

# Federal Excise Taxes: Approaching Deficit Reduction from the Revenue Side

*By Glenn H. Miller, Jr.*

The U.S. budget deficit has recently followed a downward course, yet some projections still show large deficits through 1994 if no fiscal policy changes are made. Many analysts believe the deficit is impairing the prospects for future U.S. economic growth and threatening the outlook for the U.S. standard of living. The failure to take steps to ensure further deficit reduction reflects the difficult choices facing fiscal policymakers.

In debates over which deficit reduction options to adopt, some persons emphasize the role of economic growth and federal spending restraint. Others insist that tax increases must play a role in reducing the deficit. Many of those supporting tax increases favor increases in narrow-based consumption taxes, especially the federal excise taxes on alcohol, tobacco, and motor fuels. Such increases would do more than

raise revenue, however. They would also affect consumption patterns and the distribution of the tax burden.<sup>1</sup>

This article reviews estimates of the revenue-raising power of moderate increases in federal excise taxes on alcohol, tobacco, and motor fuels, and examines the major drawbacks and offsetting virtues of such increases. The first section documents the need for deficit reduction. The second section shows how moderate increases in federal alcohol, tobacco, and motor fuels taxes could significantly contribute to deficit reduction. The third and fourth sections evaluate increases in those excise taxes against the objectives of a good tax system: equity, neutrality, and simplicity. The article maintains that if revenue increases are deemed an appropriate part of a deficit reduction package, then

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<sup>1</sup> Excise tax increases would also likely influence the level of output and the general price level. This article does not discuss those macroeconomic effects.

higher taxes on alcoholic beverages, tobacco products, and motor fuels deserve serious attention.

## Reducing the federal budget deficit

The Congressional Budget Office (CBO) projects that the budget deficit will decline slowly through fiscal year (FY) 1994 with current budgetary policies unchanged. Yet even with this projected decline, a sizable deficit is still projected for FY 1994. Many persons agree that further deficit reductions are needed to help increase savings and investment in the United States and thereby improve the outlook for future U.S. living standards. Disagreement remains, however, on what fiscal policy actions should be taken to further reduce the deficit.

After rising through the mid-1980s, the federal budget deficit now appears to be set on a slow downward course. The deficit in FY 1980 stood at \$74 billion. After soaring to \$221 billion in FY 1986 and falling sharply to \$150 billion in FY 1987, the deficit edged back up to \$155 billion in FY 1988. The CBO projects that with current tax and spending policies (the baseline deficit projections), the deficit will decline to \$122 billion in FY 1994 (Table 1).<sup>2</sup>

Projected deficits for each year from now through FY 1993 fall short of reaching the Gramm-Rudman (G-R) deficit targets. Those targets fall steadily from \$100 billion for FY 1990 to zero (or budget balance) for FY 1993

(Table 1). In the absence of faster economic growth than projected by the CBO, further fiscal policy actions appear needed to close the gap between the G-R targets and the projected current policy deficits.

## Reducing the deficit: Why?

Federal Reserve Chairman Alan Greenspan, remarking on "the long-term corrosive impact of the deficit," has argued that "the case for bringing down the deficit is compelling."<sup>3</sup> The large deficits of the 1980s have dampened saving and investment in the United States and lessened the expected growth of the U.S. standard of living. Federal budget deficits absorb savings, leaving less available for private investment. Heavy borrowing to finance deficits also puts upward pressure on interest rates, raising the cost of capital and further inhibiting investment spending.

The negative effects of the deficit have been mitigated by inflows of foreign capital, but those inflows have been associated with large trade deficits, leading many economists to view the budget deficit and the trade deficit as twin problems. Some economists argue that the ultimate effects of the twin deficits will be a further reduction in U.S. living standards relative to other industrial nations, due to weaker U.S. investment spending and the need to meet large foreign debt obligations.<sup>4</sup>

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<sup>2</sup> The deficit as a share of gross national product is projected to decline even faster as the deficit itself shrinks and GNP grows. Given the CBO projections of GNP growth, the deficit is expected to be 1.7 percent of GNP in FY 1994 compared with 3.4 percent in FY 1987. The size of the deficit relative to GNP would remain high by historical standards, however.

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<sup>3</sup> Alan Greenspan, "Statement to the National Economic Commission," November 16, 1988, reprinted in *Federal Reserve Bulletin* (January 1989), p. 15.

<sup>4</sup> C. Alan Garner, "Policy Options to Improve the U.S. Standard of Living," *Economic Review*, Federal Reserve Bank of Kansas City (November 1988), pp. 9-16.

**TABLE 1**  
**Deficit projections and targets, fiscal years 1988-94**  
 (billions of dollars)

	Actual	Projections					
	1988	1989	1990	1991	1992	1993	1994
Baseline deficit projections	155	155	141	140	135	129	122
Gramm-Rudman deficit targets	144	136	100	64	28	0	—

Source: Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1990-1994*, January 1989.

In short, economists generally agree that deficit reduction is needed because the budget deficit is harmful to the U.S. economy. In Chairman Greenspan's words, "The deficit already has begun to eat away at the foundations of our economic strength. And the need to deal with it is becoming ever more urgent."<sup>5</sup>

### *Reducing the deficit: How?*

While there is broad agreement on the need for deficit reduction, there is less agreement on how to do it. Assuming that economic expansion alone will not let the country grow out of the deficit, fiscal policymakers have few options.<sup>6</sup> They can either cut expenditures or

increase revenues.<sup>7</sup>

Revenue increases for deficit reduction could come from higher taxes on consumption, personal income, or business income. People are reluctant to propose major changes in personal and business income taxes, however, because the Tax Reform Act of 1986 has been in effect for only a short time. Furthermore, taxing income reduces the net rate of return on saving and thus inhibits saving, investment, and economic growth more than taxing consumption does. In contrast, a consumption tax favors saving relative to consumption when compared with an income tax. Some economists argue that

<sup>5</sup> Greenspan, "Statement to the National Economic Commission," p. 15.

<sup>6</sup> Assumptions that would allow enough economic expansion to permit growing out of the deficit were called "very unlikely" by Chairman Greenspan, according to a published report of his testimony to the National Economic Commission. *Congressional Quarterly Weekly Report*, November 26, 1988, p. 3385.

<sup>7</sup> A large number of different deficit reduction packages may be put together. For a detailed listing of options for both spending cuts and revenue increases, see CBO, *Reducing the Deficit: Spending and Revenue Options*, (CBO, February 1989). For discussion of one set of judgments on reaching budget balance, see Joseph J. Minarik and Rudolph G. Penner, "Fiscal Choices," *Challenge to Leadership: Economic and Social Issues for the Next Decade*, Isabel V. Sawhill, ed. (Washington, D.C.: The Urban Institute Press, 1988).

an income tax taxes savings twice. All income is taxed when earned, and then interest on saved income is taxed again. Because consumption taxes do not tax savings, it is argued that with such taxes people will consume less and save more—providing savings that could then be used for investment to enhance productivity and living standards.

A consumption tax may be either broad-based or narrow-based. A broad-based consumption tax, in turn, may be either a direct tax or an indirect tax. Direct taxes are levied on those meant to bear the tax burden, while indirect taxes are imposed elsewhere but then shifted to those who finally bear the burden. An example of a direct, broad-based consumption tax is a personal expenditure tax, which taxes an individual on his income less his savings, making his consumption the expenditure tax base. An indirect, broad-based consumption tax, on the other hand, is levied on commodities or transactions. In the United States, the most familiar tax of this kind is the retail sales tax. Less familiar, though essentially equivalent except in the method of administration, is the value-added tax (VAT).<sup>8</sup>

Selective excise taxes on specific transactions, commodities, or groups of commodities are indirect, narrow-based consumption taxes.

<sup>8</sup> For further information on an expenditure tax, see Glenn H. Miller, Jr., "Alternatives to the Current Individual Income Tax," *Economic Review*, Federal Reserve Bank of Kansas City (September/October 1984), pp. 11-14, and references cited there. For a detailed discussion of the VAT, including a comparison with a retail sales tax, see Glenn H. Miller, Jr., "The Value-Added Tax: Cash Cow or Pig in a Poke?" *Economic Review*, Federal Reserve Bank of Kansas City (September/October 1986), pp. 3-15.

**TABLE 2**  
**Federal excise tax receipts,**  
**fiscal year 1988**  
(billions of dollars)

<b>Tax</b>	<b>Receipts</b>
Alcohol	5.7
Tobacco	4.6
Gasoline and diesel fuel	11.9
All other	13.0
<b>Total</b>	<b>35.2</b>

Source: Office of Management and Budget, *Budget of the United States Government, Fiscal Year 1990*, (OMB, 1989).

Over the past 75 years, the federal government has levied excise taxes on a wide range of items, including cigarettes and the matches to light them, telephone service, admissions to movies, leasing of safe-deposit boxes, jewelry, and furs. Most federal excises, however, were eliminated by the Excise Tax Reduction Act of 1965.

In FY 1988, total federal excise taxes were \$35.2 billion, or about 3.9 percent of total federal receipts (Table 2). Taxes of about \$5.7 billion on alcohol and about \$4.6 billion on tobacco accounted for approximately 29 percent of total excise receipts. Receipts from motor fuels taxes contributed \$11.9 billion to the Highway Trust Fund and accounted for about 34 percent of all excise receipts.

Admittedly, excise tax receipts are a small part of total federal receipts. However, moderate increases in a small set of excises could perhaps make a significant contribution to deficit reduction.

## Revenue increases from federal excises

Discussions of using higher federal excise taxes as a revenue source to reduce the budget deficit generally focus on increasing the taxes on alcohol, tobacco, and motor fuels. Moderate increases in these narrow-based consumption taxes could produce a significant addition to revenues.

U.S. excise tax rates have changed little over the past three decades. As a result, excise tax revenues have declined substantially as a share of total receipts. As product prices have risen through the years, the burden of these taxes has fallen sharply when expressed as a proportion of the prices of the taxed items.

### *Alcohol and tobacco taxes*

Since the 1950s, excise tax rates on alcohol and tobacco products have remained relatively constant in the United States and are well below those in other industrial countries. In 1951, the tax on a pack of cigarettes was 8 cents. The tax was increased to 16 cents in 1983, but its share of the price remained far below what it was in the 1950s. The tax on distilled spirits was increased slightly in 1985, but taxes on beer and wine have not been raised since 1951. Moreover, the rates charged on beer, wine, and distilled spirits vary significantly according to alcoholic content.<sup>9</sup>

Increases in alcohol and tobacco excises would restore a considerable part of the real

value of these taxes. The CBO estimates that increasing the tax on distilled spirits from \$12.50 to \$15.00 per proof gallon would raise about \$0.4 billion a year in revenue, or about \$2 billion from 1990 through 1994. Doing so might add about 40 cents to the price of a 750 milliliter bottle of 80-proof liquor. Raising the tax on beer and wine to a level equivalent to that on distilled spirits per ounce of alcohol content would raise nearly \$5 billion a year in revenues from 1990 through 1994. Such an increase would raise the federal excise tax on a 750 milliliter bottle of wine from 3 cents to 54 cents, and that on a six-pack of beer from 16 cents to 63 cents. A doubling of the cigarette tax to 32 cents a pack would provide additional revenue of nearly \$3 billion a year from 1990 through 1994.<sup>10</sup>

### *Motor fuels tax*

The federal government has levied gasoline taxes and other automobile-connected excise taxes for over 50 years. Although already viewed implicitly as user charges, in the late 1950s such taxes were earmarked for the Highway Trust Fund as construction of the Interstate Highway System got under way.

In FY 1988, total Highway Trust Fund receipts were about \$14.1 billion. Taxes on gasoline and diesel fuel used on highways made up about \$11.9 billion, or 84 percent, of the total. The gasoline tax is currently 9.1 cents per gallon and the diesel fuel tax is 15.1 cents per gallon.

<sup>9</sup> Present excises are estimated to be about 10 cents an ounce of alcohol for distilled spirits, 5 cents for beer, and 1 cent for wine.

<sup>10</sup> All estimates of projected revenues from tax increases are from CBO, *Reducing the Deficit: Spending and Revenue Options* (CBO, February 1989).

The real value of motor fuels taxes has not eroded since the 1950s as much as that of alcohol and tobacco taxes; however, moderate increases in motor fuels taxes would bring the taxes closer to their real values of the early 1980s. The CBO estimates that a 12-cent-per-gallon increase in the federal excise tax on both gasoline and diesel fuel for highway use would yield additional revenue of between \$11 billion and \$12 billion per year from FY 1990 through FY 1994.<sup>11</sup> This estimate produces the widely used rule of thumb that each one-cent-per-gallon increase in the gasoline excise tax would yield about \$1 billion per year in additional revenue. With the average national price of gasoline at about a dollar a gallon, raising the federal excise tax by 12 cents would still leave the price at the pump below its peak in the early 1980s and well below gasoline prices in other industrial countries.<sup>12</sup>

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<sup>11</sup> Increases in energy taxes other than the motor fuel taxes are sometimes suggested as means of deficit reduction. Additional revenues of about \$9 billion a year are projected for a \$5 per barrel fee on imported oil. Other more broadly based energy taxes would provide more revenue. A tax of \$5 per barrel on both domestic and imported oil is projected to produce about \$21 billion a year in additional revenue, while a 5 percent tax on total domestic energy consumption is estimated to raise just under \$15 billion a year. For a detailed discussion of oil taxes and deficit reduction, see CBO, *The Budgetary and Economic Effects of Oil Taxes* (CBO, April 1986); see also Tim R. Smith, "U.S. Energy Policy in a Changing Market Environment," *Economic Review*, Federal Reserve Bank of Kansas City (September/October 1986), pp. 16-30.

<sup>12</sup> The U.S. average national price of gasoline reached about \$1.40 per gallon in the early 1980s. Gasoline prices in western Europe and Japan, including tax, range from about \$2.25 to about \$3.75 per gallon. The tax share ranges from about one-half to about three-fourths of the total price in those countries, compared with about one-third in the United States.

When taken as a whole, the projected revenue increases from higher excise taxes on alcohol, tobacco, and motor fuels are significant.<sup>13</sup> The increases described above together could produce almost \$20 billion a year on average over the next five years, when current policy deficits are estimated to average about \$133 billion a year (Table 3).<sup>14</sup>

### **Objectives of a good tax structure**

As shown in the previous section, moderate increases in excise taxes on alcohol, tobacco, and motor fuels could raise significant amounts of revenue. Such tax increases may be supported on grounds besides their revenue raising capacity, and may also be opposed for reasons other than just wanting to avoid any tax hikes. Several of the arguments for and against excise tax increases may be examined in light of the objectives of a good tax structure.

While tax systems develop as a result of many influences, economists have set forth some guidelines to taxation. Such guidelines are often

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<sup>13</sup> Strictly speaking, the amounts of deficit reduction from the separate options prepared by the CBO cannot simply be added together to give totals. The effects of each option were calculated separately and there would be interactions between them if many were enacted. Such interaction effects are probably small when estimates are summed for just the excise taxes discussed here.

<sup>14</sup> These excise tax increases would be close to the projected receipts from a 5 percent surcharge on the individual income tax. Imposition of a broad-based consumption tax could be more revenue productive than these selective excise tax increases. For example, a VAT levied at a 5 percent rate with exemptions for food, housing, and medical care could produce more than \$70 billion a year in added revenues when fully operational.

**TABLE 3**  
**Estimated cumulative five-year**  
**addition to revenues from selected**  
**excise tax increases,**  
**fiscal years 1990-94**  
**(billions of dollars)**

Tax increase	Additional revenues
Cigarette tax <sup>1</sup>	14.2
Tax on distilled spirits <sup>2</sup>	2.2
Taxes on wine and beer <sup>3</sup>	24.2
Motor fuels tax <sup>4</sup>	57.8
<b>Total<sup>5</sup></b>	<b>98.4</b>
<b>Addenda</b>	
Impose a value-added tax <sup>6</sup>	281.9
Add a 5 percent surtax to the individual income tax	121.4
Footnotes:	
<sup>1</sup> From 16 to 32 cents per pack.	
<sup>2</sup> From \$12.50 to \$15 per proof gallon.	
<sup>3</sup> To alcohol-equivalent rate on distilled spirits.	
<sup>4</sup> By 12 cents per gallon, from 9 cents for gasoline and 15 cents for diesel fuel.	
<sup>5</sup> See text footnote 13.	
<sup>6</sup> At a 5 percent rate, with exemptions for food, housing, and medical care.	
Source: Congressional Budget Office, <i>Reducing the Deficit: Spending and Revenue Options</i> , (CBO, February 1989).	

expressed in terms of several generally accepted objectives of a good tax structure. These objectives may then be used as criteria for evaluating tax systems or individual taxes.

A good tax structure includes three generally accepted objectives: equity, or fairness in the distribution of the tax burden; neutrality,

or minimum interference with economic decisions and behavior in otherwise efficient markets; and simplicity, or effective and understandable administration of a tax.<sup>15</sup>

The good tax structure described by these objectives is an ideal, which cannot be fully attained in practice. For example, attainment of an objective may depend on the assumption of pre-tax conditions not present in the real world. Moreover, the individual objectives themselves may be in conflict. In other words, the pursuit of equity may interfere with neutrality, or achieving equity may be possible only with less simplicity. In practice, then, tradeoffs between the objectives may be required. Evaluating taxes against the generally accepted objectives of a good tax structure is still a useful exercise, however, as policymakers and other citizens decide what tradeoffs are acceptable.

### *Equity*

The equity objective calls for the burden of taxation to be distributed fairly among taxpayers. Three approaches to achieving equity in taxation are the ability-to-pay principle, the benefit principle, and the sumptuary principle.

According to the ability-to-pay principle, the burden of taxation should be distributed on the basis of some measure of taxpayers' economic conditions. Thus, taxpayers would contribute to the cost of government according to their economic capacities.

<sup>15</sup> Richard A. Musgrave and Peggy B. Musgrave, *Public Finance in Theory and Practice*, 2d ed. (New York: McGraw-Hill Book Co., 1976), pp. 210-11.

Fairness in taxation under the ability-to-pay principle is usually evaluated in terms of vertical equity and horizontal equity. Vertical equity requires that people in different situations are treated differently. Horizontal equity requires that people in similar situations are treated similarly. Income is generally accepted as the measure of a taxpayer's economic condition to be used in judgments about the equitable distribution of tax burden.<sup>16</sup> With regard to vertical equity, a tax is progressive when those in higher income classes pay a larger share of their incomes in taxes than those in lower income classes. A tax is regressive when those in lower income classes pay a larger share of their incomes in taxes. A tax is proportional when people in all income classes pay the same share of their incomes in taxes.

The second approach to achieving equity, the benefit principle, calls for the tax burden to be distributed on the basis of taxpayers' benefit from, or use of, public services. Such an approach is fair because taxpayers contribute to the cost of government according to the benefits received from government activities.

The third approach to achieving equity, the

sumptuary principle, allows society to tax behavior or activities that it deems immoral or antisocial. Sumptuary taxes to penalize and discourage such activities are thus not inequitable. Those taxpayers finding the burden too heavy can escape it by voluntarily ceasing the activity, while those who choose to continue it are properly and fairly contributing to the cost of government.

Most contemporary discussions of equity in taxation involve the ability-to-pay principle, rather than the sumptuary or benefit principles. Few object to the horizontal equity standard, and progressivity is widely accepted as the standard for vertical equity. The sumptuary principle is frequently condemned and is not widely accepted as a means toward equity in taxation. The benefit principle as a standard of fairness is best represented by user fees for public services that directly benefit clearly identifiable users.

### *Neutrality*

The neutrality objective calls for minimal interference of taxation with economic decisions and behavior. Important to this objective is the concept of efficient resource allocation by a competitive market system, which uses the economy's resources and technology to produce the most goods and services possible to meet consumers' desires. In considering the effects of taxes on taxpayers' decisions and behavior, such an efficient allocation of resources is usually implicitly assumed to exist before imposition of a tax. In such a situation, nearly all taxes interfere with the allocation of resources because they lead taxpayers to change their behavior. For example, if consumers were satisfying their preferences before imposition

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<sup>16</sup> Consumption expenditures are sometimes suggested as an alternative measure, however. The rationale is that total expenditures reflect long-time incomes and are thus better indicators of taxpayers' economic situations than are incomes for a single year. This view implies that questions about the equitable distribution of tax burden should be answered by looking at the share of total expenditures paid in taxes by each income group. Significantly different results may be obtained when the distributional effects of taxes are measured relative to expenditures than when measured relative to incomes. This is demonstrated for federal excise taxes in CBO, "The Distributional Effects of an Increase in Selected Federal Excise Taxes," Staff Working Paper, January 1987.

of a tax, their new after-tax consumption patterns bring reduced satisfaction. The change in consumer purchases that occurs causes resources to be reallocated following imposition of the tax, therefore the tax is not neutral.

Only one tax, a lump-sum head tax, or poll tax, is neutral with regard to all economic choices, such as choices between income and leisure, between present and future consumption, and between various consumer goods. Paying a head tax does not interfere with a taxpayer's economic behavior because he cannot avoid or reduce it by changing his consumption, production, or work patterns.

In a market economy, efficient resource allocation depends on competition assuring that the output produced fits consumers' preferences. Firms seek to maximize profits by producing at least cost what consumers desire. Efficient resource allocation by such a system may be hindered in practice by deviations from the ideal. For example, efficiency may be lessened by markets that are imperfectly competitive, or by what are called externalities, or spillover effects.

Externalities are side effects of activities that affect the well-being of others, bringing to others incidental benefits or costs not paid for by those responsible for them. These spillover effects are not reflected in market transactions and interfere with the market system's efficient allocation of resources.

External costs of production or consumption not accounted for by the market are imposed on society rather than being properly allocated to the producers or consumers responsible for them. For example, a factory's emission of pollution into the air may impose health care costs on those around it. While they are real costs for society, the producer may disregard

these social costs because he does not pay for them. They enter neither his costs of production nor the market price for his product. Thus, while social costs may be greater than private costs, the market system only takes account of the latter and an inefficient allocation of resources results. Similar results may occur when consumption generates external costs.

Charging external costs to the producers or consumers responsible for them would internalize those costs and help improve an inefficient resource allocation. Government may intervene to internalize social costs in order to improve resource allocation, and taxes may be the instrument chosen to correct the inefficiencies. For example, charging spillover costs by taxing the consumers responsible for them would likely reduce the consumption. And, the revenues could be used to help remedy the impact of the negative externality.

Taxes used to correct inefficiencies due to externalities are not neutral because they interfere with economic decisions and behavior. But the neutrality objective generally assumes the introduction of taxes into an otherwise efficient market. When negative externalities are already interfering with efficient resource allocation, however, taxes may help correct those other inefficiencies and move the economy toward overall efficiency.

Sumptuary taxes and benefit taxes are sometimes viewed as special cases when judged against the neutrality objective. Both cases may be seen as situations involving externalities.

Sumptuary taxation, which changes consumption patterns and resource allocation from a nontax situation, is justified because society views consumption of the taxed goods as contrary to the public interest. Thus, the changes in consumption are viewed not as a cost but as

a gain. This case for sumptuary taxation, when more explicitly made, is really an example of using taxation as a remedy for the presence of negative externalities. Consumption of the taxed goods gives rise to social costs not included in their prices. Sumptuary taxes are intended to internalize those costs by placing them on the consumers of the taxed goods, thus reducing consumption and providing revenues to help pay for the social burden created.

Benefit taxes, or charges for public services that directly benefit clearly identifiable users, appear to conflict with the neutrality objective by curtailing consumption and altering resource use. Benefit taxes are collected where a specific publicly financed service is provided. The public expenditure reduces the cost of the service to consumers by subsidizing the activity and thus introduces an inefficient allocation of resources. Efficiency is reduced as more resources are drawn into the activity than are warranted. The benefit tax, or user charge on the service, acts to offset the subsidy and improves efficiency rather than worsening it. Thus, public expenditures may subsidize certain activities by providing external benefits that interfere with efficient resource allocation. In such cases, benefit taxes may help redress the balance toward efficiency. While apparently at odds with the neutrality objective, such use of benefit taxes helps secure more efficient resource use.

### *Simplicity*

A good tax structure should be simple, understandable to the taxpayer, and as free as possible from arbitrary administration. Cost of administration and compliance should be minimal, given the other objectives.

## **Appraising the effects of excise tax increases**

Moderate increases in taxes on alcohol, tobacco, and motor fuels would have effects in addition to their revenue-raising capacity. Consumption patterns would likely change as a result of such tax increases, and the burden of the tax hikes would probably not be distributed evenly. Raising more revenue by increasing these taxes should be relatively easy and efficient, since the means for doing so already exist.

### *Equity*

The question of who finally pays excise taxes needs to be considered when judging how excises measure up to the equity objective. Excise taxes are normally passed on to consumers through price increases.<sup>17</sup> The tax is typically collected by the seller, and the amount of the tax is included in the price charged to the consumer. Thus, the consumer bears the burden of the tax.

The ability-to-pay principle is most often used in evaluating how taxes measure up to the equity objective. Appraising the vertical equity of an excise tax—whether it is progressive or regressive—depends on expenditures on the taxed good relative to income, for different income classes. Since excises are generally levied at the same rate for all purchases of the taxed good, the distribution of purchases of the

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<sup>17</sup> "On the whole, the common assumption of complete forward shifting of an excise tax is in most cases close enough to reality to be a useful approximation, if the tax rate is moderate and the industry is growing." Carl S. Shoup, *Public Finance* (Chicago: Aldine Publishing Co., 1969), p. 275.

good across income classes determines the distribution of an excise tax burden. Average expenditures for most goods subject to federal excise taxes are a much larger share of income for lower income groups than for higher income groups.<sup>18</sup> The present set of federal excise taxes is regressive overall, and most individual excises are also regressive. Such taxes thus violate the objective of vertical equity.

Excise taxes also tend to compromise the objective of horizontal equity. All taxpayers within an income class are not likely to have the same preferences for taxed goods, and those who buy more will be taxed more heavily than others in a similar economic condition. The burden of the present federal excise taxes varies considerably within income classes, more so for some taxes than for others.

Excise taxes on alcohol and cigarettes perform poorly with regard to vertical equity. These taxes are generally regressive relative to income. Average expenditures on distilled spirits, wine, beer, and tobacco, all decline as a percent of income as income rises. The tobacco excise is clearly the most regressive of the four; the excises on distilled spirits and beer are more regressive than the tax on wine, which is about proportional.<sup>19</sup>

The principle of horizontal equity is also violated by the excise taxes on alcohol and cigarettes. In any income class, families with

strong preferences for these products are taxed more heavily than other families with similar incomes who spend their incomes differently. Some families make no purchases of alcohol and tobacco products. Moreover, the proportion of families that do purchase alcohol and tobacco varies within each income class. In addition, the amount of purchases may vary widely among those families in any income class that do make expenditures. These patterns suggest the absence of horizontal equity for alcohol and tobacco excises generally. The CBO concludes, "The incidence of [such] tax increases would vary the most within the lowest income classes."<sup>20</sup>

Taxes on alcohol and tobacco products are sumptuary taxes and may also be evaluated against the sumptuary principle of equity, which says that taxes on actions deemed immoral or antisocial are fair. These taxes penalize consumption of alcohol and tobacco, but their success in discouraging consumption is open to question. Consumption of alcohol and tobacco is generally not very responsive to changes in income or relative prices. As a result, alcohol and tobacco taxes are better at raising revenue than at discouraging consumption of these products.

Motor fuels excise taxes are fair according to the benefit principle of the equity objective. Motor fuels taxes are paid into the Highway Trust Fund. Expenditures are made from the trust fund for the construction and maintenance of the nation's roadways, to the benefit of the highway users who pay the taxes. These taxes

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<sup>18</sup> Estimates of tax burden distribution used in this article are from CBO, "The Distributional Effects . . . ."

<sup>19</sup> The tobacco excise is also regressive relative to expenditures, but the three alcohol excises are close to being proportional relative to expenditures.

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<sup>20</sup> CBO, "The Distributional Effects . . . ," p. 2.

thus meet the standard of fairness represented by collecting user fees for public services that directly benefit clearly identifiable users.

Excise taxes on motor fuels do not measure up well to the ability-to-pay principle of the equity objective. Like selective excises generally, the gasoline tax fails the vertical equity test. Average expenditures for gasoline as a share of income decline steadily and substantially as incomes increase, making the federal excise tax on gasoline significantly regressive relative to income.<sup>21</sup>

The horizontal equity criterion for the gasoline tax, as for other excise taxes, depends on the distribution of spending on the taxed item within income classes. On a national average basis, spending for gasoline apparently varies little among families in the same income class, for incomes of \$10,000 or more. The divergence in spending for gasoline is greater among families in the lower income groups. A smaller share of these families buy any gasoline at all, and 20 percent of them account for more than 70 percent of all gasoline purchased by families in these income groups. Thus, with regard to the gasoline tax, horizontal equity appears to be less well served among low-income groups than among higher income groups.

There is also a geographic aspect to how the motor fuels tax measures up to the horizontal equity standard. The burden of the tax does not fall evenly on different parts of the country.

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<sup>21</sup> Relative to expenditures, however, the burden of the gasoline tax is greater for families in the middle-income ranges than for those with either larger or smaller incomes. This distribution of the burden reflects the fact that purchases of gasoline as a share of total expenditures are highest in the middle-income ranges.

State per capita motor fuel consumption is greater than the national average in the southern and western parts of the United States. Motor fuel taxes thus fall more heavily on people living in larger and less heavily populated states, that is, on drivers who typically travel greater distances than those living in smaller, more urbanized states, even when their income situations are similar.

### *Neutrality*

Appraising excise taxes in light of the neutrality objective requires examining taxpayers' responses to the taxes. Paying excise taxes does affect consumer decisions and behavior. The higher price for the taxed good relative to the prices of other goods leads consumers to shift their purchases from taxed to untaxed goods. With new, higher prices for the taxed goods, consumers also have less disposable income and must reduce their saving, their consumption, or both. Consumers may reduce their purchases either of the taxed good or untaxed goods. If demand for the taxed good is highly elastic—that is, if the amount consumed of the taxed good responds significantly to price changes—consumption of the taxed good is more likely to be curtailed. If demand for the taxed good is highly inelastic, consumption of other goods is more likely to be curtailed.

Excise taxes on alcohol and tobacco may be justified in order to change consumers' decisions and behavior, because of negative externalities associated with consumption of those products. But the highly inelastic demand for alcohol and tobacco has implications for the outcome of such an approach.

The externalities case for alcohol and tobacco

taxes rests on the external costs associated with their consumption. Use of alcohol and tobacco endangers the health of consumers as well as the health and safety of others, and creates social costs not reflected in product prices. Taxing consumption of these products is thus an example of charging external costs to the consumers responsible for them. Alcohol and tobacco taxes both internalize the social costs of their consumption and provide revenue to help compensate for some of the adverse effects of that consumption. While such taxes interfere with consumer decisions and behavior by changing consumption patterns, those changes result in a gain to society. Inefficiencies already present due to negative externalities are corrected by the imposition of the taxes. But due to the inelastic demand for alcohol and tobacco, the internalization of costs that occurs is likely reflected more in increased revenues than in reduced consumption.

The motor fuels tax is an example of a benefit tax, or user fee, which appears to conflict with the neutrality objective but improves efficiency. Public highway expenditures by themselves would subsidize automobile transportation and interfere with efficient resource allocation. Charging the users who benefit from the highway system by collecting motor fuels taxes redresses the balance toward efficiency.

Some opponents of using the motor fuels excise taxes for deficit reduction say that doing so would break the user charge link between those taxes and highway construction and maintenance. And without that link, the benefit principle of taxation would no longer serve as a rationale for the tax increase. For example, the National Conference of State Legislatures (NCSL) commented as follows in testimony before Congress: "The proposal to employ

gasoline taxes to finance nontransportation activities of the federal government represents a departure from the user fee philosophy and an abrogation of the state-federal partnership."<sup>22</sup> Similarly, the National Governors' Association asserted, "To increase the federal motor fuels taxes as a way to help reduce the deficit would be contrary to [the] user fee principle and would harm the funding for transportation programs."<sup>23</sup>

The argument implies that using a motor fuels tax increase to reduce the deficit means allocating the additional receipts to the general fund rather than to the Highway Trust Fund. The additional receipts could be held in the trust fund, however, as some unspent funds are now. Such balances, temporarily serving as contributions to deficit reduction, could later be released to be spent for their traditional purposes when the overall fiscal situation improves. An argument against this approach is that singling out drivers and highways to contribute to deficit reduction lessens the pressure for spending restraint in other programs.

Opponents of a motor fuels tax increase for deficit reduction also argue that changes in consumption patterns due to such an increase would reduce both national and state and local revenues available for highway construction and maintenance at a time when such infrastructure

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22 "Proposal to Increase the Federal Gasoline and Diesel Taxes for Deficit Reduction Purposes," hearing before the Subcommittee on Surface Transportation of the House Committee on Public Works and Transportation, 1987, p. 83.

23 "Increasing Federal Excise Taxes to Reduce the Deficit," hearing before the Subcommittee on Surface Transportation of the House Committee on Public Works and Transportation, 1987, p. 121.

is in need of substantial improvement. If motor fuels purchases were reduced due to price increases resulting from increasing the federal excise tax, the revenues of both the Highway Trust Fund and of state and local governments would be reduced. According to the NCSL testimony, “The loss of trust fund and state revenue implies a reduction of some \$6 to \$8 billion in funds available over the next five years for construction and maintenance of highways and other transportation systems across the nation.”<sup>24</sup>

Those favoring a motor fuels tax increase to help reduce the federal deficit often point to associated benefits due to tax-induced changes in consumption patterns. Conservation of energy, especially oil, is likely to be increased as fuel prices rise and consumption declines. At the same time, such changes in consumption patterns would enhance economic welfare by putting more of the burden of the spillover costs of automobile travel on its consumers.<sup>25</sup>

Gasoline price increases due to a rise in the

federal excise tax would enhance energy conservation in two ways. Higher gasoline prices would lead to less driving, and hence to reduced purchases of gasoline. And in the longer run, automobile purchasers would be led to buy more fuel-efficient cars and trucks, thus slowly improving the fuel efficiency of the stock of motor vehicles in operation. The impact of higher gasoline taxes would help preserve conservation gains made since the oil price shocks of the 1970s, gains which have tended to weaken in the face of lower oil prices in recent years. Preservation of those gains—and a possible enhancement of them—would help reduce U.S. dependence on foreign oil supplies, thus reducing the nation’s vulnerability to supply disruptions.

The motor fuels tax, by changing consumption patterns, can also improve resource allocation by correcting for some external costs of fuel consumption. Costs of air pollution and road congestion due to driving motor vehicles are social costs of highway travel not fully borne by its consumers. Increased motor fuels taxes would shift more of the burden of those social costs to highway users responsible for them.

### *Simplicity*

Excise taxes are generally viewed as relatively easy to administer and collect. Raising additional revenue through increases in excise taxes on alcohol, tobacco, and motor fuels would be especially simple and efficient because the means for collecting them are already in place. In contrast, collecting a federal VAT would require a long lead time and relatively high administration and compliance costs.

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<sup>24</sup> “Proposal to Increase . . . ,” hearing before the Subcommittee on Surface Transportation of the House Committee on Public Works and Transportation, p. 89.

<sup>25</sup> Discussion of changes in the motor fuels tax often lead to discussion of other energy tax changes such as imposition of an oil import fee, a tax on all domestic and imported oil, and a tax on all domestic energy consumption. Increasing any of these taxes would raise energy prices and thus increase conservation. Energy taxes generally are regressive relative to income, but the regional impact would likely be quite different for different taxes. Domestic oil producers and oil-producing states would benefit from an oil import fee, but all industries using oil or energy generally in production could be adversely affected by higher costs due to the imposition of these alternative energy taxes.

## Conclusion

Increases in federal excise taxes on alcohol and tobacco products and motor fuels have been suggested as means to help reduce the federal budget deficit. Moderate increases in these federal excise taxes could make a significant contribution to reducing the deficit. There are tradeoffs, however, between the other effects of such tax increases. Admittedly, these taxes generally do not do well in terms of vertical and horizontal equity, yet other benefits are

likely to accompany increases in these taxes due to their effects on consumption patterns. Additional revenues from consumers of motor fuels, alcohol, and tobacco may be viewed as helping to offset social costs associated with their consumption, and the higher price of motor fuels due to a tax hike would likely enhance conservation of oil. Overall, inclusion of increases in these taxes in a deficit reduction package that incorporates revenue changes merits serious attention.