Although the major argument advanced in favor of the expenditure tax up to that time had been that it avoided some of the more serious inequities of the income tax, the 1942 tax was proposed as an adjunct to, and not a substitute for, the existing individual income tax. Moreover, in introducing the measure, Secretary Morgenthau did not refer to the equity aspects of the tax, but rather gave as the dual purposes of the tax the raising of additional revenue and the curbing of consumer spending.

The tax was to have consisted of two parts, a flat rate tax of 10 percent which would have been refunded after the war, and a progressive surtax. The flat rate tax applied to all spendings in excess of $500 for a single person, $1,000 for a married couple, and $250 for each dependent; exemptions for purposes of the surtax were exactly double those for the flat rate. The proposed surtax schedule, shown in Table 1, was to have applied on a per capita basis in order to avoid penalizing large families.

An expenditure tax of limited applicability has been imposed in India since 1958. It was suspended in 1962, but was reintroduced in the 1964 budget. As a consequence of the relatively high basic allowance and generous provisions for deductions, however, the tax applies to few taxpayers. The basic allowance of approximately $6,000 for individuals and up to $12,000 for families excludes the great mass of citizens. Allowable deductions include expenditures on weddings, maintenance of parents, medical treatment, education outside India, and legal proceedings. Expenditures on durables, such as automobiles or furniture, are spread over a five year period.

Rates on the original tax ran from 10 to 100 percent, but were subsequently modified. The present rates range from 5 percent on taxable expenditures of $7,650 to 15 percent on taxable expenditures in excess of $15,120. Revenue from the Indian expenditure tax has been comparatively trivial, on the average accounting for about one-tenth of one percent of total tax collections.

Table 1

Proposed Surtax Schedule for Expenditure Tax, 1942

Spendings(a) (in thousands of dollars)	Tax Rate
$0—1	10%
1—2	20
2—3	30
3—5	40
5—10	50
Over 10	75

a. Spendings after deduction of $1,000 for single person, $2,000 for married couple, and $500 for each dependent, divided by number of persons in family unit (dependent children considered equivalent to ½-person). Rate corresponding to per capita spendings is applied to total spendings after deductions.

Source: **Annual Report of the Secretary of the Treasury on the State of the Finances for the Fiscal Year Ended June 30, 1943, p. 413.**

Similarly, the expenditure tax in Ceylon applies to relatively few persons. A tax-free allowance, based roughly on expenditures and personal exemptions, ranges from $2,310 to $7,350. The rates vary from 20 percent on taxable expenditures up to $1,050, to 240 percent on taxable expenditures exceeding $4,200.

Taxes Based on Capital

An individual tax found in several European countries is levied on one form or another of net personal wealth.[17] Austria, Denmark, Finland, Germany, Luxembourg, Netherlands, Norway, Sweden and Switzerland levy an annual tax on the value of all of an individual's net assets. In other countries, such as Belgium, France, and the United Kingdom, taxes on individual wealth are more in the nature of stamp duties. No serious proposal has been made for such a tax at the national level in this country, and in fact there is some question as to

17. Estate and gift taxes, based on transfers of capital, exist at the Federal level in the U.S. and will not be examined in this paper.

whether a net wealth tax would be constitutional at the Federal level.[18] Taxes on gross wealth in the form of real estate and various types of tangible and intangible property are an important source of revenue at the state and local level.

NON-TAX REVENUE SOURCES

Three possible sources of governmental revenue, yielding in some instances fairly substantial amounts, are not, strictly speaking, taxes: user charges, lotteries, and government monopolies. They will be described briefly but not anaylzed for economic effect, since they are outside the scope of this study.

User Charges

User charges are not always distinguishable from taxes. They may sometimes take the form of specific taxes levied on identifiable consumers of certain kinds of government services, but may also appear as special fees and assessments. The basic principle of user charges is that the cost of a government service should be borne entirely or in large part by the immediate recipient of the service, rather than by citizens generally.

Lotteries

The 1963 authorization of state-sponsored sweepstakes in New Hampshire once again focused attention on the lottery as an instrument of public finance.

Even though there has not been a public lottery in the United States since 1894, lotteries are operated by many other governments today. Most are for special, semi-public objectives. Public lotteries which support charities are found in Australia, Gibraltar, Greece, Ireland, Sweden, and many of the Central and South American countries. In France, the revenue from a numbers draw is assigned to farm subsidies and veterans' benefits. Lottery bonds, in which the lenders wager the interest they would otherwise receive, generally have not been related to a specific charity but rather are designed to stimulate savings and raise revenue; such bonds are issued in Austria, Belgium, Germany, Italy, Britain, U.S.S.R., Norway, and in various Dutch municipalities.[19]

In the United States, the transport of lottery material in interstate commerce was made illegal in 1895, but not until the public lottery had played a significant role in the early financial history of the nation. For example, such eminent citizens as George Washington, Benjamin Franklin and John Hancock managed lotteries for their communities; the Continental Congress established a lottery to finance the Revolutionary War. Lotteries were used extensively to finance schools, bridges, canals, and roads, not only during the colonial period but also until the mid-1800's. The historian Ezell points out that by the end of the 18th century, "lotteries were so strongly entrenched in the economy and habits of the American people that even if there had been strong opposition, state legislatures only reluctantly would have considered abolishing the schemes.[20] But abuses grew and finally a shift in public opinion, which Ezell places at about 1830, led to the eventual disappearance of the public lottery in this country.

There are five basic types of lotteries. These are the simple numbers draw, lotto (including its popular form, bingo), interest lotteries, class lotteries (in which the participant pays an additional sum to remain in the lottery if his number is selected, through any number of suc-

18. See William J. Shultz and C. Lowell Harriss, *American Public Finance*, Prentice-Hall, New Jersey, 1949, p. 139, for a discussion of the constitutional issue. For a discussion of problems of equity, incidence, and structural uses of net wealth taxation in general and in Sweden, Germany, Switzerland, France, Netherlands, United States, Belgium and England, see the several articles in the periodical *Public Finance*, No. 3-4, 1960.
19. Robert K. Kinsey, *The Role of Lotteries in Public Finance*, unpublished doctoral dissertation, Columbia University, 1959, p. 28 ff. Kinsey has summarized his thesis in an article of the same title in *National Tax Journal*, Vol. 16, No. 2, March, 1963, pp. 11-19.
20. John Samuel Ezell, *Fortune's Merry Wheel: the Lottery in America*, Harvard University Press, Cambridge, Mass. 1960, p. 81. The historical information on lotteries given here is based on Ezell's account.

cessive stages), and the sweepstakes lottery.

Representative Roman C. Pucinski of Illinois has for many years advocated a lottery-bond plan for the United States. Under his plan, bondholders would forego interest in return for a chance on a periodic prize of one million dollars, tax free.

Public Monopolies

Proceeds from government enterprise provide fairly substantial revenue for various foreign nations as well as some states and municipalities in this country. Typical governmental monopolies produce and/or sell matches, alcoholic beverages, cigarettes, electricity, and other products for which there is a highly inelastic demand. The "profits" from such government ventures might be considered hidden taxes, for unless consumers pay a higher price for the commodity than is necessary to cover costs, there would be no "profit." There would seem to be no prospect in this country of national government invasion, for overt revenue purposes, of enterprises now privately operated. Nor is there the likehood that the Post Office will be made into a source of substantial net revenue.

II.

ECONOMIC EFFECTS OF TAXES———

Before any of the taxes described in the last section can be evaluated properly, it is essential to consider their economic and social effects. An apparently innocuous revenue raiser might harbor hidden effects which could, in time, reduce or dry up the revenue source itself and even spread their blight to collections from other taxes.

The major economic effects of most taxes fall into one or more of five categories: problems of incidence, resource allocation, welfare, growth, and the level of production and employment.

In this section, each of the five effects will be discussed, and illustrated with examples drawn from their operation in the case of excise taxes. In addition, problems of administration and compliance will be considered.

INCIDENCE

The problem that is basic to the solution of all other problems in taxation is the matter of the incidence of the tax under consideration. Before most questions about economic growth, resource allocation, and the like can be answered, a preliminary question must be dealt with: when shifting is complete, that is, when the person who actually pays the tax has passed along as much of the tax as possible to someone else, who in turn has passed it along to yet another, and so on down a chain of economic activity, in which the added cost of tax is shunted along somewhat like the unwanted card in the children's game of Old Maid, on whom does the tax finally rest? For the incidence of a tax occurs at that point where no further shifting will take place. It is the individual who actually bears the burden of the tax, who pays it and cannot shift it along, who truly is most affected by the tax. Whether this final link in the chain will be able to change his economic position and/or behavior in response to the tax (thus raising a problem of resource allocation, growth or stability) or be unable to change (thus possibly raising a problem of economic welfare) cannot be answered before the identity of the final link is established.

As it happens, tracing the shifting process of excise taxes is sometimes enormously difficult, and precise answers are much harder to come by than anyone but an expert realizes. For one thing, processes may go on under the surface; after the tax has been in effect for a while, no one can be sure what conditions would prevail without it. Broad market forces may dominate the actions of individual persons or firms in ways that are never recognized. Another part of the analytical difficulty stems from the complexities related to differing industry factors (such as price mechanisms, cost conditions, and institutional rigidities of various types), differing demand for the taxed commodities, and differing degrees of competition. But there is not always agreement about taxpayer responses to an excise tax even when the same conditions apply.

The usual analysis of the incidence of excise taxes is approximately as follows:

An excise tax, say 10 percent of the producers' prices, is imposed on a commodity which is sold under highly competitive conditions.[1] The tax adds to the producers' costs, but, by definition, under perfect competition they are unable individually to get a price above that established in the market. For the moment, therefore, the tax will be borne by the producers themselves. But producers will not wish, or be able, to sustain this situation for long; before the tax, they were producing at a level which provided them just enough profit to make their endeavor worthwhile, and the inroad of the tax now makes that profit inadequate. Consequently, some firms may find that they cannot afford to continue to produce the taxed article at all and will drop out of the market altogether; others will restrict output in various ways designed to reduce costs.[2] Eventually, exactly when being dependent upon various conditions related to the production process, output will be reduced to the extent that the price of the commodity will increase by enough to leave the producer a normal profit after the tax. Thus the tax eventually is paid by the consumer, in the form of higher prices, and the incidence of the excise tax has shifted forward to the consumer.

But some economists take the view that it is not necessarily correct to conclude that the consumer bears the burden of the tax. Their basic objection to the preceding "classical" analysis is that the reasoning stops too soon and overlooks the consequences of an important phase of the adjustment, the reduction in output of the taxed commodity. When output is cut back, then necessarily the demand for purchased resources used to produce the taxed commodity (resources such as labor and capital) will also decrease. The money income of owners of these productive resources will be reduced as well, and consequently, the demand schedule for all goods purchased by these owners as consumers will be lowered. The money income of the economy as a whole will be reduced, the relative significance of the reduction depending on the proportion of total income attributable to the resource owners in the taxed industry. Consequently, a price rise in response to decreased output is not likely, and the tax eventually is paid by resource owners in the form of lower incomes. The incidence of the tax, by this approach, shifts backward to the owners of productive resources.[3]

Both of these approaches seem logical. Is it possible to choose between such apparently contradictory points of view? One solution is to take a midway position, for it does seem possible both are right, in part, and that perhaps the excise tax is shifted both forward and backward, with the proportion shifted in each direction depending on institutional, industrial, competitive, and possibly other, yet to be identified, conditions. If this is true, then it can only be said that "some" of the tax is shifted to consumers and "some" to factor owners.

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1. The common practice is to analyze incidence, and other economic problems, by assuming conditions which are relatively easy to examine, and then modifying results as more and more restrictive (and realistic) conditions are added. Perfect competition, while no longer the most typical market situation, serves nicely as a beginning point, because of the definite train of events which predictably ensue in response to a disturbance, such as the imposition of a new tax.

2. In a growing economy, the taxed industry grows less than it otherwise would.

3. It has been argued that even this is not a complete analysis because tax revenues are spent for goods or services, providing increased demands for the same or other resources. If one looks at the composite effect of government taxation and expenditure in an economy with substantially full employment, larger government taxation and expenditure will change the composition but not the aggregate size of the demand for resources. This step,however, carries us beyond the analysis of taxation as such.
For a fuller account of forward shifting, see John Due, "Toward a General Theory of Sales Tax Incidence," *Quarterly Journal of Economics*, Vol 67, No. 2, May, 1953, pp. 253-266, and *Government Finance*, Irwin, Homewood, Illinois, 1958, pp. 286-310. For a discussion of backward shifting, see Earl R. Rolph, "A Proposed Revision of Excise-Tax Theory," *Journal of Political Economy*, Vol. 60, No. 2, April 1952, pp. 102-117, and *Theory of Fiscal Economics*, Berkeley, University of California Press, 1954, Chapter 6. The more realistic case of less than perfect competition is vastly complicated by the non-determinateness of pricing policies. Both approaches to incidence become blurred when monopolistic elements are considered; advocates of both assert that their conclusions are basically unchanged but, by the very nature of their problem, are unable to present particularly strong support for their statements. It would appear that an industry-by-industry analysis is required when the safe ground of pure competition is left behind. For Rolph's assessment of the non-competitive problems, see *Ibid.*, Chapter 7; for Due's see *Government Finance*, pp. 282-293.

Such imprecise knowledge is not as useless as might appear. Admittedly, it would be extremely valuable for policy purposes to be able to say that a given percent of an existing or proposed tax is shifted forward, and a given percent backward, in specified shares to labor and capital. This kind of exactness, however, must await further theoretical and/or empirical work. Meanwhile, it is useful to know that significant proportions of the tax *might* shift in either direction, to analyze the impact of the potential shift, and then to take a calculated risk rather than operating blindly when a new tax is imposed, or an old one removed.

EQUITY AND SOCIAL WELFARE

The first of Adam Smith's famed canons of taxation, that the "subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state," is no less relevant today than when it was written in 1776.[4] But it is not easy to define equity, much less achieve it. Unfortunately for purposes of simplicity, identical treatment does not automatically lead to equitable treatment, and might instead lead to harsh inequities. Equity requires, in fact, that treatment of taxpayers be based on their relevant *differences*. For instance, the Federal government might try to meet its revenue needs by the simple device of prorating its total needs equally among all individuals living in the United States. For 1963, this would have come to an assessment of approximately $460 apiece—$460 each from alcoholics in New York's Bowery, from babies in orphanages, from paranoids in mental institutions, as well as from nuclear physicists, newspaper editors, and presidents of giant corporations. Most taxpayers would feel intuitively that such a system, while providing identical treatment for all citizens, is obviously unfair.

The problem, then, is to devise some rule of taxation which leads to a fair result, or, in other words, to select those relevant differences on the basis of which the burden of taxation might be unequally but equitably distributed. One should then ask, in judging a tax, whether taxpayers with meaningfully different circumstances bear the burden in approximately suitable proportions. Unfortunately, in making such decisions it is well-nigh impossible to avoid imposing one's subjective standards, or, at the very least, contemporary social standards as one understands them. Objective evaluation of the justness of a given tax probably is a human (or computer) impossibility. Nonetheless, glaring exceptions to equity, such as the example in the preceding paragraph, may be relatively easy to identify, and perhaps this is as much as should be expected.

An equity problem which is also an excellent example of the importance of assumptions about shifting is found in the widespread assertion that excise taxes suffer the fatal defect of regressivity, i.e., rest with harsher severity on low-income taxpayers than on high-income taxpayers. It is immediately apparent that this conclusion rests entirely on an assumption of considerable, if not complete, forward shifting of the excise tax burden to the consumer. But if the contention that some of an excise tax is shifted backwards is correct, then such a tax will impose a relatively heavy burden on owners of productive resources, and a relatively light burden on families whose income consists of large amounts of payments not depending on production, such as pensions and social security payments. The tax also will rest lightly on those owners of productive resources who are able

4. The other canons specified that collection costs should be reasonable and that taxes should be certain and not arbitrary; convenient with respect to the time and manner of levy; economical in the sense that they should not impose extraordinarily large obstructions and discouragement on the taxpayer. See Adam Smith, *The Wealth of Nations*, Modern Library, New York, 1937, pp. 777-778.

to resist downward pressures on price, either because of a power position or institutional stickiness in adjustment. There is no necessary relationship, however, between these groups and either high or low income, although the group whose income derives from pensions and transfer payments seems quite likely to consist in large part of relatively low income individuals and households.

But even if traditional theory is correct and excise taxes are shifted forward to the purchaser of the taxed commodities, the regressive effect may not be altogether certain. An attack has been made on this traditional viewpoint from a novel approach. Assuming that the entire tax is passed forward to the consumer, one economist analyzed the retail sales tax structure for a number of states, some exempting food and others not. He found that, relative to disposable receipts, the tax is regressive over the entire range of income classes when no food or other exemptions are allowed, but becomes progressive among the middle income classes when food is exempt.[5]

The use of disposable receipts rather than any of the various measures of income as a yardstick of living standards has several points in its favor. The composition of the lowest income group, aside from a hard core of individuals with special problems, changes constantly. A considerable proportion of low income individuals and households are either very young or are retired. The young reasonably anticipate future increases in income, against which they can borrow prudently in getting established. The retired, while often receiving small money incomes, may have non-money income from assets—implicit rent from a home, unrealized capital gains from securities, and the like.

Table 2 applies Professor Davies' method to newer data. It shows that when food is taxable, a retail sales tax is progressive on the basis of disposable receipts up through the first four income classes and regressive thereafter. When food is exempted, however, the tax is progressive on disposable receipts through the first five income classes and approximately proportional from the $5,000 to $14,999 income classes.

The issue of taxing the poor, however, needs to be distinguished from regressivity. There are some levels of income so low that any tax, whether proportional, progressive, or regressive, would be a burden, and properly condemned even in a society with heavy governmental expenditures and benefits for the poor. A solution to this problem which has been introduced in Indiana is the provision of tax credits to minimize the burden on the lowest income groups resulting from a tax on consumer purchases. A fixed dollar credit for single taxpayers and for each member of a family unit applies as an offset against the taxpayer's state individual income tax liability or a cash refund when there is no income tax. Indiana's credit has been effective since the beginning of 1964. It is described as a credit for sales tax paid on food and drugs; $300 of such purchases are in effect exempt from the 2 percent tax, so that the taxpayer is allowed a $6 deduction for himself and each dependent. If the credit exceeds the tax liability, the taxpayer is eligible for a refund.

A consideration often overlooked in discussions of equity is the actual amount of tax paid, rather than the amount as a proportion of income, wealth, or disposable receipts. Generally speaking, low income recipients pay less excise tax simply because they buy less, but presumably they receive no less benefit from government spending.

Another type of inequity arises from the fact that patterns of consumption differ from one person to another. The individual or family whose tastes incline

5. David G. Davies, "An Empirical Test of Sales-Tax Regressivity," *Journal of Political Economy*, Vol. 67, No. 1, February, 1959, pp. 72-78. Disposable receipts consist of current income, borrowed money, gifts, winnings, and funds from any other sources, i.e., net money income plus certain other types of money receipts plus (assets sold plus libilities added) *minus* (assets acquired plus liabilities disposed of).

Table 2

Expenditures on Commodities Subject to Retail Sales Tax as a Percentage of Gross Income, Net Income, and Disposable Receipts, by Net Income Class, 1960

(Averages by Net Income Class)

Net income class	Gross income[b]	Net income[a]	Disposable receipts	Expenditures for current consumption	Taxable consumption	Taxable consumption as percent of gross income	Taxable consumption as percent of net income	Taxable consumption as percent of disposable receipts
Food taxable:								
Under $1,000	$ 690	$ 654	$ 1,392	$ 1,307	$ 748	108.4	114.3	53.7
$1,000 to $ 1,999	1,533	1,513	1,805	1,770	1,111	72.5	73.4	61.6
$2,000 to $ 2,999	2,628	2,508	2,874	2,675	1,795	68.3	71.6	62.5
$3,000 to $ 3,999	3,767	3,516	4,073	3,716	2,657	70.5	75.6	65.2
$4,000 to $ 4,999	4,951	4,506	5,137	4,501	3,328	67.2	73.9	64.8
$5,000 to $ 5,999	6,079	5,495	6,147	5,240	3,872	63.7	70.5	63.0
$6,000 to $ 7,499	7,537	6,710	7,476	6,229	4,641	61.6	69.2	62.1
$7,500 to $ 9,999	9,787	8,573	9,414	7,534	5,710	58.3	66.6	60.7
$10,000 to $14,999	13,623	11,724	12,850	9,744	7,442	54.6	63.5	57.9
$15,000 and over	27,999	21,889	23,607	14,745	11,078	39.6	50.6	46.9
Food not taxable:								
Under $1,000	690	654	1,392	1,307	464	67.2	70.9	33.3
$1,000 to $ 1,999	1,533	1,513	1,805	1,770	658	42.9	43.5	36.5
$2,000 to $ 2,999	2,628	2,508	2,874	2,675	1,177	44.8	46.9	41.0
$3,000 to $ 3,999	3,767	3,516	4,073	3,716	1,887	50.1	53.7	46.3
$4,000 to $ 4,999	4,951	4,506	5,137	4,501	2,408	48.6	53.4	46.9
$5,000 to $ 5,999	6,079	5,495	6,147	5,240	2,782	45.8	50.6	45.3
$6,000 to $ 7,499	7,537	6,710	7,476	6,229	3,425	45.4	51.0	45.8
$7,500 to $ 9,999	9,787	8,573	9,414	7,534	4,300	43.9	50.2	45.7
$10,000 to $14,999	13,623	11,724	12,850	9,744	5,842	42.9	49.8	45.5
$15,000 and over	27,999	21,889	23,607	14,745	9,177	32.8	41.9	38.9

a. Money income after taxes
b. Money income before taxes
Source: Computations based on Department of Labor, Bureau of Labor Statistics, Consumer Expenditures and Income Urban United States 1960-61, p. 10.

to articles which happen to be taxed (cameras rather than caviar, records instead of books) will pay more tax than another person who spends an equivalent amount, but on untaxed goods and services. Section III examines in detail the distribution of the burden of present Federal excise taxes.

RESOURCE ALLOCATION

One of the most important questions to be considered in connection with a proposed tax is whether it might impel the owners of productive resources to rearrange their economic activities in ways that reduce their individual tax burden, but, at the same time, result in use of their resources which, from the point of view of the economy, is less good than otherwise.

Most writers would say that the best tax from the point of view of resource allocation is that tax which is economically neutral in its full effect.[6] For instance, a tax which changes the relative costs of various forms of business structure—small independent units versus incorporated, large integrated companies—will predispose businessmen to choose that method which has the lowest tax tag, even though other business considerations might argue against it. Moreover, because certain producers, by virtue of physical limitations in the productive process, institutional barriers, market limitations, and the like, will be unable to use the form of business structure that offers the greatest tax advantage, the products and services of such a supplier will be at a competitive disadvantage. Some resources will shift from the disadvantaged industry or business form, and the pattern of economywide resource allocation will be distorted away from the most efficient.[7]

When excise taxes are shifted forward, a major concern about resource allocation effects is in connection with decreasing-cost industries (i.e., industries whose average costs of production decrease as output increases). If producers, in response to the tax, increase the price of the taxed good, then the amount which consumers are willing to purchase will drop and output will decline. Decreased output in this case results in higher average costs and thus, to the extent that the tax has the effect of reducing output in these industries, there will be loss of productivity. An optimum allocation of resources would dictate a relative increase, not decrease, of output of such services or commodities.

Under assumptions of backward shifting, a number of additional problems of resource allocation are raised, since obviously the owners of productive resources bearing the tax will act to minimize the burden. For example, if under a partial excise tax the rate of return in the taxed industry drops relative to the rate of return in untaxed industries, investors will be induced to move to the untaxed sector. Similarly, if wages are reduced in the taxed industry, labor will seek jobs at higher rates in untaxed fields. The extent and speed of such adjustments will depend primarily on how specialized, and hence how mobile, the resources used by the taxed industry happen to be.[8]

The imposition of excise taxes on public utilities and common carriers raises special problems. The present state of technology and scale of some operations make it practical for certain firms to create their own private facilities (which would not be subject to the tax) and supply their own needs at lower cost than

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6. Some may of course approve the use of taxes for regulatory or corrective purposes when a clear public need is served.
7. The presumption is that the more efficient allocation of resources would exist in the absence of the tax. But even if this assumption is wrong, the imposition of new taxes (as contrasted with removal of existing taxes, or substitutions for them) does not seem the best device for correcting allocative inefficiencies.
8. See J. A. Stockfisch, "The Capitalization and Investment Aspects of Excise Taxes Under Competition," *American Economic Review*, Vol. 44, No. 3, June, 1954, p. 287, for an excellent discussion of the many possible adjustments.

the taxed public facilities. For example, microwave radio is used in lieu of public communications systems, and private trucks, pipelines and airplanes instead of the common carrier.

Various social losses may result from such a tax bias against facilities available to the general public. Those who are forced to depend on public facilities might well be faced with higher rates, since the loss of the patronage of large-scale firms probably increases the utility's, or carrier's, average costs and reduces net income. Duplication of facilities may lead to excess capacity and higher costs for the economy as a whole. Private facilities, because they are not linked to the public systems and their scale is relatively small, may not be as useful to their owners as would be their public counterparts. This un-neutrality of the tax between public and private facilities would appear to lead to less than optimum allocation of resources.[9]

RATE OF GROWTH AND LEVEL OF PRODUCTION AND EMPLOYMENT

In recent years, there has been increasing preoccupation with the effect of taxation on the economy's level of employment and prices, and its growth. Since the Great Depression, it has increasingly become the custom in analyzing a tax to ask: will the proposed tax[10] interfere with (or promote) full employment and stability? What will be the effect of the tax on long-run growth of the economy?

A study by Edward F. Denison attempts to quantify the importance of most of the elements which have contributed to economic growth in the past and might be expected to do so in the future. The major factors are shown in Table 3. Denison also has evaluated some 30 changes which might be initiated to stimulate growth in the United States during the next two decades. The list includes a range of possibilities, such as reductions in death rates, reductions in work absenteeism, elimination of crime and rehabilitation of criminals, increases in the standard work week, elimination of seasonal fluctuations in non-farm production, increases or improvements in education, increases in private net investment, increases in immigration, increases in research results and decreases in the time-lag prior to industrial application, and so forth.[11]

Obviously, capital inputs play a major role in the growth process. Taxes influence the amount of saving done to make capital formation possible and the use made of such savings. Do excises and income taxes have a substantially different effect on aggregate savings and investment?

In the aggregate, saving tends to be a fairly stable percentage of income. However, family budget surveys have shown that there is a wide variation in the proportion of income saved among people at similar income levels as well as among people at different income levels. The fact of a wide variation in saving ratios suggests that a tax on consumption burdens high spenders and favors high savers (regardless of income class). On the other hand, the individual income tax for the most part does not differentiate between consumption and saving; in the long run, so many argue, it tends to put an excess burden on saving because it taxes the income from which saving is made and then taxes again any interest or dividends on that saving. In addition, to the extent that there is double taxation of dividends under the individual and corporation income taxes, there is an extra burden of income taxes on savings.

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9. For a fuller discussion, see comment by C. Lowell Harriss in *Reappraisal of Business Taxation*, Tax Institute, Princeton, New Jersey, 1961, pp. 237-242.
10. Or expenditure, but expenditures are outside the scope of this study. In practical situations, a given tax must always be evaluated relative to some alternative tax.
11. Edward F. Denison, *The Source of Economic Growth in the United States and the Alternatives before Us*, Committee for Economic Development Supplementary Paper No. 13, New York, 1962, pp. 276-279.

Since partial excise taxes can influence consumption patterns and the rate of return on investment,[12] they also affect the level of total spending, investment spending, and employment. This result has been illustrated by George F. Break, who used a simple model to show how consumption taxes, imposed in a setting of a government deficit, will lead to one of two results: either an increase in unemployment or an increase in consumer prices (i.e., inflation), depending on the reaction of consumers to the tax. He shows that when a new retail tax is imposed on consumer goods and services, if consumers are either unwilling or unable to increase their monetary expenditures on the taxed goods, there will be cutbacks in the production of these goods and associated unemployment. If, on the other hand, consumers should increase their monetary outlay on the taxed goods

12. Under assumptions of backward shifting. See Stockfisch, *op. cit.*

Table 3

Allocation of Growth Rate of Total Real National Income among the Sources of Growth

	Percentage points in growth rate		
	1909-29	1929-57	1960-80
Real national income	2.82	2.93	3.33
Increase in total inputs	2.26	2.00	2.19
Labor input, adjusted for quality	1.53	1.57	1.70
Employment	1.11	1.00	1.33
Hours	—.23	—.53	—.42
Effect of shorter hours on quality	.23	.33	.07
Education	.35	.67	.64
Increased experience and better use of women	.06	.11	.09
Changes in age-sex composition of labor force	.01	—.01	—.01
Land	.00	.00	.00
Capital input	.73	.43	.49
Non-farm residential structures	.13	.05	NA
Other structures and equipment	.41	.28	NA
Inventories	.16	.08	NA
U.S.-owned assets abroad	.02	.02	NA
Foreign assets in U. S.	.01	.00	NA
Increase in output per unit of input	.56	.93	1.14
Restrictions against optimum use of resources	NA	—.07	.00
Reduced waste in agriculture	NA	.02	.02
Industry shift from agriculture	NA	.05	01
Advance of knowledge	NA	.58	.75
Change in lag in application of knowledge	NA	.01	.03
Economies of scale—independent growth of local markets	NA	.07	.05
Economies of scale—growth of national market	.28	.27	.28

Source: Edward F. Denison, **The Source of Economic Growth in the United States and the Alternatives Before Us**, Committee for Economic Development Supplementary Paper No. 13, New York, 1962, p. 266.

enough that production does not decline, the result will be price increases and a situation of inflation.[13]

Effects on Economic Stability

One of the traditional criteria of a "good tax system" is stability of revenues. Excises and sales taxes have generally been considered to have greater stability of yield than income taxes. This is in fact one of the major advantages of sales taxation at the state and local level.

At the Federal level, however, acceptance of the objective of making the Federal budget a "balance wheel" to offset fluctuations in the private sector of the economy changes the criterion of "stability" as applied to taxation. Instead of looking at the stability of revenues, policy makers have been looking at the stability of the economy. To promote general economic stability, attention has been focused on the desirability of a Federal revenue system which acts as an "automatic stabilizing device." That is to say, from the point of view of offsetting fluctuations in the private sector of the economy, it is desirable for Federal revenues to fall sharply in a recession, so that Federal fiscal operations will provide a net addition to aggregate demand, while in a period of cyclical expansion it is desirable for Federal revenues to rise rapidly and automatically so as to check the tendencies toward inflation. The income taxes, which apply to net incomes above certain exemption levels, tend to provide such "flexibility" of yield.

Another stability problem stems from the fact that wage contracts increasingly are tied to consumer price indexes. To the extent that excise taxes are reflected in the prices of the items of general consumption which comprise the index, additional excises could lead to increases in some wage rates.[14]

PROBLEMS OF ADMINISTRATION AND COMPLIANCE

An important issue which must be considered in connection with each tax is the matter of administration and compliance costs. No matter how attractive a tax may be on other grounds, if it is difficult to administer and if compliance is costly for the taxpayers, it may better be avoided.

There are a number of considerations, common to the administration of all types of taxes, which might be laid down as general principles.

1. *Number of taxpayers covered.* The fewer the number of taxpayers subject to a particular form of tax, the lower will be the cost of tax administration. In the case of excise taxes, this principle makes collection at the manufacturing level more desirable than at the retailing level.

2. *Identification of taxpayer and taxed items.* The more easily the taxpayer can be identified, the more difficult will evasion be. Unavoidable vagueness of the scope of each commodity class subject to excise taxes greatly complicates their administration.

3. *Exemptions.* Exemptions create a number of difficulties. Not only do they reduce the yield of the tax and create the possibility of discrimination, but they also impede efficient administration. In general, the difficulty arises because, no matter how precise the definition of the exemption in the original law, confusion soon arises and administrative rulings become necessary. Taxpayers feel uncertainty as to the applicability of the tax in the case of many transactions, and thus both deliberate and inadvertent mistakes are made.

4. *Differentiated rate structure.* While a differentiated rate structure may seem to improve the equity of a given tax and increase the revenue yield, the same

13. George F. Break, "Incidence of Consumption Taxes," *Proceedings, National Tax Association*, 1961, pp. 625-632.
14. Dan Throop Smith, "Note on Inflationary Consequences of High Taxation," *Review of Economics and Statistics*, August 1952, Vol. 34, No. 4, p. 244.

problems which applied to exemptions are raised in connection with defining the categories on which the various rates are levied.

5. *Taxpayer's records.* The condition of the taxpayer's records make a difference in administrative costs. When records typically are haphazard, checking of returns requires more time, and greater opportunity for evasion exists than when expenditures and receipts are easily verified. Generally speaking, the records of retailers are not as precise and appropriate for excise tax purposes as those of manufacturers.

6. *Rate of tax.* In general, the lower the rate of the tax and the broader its base, the less attractive is evasion and avoidance.

Despite the acknowledged importance of the costs to the taxpayer of complying with the law, relatively little has been done to specify the magnitude of typical compliance costs for various forms of business taxes. Complicating the problem further still, those studies which have been published have come up with conclusions about costs which markedly differ from one another.

The lack of accurate data on taxpayer's compliance costs does not reflect the sloth of investigators, but rather the difficulties inherent in the topic. The primary obstacle is the problem of identifying the point at which normal business costs end and tax payment costs begin. How much of a clerk's time is required for the computation and the collection of the retail sales tax? How much of the senior executive's planning time should be allocated to tax compliance costs, when one of the variables he must consider in his decisions is the repercussions of a tax? Definitive answers are difficult to provide.

The recent report by a House of Representatives Subcommittee on State Taxation of Interstate Commerce includes the most comprehensive study of compliance costs to date.[15] A group of 100 firms, selected to represent a wide variety of tax situations, participated in a detailed examination of the expense of income tax compliance. Compliance costs were related to gross receipts, as shown in Table 4. The report shows that in no case did compliance costs exceed 1 percent of gross receipts, and that more than half of the cases fell between 1/100 and 1/10 of 1 percent.

Table 4

Total Compliance Cost Compared to Gross Receipts

Total compliance cost as a percentage of gross receipts[a]	No. of firms
Negligible	− −5
Under 1/1000 of 1%	2
1/1000 up to 2/1000 of 1%	2
2/1000 up to 5/1000 of 1%	−10
5/1000 up to 1/100 of 1%	12
1/100 up to 2/100 of 1%	− +14
2/100 up to 5/100 of 1%	26
5/100 up to 1/10 of 1%	+ + +13
1/10 up to 2/10 of 1%	− + + + +9
2/10 up to 1/2 of 1%	3
1/2 of 1% up to 1%	+4
Total participants	100

a. Total compliance cost includes pure income tax cost plus Unallocated (between income and sales taxes) Filing, Training, and Litigation Costs and Study, Planning, and Supervison Costs. It thus includes all costs attributable solely to income taxes and all other costs an unknown part of which is attributable to income taxes.

— Each minus represents one participant reviewed as underestimating; i.e., 2 of the 5 firms in negligible category reviewed as underestimating.

+ Each plus represents one participant reviewed as overestimating; i.e., 1 of the 4 firms in "½ of 1% up to 1%" category reviewed as overestimating.

Source: **State Taxation of Interstate Commerce, Vol. 1, Special Subcommittee on State Taxation of Interstate Commerce, Committee of the Judiciary, House of Representatives, June 15, 1964, p. 356.**

Earlier studies deal with the compliance costs of both income and excise taxes, but in general are less thorough than the subcommittee's report.[16]

15. *State Taxation of Interstate Commerce*, Special Subcommittee on State Taxation of Interstate Commerce, Committee of the Judiciary, House of Representatives, June 15, 1964, Vol. 1, pp. 335-384.
16. Such information as is available has been summarized in Committee on Taxpayer Compliance, "Interim Report," *Proceedings of National Tax Association*, 1961, pp. 427-428, and "Some Observations of NTA's Committee on Cost of Taxpayer Compliance and Administration" (mimeo), June 15, 1964.

III.

FEDERAL EXCISE TAXES

HISTORY OF EXCISE TAXES

The history of Federal excises is largely one of wartime imposts which were for the most part removed in intervening peacetime periods. Another kind of emergency, the depression of the 1930's, produced a more or less permanent set of excise taxes.

The Earliest Excises

The earliest excise taxes reflected Alexander Hamilton's policies. These included Federal assumption and funding of state debts, tariff protection for manufacturers, and an internal revenue system that would provide a stable source of revenue.

The first excise tax was levied in 1791. It was a whiskey tax designed to provide revenue required by Federal assumption of state debts. Farmers in western Pennsylvania, Maryland, Virginia, and North Carolina rose in a rebellion which President Washington put down with militia. The whiskey tax and rebellion helped to turn people away from the Federalists and toward Jefferson's "Republican" party.[1]

The whiskey tax produced little revenue, and in 1794 a new Act was passed taxing carriages, sales of certain liquors, manufacture of snuff, the refining of sugar, and auction sales. In 1797, to help meet new military expenses arising out of troubles with France, a Stamp Act was passed imposing duties on legal transactions.[2]

In the election of 1800 Jefferson, with the support of Southern planters, small farmers and tradesmen, defeated the Federalists. One result of the change in administration was that in 1802 all the internal excises were abolished (except for a salt tax, which was repealed in 1807).

Over the period 1792-1802 excise taxes produced 7.1 per cent of total tax collections (Table 5).

Successive Wartime Excise Tax Systems 1812-1919

The War of 1812 curtailed customs receipts and forced a return to excise taxes, as well as to direct taxes on property.

From 1817 until the Civil War no excises were levied. Customs duties were the chief source of revenue. Sales of public land made up the balance.

In 1862 excise taxes were levied on spirits, beer, tobacco, manufactured products, auction sales, carriages, yachts, billiard tables, plate, slaughtered cattle, hogs and sheep. In addition there were various stamp duties, occupational licenses, and taxes on railroads, steamboats, ferry boats, railroad bonds, banks, insurance companies, advertisements, and legacies. Rates were increased in 1864 and many additional items added to the tax base. These excises provided 45.7 percent of total tax collections during the years 1863-1867, or more than three times the receipts from income taxes in the same period.

At the close of the Civil War, Congress appointed a commission to study possible changes in the tax system. Among other things, the commission recommended repeal of most of the wartime excise taxes. A series of Acts from 1866 to 1870 reduced excise tax rates and removed various com-

1. Sidney Ratner, *American Taxation*, New York 1942, pp. 27-35.
2. A year later the first direct tax was levied on houses, land and slaves, and apportioned among the states.

Table 5

Federal Tax Collections by Source

Totals for Selected Periods 1792-1963[a]

Fiscal years[b]	Amount in millions					Percentage distribution				
	Total tax collections[c]	Income and profits taxes[d]	Excise taxes[e]	Customs	All other[f]	Total tax collections	Income and profits taxes	Excise taxes	Customs	All other
1792-1802	$ 86	$ 1	$ 6	$ 78	—	100.0	1.7	7.1	91.2	—
1803-1813	133	(g)	(g)	133	—	100.0	.2	.3	99.5	—
1814-1817	101	10	14	76	—	100.0	10.4	14.1	75.5	—
1818-1862	1,337	2	2	1,333	—	100.0	.2	.1	99.7	—
1863-1867	1,553	232	709	612	—	100.0	15.0	45.7	39.4	—
1868-1898	9,898	157	4,074	5,666	—	100.0	1.6	41.2	57.2	—
1899-1902	2,080	—	1,148	832	—	100.0	—	55.2	44.8	—
1903-1913	6,298	118	2,875	3,305	—	100.0	1.9	45.6	52.5	—
1914-1919	10,925	5,969	3,450	1,306	$ 200	100.0	54.6	31.6	12.0	1.8
1920-1931	44,097	27,483	8,824	5,965	1,825	100.0	62.4	20.0	13.5	4.1
1932-1940	36,467	14,265	12,639	3,135	6,428	100.0	39.1	34.7	8.6	17.6
1941-1945	129,977	97,351	19,746	1,891	10,989	100.0	74.9	15.2	1.5	8.4
1946-1950	203,458	149,063	36,554	2,158	15,683	100.0	73.3	18.0	1.0	7.7
1951-1954	259,562	197,368	37,138	2,350	22,706	100.0	76.0	14.3	.9	8.8
1955-1963	781,245	567,352	101,518	8,356	104,019	100.0	72.6	13.0	1.1	13.3

a. Periods selected on the basis of important changes in excise taxes levied.
b. Ended December 31, 1792-1842; June 30, 1843 and subsequent years.
c. Data for 1792-1862 are on a warrants issued basis; data for 1863-1912 are on a collections basis.
d. Includes direct taxes on property collected in various periods before 1900.
e. There were no excise tax collections 1849-1862.
f. Includes gift, estate, capital stock, and employment taxes.
g. Less than $500,000.

Source: Treasury Department. Computation by Tax Foundation. Percentages computed from unrounded data.

modities from the tax base. In 1883 and 1890 there were further reductions in rates and eliminations from the base. The remaining taxes after 1890 were those on alcoholic beverages and tobacco. Despite the reductions, excises provided 41 percent of total tax collections from the end of the Civil War to the outbreak of the Spanish-American war in 1898; over the same period customs duties provided 57 percent of tax collections.

In 1898 to help meet war needs, rates were once again increased, various stamp taxes were introduced, and special taxes were imposed on banks, brokers, theatres, bowling alleys, billiard parlors and pool-rooms, and other amusement places. For the period 1899-1902 excises provided 55.2 percent of total tax receipts. In 1901 many stamp taxes were repealed or modified, and in 1902 all the Spanish War taxes were removed. Until 1914 the only excises of importance were those on liquor, tobacco, oleomargarine, and playing cards. Nevertheless, these excises provided 45.6 percent of total tax collections in the period 1903-1913, an indication of the low level of Federal receipts.

A series of Revenue Acts from 1914 to 1918 raised excise tax rates and applied excises to many additional goods and services. The excises in force by 1919 are shown in Table 6. Although excise tax collections almost quadrupled from 1914 to 1919, vastly increased reliance on income taxes contributed much more to a six-fold increase in total tax collections so that the excise share fell from 46.0 percent in 1914 to 28.2 percent in 1919.

With the return of peace, rates were again reduced and many taxes removed entirely. In the late 1920's tobacco taxes accounted for the greater part of excise tax collections.

The 1932 Excise Tax System

In 1932 one of the largest peacetime tax increases in history was enacted, as Congress and the President endeavored to balance the budget in the face of declining revenues. The largest part of the 1932 tax increase was in excise taxes.

In the fiscal years 1933 and 1934 excise taxes produced 45 and 56 percent respectively of total Federal tax collections. Thereafter, the share of excise taxes declined.

World War II, Korean War, And Subsequent Changes

During World War II, excise tax rates were considerably increased, and various new excises were introduced, as a means not only of raising revenue but also of restricting consumption to make resources available for the war effort. The most important additions were the taxes on the transportation of persons and property, local telephone service, the retailers' excises on jewelry, furs, toilet preparations, and luggage, and the extension of manufacturers' excises to electric, gas and oil appliances, musical instruments, sporting goods, etc. Large increases were made in the rates of taxes on liquor, automobiles, radios, communications, amusements, while some taxes, chiefly stamp and tobacco taxes, were increased relatively little (Table 6). As in World War I, however, the increases in income taxes were more significant, with the result that the excise share in total tax collections fell to a low of 11 percent in the fiscal year 1944.

After World War II excise tax reductions were postponed even though income taxes were reduced in 1945 and 1948. After extensive hearings, in early 1950, a House bill providing for excise tax reductions and revisions was reported by the Ways and Means Committee in June. A few days later, however, fighting began in Korea, and this bill was completely revised.

The Revenue Act of 1951 brought further increases in rates and numerous changes in the bases of certain excises—again designed to restrict non-essential consumption as well as to produce additional revenue. The taxes on liquor,