institute for research on the economics of taxation

Economic Report

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1725 K STREET, N.W., SUITE 1103, WASHINGTON, D.C. 20006 • (202) 223-6316

THE ECONOMIC EFFECTS OF SELECTIVE EXCISE TAXES

Background

September was a month of jittery financial markets--and of an even more jittery Congress. The cause: news that the federal deficit would be higher than expected. Some panicky voices even suggested that some of the existing selective excise taxes ought to be raised to increase revenues. But many people forget that excise taxes have surprising negative effects. Indeed, the federal government has been moving away from such taxes for some years now. Any retreat from this course ought to be carefully considered, not rushed into.

The purpose of this report is to analyze the economic effects of excise taxes with an eye to determining the way in which they influence the overall efficiency of the economy. What we need is a set of criteria in order to judge selective excise taxes. Using these criteria, policy makers can decide under what circumstances selective excises may be beneficial, and which present-law taxes should be revised or repealed. On the basis of our analysis we suggest the following:

- Selective excises should not be employed merely to raise revenues. These taxes are distortionary and, given the current emphasis on broad based, comprehensive neutral tax systems, the use of excises purely for revenue purposes would be a giant step backwards.

- Excises taxes are justified only when it is obvious that the free market has failed to allocate resources efficiently. Under rare circumstances, the market price of a commodity or service does not properly represent its total economic cost or value to society; then an excise tax may lead to greater economic efficiency.

- In order for an excise to be effective, the tax must correctly represent the additional costs to society that the tax was meant to correct. Since the measurement of such costs is highly subjective, excises must be used with extreme care. Less is better than more.

- In structuring an excise, care must be taken to insure that "effective" tax rates do not vary over time. Under present law, compliance is such that firms often have to pay the tax before they sell their products. Thus, the tax can only be paid by borrowing, in which case the effective tax rate varies directly with the interest rate, adding unnecessary uncertainty.

- Excises should be methods of last resort, given all the uncertainty surrounding their use. Greater reliance should be placed on defining property rights or other uses of market forces to correct for "market failures."

In this paper we concentrate on excises levied on producers. Section I gives a historical overview of the system of excise taxes. Section II describes the general economic effects of excise taxation. Section III develops a set of criteria to judge excise taxes and describes when, if ever, they are justified. In section IV selected examples are used to apply the section III criteria to present law excise taxes. In section V some conclusions are offered.

I. Historical Perspective on Excise Taxation

The word "excises" as used in the Constitution of the United States (Article 1, section 8) refers to selective consumption taxes. In general, excise taxes are imposed on some products or services (and not on others), either at the manufacturer level, the wholesale level, or the retail level, either on a unit basis or on an ad valorem basis. For instance, the federal excise tax levied upon the sellers of distilled spirits, on the basis of unit of output, first began in 1791.

The basic philosophy of selective commodity taxation is "the spreading of the burden of the portion of Government expenditures financed by this form of tax in proportion to consumer expenditures, rather than in proportion to income or other criteria."[1] Historically, the federal government has relied on excises for tax revenues. As one economist has noted, "These taxes were increased during every major war, and were subsequently de-emphasized as the need for revenue declined."[2]

Many of the wartime excises were eliminated by the 1965 Excise Tax Reduction Act. Fully effective on January 1, 1969, this law repealed manufacturer's excise taxes on automobile parts and accessories (except truck parts), refrigerators, freezers, air-conditioning units, electric, gas, and oil appliances, light bulbs, radio and television sets, phonographs, records, musical instruments, sporting goods (except fishing equipment, bows and arrows), photographic equipment, business machines, pens and mechanical pencils, lighters, matches, and the so-called luxury items (furs, jewelry, luggage, and toiletries).[3] In 1971 excise taxes on passenger autos and light trucks (under 10,000 lbs.) were eliminated. The 53¢ tax per pound of sugar manufactured in the U.S. expired on June 30, 1975. The Tax Reform Act of 1976 eliminated the 8 percent tax on truck and bus parts. In 1977, excises on adulterated butter and renovated butter were repealed. The excises on local and toll telephone service and teletypewriter service will expire on January 1, 1983.

Present System of Excises

A. The Alcohol and Tobacco Taxes:

Federal alcohol taxes are of two categories:

1) Occupational taxes are imposed on certain manufacturers, and on retailers and wholesalers.

2) Excise taxes on distilled spirits, wines and beer are payable on a semi-monthly basis at the following rates:

- $10.50 per proof gallon of distilled spirits.
- $10.50 per wine gallon of imported perfumes containing distilled spirits.
- 17¢ per wine gallon of wine containing not more than 14% alcohol by volume.
- $10.50 per wine gallon of wine containing more than 24% alcohol.
- $3.40 per wine gallon of champagne or sparkling wine.
- $9.00 per 31 gallon-barrel of beer.

Federal taxes are imposed on the manufacture or importation of cigars, cigarettes, cigarette papers, and tubes at the following rates:

- 75¢ per 1,000 cigars weighing not more than 3 lbs. per thousand.
- $4.00 per 1,000 cigarettes weighing not more than 3 lbs. per 1,000.
- $8.40 per 1,000 cigarettes weighing more than 3 lbs. per 1,000.
- ½¢ per each 50 cigarette papers.
- 1¢ per each 50 cigarette tubes.

These taxes are due when tobacco products are removed from the factory or from bond. Tax returns are filed on a semi-monthly basis.

B. Firearms Taxes are in four forms:

1) An excise tax is imposed on the sale of pistols, revolvers, ordinary rifles, shotguns, shells, and cartridges, and is payable by the manufacturer, importer, or producer.

2) A stamp tax is levied on the transfer of certain firearms and destructive devices.

3) An occupational tax is imposed on manufacturers, importers, and dealers in certain firearms and destructive devices.

4) A stamp tax of $200 is imposed on the making of certain firearms and destructive devices. For instance, the tax is $200 on the transfer, or the making of a machinegun.

C. Taxes on Wagering and Games are in two forms:

1) The $500 annual occupational tax on every person engaged in the business of a) accepting wagers on sports events or contests, b) operating a betting pool or lottery for profit.

2) The 2 percent tax on wagers is attached when the bet is accepted.

D. Manufacturers' Taxes are imposed on certain motor vehicles, parts, and accessories, tires and tubes, gasoline, lubricating oils, fishing equipment, bows and arrows, firearms, and coal. For instance, the tax rate is 10% of the sale price of truck chassis and bodies. It is payable by the producer. This tax rate will be reduced to 5% after October 1, 1981.

For tires and tubes, the tax is payable by the manufacturer at the following rates:

- 9.75¢ per pound of tires used on highway vehicles; will be reduced to 5¢ on October 1, 1984.

- 5¢ per pound of other tires

- 10¢ per pound of inner tubes for tires; will be reduced to 5¢ on October 1, 1984.

- 5¢ per pound of tread rubber; will expire on October 1, 1984.

The tax on the sale or use of gasoline by a producer or importer is 4¢ per gallon, to be reduced to 1.5¢ per gallon on October 1, 1984.

The sale of lubricating oils by producers is taxed at 6¢ per gallon.

A tax of 10 percent of the sale price is imposed on the producer or importer of fishing rods, creels, reels, and artificial lures, baits, and flies.

An 11 percent tax applies to sales of certain bows, arrows, and accessories.

E. The "earmarked" excises are collected and put aside in specific trust funds in anticipation of certain liabilities:

- An excise on petroleum and chemicals is collected for the Hazardous Substance Response Trust; it will expire after September 30, 1985.

- A tax is imposed on hazardous waste, and its collection goes to the Post-closure Liability Trust Fund.

- Until an effective international deep seabed treaty is adopted, a tax of 3.75% is imposed on the imputed value of resources removed from the oceans; revenues go to the International Treaty Fund.

- Taxes on coal, at the rate of 50¢ a ton if removed from underground mines, and 25¢ a ton from surface mines, earmarked for the Black Lung Disability Benefits Trust Fund.

F. User charges are imposed on the use of public facilities and services such as highways, waterways, airways, and communications:

- The Inland Waterways Users Tax is levied on fuel used in vessels in commercial transportation on inland or intercoastal waterways at the maximum rate of 10¢ per gallon starting October 1, 1985.

- The Highway Vehicle Use Tax is imposed on certain vehicles (trucks and buses) used for highway transportation; the tax applies to the total weight of the vehicle once it exceeds 26,000 pounds. It will expire on October 1, 1984.

- A Use Tax on Civil Aircraft is levied on engine-driven aircraft registered with the Federal Aviation Agency.

G. The Crude Oil Windfall Profit Tax is levied on the production and sale of domestic crude oil after February 20, 1980. The tax is imposed on the producer, but the first purchaser who files quarterly returns has the primary collection responsibility. The rates depend on whether the oil is classified as tier one, two, or three; they are 70 percent, 60 percent, and 30 percent, respectively. Independent producers may pay the tax at reduced rates on the first thousand barrels per day of tier one and tier two oil. The windfall profit tax rate applies to the difference between the removal price and the base price. From January 1, 1982, the rate on profits from newly discovered oil will be decreased over 5 years from 30 percent in 1981 to 27.5 percent in 1982, and 15 percent in 1986 and thereafter. This tax contributes to the recent increase in importance of excise taxes in the federal revenue structure.

The Revenue Role of Selective Excises

Table 1 shows the relative importance of the major excises as revenue sources. Before the Crude Oil Windfall Profit Tax Act became effective on March 1, 1980, tobacco and alcohol taxes were the leading revenue producers. In 1980, excises on gasoline (imposed on its producers and highway users) amounted to 40 percent of the total excise. The production of gasoline, tobacco, and alcoholic beverages together gives rise to 73 percent of the 1980 excise revenue.

Table 2 presents some interesting facts regarding the historical place of excises in the federal tax receipts. Although both excise revenues and total tax revenue grew over the 1900-1980 period in nominal terms, the total revenue grew much faster. This is because the income tax system assumed a dominant role in the federal tax structure after the First World War. As a result, excises have declined from 96 percent of total revenue in 1900 to 4.7 percent in 1980. (The estimated increase to 9.8 percent in 1982 is partly based on lower income tax revenues and on higher Windfall Profits taxes on oil.)

TABLE 1

Major Excise Taxes, 1980

Type	Amount (millions)	Percent of Total Excise
Alcohol	5601	23
Tobacco	2443	10
Windfall Profits	5959	24
Telephone and teletype	1118	5
Highway - gasoline	4011	16
Highway - other	2609	11
Air - transport of persons	1601	7
Air - other	987	4
TOTAL	24329	100

Source: Budget of the United States Government, FY 1982, Table 10.

TABLE 2

Historical Relationship between
Excises and Total Revenue

Year	Federal Excise Tax (Billions, $ current)	Federal Budget Receipts (Billions, $ current)	Fed. Exc. Tax % Fed. Budget Receipts	Fed. Ecx. Tax[2] % GNP
1982e	69.6	711.8	9.8 %	2.1 %
1981e	44.4	607.5	7.3	1.5
1980	24.3	520.0	4.7	0.9
1979	18.7	465.9	4.0	0.8
1978	18.4	402.0	4.6	0.9
1977	17.5	357.8	4.9	0.9
1976[1]	21.5	381.8	4.9	1.0
1975	16.6	281.0	5.9	1.2
1974	16.8	264.9	6.3	1.2
1973	16.3	232.2	7.0	1.3
1972	15.5	208.6	7.4	1.4
1971	16.6	188.4	8.8	1.6
1970	15.7	193.7	9.2	1.6
1969	15.2	187.8	8.1	1.7
1968	14.1	153.7	9.2	1.7
1967	13.7	149.6	9.2	1.8
1966	13.1	130.9	10.0	1.8
1965	14.6	116.8	12.5	2.2
1964	13.7	112.7	12.2	2.2
1963	13.2	106.6	12.4	2.3
1962	12.5	99.7	12.5	2.3
1961	11.9	94.4	12.7	2.4
1960	11.7	92.5	12.7	2.4
1950	7.6	40.0	20.0	2.8
1940	1.9	5.3	35.0	2.0
1930	0.6	3.0	19.0	0.6
1920	0.9	5.4	15.0	1.0
1910	0.3	0.3	92.0	0.9
1900	0.3	0.3	96.0	1.6

1. Includes transitional quarter (July 1976-Sept. 30, 1976).

2. Taxes on fiscal year basis whereas GNP on calendar year basis; for this column, GNP averaged so as to approximate fiscal year.

Sources:

Federal Excise Taxes;1960-1982e, Economic Report of the President, various issues. 1900-1950, Historical Statistics of the United States, Series Y 363-73.

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GNP; 1981e-1982e, U.S. Budget in Brief FY82. 1929-1980, Economic Report of the President, 1981. 1900-1930, Historical Statistics of the U.S., series F1.

II. The Economics of Selective Excise Taxation

A selective tax imposed on a product affects three groups of individuals: the consumers of the taxed product, the manufacturers of the taxed product, and the owners of the inputs (e.g. labor, capital, land) used in the production process. The tax effects are distributed among these market participants via the mechanism of relative prices. A tax on a product raises its market price, and renders it more expensive in comparison to other non-taxed products. The subsequent changes in the demand and supply of the non-taxed products depend on their relative characteristics; certain products are necessary to the consumption and/or production of the taxed product (for instance, gasoline is essential to the use of most automobiles), while others may replace the more expensive taxed product (for instance, soft drinks are consumed in place of wine). Thus, the secondary effects of selective excises touch the consumers and producers of other non-taxed goods.

Reduced Output and Higher Price

In general, the market price of a taxed product rises above the pre-tax level. This is because the selective tax drives a wedge between the net sale price received by the producers and the gross sale price paid by the consumers. At any given price, the consumers are willing and able to buy a fixed quantity, which declines as the price of the product rises. As the sale price goes up by some proportion of the excise tax, consumers cut back on their purchases. This adjustment to the tax results in a lower market volume, coupled with a higher gross sale price.

In a competitive economy, prices and the changes in prices provide the signals that help allocate resources. In the above situation, consumers respond to the higher gross sale price of the taxed product by reducing their demand, and producers respond to the lower net-after-tax sale price by reducing their output. Thus, the selective excise tax has introduced distortions that lead to lower output. This loss of efficiency can be observed and analyzed from different angles. First, let us consider the tax-induced distortion in a consumer's choice between the taxed product and other goods and services.

The Loss of Consumers' Satisfaction

In a world without taxes, when the market is functioning properly, prices will represent the value that individuals place on goods. Given a limited income, an individual will mix his purchases to get the highest possible level of overall satisfaction. If a tax is introduced that distorts prices (such as an excise), then market signals are confused and an individual may be forced to consider making purchases that he would otherwise think undesirable. Not only does an excise tax lower the absolute level of consumption but, since it changes the prices facing the consumer it may change the composition of purchases in an undesirable manner. Consider this example.

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A selective tax imposed on a product affects three groups of individuals: the consumers of the taxed product, the manufacturers of the taxed product, and the owners of the inputs (e.g. labor, capital, land) used in the production process. The tax effects are distributed among these market participants via the mechanism of relative prices. A tax on a product raises its market price, and renders it more expensive in comparison to other non-taxed products. The subsequent changes in the demand and supply of the non-taxed products depend on their relative characteristics; certain products are necessary to the consumption and/or production of the taxed product (for instance, gasoline is essential to the use of most automobiles), while others may replace the more expensive taxed product (for instance, soft drinks are consumed in place of wine). Thus, the secondary effects of selective excises touch the consumers and producers of other non-taxed goods.

Reduced Output and Higher Price

In general, the market price of a taxed product rises above the pre-tax level. This is because the selective tax drives a wedge between the net sale price received by the producers and the gross sale price paid by the consumers. At any given price, the consumers are willing and able to buy a fixed quantity, which declines as the price of the product rises. As the sale price goes up by some proportion of the excise tax, consumers cut back on their purchases. This adjustment to the tax results in a lower market volume, coupled with a higher gross sale price.

In a competitive economy, prices and the changes in prices provide the signals that help allocate resources. In the above situation, consumers respond to the higher gross sale price of the taxed product by reducing their demand, and producers respond to the lower net-after-tax sale price by reducing their output. Thus, the selective excise tax has introduced distortions that lead to lower output. This loss of efficiency can be observed and analyzed from different angles. First, let us consider the tax-induced distortion in a consumer's choice between the taxed product and other goods and services.

The Loss of Consumers' Satisfaction

In a world without taxes, when the market is functioning properly, prices will represent the value that individuals place on goods. Given a limited income, an individual will mix his purchases to get the highest possible level of overall satisfaction. If a tax is introduced that distorts prices (such as an excise), then market signals are confused and an individual may be forced to consider making purchases that he would otherwise think undesirable. Not only does an excise tax lower the absolute level of consumption but, since it changes the prices facing the consumer it may change the composition of purchases in an undesirable manner. Consider this example.