individuals selling lower priced, smuggled cigarettes. The industry has also been damaged by distributors who felt the economic need to deal in illegal cigarettes. On another level, political and law enforcement officials have been corrupted and some persons have been injured and even killed.

State law enforcement officials were unable to deal effectively with this problem because of its interstate nature and because state legislatures were unwilling to appropriate adequate funds for law enforcement. There were some who felt the only way to deal with the problem was for Congress to pass legislation that would coerce the states to adopt uniform cigarette tax rates. This approach was strongly opposed by the tobacco industry because it entailed higher taxes and by many state tax administrators and politicians because it constituted federal interference in state tax matters. At the other extreme were persons who favored the status quo either because they believed cigarette smuggling was not a serious problem or because they believed the problem was created by the high-tax states which could solve their own problem by reducing their cigarette tax rates. Most state tax administrators and law enforcement officials favored Congressional legislation making cigarette smuggling a federal crime.

In 1978, the Congress enacted PL 95-575 which prohibited the transportation, receipt, shipment, possession, distribution or purchase of more than 60,000 cigarettes not bearing the tax indicia of the state in which the cigarettes are found. The impact of this legislation on cigarette smuggling appears to be greater than even its strongest advocates expected. It is, however, too soon to proclaim a complete, long-term victory over cigarette smuggling as many of the conditions that encouraged large-scale tax evasion in the 1970s still remain. There

have been substantial increases in state cigarette tax rates in the last three years and there is some evidence that cigarette smuggling increased in 1983, albeit modestly. The withdrawal or diminution of the federal law enforcement presence might encourage increased cigarette tax evasion activity.

The National Association of Tax Administrators (NATA) summarized the current situation well in testimony before Congress in 1982.

We pointed out that cigarette smuggling is by its very nature an interstate activity which can be dealt with effectively only by a federal presence. We also pointed out that the Contraband Cigarette Act is an unusually successful law, in that it has been highly effective in reducing the volume of smuggling sharply and quickly; and it forestalled a growth in smuggling during a period of recession when this illegal activity could be expected to flourish. Nevertheless, we emphasized, the experience of New York and a number of other states where smuggling incidents have occurred indicates that this illegal activity is still present and could accelerate easily. We said that the minimal federal presence requested by the ATF would retain the gains that had been made and prevent a new outburst in smuggling, and we stressed that if that minimal federal presence were removed, a massive resurgence in smuggling could occur very quickly. The recent widespread rise in cigarette tax rates was cited as a new incentive for such a revival.[1]

SUMMARY OF FINDINGS AND CONCLUSIONS

The major findings of this study follow.

• Cigarette smuggling has declined dramatically since the 1970s, particularly large-scale organized smuggling (see Map 1-1). The amount of revenue lost by state and local governments due to tax evasion and tax exemption is estimated at $255 million for FY 1983; the amount lost by the "losing" states is $309 million. This is 5.4 percent of estimated cigarette tax collections, a 45 percent decline from the 10 percent lost by these governments in 1975. In its 1977 report on cigarette bootlegging, ACIR identified 14 states as having a serious bootlegging problem. In 1983 only Connecticut and West Virginia could be

Map 1-1
REDUCTION IN CIGARETTE TAX EVASION IN PACKS PER CAPITA, 1975-83
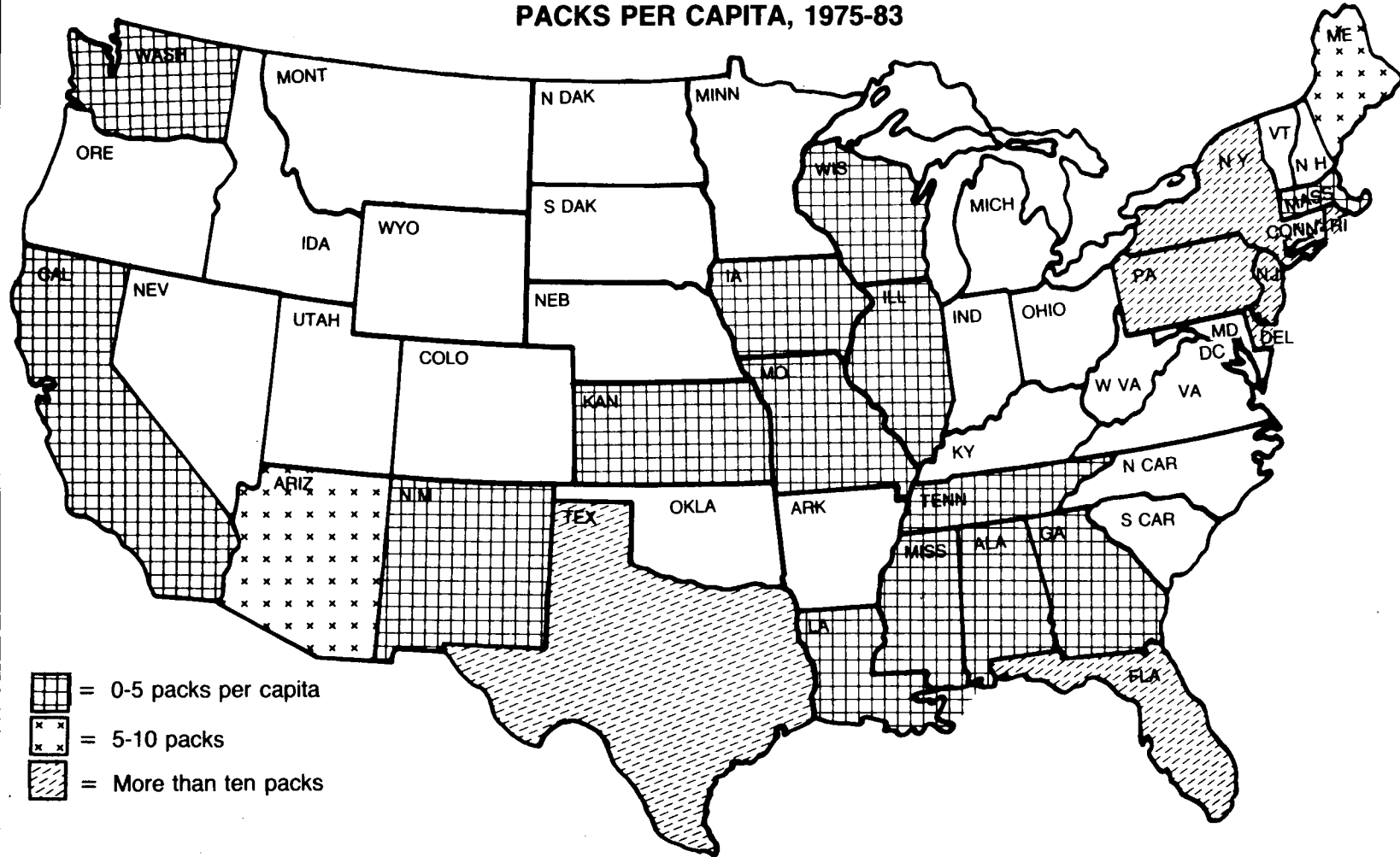
= 0-5 packs per capita

= 5-10 packs

= More than ten packs

SOURCE: ACIR staff estimates.

[1]Delaware and Rhode Island changed from modest losses to large gains.
[2]A significant increase in tax evasion (four packs per capita) or more occurred in Alaska, D.C, Michigan, Nevada, Oklahoma, Oregon, South Carolina, Utah, Virginia and West Virginia. Several of these states changed from winners to losers.
[3]Idaho, Indiana, Kentucky, New Hampshire, North Carolina experienced reduced gains from cigarette tax evasion. Increased gains occurred in only Vermont and Wyoming.
[4]Per capita gains and losses for each state are shown in Table 5-5.

placed in this category, and the losses in these states are more likely due to casual than organized smuggling. (This categorization excludes tax exempt sales which were not segregated in the earlier study, but are treated separately in this report.)

- *An estimated 70 percent of the revenue lost by state and local governments results from tax exemption of sales on Indian reservations and military bases.* These exemptions are the major source of the revenue loss on cigarettes in 26 states. The estimated loss was $219 million in FY 1983. The tax exemption for military sales cost state and local governments an estimated $176 million in FY 1983. Of this amount, about 31 percent, or $54 million, can be attributed to the illegal sale of cigarettes to nonmilitary personnel. Although this tax exemption was listed in the 1984 ACIR survey on cigarette tax evasion as the major tax evasion problem by seven states, there is no evidence that this problem has increased in severity in recent years. In contrast, tax-exempt sales on Indian reservations, which was listed as the major problem by five states, appears to be becoming a more serious problem in a number of states despite favorable (for the states) court rulings in recent years.

- *The decline in cigarette tax evasion activities is due mainly to the enactment of the Federal Cigarette Contraband Act in 1978.* The enforcement agency, the Bureau of Alcohol, Tobacco, and Firearms (U.S. Treasury Department) has been extremely effective in stopping over-the-road smuggling, as well as in reducing the illegal diversion of cigarettes. It is also possible that the reduction in smuggling is partly due to the declining real value of interstate price differences that began in the mid-1970s and continued until 1981, and the increasing cost of smuggling.[2] The major gains against cigarette smuggling were made between 1978 and 1980. Between 1980 and 1983 there was a relatively small decline in cigarette bootlegging.

- *There have been numerous state tax increases since 1981 and state cigarette tax differentials, which are the primary cause of cigarette smuggling, have widened in the last few years (see Map 1-2).* These tax differentials, combined with the slowdown in inflation, have caused a sharp increase in real cigarette price differences among the states, creating the potential for a re-

surgence of cigarette smuggling in the future if law enforcement efforts become less effective.

- *Many states have reduced the resources devoted to enforcing state cigarette tax laws.* These reductions have been due largely to budget problems, the decline in cigarette smuggling, and increased reliance on federal law enforcement. These reductions may be justified given the sharp decline in organized smuggling, but a significantly reduced effort or a lack of continuity in law enforcement (including auditing) at the national or state level is an invitation for increased cigarette smuggling.

- *The empirical analysis in this report indicates that tax-related variables significantly affect per capita sales variations among the states, but this effect has weakened in recent years.* Higher prices are still associated with low per capita sales and vice versa, but the price elasticity of cigarettes (in an individual state) has declined sharply since the mid-1970s, due largely to the reduction in tax evasion activities. State per capita sales are converging toward the mean and the remaining variations are largely due to social, economic, and demographic factors such as religion, income and ethnic composition.

RECOMMENDATIONS ON CIGARETTE BOOTLEGGING

Federal Enforcement Efforts

The Commission concludes that the incidence of cigarette smuggling has declined significantly since 1977, due in large part, to the passage of the Federal Contraband Cigarette Act in 1978. Because tax differentials among states remain large, however, the removal of this federal enforcement presence could result in a resurgence of cigarette smuggling. The Commission therefore recommends that the Congress continue to fund the tobacco enforcement program of the Bureau of the Alcohol, Tobacco and Firearms (ATF).

The conclusion that cigarette bootlegging has declined since the mid-1970s is based on observations in the field by federal and state enforcement agents and on statistical evidence. In its 1977 report, ACIR identified 14 states as having a serious cigarette bootlegging problem and 9 states as ben-

4

Map 1-2

INCREASES IN STATE CIGARETTE TAX RATES, IN CENTS PER PACK, JANUARY 1, 1981, TO JULY 1, 1984

WASH 7.0

MONT 4.0

N DAK 6.0

MINN

ME 4.0

ORE 10.0

IDA

WYO

S DAK 1.0

WIS 9.0

MICH 10.0

VT 5.0

N Y 5.0

N H

6.0

MASS 5.0

CONN RI 5.0

CAL

NEV 5.0

UTAH 2.0

COLO 5.0

NEB 5.0

IA 5.0

ILL

IND

OHIO

PA

NJ 6.0

MD

DC

DEL

KAN 5.0

MO 4.0

W VA

VA

ARIZ 2.0

N M 2.0

TEX 1.0

OKLA

ARK 3.25

LA 5.0

KY

TENN

MISS

ALA 0.5

GA

N CAR

S CAR

FLA
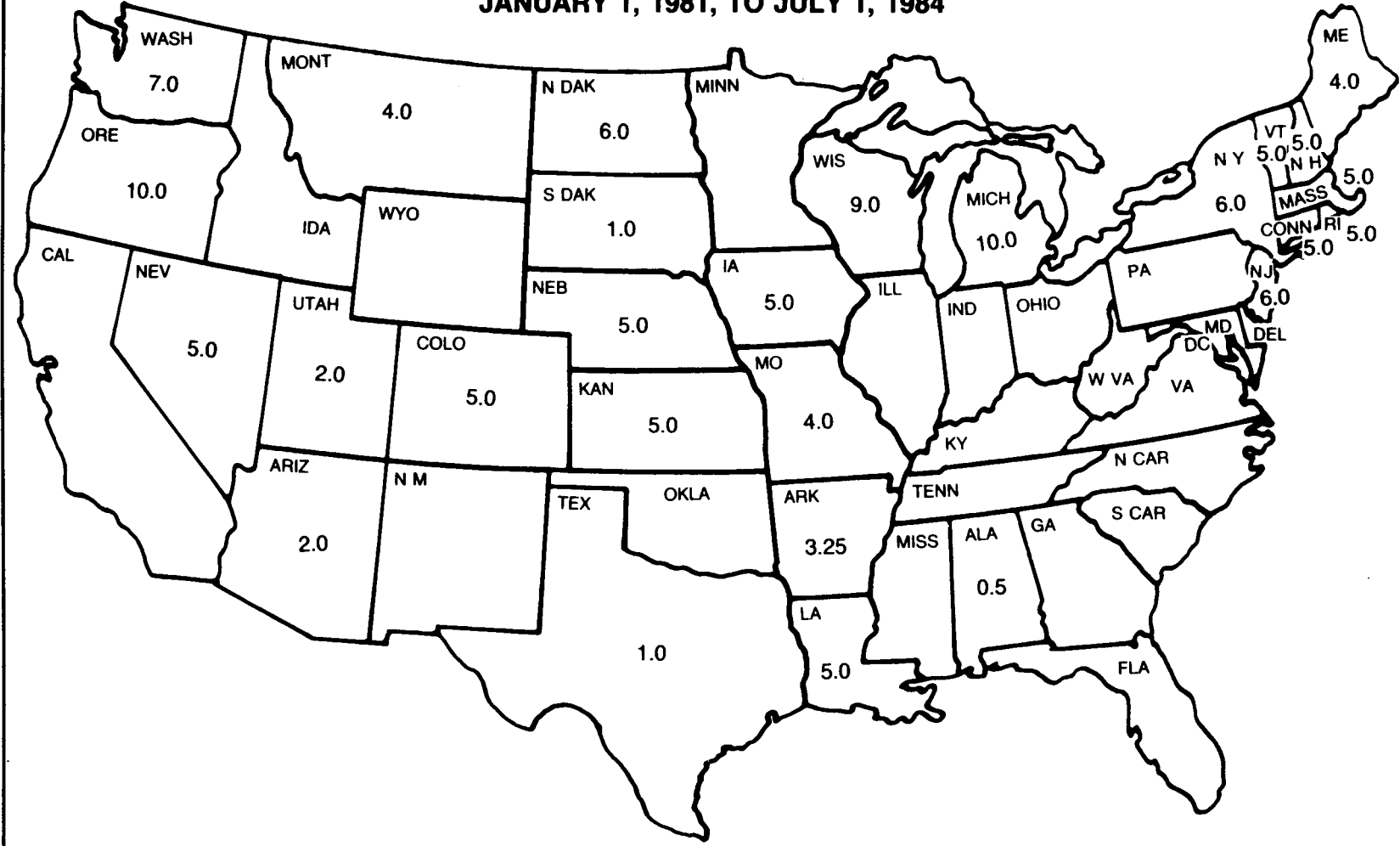
SOURCE:The Tobacco Institute, *The Tax Burden on Tobacco,* Vol. 18, 1983, and Commerce Clearing House, *State Tax Review,* 1984 issues.

[1]The cigarette tax rate in Maine will increase an additional 8¢ on October 1, 1985. The tax rate in Texas will increase an additional 1¢ on September 1, 1985. The tax rate in Kansas will increase 8¢ on October 1, 1985, if the federal tax rate is reduced by 8¢.

[2]The state sales tax was extended to cigarettes in Maine, Minnesota, Ohio, Oklahoma, Pennsylvania and Texas adding from 3¢ to 6¢ per pack.

eficiaries of bootlegging. In fiscal year 1976, per capita cigarette sales in the 14 states with a bootlegging problem averaged 90.1 percent of the U.S. average. By fiscal year 1982, per capita sales in these states had risen to 95.3 percent of the U.S. average. (In fiscal year 1983, per capita sales fell to 94 percent of the U.S. average, due most likely to tax increases in many states and some distortions in the figures caused by the doubling of the federal cigarette excise tax.) In fiscal year 1976, per capita cigarette sales in the nine states gaining from cigarette bootlegging was 142 percent of the U.S. average. In fiscal year 1983, per capita cigarette sales in these states fell to 124.4 percent of the U.S. average. In all nine states per capita cigarette sales were at or very near their peak during the 1976-78 period.

It is no coincidence that the ACIR report on cigarette bootlegging was published and the federal *Contraband Cigarette Act* passed during this period. An additional piece of statistical evidence supporting the conclusion that cigarette smuggling has declined is provided by the coefficient of variation of per capita cigarette sales. This measures the degree of variation from the mean. In fiscal year 1975, the coefficient of variation was 8.56 packs. This measure of variation fell to 5.5 packs in fiscal year 1980 and 4.94 packs in fiscal year 1983. In other words, the variation in taxable cigarette sales among the states has become much smaller. One of the main reasons for variations among states is cigarette smuggling; other factors are tourism, income, and social and demographic differences. There is little evidence that these other factors have changed significantly; therefore, it seems reasonable to conclude that the variation in per capita cigarette sales among the states has declined because of reduced cigarette bootlegging.

Most conclusive is the major finding of this study that the estimated amount of cigarette tax evasion has declined about 45 percent since 1975 and about 70 percent of the remaining amount is due to tax-exempt sales on Indian reservations and military bases.

The ATF has made an important contribution in promoting more uniform law enforcement among the states, in coordinating interstate investigations and in improving the training of state and local law enforcement personnel. A continuous federal law enforcement presence is needed to maintain the gains made against cigarette smuggling, to keep organized crime involvement in check and to protect legitimate cigarette wholesalers and retailers.

Congressional Monitoring

The Commission concludes that the level of cigarette bootlegging could increase again if the tax differentials among the states continue to increase. The Commission therefore recommends that Congress closely monitor organized interstate cigarette smuggling activities in the states and provide additional federal law enforcement resources if the level of such activity appears to be rising.

In the 1970 to 1975 period there were 34 increases in state cigarette taxes. This large number of increases coincided with a substantial rise in the level of cigarette bootlegging. In the 1975 to 1980 period there were only 12 increases in state cigarette tax rates (and one tax reduction). During the 1980-83 period there were 31 tax increases (and one reduction) as the weak economy put pressure on state finances.

In 1970 the largest state tax differential was 16 cents. By 1975 the largest differential had increased to 19 cents and remained at this level until 1982, when the largest state tax differential increased to 23 cents. The ACIR concluded in its 1977 report that a 10-cent tax differential appeared to be the point at which cigarette smuggling became profitable enough to attract organized criminal elements. This "flashpoint" has likely risen because inflation has increased the costs associated with cigarette smuggling. A 23-cent differential, however, offers a very attractive profit opportunity for organized smuggling operations.

The tobacco producing states are unlikely to increase their tax rates. Therefore, further tax increases by high-tax states will increase state tax differentials and could cause a resurgence of cigarette bootlegging without an increased federal law enforcement presence.

State Enforcement Efforts

The Commission concludes that the states have cut back the resources devoted to enforcing cigarette tax laws. The major reasons for the reductions are budget problems and the success of the federal enforcement effort in reducing cigarette smuggling. When the federal *Contraband Ciga-*

rette Act was passed in 1978, Congress expressed concern that the states would reduce their law enforcement efforts and place the major burden on the national government. **The Commission is concerned that some states are using federal actions to justify reducing their role in enforcing cigarette tax laws. The Commission therefore recommends that the states maintain an active law enforcement presence and that when tax rates are increased consider allocating a portion of the additional revenue generated for law enforcement.**

It may be logical to reduce enforcement efforts when cigarette smuggling declines, but severe reductions could be an open invitation for an increase in cigarette smuggling. The states must begin to think of enforcement activities as preventive. Such activities as regular auditing are important to keep cigarette smuggling in check even if no immediate revenue is generated by the audits. A continuous, visible law enforcement effort by the states is necessary if the progress made against cigarette smuggling in the last few years is to be maintained.

Exemption of Military Sales

The Commission concludes that the illegal purchase of cigarettes from military installations for consumption by nonmilitary personnel is a problem. The Commission recommends, that as a beginning, military officials work closely with appropriate state and federal officials to further reduce incidences of cigarette bootlegging on military installations.*

The exemption of cigarettes sold on military bases from state and local taxes has been a major concern to state tax administrators for a number of years. Tax administrators are concerned about the revenue loss on legal tax exempt sales, but are even more concerned about revenues lost because of illegal sales to nonmilitary personnel.

In ACIR's 1984 survey of cigarette tax administrators, seven states listed military privilege abuses as their most serious tax evasion problem and four states listed it as their second most serious problem.

The revenue loss to state governments from the military sales exemption on cigarettes is estimated at $177 million (fiscal year 1983 data). The loss exceeds 7% of total cigarette revenues in seven states.

In its 1977 report, *Cigarette Bootlegging: A State and Federal Responsibility*, the Commission recommended that the Congress allow state and local governments to levy excise and sales taxes on cigarettes sold at military installations. This approach is still favored by most state tax administrators for five main reasons: (1) As mentioned above, there is a substantial revenue loss. An estimated 31 percent of this loss results from resales to unauthorized personnel. (2) This exemption is a fringe benefit provided to military personnel and is financed by state and local governments. (3) Cigarettes cannot be viewed as a necessity nor as a major item of personal expense, and the imposition of state and local taxes will not create a significant hardship on military personnel. (4) The federal government imposes its cigarette tax on military sales and state and local governments should be extended the same authority. (The 8-cent increase in the federal cigarette excise tax in 1983 was imposed on military sales and no strong evidence was offered that the increase imposed a significant hardship on military personnel.) (5) The extension of the cigarette tax to military bases will remove a source of cigarette tax evasion and increase revenues in several

---

states by an amount sufficient to allow a significant reduction in the state cigarette tax rate. For example, extending state cigarette taxes to military sales would allow a 4-cent reduction in the cigarette tax in Hawaii, a 3-cent reduction in Washington and a 2 cent reduction in Florida.

The military view is that the exemption from state and local taxes is an important benefit to servicemen, helping to offset low pay and difficult working conditions. Military officials also point out that most base commanders impose restrictions on the purchase of cigarettes in an effort to reduce illegal sales. There is little reason to expect that the military sales exemption will be repealed by Congress. Therefore, the most reasonable solution appears to be close cooperation between military officials and state tax administrators in states where the military privilege is being abused.

Indian Reservations

The Commission concludes that the illegal sale of cigarettes from Indian reservations is a growing problem in a number of states, despite recent court recognition that states have the legal right to tax sales to non-Indians. The Commission, therefore, reaffirms its 1977 recommendation that state tax officials attempt to reach an agreement with Indian leaders for precollection of the cigarette tax sold on Indian reservations. The state should agree to refund the tax paid by residents of the reservations, as well as provide some compensation for revenue lost on sales to non-Indians, based on a mutually agreeable formula. The Commission also directs its staff to work with state tax officials, Indian representatives, the Department of Interior, and other interested parties to develop legislation that can be used by the states to implement these mutual agreements.

In ACIR's 1984 state survey on cigarette tax evasion, five states listed Indian reservation privilege abuses as their most serious tax evasion problem and three states listed it as their second most serious problem. The problem is most severe in the Western states of Montana, New Mexico, Arizona, and Washington, but in recent years has developed into a fairly serious problem in Florida and Wisconsin and is spreading to other states, such as New York.

The courts have restricted the states' taxing power on Indian reservations but have ruled in recent years that the cigarette tax should be imposed on non-Indians. However, some tribes continue to sell untaxed cigarettes to non-Indians despite seizures of cigarettes outside reservations by state law enforcement officials and on-reservation seizures in two states.

Several states such as South Dakota, Wisconsin and Minnesota have addressed the problem by precollecting the tax on sales to Indian reservations and refunding the cigarette tax to the Indians on the basis of average statewide per capita consumption. A number of Indian tribes, however, have been unwilling to enter into agreements with a state because of the revenue loss to the tribe, strong feelings about Indian sovereignty, and distrust of government officials.

Short of national legislation, the only reasonable solution to the problem appears to be mutual agreements between Indian tribes and state governments. These agreements might be facilitated by a cooperative effort among the affected states to develop consistent policies and similar state legislative responses to the cigarette tax evasion problem.

FOOTNOTES

[1]Proceedings of the Fifty-Seventh Annual Meeting," National Tobacco Tax Association, 1983, Federation of Tax Administrators, Washington, DC.

[2] See Kenneth E. Warner, "Cigarette Excise Taxation and Interstate Smuggling: An Assessment of Recent Activity," *National Tax Journal*, December 1982.

CIGARETTE BOOTLEGGING: HISTORY AND BACKGROUND

In 1977 the ACIR published a report titled, *Cigarette Bootlegging: A State and Federal Responsibility*. A major finding of that report was that:

> Tax evasion activities, which cost the high-tax states $391 million in revenue losses each year, are primarily due to state tax differentials and are a serious problem in 14 states and a moderate problem in another eight states.

A number of alternatives for dealing with this problem were examined, including incentive programs designed to encourage more uniform state cigarette tax rates. The Commission opted for a middle-of-the-road approach and recommended that "The Congress should give early and favorable consideration to legislation prohibiting the transportation of contraband cigarettes in interstate commerce." (The Commission also supported recommendations concerning cooperative state enforcement efforts, stronger state cigarette tax laws, and public information programs.) As a part of this recommendation the Commission proposed that Congress closely monitor the cigarette bootlegging problem in the event that stronger federal action, such as a federal incentive program designed to promote uniform state tax rates, might be warranted.

Due, in part, to the recommendations of the ACIR and the publicity generated by the report on cigarette bootlegging the Congress enacted PL 95-575 in October 1978. (The law is included in *Appendix F*.) This law prohibits the transportation, receipt, shipment, possession, distribution or purchase of more than 60,000 cigarettes not bearing

the tax indicia of the state in which the cigarettes are found. Violation of the statute is punishable by imprisonment for a term not to exceed five years and/or a fine of up to $100,000. Vehicles used to transport contraband cigarettes are subject to seizure.

Although the arrests, seizures and convictions under the contraband cigarette law have not been substantial, the attendant publicity and the federal enforcement presence appeared to have acted as a deterrent to cigarette bootlegging, at least initially. (ATF law enforcement activities are detailed in Chapter 3.)

However, there is still considerable profit to be made from cigarette smuggling although the risks have increased. As will be discussed in detail in this chapter, cigarette tax evasion or bootlegging is caused by the wide disparity in the price of cigarettes in various states. This disparity is largely due to the wide differences in tax rates imposed on cigarettes by state and local governments. The cigarette tax rate ranges from two cents per pack in North Carolina to 26 cents in Massachusetts and Connecticut. The disparity is even larger when local cigarette taxes and state and local sales taxes are included. For example, the sales tax on cigarettes adds 7 cents per pack in Connecticut and only 3 cents per pack in North Carolina. High local cigarette tax rates in New York and Chicago push the total tax rates in those cities above the highest state tax rates. This wide variation makes it very profitable to purchase cigarettes in a low-tax state such as North Carolina and sell them illegally in Connecticut or Massachusetts. The variation between North Carolina and Connecticut is 28 cents per pack (including state sales tax) or $2.80 a carton. This large difference provides a substantial profit opportunity for those willing to engage in the illegal transportation of cigarettes, or to hijack cigarettes (which increases the profit margin) or to divert cigarettes by other means from the legal distribution system.

TYPES OF EVASION ACTIVITIES

There are several distinct types of cigarette smuggling or tax evasion activities that constitute the major sources of revenue loss to the states.

Casual Cigarette Smuggling. This type of smuggling usually takes place across the border of neighboring states. In its most common form, a resident of a high-tax state who lives near the border or is on vacation in a low-tax state will buy cigarettes for personal use or for friends. A person remains a casual smuggler until he or she starts selling cigarettes for profit, at which point this activity is considered an organized criminal enterprise.

A 50-state (and DC) survey of cigarette tax administrators conducted by the ACIR in 1984 (hereafter referred to as the ACIR survey) found that

Table 2-1
TYPES OF SMUGGLING PROBLEMS IN THE STATES
(N = 49)

Type of Smuggling	Number of States Monitoring	Number of States Ranking (1 = Most Severe Problem)					
		1	2	3	4	5+	NR
Casual	28	10	6	2	1	0	9
Organized	10	3	2	0	1	1	3
Counterfeiting	5	0	1	1	0	2	0
Mail Order	10	0	1	4	3	1	0
Military Privilege Abuses	24	7	4	5	3	0	5
Indian Reservation Privilege Abuses	14	5	3	1	0	0	5
Stamping Agent Fraud	7	1	1	3	1	1	0
Hijacking	8	0	1	2	1	3	1
Other	10	1	5	0	1	0	3

SOURCE: Compiled by ACIR staff from questionnaire sent to cigarette tax administrators in the 50 states and the District of Columbia.

casual smuggling is the primary tax evasion problem in ten states and the second most serious problem in six states. (See Table 2-1.)

Organized or Commercial Cigarette Smuggling. This activity involves the transportation of cigarettes between states for profit. This type of smuggling can range from a small, part-time operation to a large-scale business run by organized crime figures. This type of smuggling is of greatest concern to the states. Fortunately, the incidence of this type of smuggling appears to be decreasing. In the ACIR survey only three states mentioned organized smuggling as their most serious problem. In a 1975 survey of the states, ten states listed organized smuggling as their most serious cigarette tax evasion problem.[1]

A related problem is the counterfeiting of state cigarette tax indicia (meter impression or decal), which surfaced as a problem in the early 1970s. In the 1984 ACIR survey, five states listed counterfeiting as a tax evasion problem. Counterfeiters illegally purchase unstamped cigarettes in low-tax states by paying the state taxes on the cigarettes and then giving the wholesaler a premium to purchase the cigarettes without stamps. The cigarettes are then transported to high-tax states, stamped with counterfeit stamps, and distributed through legitimate channels in collusion with retailers, vending machine operators, and wholesalers.

Mail-Order Purchase of Cigarettes. There are operators in low-tax states that sell cigarettes through the mail to customers in high-tax states, allowing the purchaser to avoid the higher state tax. The Jenkins Act (15 USC 375-378) was passed by Congress in 1949 to stop this type of tax evasion. However, because violations of this act were only a misdemeanor, all prosecutions were made under the mail fraud statute, as these violations were felonies. Federal enforcement and the mail fraud statutes have sharply reduced the incidence of mail-order smuggling.[2] The 1984 ACIR survey found that mail-order sales was a tax evasion problem in ten states, however only one of these states listed it as their first or second most serious problem. In contrast, the 1975 LEAA survey found that mail-order sales was a problem in 16 states, and nine of these states listed it as their first or second most serious problem.

However, the U.S. Postal Service which in the past played a large role in reducing the incidence of mail-order smuggling appears to be rethinking its role in this area.[3] In 1983, the Postal Inspection Service took the position that they do not have the authority to enforce the Jenkins Act. Subsequently, the chief postal inspector indicated that the Postal Service was prepared to resume its investigations in the event there was any resurgence in cigarette mail order selling. The elimination of enforcement activity by the Postal Service would create the potential for a resurgence of mail-order smuggling. Leon Rothenberg, executive secretary of the National Tobacco Tax Association made the following comment about this situation:

If the Post Office continues to take the position that cigarette tax evasion through mail-order sales is outside its jurisdiction, the states will have no protection against a resurgence in the cigarette mail-order business. If the Justice Department will not enforce the Jenkins Act—and there is no indication it will—and the Postal Service will not conduct mail-fraud investigations, it appears that the gates have opened to huge illicit profits from cigarette mail-order sales. The potential evasion is much greater than any which has occurred in the past, because the great increases in state cigarette taxes in the last year have added substantially to the profit incentive for mail-order sales.[4]

Purchase of Cigarettes Through Tax-Free Outlets. Untaxed cigarettes can be obtained from three primary sources: international points of entry, military post exchanges (PXs), and Indian reservations. The first source has created few problems for the states, although one state reported in the ACIR survey that smuggling from Mexico was a small problem.[5]

The purchase of tax-free cigarettes from military installations results in significant revenue losses in many states. (See Table 3-11) The ACIR survey found that seven states listed military privilege abuses as their most serious cigarette tax evasion problem and four states listed it as their second most serious problem.

The tax-free purchase and subsequent illegal sale of cigarettes from Indian reservations is a major problem in several western states as well as in Florida and Wisconsin. The 1984 ACIR survey found that eight states considered this their first or second most serious cigarette tax evasion problem. (See Table 2-1.)

11

A more detailed discussion of cigarette purchases at military installations and Indian reservations can be found in *Chapter 3*.

Other Tax Evasion Activities. The final type of cigarette tax evasion relevant to this study is the diversion of cigarettes within the legal distribution system. This can be done in several ways. First, state licensed stamping agents can divert cigarettes from the legitimate cigarette distribution system so they can be marketed without payment of state taxes. The volume of cigarettes moving through the normal distribution system and the accountability practices in some states offer an opportunity for diversion to illicit channels through numerous fraudulent accounting schemes. The ACIR survey found that stamping agent fraud was a problem in seven states—two of these states listed it as their first or second most serious problem. Second, cigarettes, cigarette stamps or stamping machines can be stolen. Cigarettes are stolen in route from the manufacturer to the wholesaler and the state stamp is counterfeited, stolen tax stamps are used or, in rare instances, the stamp can be affixed with a stolen stamping machine. In the ACIR survey eight states listed hijacking as a problem and one state mentioned theft of tax stamps. (The complete results of the ACIR survey are in *Appendix B*.)

STATE TAX DIFFERENTIALS

Cigarette bootlegging did not become a serious problem for state and local governments until the 1960s when, for the first time, tax differentials became large enough to encourage such activities. In 1960, the largest differential in cigarette taxes between any two states was eight cents and the widest variation in the retail price of cigarettes was about 10 cents. The price differential between North Carolina and New York was only 5.2 cents per pack. The largest differential was between North Carolina and Louisiana, which at that time had the highest state cigarette tax rate (8 cents), along with Montana and Texas.

By 1965, the largest variation in cigarette tax

rates had increased to 11 cents per pack and the variation in retail price to 12.9 cents. The largest variation in retail price was between North Carolina and New York. In only five years the price differential between these two states had increased by 7.7 cents; 5 cents of the difference was due to an increase in the New York cigarette excise tax.

A combination of the Surgeon General's 1964 report on smoking and health and the fiscal problems in many northeastern and midwestern states led to large tax rate increases in many states. As a result, by 1970 the high and low cigarette tax states were separated by 16 cents—2 cents in North Carolina and 18 cents in Pennsylvania. The largest retail price differential in 1970 was 16.5 cents.

At the time of the ACIR report on cigarette bootlegging (fiscal 1977) cigarette tax rates ranged from 2 cents in North Carolina to 21 cents in Connecticut and Massachusetts. The retail price of cigarettes, including taxes, varied from 36.6 cents in North Carolina to 58.4 cents in Connecticut—a 21.8 cents difference.

In the 1977 report it was noted that there was some evidence of a stabilization in cigarette tax rates. Between 1973 and 1975, only five states increased their cigarette tax rates compared with an increase in 26 states between 1970 and 1973. This trend continued in the 1975 to 1980 period when only 12 states increased cigarette tax rates—and one state reduced the tax rate. This restraint on the part of the states was likely due to improved fiscal conditions as a result of the strong economic recovery during this period and, possibly, due to increased concern about cigarette bootlegging. The ACIR report recommended that the states should exercise restraint in formulating cigarette tax policy; and the report received considerable media coverage which directed attention to the cigarette bootlegging problem.

Table 2-2
CHANGES IN STATE CIGARETTE TAX RATES, 1970-83

Fiscal Year Ended June 30	Total Actions	Number of Tax Increases	Number of Tax Decreases
1970-75	34	34	0
1975-80	13	12	1
1980-83	32	31	1

SOURCE: ACIR staff compilation from data in The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18, Table 6, p. 9, Table 7, p. 10.

Table 2-3
CIGARETTE TAX RATES BY STATE, IN CENTS PER PACK, 1976 AND 1983

State	Cigarette Tax Rate, 1976[1]	Sales Tax, 1976[2]	Cigarette Tax Rate, 1983[2]	Sales Tax, 1983[2]	Increase in State Taxes on Cigarettes 1976 to 1983
Alabama	12	2	16	3	5
Alaska	8	*	8	*	0
Arizona	13	2	13	4	2
Arkansas	17.75	**	21	**	3.25
California	10	3	10	5	2
Colorado	10	**	15	**	5
Connecticut	21	**	26	8	13
Delaware	14	*	14	*	0
Washington, DC	13	3	13	6	3
Florida	17	3	21	5	6
Georgia	12	1	12	2	1
Hawaii	11	2	23	4	14
Idaho	9.1	1	9.1	4	3
Illinois	12	2	12	4	2
Indiana	6	1	10.5	4	7.5
Iowa	13	2	18	4	7
Kansas	11	2	16	3	6
Kentucky	3	2	3	4	2
Louisiana	11	2	11	3	1
Maine	16	**	20	**	4
Maryland	10	2	13	**	1
Massachusetts	21	**	26	**	5
Michigan	11	2	21	3	11
Minnesota	18	**	18	6	6
Mississippi	11	2	11	4	2
Missouri	9	1	13	3	6
Montana	12	*	16	*	4
Nebraska	13	1	18	4	8
Nevada	10	1	15	5	9
New Hampshire	12	*	17	*	5
New Jersey	19	**	25	**	6
New Mexico	12	2	12	3	1
New York	15	2	21	3	7
North Carolina	2	2	2	3	1
North Dakota	11	2	18	4	9
Ohio	15	**	14	4	3
Oklahoma	13	**	18	**	5
Oregon	9	*	19	*	10
Pennsylvania	18	**	18	6	6
Rhode Island	18	**	23	**	5
South Carolina	6	2	7	3	2
South Dakota	12	**	15	**	3
Tennessee	13	2	13	4	2
Texas	18.5	**	18.5	**	0
Utah	8	2	12	5	7
Vermont	12	**	17	**	5
Virginia	2.5	2	2.5	3	1
Washington	16	3	23	6	10
West Virginia	12	2	17	5	8
Wisconsin	16	2	25	5	12
Wyoming	8	**	8	**	0

[1]As of July 1.
[2]As of November 1.

*No sales tax.
**Sales tax not applied to cigarettes.

SOURCE: ACIR staff compilation from data in The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18, Tables 6 and 15.

As indicated in *Table 2-2* the restraint on cigarette tax increases was short lived. Between 1980 and 1983 there were 31 states that increased cigarette tax rates. The main reason for these increases was the economic slump which caused serious fiscal problems for many states; the cigarette tax was a relatively easy target because of the negatives attached to smoking. Another contributing factor may have been the reports that cigarette bootlegging was on the decline after the passage of the federal legislation in 1978. (See *Table 2-3*.)

In 1983 the differential in cigarette tax rates was even wider, ranging from 2 cents in North Carolina to 26 cents in Massachusetts and Connecticut and 29 cents in New York City. The retail price of cigarettes varied from 75 cents in North Carolina to $1.135 in Connecticut; this 38.5 cents differential is 16.7 cents higher than the largest differential in 1977. Only 5 cents of this increase in the retail price differential was accounted for by higher state cigarette taxes (Connecticut in 1983). The remainder of the difference was accounted for by the effect of price increases on different bases. There was little difference in the price increases (less state and federal cigarette taxes) in the two states, but the price increase in cents per pack was higher in Connecticut than in North Carolina because the 1977 base price was higher in Connecticut. The increase in the differential would appear to offer a more attractive opportunity for smuggling, but a clear judgment cannot be made until the return on investment is considered. For example, the 1977 differential of 21.8 cents is 40 percent of the North Carolina (source state) retail price of 41.8 cents. In 1983 the differential of 38.5 cents was 51.3 percent of the North Carolina retail price of 75 cents. This would indicate that the profit potential in cigarette bootlegging has increased, although this could be partially offset by higher costs for such items as gasoline.

The large number of state tax increases and the federal tax increase has resulted in a sharp increase in the real price of cigarettes since 1981. From 1981 to 1983, the price of cigarettes (filter tip, king size) increased 35.5 percent, while the U.S. consumer price index increased only 9.4 percent. In contrast, between 1973 and 1981 the price of cigarettes increased 59.2 percent while the consumer price index increased 104.6 percent.

The large differentials in cigarette taxes are mainly between the low-tax, tobacco-producing states and the high-tax northeastern states, although high rates are becoming more common in other parts of the country. In 1976 the tax rates in 39 states ranged between 8 and 17.75 cents. In 1983 (as of November 1) there were 31 states falling within this range. In 1976 there were only four states with a cigarette tax rate above 18 cents. This number had increased to 14 by the end of 1983. (See *Table 2-4*.)

Table 2-4
DISTRIBUTION OF CIGARETTE TAX RATES, 1976, 1980, 1984

Rate (in cents)	July 1 1976	July 1 1980	January 1 1984
2	1	1	1
2.5	1	1	1
3	1	1	1
6	2		
7		1	1
8	3	2	2
9	3	2	
9.1		1	1
10	4	5	1
10.5		1	1
11	6	4	2
12	9	8	4
13	6	5	5
14	1	3	2
15	2	2	3
16	3	3	3
17	1	1	3
17.75	1	1	
18	3	4	6
18.5	1	1	1
19	1	1	1
20			1
21	2	3	4
23			3
25			2
26			2
Median Rate	12¢	12¢	15¢

SOURCE: The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18, Table 7, pp. 12-13.

CIGARETTE TAX RATES AND PER CAPITA SALES

A state's per capita cigarette sales and its cigarette tax rates are closely related. (See *Tables 2-5* and *2-6*.) All but five of the high-tax states have per capita consumption well below the U.S. average. The exceptions are Arkansas, Florida, Maine, Michigan, and Rhode Island. Florida's per capita cigarette sales are slightly below the U.S. average, but because of Florida's tourist trade, per capita sales should be well above the U.S. average. Tourism tends to inflate per capita sales figures. This is also the probable cause of the higher than average sales in Maine. In 1981 Maine's tourist expenditures were 39.1 percent above the U.S. average. The relatively high per capita sales in Rhode Island can be explained by the fact that it is a small state bordered by two populous states with higher cigarette tax rates. The reasons for higher than expected per capita sales in Michigan and Arkansas are not as clear-cut. Until Michigan raised the cigarette tax from 11 to 21 cents in 1982, per capita sales were generally 5 to 7 percent above the national average, as might be expected in a high-income, industrialized state. In 1983, after the cigarette tax increase, per capita sales were slightly below the U.S. average. Arkansas is a real puzzle. Per capita sales in 1983 were only slightly below the U.S. average although Arkansas is a low-income state and has the highest tax rate in the region. In 1974 per capita sales in Arkansas were almost 16 percent below the U.S. average, but since that time per capita sales have increased 16.7 percent compared with an 0.8 percent decline nationally. Arkansas maintained its tax rate at 17.75 cents per pack during most of that period, then raised the rate to 21 cents in March 1983.

In all but four cases, per capita sales in the low-tax states are comfortably above the U.S. average. Idaho is an exception because of the large Mormon population, as most followers of this religion do not smoke. Mississippi is a low-income state and could be expected to be well below the national average, but is only slightly below average in per capita sales. South Carolina is only slightly above the U.S. average despite a very low tax rate, mainly because the state borders North Carolina which has the lowest tax rate in the nation. In California per capita sales were 14 percent below the national average although sales should be well above average because California is a high-income state and

Table 2-5
COMPARISON OF PER CAPITA SALES IN HIGH AND LOW CIGARETTE TAX STATES, FY 1983

High-Tax States (20 cents or more)	Per Capita Sales As Percent of U.S. Average
Arkansas	99.4
Connecticut	88.8
Florida	99.1
Hawaii	62.1
Maine	105.1
Massachusetts	93.0
Michigan	99.6
New Jersey	94.2
New York	96.7
Rhode Island	105.4
Washington	79.5
Wisconsin	82.5
Unweighted average	92.1
Low-Tax States (11 cents or less)	
Alaska	114.1
California	86.0
Idaho	86.4
Indiana	111.0
Kentucky	156.1
Louisiana	103.8
Mississippi	99.6
North Carolina	131.8
Nevada	123.6
South Carolina	101.8
Virginia	112.3
Wyoming	109.6
Unweighted Average	111.3

SOURCE: ACIR staff compilation from data in The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18, Tables 6 and 15.

has the lowest cigarette tax rate in the region. Per capita sales in California have generally been below the U.S. average since the early 1970s, but were only 5.7 percent below the average in 1978. The reason for below average consumption in Cali-

Table 2-6
PER CAPITA SALES BY TAX RATE, FY 1983

Tax Rate (cents)	Number of States	Tax Paid Sales (in millions of packs)	State Population (in thousands)	Per Capita Sales (in packs)	Per Capita Sales as Percent of U.S. average
2-11	12	7,940.2	60,695	130.8[1]	101.6%
12-16	21	10,009,5	79,616	125.7	97.6
17-20	9	5,690.9	46,518	122.4	95.0
21 +	9	5,602.8	47,151	118.8	92.2

[1]Per capita consumption is 147.5 packs if California and Idaho are excluded. These two states have below average consumption because of demographic and religious factors.

SOURCE: ACIR staff compilation from The Tobacco Tax Institute, The Tax Burden on Tobacco, Washington, DC, 1983, Vol. 18, Table 6, page 9, Table 10, p. 25 and U.S. Bureau of the Census, Population Estimates and Projections, Washington, DC, Government Printing Office, July 1983.

fornia appears to be because of the large Hispanic population, as this ethnic group smokes less than the average. (See Table 5-3.) From 1978 to 1983, per capita sales in California declined about 12 percent compared with a 3.7 percent decline nationally.

Cigarette bootlegging has caused a significant shift in per capita sales among the states. In 1960, cigarette sales in the northeastern states were well above the national average, while sales in the southern states were considerably below the national average. (See Table 2-7.) This significant divergence was due largely to economic and cultural factors as there was little evidence of cigarette smuggling in 1960. By 1965, the cigarette sales patterns had begun to change in favor of the southern states, although sales were still significantly higher in the northeastern states. By 1976, widespread cigarette smuggling had reduced cigarette sales in the northeastern states to well

below the national average, while sales in several southern states had risen substantially above the national average. To illustrate, per capita cigarette sales in six of the northeastern states most affected by cigarette bootlegging (Connecticut, Massachusetts, New Jersey, New York, Pennsylvania, and Ohio) were 7.5 percent above the national average in 1960 and 11.7 percent below the national aver-

Table 2-7
PER CAPITA CIGARETTE SALES AS PERCENT OF NATIONAL AVERAGE, BY REGION, SELECTED YEARS, 1960-83

Region	1960	1965	1970	1976	1983
New England	113.0	113.0	108.6	101.3	104.3
Mideast	108.9	104.7	100.0	94.1	99.4
Great Lakes	102.0	104.3	104.0	101.1	102.0
Plains	91.7	90.5	92.8	94.0	88.3
Southeast	83.6[1]	86.8[4]	98.6	111.3	109.4
Southwest	86.3	92.6	89.6	90.1	91.3
Rocky Mountain	77.5[2]	87.8	80.6	89.2	86.5
Far West	106.2[3]	103.4[3]	100.9	94.2	88.1
Addendum:					
CT, MA, NY, NJ, PA, OH	107.5	104.5	99.4	88.3	96.6
NC, KY, VA	91.8[1]	98.2[4]	114.7	151.9	130.6

[1]Data not available for North Carolina and Virgnia as these states did not levy a cigarette tax in 1960.
[2]Data not available for Colorado.
[3]Data not available for Oregon.
[4]Data not available for North Carolina.

age in 1976. Comparable data for the three lowtax southern states of North Carolina, Kentucky, and Virginia are not available as Virginia did not adopt a cigarette tax until fiscal 1961 and North Carolina enacted its first cigarette tax in fiscal 1970. However, in 1960 per capita sales in Kentucky were 8.2 percent below the national average, in 1965 per capita sales in Kentucky and Virginia were 1.8 per-

cent below the national average, and in 1976 per capita sales for Kentucky, Virginia, and North Carolina were 51.9 above the U.S. average. The peak years for consumption in the six northeastern states noted above were the early to mid-1960s, while the peak year for each of the three low-tax southern states was 1976. (See *Appendix Table C-2*.)

Table 2-8
UNFAIR CIGARETTE SALES LAWS

	Presumptive Mark-Up			
	Wholesaler		Retailer	
State	**Cost of Doing Business (%)**	**Cartage (%)** (if performed and specified)	**Cost of Doing Business (%)**	**Cartage (%)** (if performed and specified)
Alabama[1]		------No Unfair Sales Law------		
Alaska		------No Unfair Sales Law------		
Arizona[9]		------No Unfair Sales Law------		
Arkansas	2	¾	6	
California		------No Unfair Cigarette Sales Law------		
Colorado		------Unfair Practices Act Only[2]------		
Connecticut	2	¾	8	
Delaware	5[3]		8	
Washington, DC		------No Unfair Sales Law------		
Florida		------No Unfair Sales Law------		
Georgia[4]		------No Unfair Sales Law------		
Hawaii		------No Unfair Sales Law------		
Idaho	2	¾	6	¾
Illinois		------No Unfair Sales Law------		
Indiana	4	1	8	
Iowa	3	½	6	
Kansas		------No Unfair Sales Law------		
Kentucky	2	¾	8	
Louisiana	2	¾	6	¾
Maine	2[5]	¾	6	¾
Maryland	5[6]	¾	8	¾
Massachusetts	2	¾	12.4	
Michigan		------Unfair Practices Act Only[2]------		
Minnesota	4		8	
Mississippi	2	1	6	
Missouri		------No Unfair Cigarette Sales Law------		
Montana	5	¾	10	
Nebraska	4	¾	8	
Nevada		------No Unfair Sales Law------		
New Hampshire		------No Unfair Sales Law------		
New Jersey	5¼	¾	8	

UNFAIR CIGARETTE SALES LAWS

Unfair cigarette sales laws prohibit cigarette sales below cost and establish minimum markups which are presumed to reflect business costs. The specified markups are 2 to 5 percent for retailers. Violators may be subject to injunctions by the state tax commissioner, fines up to $1,000, imprisonment, and private injunctions and damage suits.

Unfair sales or practices laws apply to cigarettes as well as other goods, and except for their broader scope, are very similar to unfair cigarette sales laws—sales below cost are prohibited, and costs are presumed to include a minimum specified

Table 2-8 (continued)
UNFAIR CIGARETTE SALES LAWS

	Presumptive Mark-Up			
	Wholesaler		Retailer	
State	Cost of Doing Business (%)	Cartage (%) (if performed and specified)	Cost of Doing Business (%)	Cartage (%) (if performed and specified)
New Mexico	2	¾	8	
New York	------No Unfair Sales Law------			
North Carolina	------No Unfair Cigarette Sales Law------			
North Dakota	------Unfair Practices Act Only[2]------			
Ohio	2		6	
Oklahoma	2	¾	6	¾
Oregon	------No Unfair Sales Law------			
Pennsylvania	4		6	
Rhode Island	2	¾	6	¾
South Carolina	------Unfair Practices Act Only------			
South Dakota	4	1½[8]	8	
Tennessee	3½	½	8	
Texas[7]	None		None	
Utah	None	¾	6	¾
Vermont	------No Unfair Sales Law------			
Virginia	2	¾	6	¾
Washington	4	1½	10	
West Virginia	2		7	
Wisconsin	3		6	
Wyoming	------Unfair Practices Act Only------			

[1]Unfair Sales Law omitted in 1975 when new code was adopted.
[2]No presumptive mark-up specified; basic cost only.
[3]Less 2 cents per carton allowed for "cash and carry" sales.
[4]H.B. 1071 repealed the Unfair Cigarette Sales Act effective 7/1/80.
[5]Except sales by cigarette distributors to wholesale dealers or operators of 15 or more vending machines are not subject to 2 percent minimum mark-up.
[6]Includes cigarette tax payable (normally the tax forms part of the base for calculating the percent mark-up).
[7]Texas has an Unfair Grocery Sales Act which may be applicable to cigarettes; presumptive mark-ups are not specified.
[8]Effective 7/1/81 (up from 0.75 percent, S.B. 99, Laws 81).
[9]Repealed (Chapter 29 Laws 1982, 3/31/82).

SOURCE: The Tobacco Merchants Association of the U.S., January 1984.

markup. These laws have no effect on cigarette prices in states with an unfair cigarette sales law because the cigarette laws set higher markups and are applied more directly. The general laws may have some effect on cigarette prices in states that do not have unfair cigarette sales laws.

As of January 1, 1984, there were 27 states that had unfair cigarette sales laws or unfair sales laws applying to cigarettes. There were five states that had an unfair practices act only. (See *Table 2-8.*) Since 1975, seven states have repealed unfair sales laws as applied to cigarettes.

There has generally been a belief that these laws are partly responsible for the variation in the price of cigarettes among the states. That is, cigarettes in a state without an unfair sales law could be expected to sell at a lower price than a state with an unfair sales law, all other factors, such as tax rates, being equal. To test this hypothesis, the retail price of cigarettes in 1982 was estimated for 48 states and the District of Columbia (Alaska and Hawaii were excluded). The independent variables were the tax rate (state and local), wage rates and operating expenses for tobacco wholesalers, a dummy variable for western states, a dummy variable for northeastern states, and a dummy variable for states with unfair sales or cigarette sales law (the actual markups were used in another version of this equation). The equation had an R^2 of .946 with a standard error of 1.86 cents. The tax rate was the most significant variable, explaining 88 percent of the variation in retail cigarette prices among the states. The other statistically significant variables (at the 95 percent confidence level) were wage rates and the dummy variables for western and northeastern states. Neither of the two unfair sales variables tested were statistically significant. Manchester (1973) reached the same conclusion.[6] He concluded that the customary markups probably exceeded the minimum specified in these laws and thus unfair sales laws have no effect on retail prices, indicating that these laws do not contribute to the bootlegging problem. Another reason why these laws do not measurably affect the price of cigarettes is that they are not generally enforced.

FOOTNOTES

[1] Law Enforcement Assistance Administration, U.S. Department of Justice, *Combatting Cigarette Smuggling*, Washington, DC, January 31, 1976).

[2] Because of successful prosecutions by the U.S. Postal Service under the mail-fraud statutes, the number of tobacco mail-order companies declined 70 percent between 1974-77. Over that period, the weekly average shipments of cigarettes dropped from 200,000 carton to 1,700 cartons. National Tobacco Tax Association, *Proceeding of the Fifty-Seventh Annual Meeting*, 1983, Federation of Tax Administrators, Washington, DC, p. 12.

[3] In a November 27, 1984, letter to the National Association of Tax Administrators, the office of the chief postal inspector affirmed the U.S. Postal Service's policy of considering mail-fraud investigations of major cigarette mail-order operations, although indicating that only selected major operators could be investigated.

[4] National Tobacco Tax Association, *Proceeding of the Fifty-Seventh Annual Meeting*, 1983, Federation of Tax Administrators, Washington, DC, p. 12.

[5] In the July 21, 1983, issue of the *Federal Register*, Vol. 48, No. 141, an advance notice of proposed customs regulations amendments relating to duty-free stores was published. One of the reasons given for these proposed amendments was that duty-free shops, especially on the United States-Mexico border have become major wholesalers of certain goods. In some Mexican border communities, the smuggling of cigarettes, alcoholic beverages and luxury items purchased from duty-free stores and smuggled back into the United States is a constant source of friction between customs and retail merchants. These merchandise are free of state, federal, and local prices and can be sold at sharply reduced prices.

In a November, 1984 contract, the Customs Service indicated that they do not currently consider cigarette smuggling a serious problem.

[6] Paul B. Manchester, "An Econometric Analysis of State Cigarette Taxes, Prices, and Demand, With Estimates of Tax-Induced Interstate Bootlegging," a thesis submitted to the University of Minnesota, August 1973, pp. 18-19.

FEDERAL AND STATE POLICIES

FEDERAL AND STATE
LAW ENFORCEMENT ACTIVITIES

Federal Law Enforcement

Until 1978 the smuggling of cigarettes across state lines was not a federal offense—the only federal law dealing directly with cigarette bootlegging was the *Jenkins Act* (15 USC 375-378), enacted in 1949 to deal with mail order sales of cigarettes from low-tax states.[1]

In October 1978 the *Contraband Cigarette Act* (PL 95-575) was passed. This law makes it illegal to transport, ship, receive, possess, distribute, or purchase more than 60,000 cigarettes not bearing tax indicia of the state in which they are found. Tobacco manufacturers, tobacco exporters, common carriers transporting cigarettes under proper bill of lading, and state-licensed tobacco industry members are exempt under this statute. Violation of the statute is punishable by imprisonment for a term not to exceed five years and/or a fine of up to $10,000. Conveyances used to transport contraband cigarettes are subject to seizure. The law also authorizes the Secretary of the Treasury to issue regulations requiring that persons engaged in transactions involving more than 60,000 cigarettes maintain disposition records to show the name, address, destination, vehicle license number, driver's license number, and signature of the purchaser as well as a statement of the purpose of the purchase and the identity of the principal recipient if the purchaser is acting as an agent. Falsification of

the required disposition records is punishable by imprisonment not to exceed three years and/or a fine not to exceed $5,000. The enforcement agency is the Bureau of Alcohol, Tobacco, and Firearms (ATF) in the U.S. Department of the Treasury.

The law does not allow for open inspection of records. Consent or a judicial order are needed to examine the required disposition records and such inspections are limited only to those records specified under the law and its implementing regulations.

Congress explicitly stated its intent that primary responsibility for cigarette tax enforcement should remain at the state level with the federal effort to be concentrated on those investigations which are beyond the jurisdictional and resource abilities of state agencies. The intent is found in Section 2345(b) of the law which reads as follows:

> Nothing in this chapter shall be construed to inhibit or otherwise affect any coordinated law enforcement effort by a number of states, through interstate compact or otherwise to provide for the administration of state cigarette tax laws, to provide for the confiscation of cigarettes and other property seized in violation of such laws and to establish cooperative programs for the administration of such laws.

Have state enforcement efforts been relaxed because of the federal law? This question will be discussed in the next section of this chapter.

The ATF Contraband Cigarette Program was designed to accomplish four major goals. First, to assist state enforcement and revenue agencies to collect all revenue due under state cigarette tax statutes. Second, to reduce the interstate trafficking in cigarettes by organized smuggling groups. Third, to prosecute significant violators of the *Contraband Cigarette Act*. Fourth, to re-establish state control over the collection of their cigarette tax revenues thereby minimizing the need for federal involvement.

To achieve these goals ATF used several different approaches—the first part of the ATF program is based on the use of traditional law enforcement methods against organized smuggling operations. ATF also trains state and local personnel and assesses state cigarette auditing and tax collection systems. The remainder of the program is designed to implement the recordkeeping provisions of the *Contraband Cigarette Act*, and foster voluntary

compliance with the act and its regulations.

ATF program strategies have evolved as more knowledge was gained about the intricacies of the problem. Initial strategy was aimed at increasing knowledge about the problem and the distribution system and publicizing the requirements and penalties of the law. ATF focused its strategies on those elements of the tax evasion problem which were clearly interstate in nature and whose disruption would have the greatest impact on returning revenues to the state.

Both state and federal efforts were initially concentrated against over-the-road smuggling. However, as cases developed it became clear that a major source of illicit cigarettes resulted from diversion schemes and manipulation of cigarette accountability records. These operations provide large volumes of cigarettes without the cost and risk (both of which have increased in recent years) of shipping long distances from a low-tax state. These cigarettes can then be stamped with either counterfeit, stolen or modified equipment to avoid payment of the appropriate state cigarette taxes. The final product is cigarettes with apparently authentic state tax indicia which can be distributed and sold through normal distribution channels. The essential element of this type of organized activity is manipulation of bookkeeping and account records in the legal distribution system. (See sample cigarette tax forms in *Appendix D*.) In general, it was difficult to obtain sufficient evidence to bring indictments against these operators. However, both audits and inspections and traditional methods of law enforcement investigations such as undercover penetration, informant development and surveillance worked well in establishing cases against organized cigarette smuggling operations. The auditing of records indicating shipments from manufacturers to distributors and from distributors to other stamp affixing agents combined with a good state inspection program has been particularly helpful in uncovering illicit diversion of cigarettes. For example, an ATF initiated task force in New York led to the identification of sources of illegal diversion of cigarettes and civil assessments by New York State in excess of $1.5 million. (See details in box on page 44.)

ATF Law Enforcement Results

The following are examples of investigations involving contraband cigarette enforcement that

ATF has been involved in recently:

- In December 1982, the principal officer of the third largest licensed cigarette stamping agent in New York state, was arrested for his involvement in counterfeiting, New York city/ state cigarette tax indicia. Subsequently, this individual and the corporation were convicted for possession of contraband cigarettes as part of a multimillion dollar counterfeiting operation that was uncovered by ATF and New York state authorities. Subject was sentenced to serve 18 months in the custody of the attorney general and fined $30,000. The corporation pled nolo contendere and agreed to pay a $25,000 fine.

- In December 1982, ATF and Michigan authorities recovered 94 cases of contraband cigarettes. In February 1983, as a result of an ATF undercover investigation relating to the source of the 94 cases, an additional 50 cases were recovered when they were delivered to the undercover special agent. Three suspects were arrested at the time of delivery. All of the cigarettes were part of a load of 1,480 cases hijacked in Dayton, Ohio.

- In January 1983, ATF agents in Maryland arrested three persons and recovered 1,000 cases of cigarettes that had been previously hijacked in Georgia.

- In March 1983, ATF agents in South Carolina seized 100 cases of contraband cigarettes that were part of a shipment of cigarettes that were hijacked in Virginia.

- In December 1983, ATF agents arrested three suspects and recovered 1,023 cases of cigarettes in North Carolina that had been hijacked from an interstate carrier. The cigarettes were destined for Oklahoma.

- In February 1984, ATF agents arrested two armed suspects and seized 3,194 cartons of untaxed cigarettes in West Virginia. The cigarettes had been purchased in North Carolina, and were destined for Michigan.

Tables 3-1 to 3-4 summarize ATF law enforcement activity from fiscal year 1979 through the first nine months of fiscal year 1984. The main conclusions to be drawn from this data are (1) that ATF activity has declined markedly since 1981, due mainly to uncertainties about their budget and to a decline in smuggling activity; (2) a number of persons involved in cigarette smuggling had prior felony convictions and/or organized crime ties; (3) a relatively small percentage of those persons arrested for cigarette smuggling were convicted and very few were sent to jail. This is a somewhat surprising result given the type of individual involved in cigarette smuggling.

State Law Enforcement

Most states do not devote substantial resources to enforcing state cigarette tax laws. This is mainly because the cigarette tax accounts for a small percentage of total state revenue and most state officials and legislators do not consider cigarette bootlegging a high-priority problem, particularly in recent years. However, even in the mid-1970s when cigarette smuggling was a serious, well-documented problem, most states devoted little effort to enforcement. It is difficult even under the

Table 3-1
DISPOSITION OF SUSPECTS APPREHENDED THROUGH
CONTRABAND CIGARETTE PROGRAM, FY 1979-84

	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
Cases Recommended for Prosecution	5	16	23	7	8	7
Defendants	6	29	55	20	26	13
Indicted	0	15	23	12	14	2
Prosecutions	6	19	17	10	24	2
Convictions/Guilty Plea	6	19	9	10	14	2
Awaiting Disposition	0	0	0	0	10	3

Table 3-2
LAW ENFORCEMENT RESULTS, FY 1979-84

	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
ATF Arrests	6	19	25	16	8	11
ATF State/Local Cooperative Arrests	24	56	7	0	2	2
Total Arrests	30	75	32	16	10	13
Suspects Referred to Other Agencies	13	38	7	2	0	3
ATF Cigarette Seizures (cartons)	8,512	29,804	104,892	2,357	13,674	4,087
ATF State/Local Cooperative Seizures (cartons)	17,563	40,367	20,555	8,580	—	61,993
Total	26,075	70,171	125,447	10,937	13,674	66,080

Table 3-3
DISPOSITION OF FEDERAL DEFENDANTS IN BUREAU OF ALCOHOL, TOBACCO, AND FIREARMS CONTRABAND CIGARETTE CASES, FY 1979-84

	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
Suspended Sentence or Probation	4	13	20	6	1	N.A.
Imprisonment up to One Year	1	2	3	—	—	N.A.
Imprisonment Over One Year and up to Five Years	0	3	7	2	2	N.A.
Other	1	1	6	2	7	N.A.
Total	6	19	36	10	10	N.A.

Table 3-4
CHARACTERISTICS OF FEDERAL DEFENDANTS IN BUREAU OF ALCOHOL, TOBACCO, AND FIREARMS CONTRABAND CIGARETTE CASES, FY 1979-84

	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
Prior Felony Convictions	4	9	2	7	6	N.A.
Other Criminal Record	—	—	—	1	2	N.A.
Prior Organized Crime Tie	3	12	1	—	—	N.A.
Over 2,000 Cartons Involved	1	15	5	—	—	N.A.
Involved Interstate Transportation	6	18	5	—	—	N.A.
Carrying Firearms at Time of Arrest	4	2	0	0	3	N.A.

SOURCE (Tables 3-1 to 3-4): U.S. Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms.

most favorable circumstances to convince state decisionmakers that additional expenditures for cigarette law enforcement are a wise investment. State governments have pressing needs in many areas, and tax administration has tough competition for limited state resources.

The entry of the federal government into the cigarette tax law enforcement field gives state legislatures an additional excuse to skimp on their cigarette law enforcement budgets. The ACIR survey on cigarette bootlegging attempted to gather data on state budgets for enforcing cigarette tax laws for fiscal years 1979 and 1984. However, many states could not provide specific figures because law enforcement expenditures for cigarette taxes are often lumped together with enforcement expenditures for other taxes. The information provided indicates that most states spend little if any money on enforcing cigarette tax laws, as cigarette tax evasion is little or no problem in the majority of the states. Even those states that acknowledge a serious cigarette tax evasion problem spend relatively modest amounts. For example, Massachusetts estimates a revenue loss of $13 to $16 million due to tax evasion activities yet allocates only two person-years to cigarette tax enforcement plus two person-years for audits. This small effort may be related to the fact that Massachusetts believes that its most serious tax evasion problem is casual smuggling, which is generally of small concern to most states, partly because this type of activity is difficult to control with normal law enforcement techniques.

As the NTTA Committee on Tax Evasion stated:

> High tax states bordering low tax states have the additional problem of the so-called "casual" bootlegger. I have often wondered if we, as responsible administrators, have given this problem enough thought. How many individuals make special trips across state lines to purchase five or ten cartons for the family or their co-workers at the factory? What about the small retailer who buys to resell to his known customers? How should we treat the returning vacationer who purchased 30 cartons in the low-tax state.
>
> We honestly have not given it enough thought. The dollar figure for tax evasion by casuals might surprise most of us.[2]

This parsimony is not just limited to the states. The federal government has threatened on several occasions since 1980 to reduce or eliminate the funds appropriated to ATF for enforcement of the *Contraband Cigarette Act*. In a sense, the ATF law enforcement program has nearly become a victim of its own success, as it appears to have successfully reduced cigarette bootlegging to manageable levels.

There was concern in Congress when the federal *Contraband Cigarette Act* was passed that the states would reduce their law enforcement efforts and rely mainly on the federal enforcement presence. The ACIR survey asked whether states had changed their level of law enforcement activity due to the federal legislation. There were eight states that indicated a reduction in law enforcement activity in response to this question. Four states attributed the reduction to budget problems, two states to reduced levels of bootlegging and only two states attributed the reduction to increased federal law enforcement activity. Four states indicated that their law enforcement efforts were increased because of the federal legislation. Overall it appears that the majority of states have reduced the amount of resources allocated to enforcing cigarette tax laws. For example, Massachusetts reported a reduction of effort from five person-years in 1979 to two person-years in 1984; Pennsylvania reported expenditures of $2.2 million in fiscal year 1979 and only $400,000 in fiscal year 1984; Minnesota reported expenditures of $280,000 in fiscal year 1979 and only $235,000 in fiscal year 1984; and Ohio reported reducing their cigarette tax enforcement staff by five during this period.

There are various reasons for the reduced level of state law enforcement activity in recent years, but the main reasons appears to be the reduction in the level of tax evasion activities, certainly a good reason for reducing the resources allocated for this purpose. Some states may be relying more on federal law enforcement than Congress intended, but this is of no immediate concern if, as it appears, the magnitude of the problem has been significantly reduced.

Although it seems logical to reduce enforcement effort as the seriousness of the problem declines, this can create problems as there is always the potential for cigarette smuggling to again become a major tax administration problem for many states. One state tax administrator listed several of the problems with an on-again, off-again enforcement program: (1) any deterrent effect due to visibility of

UNCOVERING A COUNTERFEITING OPERATION

Back in 1980, when the state special investigations bureau was set up in New York, we asked the Bureau of Alcohol, Tobacco and Firearms to assist in the transfer of this program from the state audit section, taxpayer assistance section, and so forth. During the transfer, every cigarette tax enforcement procedure was examined, and recommendations were made for their improvement. A lot of those recommendations are contained in the handbook that has been issued by ATF.

We used these procedures, developed back in 1980, in the detection of the latest counterfeiting case in New York, an operation uncovered in the latter part of 1982. It really was a classic, textbook piece of detection.

The first indication that a counterfeit problem was developing came through our retail-inspection teams. They identified cigarettes on the street which they believed did not "conform to code" (an old Pitney-Bowes term). That means simply that they felt there was something wrong with the indicia. They brought them into the state offices, and we tested them under procedures given us by the Meyercord Company. We sent them on to Meyercord, which tested them again, and felt there was something wrong. Finally, we sent the indicia to the ATF lab in Washington, and they came back with an affirmative answer: yes, these are counterfeit. Among other tests, a spectrograph analysis led them to this conclusion.

At the same time, our auditors (who are now part of our staff) were doing an audit of this stamper and found that there was a discrepancy between the number of cigarettes being purchased from the manufacturer and the amount of tax indicia being purchased from the bank. The agent was one of the largest-volume stampers in the state. The only indication we had that they might have had some criminal motivation was that they had had some financial trouble in the past.

We sat down with our information with ATF at this point and planned out our course of investigation, the procedures, observations, and so forth. It turned out that the warrants we eventually executed were federal warrants; we had decided to go after the counterfeiters under federal law.

When the warrants were executed, we found the counterfeit stamps in the den of one of the individuals arrested. They had been delivered in sheet form. This meant that they could not use the Meyercord machine to affix them, but had to do it by hand. At the time we captured them, however, they were adapting the sheets of stamps so that they could soon have used the Meyercord system. If that had happened, we would have suffered a much greater loss than in fact we did.

We detected the counterfeiting operation right at its beginning; we believe we got it within the first week or two after the cigarettes began to hit the street. Nevertheless, just within the course of our investigation, they got us for $700,000. You can see from this the enormous cost to New York if the operation had been permitted to continue.

There's nothing more I can tell you about the counterfeiting case except the final results: The agent was tried in federal court and sentenced to 18 months in prison and fined $30,000. The corporation was also fined $30,000. We issued an assessment for $3 million against both the agent individually and the corporation. We're currently tracking some of the monies made through the illegal enterprise. We believe we know where some of it went; a lot of it went out of the country. We're still looking into the source of the stamps, and we think we're getting close there.

We have other investigations under way with ATF that suggest both the existence of other counterfeiting operations and of a resurgence in over-the-road bootlegging. We have documented the involvement of organized crime in more than one case. This type of work really could not have been done without the aid of ATF. They developed the informants and handled the connections outside New York. We also benefit from being able to make federal cases out of incidents of tax evasion, rather than state cases.

What we have shown in this latest case is that we can detect a counterfeiting operation, and that we can prosecute such a scheme successfully in the courts.

Source: Urzi, Emanuel, "Cigarette Tax Evasion: Counterfeiting Operations," National Tobacco Tax Association, Proceeding of the Fifty-Seventh Annual Meeting, 1983, Federation of Tax Administrators, Washington, DC.

a regular enforcement program is lost as violators can afford to take their chances at getting caught; (2) the lack of a regular program hampers efforts to the casual smuggler; (3) the loss of potentially valuable criminal intelligence information can be quite important, particularly with nonresident organized smuggling groups—a consistent enforcement program must be maintained to maximize potential intelligence; (4) the lack of a regular enforcement program makes the manufacture and use of counterfeit tax indicia quite possible. This counterfeiting could continue until the activities were discovered by audit or accidentally uncovered during a periodic inspection. There could be substantial revenue losses to the state during the interim.

The best approach would be for states to maintain a regular law enforcement program appropriate to the current level of cigarette smuggling and carefully monitor cigarette smuggling activity, and then increase resources if cigarette tax evasion activities began to increase. To be more specific, the states should maintain a program that provides for: (1) routine inspections at the retail-trade level, checking on stamped cigarettes and random checks on the validity of indicia, (2) the surveillance of suspected individuals and activities, (3) the exchange of intelligence data and ideas with law enforcement agencies and neighboring states, (4) a strong audit program ensuring the use of manufacturers' print-out data, which lists amount of cigarettes shipped to each distributor.

State Cigarette Tax Laws

State laws prohibiting cigarette smuggling vary widely from state to state as do the powers of the agencies charged with enforcing these prohibitions. Despite this variance, there are some common statutory patterns that can be seen in most cigarette tax legislation.

Smuggling cigarettes is illegal in almost every state. In most states, it is a crime, punishable by fine and/or imprisonment, to possess, transport, deliver, or sell improperly stamped cigarettes.

The penalties range from a fine of a few hundred dollars in many states to fines of several thousand dollars and imprisonment for several years in Texas, Pennsylvania, New York, and Massachusetts. The heavier penalties generally apply only when large amounts of cigarettes are involved. For example, in Massachusetts illegal transportation of few-

er than 12,000 cigarettes is a misdemeanor, punishable by a fine of not more than $1,000 or by imprisonment for not more than one year, or both, whereas illegal possession or transportation of more than 12,000 cigarettes is a felony, punishable by a fine of not more than $5,000 or by imprisonment in state prison for not more than five years, or both. In Tennessee a person possessing, for purpose or sale or transporting, unstamped cigarettes in an amount less than 25 cartons is guilty of a misdemeanor, punishable by a fine of $100 to $1,000 and imprisonment of one month to one year, or both; possession and transportation of more than 25 cartons is a felony punishable by imprisonment in the state penitentiary for not less than one year or more than ten years.

In addition to criminal penalties, a number of states have statutory provisions for the confiscation of illegal cigarettes and motor vehicles used to smuggle cigarettes.

States that place cigarette tax violations in the misdemeanor class tend to punish possession, sale, and delivery of unstamped cigarettes in a smiliar manner. States that place cigarette tax evasion in the felony class usually attach misdemeanor penalties for possession or sale of unstamped cigarettes when intent to defraud cannot be proved and felony penalties where intent can be proved.

Many states that treat cigarette smuggling as a felony also differentiate between first and repeat offenders. For example, in Nevada, the first offense is a misdemeanor, but subsequent offenses are felonies punishable by a fine of up to $5,000 and/or imprisonment of up to ten years.

In Ohio transportation of untaxed cigarettes, possession of untaxed cigarettes, and possession with intent to sell (wholesale value of $60 or more) are first offense felonies, but penalties are sharply increased for second offenses. Penalties for the first offense are six months to five years in prison and/or a maximum fine of $2,500; penalties for the second offense are two to 15 years in prison and/or a maximum fine of $7,500.

Although states are not uniform in their treatment of sellers, transporters, and possessors of unstamped cigarettes, a great degree of uniformity exists in the treatment of persons who counterfeit or alter tax stamps. Such offenders are often punished as felons and almost always punished more severely than other cigarette tax violators. For example, in Texas, counterfeitors can receive a prison sentence of up to 20 years. In Pennsylvania,

State										
New York	X				X	X	m		X	X
North Carolina			X			X		X		
North Dakota	X					X				
Ohio	X	X	X	X	X	X	n		X	X
Oklahoma	X			X		X		X		
Oregon		X	X			X		X		
Pennsylvania			X	Xo			p		X	
Rhode Island					X	X		X		X
South Carolina			X					X		X
South Dakota			X					X		X
Tennessee	X		X	X	X	X	q	X		
Texas	X		X	X	X	X	r		X	
Utah						X		X		
Vermont					X	X		X		
Virginia	X	X		X		X		X		
Washington	X	X	X	X	X	X		X		
West Virginia	X		X	Xs		X		X		
Wisconsin			X	X	X	X	t		X	
Wyoming					X	X		X		

Footnotes:

a Possession or sale of untaxed cigarettes is a felony if tax value is $100 or more.

b Transportation for sale or possession of 20,000 or more cigarettes is punishable by imprisonment of one to five years and a fine of $500 to $5,000.

c Possession of ten or more packs of untaxed cigarettes is punishable by imprisonment of not more than 90 days and a fine of $100 to $1,000.

d Transportation of over 40,000 cigarettes with intent to evade tax is a felony.

e Falsification of records is a felony punishable by confinement for one to two years. Possessing, selling or offering to sell contraband cigarettes by unlicensed persons is punishable by imprisonment of two to five years.

f Transportation without invoice or delivery tickets is a felony.

g Possession of more than 12,000 cigarettes by an unlicensed person is a felony, punishable by a fine of not more than $5,000 and/or imprisonment for not more than five years.

h Transportation, acquisition or possessing cigarettes with wholesale value of $50 or more is a felony, punishable by imprisonment of up to five years and/or a fine of not more than $5,000.

i Counterfeiting, possessing, receiving, or transporting more than 20,000 untaxed cigarettes is a felony punishable by imprisonment of up to five years and/or a fine of up to $5,000.

j Violation not otherwise specified is a misdemeanor, punishable by confinement in county jail for not more than one year and/or a fine not to exceed $500.

k Fraudulent activity relating to tax stamps is a felony punishable by imprisonment for not less than two years nor more than five years.

l Felony if committed by a corporation

m Felony after two convictions regardless of quantity and for the transportation for sale of more than 20,000 cigarettes.

n Felony if wholesale value is in excess of $60.

o Possession of more than 200 but less than 1,000 cigarettes is punishable by imprisonment of not more than 90 days and/or a fine of $300. Possession of 1,000 or more cigarettes is punishable by imprisonment of not more than three years and/or a fine of not less than $1,000 or more than $15,000.

p Possession of any pack of cigarettes with intent to evade tax is a felony, punishable by imprisonment for not less than two years nor more than five years.

q Possession of over 25 cartons of cigarettes is a felony, punishable by one to ten years in prison.

r Transportation of more than 200 unstamped cigarettes and possession of 10,000 or more unstamped cigarettes is a felony punishable by either/or confinement in the state penitentiary for not more than two years or in the county jail from one to six months and a fine of from $100 to $5,000.

s Possession of 400 to 20,000 cigarettes is punishable by up to six months imprisonment and a fine of not over $200. Possession of over 20,000 cigarettes is punishable by imprisonment of up to one year and a fine of not over $1,000.

t Possession or transportation by unauthorized persons of fewer than 6,000 cigarettes is punishable by a fine of not more than $200 and/or imprisonment of not more than six months. For 6,000 to 36,000 cigarettes the penalty is a fine of not more than $1,000 and/or imprisonment of not more than one year. For more than 36,000 cigarettes the penalty is a fine of not more than $10,000 and/or imprisonment for not more than two years.

Source: Compiled by ACIR staff from data provided by state tax administrators.

Arizona, Kentucky, and Wisconsin, the maximum penalty for this crime is ten years imprisonment; in most states the maximum penalty is five years. In several states—for example, South Carolina, New Mexico, and Nevada—the penalty for counterfeiting is relatively minor or nonexistent.

Generally, the penalties for cigarette smuggling activities are not very heavy. (See *Table 3-5*.) Most states classify violations as misdemeanors. Only 16 states classify any violation (other than counterfeiting) as a felony. Very few states impose punishment that could be considered a real deterrent to violators. In the 1984 ACIR survey, 20 states provided information on the penalties imposed by the courts in cigarette smuggling cases. Other than a federal conviction in which a fine of $30,000 and 18 months imprisonment was imposed, only one state reported imposition of a jail term and that was for only five days. Many cigarette smuggling cases are not prosecuted, although cigarettes, and often vehicles, are usually confiscated. In cases of prosecutions the courts generally impose light fines and/or probation. The largest fine imposed was $2,000. One state reported 11 convictions out of 166 smuggling incidents in the past two years with an average fine of $129.

As might be expected, the penalties in low-tax states are unusually light. For example, in South Carolina, the only violation is possession of un-taxed cigarettes and the penalty is only a $20 to $100 fine. In Indiana, possession is also the only violation and the penalty is imprisonment of 10 to 90 days and a fine of $100 to $1,000. These states have no need for heavy penalties because they do not have smuggling problems. However, even the high-tax states with serious smuggling problems do not impose, in most cases, substantial penalties on violators of cigarette tax laws.

The lack of strong, uniform state laws against cigarette smuggling is a handicap to law enforcement officials, although the passage of the federal *Contraband Cigarette Act* has made this a less serious problem. In its 1977 report on cigarette bootlegging the ACIR made the following recommendations regarding state cigarette tax laws:

> The Commission concludes that most state cigarette tax laws do not adequately cover bootlegging activity and have weak penalty provisions. The result is that law enforcement efforts are hampered and bootlegging activity is not deterred. The Commission therefore recommends that officials in those states affected by cigarette smuggling examine their statutes and, where appropriate, broaden these laws to make a felony any act involving the shipment, sale, and possession of a substantial number of contraband cigarettes and to increase the penalty provisions. The Commission further recommends that state and local officials consider the transfer of criminal penalty provisions from tax law to penal law.

Since that recommendation was adopted in 1976, at least 15 states have increased the number of cigarette tax violations subject to penalty and/or increased the penalties of these violations. (Legislation to substantially increase penalties for cigarette smuggling is currently pending in Illinois. For example, the penalty for possession of 40,000 or more unstamped cigarettes would be increased from a misdemeanor punishable by up to one year in prison and a $1,000 fine to a felony, punishable by a one to three year prison term and a $10,000 fine.) There has been no action to transfer cigarette penalties from tax law to penal law, although the general view among law enforcement officials is that this change would result in a substantive improvement in cigarette tax compliance and judicial enforcement of cigarette tax laws. Increasing penalties for cigarette tax evasion violations will be a futile exercise unless judges impose more severe penalties. Many people, obviously including many judges, believe that cigarette smuggling is not a serious crime and violators should not be subject to heavy penalties. This lenient attitude is not a serious problem currently in light of the success of the federal *Contraband Cigarette Act* in reducing the amount of cigarette smuggling. However, if cigarette smuggling begins to increase again to the level of the mid-1970s, as it could, the states would be well advised to give serious attention to finding ways to convince courts to impose more severe penalties on cigarette smugglers.

UNIFORM CIGARETTE TAXATION

Cigarette tax differentials have been recognized as the major source of cigarette bootlegging. Likewise, uniformity of tax rates is recognized as the most effective treatment of this problem. The major stumbling blocks to more uniform tax rates are twofold. First, the high-tax states are not willing to lower their rates because of the expected revenue

loss, although a portion of this loss would be offset by a reduction in cigarette tax evasion. Second, the low-tax states are reluctant to raise their rates because of the tobacco industry's opposition to higher tax rates. The low-tax states are also concerned about a possible reduction in revenue if they lose their tax advantage.

Therefore, the states are unlikely to move toward uniform rates on their own and the national government does not have the constitutional authority to mandate a uniform cigarette tax rate for all the states. The solution would be for the federal government to enact an incentive program to encourage the pursuit of uniform tax rates. For example, the federal government could increase the federal excise tax on cigarettes by 20 cents and provide a rebate to the states equal to the 20 cents less the rate levied by the tax. For example, a state that completely repealed its cigarette tax rate would receive a rebate of 20 cents and a state that levied a 10-cent tax rate would receive a rebate of only 10 cents. The rebate would likely be based on cigarette consumption, although it could be based on population. A rebate based on population would be similar to a general revenue sharing program and would penalize states that benefited from cigarette bootlegging as well as states that had above average cigarette consumption due to tourism or social and demographic factors. If the rebate were based on cigarette consumption, the low-tax, high-consumption states such as Kentucky and North Carolina would receive an initial windfall, although as tax evasion declined in response to uniform rates the revenue advantage of these states would diminish.

This type of incentive plan is so coercive that every state would almost certainly be forced to participate. The only states that might be hesitant would be the high-tax states that suffer a small revenue loss. All states could be held harmless by allowing them to levy a low-rate tax, say 3 cents, or by capping the amount a state could receive in excess of its actual collections and using the excess to compensate states that lose revenue under the proposal.

Uniform cigarette taxation is generally viewed as a last resort solution to cigarette smuggling. The tobacco industry strongly opposes uniform taxation because it would result in higher cigarette taxes in many states, and higher taxes mean lower cigarette sales. The majority of state tax officials also oppose uniform cigarette taxation, mainly be-

cause they believe the states should have the right to set their own tax rates without federal interference. In the 1984 ACIR survey on cigarette bootlegging, state tax officials were asked whether they favored uniform cigarette taxation. The results were 14 in favor, 28 opposed and seven provided no response. (See *Appendix B.*) The respondents were state revenue commissioners or cigarette tax administrators. A survey of elected officials might have produced even less support for uniform cigarette taxation.

Uniform cigarette taxation would largely eliminate cigarette smuggling, although some casual smuggling would remain because there would still be variations in cigarette prices even if tax rates were the same. For example, in 1983 the average before tax price of cigarettes was 60 cents per pack in Massachusetts and 55 cents in New Hampshire; the average before tax price per pack was 67 cents in Connecticut and only 56 cents in North Carolina. These relatively small price differences would be unlikely to encourage organized bootlegging, but casual across-the-border bootlegging might still exist in a few states. The loss of revenue from tax-exempt sales of cigarettes on military bases and Indian reservations would also be eliminated or sharply reduced if a uniform national rate were levied and collected from the manufacturers. (If states voluntarily adopted uniform tax rates, these sales would still retain a tax advantage that would not exist if states were encouraged to eliminate or reduce their cigarette tax rates by a federal incentive plan.) Uniform cigarette taxation would not eliminate hijacking of cigarettes, and could, in fact, cause an increase, as criminals looked for profit opportunities. However, hijacking is a general law enforcement problem and is not unique to cigarettes. Also there would be no revenue loss to states from hijacking if there were a uniform federal tax and no state taxes, as federal taxes are collected from the manufacturers. Despite the power of uniform taxation to largely eliminate cigarette bootlegging, the loss of state autonomy is probably too great a price to pay, particularly for the vast majority of states not subject to substantial cigarette smuggling activities—a majority that has increased in recent years.

Is There a Case for Federal Intervention?

The federal government acknowledged the interstate nature of cigarette bootlegging and the dif-

31

ficulty an individual state has in dealing with this problem with the passage of the federal *Contraband Cigarette Act* in 1978. A further increase in the federal government's role in the cigarette tax area would require evidence that the contraband legislation has been unsuccessful in controlling cigarette smuggling—the evidence is to the contrary. However, the unique nature of the cigarette tax as a revenue source may provide some justification for federal interference in state tax policy under certain circumstances.

First, the high value, low breakage, and small size of the product make cigarettes highly conducive to smuggling when tax differentials exist. Thus, a state may create a profit incentive for bootleggers by raising or lowering its tax only a few cents.

Second, the high concentration of the tobacco industry in three states provides these states with good reason for keeping their cigarette taxes at a minimum. During periods of inflation, the stable rates in these states result in a reduction in the "real" tax rate. This widens rate differentials with other states that may be raising their cigarette tax rate to ease financial problems.

Third, whenever a state is in fiscal difficulty, cigarette tax increases are attractive because of the marginal additions to revenue they can provide. The result of a succession of such marginal tax increases is, of course, a high cigarette tax. At the same time, the low-tax state has a strong incentive to keep the tax constant. Because the costs of the resulting tax evasion can be, to a certain extent, borne by the nation as a whole in the form of increased organized criminal activity, there is little reason for a given state to unilaterally reduce or increase its tax.

Fourth, the federal government has a particular interest in health and income distribution concerns as they relate to the cigarette tax in particular. The high tax on cigarettes, similar to the liquor tax, has been justified by the value judgment that people should be penalized for consuming a product that is dangerous to their health. Many other federal policies are designed to discourage cigarette consumption. It can be argued that such a judgment should be made on a national level rather than left to each state and uniformity should be the rule regarding the level of such a tax. The federal government has offered little leadership in this respect and has allowed the states individually to make the decision. The states appear to have ig-

Table 3-6
CIGARETTE SMOKING PRACTICES
(resident)

	Percent Smokers (17+)	
NORTHEAST REGION		32.7
Boston	34.4	
Buffalo	30.8	
New York	31.2	
Philadelphia	34.5	
Pittsburgh	32.7	
SOUTH REGION		28.9
Atlanta	36.7	
Baltimore	35.6	
Dallas	39.4	
Houston	33.8	
Miami	29.7	
New Orleans	36.7	
Tampa/St. Petersburg	34.5	
Washington, DC	36.8	
NORTH CENTRAL REGION		39.8
Chicago	33.9	
Cincinnati	37.9	
Cleveland	43.3	
Detroit	37.1	
Indianapolis	41.0	
Kansas City	37.6	
Milwaukee	40.6	
Minnesota/St. Paul	25.9	
St. Louis	36.7	
WEST REGION		30.6
Anaheim/Santa Ana	31.8	
Denver	35.3	
Los Angeles/ Long Beach	31.9	
Portland	26.8	
San Bernadino/ Riverside	38.0	
San Diego	27.5	
San Francisco/ Oakland	35.7	
San Jose	24.8	
Seattle/Everett	29.9	
TOTAL POPULATION (17+)		33.0

Source: Based on estimates contained in the 1979 Health Interview Survey conducted by the National Center for Health Statistics, U.S. Department of Health and Human Services.

Table 3-7
EXPENDITURES FOR TOBACCO PRODUCTS AND DISPOSABLE PERSONAL INCOME, 1974-83

Year	Total	Cigarettes	Cigars[1]	Other[2]	Disposable Personal Income (in billions of dollars)	Percent of Disposable Personal Income Spent on Tobacco Products			
		(millions of dollars)				All	Cigarettes (in percent)	Cigars	Other[2]
1974	$14,475	$13,270	$705	$ 500	$ 998	1.47%	1.35%	.07%	.05%
1975	15,505	14,250	680	575	1,096	1.43	1.32	.06	.05
1976	16,410	15,100	675	625	1,194	1.39	1.28	.06	.05
1977	17,190	15,850	665	675	1,312	1.32	1.22	.05	.05
1978	18,030	16,600	680	750	1,463	1.24	1.14	.05	.05
1979	19,150	17,650	670	830	1,642	1.17	1.08	.04	.05
1980	21,000	19,400	670	930	1,829	1.15	1.06	.04	.05
1981	22,940	21,200	700	1,040	2,048	1.13	1.04	.04	.05
1982[3]	25,310	23,525	685	1,100	2,177	1.16	1.08	.03	.05
1983[4]	29,645	27,800	675	1,170	2,315	1.28	1.20	.03	.05

[1]Includes small cigars (cigarette-size).
[2]Smoking tobacco, chewing tobacco, and snuff.
[3]Subject to revision.
[4]Estimated.
Source: Compiled from reports of U.S. Department of Commerce, Bureau of Economic Analysis.

nored this role, because the present pattern of cigarette taxes reflect revenue conditions more than health-conscious value judgments. High taxes are generally found in the Northeast and Midwest and lower taxes are found in the South and West. This pattern is in direct conflict with the expected disapproval of smoking, which if reflected in consumption patterns, should be highest in the West and South and lowest in the Northeast and Midwest (Table 3-6).

The federal government also has interests in the distributional effects of taxes, and the extremely high regressivity of the cigarette tax should make it subject to federal concern. Consumer expenditure data for 1972-73 (latest data available) indicated that persons earning less than $5,000 spent 2.7 percent of their income on tobacco products, while persons earning $25,000 or more spent only 0.4 percent of their income on tobacco.

The tax rate in most states has surpassed the federal levy, with the result that the combined state and federal cigarette tax has a highly regressive impact on income distribution, although the small share of the budget devoted to tobacco con-

siderably mitigates the overall impact. (See Table 3-7.) It can be argued that the regressivity issue should be considered along with the health effect of cigarettes at the federal level in order to achieve a consistent policy. If the federal government decides that the health impact is most important, then a uniformly high tax would be indicated. If it is decided that the tax has little effect on cigarette consumption, and thus, on health and is a poor revenue source because of its regressivity, then a uniformly low tax rate may be agreed upon. Either approach would reduce the incidence of cigarette smuggling. In any event, the cigarette tax does appear unique in its impact on federal matters and federal intervention may be appropriate even if tax evasion is not a major consideration.

Uniform Tax Proposals

Over the years there have been a number of proposals to encourage the states or the federal government to withdraw from the cigarette tax field. Until recent years few proposals had been advanced to encourage uniform state cigarette tax

rates. ACIR's 1977 report on cigarette bootlegging included a history of these incentive proposals up until 1976. (See Chapter 5 of 1977 report.) Since 1976 there have been several additional uniform tax proposals introduced in the Congress.

In 1977 there were three major uniform tax proposals:

1. HR 9667 that would have increased the federal cigarette excise tax on cigarettes by 27 cents and returned the proceeds to the states based on cigarette consumption. The rebate was to be reduced by the amount of the tax levied by the state.

2. HR 9733 that would have increased the federal excise tax on cigarettes by 12 cents and returned the proceeds to the states based on consumption. To qualify a state could not levy a combined state and local tax of more than 3 cents per pack. Payments were limited to 150 percent of the former net collections in the state. The excess funds were to be used to compensate states that experienced a revenue shortfall.

3. HR 9763 that would have increased the federal excise tax on cigarettes by 15 cents to 23

Table 3-8
STATE TAXABLE CIGARETTE SALES AS PERCENT OF FEDERAL REMOVALS

Year	Percentage
1970	93.4%
1975	97.0
1976	91.7
1977	96.2
1978	95.0
1979	93.6
1980	96.4
1981	94.7
1982	94.8
1983	97.5
1984 est.	96.4[1]

[1]Estimate based on ten months data.
Source: Compiled by ACIR staff from data in, The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18, Tables 3 and 10.

---

cents and returned the proceeds to the states based on cigarette consumption. The rebate was to be reduced by the amount of the tax levied by the state.

These proposals were advanced prior to the passage of the *Contraband Cigarette Act* in 1978, which was viewed as a middle of the road solution to cigarette bootlegging—between a do nothing approach and the adoption of a uniform tax proposal. As is documented elsewhere in this report the act has been successful in reducing the incidence of cigarette bootlegging. Therefore, the support for the "radical" uniform taxation approach has largely evaporated.

There appears to be little justification for uniform cigarette taxation under current conditions. However, with the large tax differentials that still exist there is the potential for a resurgence of cigarette bootlegging, particularly if the federal law enforcement presence is reduced, and this issue could surface again.

TAX-FREE PURCHASE OF CIGARETTES

In fiscal 1983, 2.5 percent of total federal tax-paid cigarette removals were exempt from state and local taxation. (See *Table 3-8*.) This figure was calculated by comparing federal removals with state tax-paid sales. This was the lowest percentage of tax-exempt cigarettes in at least 20 years. There are three reasons for the difference between federal removals and state tax-paid sales: (1) sales at military bases, veterans hospitals, and federal prisons; (2) sales on Indian reservations and (3) illegal diversion of cigarettes from the normal distribution chain. (This is generally done by dishonest wholesalers after the cigarettes are received from the manufacturer.) In fiscal 1983, the number of packs of cigarettes not subject to state-local taxation was 745 million. The available estimate of military and Indian sales was 1,173 million. The reason for this discrepancy is unclear. In fiscal 1982, there were 1,633 million packs exempt from state-local taxation. An estimated 73 percent of this difference was accounted for by tax-free military and Indian sales. The remaining 27 percent was apparently due to illegal diversion activities. The sharp increase in the percentage of cigarette sales subject to state-local taxation, as shown in *Table 3-4*, is likely due to a decline in this diversion activity, as there is no evidence that there has

Table 3-9
TAX EXEMPT SALES—INDIAN RESERVATIONS, FY 1983[a].

States	Sales (thousands of packs)	Percent of Total Sales	Dollar Loss [b] (in thousands of dollars)	States	Sales (thousands of packs)	Percent of Total Sales	Dollar Loss [b] (in thousands of dollars)
United States, Total	189,822	0.6	$43,130	New Jersey	0		—
Alabama	0		0	New Mexico	13,476	10.3	2,021
Alaska	0		0	New York	6,356	0.3	1,525
Arizona	27,397	8.6	4,657	North Carolina	0		0
Arkansas	0		0	North Dakota	1,050	1.3	231
California	115[c]	*	17	Ohio	0		0
Colorado	Minimal		—	Oklahoma	9,295	2.1	1,673
Connecticut	0		0	Oregon	500	0.2	94
Delaware	0		0	Pennsylvania	0		0
Washington, DC	0		0	Rhode Island	0		0
Florida	59,777	4.5	15,542	South Carolina	0		0
Georgia	0		0	South Dakota	139[d]	0.2	21
Hawaii	0		0	Tennessee	0		0
Idaho	5,399	5.0	707	Texas	0		0
Illinois	0		0	Utah	NA		—
Indiana	0		0	Vermont	0		0
Iowa	0		0	Virginia	0		0
Kansas	180	*	34	Washington	21,427	4.9	6,214
Kentucky	0		0	West Virginia	0		0
Louisiana	0		0	Wisconsin	19,132	3.8	5,740
Maine	0		0	Wyoming	156[ae]	0.2	12
Maryland	0		0				
Massachusetts	0		0				
Michigan	169	*	42				
Minnesota	2,026	0.4	486				
Mississippi	0		0				
Missouri	0		0				
Montana	15,902	17.4	2,544				
Nebraska	4,002	2.3	880				
Nevada	3,324	2.4	690				
New Hampshire	0		0				

NOTE: The data for Indian reservations were provided by state tax administrators. In the case of South Dakota the information was obtained from the Minnesota revenue department as the Indians in South Dakota are supplied by a Minnesota wholesaler.

[a] Montana and Nebraska figures are for CY 1983. Wyoming number is for FY 1984.
[b] Losses are based on state cigarette and sales tax rates as of November 1, 1983.
[c] Minimum estimate.
[d] Total sales on Indian reservations are 1,384,400 packs. Only this small amount is not taxed
[e] Total sales are 260,000 packs; 40 percent are taxed.
*Less than 0.1 percent.

Source: Compiled by ACIR staff from data provided by state revenue departments.

been a significant decline in sales on military bases and Indian reservations.

Indian Reservations

Seven western states and one southern state consider the purchase of tax-free cigarettes on reservations by non-Indians a major tax evasion problem. As measured by sales on Indian reservations (to Indians and non-Indians) as a percentage of total cigarette sales, the problem is most severe in Montana (17.4 percent), New Mexico (10.3 percent), Arizona (8.6 percent), Washington (4.9 percent), Florida (4.5 percent) and Wisconsin (3.8 percent). (See Table 3-9.)

Court decisions have limited state taxing power on Indian reservations. The decisions are based largely on Article I, Section 8, Clause 3 of the *U.S. Constitution*, which authorizes Congress to "regulate commerce with foreign nations and among the several states, and with the Indian tribes."

In the last decade, the U.S. Supreme Court has rendered several decisions on the states' power to tax reservation Indians. In 1973, the Court, in *McClanahan vs. Arizona Tax Commission*, held that the Arizona income tax does not apply to Indians employed on a reservation.

In *Mescalero Apache Tribe vs. Jones* (1973), the Supreme Court upheld the New Mexico sales tax on ski lift tickets at a resort operated by reservation Indians but not located on reservation land. In this decision, the Court applied the principle that unless federal law expressly prohibits the taxation of Indians beyond reservation boundaries, they are subject to all nondiscriminatory laws applicable to citizens of the state.

Several later cases are more directly relevant to the state cigarette tax evasion problem. In *Moe vs. Confederated Salish and Kootenai*, decided by the U.S. Supreme Court in 1976, the major issue was the right of Montana to impose a tax on cigarettes sold to Indian residents of the reservation. The Court held that the cigarette tax could not be imposed on reservation purchases by an Indian resident, but because the cigarette tax is paid by the consumer, the tax could be imposed on the sales to non-Indians. In *Bryan vs. Itasca County, Minnesota* (1976), the U.S. Supreme Court overturned a Minnesota Supreme Court ruling that extended all nonrestricted tax laws of the state to Indian reservations.

The most recent case concerning state taxation on Indian reservations was *Washington vs. Confederated Colville Tribes*, decided by the U.S. Supreme Court in 1980. This case concerned challenges of several Indian tribes to efforts by the State of Washington to apply various state taxes and other laws to transactions and activities occurring on Indian reservations. In actions brought in Federal District Court, the tribes sought declaratory and injunctive relief against enforcement of the state sales and cigarette taxes, and in particular against the states' seizure of untaxed cigarettes destined for delivery to the reservations, contending that those taxes could not lawfully be applied to tribal cigarette sales. The District Court held that the state cigarette tax and the sales tax on cigarettes could not be applied to on-reservation transactions because it was preempted by tribal taxing ordinances which the tribes had adopted with respect to on-reservation sales of cigarettes and constituted an impermissible interference with tribal self-government. On direct appeal, the U.S. Supreme Court held that (1) the state could impose its cigarette excise tax and general sales tax on on-reservation purchases of cigarettes by non-members of the Indian tribes, since the economic impact of the tax resulting from the tribes' loss of a competitive advantage with respect to businesses in the surrounding areas did not warrant exempting the Indians from the taxes, and since there was no direct conflict between the state and tribal tax schemes, each government being free to impose its taxes without ousting the other, (2) Indian tribes had the power to impose cigarette taxes on the sale of cigarettes on their reservations to nontribal purchases, (3) the state could validly require tribal smokeshops to affix tax stamps purchased from the state to individual packages of cigarettes prior to the time of sale to nonmember of the tribes and to keep detailed records of both taxable and nontaxable transactions in order to assist the state in enforcing the sales and cigarette taxes, (4) the state had the power to apply its sales and cigarette taxes to Indians residing on a reservation who were not enrolled in the reservation's governing tribe, (5) as a means of enforcing its valid taxes, the state had the power to seize, as contraband, unstamped cigarettes traveling to the reservation from out-of-state wholesalers if the tribes did not cooperate in collecting the states' taxes, (6) the Court failed to rule on Washington's contention that it may enter onto the reservation to seize stocks of cigarettes which are intended for sale to nonmembers. [The state

has never entered or threatened to enter the reservation for this purpose.]

This was an important victory for the states in that the Supreme Court indicated that it will not permit Indian reservations to become "tax havens" for non-Indians unless Congress has clearly indicated this preference. The effect of this ruling was to reduce state revenue losses from sale of cigarettes to non-Indians on Indian reservations. The State of Washington estimates that its revenue loss declined from about $14 million a year prior to the Court ruling to about $6 million in fiscal year 1983.[3] However, illegal cigarettes sales to non-Indians will continue because the Courts did not provide guidance as to how to enforce these laws and the states have generally been unwilling to make seizures on all the Indian reservations.[4]

In May 1984 the Washington State Department of Revenue and the Washington State Patrol seized 5,640 cartons of unstamped cigarettes being transported from Montana to the Puyallup Indian reservation. The cigarettes were being transported in a truck-trailer on Interstate 90. The driver and a passenger were arrested and charged with transporting contraband cigarettes. The cigarette and sales tax revenue involved amounted to $17,000.

A recent case in Wyoming reaffirmed the state's right to impose state cigarette and sales taxes on Indian reservation sales to non-Indians. In *Stagner vs. Wyoming State Tax Commission* (1984), the Wyoming Supreme Court held that the cigarette sales tax statutes require Indian smokeshops to collect the tax on cigarettes sold to non-Indians and to Indians who are not enrolled as members of the Shoshone or Arapahoe Tribes. The Court also held that it was legal for the state to seize cigarettes enroute to the reservation if there is noncompliance with state taxing statutes.

The best approach to ending illegal sales on reservations appears to be cooperative agreements between the tribes and the state. The State of Minnesota has handled its problem with Indian cigarette sales by precollecting the tax on cigarettes sold on Indian reservations and refunding the tax to Indians on the basis of average state per capita consumption times the population of the reservation. However, one tribe subsequently backed out of this agreement and is selling untaxed cigarettes to non-Indians.

The state of South Dakota has similar agreements with several Indian tribes, and as a result the state tax is collected on more than 90 percent of the cigarettes sold on Indian reservations.

In 1984, Wisconsin reached an agreement with ten of its 11 Indian tribes that provided for precollection of the state tax on sales to the Indian reservations with a refund of 70 percent on sales to nontribal members and nonreservation resident tribal members and a 100 percent refund on sales to resident tribal members. The refunds are based on four conditions: (1) the tribal council filed a refund claim; (2) the tribal council approved reservation retailers; (3) the land on which sale occurred was designated a reservation on or before January 1, 1983; and (4) the cigarettes were not delivered to the buyer by common or contract carrier, or, by the U.S. postal service. The one tribe that did not enter the agreement was allowed to purchase untaxed cigarettes under the following conditions: (1) the cigarettes must be delivered by the distributor to the purchaser on the reservation; (2) the distributor shall retain, for a period of two years, proof that all sales were to a qualified Indian retailer; (3) the distributor must submit record to state of all sales of untaxed cigarettes to Indian purchasers; (4) the distributor may not sell untaxed cigarettes to an Indian retailer if the cigarettes are to be sold to persons other than to resident tribal members; (5) the Indian retailer must keep detailed records of both taxable and nontaxable transactions. In addition, unless the Indian purchaser is personally known to the retailer, they must present a tribal identification card when purchasing cigarettes; (6) an Indian retailer must sell stamped cigarettes to persons other than resident tribal members and may receive a refund for 70 percent of the tax collected.

This agreement allows the state of Wisconsin to collect some revenue not previously collected, but the state is still suffering a substantial revenue loss from cigarette sales on Indian reservations. The 70 percent rebate on sales to off-reservation persons is more generous than the agreements in Minnesota and South Dakota.

The major barrier to widespread adoption of cooperative agreements such as those used in Minnesota, South Dakota, and Wisconsin is the loss of cigarette sales by Indian smokeshops if they levied the state tax. To overcome this problem, states could allocate to the Indians a share of the cigarette tax as compensation for lost sales in addition to the refund for the tax paid by reservation Indians or provide a partial rebate for sales to non-Indians as is done by Wisconsin. In situations where agree-

Table 3-10
CIGARETTE SALES ON MILITARY BASES, FY 1983

State	Military Sales (in thousands of packs)	Percent of Total Sales	Revenue Loss[a]	Estimated Military Consumption[b]	Estimated Illegal Sales[c]	Revenue Loss: legal Sales	Military Population (active duty retired including dependents	Percent of Total Population
				(in thousands of dollars				
United States	985,548[d]	3.4	$176,629	761,489	$266,417	$55,223		
Alabama	30,296	6.6	5,756	13,417	16,879	3,207	119,665	3.0
Alaska[e]	10,560	16.4	845	9,087	1,473	118	57,764	12.1
Arizona	20,310	6.4	3,453	16,563	3,747	637	143,558	4.9
Arkansas[f]	11,984	3.3	2,516	7,068	4,916	1,032	68,112	2.9
California	113,601	4.1	17,040	113,953	—	—	938,627	3.7
Colorado	22,609	5.9	3,391	20,188	2,421	363	159,233	5.1
Connecticut	11,500	3.2	3,910	4,300	7,200	2,448	40,392	1.3
Delaware	3,425	3.8	480	2,662	763	107	21,116	3.5
Washington, DC[f]	5,300	6.9	1,007	7,243	—	—	50,331	8.0
Florida	96,347	7.3	25,050	56,539	39,808	10,350	520,924	4.9
Georgia	59,238	8.2	8,293	30,880	28,358	3,970	241,720	4.2
Hawaii	12,084	15.2	3,263	18,365	—	—	114,570	11.2
Idaho[f]	2,248	2.1	295	3,386	—	—	28,545	2.8
Illinois	26,008	1.8	4,161	16,010	9,998	1,600	122,674	1.1
Indiana	6,608	0.8	958	5,028	1,580	229	51,866	0.9
Iowa[f]	1,133	0.3	249	1,273	—	—	17,903	0.6
Kansas	19,489	6.3	3,703	13,053	6,436	1,223	95,709	4.0
Kentucky	15,263	2.1	1,068	16,386	—	—	118,058	3.2
Louisiana	9,500	1.6	1,330	14,735	—	—	119,399	2.7
Maine[e]	3,860	2.5	772	2,883	977	195	27,922	2.4
Maryland	22,530	4.1	2,929	19,041	3,489	453	154,309	3.6
Massachusetts	20,500	3.0	5,330	7,551	12,949	3,366	74,895	1.3
Michigan	10,619	0.9	2,549	7,369	3,250	780	71,635	0.8
Minnesota[f]	2,262	0.5	543	2,052	210	38	28,074	0.7
Mississippi[f]	11,250	3.6	1,688	9,628	1,622	243	84,354	3.2
Missouri[e]	8,780	1.3	1,404	9,220	—	—	87,063	1.8
Montana[f]	2,425	2.2	388	2,276	149	24	19,076	2.3
Nebraska[f]	8,043	4.6	1,769	6,735	1,308	288	51,086	3.2
Nevada[f]	9,329	6.7	1,866	8,760	569	114	71,593	8.1
New Hampshire	4,988	2.3	848	2,657	2,331	396	25,616	7.7

New Jersey	24,268	2.7	6,067	11,915	12,353	3,088	101,242	1.4
New Mexico[g]	10,124	7.7	1,519	9,970	154	23	78,401	5.6
New York	29,745	1.4	7,139	14,229	15,556	3,733	129,134	0.7
North Carolina	16,855	1.7	843	38,499	—	—	262,837	4.3
North Dakota[g]	3,275	4.1	720	5,622	—	—	35,752	5.3
Ohio[g]	11,952	0.9	2,151	11,819	133	24	116,445	1.1
Oklahoma	19,500	4.4	3,510	17,253	2,247	404	135,576	4.1
Oregon[g]	800	0.2	152	2,668	—	—	39,224	1.5
Pennsylvania	20,924	1.4	5,022	9,564	11,360	2,726	110,507	0.9
Rhode Island	5,375	4.1	1,236	2,364	3,011	693	21,629	2.2
South Carolina[e]	18,390	4.4	1,839	25,366	—	—	191,533	5.9
South Dakota[g]	2,465	3.2	370	3,153	—	—	22,125	3.1
Tennessee	7,014	1.2	1,192	8,226	—	—	86,362	1.8
Texas	106,377	5.5	19,680	71,075	35,302	6,531	583,741	3.7
Utah[g]	3,740	3.5	636	4,119	—	—	34,612	2.1
Vermont[g]	338	0.4	57	376	—	—	5,456	1.0
Virginia	73,904	9.3	4,065	46,716	27,188	1,495	367,445	6.6
Washington	41,974	9.7	12,172	24,902	17,072	4,951	210,695	4.9
West Virginia[g]	1,133	0.5	249	1,353	—	—	19,220	1.0
Wisconsin[g]	3,346	0.7	1,004	2,098	1,248	374	28,690	0.6
Wyoming	1,870	2.6	150	1,894	—	—	14,544	2.9

NOTE: The reliability of this data varies from state to state. Some states keep good records on tax-exempt sales, other states are able to provide rough estimates, and some states have no data on tax-exempt sales.

The military sales data in this table were gathered from state tax administrators, and military procurement sources, as no one central source was able to supply the data. In some cases the information received from the military and the state revenue department were inconsistent. In these cases the military data were used, as the state tax administrators generally acknowledged that it were likely to be more accurate.

Because of the limitations described above, the data in this table should be viewed as an estimate rather than an actual count

[a] State cigarette and sales tax rates as of November 1, 1983, were used to compute losses. Local tax rates are not included.

[b] The consumption estimates used to compile these estimates were as follows: active duty military, 242 packs annually (see *Table 3-12*), active duty dependents and retired military and their dependents, 128.5 packs annually (national average). Also the estimates assumed that only 50 percent of the retired military and their dependents would patronize stores to purchase cigarettes.

[c] There are 17 states for which estimated consumption exceeds estimated military sales. In Iowa, Oregon, Vermont, and West Virginia this is probably due to the lack of any large military stores. In the case of Hawaii, Kentucky, and Louisiana this appears to be due to low estimates of military sales by the states. The 1977 GAO estimates for these states were: Hawaii, 20.5 million packs; Kentucky, 19.4 million packs; Louisiana, 15.7 packs. The errors in the other states could be due to overestimates of military consumption in those states. The estimates for North Carolina and South Carolina, in particular, appear to be in this category.

[d] The military reported that CY 1983 domestic sales of cigarettes were 1,395 million packs. It appears therefore that the reported sales for many of the states are low.

[e] The estimates for these states are based on 1977 figures from the General Accounting Office, as complete data were not available from the states or the military. The Navy and the Army Commissary Service were unable to supply figures and these states have large Navy and Army bases. The 1977 GAO figures appear reliable based on comparisons of the two years for states for which complete 1983 data were available. The incomplete 1983 figures provided by the military for these states are: Alaska, 5.1 million packs; Maine, 2.5 million packs; Missouri, 5.5 million packs; and South Carolina, 14.1 million packs.

[f] State estimate provided, but military estimate used because it appeared to be more reliable.

[g] No state estimates provided—military estimate used.

ments cannot be reached the only solution appears to be tougher enforcement by the states within current legal restraints or a court ruling allowing the states to seize cigarettes on the reservations.

Military Sales

The purchase of tax-free cigarettes from military exchanges and commissaries presents a major tax evasion problem for many states (see Table 3-10). The revenue loss to the states can be divided into two parts. The first is the loss of revenue on legal purchases of cigarettes by military personnel, as state and local governments are prevented by federal law from taxing these purchases. The second is the loss due to the illegal purchase of cigarettes for friends or relatives or for sale to non-military personnel. Only the latter can be classified as a tax evasion problem. This is not generally done on an organized basis but is widespread enough to represent a significant revenue loss for the states—an estimated $55 million in 1983, or 31.1 percent of the total loss due to exemption of military sales from state and local taxes. (This is a minimum estimate because of data problems with military sales. See the explanation in Table 3-10.)

The largest losses due to tax evasion were in Florida ($10.4 million), Texas ($6.5 million), Washington ($5 million), and Georgia ($4 million). The largest losers in terms of illegal losses as percentage of the total loss due to the military tax exemption were: Massachusetts (63.2 percent), Connecticut (62.6 percent), Rhode Island (56.1 percent), Alabama (55.7 percent), Pennsylvania (54.3 percent), New York (52.2 percent), and New Jersey (50.9 percent). As is to be expected, all of these states, except Alabama, have high cigarette tax rates.

In 1981 the NATA Committee on military sales estimated the revenue loss due to abuse of the military privilege at $25.4 million or about 25 percent of the total loss due the exemption of military sales from state taxes.[5] The largest losses were in Texas ($3.7 million), California ($3.0 million) and Florida ($2.5 million).

The total revenue loss attributed to purchases of tax-free cigarettes on military bases was $176 million in FY 1983 and exceeded 6 percent of total sales in 12 states. Military sales were highest in Alaska (16.4 percent), Hawaii (15.2 percent), Washington (9.7 percent), and Virginia (9.3 percent).

The only reasonable solution to the tax evasion portion of this problem is cooperation between military commanders and state tax officials, which is good in most instances. Enforcement by the state is difficult because the majority of the illegal activity is not organized and therefore is almost impossible to prevent.

The states' problems with military sales can be eliminated if Congress will pass legislation allowing state and local governments to tax military sales. This is favored by almost all state tax administrators and has been recommended twice by the ACIR. In a 1976 report on military sales the Commission recommendation was as follows:

> The Commission concludes that the current exemption of on-base sales to military personnel from state and local taxation should be removed. The Commission therefore recommends that the Congress give early and favorable consideration to legislation amending the Buck Act to allow the application of state and local sales and excise taxes (including tobacco and liquor taxes) to all military store sales in the United States.

In a 1977 report on cigarette bootlegging the Commission adopted a somewhat narrower recommendation:

> Pending the complete removal of the state and local sales tax exemption for military sales, the Commission urges, as a first step, that the Congress enact legislation allowing state and local governments to extend the cigarette tax and the sales tax on cigarettes to sales of cigarettes on military installations.

The Commission supported these recommendations because of changes in military lifestyles (principally, easier access to shopping areas), higher military pay, the advent of the all-volunteer armed forces, increased state-local reliance on sales taxes, and the need to improve state-local tax equity, and reduce revenue losses from cigarette bootlegging. Also the Commission could see little compelling reason for state and local governments to provide "fringe" benefits to one class of federal employees, particularly when the federal government establishes the terms and conditions of military service and imposes its own taxes on military store sales.

Military officials argue that the exemption of military store sales from state and local taxes

should be retained because of the special nature of military service.

What has not changed, however is the nature of service life—as stated earlier, service life is still very different from civilian life in many respects. We ask more of our uniformed people that we do of civilians. Military persons go where they are needed when they are needed in compliance with orders and frequently sacrifice amenities available to the private citizen in responding to these requirements. The report [1976 ACIR report on military sales] strongly infers that competitive pay and improved living conditions warrant elimination of differential tax treatment. Aside from the basic question of constitutionality, we support the view that the different nature of service life warrants continuation of existing laws pertaining to state and local taxes on military store sales. We take exception to the statement in the report that there is "no objective way to evaluate the argument that military people are not comparable to civilians." The very nature of service expected of uniformed men and women makes lack of total comparability self-evident.

There is another dimension to the different nature of service life. The service member is politically different. He is not necessarily permitted to vote where he is stationed and his political activities are more restricted than those of other citizens. Further, as the report does point out, military persons often do not make the same use of state and local public services as civilians. Imposition of state and local sales taxes implies that military persons would receive equal benefits from those taxes and would have an equal voice in how those taxes are spent. Neither would be uniformly true.[6]

A 1979 report by the General Accounting Office suggested several alternatives to limit state and local revenue losses from the military tax exemption, short of complete removal of the exemption.[7]

Federal payments to state and local governments. This would be similar to the federal impact aid program, which minimizes the financial burden placed on local school districts for the cost of educating children of federal employees. The program could provide payments to state and local governments in recognition of burdens placed on these governments for other services, such as police and fire protection of military personnel who reside off base.

The major problems with this approach is that it would be difficult to determine the proper distribution of funds among the states and localities, just as it is with the Federal Impact Aid program, and the program would not promote a fairer distribution of the tax burden or solve tax administration problems.

Make military stores self-supporting. These stores currently receive a subsidy from the federal government. Making the stores self-supporting would require price increases that would likely reduce store patronage from off-base personnel. This approach has two major advantages: (1) more of the burden of taxation would be assumed by military and retired persons living off base who use services in the state or community where they are levied; and (2) tax administration problems could be reduced because higher prices for goods, such as cigarettes, would discourage casual buying for friends.

The major disadvantage of this alternative is that it would result in a larger price increase than would subjecting military sales to state and local taxes, as the federal subsidy to military stores is larger than revenue lost by the states.[8]

Charge prevailing prices for items taxed by state and local governments. A precedent was established for this alternative in 1978 by the Veterans Administration, when they began to sell tobacco products at the prevailing local price. Although this was done primarily to recognize the adverse health effects of smoking, it does have important implications with regard to lessening the revenue loss experienced by state and local governments. The result was a 33.5 percent decline in cigarettes sold at veterans' facilities between 1977 and 1979.[9] During the same period national consumption increased 3.2 percent. A similar policy could be adopted by the Department of Defense for cigarettes sold in commissaries and exchanges. This would reduce sales at military stores, but for convenience reasons sales would not likely fall enough to fully offset higher prices. Therefore, military stores could experience an increase in profits.

Table 3-11
SMOKING PREVALENCE, BY AMOUNT SMOKED, IN FOUR BRANCHES OF THE ARMED SERVICES, 1980

Cigarettes Per Day	Branch				
	Army	Navy	Marine	Air Force	Total
Less than One Pack	18.7	16.6	18.3	13.6	16.6
One to Two Packs	24.0	27.3	25.0	22.2	24.7
Two to Three Packs	8.1	8.5	7.2	6.9	7.8
More than Three Packs	2.7	1.6	1.7	1.4	1.9
Non Response	2.6	1.4	1.9	.9	1.7
Nonsmoker	44.0	44.5	46.0	55.0	47.4
Total Percent Smoker	56.0	55.5	54.0	45.0	52.6

Note: Based on over 15,000 interviews of active military personnel worldwide.

Source: U.S. Department of Health and Human Services, Office on Smoking and Health.

This is similar to the second alternative, but could be targeted to specific goods and would largely eliminate state-local tax administration problems.

The major disadvantage of this alternative is that it would erode benefits provided to military personnel and retirees.

Use private, independent contractors to operate resale activities. This is probably the least desirable of the alternatives as it would be more drastic than repealing tax exempt status for military sales. Independent contractors are private parties and must pay all federal, state, and local taxes. Also, they would have to charge higher prices than military stores in order to earn a profit.

The exchanges currently use private, independent contractors or concessionaries for various service activities such as barber services, shoe repair and watch repair. This practice complies with executive branch policy that the government should not compete with private enterprise and DOD policy that sale, welfare and recreation activities should be contracted out when dictated by the nature of the activities.

A report by the Defense Audit Service on the exchanges recommended that DOD consider this approach.[10] The exchanges objected on the grounds that the higher prices would be detrimental to their customers and that contractors would not operate in unprofitable areas and thus govern-

ment operation of these stores was necessary to maintain mission effectiveness.

This alternative would eliminate state-local government revenue losses, but would seriously erode the benefits provided to military personnel and retirees.

FOOTNOTES

[1] This act requires persons who ship cigarettes into other states to notify the tobacco tax administrators in these states of the names and addresses of the recipients, the quantities and brands of cigarettes and dates of mailing. The act also requires a business to provide tobacco administrators with its name, principal place of business and the names of its offices. Any person who violates these filing and reporting requirements faces punishment of a fine of not more than $1,000 and/or imprisonment for not more than six months. This Act in conjunction with the U.S. mail fraud statute has been successful in curtailing mail-order cigarette smuggling.

[2] National Tobacco Tax Association, *Proceeding of the Fifty-Fifth Annual Meeting*, 1981, Federation of Tax Administrators, Washington, DC, p. 11.

[3] Information provided by Washington Department of Revenue.

[4] In the last two years California and Wyoming seized cigarettes on Indian reservations. Both cases involved Indian proprietors and not tribal enterprises.

[5] National Tobacco Tax Association, *Proceeding of the Fifty-Fifth Annual Meeting*, 1981, Federation of Tax Administrators, Washington, DC, p. 24.

[6] ACIR, *State Taxation of Military Income and Store Sales*, A-50, July 1976, p. 57. (Statement of Vice Admiral John G. Finneran, U.S. Navy Deputy Assistant Secretary of Defense.)

[7] General Accounting Office, *The Tax Status of Federal Resale Activities: Issues and Alternatives*, FPCD 79-19, April 19, 1979, Washington, DC.

[8] *Ibid.* p. 31.

[9] Letter from Richard Percival, Director, Veterans Canteen Service, August 3, 1984.

[10] Defense Audit Service, Department of Defense, *Report on the Comparative Evaluation of the Policies and Procedures of the Military Exchange Systems*, July 26, 1978, Arlington, VA, pp. 647-48.

CIGARETTE TAX ADMINISTRATION

State cigarette tax administrators have organized their collection activities to obtain the revenue as close to the source as possible. The result is that the tax is collected from the consigners who first receive cigarettes from the manufacturers. These are primarily wholesalers and large retail outlets that buy directly from manufacturers. In all cases, tobacco manufacturers have a record of cigarettes distributed to the dealers who are responsible for the payment of state and local taxes—dealers who first receive the cigarettes are liable for the tax. Manufacturers do not have records that indicate the subsequent distribution of cigarettes to other wholesalers or retailers within or without the state. Most states, however, require that distributors keep records of cigarettes received from sources other than the manufacturer, cigarettes sold to other stamping agents within the state, and cigarettes sold outside the state. (See *Exhibits 1* through *4* in *Appendix D* for samples of the forms used by Delaware.) Careful auditing of these records can detect the illegal diversion of cigarettes to avoid state taxes.

USE OF STAMPS

In all but three of the 50 states, the payment of the cigarette tax is evidenced by the affixation of a transfer stamp or meter impression on each pack of cigarettes. The exceptions are Alaska, Hawaii, and Michigan.

To compensate the wholesaler for the expense incurred from opening and repacking cases and cartons to stamp each cigarette pack, the stamps

and impressions are sold to the wholesaler at a discount from face value. In 1982, these discounts totalled $103.1 million—2.5 percent of the face value of all stamps and impressions furnished to the affixing agents. (See *Table 4-1* for the dollar value of the discounts by state.) This cost is borne by the states in the form of lower revenue from the cigarette tax. This additional cost results in either a higher state cigarette tax, lower expenditures on enforcement activities, reduced state services, or higher rates on other taxes. The available evidence indicates that in some states distributors are under compensated for their costs and in other states they are over compensated. The question that must be answered is whether or not these costs are nec-

essary for the effective administration of the cigarette tax.

Stamps have been used as evidence of payment of cigarette taxes for several decades and are established firmly as the primary means of collecting the tax. Over the years, several states have expressed interest in abandoning stamps and using the return method of collection,[1] but no action has been taken. Since 1947, every state that has enacted a cigarette tax has elected to use stamp or meter impressions.

Distributor Discounts

The use of stamps and impressions creates two

Table 4-1
THE TOTAL MONETARY AMOUNTS OF DISCOUNTS RETAINED BY CIGARETTE DISTRIBUTORS, 1982
(in thousands of dollars)

State	Amount Retained	State	Amount Retained
United States, Total	**$103,059**	**Nebraska**	1,527
Alabama	5,616	**Nevada**	557
Alaska	53	**New Hampshire**	635
Arizona	1,052	**New Jersey**	2,570
Arkansas	2,000	**New Mexico**	507
California	2,425	**New York**	4,064
Colorado	1,566	**North Carolina**	3,121
Connecticut	753	**North Dakota**	507
Delaware	273	**Ohio**	6,661
Washington, DC	202	**Oklahoma**	3,340
Florida	5,732	**Oregon**	574
Georgia	2,659	**Pennsylvania**	7,882
Hawaii	a	**Rhode Island**	425
Idaho	504	**South Carolina**	1,517
Illinois	1,870	**South Dakota**	419
Indiana	3,406	**Tennessee**	1,768
Iowa	1,260	**Texas**	10,002
Kansas	1,127	**Utah**	501
Kentucky	1,684	**Vermont**	320
Louisiana	3,872	**Virginia**	2,021
Maine	633	**Washington**	838
Maryland	2,363	**West Virginia**	1,598
Massachusetts	1,897	**Wisconsin**	2,581
Michigan	1,412	**Wyoming**	202
Minnesota	1,614		
Mississippi	2,814	a - Hawaii has no distributor discount.	
Missouri	1,628	SOURCE: Compiled by Federation of Tax Administrators (FTA).	
Montana	341		

Table 4-2
CHANGES IN CIGARETTE TAX RATES AND DISTRIBUTOR DISCOUNTS, 1983

State	Effective Date of Change	Tax Rate Change (in cents per pack)	Discount Change	Discount Per Case of 12,000 Cigarettes
Arkansas	3/10/83	17.75 to 21	(3.8%)	$4.047 to 4.788
Colorado	11/01/83	10 to 15	(4.0%)	$2.40 to 3.60
Connecticut	8/01/83	21 to 26	(1.0%)	$1.26 to 1.56
Kansas	7/01/83	11 to 16	3.25% to 2.65%	$2.145 to 2.544
Maine	9/23/83	16 to 20	(2.5%)	$2.40 to 3.00
Massachusetts	7/11/83	21 to 26	($1.60/600 stamps)	($1.60)
Montana	7/01/83	12 to 6	3% to 6, 4, 3%a	$2.16 to $5.76, 3.84, 2.88
Nevada	7/01/83	10 to 15	(4.0%)	$2.40 to 3.60
New Hampshire	8/15/83	12 to 17	(2.75, 2.375, 2%)	$1.98, 1.71, 1.44 to $2.805, 2.4225, 2.04
New Jersey	7/01/83	24 to 25[b]	1.156% to 1.11%[b]	$1.6646 to 1.665
New York	4/01/83	15 to 21	(1.38% to 0.98%)	$1.242, 0.882 to $1.7388, 1.2348
North Dakota	4/01/83	12 to 18	(5.0%)	$3.60 to 5.40
Oregon	1/01/84	(19)	0.167¢/pack to 0.24, 0.18¢/pack[a]	$1.00 to $1.44, 1.08
Vermont	8/15/83	12 to 17	3.2% to 3.3%	$2.304 to 3.366
Wisconsin	7/02/83	(25)	2.1% to 2.0%	$3.15 to 3.00

( )—No change.

[a]Montana, New Hampshire, New York, and Oregon have graduated discount rates; see *Table 4-3*.

[b]New Jersey's tax rate is tied to the average wholesale price of cigarettes' the tax rate is reviewed and changed administratively; the discount rate is also changes, to keep the monetary value of the discount steady.

SOURCE: Compiled by FTA.

major administrative problems. Discounts allowed to wholesale distributors make the cigarette tax one of the most expensive taxes to administer. In some states, the compensation paid distributors exceeds the cost of affixing tax indicia, thereby providing cigarette wholesalers a source of income not enjoyed by other businesses that collect taxes for the state.

These problems have been magnified in recent years because state legislatures have raised cigarette tax rates frequently and these increases have often been accompanied by higher payments to distributors. When a state raises its cigarette tax rate, the amount of discount per case increases proportionately, unless an adjustment is made.

In 1983, 12 states increased their cigarette tax rate by legislation and nine of these did not alter their discount rate. In Massachusetts, where the discount is a fixed amount per 600 stamps, the amount of the discount remained unchanged. In the eight other states, where the discount is expressed as a percentage of the value of the indicia affixed, the monetary amount of the discount increased. The other three states that raised their tax rates by legislation did alter their discount rates: Kansas lowered its percentage discount, so that the value of the discount increased marginally; Montana instituted a graduated percentage discount; and Vermont raised its percentage discount. Two states changed only the discount rate; Oregon instituted a graduated discount and Wisconsin raised its percentage discount. (See Table 4-2.)

The cost of affixing stamps is not related to the denomination of the stamps, therefore fixed rate discounts would seem to be inefficient from the state's standpoint. Over the years, some states have adopted either graduated or fixed-amount discounts. Nine states now have graduated rates (as of

47

Table 4-3
STATE CIGARETTE TAX RATES AND DISTRIBUTION DISCOUNTS
(as of January 1, 1984)

State	Tax Rate: Cents per Pack	Discount: Statutory Rate[a]	Discount: Dollars per Case of 12,000 Cigarettes
Alabama	16	7.5	7.20
Alaska[b]	8	1	0.48
Arizona	13	4,3,2[c]	3.12,2.34,1.56
Arkansas	21	3.8	4.788
California	10	0.85	0.51
Colorado	15	4	3.60
Connecticut	26	1	1.56
Delaware	14	0.3c/pack	1.80
Washington, DC	13	2	1.56
Florida	21	2	2.52
Georgia	12	3	2.16
Hawaii[b]	d	—	—
Idaho	9.1	5	2.73
Illinois	12	1.67,1.33,1,0.67[c]	1.20,0.96,0.72,0.48
Indiana	10.5	4	2.52
Iowa	18	2	2.16
Kansas	16	2.65	2.544
Kentucky	3[e]	9.09[f]	1.6362
Louisiana	11	6	3.96
Maine	20	2.5	3.00
Maryland	13	3.25	2.535
Massachusetts	26	$1.60 per 600 stamps	1.60
Michigan[b]	21	1	1.26
Minnesota	18	2.5,2,1.5[c]	2.70,2.16,1.62
Mississippi	11	8	5.28
Missouri	13	3	2.34
Montana	16	6,4,3[c]	5.76,3.84,2.88
Nebraska	18	5	5.40
Nevada	15	4	3.60
New Hampshire	17	2.75,2.375,2[c]	2.805,2.4225,2.04
New Jersey	25	1.11g	1.665
New Mexico	12	4,3,2c	2.88,2.16,1.44
New York	21	1.38,0.98[c]	1.7388,1.2348
North Carolina	2	7/24¢ per stamp	1.75
North Dakota	18	4	4.32

State			
Ohio	14	3.34[h]	2.808
Oklahoma	18	4	4.32
Oregon	19	0.24,0.18¢/pack[c]	1.44,1.08
Pennsylvania	18	3	3.24
Rhode Island	23	1.5	2.07
South Carolina	7	5	2.10
South Dakota	15	3.5	3.15
Tennessee	13	2.75,2.5,2.25,1.75[c]	2.145,1.950,1.755,1.365
Texas	18.5	2.75	3.0525
Utah	12	4	2.40
Vermont	17	3.3	3.366
Virginia	2.5	2.5¢/carton	1.50
Washington	23	1.682[i]	1.11
West Virginia	17	4	4.08
Wisconsin	25	2	3.00
Wyoming	8	6	2.88

[a]Given in percentages unless otherwise indicated.

[b]Alaska, Hawaii, and Michigan do not use tax indicia.

[c]These states have graduated discounts:

Arizona	4 percent of the first $30,000 in stamps per month, 3 percent of the next $30,000, 2 percent of additional purchases.
Illinois	1.67 percent of the first $700,000 in tax paid during the fiscal year, 1.33 percent of the next $700,000, 1 percent of the next $100,000, and 0.67 percent of additional purchases.
Minnesota	2.5 percent of the first $500,000 in stamps purchased during the fiscal year, 2 percent of the next $500,000, and 1.5 percent of additional purchases.
Montana	6 percent of the first 2,580 cartons purchased in a month, 4 percent of the next 2,580, and 3 percent of additional purchases.
New Hampshire	2.75 percent of the first $500,000 in stamps purchased during the year, 2.375 percent of the next $500,000, and 2 percent of additional purchases.
New Mexico	4 percent of the first $30,000 in stamps purchased in a month, 3 percent of the next $30,000, and 2 percent of additional purchases.
New York	1.38 percent of the first year $1.5 million in stamps purchased in a year, and 0.98 percent of additional purchases.
Oregon	0.24-cent per pack for the first 26,000 cases stamped in a year, and 0.18-cent per pack for additional cases.
Tennessee	2.75 percent of the first 3,000 cases stamped in a fiscal year, 2.5 percent of the next 3,000 cases, 2.25 percent of the next 9,000 cases, and 1.75 percent of additional cases.

[d]Hawaii's tax rate is set at 40 percent of the wholesale price of cigarettes.

[e]Kentucky levies an additional enforcement and administration fee, on wholesalers alone, of 0.1-cent per pack stamped. This additional tax does not enter into the calculation of the discount—see footnote f.

[f]Kentucky allows 30 cents compensation for each $3 of tax evidence, so that, at the current rate of $3 for 100 stamps, a distributor actually receives 110 stamps. In the terms of this table, this is a 9.09 percent discount, or $1.6362 a case.

[g]New Jersey's tax rate includes a sales tax component, tied to the average wholesale price of cigarettes. The rate is reviewed and changed administratively, as often as every six months. When the tax rate changes, the rate of the discount may also be changed administratively, so that the monetary benefit of the discount remains constant.

[h]Ohio allows a discount of 3.6 percent of 13/14 of the tax value of its stamps. This amounts to 3.3 percent of the full 14 cent tax per pack.

[i]Washington provides graduated discounts for the first 11 cents of its tax. The percentage shown here is the composite discount applicable to the first 11 cents tax per pack.

SOURCE: Compiled by Federation of Tax Administrators.

January 1, 1984); the amounts decline as a distributor's purchases of tax indicia increase. Five states use fixed-amount discounts, stated in terms of packs or cartons of cigarettes rather than the value of the tax stamps purchased.

The graduated discount is based on the assumption that the cost per unit of stamping cigarettes declines as volume increases. Thus, with a system of graduated discounts, the rate of the discount declines as volume increases. The fixed amount is designed to make the monetary discount independent of the tax rate. When a state with a percentage discount raises its tax, the value of its discount will also rise. A flat discount rate per unit prevents this automatic increases in the benefit to distributors. In several states, the same result is achieved by applying the discount to only a specified portion of the tax rate.

The cost of cigarette tax administration, exclusive of discounts, is comparable to that of other excise taxes. However, in the 47 states (plus the District of Columbia) using stamps or meter impressions, administrative expenses, discounts, stamps and enforcement activities are a significantly larger percentage of collections than for any other major tax. The percentage discount allowed distributors range from zero in Hawaii (the only state which does not allow a discount) to $7.20 a case[2] in Alabama. Excluding the three states which do not use tax indicia, the smallest discount is 51 cents per case in California. (See *Table 4-3*.) The median rate is 10 percent higher than in January 1983. (See *Table 4-4* for the distribution of state cigarette discounts.) It should be noted that most discounts are stated in percentage terms, but the monetary value per case depends on the tax rate. For example, both South Carolina and Nebraska provide a 5 percent discount, but the discount per case is $2.40 per case in South Carolina and $5.40 per case in Nebraska because the tax rate is 7 cents in South Carolina and 18 cents in Nebraska.

As noted above, wide differences in discounts prevail among the states even though stamp-affixing procedures are generally standardized throughout the country. No evidence exists to demonstrate that the variance in discounts is the result of regional cost differences. For example, among western states the discounts vary from 51 cents in California to $5.40 in Nebraska and North Dakota. In the south, the discounts range from $1.75 in North Carolina to $7.20 in Alabama.

The cost of discounts increased 19 percent be-

Table 4-4
DISTRIBUTION OF DISTRIBUTORS DISCOUNTS

Distributor's Discounts (in dollars per 12,000-cigarette case)	Number of States* in Discount Range
No discount	1
$0.0 to 0.99	2
1.00 to 1.49	4
1.50 to 1.99	9
2.00 to 2.49	7
2.50 to 2.99	10
3.00 to 3.99	10
4.00 to 4.99	3
5.00 and over	5

*The District of Columbia is included. For graduated discount rates, only the maximum amount has been tabulated.

SOURCE: Federation of Tax Administrators, *State Cigarette Tax Rates and Distribution Discounts*, January 1984.

tween 1975 and 1983, although total package sales increased only 5.7 percent. As a result the discount per package increased 12.8 percent during this period. However, this is a considerable slowdown from the 1963 to the 1975 period, when the discount per package increased 66.5 percent. Also, the increase in the discount per package since 1975 is well below the rate of inflation, narrowing the gap between discounts and the cost of affixing indicia.

The wide range among the states in the amount of the distributor discount per case and the failure of many states to adjust discounts as tax rates change demonstrates rather clearly the lack of a relationship between distributor costs and reimbursements received from the state. There is little current data available indicating the appropriate level of reimbursement for affixing indicia. The studies done in the past indicated that the overpayment of distributors by the states was the rule rather than the exception, however these studies are too outdated to be reliable.

It has been suggested that the states have been generous with discounts in an effort to appease tobacco wholesalers, who are generally a major source of opposition to increases in the cigarette

tax rate. Whatever the reason, a good case can be made for attempting to more closely relate the costs incurred by distributors to the discounts provided by the state.

A reasonable approach would be for the states to shift the basis of the distributor discount to a fixed amount per stamp and, to the extent possible, make the discount equal to the cost of affixing stamps. Five states currently have a discount based on a fixed amount per stamp. In these states, the cost per case of the discount varies from $1.08 to $1.80, which is well below the 50-state median rate (including Washington, DC) of $2.52 per case. The highest discounts per case are in those states with fixed percentage discounts, with the sole exception of Montana.

STAMPS AS AN ENFORCEMENT AID

Stamps were introduced to provide evidence that the cigarette tax was paid and to make tax avoidance more difficult. Given the surge in bootlegging and counterfeiting in the 1970s, there is reason to question whether or not undue reliance has been placed on the use of stamps and other indicia. The cost of affixing stamps is so great that less money is spent on law enforcement and auditing procedures that is needed to insure efficient collection of the cigarette tax. It is difficult to make comparisons between states that use stamps and those that do not. Michigan is comparable to other states, while Hawaii and Alaska do not border on other states and are not subject to interstate smuggling problems. Michigan's cigarette tax collections appear to be as efficient and effective as any other state's.[3] Michigan is aided in its enforcement efforts to an unknown extent by other states' use of indicia. It is possible that if other states stopped using stamps, Michigan would have more enforcement problems.

State tax administrators have not indicated any active interest in collecting the cigarette tax without the use of indicia and there is no evidence that such interest can be generated in the near future. The general view of administrators is that the cigarette tax cannot be collected without the use of stamps unless tax rates become uniform.

Centralized Cigarette Collection

Can the cigarette tax be collected effectively by some method other than requiring distributors to break open cases and affix indicia to each pack?

Collection With Stamps. One approach would be to collect the tax at the source by requiring the manufacturer to imprint each state's indicia at the packaging stage. However, the burden placed on the manufacturer makes this proposal impractical. Indicia could be affixed easily, but the warehousing and transportation problems would be substantial. The manufacturer would have to maintain at least 51 different inventories for distribution to each state. Because of such problems, this proposal has generated little support and has been strongly opposed by cigarette manufacturers.

The major stumbling block to the central collection of the cigarette tax at the manufacturing level is the requirement that indicia be attached to each package to evidence payment of the tax. If this requirement were eliminated, many of the problems that would otherwise be encountered in cigarette packaging, shipping, and storing would be largely removed.

Collection Without Stamps. Another approach would be for the manufacturer to affix to the invoice the amount of tax paid in the state to which the cigarettes are being shipped. Packaging, storing, and shipping routines would not be disturbed under this proposal, and only a slight change in the billing procedure would be required. The state would take responsibility at the point of delivery. If the cigarettes are distributed to retailers within the state, there would be no collection problems. If the cigarettes are sold to retailers or distributors in other states with different tax rates, adjustments would have to be made on the distributors' tax returns. The distributor would remit the additional tax due to the state of receipt or claim a refund from his own state. Each state would remit to another state the precollected tax due on shipments originally received in the state but subsequently sold to retailers or distributors in other states. The process would require increased auditing and changes in the states' accounting procedures, but most states could meet this requirement with little difficulty.

The collection of the cigarette tax at the manufacturing level would increase costs for tobacco manufacturers, and they could be expected to ask for reimbursement. States would also incur higher costs for increased auditing. These costs, however, could easily be met out of a small portion of the money currently paid as discounts to distributors.

The money saved by the states could be used to increase enforcement efforts, to reduce the cigarette tax or other taxes, or to provide increased government services.

In addition to the savings on discounts, the states would benefit from an improved level of tax compliance. After the passage of the *Contraband Cigarette Act* in 1978 the Bureau of Alcohol, Tobacco and Firearms found that the major source of illicit cigarettes was not over-the-road smuggling, but diversion schemes and manipulation of cigarette accountability records. Collection of state cigarette taxes at the manufacturers' level would largely eliminate this problem as illegal diversion would be much more difficult.

As indicated in *Table A-2*, the revenue involved in the restructure of the cigarette tax collection process is $103.1 million a year. The quality of tax enforcement, administrative efficiency, and the prudent expenditure of taxpayers' money are also involved. Tax administrators and tobacco industry officials believe that the collection of the cigarette

tax without stamps would result in an increase in cigarette bootlegging activity. This is a possibility, as state and federal enforcement officals would have no way of knowing whether the appropriate state tax has been paid on cigarettes sold within the state. However, because stamps are often counterfeited and cigarettes sold with out-of-state stamps are not often reported, the loss of this information may not be as critical as it appears. On balance, the collection of cigarette taxes without stamps warrants consideration, particularly if tax rates become more uniform.

FOOTNOTES

[1] A form would be filed with the state with the tax due based on the numbers of cigarettes received from the manufacturer.
[2] A standard case is 60 cartons or 12,000 cigarettes.
[3] Although Michigan borders on a low-tax state (Indiana), per capita sales have been about 5 percent above the U.S. average in most years; in fiscal 1983 a 10-cent increase in the cigarette tax rate dropped per capita sales slightly below the national average.

CIGARETTE TAX EVASION— A STATISTICAL ANALYSIS

FACTORS AFFECTING CIGARETTE CONSUMPTION

Cigarette tax evasion activities have a definite impact on states through loss of revenue and on tobacco wholesalers and retailers in affected states through loss of business. Fortunately, as will be discussed later in this chapter, these illegal activities appear to have become less prevalent in recent years. To assess the magnitude of the problem and to judge the need for additional legislative or law enforcement action, state by state estimates of revenue losses due to tax evasion activities have been prepared. The total volume of smuggling traffic must be based on indirect measures, because bootleggers do not publish data and law enforcement reports offer little in the way of a comprehensive accounting of smuggling. One indirect measure of smuggling is the deviation of state per capita sales from the U.S. average. Deviations for each state are shown in *Table 5-1*. In many states these deviations are due to sale of tax-free cigarettes on Indian reservations and military installations. Estimates of these sales are available for most states. Therefore, an adjustment is also made for these sales, for the 1983 data, thereby providing a more accurate indication of which states may have over-the-border smuggling problems. States that lose revenues from bootlegging would, all other factors being equal, show up in the table as below average in per capita sales, while states that gain from bootlegging would have above average per capita sales.

The problem with using these deviations directly as a bootlegging measure is that there are other influences at work. Cigarette demand studies have indicated the importance of other economic, social, and demographic variables that affect per capita sales, many of which are unrelated to bootlegging. Thus, the deviation measure alone lacks the requisite accuracy to measure revenue losses from bootlegging.

The changes over time in the state deviations from national per capita cigarette consumption, however, can be used to draw conclusion about changes in the magnitude of cigarette bootlegging. Included in *Table 5-1* is the coefficient of variation for per capita cigarette sales in fiscal years 1975, 1980 and 1983. The coefficient is obtained by dividing the sum of the variances from the mean by the mean. This statistic provides a measure of the variation from the mean, which is comparable from year to year. The lower the number, the smaller the degree of variance. In fiscal 1975, the coefficient of variation was 8.56 packs. The vari-

Table 5-1

VARIANCE IN STATE PER CAPITA CIGARETTE SALES FROM U.S. AVERAGE, FY 1975, 1980, AND 1983

(in packs)

State	FY 1975	FY 1980	FY 1983	Addendum: Variance Adjusted for Tax Exempt Sales: FY 1983
Alabama	-19.2	-9.4	-12.5	-9.8
Alaska	19.5	1.4	18.1	36.1
Arizona	-9.1	-5.8	-17.7	-6.3
Arkansas	-16.1	-0.8	-0.8	-1.6
California	-3.8	-12.4	-18.0	-18.4
Colorado	0.1	-1.6	-3.5	-1.2
Connecticut	-20.7	-14.6	-14.7	-16.0
Delaware	16.7	17.9	20.8	21.5
Washington, DC	45.6	2.9	-4.3	-2.4
Florida	1.0	6.4	-1.2	7.4
Georgia	-8.0	1.4	-0.2	5.2
Hawaii	-38.5	-56.8	-48.8	-41.7
Idaho	-7.6	-17.4	-17.5	-14.7
Illinois	0.9	2.6	-0.9	-3.6
Indiana	31.5	14.3	14.2	10.4
Iowa	-10.4	-8.0	-13.2	-17.8
Kansas	-7.5	-5.5	-1.2	1.9
Kentucky	92.1	82.7	72.3	71.4
Louisiana	2.7	11.2	4.9	2.1
Maine	9.8	8.6	6.6	4.9
Maryland	15.2	-1.1	-0.6	-0.3
Massachusetts	-4.8	-12.1	-9.0	-10.4
Michigan	5.9	8.1	-0.5	-4.3
Minnesota	-19.4	-14.9	-15.6	-19.6
Mississippi	-14.1	-5.6	-6.5	-8.4
Missouri	4.6	9.5	5.3	2.1
Montana	-7.1	-10.6	-15.1	2.0
Nebraska	-16.8	-16.3	-18.0	-16.1
Nevada	74.3	45.1	30.4	39.3
New Hampshire	138.2	115.2	104.1	104.7

ation fell to 5.50 packs in fiscal 1980 and 4.94 packs in fiscal 1983. In other words, the variation in cigarette sales among the states has become much smaller (per capita cigarette sales are converging toward the mean) in recent years. One of the main reasons for variations among states is cigarette smuggling; other factors are tourism, income, and social and demographic differences. There is little evidence that these other factors have changed significantly, therefore, the conclusion is that the variation in per capita sales among

the states has declined because of a reduction in cigarette bootlegging. This measure is not absolute proof of the decline of cigarette bootlegging, but provides strong evidence, along with field observations, and other statistical evidence presented in this report, that bootlegging has declined significantly since the mid-1970s.

The sharp decline in the coefficient of variation between 1975 and 1980 is consistent with the observations of state and federal law enforcement officials that the largest gains against bootlegging

Table 5-1 (continued)
VARIANCE IN STATE PER CAPITA CIGARETTE SALES FROM U.S. AVERAGE, FY 1975, 1980, AND 1983
(in packs)

State	FY 1975	FY 1980	FY 1983	Addendum: Variance Adjusted for Tax Exempt Sales: FY 1983
New Jersey	-8.6	-8.3	-7.5	-9.2
New Mexico	-27.8	-29.9	-32.5	-20.5
New York	-7.0	-5.0	-4.2	-7.5
North Carolina	95.1	55.2	40.9	38.6
North Dakota	-13.0	-8.9	-9.2	-7.8
Ohio	-8.4	0.9	1.2	-3.9
Oklahoma	2.0	9.0	11.2	15.1
Oregon	23.5	13.9	4.2	-0.3
Pennsylvania	-16.3	-8.6	-3.5	-6.7
Rhode Island	23.8	16.7	7.0	8.0
South Carolina	-0.4	5.7	2.3	3.0
South Dakota	-17.4	-17.9	-19.0	-20.5
Tennessee	-13.5	-2.2	0.2	-3.3
Texas	-14.9	2.9	-2.4	-0.5
Utah	-55.1	-57.8	-59.8	-62.4
Vermont	24.6	29.0	25.0	20.7
Virginia	21.8	16.3	15.9	24.3
Washington	-31.4	-31.2	-26.4	-16.6
West Virginia	-7.7	-10.3	-13.1	-17.5
Wisconsin	-17.4	-15.3	-22.5	-22.8
Wyoming	29.8	25.5	12.4	19.4
Addendum: All States/Per Capita Sales (weighted average)	130.9	132.6	128.8	
Coefficient of Variation[1]	8.56	5.50	4.94	
Range of Tax Rates	2-21 ¢	2-21 ¢	2-25 ¢	

[1] The coefficient of variation is calculated by dividing the population variance by the mean. It is used to measure the degree of variance from the mean. The higher the number, the greater the degree of variance.

SOURCE: ACIR staff compilation from data in, The Tobacco Institute, The Tax Burden on Tobacco, Washington, DC, 1983, Vol. 18, Tables 7 and 11.

Table 5-2
CIGARETTE SMOKING STATUS OF PEOPLE 20 YEARS OF AGE AND OVER, ACCORDING TO SEX, RACE, AND AGE, 1965, 1976, 1980, AND 1983

(data are based on household interviews of a sample of the civilian noninstitutionalized population)

Sex and Age	Smoking Status (in percent)							
	Current Smoker[1]				Former Smoker			
	1965	1976	1980[2]	1983[3]	1965	1976	1980[2]	1983[3]
Both Sexes								
Total, all Ages, 20 Years and Over	42.7%	36.4%	33.6%	32.0%	14.0%	20.5%	22.0%	22.7%
MALE								
Total[4]								
All Ages, 20 Years and Over	52.4	41.9	38.3	35.2	20.5	28.9	29.3	30.3
20-24 Years	59.2	45.9	39.7	37.5	9.0	12.2	12.1	10.8
25-34 Years	60.7	48.5	43.1	38.0	14.7	18.3	20.6	20.0
35-44 Years	58.2	47.6	42.6	40.1	20.6	27.3	27.6	29.3
45-65 Years	51.9	41.3	40.8	35.6	24.1	37.1	36.9	39.5
65 Years and Over	28.5	23.0	17.9	20.8	28.1	44.4	47.4	49.8
FEMALE								
Total[4]								
All Ages, 20 Years and Over	34.1	32.0	29.4	29.1	8.2	13.8	15.5	15.9
20-24 Years	41.9	34.2	32.7	36.1	7.3	10.4	11.0	11.5
25-34 Years	43.7	37.5	31.6	32.3	9.9	12.9	14.4	13.1
35-44 Years	43.7	38.2	34.9	33.6	9.6	15.8	18.9	17.0
45-65 Years	32.0	34.8	30.8	30.5	8.6	15.9	17.1	18.1
65 Years and Over	9.6	12.8	16.8	13.5	4.5	11.7	14.2	18.0

[1]A current smoker is a person who has smoked at least 100 cigarettes and who now smokes; includes occasional smokers.
[2]Based on data for the last six months of 1980.
[3]Provisional estimates based on data from the first six months of 1983. Computed by the Division of Epidemiology and Health Promotion.
[4]Base of percent excludes persons with unknown smoking status.

SOURCE: U.S. Department of Health and Human Services, Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 5-3

PERCENT DISTRIBUTION OF PEOPLE 20 YEARS OF AGE AND OVER, BY SMOKING STATUS AND PERCENT DISTRIBUTION OF CURRENT SMOKERS, BY NUMBER OF CIGARETTES SMOKED DAILY, ACCORDING TO SELECTED CHARACTERISTICS, 1977

Smoking Status
(in percent)

Characteristic	Total[1]	Never Smoked	Former Smoker	Current Smoker
All Persons 20 Years of Age and Over ...	100.0%	43.9%	20.1%	36.0%
Race or Ethnicity				
White...............................	100.0	43.1	21.7	35.2
Black...............................	100.0	45.0	13.0	42.0
Hispanic............................	100.0	54.1	12.3	33.5

Number of Cigarettes Smoked Daily
(in percent)

Characteristic	All Current Smokers[2]	Less Than 15	15-24	25-35	35 or more
All Persons 20 Years of Age and Over	100.0%	30.3%	43.2%	12.8%	13.7%
Race or Ethnicity					
White.....................	100.0	25.2	45.1	14.0	15.8
Black.....................	100.0	53.8	36.2	7.3	2.7
Hispanic..................	100.0	59.1	27.0	4.9	8.7

[1]Excludes unknown smoking status.
[2]Excludes unknown amount smoked.

SOURCE: U.S. Department of Health and Human Services, Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

were made between 1977 and 1980—a period marked by considerable publicity about cigarette bootlegging and the passage of the federal *Contraband Cigarette Act*. The relatively small decline in the coefficient of variation since 1980 is also consistent with field observations indicating that the level of cigarette bootlegging activity has plateaued in the early years of the 1980s.

This chapter presents a comprehensive analysis of the current level of cigarette tax evasion activities, including state-by-state estimates of revenue gains and losses.

Social and Demographic Factors

One reason states have different per capita cigarette sales is because people's tastes and preferences differ. The age distribution of the population, for example, influences per capita cigarette sales because adults are the main consumer group and smoking habits vary with age. A state with a relatively large percentage of the population over the legal age should have higher per capita sales, other elements being equal.

The percent of resident population exempt from

the cigarette tax also causes variations in per capita sales data. Military personnel and Indians on reservations are exempt from both cigarette excise and sales taxes, but are included in the state population count. Because sales data is only available for tax-paid cigarettes, states with large exempt populations (or active military or Indian entrepreneurs) will have lower than average per capita sales, other factors being equal.

Tourist populations, which are, of course, not counted in the resident population, tend to inflate per capita cigarette sales. This effect is particularly pronounced for states with small resident populations, such as Nevada. Per capita cigarette sales in Nevada were 23.6 percent higher than the national average in fiscal year 1983, largely because of tourism.

Other social and demographic variables that are associated with variations in state per capita sales include religion, region, ethnic populations and the male-female population ratio. The existence of a large religious population that explicitly forbids smoking can significantly reduce a state's per capita sales. For example, the Mormon population in Utah helps explain why that state's per capita sales are only a little more than half the national average.

The male-female ratio may also be related to the level of smoking. Surveys indicate that a larger proportion of men than women smoke cigarettes. (See Table 5-2.) States with high male-female ratios should have higher per capita sales, other factors being equal. However, the statistical evidence of the link between smoking and gender is weak, possibly because there is little variation in the male-female ratio among the states.

The ethnic makeup of a state's population appears to be a factor in explaining variations in per capita cigarette sales. For example, surveys on smoking habits indicate that Hispanics smoke less than whites. (See Table 5-3.) Therefore, states with relatively large hispanic populations can be expected to have below average per capita sales; this is the case in California, New Mexico, Arizona, and, to a lesser extent, in Texas. Also, there is statistical evidence (although no survey evidence) that persons of Scandinavian or Asian ancestry smoke less than the general population. This appears to be a factor in explaining below average per capita sales in the Plains states and in Hawaii.

The regional differences in per capita sales originally may have been associated with the factors discussed above and have since taken on an importance of their own. The justification for this is the habit-forming nature of smoking. Thus, states that originally had large religious memberships with groups intolerant of smoking may still have low per capita sales despite a relative decline in religious population.

Related to the regional variable is the geographic distribution of the population, with population density, the urban-rural population ratio and percent manufacturing employment as the most likely variants that could be applied to explain variations in per capita sales. The rationale behind this factor is that cigarette smoking is a social phenomenon more common among dense populations than among widely scattered populations. This may be a partial explanation for lower than average per capita sales in most western states. In fiscal year 1983 there were 18 states with per capita cigarette consumption above the national average and only four of these states were west of the Mississippi River (and three of these states had very high levels of tourism).

Economic Factors

Price and income effects on the demand for cigarettes are probably as important as social and demographic variables in explaining variations in state per capita cigarette sales. According to elementary supply/demand theory, if a cigarette is a normal good, then per capita sales will be directly related to per capita income. Most cigarette demand studies postulate such a relationship; that is, states with high per capita income have high per capita sales, other factors being equal.

An even more fundamental law of economics dictates that as the price rises, the quantity demanded falls; hence, states with high-priced cigarettes will have low consumption, other factors equal. Although the extent to which demand is responsive to price is a debatable question, even with relatively unresponsive demand the effect may be substantial because prices vary considerably from one state to another. This price differential is almost totally the result of the difference in state sales and excise taxes. (State and local cigarette taxes explain almost 90 percent in the price variations among the states.) The important point to be made here is that high taxes (or high prices) generally reduce consumption, and even if tax differentials had no effect on bootlegging, there would be lower consumption in high-tax states.[1]

FACTORS AFFECTING BOOTLEGGING

Although all the economic, social, and demographic variables discussed above have a significant impact on per capita cigarette sales, bootlegging (casual and organized) is still believed to account for a significant share of the interstate variation in cigarette sales. Because no direct data are available on bootlegging, one must examine the factors that cause bootlegging and measure their effects on per capita sales.

The major determinant of bootlegging is the tax differential (or price differential) between a state and its closest neighbors. If a state has a higher tax on cigarettes than its neighboring border states, the border states will gain sales from the bootlegging of cigarettes from the high-tax state, while the high-tax state will lose sales to the surrounding lower tax states.

Revenue gains and losses resulting from the tax differential between bordering states are generally due to either casual smuggling or organized smuggling. In most states, the major smuggling problem today appears to be of the casual variety. However, in the 1970s organized smuggling was the major problem in many states, particularly in the Northeast and Midwest. In these states, the ultimate consumer was responsible for only a small portion of cigarette smuggling, with the remaining portion accounted for by enterprising distributors or organized criminal elements, often on a large scale. This type of smuggling still exists in some states, but is much less intense and widespread than several years ago.

The amount of smuggling depends not only on the tax differential, but on other factors such as the accessibility of retail outlets in the low-tax state to significant population centers in the high-tax state. Thus, length of border, population near the border and ease of access affect the magnitude of bootlegging gains and losses. For example, all these factors are particularly favorable for bootlegging from New Hampshire to Massachusetts. The tax rate in New Hampshire is 9 cents less than in Massachusetts, and there are large population centers within easy driving distance of the New Hampshire border. In addition, businessmen in New Hampshire actively court customers from Massachusetts with the encouragement of the state government. The result is that New Hampshire has the highest per capita cigarette sales in the nation—80.8 percent above the national average in

fiscal year 1983. On the other hand, per capita cigarette sales in Massachusetts were about 7 percent below the national average in fiscal year 1983. It is interesting to note that this disparity was at its greatest in fiscal year 1976 when per capita cigarette sales in New Hampshire were 149.3 percent higher than in Massachusetts. In fiscal year 1983 per capita sales in New Hampshire were only 94.4 percent higher than in Massachusetts. Although the tax disparity has not changed since that time, the tax saving as a percentage of the price of cigarettes in Massachusetts has fallen from 19 percent to 12 percent. Also the amount of organized smuggling between the two states has likely declined, although casual smuggling has always accounted for the major share of the across-the-border traffic.

Large-scale interstate smuggling, often over long distances, such as the smuggling of cigarettes from North Carolina to New York, has little to do with border state tax differentials. It depends on the differential between the high-tax, receiving state and the low-tax state from which the contraband originates. Only the lowest taxing state in a region is likely to benefit from this type of bootlegging, and, in general, the higher the tax differential, the more likely the high-tax state will lose sales from interstate smuggling.

Other important factors related to both across-border and interstate smuggling are the distances between state population centers and the risk of arrest and seizure of contraband. Increased law enforcement activity can alter the pattern of interstate bootlegging by increasing the risk component of the cost of bootlegging cigarettes. This, in fact, appears to have occurred due to the 1978 federal *Contraband Cigarette Act*, making transportation of contraband cigarettes in interstate commerce a federal criminal offense. Strong state law enforcement efforts can also reduce the incidence of cigarette smuggling, but without an overall 50-state effort, only the pattern would be affected and bootlegging could continue from other low-tax, low-risk states.

RESULTS OF THE STATISTICAL ANALYSIS

Multiple regression analysis using pooled, time series data for fiscal years 1981, 1982, and 1983 was employed in this study to determine the factors that best explain state per capita cigarette sales. Data for three years were used because more

Table 5-4
CIGARETTE TAX EVASION—ESTIMATED GAINS AND LOSSES BY STATE, FY 1983
(dollar amounts in millions)

State	Estimated Cigarette Revenue[1]	Revenues Assuming No Tax Evasion or Exemption	Estimated Gain or Loss	Gain or Loss as Percent of Column 1	Exhibit: Loss From Tax Exempt Sales[3]
United States, Total	$5,697.1	$5,952.2	$-255.2[2]	4.8%	$220.7
Alabama	$99.9	$109.6	$-9.7	-9.7%	$5.8
Alaska	6.9	6.7	0.2	3.2	0.8
Arizona	59.2	60.9	-1.7	-2.9	8.1
Arkansas	60.9	63.4	-2.5	-4.1	2.5
California	415.0	433.7	-18.7	-4.5	17.1
Colorado	64.6	66.0	-1.4	-2.2	3.4
Connecticut	124.2	140.6	-16.4	-13.2	3.9
Delaware	12.6	11.8	0.8	6.3	0.5
Washington, DC	16.0	17.4	-1.4	-8.8	2.0
Florida	329.9	353.8	-23.9	-7.2	40.6
Georgia	110.7	112.9	-2.2	-2.0	8.3
Hawaii	20.1	22.0	-1.9	-9.5	3.3
Idaho	14.1	13.8	0.3	2.1	1.0
Illinois	281.9	301.5	-19.6	-7.0	4.2
Indiana	112.0	106.9	5.1	4.6	1.0
Iowa	74.3	77.4	-3.1	-4.2	0.3
Kansas	58.2	58.7	-0.5	-0.9	3.7
Kentucky	53.5	36.0	17.5	32.7	1.1
Louisiana	87.3	90.1	-2.8	-3.1	1.3
Maine	29.9	31.2	-1.3	-4.3	0.8
Maryland	77.1	77.7	-0.6	-0.8	2.9
Massachusetts	184.9	201.9	-17.0	-9.2	5.3
Michigan	262.2	282.5	-20.3	-7.7	2.6
Minnesota	115.1	122.3	-7.2	-6.3	1.0
Mississippi	49.0	50.2	-1.2	-2.4	1.7

Missouri	140.7	144.7	-4.0	-2.8	1.4
Montana	16.0	16.4	-0.4	-2.5	2.9
Nebraska	36.5	39.3	-2.8	-7.7	2.6
Nevada	27.6	27.9	-0.3	-1.1	2.5
New Hampshire	38.7	23.9	14.8	38.2	0.8
New Jersey	230.1	245.4	-15.4	-6.7	6.1
New Mexico	20.6	21.7	-1.1	-5.3	3.5
New York	616.2	638.5	-22.3	-3.6	8.7
North Carolina	53.2	42.6	10.6	19.9	0.8
North Dakota	17.0	17.7	-0.7	-4.1	1.0
Ohio	246.4	267.9	-21.5	-8.7	2.2
Oklahoma	82.2	87.1	-4.9	-6.0	5.2
Oregon	60.7	61.1	0.4	-0.7	0.2
Pennsylvania	372.6	383.5	-10.9	-2.9	5.0
Rhode Island	30.9	28.4	2.5	8.1	1.2
South Carolina	42.8	44.3	-1.5	-3.5	1.8
South Dakota	11.8	12.1	0.3	2.5	0.4
Tennessee	103.4	112.5	-9.1	-8.8	1.2
Texas	351.4	367.0	-15.6	-4.4	19.7
Utah	18.0	20.1	-2.1	-11.7	0.6
Vermont	14.7	12.8	1.9	12.9	0.1
Virginia	118.8	119.3	-0.5	-0.4	4.1
Washington	123.4	143.1	-19.7	-16.0	18.4
West Virginia	49.2	54.9	-5.7	-11.6	0.3
Wisconsin	148.4	165.2	-16.8	-11.3	6.7
Wyoming	6.3	5.8	0.5	7.9	0.3

[1]Includes state and local sales and cigarette tax revenues. Rates as of November 1, 1983.
[2]The loss to the losing states is $309 million.
[3]State revenue losses only; local losses not included.

observations can increase the reliability of the estimates and because data for one year may reflect abnormal occurrences in that year, such as the large federal cigarette excise tax increase in 1983. The estimates presented in this report are for fiscal year 1983.

Among the variables found to be significant in explaining state per capita cigarette consumption are cigarette and sales tax rates (adjusted for inflation), the price differential among border states (adjusted for inflation), religion, per capita income (adjusted for inflation), ethnic composition (Hispanic and Asian), and dummy variables for region, for the major exporting states, and for 1983 retail cigarette prices. Variables such as the unemployment rate, percent manufacturing employment, unfair sales laws, the male-female ratio, the urban-rural ratio, tax-exempt sales, and the before tax retail price were found to be unimportant in explaining variations in state per capita cigarette sales. (For a detailed discussion of the model and the estimates, see *Appendix A*.)

The per capita sales estimates obtained from this model were multiplied by the current state and local cigarette and sales taxes (as of November 1, 1983) to obtain estimated revenues from the sale of cigarettes. These estimates are presented in *Table 5-4*. One way to assess the cost of the present pattern of cigarette tax differentials and the bootlegging that accompanies the differentials is to compute the hypothetical per capita sales that would result if cigarette smuggling did not exist. Estimated revenues are computed by applying the current state and local cigarette and sales tax rates to the hypothetical per capita sales figures. (The method used to estimate hypothetical per capita sales is described in detail in *Appendix A*.) A comparison of these estimates with those described above is also presented in *Table 5-4*.

The gain and loss estimates in columns 3 and 4 of *Table 5-4* give a rough indication of which states gain or lose from cigarette smuggling. Briefly, this method allows per capita sales to vary among the states only to the extent that the states differ with respect to variables that are assumed to be unrelated to cigarette smuggling. These variables include tourism, religion, income, region, and ethnic composition. The tax on cigarettes is included among these variables, but only to the extent that it affects consumption. The values of these factors for each state were multiplied by the regression coefficients previously obtained to provide hypothetical

per capita sales figures for each state. These were in turn reduced so that the mean value of the hypothetical estimates were equal to the mean value of per capita sales estimated using all variables.[2]

These loss estimates encompass all nontaxable sales including sales on military bases and Indian reservations. A large share of these tax-exempt sales are legal and cannot be classified as cigarette tax evasion, particularly sales on military bases (see *Table 3-11*), therefore an attempt is made to separate these losses from total losses to arrive at an estimate of revenues foregone due to interstate and casual smuggling and illegal diversion of cigarettes. As can be seen in *Table A-3* in *Appendix A*, this adjustment significantly reduces the losses for many states and switches 20 states from a losing position to a gaining position. However, these estimates appear to be suspect for some states, particularly those with unusually large tax-exempt sales. For example, Alaska moves from a loss of 3.2 packs per capita to a gain of 19.8 packs per capita, Arizona from a loss of 3.2 packs to a gain of 13.2 packs and New Mexico from a loss of 5 packs to a gain of 12.1 packs. It is difficult to explain where the additional sales for these states come from as there is no evidence of widespread purchases by out-state purchasers in these states. It may be that the model partially reflects tax-exempt sales although there is no direct variable included. The price variable could pick up some of the effect of tax-exempt sales as high-tax states could be expected to have higher sales on Indian reservations and military bases.[4] For these states and others with large tax-exempt sales the total gain and loss numbers may be more accurate, but overall this adjustment does provide a rough division of actual tax evasion losses and losses due to legal tax exemption.

An analysis of the ACIR estimates of tax evasion losses and gains yields the following conclusions:

- The level of tax evasion activity has fallen significantly since the mid-1970s. In 1975 ACIR estimated that state and local revenue losses from bootlegging were $391 million (for the losing states) or 10 percent of total revenue. The estimated loss for FY 1983 is $309 million or only 5.4 percent of estimated total revenue. In 1975 there were 17 states that lost 9 percent or more of their cigarette tax revenue because of tax evasion or tax exemption. In 1983 there were only eight states that lost more than 9 percent of their revenue. These states are:

Table 5-5
COMPARISON OF EARLIER ACIR AND
BUREAU OF ALCOHOL, TOBACCO, AND FIREARMS
TAX EVASION ESTIMATES WITH CURRENT ACIR ESTIMATES
(in packs per capita)

State	1975 ACIR	1979 ATF	1983 ACIR[1]	State	1975 ACIR	1979 ATF	1983 ACIR[1]
Alabama	-12.3	-7.1	-11.2	Missouri	-8.0	-4.2	-3.7
Alaska	5.7	3.7	-3.2	Montana	-3.5	-l.9	-3.2
Arizona	-10.0	-2.2	-3.2	Nebraska	-7.8	-6.4	-7.9
Arkansas	-17.3	-13.1	-5.2	Nevada	6.1	12.6	-1.7
California	-5.8	-6.4	-5.0	New Hampshire	125.6	111.7	96.1
Colorado	1.3	-1.1	-2.8	New Jersey	-18.7	-12.3	-8.2
Connecticut	-23.2	-15.3	-15.4	New Mexico	-5.9	-1.0	-5.0
Delaware	-2.4	-2.0	9.3	New York	-21.0	-15.2	-4.5
Washington, DC	2.8	-9.8	-11.5	North Carolina	75.9	55.3	40.1
Florida	-21.3	-20.9	-8.7	North Dakota	-3.2	-2.0	-4.8
Georgia	-5.4	-3.2	-2.6	Ohio	-10.5	-7.4	-10.7
Hawaii	NA	NA	-6.8	Oklahoma	-3.5	-7.2	-7.5
Idaho	3.5	1.8	2.1	Oregon	7.3	10.1	-0.8
Illinois	-12.8	-9.2	-8.5	Pennsylvania	-16.7	-10.8	-3.8
Indiana	10.6	-1.2	6.4	Rhode Island	-2.6	-6.2	11.2
Iowa	-9.3	-6.2	-4.9	South Carolina	5.9	2.4	-4.8
Kansas	-5.5	-3.2	-1.0	South Dakota	-1.0	-1.5	-3.2
Kentucky	78.5	62.7	67.8	Tennessee	-12.1	-11.5	-10.6
Louisiana	-4.3	-1.4	-4.2	Texas	-19.0	-12.9	-5.2
Maine	-12.2	-4.7	-5.5	Utah	2.0	-1.1	-7.9
Maryland	0.5	-2.4	-1.0	Vermont	18.0	31.0	21.2
Massachusetts	-13.0	-17.2	-11.4	Virginia	7.9	5.8	-0.6
Michigan	-5.8	-3.7	-9.3	Washington	-19.6	-13.2	-15.8
Minnesota	-17.2	-11.7	-7.2	West Virginia	-7.5	-11.9	-13.2
Mississippi	-4.4	-4.3	-3.1	Wisconsin	-16.5	-10.7	-11.7
				Wyoming	7.7	10.3	11.9

[1]Before adjustment for tax-exempt sales.

SOURCE: ACIR and Bureau of Alcohol, Tobacco, and Firearms staff estimates.

Washington (16 percent), Connecticut (13.2 percent), Utah (11.7 percent),[3] West Virginia (11.6 percent), Wisconsin (11.3 percent), Alabama (9.7 percent), Hawaii (9.5 percent) and Massachusetts (9.2 percent). All those states except West Virginia and Utah also suffered substantial revenue losses in 1975. (Estimates were not calculated for Hawaii in 1975.) The other five states all suffered larger losses in 1975.

The states that benefit the most from cigarette smuggling are: New Hampshire (38.2 percent), Kentucky (32.7 percent), North Carolina (19.9 percent), Vermont (12.9 percent), Rhode Island (8.1 percent), Wyoming (7.9 percent), and Delaware (6.3 percent). All

these states except Delaware and Rhode Island were also winners in 1975. There were ten winners in 1983 compared with nine winners in 1975, but for the most part the amounts gained are smaller than in 1975.

- A substantial share of the revenues lost by the states is the result of the tax exemption for cigarettes sold on military bases and Indian reservations. This share is estimated at 69 percent for FY 1983. This tax exemption accounts for a major share of the revenue loss in three of the seven states reported above as suffering large revenue losses. These states are Washington (93.7 percent), Alabama (68.8 percent), and Wisconsin (40.1 percent).

After adjusting for tax exempt sales there are only two states that suffer substantial (9 percent or more of estimated sales) losses from interstate smuggling or other tax evasion activities. These states are: West Virginia (11.0 percent) and Connecticut (10.1 percent). There are eight states that suffer moderate (4 percent to 9 percent) revenue losses from casual or interstate smuggling. These states are: Ohio (7.8 percent), Tennessee (7.6 percent), Michigan (6.7 percent), Wisconsin (6.7 percent), Massachusetts (6.3 percent),Minnesota (5.3 percent), Illinois (5.1 percent), and New Jersey (4 percent). (See *Table A-3* in *Appendix A*.)

These estimates should be viewed as reasonable approximations of the level of tax evasion activity in the states rather than as precise estimates. As with any estimating model there are nontrivial errors in the estimates for a number of states. The standard error of the estimate is 4.5 percent of the mean and the error is considerably larger for a few states. (See *Table A-2*, in *Appendix A*.) Also these estimates are sensitive to the price elasticity assumption, which is discussed in *Appendix A*. Finally, the adjustment for tax exempt sales is subject to error because of the weakness of some of the data and because the estimating equations may have already reflected the impact of tax-exempt sales on per capita consumption in some states. These estimates, however, provide a good scale to judge the bootlegging problem of one state relative to another. Also, these estimates appear reasonable when compared with earlier estimates prepared by ACIR, ATF and by several of the states. (See *Table 5-5*.)

FOOTNOTES

[1]For a discussion of the effect of price on cigarette consumption see; Lewit, Eugene M. and Coate, Douglas, *The Potential for Using Excise Taxes to Reduce Smoking*, National Bureau of Economic Research, Reprint No. 347, 1982.

[2]This is the same methodology that was used in the 1977 ACIR study on cigarette bootlegging. The methodology was criticized by some because when the hypothetical per capita sales estimates were multiplied by the population for each state and summed, the total substantially exceeded the actual amount of cigarettes consumed nationwide. This difference can be eliminated by using an adjustment factor that weights sales by the population for each state. This particular problem is not present for the fiscal 1983 data. When the 1983 hypothetical per capita sales estimates are multiplied by each state population and summed, the result is very close to actual national consumption (federal removals.) The estimates produced by the population adjustment method are presented in *Appendix Table A-5*. These estimates should be compared with the estimates in *Table A-3*, after the adjustment for tax exempt sales, as this method controls for taxable sales, thereby removing from the estimates, on an average basis, tax-exempt sales.

[3]The large loss in Utah is surprising. This may be due to tax exempt sales on Indian reservations. Unfortunately the state could not provide these figures.

[4]A variable for tax-exempt sales was tested but was not significant, perhaps because it was correlated with a dummy variable used to measure the difference in consumption levels between eastern and western states.]

Description of Methodology Used to Estimate State Cigarette Sales and Revenue Losses from Tax Evasion

ESTIMATING CIGARETTE SALES

The method used to estimate cigarette sales is a pooled, cross section, multiple regression analysis. Cross section data for the 50 states and the District of Columbia were pooled for years 1981, 1982, and 1983. A supply-demand model was postulated to explain state per capita cigarette sales.[1] The following simplifying assumption was made: the supply of in-state tax-paid cigarettes was assumed to be perfectly elastic at the prevailing price within the state. This assumption is either explicitly or implicitly present in most studies of cigarette demand. Consequently, the per capita sales of in-state cigarettes equals the quantity demanded. The reduced form equation becomes the demand function for in-state cigarettes:

$$Q_1 = b_o + b_1 X_{1i} + b_2 X_{2it}$$
$$\ldots b_{12} X_{12i} + U_i (i = 1 \ldots 51)$$

Where Q_1 is the per capita sales of in-state cigarettes in state i; $X_{1i} \ldots X_{12i}$ are the values for the determinants of demand for state i; $b_0 \ldots b_{12}$ are the parameters to be estimated and U_1 is the error term—the demand equation is assumed to be linear in the X variables, with the normal distribution assumptions and the independence of the error term also asserted.

As mentioned above, the dependent variable is state per capita cigarette sales. Total cigarette sales were not used because 99 percent of the variation is explained by population, leaving little to be explained by other variables. For example, the price differential variable (described below) is one of the

65

main determinants of state per capita sales, but is statistically insignificant in estimating total cigarette sales. It would, therefore, be very difficult to estimate revenue gains and losses from cigarette bootlegging using total cigarette sales as the dependent variable.

The independent variables that are significant in explaining state variations in per capita cigarette sales are listed below:

X_1 = State and local cigarette and sales taxes
X_2 = Real per capita income
X_3 = Index of tourism
X_4 = Index of border state price differentials
X_5 = Religion
X_6 = (binary variable) = 1 in plains states and
         = 0 in all other states
X_7 = Percent population of Spanish origin
X_8 = Percent population of Asian origin
X_9 = (binary variable) = 1 in western states and
         = 0 in eastern states
X_{10} = (binary variable) = value of 1983 prices and
         = 0 for 1981 to 1982
X_{11} = (binary variable) = 1 for lowest price state in northeast and
         = 0 in all other states
X_{12} = (binary variable) = 1 for two lowest price states in south and
         = 0 in all other states

Statistical Methodology

The state and local tax per pack, X_1, was used as a proxy for the price of in-state cigarettes. It is expected that $b<0$, implying that less in-state cigarettes are purchased as the tax rate rises. The retail price of cigarettes was also tested and found to be a slightly less powerful explanatory variable than the tax rate. This seems to indicate that purchase decisions are more responsive to the tax rate than to the actual retail price of cigarettes. The state and local tax rates were also used as separate variables, but the local tax rate was not statistically significant and the combined tax rate was more significant than the state tax rate alone.

If cigarettes are normal goods, per capita income (in real terms), X_2, should be positively related to per capita sales; hence b_2 should be positive; $b_2 > 0$.

The level of tourist activity can have a significant impact on the level of per capita cigarette sales, particularly in low-population states. To measure this effect, two variables were tested, per capita hotel and motel receipts and total per capita tourist expenditures. The second variable was used in the final equation, because it was slightly more significant. However, per capita hotel and motel receipts might be a preferable choice because it is probably measured more accurately and was one of the variables used to produce the 1977 cigarette bootlegging estimates. It is expected that $b_3 > 0$.

The index of price differentials, X_4, ideally represents the demand for in-state cigarettes, which is derived from populations in border states relative to populations in the base state. Cigarettes from other states are considered to be substitute goods; hence the index of the price of these substitutes should be positively related to per capita sales of in-state cigarettes; $b_4 > 0$. The index was deflated by the U.S. Consumer Price Index. This variable is designed mainly to capture the effects of casual smuggling across borders, but it should also capture some of the effects of organized smuggling.

This index was constructed by weighting the differences in prices by the relative border populations of the states in question.[2] Border population is defined as the population of all counties, any part of which is within 60 miles of the border. If the border state price was higher than the base state price, the difference was weighted by the ratio of populations near the border (60 miles) in the base state divided by the total base state population. This provides an estimate of the percentage of the base state population within easy driving distance of the border state.[3]

The logic of this approach is that if price in the border state is higher, the size of the population of that state can affect the level of sales in the base state. However, if the price in the border state is lower, the population of the border is irrelevant because residents of the base state will be making purchases in the border state and the population of that state has no bearing on the effect of these purchases on cigarette sales in the base state.

The formula used was $X = (pdh-Pd1)$ where:

$Pdh = K \quad \dfrac{P_j\text{-}P \text{ (population near border in border state)}}{\text{population of base state}}$

$j = 1$

K = Number of higher price bordering states

P_j = Price in the jth higher price bordering state

P = Price in the base state

$$Pd1 = \overset{n}{\underset{i=1}{}} \frac{(P-P_1) \text{ (population near border in base state)}}{\text{population in base state}}$$

n = Number of lower price bordering states

P_1 = Price in ith lower price bordering state

This index cannot fully measure all the factors that account for movements across borders to purchase cigarettes, but as will be explained below, this is one of the most significant variables for explaining the differences in per capita cigarette sales among the states.[4]

A religion index was constructed to account for religious opposition to smoking; X_5 equals the percent of a state's population belonging to the Church of the Latter Day Saints (Mormons) of the Seventh Day Adventists. The states with a high percentage are: Utah (67.5 percent), Idaho (26.2 percent), Wyoming (9.1 percent), and Nevada (7.1 percent). The expected sign for b_5 is negative because these groups disapprove of smoking; $b_5 < 0$.

There are four variables used to explain different habits, tastes, and preferences for smoking based on region or demographics. It was observed that the Plains states (Minnesota, Iowa, Kansas, Nebraska, South Dakota, North Dakota, and Wisconsin) have historically had lower than average per capita cigarette consumption. This may be due to the agricultural nature of these states or to the population mix (these states have relatively large Scandanavian populations).[5] Although no confirming data is available, a dummy variable, X_6, was used in which a 1 was for the Plains states and a 0 for all other states. This classification allows one to postulate an inverse relationship between X_6 and per capita sales; $b_6 < 0$. The second demographic variable, X_7, is the percentage of population of Spanish origin in a state. Surveys of smoking habits indicate that persons of Spanish origin smoke less than the general population. (See Table 5-3.) Therefore, this variable should be negatively related to per capita cigarette sales; $b_7 < 0$. The states with the largest Spanish populations are; New Mexico (36.6 percent), Texas (21 percent), California (19.2 percent), Arizona (16.2 percent), and Colorado (11.8 percent).

The third demographic variable used is the percentage of a state's population of Asian descent. It is postulated that this population group smokes less than the general population, although there is

no hard survey data to support this hypothesis. The largest concentrations of Asian persons are found in Hawaii (61.2 percent) and California (5.5 percent).[6] This variable, X_8, should be negatively related to per capita sales; $b_8 < 0$.

The final demographic variable, X_9, is a binary (or dummy) variable, where 1 is used to represent western states (all states west of Missouri and north of Kansas) and a 0 is used for eastern states. This variable is used because survey data indicates that smoking is less prevalent in the west than in the east. (See Table 3-6.) Consumption is also lower in western states than in eastern states because of larger Indian, military, Hispanic and Asian populations. The equation includes separate variables for Hispanic and Asian population and when these variables are added to the model the significance of the east-west dummy variable declines. This variable also reflects to some degree the depressing effect of tax-exempt sales on military bases and Indian reservations on cigarette consumption in western states.[7]

Variable X_{10} is a price dummy variable for 1983. Because the final cigarette estimating equation uses data for three years, three price dummy variables were tested. The first variable included 1981 prices for each state and a 0 for 1982 and 1983, the second variable includes 1982 prices and a 0 for 1981 and 1983 and the third variable includes 1983 prices and a 0 for 1981 and 1982. The purpose of these dummy variables is to determine if there has been a significant change in the price elasticity of cigarettes over this three year period. Of these three variables only the last was significant at the standard 95 percent confidence level, indicating a significant change in price elasticity in 1983. Only this 1983 dummy variable was included in the final estimating equation. The sign of the coefficient is negative indicating that cigarette consumption was more responsive to price (more elastic) in 1983 than in 1981 or 1982. This may be because cigarette prices increased sharply in 1983, due mainly to the 8-cent increase in the federal cigarette tax and the large number of increases in state cigarette taxes. It could also reflect an increase in cigarette bootlegging in 1983, although evidence on this is inconclusive.

The inclusion of the last two variables, X_{11} and X_{12}, represents an attempt to inject an interstate bootlegging dimension into the model. Prior to the 1977 ACIR report on cigarette bootlegging, cross-section studies considered only border state boot-

legging, possibly because the interstate problem was believed to be minimal or nonexistent at the time. We now know, of course, that interstate bootlegging exists and this aspect of demand should be included in the specification of the model, although the incidence of this type of smuggling has declined significantly in the last few years.

This study assumes that only the lowest tax (price) state in a region where interstate bootlegging is present is likely to benefit from this type of demand. The amount of gain in per capita sales for the low-price state depends, of course, on the population of the low-price state, the population of the high-price states in the region, the price differential, the distance between the states, and the risk factor involved in the transportation of the contraband cigarettes. To avoid this complexity, two simple intercept dummy variables were used to account for the windfall gains received by the lowest price state in the two regions most affected by interstate smuggling.

In the Northeast, New Hampshire is the lowest price state. In this case, there is probably more casual smuggling by Massachusetts residents than interstate smuggling. However, the New Hampshire smuggling situation is understated by the border tax differential index, most likely because of the unique nature of the smuggling situation between New Hampshire and Massachusetts and because of some interstate smuggling of cigarettes to New York, Connecticut and other nearby states. As a result, it appears that New Hampshire has a unique type of interstate smuggling problem which must be handled via the binary variable X_{11}. (New Hampshire = 1; all other states = 0.)

The two states that are the most cited sources of interstate contraband are North Carolina and Kentucky. Cigarettes from these two states have been found in states are far removed as Massachusetts, Minnesota, Florida, and Texas. Variable X_{12} is meant to measure the impact of interstate smuggling on the per capita consumption of these two states, taking on the value of 1 for Kentucky and North Carolina, and 0 for the remaining sates. The expected sign for both b_{11} and b_{12} is positive because interstate smuggling should have the effect

Table A-1
RESULTS OF REGRESSION

Variable	Estimated Coefficient	T Statistic[2]
Real State and Local Tax Rate	-1.0358	-6.972
Real Price Differential	.4690	11.077
Real 1983 Price Dummy	-.0690	-5.473
Real Per Capita Income	.0018	5.248
Tourism (per capita)	.0056	10.178
Percent Asian Population	-.7981	-12.835
Percent Spanish Origin	-.6455	-7.665
Religion	-.7084	-12.751
Regional Dummy (east-west)	-8.5922	-5.862
Plains State Dummy	-10.3516	-6.830
New Hampshire Dummy	59.7685	13.032
Kentucky-North Carolina Dummy	20.1486	5.771
Constant	131.8829	11.077

R^2 = .9531 (.949 when adjusted for degrees of freedom)
Standard Error of Estimate = 5.8837

[1]The equations were run in both linear and log form. Both forms were satisfactory, but the linear version was used for simplicity reasons.
[2]The T-statistic is a test statistic for the hypothesis that a coefficient has a particular value. The T-statistic to test if a coefficient is zero (that is, the variable does not belong in the equation) is the ratio of the coefficient to its standard error. As a general rule, if the T-statistic exceeds one in magnitude it is at least two-thirds likely that the true value of the coefficient is not zero, and if the T-statistic exceeds two in absolute value it is at least 95 percent likely that the coefficient is not zero.

SOURCE: Computed by ACIR staff.

of increasing the demand for cigarettes in these states; $b_{11} > 0$; $b_{12} > 0$.

Results of the Regression

Per capita cigarette sales for fiscal years 1981, 1982, and 1983 were regressed on variables X_1 through X_{12}. The estimated coefficients b_1 through b_{12} along with the T-statistics are shown in *Table A-1*.

From a statistical standpoint, the results appear to be satisfactory because the R^2 was high (most of the variation is explained), all the estimated coefficients had the correct, hypothetical signs, and all the independent variables were significant to the standard 95 percent confidence level. It should be noted that a number of other variables were tested, but not used in the final equation because the sign was wrong, other related variables were superior, or they were insignificant. These variables include: Population 18 and over, population 65 and over, the unemployment rate, a dummy for unfair sales laws, the percent population of Scandinavian origin, the before-tax retail price, percent military population, percent Indian population, and tax-exempt sales. The after-tax retail price was also tested and proved to be slightly less significant than the state and local tax rate. The per capita income, tax rate and price difference variables were tested in both nominal and real terms and the latter proved more satisfactory.[8]

As can be seen in *Table A-1*, the dummy variables, X_{11} and X_{12}, were important in explaining the variation in per capita cigarette sales. This would occur to some extent whether or not the variables were justified theoretically. In this case, however, the theoretical justification is backed up by evidence of interstate bootlegging, and leaving out such variables would result in less accurate estimates. To give some indication of the importance of these two variables in the estimation of cigarette demand, the regression was estimated without these interstate dummy variables. The R^2 fell to .889, the standard error of the estimate increased 2.8 packs per capita and all the T-statistics declined in absolute variable, except the price difference which picked up some of the variation previously explained by the two dummy variables. As can be seen in *Table A-2*, which presents state-by-state estimates of per capita sales with and without the dummy variables, the estimates are less accurate for most states, particularly for New

Hampshire, although for many states there is little difference. It is interesting to note that the interstate smuggling dummies are much less important to the estimating model than in 1975. (See page 82 of 1977 ACIR report on cigarette bootlegging). This is additional evidence that the level of interstate smuggling has declined since the mid-1970s. To evaluate the impact of cigarette smuggling, state-by-state comparisons of per capita sales are estimated with and without smuggling variables (*Table A-2*). The removal of the price differential from the model, along with the two dummy variables, results in an R^2 of only .648 and the standard error increased by another 7.2 packs per capita (a total increase of ten packs). As can be seen in Column 4 of *Table A-2*, the estimates for most of the states are less accurate. Moreover, the estimates for Kentucky, New Hampshire and South Carolina are clearly inaccurate, indicating that the model is misspecified if these variables are excluded. However, some bootlegging effects may still be captured in the "without" equation by the tax variable. The rate is related to interstate smuggling because the higher a state tax, the more likely the state is to lose per capita sales to interstate smuggling. The estimated effect of the tax rate on cigarette sales increases in importance when the other bootlegging variables are removed—the coefficient increases from -1.03 to -3.00.

A comparison of the estimates produced by the final version of the cigarette demand model with actual sales indicates that the model can accurately forecast sales for most states. There is only one state for which the estimating error exceeds two standard deviations—Oklahoma. The estimating errors for the states of Vermont, Maryland, Michigan, Montana, Ohio, Texas, Tennessee, Virginia, and the District of Columbia are also relatively large. Sales for Vermont, Maryland, Virginia, DC, and Montana are over estimated. In the case of Vermont, the over estimate may indicate that Vermont gains less from cigarette bootlegging than indicated by its tourism, possibly because it borders New Hampshire, which may capture some sales that would normally go to Vermont. The over estimate of sales in Montana is likely due to unusually large tax-exempt sales of 22.1 packs per capita. In Maryland and the District more sales may be lost to Virginia than is captured by the price differential variable. The high local tax rates in several counties in Virginia reduces the overall price advantage over Maryland and DC, but in those areas with no

Table A-2
ESTIMATED CIGARETTE SALES, WITH AND WITHOUT
SMUGGLING VARIABLES, FY 1983
(in packs per capita)

States	Actual Sales	Estimated With All Variables	Estimated w/o Dummy Variables for Interstate Smuggling	Estimated With No Tax Evasion Variables (except tax rate)
Alabama	116.1	115.3	112.3	120.1
Alaska	140.2	140.3	139.9	150.1
Arizona	109.2	111.8	112.1	108.6
Arkansas	127.0	125.5	125.5	131.4
California	109.8	110.9	110.1	111.5
Colorado	123.4	124.4	123.2	131.8
Connecticut	114.4	116.1	113.5	110.6
Delaware	149.0	148.8	158.6	149.1
Washington, DC	125.4	134.3	130.9	145.8
Florida	125.9	120.3	120.6	114.1
Georgia	127.5	133.4	134.1	145.1
Hawaii	78.8	73.9	73.8	70.8
Idaho	109.9	110.3	113.1	111.7
Illinois	127.7	122.3	121.2	127.3
Indiana	142.9	141.1	148.5	144.6
Iowa	115.6	116.2	117.5	114.9
Kansas	127.1	126.8	128.1	138.6
Kentucky	199.9	207.2	222.1	166.8
Louisiana	132.5	130.5	130.3	142.4
Maine	134.6	131.2	129.8	143.4
Maryland	127.6	138.5	140.2	151.1
Massachusetts	119.9	123.2	120.1	129.5
Michigan	128.6	120.4	119.7	118.5

Minnesota	113.0	115.9	116.2	113.5
Mississippi	121.4	127.2	127.3	138.9
Missouri	133.8	130.7	131.7	136.1
Montana	112.6	123.6	122.1	131.8
Nebraska	110.5	104.1	102.4	97.3
Nevada	158.2	155.9	154.8	159.3
New Hampshire	231.9	238.4	207.7	156.6
New Jersey	121.1	123.5	124.3	119.8
New Mexico	94.9	97.1	94.5	99.2
New York	124.6	124.6	127.1	121.7
North Carolina	168.8	175.8	165.5	170.1
North Dakota	118.7	114.2	112.9	114.7
Ohio	130.3	122.9	119.4	133.7
Oklahoma	137.4	125.1	124.3	129.8
Oregon	124.3	120.4	123.4	112.0
Pennsylvania	125.1	130.7	132.0	136.0
Rhode Island	136.0	140.4	154.9	120.4
South Carolina	129.5	132.3	129.1	156.2
South Dakota	109.1	112.7	111.9	114.1
Tennessee	128.6	120.4	116.3	132.3
Texas	124.6	117.2	117.3	120.9
Utah	67.6	66.6	64.2	65.9
Vermont	152.4	166.1	183.0	160.4
Virginia	144.0	135.3	138.4	141.5
Washington	101.7	98.9	95.1	84.1
West Virginia	115.2	114.3	109.7	121.4
Wisconsin	106.5	104.0	103.5	91.7
Wyoming	139.6	143.3	153.2	140.9

SOURCE: ACIR staff estimates based on cross-section analysis of 1981-83 sales data for the 50 states and the District of Columbia.

Table A-3
ESTIMATED GAINS AND LOSSES FROM CIGARETTE TAX EVASION, FY 1983

(in packs per capita)

States	Estimated Per Capita Sales (1)	Hypothetical Per Capita Sales (no smuggling) (2)	Estimated Per Capita Gain or Loss (1-2) (3)	Per Capita Tax-Exempt Sales (4)	Interstate and Casual Smuggling Gains or Losses (4-3) (5)
Alabama	115.3	126.5	-11.2	7.7	-3.7
Alaska	140.3	143.5	-3.2	23.0	19.8
Arizona	111.8	115.0	-3.2	16.4	13.2
Arkansas	125.5	130.7	-5.2	5.2	0
California	110.9	115.9	-5.0	4.6	-0.4
Colorado	124.4	127.2	-2.8	7.3	4.5
Connecticut	116.1	131.5	-15.4	3.7	-11.7
Delaware	148.8	139.5	9.3	5.7	15.0
Washington, DC	134.3	145.8	-11.5	17.0	5.5
Florida	120.3	129.0	-8.7	13.6	4.9
Georgia	133.4	136.0	-2.6	10.4	7.8
Hawaii	73.9	80.7	-6.8	12.0	5.2
Idaho	110.3	108.2	2.1	7.8	9.9
Illinois	122.3	130.8	-8.5	2.3	-6.2
Indiana	141.1	134.7	6.4	1.2	7.6
Iowa	116.2	121.1	-4.9	0.4	-4.5
Kansas	126.8	127.8	-1.0	8.1	7.1
Kentucky	207.2	139.4	67.8	4.1	71.9
Louisiana	130.5	134.7	-4.2	2.2	-2.0
Maine	131.2	136.7	-5.5	3.4	-2.1
Maryland	138.5	139.5	-1.0	5.3	4.3
Massachusetts	123.2	134.5	-11.4	3.6	-7.8
Michigan	120.2	129.5	-9.3	1.2	-8.1

Minnesota	115.9	123.1	-7.2	1.0	-6.2
Mississippi	127.1	130.2	-3.1	4.4	1.3
Missouri	130.7	134.4	-3.7	1.8	-1.9
Montana	123.6	126.8	-3.2	22.7	19.5
Nebraska	104.1	112.0	-7.9	7.6	-0.3
Nevada	155.9	157.6	-1.7	14.0	12.3
New Hampshire	238.4	142.3	96.1	5.6	101.7
New Jersey	123.5	131.7	-8.2	3.3	-4.9
New Mexico	97.1	102.1	-5.0	17.1	12.1
New York	124.6	129.1	-4.5	2.0	-2.5
North Carolina	175.8	135.7	40.1	2.7	42.8
North Dakota	114.2	119.0	-4.8	6.4	1.6
Ohio	122.9	133.6	-10.7	1.1	-9.6
Oklahoma	125.1	132.6	-7.5	8.9	1.4
Oregon	120.4	121.2	-0.8	0.5	-0.3
Pennsylvania	130.7	134.5	-3.8	1.8	-2.0
Rhode Island	140.4	129.2	11.2	6.0	17.2
South Carolina	132.3	137.1	-4.8	5.7	0.9
South Dakota	112.7	115.9	-3.2	3.7	0.5
Tennessee	120.4	131.0	-10.6	1.5	-9.1
Texas	117.2	122.4	-5.2	6.9	1.7
Utah	66.6	74.5	-7.9	2.4	-5.5
Vermont	166.1	144.9	21.2	0.7	21.9
Virginia	135.3	135.9	-0.6	13.4	12.8
Washington	98.9	114.7	-15.8	14.8	-1.0
West Virginia	114.3	127.5	-13.2	0.6	-12.6
Wisconsin	104.0	115.7	-11.7	4.7	-7.0
Wyoming	143.3	131.4	11.9	4.0	15.9

SOURCE: ACIR staff estimates based on pooled cross-section analysis of 1981-83 sales data for the 50 states and the District of Columbia.

local tax, the advantage is very large. The District also has large tax-exempt sales, which could also explain the over estimate. Sales for Michigan, Ohio, Tennessee, and Texas are under estimated. There is no clear explanation for these misestimates. The reason for the under estimate in Michigan could be because the negative effects of the increase in the tax rate from 11 cents to 21 cents in May 1982 may not have been fully reflected in the fiscal 1983 data. In Texas the explanation may be the large number of illegal aliens, who increase cigarette sales but are not included in the population figures.

In summary, it is possible to produce reasonably accurate state-by-state estimates of per capita cigarette sales. Variables related to tax evasion are important in explaining the variations in per capita sales, but less important than in the 1970s, as the amount of cigarette smuggling has clearly declined in recent years. Social, economic, and demographic variables, such as tourism, income, religion and ethnic composition are becoming more impor-

tant in determining the level of cigarette sales in a state.

ESTIMATES OF GAINS AND LOSSES FROM CIGARETTE BOOTLEGGING

The results of the regression analysis of cigarette demand were used to estimate gains and losses from cigarette tax evasion in the following manner. The total variation in per capita sales was assumed to originate from two sources: smuggling and nonsmuggling factors. The per capita sales figures in Table A-3, column 1, were estimated using all the variables and regression coefficients obtained in the analysis described above. Hypothetical per capita sales figures were then estimated by varying only the factors unrelated to bootlegging and multiplying, for each state, these variables by the regression coefficients obtained earlier. Every state was assumed to be uniform with respect to smuggling factors; therefore, the hypothetical per capita

Table A-4
LOCAL CIGARETTE TAX REVENUES, FY 1983

State	Local Cigarette Tax[1] (in cents per pack)	Estimated Local Cigarette Revenues (in millions of dollars)	Hypothetical Local Cigarette Revenues (in millions of dollars)	Gain or Loss (in millions of dollars)
Alabama	2.93	$13.3	$14.7	$-1.3
Alaska	2.15	1.5	1.4	-0.1
Arizona	1.2	3.9	3.3	0.5
Colorado	1.8	6.9	7.1	-0.2
Georgia	0.6	4.6	4.6	—
Illinois	4.1	57.5	61.5	-4.0
Louisiana	1.2	6.9	7.1	-0.2
Missouri	5.7	36.9	38.0	-1.1
New Mexico	0.4	0.5	0.6	-0.1
New York	4.0	88.0	91.2	-3.2
Ohio	0.6	7.9	8.6	-0.7
Oklahoma	2.1	8.5	9.0	-0.5
Tennessee	1.4	7.8	8.5	-0.7
Texas	0.8	14.5	15.2	-0.7
Virginia	10.4	77.7	78.0	-0.3
Washington	0.2	0.8	1.0	-0.2
Wyoming	0.7	0.5	0.5	—

[1]Includes local cigarette and sales taxes. The local rate is the weighted average tax rate for the entire state.

SOURCE: Computed by the ACIR staff.

sales figures vary from one state to another only as a result of the variation in nonsmuggling factors. These hypothetical per capita sales estimates, displayed in *Table A-2*, therefore represent the per capita sales that would have resulted if cigarette tax evasion (and tax exemption) did not exist. Subtracting hypothetical sales from estimated sales produces the estimated per capita sales gain or loss resulting from tax evasion and tax exemption. (See *Table A-4* for revenue impacts on local governments.)

This procedure for estimating gains and losses from cigarette tax evasion depends on the division of the explanatory variables into two separate classes—those affecting tax evasion and those not affecting tax evasion. The first group includes the price differential (X_4), the interstate smuggling dummy variables $(X_{11}$ and $X_{12})$, the state and local tax on cigarettes (X_1) and the 1983 price dummy (X_{10}). The second group includes real per capita income (X_2), tourism (X_3), religion (X_5), the Plains states dummy (X_6), ethnic composition $(X_7$ and $X_8)$, region (X_9), the state and local tax (X_1) and the 1983 price dummy (X_{10}).

Because the tax and price variables were present in both groups, a method is needed to separate the consumption effect of the tax from the tax evasion effect. For this purpose, the state and local tax variable was replaced by the retail price and the regression was re-estimated. The price coefficient is then compared with the expected coefficient assuming no smuggling. To calculate this coefficient an estimate of the price elasticity of cigarette consumption must be made. Chosing the appropriate price elasticity for cigarettes is difficult, as there is a wide range of estimates. Lewit and Coate estimated the price elasticity of demand to be -0.42.[9] As a part of the ACIR study a price elasticity estimate was calculated for 15 states believed to be free from across-the-border cigarette smuggling; this estimate is -0.26 (see *Appendix E*). In the 1977 ACIR study on cigarette bootlegging a price elasticity estimate of -0.34 was used, which by coincidence, was exactly the midpoint of the two elasticity estimates mentioned above. Because a price elasticity of -0.34 still appears to be reasonable, this was used to estimate tax evasion losses.

Substituting into the elasticity formula,

$$Ed = \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$$

where Ed equals -0.34, P equals average price

(70.8 cents) and Q equals average per capita sales (131.2 packs) resulted in:

$$\frac{\Delta Q}{\Delta P} = -.630$$

which is the expected coefficient of the price variable representing the consumption effect alone. Comparing this coefficient with the coefficient actually obtained from the regression $(-.8455)$, it was inferred that about 75 percent of the change in per capita sales due to a change in price is the result of the consumption effect. The remainder is assumed to be the result of tax evasion. It seemed plausible to assume that this same percentage also held for the change in per capita sales due to the change in the tax rate. Thus the tax coefficient was reduced by 25 percent in calculating the hypothetical per capita sales figures in *Table A-3*.

An intercept adjustment of five packs per capita was made to arrive at the final hypothetical sales estimate. This was done to equate the mean per capita estimated sales with the mean per capita hypothetical sales. The intercept adjustment used in this analysis results in hypothetical packs exceeding estimated packs by about 1 billion packs. This difference is about equal to the number of packs of tax-exempt cigarettes. However, the number of hypothetical packs is almost exactly equal to the actual number of packs consumed nationwide. An alternate way to make this adjustment is to weight the per capita sales for each state by the population of each state to insure that the total estimated number of packs of cigarettes nationwide equals the hypothetical number of packs.[10] The population weighted intercept adjustment results in hypothetical per capita sales of about 3.5 packs lower than the nonweighted adjustment. Using this estimate to compute cigarette revenue losses, however, would not include losses due to tax-exempt sales, because total hypothetical sales are constrained to equal total taxable sales. The estimates obtained by using the population weighted intercept adjustment are presented in *Table A-5*. The estimates obtained from the two methods are substantially different for only those states that have unusually large tax-exempt sales.

A word of caution is in order concerning these estimates. The gains and losses presented in *Table A-3*, depend to a large degree on the assumed price elasticity, -0.34. If the price elasticity of cigarette consumption is higher as some studies have found, then the losses due to cigarette tax evasion

Table A-5

ESTIMATED GAINS AND LOSSES FROM CIGARETTE TAX EVASION
USING ALTERNATIVE POPULATION-WEIGHTED METHOD, FY 1983

(in packs)

States	Estimated Per Capita Sales	Hypothetical Per Capita Sales (no smuggling)	Per Capita Gain or Loss (1-2)
Alabama	115.3	123.2	-7.7
Alaska	140.3	140.2	0.1
Arizona	111.8	111.7	0.1
Arkansas	125.5	127.4	-1.9
California1	10.9	112.6	-1.7
Colorado	124.4	123.9	0.5
Connecticut	116.1	128.2	-12.1
Delaware	148.8	136.2	12.6
Washington, DC	134.3	142.5	-8.2
Florida	120.3	125.7	-5.4
Georgia	133.4	132.7	0.7
Hawaii	73.9	77.4	-3.5
Idaho	110.3	104.9	5.4
Illinois	122.3	127.5	-5.2
Indiana	141.1	131.4	9.7
Iowa	116.2	117.8	-1.6
Kansas	126.8	124.5	2.3
Kentucky	207.2	136.1	71.1
Louisiana	130.5	131.4	-0.9
Maine	131.2	133.4	-2.2
Maryland	138.5	136.2	2.3
Massachusetts	123.2	131.2	-8.0
Michigan	120.2	126.2	-6.0
Minnesota	115.9	119.8	-3.9
Mississippi	127.1	126.9	0.2

Missouri	130.7	131.1	-0.4
Montana	123.6	123.5	0.1
Nebraska	104.1	108.7	-4.6
Nevada	155.9	154.3	1.6
New Hampshire	238.4	139.0	99.4
New Jersey	123.5	128.4	-4.9
New Mexico	97.1	98.8	-1.7
New York	124.6	125.8	-1.2
North Carolina	175.8	132.4	43.4
North Dakota	114.2	115.7	-1.5
Ohio	122.9	130.3	-7.4
Oklahoma	125.1	129.3	-4.2
Oregon	120.4	117.9	2.5
Pennsylvania	130.7	131.2	-0.5
Rhode Island	140.4	129.9	10.5
South Carolina	132.3	133.8	-1.5
South Dakota	112.7	112.6	0.1
Tennessee	120.4	127.7	-7.3
Texas	117.2	119.1	-1.9
Utah	66.6	71.2	-4.6
Vermont	166.1	141.6	24.5
Virginia	135.3	132.6	2.7
Washington	98.9	111.4	-12.5
West Virginia	114.3	124.2	-9.9
Wisconsin	104.0	112.4	-8.4
Wyoming	143.3	128.1	15.2

SOURCE: ACIR staff estimates based on cross-section analysis of 1981-83 sales data for the 50 states and the District of Columbia.

are lower than estimated in this report. If the price elasticity of cigarette consumption is lower than assumed, then the losses due to cigarette tax evasion are higher. In the absence of conclusive evidence one way or another, the chosen elasticity remains plausible. Also tax evasion loss or gain estimates for those states for which the estimate of actual sales was substantially in error (see above) are likely to be less reliable than for those states that were more accurately estimated.

FOOTNOTES

[1] The per capita sales figures in *The Tax Burden on Tobacco* were calculated using July 1 population figures. The per capita numbers were adjusted to reflect fiscal year population figures, as the sales figures are on a fiscal year basis.

[2] Price differences of 2 cents or less were ignored in the price differential index because it is unlikely that such small differences will contribute to bootlegging.

[3] This formula was modified in instances where the border state was believed to be a regional supplier, for example, North Carolina and Kentucky. In these cases the price difference was weighted by the ratio of the base state population by the base state population, which is, in efect, the same as using the unweighted price difference.

[4] This index is adopted from a price differential index used by Alexander Wiseman in his doctoral dissertation concerning the demand for cigarettes. See Alexander C. Wiseman, *The Demand for Cigarettes in the United States: Implications for State Tax Policy*, doctoral dissertation, University of Washington, January 1968.

[5] A related variable, the percentage of population of Scandinavian descent in a state, was tested and found significant in several specifications of the model, but proved to be less significant than the Plains states dummy. The states with the largest relative Scandinavian populations are North Da-

kota (16.4 percent), Minnesota (10.6 percent), South Dakota (8.5 percent), and Montana (6.2 percent).

[6] Because the Asian population is so much higher in Hawaii than in other states, this variable is similar to a dummy variable where a 1 would be used for Hawaii and a 0 for all other states. A dummy variable is often used when there are observations with large deviations from the mean that cannot be accurately estimated with specific data series, such as income, price or population. In the case of Hawaii, per capita cigarette consumption is 62 percent below the national average. A portion of this difference is explained by the large military population but the remaining difference can only be explained by cultural factors.

[7] This was tested by including per capita exempt sales in the model with and without the east-west dummy variable. By itself, the tax exempt sales variable is significant (T Value of -3.605), but when the east-west variable is added the T-value for tax-exempt sales declines to -1.980.

[8] The price differential variable was tested in two versions, the final combined version and a version in which separate variables were used for states that exported cigarettes (winners) and states that imported cigarettes (losers). The price differential for exporting states was significant, but the importing variable was insignificant. This is probably because the large number of losing states do not lose as much individually as the few winners gain.

[9] Lewit, Eugene M. and Coate, Douglas, *The Potential for Using Excise Taxes to Reduce Smoking*, National Bureau of Economic Research, Reprint No. 347, 1982.

[10] The 1977 estimates prepared by ACIR used the unweighted adjustment. The result was that hypothetical sales exceeded actual sales by about 1.5 billion packs, double the amount that could be explained by tax-exempt sales. Because of this discrepancy it is possible that the cigarette smuggling gains and losses were over-estimated in the 1977 report. This means that the improvement in cigarette tax evasion since the mid-1970s may not be as large as estimated in this report. However, even if the earlier estimates were overstated, the reduction in cigarette tax evasion has still been substantial by all measures.

Summary of Responses to Cigarette Bootlegging Questionnaire, April-June 1984
(N = 49)

1.A. Is cigarette tax evasion a problem in your state?

Yes **26**　　No **19**　　No Response **4***
*One state answered "questionable."

2.B. If a problem exists, please indicate the type of problem. as listed below. If more than one type of tax evasion problem exists in your state, please rank in order of severity (1 being most severe).

	Number of States Mentioning	Rank					
		1	2	3	4	5+	NR
Casual	28	10	6	2	1	0	9
Organized	10	3	2	0	1	1	3
Counterfeiting	5	0	1	1	0	2	0
Mail Order	10	0	1	4	3	1	0
Military Privilege Abuses	24	7	4	5	3	0	5
Indian Reservation Privilege Abuses	14	5	3	1	0	0	5
Stamping Agent Fraud	7	1	1	3	1	1	0
Hijacking	8	0	1	2	1	3	1
Other (specify)	10	1	5	0	1	0	3

(Theft and for profit smuggling from other states were most often mentioned problems in this category.)

C. If you have an organized smuggling problem please indicate the suspected source of cigarettes.

79

All but four states indicated that they do not have an organized smuggling problem or at least have no evidence of such activity. The sources mentioned were; nearby low-tax states and stolen cigarettes; Asian groups; NH, VT, and NC; NC, KY, and neighboring states; NC; KY, NC, and VA; NC, VA; Minnesota distributor supplying Indians; Montana Indian reservation; military bases and Indian reservations.

D. What is your current estimate of state revenue lost due to tax evasion activities?

> 0-3 percent **19**
> 3 to 5 percent **3**
> 5 to 10 percent **4**
> more than 10 percent **5**
> not known **18**.

E. Do you have any evidence of organized crime involvement in cigarette smuggling or counterfeiting in your state?
   Yes **4***   No **45**   No Response **0**
   *One state indicated organized Indian smuggling.

F. If you have a cigarette tax evasion problem, has it improved or worsened in the past five years? To what do you attribute this change?

> Improved **17**;
> Worsened **9**;
> No Change **10**;
> Not Applicable or No Response **13**

Improvement
Eight states credited passage of federal contraband law or assistance of ATF agents; seven states credited their own efforts in better auditing, enforcement of laws and public education; also mentioned by one state in each case was cooperation of military, elimination of mail order problem, lower taxes as percentage of retail price, increased cost of cigarettes, a favorable court ruling on the Indian situation and the change from metered impression stamping system to a heat fusion program. One state indicated that their records indicated improvement, but some bootlegging may be undetected due to re-

duction in field staff. (Some states listed more than one factor.)

Worsened
Five states blamed increased tax evasion on higher taxes; three states singled out Indians; and one state mentioned increased thefts and hijackings.

2.A. How many incidents of cigarette smuggling have been uncovered in your state in the last two years?

> 1-10 **7**;
> 10 or more **13***;
> None **24**;
> No Response **5**
> *Largest reported number of incidents were 251 in New Jersey, 166 in Wisconsin, 90 in Tennessee, 50 in Illinois, 31 in Connecticut, and 30 in Massachusetts. New York reported eight significant cases and numerous retail seizures.

2.B. What were the penalties imposed by the courts in these cases?
   Twenty states responded to this question. Other than for a federal conviction, only one state reported imposition of a jail term and that was for only five days. Penalties were generally confiscation (cigarettes and sometimes vehicles), light fines and/or probation or suspended jail sentence. The heaviest fine reported was $2,000.

3.A. What is your fiscal 1984 budget for enforcing state cigarette laws? $_____
   How many person-years are directly involved in this activity? (If possible, indicate distribution of time and money between audit and enforcement activities.)

   The responses to this question were not sufficient to prepare an analysis. Most states indicated that cigarette tax administration was combined with administration of other taxes and could not be separated. The data that was provided indicated that most states spend little on administering cigarette tax laws and in many cases funds have been reduced since 1979. (*See* discussion in *Chapter 3*.)

3.B. What was your fiscal 1979 budget for this purpose? How many person years were allocated?

Same as above.

4. Has your state made any changes in the enforcement and penalty provisions of your cigarette tax laws? If yes, please enumerate the major changes.

Yes **13**   No **34**   No Response **2**

5. Do you have a counterfeit detection program in your state?

Yes **27**   No **19**   No Response **3**

6.A. Have you reduced or increased your law enforcement efforts because of the enactment of the federal contraband cigarette law in 1978? Please explain reasons for change.

Yes **11**   No **31**   No Response **7**

Six states reported increase and five states reported decrease. Only two states indicated a reduction in their law enforcement activity because of ATF involvement. Three states that answered no indicated reduced activity due to budget problems.

6.B. Have agents of the Bureau of Alcohol, Tobacco, and Firearms of the U.S. Treasury Department been helpful in uncovering cigarette tax evasion activities in your state? If yes, in what ways?

Yes **20**   No **24**   No Response **5**

Assistance most often mentioned was providing intelligence. Also mentioned were training, joint investigations, and loan of detection equipment. One state indicated ATF was not helpful because they did not want to get involved with the Indian reservation problem.

6.C. Has the ATF handbook been of assistance to you? If yes, please provide specific examples, if possible. If no, please explain why.

Yes **24**   No **22**   No Response **3**

A large number of states indicated that handbook helped them develop better audit programs. Also mentioned were training, help in detecting counterfeit stamps

and improving investigative programs. Among states answering in the negative, eight indicated that they already used procedures explained in handbook and three states indicated they had not received the handbook.

7. If possible, please provide data for fiscal 1983 (or latest year available) on the number of packs of cigarettes sold on military bases and Indian reservations in your state.

More than half the states provided information on military sales and almost all the states with Indian reservation sales provided the data. Several states were able to provide the military data after follow-up communication. Data for most other states were obtained directly from the military. (See *Tables 3-9* and *3-10*.)

8.A. Does your state have an unfair sales or practices law covering cigarette sales?

Yes **27**   No **18**   No Response **4**

8.B. Do you believe these laws contribute to cigarette smuggling by increasing price differentials among the states?

Yes **14**   No **21**   No Response **14**

9.A. Do you have any comments about possible solutions to the cigarette bootlegging problem?

About half the states provided a response to this question. A wide range of solutions were offered. Those mentioned by two or more states were; maintain ATF funding (4), adopt uniform tax nationwide (4), increase resources for state enforcement (3), provide aggressive visible enforcement on a continued basis (2), federal assistance with Indian problem—ATF/Congress (2), maintain state-federal cooperation, and affix stamps at manufacturers' level (3). Other solutions mentioned were: better communications among states, uniform tax rate with bordering state, state tax stamping, better control by military of cigarette sales, retail inspections, eliminate minimum pricing, search and seizure

of trucking firms by ATF, and high tax states should reduce rates.

9.B. Would you favor a uniform cigarette tax rate nationwide? Please explain your reasons for support or opposition.

Yes **14**   No **28**   No Response **7**

Almost every state opposed to uniform taxation used the state autonomy argument. Three states mentioned the loss of revenue and one state was concerned about higher prices and reduced demand for tobacco. Almost all supporters indicated that a uniform rate would largely eliminate tax evasion problem.

Appendix C

Cigarette Sales and Taxes: Statistical Tables

Table C-1

PER CAPITA CIGARETTE SALES AND TAX RATES BY REGION, AND TAX-PAID SALES BY STATE AND REGION, 1983

Region and State	Per Capita Sales[1] (in packs)	Average Tax Rate	Tax-Paid Sales (in millions of packs)
New England	131.0	21.50¢	1,636.8
Maine			153.4
New Hampshire			221.5
Vermont			79.3
Massachusetts			692.7
Rhode Island			130.1
Connecticut			359.8
Middle Atlantic	124.2	21.33	4,589.8
New York			2,200.7
New Jersey			902.5
Pennsylvania			1,486.6
East North Central	128.1	16.50	5,324.7
Ohio			1,403.0
Indiana			782.4
Illinois			1,463.9
Michigan			1,168.7
Wisconsin			506.7
West North Central	121.1	16.57	2,106.2
Minnesota			467.7
Iowa			335.7
Missouri			663.8
North Dakota			80.1
South Dakota			75.9
Nebraska			175.8

	Per capita sales	Tax rate	Sales
Kansas			307.2
South Atlantic	135.8	11.28	5,230.3
Delaware			90.0
Maryland			546.7
Washington, DC			78.6
Virginia			794.7
West Virginia			225.3
North Carolina			1,021.5
South Carolina			419.9
Georgia			725.1
Florida			1,328.5
East South Central	141.7	10.75	2,108.2
Kentucky			737.6
Tennessee			600.1
Alabama			458.6
Mississippi			311.9
West South Central	127.8	17.13	3,252.8
Arkansas			293.2
Louisiana			583.0
Oklahoma			444.8
Texas			1,931.8
Mountain	110.9	12.51	1,347.1
Montana			91.1
Idaho			107.4
Wyoming			70.9
Colorado			381.6
New Mexico			130.8
Arizona			317.9
Utah			107.2
Nevada			140.2
Pacific	109.4	16.60	3,647.8
Washington			434.6
Oregon			330.0
California			2,739.4
Alaska			64.3
Hawaii			79.5

¹Per capita sales by state is included in *Table A-2*. Does not include state and local sales taxes or local cigarette taxes. Rates as of November 1, 1983.

SOURCE: ACIR staff compilation from data in The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18, Table, p. 13, Table 10, p. 25, Table 11, p. 29.

Table C-2
PEAK YEAR FOR PER CAPITA TAXABLE CIGARETTE SALES, 1950-83

State	Peak Year	Per Capita Sales in Peak Year (in packs)	Percent of 1963 Per Capita Sales	State	Peak Year	Per Capita Sales in Peak Year (in packs)	Percent of 1963 Per Capita Sales
Alabama	1980	123.2	105.9%	Montana	1953	129.7	114.1
Alaska	1976	164.8	112.2	Nebraska	1961/1962	119.4	107.8
Arizona	1974	133.1	119.8	Nevada	1963	212.7	133.6
Arkansas	1980	131.8	103.0	New Hampshire	1972	296.2	127.2
California	1961	142.4	128.5	New Jersey	1966	144.9	119.5
Colorado	1973	137.9	110.1	New Mexico	1960/1961	105.0	109.0
Connecticut	1961	160.1	140.3	New York	1962	149.7	120.1
Delaware	1962	175.8	117.5	North Carolina	1976	230.2	135.7
Washington, DC	1966	295.9	237.7	North Dakota	1982	126.8	106.0
Florida	1961	141.1	110.6	Ohio	1967	136.4	104.9
Georgia	1980	134.0	104.2	Oklahoma	1982	147.0	105.0
Hawaii	1976	99.4	124.3	Oregon	1967[1]	165.1	132.5
Idaho	1972	126.1	113.3	Pennsylvania	1963	128.3	102.4
Illinois	1963	1965	145.5	Rhode Island	1953	160.0	117.8
Indiana	1977	173.0	121.0	South Carolina	1978	140.4	107.1
Iowa	1981	132.9	115.0	South Dakota	1979	117.4	106.9
Kansas	1981	132.0	103.4	Tennessee	1982	131.4	101.9
Kentucky	1976	230.9	114.8	Texas	1982	131.2	103.8
Louisiana	1981	144.0	107.7	Utah	1978	79.6	115.4
Maine	1961	145.9	107.8	Vermont	1976	171.1	111.2
Maryland	1975	146.1	114.0	Virginia	1976	158.1	109.3
Massachusetts	1963	142.2	118.7	Washington	1953	115.1	112.4
Michigan	1978	141.8	110.5	West Virginia	1977	133.9	115.7
Minnesota	1981	120.8	106.7	Wisconsin	1981	119.9	112.8
Mississippi	1980	127.0	103.8	Wyoming	1979	168.6	119.4
Missouri	1980	142.1	106.0	U.S.	1978	133.8	103.9

[1]Initial year for state cigarette tax.

SOURCE: The Tobacco Institute, *The Tax Burden on Tobacco*, Washington, DC, 1983, Vol. 18.

Table C-3
SELECTED STATISTICS FOR MUNICIPAL CIGARETTE TAXES, SELECTED STATES, FY 1983

State	Number of Jurisdictions Levying Tax	Tax Rate (cents)	Weighted Average Tax Rate (cents)	Total Revenue	Number of Packs Taxed Locally	Per Capita Sales in Taxing Localities (packs)	Per Capita Sales in Localities as Percent of State Average
Alabama[1]	235	1-6	1.8	$11,873,974	NA	NA	NA
Illinois[2]	4	5-10	4.1	$59,234,000	902,698,000	108.3	84.6%
Missouri	106	1-10	5.5	$21,264,378	417,347,579	117.6	87.7
New York[3]	1	8	2.8	$62,066,560	775,832,000	111.7	89.6
Tennessee[4]	2	1	0.2	$1,090,023	109,003,000	76.6	54.4
Virginia	22	1-15	10.4	$18,958,217	230,203,427	105.0	72.6

N.A. = not applicable.
[1]221 cities and towns and 14 counties.
[2]Chicago, Cook County, Evanston and Rosemont.
[3]New York City.
[4]City of Memphis and Shelby County.

SOURCE: ACIR staff compilation from data provided by the Tobacco Institute, Washington, DC.

Table C-4
STATE CIGARETTE TAX RATE CHANGES FROM NOVEMBER 1, 1983, TO JULY 31, 1984

State	Old Rate (per pack)	New Rate (per pack)	Effective Date
Alabama	16¢	16.5¢	July 1, 1984
Arizona	13¢	15¢	July 1, 1984
Louisiana	11¢	16¢	July 1, 1984
Maine	20¢	28¢	October 1, 1985
Texas	18.5¢	19.5¢	October 1, 1984
		20.5¢	September 1, 1985

Addendum:

Texas extended 4.125% sales tax to cigarettes	October 2, 1984
Oklahoma extended 3% sales tax to cigarettes	April 21, 1984 to December 31, 1985, when sales tax falls to 2%
Maine extended 5% sales tax to cigarettes	June 1, 1984

Note: In 1985, Kansas passed legislation that would increase the state tax from 16 cents to 24 cents if the federal government halved its tax (an 8-cent reduction).

SOURCE: Compiled by ACIR staff from data in State Tax Guide, Commerce Clearing House, 1984.

Examples of
Cigarette Tax Reporting Forms

STATE OF DELAWARE

DIVISION OF REVENUE

MONTH November, 1981

LICENSE NO. 42961

SCHEDULE A

DISTRIBUTOR'S NAME	ADDRESS
Brooks Distributing Company	1542 South Sea Street, Wilmington, DE 19801

CIGARETTES RECEIVED FROM MANUFACTURERS

Date Actually Received	Invoice Number	Delivered by (carrier)	Name and Address of Manufacturer	Packs 20s
11-06-81	45506/7	Preston	American Tobacco Company	80,600
11-11-81	23072	Jacobs	Lorillard	126,000
11-18-81	57614	Jacobs	R. J. Reynolds Tobacco Company	155,000
11-24-81	66269	Preston	Philip Morris, Inc.	110,000
11-25-81	26162	Preston	Liggett & Myers Tobacco Company	18,192
11-27-81	19861	Jacobs	Brown & Williamson Tobacco Corp.	45,650
11-30-81	17117	Preston	Lorillard	126,808

NOTE: Enter Total on Front of Resident

Wholesaler Monthly Report

		TOTAL		622,250

#25-06/78/03/142

FORM 1074-A (10/70)

SOURCE: Division of Revenue, State of Delaware, June 30, 1984.

Exhibit 2

STATE OF DELAWARE
DIVISION OF REVENUE

MONTH **November, 1981**

SCHEDULE B

NAME	ADDRESS
Brooks Distributing Company	1542 South Sea Street, Wilmington, DE 19899

CIGARETTES RECEIVED FROM OTHERS THAN MANUFACTURERS DURING MONTH

Date Received	Name and Address	Tax Paid (stamped)			Nontax Paid (unstamped)		
		10s	20s	50s	10s	20s	50s
11-03-81	Holden Distributors, Inc.						
	3216 Remington St., Philadelphia PA		9,600				None
11-06-81	Ramsey Cigarette Wholesalers						
	10 W. Needham St., Wilmington, DE 19801		4,500				
11-13-81	Berger Discount Sales						
	96 Franklin Road., Wilmington, DE 19801		7,200				
11-18-81	Tolbert Distributors, Inc.						
	N. State St., Dover, DE 19901		3,500				
	NOTE: Enter Total on Front of Resident						
	Wholesaler Monthly Report						
			24,650				
	TOTAL TO SUMMARY		24,650				

FORM 1074-B (10/70)

SOURCE: Division of Revenue, State of Delaware, June 30, 1984.

Exhibit 3

STATE OF DELAWARE
DIVISION OF REVENUE

MONTH **November, 1981**

SCHEDULE C

NAME	ADDRESS
Brooks Distributing Company	1542 South Sea Street, Wilmington, DE 19899

CIGARETTES SOLD TO DELAWARE AFFIXING AGENTS

Date	Name and Address	Tax Paid (stamped)			Nontax Paid (unstamped)		
		10s	20s	50s	10s	20s	50s
11-05-81	L & R Distributing Company						
	1312 E. 10th St., Wilmington, DE 19801		4,000			2,800	
11-10-81	Brigg Cigarette Distributors, Inc.						
	19 Adams St., Dover, DE 19901		18,200				
11-13-81	Foster Bros., Inc.						
	19 Chase St., Wilmington, DE 1980501		6,250			2,150	
11-24-81	Caulk Distributors, Inc.						
	914 Spruce St., Wilmington, DE 19801		5,100				
	NOTE: Enter Total on Front of Resident						
	Wholesaler Monthly Report						
	TOTAL TO SUMMARY		23,550			4,950	28,500

FORM 1074-B (10/70)

SOURCE: Division of Revenue, State of Delaware, June 30, 1984.

Exhibit 4

STATE OF DELAWARE
DIVISION OF REVENUE

MONTH November, 1981

SCHEDULE D

NAME	ADDRESS
Brooks Distributing Company	1542 South Sea Street, Wilmington, DE 19899

SOLD OUTSIDE DELAWARE

Date	Name	Address	10s	20s	50s	Total
11-03-81	Brady Distributing Company	16 Bishop St., Philadelphia, PA	935			
11-04-81	Shulties & Son, Inc.	198 Asbury Ave., Elkton, MD	1,105			
11-10-81	Kent Brothers, Inc.	943 George St., Philadelphia, PA	560			
11-17-81	Capitol Distributors, Inc.	J.F.K. Blvd., Baltimore, MD	875			
11-20-81	B & J Cigarette Distributors, Inc.	32 Holloway Drive, Philadelphia, PA	415			
11-27-81	Stanley Brothers, Inc.	1962 Chapman St., Elkton, MD	955			

NOTE: Enter Total on Front of

Resident Wholesaler

Monthly Report

	TOTAL TO SUMMARY	4,845

#25-06/78/06/235

FORM 1074-D (10/70)

SOURCE: Division of Revenue, State of Delaware, June 30,1984.

Other Estimating Methods

ANOTHER ESTIMATING APPROACH— THE DIRECT METHOD

Because the methodology described in *Appendix A* is sensitive to the price elasticity assumption, some researchers have suggested a more direct method for estimating cigarette tax evasion losses.[1] This method requires the identification of those states which are presumed to have no, or minimal, tax evasion activity. Per capita cigarette sales are then estimated for these states and the coefficients are used to estimate sales for all other states. The difference between those estimated sales and actual sales are assumed to be due to tax evasion.

For comparison purposes, per capita sales estimates were generated using this methodology. Fifteen "nonbootlegging" states were selected on the basis of the responses to the ACIR survey, the analysis described in *Appendix A* and the judgment of the analyst.[2] A pooled, cross-sectional regression was run using data for 1981, 1982 and 1983. As can be seen in *Table E-1*, the estimating results were excellent. All the variables are significant at the standard 95 percent confidence level and have the hypothesized signs, and the R^2 is high. The standard error is about 2 percent of the mean.

The results verify the absence of significant levels of cigarette smuggling in these states as the price differential variable was not significant and the estimated parameters indicated that the price elasticity of cigarettes is -0.26 compared with a price elasticity of -0.45 when all states are included.

Table E-1
RESULTS OF REGRESSION IN 15 NONBOOTLEGGING STATES, 1981-83 DATA

Variable	Estimated Coefficient	T Statistic
Real State and Local Tax Rate	-.9967	-3.660
Real Per Capita Income	.0029	-9.360
Real 1983 Price Dummy	-.0581	-5.149
Percent Asian Population	-.7368	-18.061
Percent Spanish Origin	-.4741	-9.921
Regional Dummy (east-west)	-8.2832	-5.744
Percent Manufacturing Employment	.2453	3.160
Tourism (per capita)	.0066	22.956
Constant	106.3828	-5.149

R^2 = .9805 (.9761 adjusted for degrees of freedom).
Standard Error of Regression = 2.8345.

The next step in this methodology is to apply the coefficients estimated for these 15 states to the appropriate variables for all other states. This is where this approach breaks down. The assumption that, in the absence of cigarette smuggling, the same factors determine cigarette consumption in the other states is not necessarily valid. For example, the estimate for Utah (and Idaho, to a lesser extent) is significantly in error because religion, which is an important factor in determining cigarette consumption in that state, is not an important determinant in the 15 nonbootlegging states. The results of the analysis indicate that there are other unidentified factors that fall into this category as the estimates for about 20 states are significantly different than those produced by the methodology described in *Appendix A*.

Overall this estimating method under estimates total nationwide consumption by about 2.7 billion packs. What appears to be happening is that the coefficients for the nonbootlegging states which generally are less populous (California is the major exception) tend to under estimate consumption in the more populous, industrial states. This would explain why states like Florida, Illinois, Michigan, Missouri, New York, Ohio, Tennessee, and Texas are estimated to gain from cigarette tax evasion whereas other evidence indicates that, in fact, these states lose revenue because of tax evasion.

The estimates produced by this methology are shown in *Table E-2*. These numbers are for illustrative purposes only and should not be viewed as accurate estimates of tax evasion gains or losses.

DESCRIPTION OF THE TIME SERIES ANALYSIS OF STATE CIGARETTE SALES

This section of the study attempts to explain the variation in per capita cigarette sales, within individual states for the 24-year period 1960-83. Its main purpose is to empirically measure the effect of cigarette bootlegging on state cigarette sales and provide estimates of the average revenue loss or gain to individual states as a result of such activities.

Empirical Model

The empirical model used to estimate the factors influencing state cigarette sales is a time-series linear multiple regression model. Seven states were chosen for this study because of particular trends in their cigarette sales. When compared with the national average per capita cigarette sales, Montana, Washington and Texas exhibit below average per capita cigarette sales, while Pennsylvania, Oklahoma, Maryland and Virginia display above average per capita cigarette sales over the 24-year period of 1960-83. These figures suggest the presence of cigarette bootlegging activities that translate into revenue losses in the case of those states with below average per capita sales and revenue gains for the states that have above average per capita sales.

The per capita cigarette demand function, esti-

mated by a time series multiple regression model using ordinary least squares is of the form:

$$Y_{it} = b_0 + b_1X_{it} + b_2X_{2it} + b_3X_{3it} + b_4X_{4it} + b_5X_{5it} + u_t$$

where   i = Montana, Washington, Texas, Pennsylvania, Oklahoma, Maryland and Virginia

   t = State FY 1960-83

Y_{1t} = Per capita cigarette sales. This figure represents the per capita number of cigarette packs sold within each state.

X_1 = Index of border state price differentials.

X_2 = Average weighted retail price per pack of cigarettes in constant dollars. This figure includes state cigarette excise and sales taxes, as well as local excise and sales taxes where levied.

X_3 = Per capita income expressed in 1967 dollars.

X_4 = Time trend variable.

X_5 = Percent of state population above 18 years of age.

u_{it} = The error term to be estimated and whose properties conform to those assumed by a classical linear regression model.

and b_0 to b_5 are the regression coefficients to be estimated. The cigarette sales equation is assumed to be linear in the X variables with a normal distribution and the X variables are assumed to be independent of the error term.

Assumptions of the Model and Expected Relationships

The dependent variable is specified as the per capita number of taxed cigarette packs sold within states. Hence, this variable does not account for tax-free cigarette sales on Indian reservations in the case of certain western states and neither does it reflect the number of tax-free cigarette packs sold on military establishments and from international ports of entry.

The index of border state price differentials X_1, seeks to measure the effect of interstate price differentials on in-state cigarette sales. It is assumed that significant interstate price differentials represent the presence of cigarette bootlegging. If the price in the base state is lower than that of the bordering states, then we might expect the population in the immediate bordering state counties to purchase lower priced cigarettes from the base

state. Hence, the quantity of in-state cigarette demand attributable to out-of-state resident purchases would be largely dependent on the size of the price differential and population concentration of bordering state counties.

However, if the price in the base state is higher than that in the bordering states, we assume the population along the border counties within the base state will choose to purchase cigarettes from the neighboring states, and hence reduce cigarette sales within the base state.

It is assumed that a price differential between the base state and the bordering state of greater than 2 cents provides incentive for across-the-border purchases or what might be termed "casual" cigarette bootlegging.

With these assumptions in mind, the price differential index was constructed by weighting the difference in prices by the ratio of population of the border state counties to that of the base state in question. The formula used was of the form:

$$PRDiF = (D_h - D_1)$$

and $PD_h = \sum_{i=1}^{n} (P_i - P) \dfrac{\text{(Population of counties in the } i\text{th state that fall within a 60-mile radium from the border of the base state)}}{\text{Population of the base state}}$

n = the number of higher priced bordering states.
P_i = Price in the ith bordering state.
P = Price in the base state.

and $PD_1 = \sum_{j=1}^{k} (p - P_j) \dfrac{\text{(Population of counties in the base state that lie within a 60 mile radius from the border of the } j\text{th state)}}{\text{Population of the base state}}$

k = number of lower priced bordering states.
P_j = Price in the jth bordering state.
P = Price in the base state.

Often states are bordered by both higher and

Table E-2
CIGARETTE TAX EVASION GAINS AND LOSSES—DIRECT METHOD, 1983
(in packs per capita)

State	Actual Sales	Estimated Sales	Gains or Losses (-)
Alabama	116.1	113.3	2.8
Alaska	140.3	139.8	0.5
Arizona	109.2	109.2	-0-
Arkansas	127.0	123.7	3.3
California	109.8	112.3	-2.5
Colorado	123.4	121.8	1.6
Connecticut	114.4	125.1	-10.7
Delaware	149.0	137.7	11.3
Washington, DC	125.4	137.0	-11.6
Florida	126.0	116.7	9.3
Georgia	127.5	129.5	-2.0
Hawaii	78.8	74.9	3.9
Idaho	109.9	114.9	5.5
Illinois	127.7	121.8	5.9
Indiana	142.9	126.2	16.7
Iowa	115.6	119.3	-3.7
Kansas	127.1	129.7	-2.6
Kentucky	199.9	129.7	70.2
Louisiana	132.5	122.1	10.4
Maine	134.6	126.6	8.0
Maryland	127.6	130.5	-2.9
Massachusetts	119.9	126.2	-6.3
Michigan	128.6	119.4	9.2
Minnesota	113.0	121.8	-8.8
Mississippi	121.4	120.9	0.5

Missouri	133.8	123.9	9.9
Montana	112.6	116.1	-3.5
Nebraska	110.5	109.8	0.7
Nevada	158.2	157.7	0.5
New Hampshire	231.9	136.0	95.9
New Jersey	121.1	124.0	-2.4
New Mexico	94.9	94.9	-0
New York	124.6	120.4	4.2
North Carolina	168.8	135.3	33.5
North Dakota	118.7	116.5	7.2
Ohio	130.3	123.9	6.4
Oklahoma	137.4	120.3	17.1
Oregon	124.3	113.0	11.3
Pennsylvania	125.1	175.2	-0.1
Rhode Island	136.0	119.8	16.2
South Carolina	129.9	128.9	1.0
South Dakota	109.1	112.9	-3.8
Tennessee	128.6	119.9	8.7
Texas	124.6	114.9	9.7
Utah	67.6	109.0	-41.4
Vermont	152.4	136.7	15.7
Virginia	144.0	126.0	18.0
Washington	101.7	105.1	-3.4
West Virginia	115.2	112.0	3.2
Wisconsin	106.5	113.6	-7.1
Wyoming	139.6	126.5	13.1

SOURCE: Computed by ACIR staff.

Table E-3 24-YEAR AVERAGE OF STATE PER CAPITA CIGARETTE SALES, 1960-83	
State	**Number of Packs**
Montana	119
Washington	99
Texas	116
Pennsylvania	124
Oklahoma	125
Maryland	129
Virginia	135
U.S. Weighted National Average	122

SOURCE ACIR staff compilations based on figures from The Tobacco Institute, *The Tax Burden on Tobacco*, 1983.

lower price states. In these instances, the value of the price differential variable (PRD_iF) would reflect the net overall effect of the weighted individual state price differentials.

This price differential index is adapted from the index developed by Alexander Weiseman in 1973.[3] The measurement of this variable marks a distinct improvement from that used in the 1977 ACIR study on cigarette bootlegging.

Actual 1983 figures are used below to serve as an example of the measurement procedure described above. For example, in the case of Montana for the year 1983 the price differential index was constructed as follows:

		Retail Price:
Base State:	Montana	81.2 cents
Neighboring States:	Idaho	83.4
	North Dakota	86.0
	Wyoming	76.0

a. Since the price in Idaho is higher than in Montana, it is assumed that population in the bordering counties within a 60-mile radius in Idaho will purchase cigarettes from Montana. Hence, the total population figure for these counties is divided by the base state's (Montana) population figure to yield a population ratio equal to .26.

b. The population ratio in the case of North Dakota is computed using similar assumptions as above.

c. However, since the price in Wyoming is less than that in Montana, it is expected that the population residing in counties bordering Wyoming will chose to purchase lower priced cigarettes from Wyoming. Therefore, the population ratio is computed by dividing the total population figure of the bordering counties in Montana by the state's population figure. This ratio is equal to .32.

d. After having computed the population ratio for each of the states, the difference in the retail price of cigarettes between the base state and each of its neighboring states is multiplied by the corresponding population ratio.

$$\text{Idaho:} \quad (83.4 - 81.2) \times .26 = 0.6$$
$$\text{North Dakota:} \quad (86.0 - 81.2) \times .08 = 0.4$$
$$\text{Wyoming:} \quad (81.2 - 76.0) \times .32 = -1.7$$

Thus, the overall price differential index of -0.7 indicates Montana is expected to have experienced a net loss in cigarette sales in 1983, due to the lower price in Wyoming.

Given the specification of this variable, b_4 is expected to be positive, indicating that a positive price differential will result in higher per capita cigarette sales and a negative differential will result in lower per capita sales. The estimated coefficient measures the effect of interstate price differentials on cigarette sales and consequently the effect of cigarette bootlegging activities on state per capita cigarette sales.

It is assumed that the higher the average weighted retail price per pack of cigarettes the lower the per capita cigarette sales and hence the coefficient for the X_2 variable is expected to be negative. To measure the effect of cigarette retail prices relative to the price of other goods and services on cigarette sales, the current cigarette retail price for each year was divided by the consumer price index of the corresponding year. This specification of the independent variable also corrects for increases in the retail price due to changes in inflation.

Per capita income is used as a proxy measure of consumer buying power and hence b_3 is expected to be positive, indicating that income has a positive effect on cigarette sales.

X_4 is defined as a trend variable and is used in the model to capture the effect of the habitual na-

ture of smoking. This variable is asumed to be linear, growing at a constant absolute amount over time and b_4 is expected to be positive.

It is widely recognized that the age distribution of the population is an important factor affecting cigarette consumption. It is expected the larger the adult population within a state, the higher the cigarette sales, all other factors being equal; b_5 is expected to be positive.

Results of the Regression

An investigation of the zero-order correlation coefficients between the independent variables in the model, reveal the presence of a high degree of multicollinearity between all the independent variables except for the price differential index. An attempt was made to estimate the regression equations using alternative specifications of the collinear independent variables, however the correlation results indicated the continuance of multicollinearity.

Montana: The regression results for the Montana time-series analysis are presented in *Table E-4*.

The results indicate that in Montana the level of real income, the time trend, and the percent of population over 18 significantly affect per capita cigarette sales. The coefficient for each of these

---

Table E-4
MONTANA

Variable	Regression Coefficient	T Value
Constant	-1.53	-0.02
Price Differential	-0.17	-0.37
Real Price	-0.75	-1.41
Real Per Capita Personal Income	0.01	3.08
Time	-1.81	-3.39
Percent of Population 18+	2.01	2.59

R^2	= 0.61
Adjusted R^2	= 0.50
Standard Error of Regression	= 2.97
Durbin-Watson Statistic	= 2.04
F Statistic	= 5.70

---

variables is statistically significant at the 95 percent confidence level and has the expected sign. However, the estimated regression coefficient for the price differential variable is not statistically significant and has the wrong sign. This unexpected result may have been caused by the fact that there is a relatively large Indian population within the state. Approximately 3 percent of Montana's population comprise Indians who, under a Supreme Court ruling in 1971, are exempt from state and local taxes on cigarettes purchased on the reservations.

In order to account for the availability of tax-free cigarettes sold to Indians on the reservations, and in the hope of correcting a possible mis-specification of the model, a dummy variable taking the value of 0 for the years 1960-71 and 1 for later years was inserted in the model. This variable was statistically insignificant and did not contribute greatly to raising the R^2. Hence, it was omitted from the equation.

Together, all five of the independent variables explain 61 percent of the variance in per capita cigarette sales within Montana. The Durbin-Watson (D-W) statistic of 2.04 indicates an absence of serial correlation in the error term.

Washington: The regression results for the time-series analysis of cigarette sales in Washington suggest price differentials between Washington and neighboring states affect the state's per capita cigarette sales (*Table E-5*).

The highly significant positive coefficient for the price differential variable indicates for every 1-cent price differential Washington loses 2.4 packs of cigarettes to the neighboring states, all other factors influencing cigarette sales being equal.

The tax-exempt privilege granted to Indians purchasing cigarettes within the reservations presents itself as a major tax evasion problem for the state of Washington. Prior to 1970 the Indians were subjected to the state cigarette tax liability. However in 1971 the Supreme Court held that Indians were to be exempt from all taxes levied on cigarettes. This court ruling provided for the availability of tax-free cigarettes on Indian reservations and thereby offered incentives for non-Indians to purchase tax-free cigarettes within the Indian reservations. The state legislature, realizing the extent of the tax evasion and revenue loss as a result of the Supreme Court ruling, passed legislation in July 1980 prohibiting the purchase of tax-free cigarettes

on Indian reservations by non-Indians. This legislation resulted in a dramatic reduction in cigarette sales on the Indian reservations and contributed to reducing cigarette revenue losses.

In order to empirically account for the legislative changes in the availability of tax-free ciga-

Table E-5
WASHINGTON

Variable	Regression Coefficient	T Value
Constant	-158.029	-2.01
Price Differential	2.442	3.54
Real Price	0.366	0.81
Real Per Capita Personal Income	-0.005	-1.29
Time	-0.478	-1.44
Dummy Variable	-5.696	-3.46
Percent of Population 18+	4.430	3.81

R^2	= 0.79
Adjusted R^2	= 0.71
Standard Error of Regression	= 2.87
Durbin-Watson Statistic	= 1.89
F Statistic	= 10.68

rettes on Indian reservations a dummy variable taking the value of 0 for the years 1960-71, 1 for the years 1972-80 and 0 for the years 1981-83 was used in the model. The coefficient for this variable was of the correct sign and statistically significant. The percent of population over 18 also has a significant influence on per capita cigarette consumption in Washington. The independent variables in the model explain 79 percent of the change in cigarette sales over time and a test for the presence of the serial correlation was indecisive. The Durbin-Watson (DW) value was 1.89, with 24 observations and six regressors. Hence, it was assumed the error terms are uncorrelated.

Oklahoma: The regression equation estimated for the state of Oklahoma is of a different form than that outlined above. The state population increased significantly in 1974 because of newly discovered oil reserves. The exceptionally high consumption of cigarettes by the incoming residents after 1974 resulted in a dramatic increase in the per capita cigarette sales figures for the state in

the post 1974 period. To capture the effect of this sudden increase in cigarette consumption, a dichotomous variable, taking the value of 0 for the years 1960-73 and 1 for the period 1974-83, was inserted in the model.

In addition, to investigate whether cigarette bootlegging decreased after 1978 as a result of federal legislation defining cigarette bootlegging as criminal activity and to empirically determine the post-1978 effect of cigarette bootlegging on per capita cigarette sales, an interactive dummy variable was used in the model. Hence, the regression equation estimated for the state of Oklahoma was of the form:

$$Y_t = b_0 + b_1 X_{1t} + b_2 X_{2t} + b_3 X_{3t} + b_4 X_{4t} + b_5 X_{5t} + b_6 X_{6t} + b_7 DX_{1t}$$

where X_6 is a dichotomous variable equal to 0 from 1960 to 1973 and 1 from 1974 to 1983

D = 0; 1960 to 1978
1; 1979 to 1983

and the independent variables X_1 to X_5 are the same as those described previously.

Hence for the years 1978 to 1983, for the state of Oklahoma the following equation would apply:
$$Y_t = b_0 + (b_1 - b_7) X_{1t} + b_2 X_{2t} + b_3 X_{3t} + b_4 X_{4t} + b_5 X_{5t} + b_6 X_{6t} + u_t$$

The regression results for the state of Oklahoma are presented in Table E-6.

The price differential variable is of the correct sign and is statistically significant at the 99 percent confidence level, indicating that for every 1-cent negative price differential between the state of Oklahoma and the bordering states the state loses sales of two cigarette packs per capita, all other factors held constant.

In the case of Oklahoma, per capita personal income in current dollars was used as an independent variable. The use of this specification of the independent variable was dictated by the fact that it contributed to raising the R^2 and was of the correct sign, when compared with the use of a similar variable in constant dollars. The positive and statistically significant coefficient for this variable indicates that cigarette sales will increase three packs per capita for every $100 increase in the state's per capita income, all else being equal. The DW statistic of 2.08 suggests an absence of serial correlation in the estimated equation. The independent variables together explain 98 percent of

the variance in per capita cigarette sales in Oklahoma and the F statistic of 127.5 is highly statistically significant.

The coefficient for the dichotomous variable representing the years 1974-83 is statistically significant at the 95 percent confidence level and is of the correct sign. The coefficient for the interactive variable is of the correct sign and is statistically significant at the 90 percent confidence level. For the years 1978-83 the effect of cigarette bootlegging on per capita sales was less than that in the period 1960-78 (i.e. 2.0 - 0.79 = 1.21). Hence for the years

Table E-6
OKLAHOMA

Variable	Regression Coefficient	T Value
Constant	93.264	0.95
Price Differential	2.000	4.29
Real Price	-0.579	-1.09
Real Per Capita Personal Income	0.003	3.48
Time	-0.580	-1.16
Percent of Population 18+	0.495	0.32
Dichotomous Variable Representing Post-1974 Sales	5.386	1.88
Interactive Variable	-0.791	-1.37

R^2	= 0.98
Adjusted R^2	= 0.97
Standard Error of Regression	= 2.13
Durbin-Watson Statistic	= 2.08
F Statistic	= 127.59

1978-83 for every 1-cent negative price differential between Oklahoma and the bordering states, cigarette bootlegging had the effect of reducing the number of per capita cigarette packs sold by 1.21, compared to two packs for the years 1960-78.

Pennsylvania: Cigarette price differentials between Pennsylvania and the neighboring states, do appear to significantly affect per capita cigarette sales within the state. The price differential variable is positive and statistically significant as expected (*Table E-7*).

Table E-7
PENNSYLVANIA

Variable	Regression Coefficient	T Value
Constant	85.737	0.61
Price Differential	2.353	2.32
Real Price	-1.880	-2.06
Real Per Capita Personal Income	-0.00006	-0.004
Time	-0.023	-0.01
Percent of Population 18+	1.424	0.75
Interactive Variable	-1.847	-0.65

R^2	= 0.87
Adjusted R^2	= 0.83
Standard Error of Regression	= 5.61
Durbin-Watson Statistic	= 1.71
F Statistic	= 19.65

The coefficient of the price variable is -1.88; which indicates that cigarette sales in Pennsylvania are reduced 1.88 packs for every 1-cent increase in the real retail price of cigarettes, all other factors held constant. The two independent variables, income and time have the wrong sign and are statistically insignificant.

An interactive dummy variable (defined similarly as that used for the equation estimated for the state of Oklahoma) was inserted in the regression equation for Pennsylvania.

The interactive variable coefficient has the expected sign but is statistically insignificant. However, the value of the estimated coefficient indicates that for every 1-cent negative price differential between Pennsylvania and its neighboring states for the period 1979-83, per capita cigarette sales were reduced by only 0.5 packs, as compared to 2.3 packs for the years 1960-78.

The equation explains 87 percent of the variation in per capita cigarette sales. The DW test for serial correlation is indecisive and therefore, the absence of serial correlation is assumed.

Texas: The results of the Texas time-series analysis of cigarette sales using the traditional variables known to affect cigarette sales, indicates little, if any, smuggling activity.

The coefficient of the price differential variable was of the wrong sign and statistically insignifi-

Table E-8 **TEXAS**		
Variable	Regression Coefficient	T Value
Constant	105.410	1.53
Price Differential	-0.200	-0.07
Real Price	-1.572	-4.79
Real Per Capita Personal Income	-0.006	-0.82
Time	-0.586	0.69
Percent of Population 18+	1.141	1.05
R^2	= 0.86	
Adjusted R^2	= 0.83	
Standard Error of Regression	= 3.46	
Durbin-Watson Statistic	= 1.58	
F Statistic	= 23.93	

cant. The real retail price of cigarettes is the only independent variable statistically significant. The income, time and population variables have the wrong sign. The DW test results indicate the DW value lies in the indecisive area of the DW distribution and hence it is assumed the error terms are uncorrelated. The estimated regression coefficients together explain 86 percent of the variance, over time, in the state's per capita cigarette sales.

Maryland: Estimation of the time series regression equation for the state of Maryland revealed

Table E-9 **MARYLAND**		
Variable	Regression Coefficient	T Value
Constant	30.603	0.17
Price Differential	0.016	0.04
Real Price	-1.394	-2.19
Real Per Capita Personal Income	0.008	0.71
Time	-2.252	-0.80
Percent of Population 18+	2.053	0.67
R^2 = 0.84		
Adjusted R^2	= 0.78	
Standard Error of Regression	= 3.67	
Durbin-Watson Statistic	= 1.78	
F Statistic	= 14.25	

the presence of positive serial correlation in the error term. Hence, a correction for the presence of first-order serial correlation was made with the use of the Cochrane-Orcutt method[4] and convergence was achieved after eight iterations. The results of the regression equation, corrected for serial correlation, for Maryland are shown in *Table E-9*.

The price differential variable has the correct sign but is statistically insignificant, indicating price differentials do not significantly affect cigarette sales in the state of Maryland. This result is perhaps explained by the particular price differential trend for the state of Maryland. Over the 24-year period studied, Maryland has had a negative border price differential for part of the time period and a positive price differential because of its relative low cigarette prices for the remainder of the 24-year period. Hence, the average over-time effect of price differentials on cigarette sales is insignificant.

The retail price of cigarettes significantly affects per capita cigarette sales. The coefficient for the three remaining variables (real income, time and population) have the correct signs but are not statistically significant. The R^2 indicates that 84 percent of the variance in cigarette sales over time is explained by the five independent regressors.

Virginia: The time series regression equation estimated for Virginia had a Durbin-Watson value of .72 . A DW test for serial correlation confirmed the presence of positive serial correlation in the error term. A first-order serial correlation was assumed and corrected for by the use of the Cochrane-Orcutt method. However, convergence was not achieved after 20 iterations and serial correlation was still present in the error term.

The results of the equation are exhibited in *Table E-10* and are to be interpreted with caution.

The price differential variable does not have the correct sign. The estimated coefficients for three of the independent variables, real income, time and population have the expected signs and are statistically significant at the .05 probability level. The R^2 of .96 is suspiciously high and hence is to be interpreted with caution.

CONCLUSION

This analysis indicates that although many of the factors that determine cigarette sales in the states are the same, there are also significant differ-

Table E-10
VIRGINIA

Variable	Regression Coefficient	T Value
Constant	-190.904	-1.60
Price Differential	-0.761	-1.63
Real Price	-0.555	-1.47
Real Per Capita Personal Income	0.017	1.70
Time	-3.634	-1.77
Percent of Population 18+	5.094	2.70

R^2	= 0.96
Adjusted R^2	= 0.94
Standard Error of Regression	= 3.38
Durbin-Watson Statistic	= 1.08
F Statistic	= 68.92

ences from state to state. For example, border price differential is an important explanatory variable in many states, but it is unimportant in Texas, Montana, Maryland and Virginia. Although the time series method is not used here to develop tax evasion losses, these loss estimates could be produced on a state-by-state basis. The advantage of this approach is that one can determine whether tax evasion losses are increasing or decreasing during a given time period. These results also provide additional evidence for evaluating the estimates prepared using the pooled, time series method for all states. Generally, these results are consistent with the analysis described in Chapter 5 and in Appen-

dix A. Time constraints prevented the use of this estimating method for each state, but it is feasible for the individual states to use time series regression analysis to monitor tax evasion trends in their state.

FOOTNOTES

[1] ABT Associates, Inc., Unreported Taxable Income From Selected Illegal Activities, Volume II, March 31, 1983.
[2] These states are: Alaska, Arizona, California, Colorado, Georgia, Hawaii, Kansas, Mississippi, Maryland, Montana, Nebraska, Nevada, New Mexico, North Dakota, and South Dakota.
[3] Wiseman, Alexander, The Demand for Cigarettes in the United States: Implications for State Tax Policy, doctoral dissertation, University of Washington, January 1968.
[4] Wonnacott, R. J. and Thomas H. Wonnacott, "Econometrics" Chapter 6, 1979.

DATA SOURCES

1. Per Capita Sales, State Cigarette Excise and Sales Tax, Average Weighted Retail Price, The Tobacco Institute, The Tax Burden on Tobacco, Vol. 18, 1983.
2. Local Cigarette Excise Tax, unpublished data from the Tobacco Institute.
3. Per Capita Income, U.S. Department of Commerce, Bureau of Economic Analysis.
4. Percent of Population Over 18, Estimates of the Population by States by Age, Current Population Reports, U.S. Department of Commerce, Bureau of the Census, Series P-25, selected issues.
5. Price Differential Index, ACIR staff computations.
6. County Population Figures: 1960 figures from the U.S. Department of Commerce, Bureau of the Census, "1962 Census of Governments, Vol. 4, No. 2, Finances of County Governments", the 1970 figures were obtained from Bureau of the Census, "1972 Census of Governments, Vol 4, No. 3, Finances of County Governments."

Contraband Cigarette Act PL 95-575

T hat Title 18, *United States Code,* is amended by inserting after Chapter 113 the following new chapter.

"CHAPTER 114—TRAFFICKING IN CONTRABAND CIGARETTES

"Sec.
"2341. Definitions.
"2342. Unlawful acts.
"2343. Recordkeeping and inspection.
"2344. Penalties.
"2345. Effect on State law.
"2346. Enforcement and regulations.

"§ 2341. Definitions

"As used in this chapter—
"(1) the term 'cigarette' means—
"(A) any roll of tobacco wrapped in paper or in any substance not containing tobacco; and
"(B) any roll of tobacco wrapped in any substance containing tobacco which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers of a cigarette described in subparagraph (A);
"(2) the term 'contraband cigarettes' means a quantity in excess of 60,000 cigarettes, which bear no evidence of the payment of applicable state cigarette taxes in the state where such cigarettes are found, if such state requires a stamp, impression, or other indication to be placed on

packages or other containers of cigarettes to evidence payment of cigarette taxes, and which are in the possession of any person other than—

"(A) a person holding a permit issued pursuant to chapter 52 of the *Internal Revenue Code of 1954* as a manufacturer of tobacco products or as an export warehouse proprietor, or a person operating a customs bonded warehouse pursuant to section 311 or 555 of the *Tariff Act of 1980* (19 U.S.C. 1311 or 1555) or an agent of such person;

"(B) a common or contract carrier transporting the cigarettes involved under a proper bill of lading or freight bill which states the quantity, source, and destination of such cigarettes;

"(C) a person—

"(i) who is licensed or otherwise authorized by the state where the cigarettes are found to account for and pay cigarette taxes imposed by such state; and

"(ii) who has complied with the accounting and payment requirements relating to such license or authorization with respect to the cigarettes involved; or

"(D) an officer, employee, or other agent of the United States or a state, or any department, agency, or instrumentality of the United States or a state (including any political subdivision of a state) having possession of such cigarettes in connection with the performance of official duties;

"(3) the term 'common or contract carrier' means a carrier holding a certificate of convenience and necessity, a permit for contract carrier by motor vehicle, or other valid operating authority under the *Interstate Commerce Act*, or under equivalent operating authority from a regulatory agency of the United States or any state;

"(4) the term 'state' means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands; and

"(5) the term 'Secretary' means the Secretary of the Treasury.

"§2342. Unlawful acts

"(a) It shall be unlawful for any person knowingly to ship, transport, receive, possess, sell, distribute, or purchase contraband cigarettes.

"(b) It shall be unlawful for any person knowingly to make any false statement or representation with respect to the information required by this chapter to be kept in the records of any person who

ships, sells, or distributes any quantity of cigarettes in excess of 60,000 in a single transaction.

"§2343. Recordkeeping and inspection

"(a) Any person who ships, sells, or distributes any quantity of cigarettes in excess of 60,000 in a single transaction shall maintain such information about the shipment, receipt, sale, and distribution of cigarettes as the Secretary may prescribe by rule or regulation. The Secretary may require such person to keep only—

"(1) the name, address, destination (including street address), vehicle license number, driver's license number, signature of the person receiving such cigarettes, and the name of the purchaser;

"(2) a declaration of the specific purpose of the receipt (personal use, resale, or delivery to another); and

"(3) a declaration of the name and address of the recipient's principal in all cases when the recipient is acting as an agent. Such information shall be contained on business records kept in the normal course of business.[1] Nothing contained herein shall authorize the Secretary to require reporting under this section.

"(b) Upon the consent of any person who ships, sells, or distributes any quantity of cigarettes in excess of 60,000 in a single transaction or pursuant to a duly issued search warrant, the Secretary may enter the premises (including place of storage) of such person for the purpose of inspecting any records or information required to be maintained by such person under this chapter, and any cigarettes kept or stored by such person at such premises.

"§2344. Penalties

"(a) Whoever knowingly violates section 2342(a) of this title shall be fined not more than $100,000 or imprisoned not more than five years, or both.

"(b) Whoever knowingly violates any rule or regulation promulgated under section 2343(a) or 2346 of this title or violates section 2342(b) of this title shall be fined not more than $5,000 or imprisoned not more than three years, or both.

"(c) Any contraband cigarettes involved in any violation of the provisions of this chapter shall be subject to seizure and forfeiture, and all provisions of the *Internal Revenue Code of 1954* relating to the seizure, forfeiture, and disposition of firearms, as defined in section 5845(a) of such code, shall, so

far as applicable, extend to seizures and forfeitures under the provisions of this chapter.

"§2345. Effect on State Law

"(a) Nothing in this chapter shall be construed to affect the concurrent jurisdiction of a state to enact and enforce cigarette tax laws, to provide for the confiscation of cigarettes and other property seized for violation of such laws, and to provide for penalties for the violation of such laws.

"(b) Nothing in this chapter shall be construed to inhibit or otherwise affect any coordinated law enforcement effort by a number of states, through interstate compact or otherwise, to provide for the administration of state cigarette tax laws, to provide for the confiscation of cigarettes and other property seized in violation of such law, and to establish cooperative programs for the administration of such laws.

"§2346. Enforcement and Regulations

"The Secretary, subject to the provisions of section 2343(a) of this title, shall enforce the provisions of this chapter and may prescribe such rules and regulations as he deems reasonably necessary to carry out the provisions of this chapter.".

Sec. 2. The table of chapters of part I of title 18, United States Code, is amended by inserting immediately below the item relating to chapter 113 the following:

Sec. 3. (a) Section 1(b) of the act of August 9, 1939 (ch. 618, 53 Stat. 1291 (49 U.S.C. 781(b))), is amended—

(1) by striking out "or" at the end of paragraph (2);

(2) by striking out the period at the end of paragraph (3) and inserting in lieu thereof "; or"; and

(3) by inserting after paragraph (3) the following new paragraph:

"(4) Any cigarette, with respect to which there has been committed any violation of chapter 114 of title 18, United States Code, or any regulation issued pursuant thereto."

(b) Section 7 of the act of August 9, 1939 (ch. 618, 53 Stat. 1291 (49 U.S.C. 787), is amended—

(1) by striking out "and" at the end of subsection (e);

(2) by striking out the period at the end of subsection (f) and inserting in lieu thereof "; and"; and

(3) by inserting after subsection (f) the following new subsection:

"(g) The term 'cigarettes' means 'contraband cigarettes' as now or hereafter defined in section 2341 of title 18, United States Code.".

(c) Section 1961(1)(B) of title 18, United States Code, is amended by inserting after "sections 2314 and 2315 (relating to interstate transportation of stolen property)," the following: "sections 2341-2346 (relating to trafficking in contraband cigarettes),".

Sec. 4.(a) Except as provided in subsection (b), this act shall take effect on the date of its enactment [November 2, 1978].

(b) Sections 2342(b) and 2343 of title 18, United States Code, as enacted by the first section of this act, shall take effect on the first day of the first month beginning more than 120 days after the date of the enactment of this act [November 2, 1978].

Sec. 5. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of chapter 114 of title 18, United States Code, added by the first section of this act.

---

[1]Sentence inserted by House Concurrent Resolution 755.

what is ACIR?

The Advisory Commission on Intergovernmental Relations (ACIR) was created by the Congress in 1959 to monitor the operation of the American federal system and to recommend improvements. ACIR is a permanent national bipartisan body representing the executive and legislative branches of Federal, state, and local government and the public.

The Commission is composed of 26 members—nine representing the Federal government, 14 representing state and local government, and three representing the public. The President appoints 20—three private citizens and three Federal executive officials directly and four governors, three state legislators, four mayors, and three elected county officials from slates nominated by the National Governors' Conference, the Council of State Governments, the National League of Cities/U.S. Conference of Mayors, and the National Association of Counties. The three Senators are chosen by the President of the Senate and the three Congressmen by the Speaker of the House.

Each Commission member serves a two year term and may be reappointed.

As a continuing body, the Commission approaches its work by addressing itself to specific issues and problems, the resolution of which would produce improved cooperation among the levels of government and more effective functioning of the federal system. In addition to dealing with the all important functional and structural relationships among the various governments, the Commission has also extensively studied critical stresses currently being placed on traditional governmental taxing practices. One of the long range efforts of the Commission has been to seek ways to improve Federal, state, and local governmental taxing practices and policies to achieve equitable allocation of resources, increased efficiency in collection and administration, and reduced compliance burdens upon the taxpayers.

Studies undertaken by the Commission have dealt with subjects as diverse as transportation and as specific as state taxation of out-of-state depositories; as wide ranging as substate regionalism to the more specialized issue of local revenue diversification. In selecting items for the work program, the Commission considers the relative importance and urgency of the problem, its manageability from the point of view of finances and staff available to ACIR and the extent to which the Commission can make a fruitful contribution toward the solution of the problem.

After selecting specific intergovernmental issues for investigation, ACIR follows a multistep procedure that assures review and comment by representatives of all points of view, all affected levels of government, technical experts, and interested groups. The Commission then debates each issue and formulates its policy position. Commission findings and recommendations are published and draft bills and executive orders developed to assist in implementing ACIR policies.