

Raise Excise Taxes? Not in Florida

by

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Distinguished Professors of Economics, Ohio University

Policy Report #41

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Table of Contents

Executive Summary	1
I. Introduction	3
II. The Fairness Question	3
III. Income and Price Elasticity	4
IV. Excise Taxes and Economic Welfare	6
V. Excise Taxes and Government Growth	7
VI. Social Costs	8
VII. Tax Avoidance and Evasion: The Internet Challenge	10
VIII. Negotiated Tobacco Settlements and State Revenues	11
IX. Conclusions.....	12

Executive Summary

- Anticipated revenues have slowed for the Florida 2003-04 fiscal year and some argue that new revenues are needed to balance the state budget. Predictably, some will argue that excise taxes should be increased to enhance state revenues. Proponents contend that such an increase will both promote public health by reducing harmful cigarette smoking while easing the financial problems of the state.
- Florida's cigarette excise tax of 33.9 cents per pack was raised sharply in the early 1990s (for example, in 1990, it was 12 cents per pack). Cigarette levy increases are the reason that the tobacco product component of the Consumer Price Index has risen more than any other component, including that for health care and college tuition fees.¹ While the state's current tax is below the median of all states, it is significantly above that of Georgia and Alabama.
- The three most important excise taxes—those on tobacco, alcohol, and gasoline—burden lower income Americans more than upper income persons. Any attempt to finance a fiscal revenue shortfall by increasing existing excises will serve to increase the tax burden of lower income Floridians in general and minority groups in particular.
- The Internet has revolutionized cigarette retail sales and raising excise taxes would increase the outflow of business to e-commerce retailers. For this reason, even if excise taxes temporarily raised revenues, the ultimate defection of customers to Internet purchases may make the long-term revenue effects neutral or even negative.
- Florida reached an agreement with the largest tobacco companies to settle litigation related to tobacco-related health care costs in 1998. The settlement amount was an estimate; the precise amount depends on the consumption of cigarettes produced by the major manufacturers. Consequently, if Florida were to increase its cigarette excise tax, the volume of cigarettes consumed will fall or shift to nontaxed sources of cigarette products, which in turn will reduce its settlement revenues.

- This study argues that new excise taxes on cigarettes and other tobacco products would raise little new revenue and would not materially resolve state budget woes.² Moreover, the tax would create other problems—compliance, equity, and resource allocation issues—that would outweigh any modest increase in revenues obtained.

I. Introduction

No tax is “good.” All taxes produce a measure of unintended economic effects, create inefficiencies in the marketplace, or are inequitable, and this is especially true of excise taxes. Individuals seek to minimize their excise tax burden by foregoing consumption of the taxed good or service, or by foregoing consumption of other goods and services so they can afford the desired ones. Consumers are sensitive to prices and price changes induced by excise taxes lead people to alter their behavior. At the highest income levels, which represent only a small fraction of all households, prices are less relevant. But further down the income ladder, the tax issue becomes more important with the greatest impact on the middle class, working women, the working poor, those on a fixed income, and the elderly.

Of all forms of taxation, excises are the most difficult to defend for students of public finance.³ In evaluating the practice of excise taxation and particularly as it relates to Florida’s desires for more revenue, four questions should be addressed:

Are excise taxes fair? What is the distribution of the burden of such taxes?

Are excise taxes economically efficient?

Do excise taxes promote or harm economic growth?

Would enacting new excise taxes reduce the size of a state’s budget shortfall?

II. The Fairness Question

Taxes that may be considered only mildly harmful on the grounds of efficiency or economic neutrality may still be considered “bad” because they are perceived as unfair. Head taxes (that is, lump sum levies on all citizens) do not have the same negative incentive effects that accompany many other tax forms. Yet they are widely condemned and are seldom used because they violate a common-sense notion of equity, since they burden the poor more than the affluent.

Fairness and equity are subjective concepts. What is fair to one person may be considered unfair to another. According to the widely accepted ability-to-pay principle of public finance, the burden of financing governmental services should vary with one’s financial condition. Under one set of assumptions, the overall well-being of citizens may be improved by imposing larger tax burdens on the rich than

on the poor. Specifically, if one accepts the view that a dollar's additional income brings more satisfaction to lower income persons than to millionaires and billionaires, then community satisfaction is enhanced by taxing the rich proportionally more than the poor, since wealthy individuals give up less satisfaction per dollar of tax than lower income persons.⁴

A progressive tax is one that absorbs a larger proportion of the income of upper income individuals than lower income ones. For example, the federal income tax has been made progressive because of a general sentiment that this is fair and desirable.

Individuals who reject the ability-to-pay principle argue that taxes should be proportional—that they should be the same percent of income for individuals in all income groups. American excise taxes presently tax the poor proportionally more than the affluent and are strongly regressive in nature. The three more well-known excise taxes—those on tobacco, alcohol, and gasoline—burden lower income Americans more than upper income ones. This is demonstrated by data from the Consumer Expenditure Survey, which measures the spending habits of American households for various income classes, including their expenditures on tobacco, alcohol, and gasoline.⁵ Less affluent Americans spend a significantly larger proportion of their incomes on the three taxed items than do more prosperous Americans. Using an early version of the Consumer Expenditure Survey, the late Joseph Pechman of the Brookings Institution estimated that federal excise taxes took 13 times as large a proportion of the income of the poorest 5 percent compared with the richest 5 percent.

III. Income and Price Elasticity

Two key factors in determining the impact of excise taxes on various income groups are “price elasticity” and “income elasticity.” The concepts refer to the sensitivity of consumers of the taxed product to changes in price or income, respectively.

- If the price elasticity of demand is high, that means people are sensitive to price. Price increases are met with consumer resistance and many would-be buyers switch to substitutes.
- Where price elasticity is high (greater than 1.0), it is difficult for suppliers to pass excise taxes on to the consumer in the form of higher prices, in the short run. In the longer run, there is little doubt that taxes are ultimately shifted to the consumer.

- Where demand is inelastic with respect to price (less than 1.0, meaning the percent change in quantity demanded is less than the percent change in price), producers can pass on most of an increase in excise taxes to consumers quickly.⁶

With but one exception, the authors know of no studies estimating the price elasticity of demand for tobacco to be as great as 1.0⁷ and that study was for Great Britain. Typical studies for the United States have estimated the elasticity to be very low, 0.20 to 0.40.⁸ Using a 0.30 estimate as representative, it is estimated that a 10 percent increase in cigarette prices reduces the quantity demanded of cigarettes by only 3 percent. This suggests that the health argument for higher excise taxes is weak—higher taxes will have only modest effects on consumption.

The empirical evidence on low price elasticity, then, supports the view that consumers of cigarettes quickly begin to feel the burden of an excise tax increase. In a competitive environment, ultimately consumers absorb all the burden of a tax. Producers are unable to absorb all the costs of an excise tax increase. As a result, a producer must either shift the increased cost to the consumer or consider simply abandoning the market in order to produce other products that provide a higher return.

Income elasticity determines the regressivity of a cigarette excise tax. If a 10 percent rise in income levels is associated with less than a 10 percent increase in the demand for cigarettes, demand is “income inelastic,” meaning a numerical value of less than 1.0. An inelastic demand implies that cigarette consumption rises less rapidly than income. Various studies indicate that the income elasticity of demand for cigarettes is well below 1.0.⁹ Wealthy people spend only slightly more on tobacco products than poorer individuals, and, as a percent of their income, the rich spend much less.

Using the 2001 Consumer Expenditure Survey and comparing low income Americans (those with incomes of \$5,000 to \$10,000 annually) with moderately affluent Americans (those with \$50,000 to \$70,000 annual income), spending on tobacco products averaged slightly over \$350 for the more affluent group, compared with \$233 for the lower income individuals. The more affluent made about eight times the income of the poor, but spent only 50 percent more on tobacco products.¹⁰ The calculated income elasticity of demand was well under 0.10; a 10 percent increase in income was associated with less than a 1 percent increase in tobacco spending.

Moreover, these estimates almost certainly understate the regressivity of tobacco excises, since tobacco taxes are typically not ad valorem taxes. Wealthier

individuals may smoke no more cigarettes or cigars than poorer persons, but they pay more because they buy more expensive brands. Since the tax per package of cigarettes is the same regardless of price, the actual tax paid by wealthy cigarette smokers may be little different in actual dollars than that paid by poorer smokers. Thus, the tax has the same highly regressive qualities as a head tax. The percentage of the cigarette price paid in excise taxes is lower for the rich than for the poor. Using the income groups referred to above from the 2001 Consumer Expenditure Survey, if the more affluent group buys cigarettes or other tobacco products that cost 50 percent more per unit than the poorer group, the absolute number of dollars in excise taxes paid is the same for both groups, as with a head tax. Yet the tobacco tax is probably even less equitable than a head tax, which, at least, everyone pays.

The tobacco tax burdens some poor Americans, while it lets others off without paying a penny. For government to engage in programs to improve the economic status of minorities, while at the same time levying taxes that harm these groups significantly, makes little sense.

IV. Excise Taxes and Economic Welfare

Economists have long condemned excise taxes for promoting economic inefficiency, lowering economic welfare below what it would otherwise be. The traditional or “micro” approach to analyzing economic inefficiency is considered in this report. It looks specifically at a given excise tax and the narrow impact it has on consumers, producers, and government.

Excise taxes apply to only select products or services. The imposition of an excise tax increases the prices for these goods relative to nontaxed items, leading consumers to buy less of the taxed commodities or to substitute purchases of nontaxed goods or services, or to forego consumption of other goods in order to afford highly taxed ones.

The tax adversely reduces the welfare of the consumer in two ways.

1. First, if individuals buy a taxed commodity after the imposition of the excise tax, their income available for other purchases is reduced.
2. Second, if the tax-induced increase in the price of a good leads individuals to substitute a nontaxed commodity for the taxed one, their after-tax income is the same, but they are buying a “bundle of goods” less desirable than they would have purchased if the tax were not present.

“Economic welfare” for consumers can be defined in the following manner: if consumers are able to buy a product for less than what they are willing to pay for the product, they obtain a surplus of economic welfare. For example, individuals might be willing to pay \$3.50 a pack for cigarettes, but if they get a pack for \$3, they derive a benefit of 50 cents. That benefit is called consumer surplus. So by raising the price of commodities, excise taxes lower the consumer surplus or the net welfare derived by consuming citizens. It can be shown that the gains to the government in tax revenue are less than the loss of consumer welfare when an excise tax is implemented. In the jargon of economists, there is a “deadweight loss.”

Consumers’ sensitivity to price changes is important in determining the economic effects of an excise tax. If consumers are highly sensitive to price (meaning that demand is elastic), initially a comparatively large portion of the excise tax will be shifted back to the producer. Because the tax increase greatly reduces product sales in such instances, both consumer and producer surplus is reduced. But the burden falls to a larger extent on producers than when demand is inelastic, when consumers are relatively insensitive to price changes. As we have already observed, demand tends to be highly inelastic for several products with major excise taxes, suggesting that the consumer bears the bulk of the burden of the tax, even in the short run.

Ultimately, over time, the burden of excise taxes falls on consumers. If part of the burden fell on producers, rates of return on investment in taxed industries would fall below the rate of return in nontaxed (in an excise tax sense) industries. This induces resources to move away from the excise-taxed industries, thereby equalizing rates of return between the taxed and nontaxed industries.¹¹

There is little controversy among economists over the fact that consumer surplus is reduced by excise taxation. Arnold Harberger, the pioneer in this form of analysis, has demonstrated that the welfare loss of excise taxation can equal up to one-half the revenue gain to government from such taxes.¹² Thus, an excise tax that raises \$1 billion in revenue may impose as much as \$500 million in welfare costs on consumers.

V. Excise Taxes and Government Growth

James Buchanan and Geoffrey Brennan have suggested an argument to use against excise taxes.¹³ If government is viewed as an inefficient monopoly provider of certain public services, then any tax that promotes the growth of a relatively inefficient government sector at the expense of the more competitive and efficient

private sector is inefficient. In other words, it makes no sense to tax the public in an effort to fund inefficient government services that the market can provide more efficiently and at less cost.

Both a private company and a government agency will maximize revenue by practicing price discrimination. That is, they will charge those customers who desperately need the product a high price, and charge those customers whose demand for the product is highly price sensitive, a lower price. Thus, movie theater operators charge adults, who are less price sensitive, more for shows than children, whose demand is relatively price-elastic. Similarly, governments can charge, via excise taxes, higher “prices” for products for which demand is highly inelastic than for other products, which are either exempt from taxation or taxed at some lower general sales tax rate. It is no accident that excise taxes are concentrated in areas where demand is highly inelastic—the government can enhance its revenue without driving the customers away.¹⁴ To the extent that using price discrimination enhances government revenues, it also drains dollars away from the private sector that could be invested or expended for a greater return.

VI. Social Costs

One argument for imposing a selective sales-type tax is that some activities have negative externalities, or social costs, associated with them that are borne by third parties. As a result, the price system does not fully reflect the true social cost of the good in question. Such arguments are used to justify several forms of governmental intervention in market processes; for example environmental regulation. Because much of the cost of pollution is borne by residents of the community where the product is produced and those costs are not fully reflected in the supply of the product (since the producer does not have to pay them), it is argued that intervention in market-determined solutions is appropriate.

Similar reasoning might be used to justify excise taxes where there is some external cost associated with the product, costs not borne by the consumer or producer. In reality, however, there are severe problems involved with imposing excise taxes to accommodate the perceived social costs of activities that are not reflected in market prices. Consider, for example, an excise tax on wine. It might be argued that heavy wine consumption can impose external costs, such as when a drunk driver injures an innocent third party. Yet, the American legal system provides both criminal and civil sanctions for damages resulting from the over-consumption of alcohol. Beyond that, however, there is considerable evidence that very moderate consumption (one glass a day) of wine may be medically beneficial,

that such consumption imposes absolutely no social costs, and that there is no justification for discouraging such consumption on some external cost/health risk grounds. Indeed, a case can be made to subsidize moderate wine consumption in that the health benefits give society more workers (to the extent wine reduces strokes and heart attacks) to fund social services.

An excise tax that discourages this form of consumption is thus clearly inefficient and even inequitable. Yet it is impossible to construct a tax that reaches only “bad” consumers of wine without burdening the “good” consumers. Thus, even if one could envision situations where an excise tax might serve to improve resource allocation, typically, it is impossible to implement such a tax without having some accompanying negative resource allocation effects.

This same rationale has been advanced to support excessive excise tax rates on the purchase and use of tobacco products. Since cigarette smokers create great health costs via Medicare and Medicaid, as suggested by many studies *ad infinitum*, shouldn’t they bear a significant portion of those costs through excise taxes? However, it is nearly impossible to quantify what these fiscal costs to the public may be (although some have tried mightily). In addition, Medicare and Medicaid services are provided with a minimum of qualifications; age and level of income being the two primary measures for participation.

There is nothing prohibiting the government from establishing further qualifications for participation in these services, such as whether or not the consumer is a user of tobacco products. In other words, the state could (and should) establish parameters by which persons can avail themselves of the state service. The exchange for government services has always necessitated some loss of liberty, in which case, if persons wish to access a government service, such as Medicaid, it is not too much to ask that certain behaviors be required. If persons wish not to comply, then they are free to seek health care elsewhere. To pretend that somehow excise taxes on tobacco products alleviate the burden to the state for the cost of services incurred is inefficient, unfair, and regressive. Finally, by pretending that it is good policy to allow “any and all” with a bare minimum of qualifications to access these government services, the state is attempting to mask the true cost to economic liberty. Since those “behaving badly” are not singled out, the true loss is to all citizens, not just those using tobacco products, as the costs of Medicaid and Medicare spiral continuously, robbing the private sector of dollars and injuring economic vitality as a result.

This same excise tax rationale will certainly be attempted in placing some kind of “obesity tax” on high fat or “fast foods.” Again, such a tax would be inefficient, punitive, and regressive. Yet the state can make the same argument that it “absorbs”

the costs via Medicaid and Medicare for the ill-considered diet practices of some citizens. However, again, rather than make state services dependent upon the behavior of the individual, the states will be tempted to enact a tax policy that regressively and sloppily punishes all consumers who consume these high fat food products regardless of their personal practices.

VII. Tax Avoidance and Evasion: The Internet Challenge

While the earlier discussion made it clear that the major products subject to Florida excise tax have highly inelastic demands, that is not to say that the imposition of a tax increase would have only minor effects on *taxed* sales. It is increasingly possible for individuals to obtain the taxed product from nontax sources. Thus, *while the demand for cigarettes in general is inelastic with respect to price, the demand for taxed cigarettes is far more elastic*—meaning tax-induced price increases will lead to significant drops in sales subject to tax. Historically, avoiding state excise taxes was accomplished by crossing borders into other states, where excise taxes might be lower. That is the case presently with Florida's cigarette excise tax, which is triple the rate in Georgia and more than double that in Alabama. At the present, a person can save more than \$10 by crossing into Georgia to buy five cartons of cigarettes. If Florida were to raise its tax, the incentives to cross the border will rise still further. Cross-border activity is more than a theoretical possibility: nearly 39 percent of America's population in 1990 lived in counties bordering on other states or nations, and the proportion has not changed dramatically since.¹⁵ Alternatively, individuals could (and can) buy untaxed cigarettes on Indian reservations and military bases. Declining air transportation costs have also increased the availability of cigarettes purchased while traveling in other countries.

The availability of cheap cigarettes across borders has an enormous impact on taxed consumption within the state of residence. The authors of this study once observed the impact of a 15 cent per pack excise differential between Cincinnati (high tax), and neighboring northern Kentucky (low tax), concluding that nearly half the cigarettes consumed in Cincinnati were purchased in Kentucky at lower prices. We estimated the elasticity of demand for cigarettes in the border counties to be an extraordinary 5.66—a 10 percent increase in cigarette prices would lead to a 56 percent decline in quantity demanded.¹⁶ Even though excise taxes are only part of the price of cigarettes, high price elasticities such as indicated are consistent with the view that large excise tax increases might have no net positive revenue effect for the states.

So, even before the Internet, there were enormous incentives for persons to avoid taxation by purchasing cigarettes in lower taxed jurisdictions. The only reason why people would pay somewhat higher prices to buy cigarettes locally is because of “transactions costs”—the cost of traveling to other jurisdictions, the cost of learning of alternative options, and so forth. For the 61 percent of Americans living outside of border counties (even more in Florida), those costs were often fairly high, so states could raise excise taxes on those individuals without a huge loss of sales.

The Internet, however, has revolutionized cigarette retail selling. The transactions cost of buying cigarettes in faraway destinations has fallen dramatically. There are still shipping costs of moving cigarettes. But the cost of searching for information on alternative cigarette retail outlets and of “traveling” to get them has plunged, the information costs falling dramatically, and the transportation costs to the buyer essentially disappearing. Purchasers will buy cigarettes if the price savings generated by lower taxes exceed the transactions costs. The Internet-induced decline in transactions costs increases occasions where tax avoidance enhances individual financial welfare.

As an experiment, one of the authors (a nonsmoker) went on the Internet to see how quickly he could locate inexpensive cigarettes. Within 10 minutes, several sites were accessed. The best was a Switzerland site that sold cigarettes from a bonded warehouse in a tax-free area. The retail price per pack for Marlboros was less than \$1.50 inclusive of shipping costs—lower than the Florida price now. Raising excise taxes would increase the outflow of business to Internet retailers.

Trying to enforce tax collection (or to prevent what tax authorities view as smuggling) is possible but would be extremely costly. The Internet has increased dramatically the difficulty of individual states in increasing revenues through higher excise taxation.¹⁷ As people become more comfortable shopping on the Internet, this phenomenon will strengthen, further eroding any possibility of revenue gains from excise tax hikes. Thus even if excise taxes temporarily raised revenues, the ultimate defection of customers to Internet sales would likely make the long-term revenue effects neutral or even negative.

VIII. Negotiated Tobacco Settlements and State Revenues

By 1998, all states had reached agreements with major tobacco companies to settle litigation for tobacco-related health care costs and pertinent issues, involving payments over the next generation projected to reach into the hundreds of billions of dollars. The dominant agreement was the Master Settlement Agreement (MSA),

reached on November 23, 1998, between the four largest cigarette manufacturers and 46 states. Florida (along with Minnesota, Texas, and Mississippi) had previously settled out of court. In Florida's case, the projected payouts through 2025 were estimated at \$13,437,600,000.¹⁸

The widely announced settlement amounts, however, were estimates, with the precise amounts dependent on consumption of cigarettes produced by participating manufacturers. There is an interaction between payouts under the MSA and other statewide agreements and excise tax revenues. One study concluded, "Current trends indicate states will experience a \$14 billion decrease in projected tobacco settlement revenue over the next nine years. To date, states have collected \$1.6 billion less than projections made in the Master Settlement Agreement signed in 1998. These losses are attributed to two main factors: decline in the consumption of [*taxed*] cigarettes and a decrease in market share by the four largest cigarette manufacturers."¹⁹ It is estimated that manufacturers not participating in the MSA have gained 0.8 percent in market share, which equates to a \$2.4 billion loss in revenue to the states.²⁰

As states impose new excise taxes, the volume of taxed cigarettes consumed falls somewhat, nontaxed or lower-taxed cigarette consumption rises, and that in turn reduces settlement revenues. Thus not only do new excise taxes reduce tax revenues directly by reduced volumes of taxed sales, but they also reduce them by leading to lower settlement revenues. This situation further increases the possibility that new excise taxes on net will have no long-term positive revenue effects. The rise in market share for nonparticipating manufacturers comes in part because the settlement payments effectively are an additional excise tax on participating manufacturers. This gives nonparticipating manufacturers a price advantage (and increases their market share). To the extent smokers switch to lower priced substitutes provided by nonparticipating manufacturers or buy nontaxed (for example, European manufactured and sold) cigarettes from the major manufacturers participating in the settlement agreements, Florida will lose settlement monies.

IX. Conclusions

The states now find themselves in a bizarre Catch-22. Having wrung billions out of the MSA participants to supposedly fund health care costs and to fund public health programs discouraging the young from smoking, the states allowed themselves to become addicted to the tobacco dollars. These tobacco dollars have and are being spent to fund many other government services. The MSA dollars are

now intricately embedded in the state budgets. Perversely, the states find themselves in the awkward position of being dependent on a certain amount of tobacco use to fund their respective budgets. Worse yet, this strange arrangement makes it undesirable, as this study indicates, to increase excise taxes on cigarette sales. Such increases will only diminish MSA revenues by modestly decreasing consumption, encouraging competitive sales by non-MSA participants and the increased consumption of nontaxed Internet sales and cross-border or contraband sales.

As a result, increased excise taxes are unlikely to help Florida deal with its fiscal problems. Beyond that, however, cigarette excise taxes are deficient in other ways. They are extremely regressive, resembling a head tax, taxing the rich and poor alike about the same number of dollars per capita. Thus they burden the poor far more than the rich. Higher taxes will escalate compliance problems, and buyers will increasingly flee to Indian reservations, other tax jurisdictions, illegal smugglers, and, above all, to the Internet to buy the product. To prevent this from happening would involve significant new outlays of money for tax enforcement.

Moreover, higher cigarette taxes violate basic rules of economic neutrality. They distort the allocation of resources in ways that lower consumer welfare. If successful in raising revenues, they promote the substitution of public activities for private sector ones that, on average, are more productive and efficient, since they are driven by the discipline of competition and markets. Therefore, a strong case can be made to oppose increases in excise taxes, particularly those on tobacco products, as a means of dealing with financial exigency. Florida's budget problems have arisen because expenditure growth over the past decade has exceeded what was necessary to meet the imperatives of inflation and population growth.

A study published in *The Journal of the James Madison Institute*, researched and written by Dr. Randall Holcombe, shows that state sales tax revenue has approximately doubled since 1990-91, from \$8.1 billion to \$16 billion in 2001-02.²¹ As a percentage of income, Florida's sales tax revenues and total tax revenues are higher than they were 10 years ago.²² Even after adjusting for inflation and population growth, total state revenues per person rose from \$2,281 in 1990-01 to \$2,955 in 2001-02. Sales tax revenues increased from \$813 per person to \$1,010 over the same period. Furthermore, total inflation-adjusted 2001-02 state revenues per person were 11.9 percent higher than five years ago and even 6.2 percent higher in 2000-01 than the five years before.²³ Even with the sluggish economy, Florida is realizing a projected net increase in revenues of nearly \$300 million for 2003-04 fiscal year.

Rather than increasing excise taxes, concentrating on reducing expenditures and

increasing government efficiency in the provision of services would be a more promising and growth-friendly way of dealing with Florida's projected revenue slowdown.

Endnotes

¹ From 1982-84 to February 2003, the tobacco product component of the CPI-U rose 372.7 percent, compared with 276.3 percent for the tuition and child care component, or 193.0 percent for the medical care component of the index. See www.bls.gov/cpi/home.htm for details.

² A good case can be made that those budget woes reflect in large part the sharp increase in state government expenditures over the past decade as much or more than current revenue shortfalls. This is an issue, however, beyond the scope of this report.

³ Representative standard surveys of public finance speaking of the economic difficulties with excise taxes include: Edgar K. and Jaqueline M. Browning, *Public Finance and the Price System* (New York: Macmillan, 1987), Richard A. Musgrave, *The Theory of Public Finance* (New York: McGraw Hill, 1959), and Joseph Stiglitz, *Economics of the Public Sector* (New York: W.W. Norton, 2000).

⁴ That, however, is not necessarily true if the disincentive effects of the alternative approach—progressive taxation—reduce overall income levels by a material amount.

⁵ U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey* (Washington, D.C.: Government Printing Office, various years). For the 2001 and other recent surveys, go to www.bls.gov/cex/home.htm#tables.

⁶ Historically, some economists have argued that excise taxes could be shifted backward to owners of capital. See, for example, Harry Gunnison Brown, "The Incidence of a General Output or a General Sales Tax," *Journal of Political Economy*, April 1939, or Earl R. Rolph, "A Proposed Revision of Excise Tax Theory," *Journal of Political Economy*, April 1952.

⁷ Tony McGuinness and Keith Cowling, "Advertising and the Aggregate Demand for Cigarettes," *European Economic Review*, July 1975.

⁸ See, for example, Badi H. Baltagi and Dan Levin, "Estimating Dynamic Demand for Cigarettes Using Panel Data: The Effects of Bootlegging, Taxation, and Advertising Reconsidered," *Review of Economics and Statistics*, February 1986, and Barry J. Seldon and Khosrow Doroodian, "A Simultaneous Model of Cigarette Advertising: Effects on Demand and Industry Response to Public Policy," *Review of Economics and Statistics*, November 1989. A more recent estimate places the short-term price elasticity at 0.28, noting, however, considerable variations with age, income, and race. See Matthew C. Farrelly, "Response by Adults to Increases in Cigarette Prices by Sociodemographic Characteristics," *Southern Economic Journal*, July 2001. For a broader discussion, see W. Kip Viscusi, *Smoking* (New York: Oxford University Press, 1992).

⁹ Aside from the elasticity less than 0.10 reported below, in another calculation we estimated the income elasticity at 0.18, meaning a 10 percent increase in income is associated with a 1.8 percent increase in tobacco usage. An identical estimate has been obtained for Sweden. See A. Koutsayannis, "Demand Functions for Tobacco," *Manchester School*, January 1963. Other estimates of around .30 are common. See, for example, Seldon and Doroodian, *op.cit.*, and Richard Schmalensee, *The Economics of Advertising* (Amsterdam: North-Holland, 1972).

¹⁰ See *Consumer Expenditure Survey*, *op. cit.*

¹¹ Where industries are not characterized by ease of entry or exit, or where substantial noncompetitive profits exist, that conclusion may not hold. There is little evidence, however, that these conditions characterize most industries subject to excise taxation.

¹² See his *Taxation and Welfare* (Boston: Little, Brown, 1974). His earlier classic article is "The Incidence of the Corporation Income Tax," *Journal of Political Economy*, June 1962.

¹³ See their *The Power to Tax* (Cambridge: Cambridge University Press, 1980).

¹⁴ A caveat here: with new technologies (for example, Internet sales), the sensitivity of taxpayers to cigarette prices in general may remain unchanged, but consumers can increasingly substitute untaxed for taxed cigarettes, so the price elasticity of *taxed* cigarettes may be fairly high. This is discussed more below.

¹⁵ See Richard Vedder, "Bordering on Chaos: Fiscal Federalism and Excise Taxes," in William F. Shugart II, ed., *Taxing Choice: The Predatory Politics of Fiscal Discrimination* (New Brunswick, NJ: Transaction Publisher, 1997), p. 276. Much of this section is adopted from research incorporated in that paper.

¹⁶ *Ibid.*, p. 280.

¹⁷ That is much less true for products for which shipping costs are high. Gasoline is the best example, although sale of beer by Internet is generally still not feasible as given shipping costs. For high price liquors or wines, Internet sales are growing as the shipping costs are relatively modest in relation to the value of the product sold.

¹⁸ See Council of State Governments, *Tobacco Settlement and Declining State Revenues* (Lexington, KY: Council of State Governments, March 2002). Also go to www.csg.org.

¹⁹ *Ibid.*, p.1.

²⁰ *Ibid.*, p.1

²¹ Randall Holcombe, "Florida is Not Facing a Revenue Crisis," *The Journal of the James Madison Institute*, Winter 2003.

²² *Ibid.*

²³ *Ibid.*

Notes