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Excise Taxes

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Once a country has developed substantial domestic production — beyond agricultural commodities and those subject to traditional excises — there are strong arguments for moving to a sales tax rather than continuing to add excise taxes.

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Summary findings

Due contrasts excise taxes with sales taxes, consumption taxes, licenses, stamp duties, and other indirect taxes. He describes different types of excises, their relative tax burdens, and how progressive and economically efficient they may be.

The main argument for traditional excise taxes, he says, is that they yield substantial revenue with relatively little complaint. A second justification is that the cost of the excessive use of commodities is borne by the purchasers, not by society at large. A third argument is to penalize people for a commodity's use (especially popular with commodities such as alcohol).

Arguments against traditional excises: They tend to be regressive, because of the low income elasticity of demand, and they place an unequal burden on families at given income levels. They deprive families of the funds for milk and other essential items, without reducing consumption of taxed goods. High rates tend to increase smuggling and illicit production, often of inferior, even dangerous, substitutes. And the case for them is not strong, resting as it often does on moral grounds. But excise taxes are sure to continue as they yield revenues and are generally more acceptable than other sources of revenue, such as income taxes.

Taxes on motor fuel and related motor vehicle levies are among the three most productive excises. They are justified as a charge for the use of roads, in lieu of tolls. In western Europe, they are seen as progressive, as reaching the people most able to pay — and incidentall as reducing road congestion. Criticism of such taxes centers on how best to attain desired goals — for example, sorting out the relative burdens on light and heavy vehicles.

Luxury excises tend to be applied to commodities an services with a high income-elasticity of demand, the assumption being that they will reach the people best able to pay them — achieving equity without relying on increased income taxes, which are difficult to enforce in developing countries and hurt incentives. A luxury exci tax, limited to certain items, is viewed as being progressive, which a sales tax rarely is.

But if various rates apply, compliance and administration become complex, and consumers may discriminate among closely related commodities. Moreover, the goods taxed are often widely used by lower income groups (sugar and kerosene are prime examples). For these reasons, many countries are introducing sales taxes, with few rates or a single rate (with exemptions), with simplified processing, and with less ambiguity about what is or is not taxed.

This paper — a product of the Public Economics Division, Policy Research Department — is part of a larger effort in the department to develop policy options to reform fiscal systems in developing countries. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Carlina Jones, room N10-063, extension 37699 (38 pages). February 1994.

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THE CONCEPT OF AN EXCISE TAX

Unlike most forms of taxation, excise taxes are not, in their modern form, clearly delimited from other taxes. The traditional British concept of an excise, still accepted in many British Commonwealth countries, was clearly defined: an excise tax was a levy upon production rather than sale, imposed only upon domestic activity and only to commodities, not services, at specific rates, with quantitative control. The modern concept of an excise, however, is substantially broader, especially in nonCommonwealth countries. The basic characteristic is application to specified commodities or groups of commodities. The tax may apply to either production or sale, to domestic outputs or to imports as well, with either specific or ad valorem rates, with either physical control (common on alcoholic beverages and tobacco) or accounts control. As with the traditional British concept, there is a definite intent to discriminate against the users of the specified goods. Excise may apply to services as well as commodities, although in many countries selective service taxes are regarded as distinct from excises.

Excises vs. Sales Taxes

Thus excises are distinguished from sales taxes in being applied to specified goods, with a limited overall coverage, whereas typically, but not always, sales taxes apply to all goods except those specified as exempt. A few sales taxes, such as that of Tanzania, specify taxed goods and rates by tariff classification number. In most countries there is a sharp distinction, at law and in practice, between excises and sales taxes, but this distinction is not universal, nor is the terminology. Thus a very broad excise system, such as that of Japan and the Union government of India, resembles a sales tax, and a sales tax with numerous exemptions and a wide range of rates (for example Guyana) is similar to the usual excise system. In a few countries levies that are excises by usual definition are designated by law as sales taxes, the states of Nigeria being the prime example. Nevertheless, in most countries, there is in practice a sharp delineation between excises and the sales tax.

Excises vs. Consumption Taxes

A few countries, particularly in the immediate past, have used two sets of selective levies, one group consisting of excises in the usual form, the other, called consumption or purchase taxes, having a much broader coverage and applying to imports as well as domestic production. Jamaica, Trinidad and Barbados were major examples, though the first two have now moved (Trinidad) or are moving (Jamaica) to value-added taxes. Egypt has had a similar pattern of indirect taxes. Broad levies of this type will not be included in the coverage of this paper, despite their similarity to excises.

Excises vs. Licenses, Stamp Duties, and Other Miscellaneous Indirect Taxes

Most countries impose license taxes on motor vehicles and various forms of economic activity. These are typically annual, constituting a direct charge for a certain privilege, and thus are distinguished from excises. The same is true of stamp duties required on various documents in many countries, airport departure taxes, and other similar levies.

Taxes on specified services, while in many countries distinguished from excises, will be included in the concept of excises in this paper.

THE ORIGIN OF EXCISE TAXES

Excise taxes were among the relatively early forms of taxation, first developed on a significant scale in Holland, then introduced in Great Britain and other countries in the 16th and 17th centuries. In developing countries, however, the introduction of excises, though partly influenced by the policies of the colonial powers, occurred primarily when domestic production began of commodities that had been major sources of customs revenue, particularly cigarettes and beer, and subsequently distilled spirits. Essentially the excises were introduced to protect major revenue sources as domestic production replaced importation.

THE TYPES AND CHARACTERISTICS OF EXCISES

Excise taxes of today fall into several rather distinct classes.

First, and usually the most productive of revenue, are the traditional excises: alcoholic beverages, often with different rates on distilled spirits of various types, beer, and wine; and tobacco products, primarily cigarettes. These are among the oldest of excises, and their use is almost universal around the world. These are deliberately discriminatory against the users of the products.

Secondly, and of major revenue importance, are the excises upon motor fuel, and, in some countries, other petroleum products as well. The motor fuel levies may be regarded as charges for the use of roads, in lieu of tolls; this philosophy (though not universally accepted) is substantially different from that of the traditional levies.

Thirdly, in many countries, excises are applied to commodities essentially regarded as "luxuries"--ones the purchase of which is considered to reflect ability to pay. A secondary motive in many developing countries is to reduce luxury consumption of imported goods for foreign exchange reasons. Included frequently are the sale of motor vehicles, various consumer durables, entertainment, transportation, sugar, candy, various types of clothing, and many others. Not infrequently some commodities are included that can scarcely be considered luxuries in any sense, such as cement, but offer considerable revenue; they could be classified separately as simply revenue excises.

This classification is important in terms of the rationale of the levies and administration; the control measures are substantially different among the three.

Apart from the type of commodity and service subject to tax, the contemporary excise systems vary in other respects, as suggested above.

Domestic and Imported Goods

A number of countries still adhere to the old British concept of an excise applying only to domestic production.

These levies are sometimes supplemented by equivalent but separate taxes on importation, adjusted as excises are changed, but not designated as excises. Otherwise, changes in excises require adjustments in customs duties to maintain the same degree of protection. This has been done systematically in some countries such as India; in others it has not. The alternative, common in other parts of the world, is to apply excises equally to imports and domestic production. This is the practice in most Latin American and Francophone African countries.

Level of Application of the Excise

Traditionally, and still primarily, excises apply on domestic transactions, at the manufacturing level. However, some are applied at the wholesale or retail level, the latter inevitable with most services, and are used with commodities in several countries, as for example, the United States in the past, on jewelry, and currently on diesel fuel (wholesale).

Specific vs. Ad Valorem Rates

Typically, specific rates were used, primarily for administrative simplicity, but in part, with traditional excises, under the principle that the amount of tax should be the same per physical unit (e.g., of alcohol) regardless of the price paid. Specific levies are still dominant, particularly with traditional excises, but many countries, for example, Guatemala and Chile, use ad valorem rates, and others use a combination, a specific minimum and an ad valorem supplement. This issue will be discussed in a subsequent section.

Extent of Coverage and Use

Some writers classify excise systems into three classes: limited, intermediate, and extended, on the basis of coverage. The limited systems, such as those of the United States and Trinidad, apply only to the traditional commodities plus motor fuel and a very few other items. The other two apply to broader ranges, the third resembling a sales tax if the coverage is broad enough.

Table I indicates the revenue importance of excises (including special service taxes) by country and by region, based on the International Monetary Fund tabulation. Only market economy countries were included. Some arbitrary classification decisions must be made by the IMF staff in preparing tables, but the figures nevertheless give a good overall impression of the relative reliance on this form of taxation. Figures by country are shown in Appendix Table A1.

For all countries for which data are available (108), the lowest income countries show only slightly more reliance on excises than do the countries in the $501-$2,000 range, basically because they have less domestic industry and rely more heavily on customs duties. The countries above show a definitely lower percentage. But statistical analysis shows no meaningful correlation between per capita GNP and reliance on excises. For the African and Asian countries, however, there is a definite inverse relationship between per capita GNP and reliance on excises, a pattern also found in Central and North America. All but one of the South American countries show approximately the same relative dependence on excises. Previous studies of excises as a percentage of indirect tax revenue show a definite positive

Table 1

The Relationship Between Excises as Percentage of
Total Tax Revenue and GNP per Capita,
For All Countries and by Region

Estimated Per Capita GNP (US dollars)	Number of Countries	Excises as Percentage of Total Tax Revenue
Below 500		
All countries	30	14.7%
Africa	20	11.3%
Asia	8	22.3%
Europe	0	--
North and Central America	1	29.9%
South America	1	7.4%
501-2000		
All countries	37	13.4%
Africa	11	9.9%
Asia	8	15.8%
Europe	1	7.7%
North and Central America	11	14.9%
South America	6	14.6%
2001-6000		
All countries	16	10.5%
Africa	2	0.2%
Asia	2	6.6%
Europe	4	14.1%
North and Central America	3	8.3%
South America	5	14.4%
Above 6000		
All countries	25	9.4%
Africa	0	--
Asia	6	8.8%
Europe	16	10.3%
North and Central America	3	5.8%
South America	0	--

Source of Data: International Monetary Fund. Government Finance Statistics Yearbook, 1990 (Washington: 1991). More detailed analysis is presented in the article by John F. Due and Carrie Meyer, "Major Determinants of the Tax Structures of Market Economy Countries, Tanzania Journal of Economics, Vol. 1 (July 1989), pp. 47-63.

Appendix tablecorrelation between per capita GNP and the reliance on excises as a percentage of indirect taxes. For the world as a whole, over half of the countries show a reliance on excises as a percentage of indirect taxes in a narrow range between 27 and 29 percent. A1 shows the data by country. The highest group, showing more than 30 percent of their revenue from excises (omitting India because of its reliance on basically a sales tax labelled excise), are Burundi, Guinea-Bissau, Pakistan, Maldives, and Nicaragua. Those showing no excise revenue are Seychelles, Botswana, Comoros, Oman, Kuwait, and Syria.

Data of revenue from various forms of exc. 's are not generally available; the I.M.F. volume provides figures on these categories for only a limited sample. On the basis of information available, however, some data can be given (from the early 1980s). Some countries obtain most of their excise revenue from alcoholic beverages: for example (percentages of excise tax revenue) Rwanda 99, Burundi 95, Guyana 70, Congo 59, Netherlands Antilles 57, Belize 53, Suriname 43, Zambia 41. Zambia in most years receives about 18 percent of its total tax revenue from beer alone. Latin American countries show relatively high percentages; the Islamic countries the least, since they prohibit or restrict the sales of alcoholic beverages. Several countries depend heavily on tobacco taxes: Indonesia 90, Zaire 80, Somalia 52, Morocco 44 and Sierra Leone 44. Several of these are Islamic countries with little or no reliance on taxes on alcoholic beverages. In a number of countries motor fuel levies are the major sources; in 14 countries they yield over half of all excise revenue. These include (1980s data) Oman 100, Kuwait 98, Columbia 96, Peru 91, Mexico 88, Israel 79, Costa Rica 76, Mali 74, Trinidad 72, Argentine 69, Niger 67, Singapore 67, Chad 63, Botswana 59.

RELATIVE EXCISE TAX BURDENS

It is impossible to compile data on excise taxes relative to prices for developing countries, other than for a very small sample. Thus as a second best solution, data are presented in Table 2 for the OECD countries, as compiled by the U.S. Congressional Budget Office, with data for 1988.

The almost universal assumption is that excise taxes, by adding to the cost of producing the particular items, will be reflected in higher prices, under usual competitive conditions, and thus will be borne in relation to consumer spending on the items. This is of course an oversimplification, because of the possibility of shift in factor prices as demand for the tax products fail, particularly in a relatively open economy, as demonstrated by G. A. Hughes with respect to Thailand.[1] Widespread smuggling and black markets (not reached by the tax), for example, may prevent full shifting, as will some price controls. Import licensing, which leads to monopoly pricing, may result in less than full shifting.[2] But nevertheless it is the only reasonable workable assumption.

Empirical studies of distribution of excise tax burden by income class have been made in a number of countries. Many of these were summarized by Charles McLure and Wayne

[1]G. A. Hughes, "A New Method for Estimating the Effects of Fuel Taxes: An Application to Thailand," World Bank Economic Review 1 (1986) 65-101. Note also A. Lans Bovenberg, Indirect Taxation in Developing Countries: A General Equilibrium Approach, International Monetary Fund Staff Papers 34 (June 1987) 333-73.

[2]A good discussion is presented in the paper by Anwar Shah and John Whalley, An Alternative View of Tax Incidence Analysis for Developing Countries, NBER Working Paper 3375 (Cambridge, Mass.: National Bureau of Economic Research), June 1990.

Table 2

Excise Taxes as Percentage of Retail Prices, 1988

Country	Cigarettes	Distilled Spirits	Beer	Wine	Gasoline
Australia	32.3	17	35	15	49.4
Austria	55.0	40	36	31	62.5
Belgium	64.4	56	27	27	64.7
Canada	N.A.	82	53	69	40.5
Denmark	69.2	83	50	48	75.3
Finland	N.A.	66	41	66	52.0
France	49.2	45	18	18	76.9
Germany	59.8	64	20	12	64.0
Greece	36.8	N.A.	N.A.	N.A.	66.4
Iceland	N.A.	N.A.	N.A.	N.A.	N.A.
Ireland	53.8	66	64	51	70.7
Italy	56.8	27	20	8	78.3
Japan	N.A.	23	47	22	47.0
Luxembourg	60.9	44	14	6	56.4
Netherlands	54.8	72	34	25	70.4
New Zealand	N.A.	53	30	20	51.0
Norway	N.A.	91	54	59	66.6
Portugal	58.0	8	14	8	66.0
Spain	32.8	47	15	11	65.2
Sweden	N.A.	92	34	69	62.2
Switzerland	N.A.	31	14	5	64.7
Turkey	N.A.	N.A.	N.A.	N.A.	N.A.
United Kingdom	61.3	51	31	29	67.8
United States	30.1	45	15	12	31.5

Source: Congressional Budget Office, Federal Taxation of Tobacco, Alcoholic Beverages and Motor Fuels (Washington: Congressional Budget Office, 1990.

Thirsk,[3] by Sijbren Cnossen,[4] and by Mukul Asher and Anne Booth for the ASEAN countries.[5] One of the most complete recent studies is that for Jamaica by Michael Wayslenko.[6] All of these are based upon consumer expenditure studies, showing expenditures by commodities and services by income groups, and these are by no means entirely accurate, especially for alcoholic beverages. It is not possible to review these studies in detail, but summary is possible.

A portion of the Jamaica study is shown in Table 3, providing data for both excise taxes and the portion of the consumption tax applying to the same commodities, with different income brackets. The tax on cigarettes and tobacco products is clearly regressive, except in the lower income brackets. The tax on beer is progressive at the lowest brackets, then more or less proportional and regressive at higher levels. Tax on distilled spirits shows an irregular pattern, with progression at some levels but regression at higher levels. All alcoholic beverages combined show an overall progression except at the higher income levels, but in an irregular fashion; expenditures on the lower taxed item are concentrated in the lower income levels. The tax on motor fuel is proportional, slightly progressive at the higher income levels.

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[3]Charles McLure and Wayne Thirsk, "The Inequity of Taxing Iniquity," Economic Development and Cultural Change 26 (April 1978), 487-503.

[4]Sijbren Cnossen, Excise Systems: A Global Study of the Selective Taxation of Goods and Services (Baltimore: Johns Hopkins Press, 1977).

[5]Mukul G. Asher and Anne Booth, Indirect Taxation in ASEAN (Singapore: Singapore University Press, 1983).

[6]Michael Wayslenko, Tax Burden in Jamaica Before and After Tax Reform. Jamaica Tax Structure Examination Project, Metropolitan Studies Program, Syracuse University and Jamaica Board of Revenue (Syracuse and Kingston 1987).

Table 3

Jamaica, Tax Burden by Income Groups, Excise Taxes and General Consumption Tax on Goods Also Subject to Excises

Excises				Consumption Tax on Goods Also Subject to Excises			
Inome Decile	Cigarettes	Beer	Spirits	Income Decile	Alcoholic Beverages	Tobacco Products	Motor Fuels
Under J $3,674	1.16	0.42	0.06	Under J $1,232	0.42	1.06	0.62
3,675 - 6,048	1.46	0.41	0.25	1,233 - 1.943	0.69	1.20	0.61
6,049 - 8,734	1.32	0.51	0.41	1,944 - 2,825	0.57	1.40	0.59
8,735 - 12,704	1.54	0.58	0.10	2,826 - 3,759	0.89	1.46	0.59
12,705 - 16,780	1.15	0.52	0.13	3,760 - 4,848	0.96	1.47	0.57
16,781 - 21,895	1.10	0.50	0.25	4,849 - 6,336	1.09	1.14	0.71
21,896 - 27,701	0.91	0.41	0.22	6,337 - 8,543	1.03	[illegible]	0.83
27,702 - 35,882	0.80	0.41	0.16	8,544 - 12,120	1.22	[illegible]	0.97
35,883 - 54.928	0.78	0.37	0.22	12,121 - 19,995	0.79	0.68	1.07
Over J $54,929	0.41	0.27	0.10	Over J $19,996	0.82	0.59	1.20
All Households	1.06	0.44	0.19	All Households	0.85	1.10	0.78

Source: Michael Wayslenko, Tax Burden in Jamaica Before and After Tax Reform, Jamaica Tax Structure Examination Project, Metropolitan Studies Program, Syracuse University and Jamaica Board of Revenue (Syracuse and Kingston 1987).

The general picture shown in the other studies is similar, with some exceptions.

Cigarettes: According to virtually all of the studies, taxes on cigarettes are regressive. One of the most recent studies, in Korea, shows a high degree of regressivity[7], as do studies in industrialized countries. There appear to be a few exceptions, in Lebanon and the Argentine, and possibly in Indonesia. The reason in these countries is that there are two types of cigarettes, one much cheaper and subject to a lower tax than the other, bought primarily in the lower income groups.

Beer: Generally shown to be regressive, but less so than cigarettes.

Distilled spirits: Less regressive, but some at higher levels.

Alcoholic beverages: Overall, possibly progressive, as higher income groups concentrate on distilled spirits, with a high tax, lower income groups concentrate on beer.

Motor fuel: The Hughes study in Thailand and others show the tax to be regressive, though not universally so, in developing countries. In the United States, however, the tax appears to be highly regressive.[8]

On other commodities, studies are limited. Entertainment taxes appear to be progressive (India, Philippines); taxes on public utilities to be regressive; salt, very regressive (Lebanon); radios, TV and refrigerators, very progressive to middle incomes, then regressive (Panama); clothing, proportional to middle incomes, then regressive (Panama); sugar, progressive to middle incomes, then regressive (Greece).

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[7]Peter S. Heller, The Incidence of Taxation in Korea, IMF Staff Paper, DM/81/14, Feb. 15, 1981.

[8]U.S. Congressional Budget Office, Federal Taxation of Tobacco, Alcoholic Beverages and Motor Fuel (Washington: Congressional Budget Office, 1990) p. 78. This conclusion is challenged by James W. Poterba, "Is the Gasoline Tax Regressive?," NBER Working Paper 3578, (Cambridge, Mass., National Bureau of Economic Research) January 1990, who argues that in this instance expenditures are a better base for measuring regressivity as so many persons in the lowest income group are there only temporarily.

The reference thus far has been only to overall distribution of burden by income class. But the relative burden on various families will differ substantially according to relative use of the taxed commodities. Thus families with regular smokers will bear much more burden than nonsmoking families at given income levels; consumption of alcoholic beverages also differs sharply among families, and in those developing countries in which some families own cars, so will the tax on motor fuel. There are also significant differences between urban and rural families at given income levels, with a higher burden on the former, because of greater relative purchases of the taxed goods at given income levels.

THE POSSIBILITY OF PROGRESSIVITY IN AN EXCISE TAX SYSTEM

Since a major complaint against excise taxes is the regressivity, governments have frequently sought to adjust the levies to lessen regressivity and if possible to introduce progressivity.[9]

Problems in Determining Distributional Patterns

As suggested in earlier sections, there are serious problems in determining the pattern of distribution of excise tax burdens by income group.

First, what is the incidence of an excise, that is, to what extent is it reflected in higher commodity prices and thus is borne in relation to consumer expenditures, or instead reduces factor incomes and thus is borne in relation to factor incomes, either in total or by certain groups? No scientific answer is possible, though as suggested in an earlier section the most common assumption made is that an excise tax, as an addition to cost, will primarily be reflected in the prices of the products, though there are undoubtedly exceptions when, for example,

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[9]One of the few extensive discussions of this question is to be found in the volume by Sijbren Cnossen, Excise Systems (Baltimore: Johns Hopkins Press, 1977) Chap. 4.

smuggling or black markets prevents full forward shifting, firms absorb tax because of monopoly profits due to import licensing or other causes, or prices of factors specialized to the industry fall, or there are broader overall shifts in commodity and factor prices, as demonstrated in general equilibrium models of shifting. Nevertheless, the generally accepted assumption is that an excise primarily results in higher prices to consumers of the commodity.

Secondly, should distribution of burden be measured in relation to consumption, or income, and if the latter is chosen, annual income or lifetime income? Since income is generally, but not universally, regarded as the best measure of tax paying ability, it is most commonly accepted as the basis for expressing the pattern of tax burden distribution. Likewise annual income is usually regarded as the appropriate measure of income, since income on a current basis is the primary source of payment of taxes. But there is no complete agreement on this issue, and in some special circumstances, expenditure may be the better basis.

Thirdly, there are related questions about exactly what items should be included in income and problems of measurement of some forms. Should gifts and welfare payments be included--though these are not significant in most developing countries. More serious is the importance of income in kind in the developing countries, products of semi subsistence agriculture, for example. These are difficult to discover and measure, and are frequently omitted in tabulations. Since this form of income concentrates in the lowest income groups, figures of tax burden as a percentage of income overstate tax for these groups.

Fourthly, data on consumer expenditure by income group are based upon consumer expenditure surveys, which are by no means entirely accurate. The family samples selected may not be fully representative. Persons often do not remember or keep accurate records of their expenditures by commodity groups. There are definite biases on the part of many persons in reporting expenditures on various commodities, particularly alcoholic beverages; some studies have shown that if purchases reported in the sample are expanded to cover the entire population, the total accounts for only a small percentage of the amounts known to be sold by distributors.

A final problem now widely recognized is that expenditure patterns differ sharply between urban and rural areas; some studies now have separate data for the two groups.

Circumstances in Developing Countries Facilitating Progressivity of Excises

For several reasons it appears to be more feasible to reduce regressivity of excise systems or increase progressivity in developing countries than in industrialized ones. In many developing countries, particularly the least developed ones, the economies are essentially dualistic, with sharply different consumption patterns in the two sectors. In the lower income semi-subsistence sector, much consumption is in kind, goods produced and consumer by the family or village, with little or no commercial activity. Even if these commodities were subject to excises, the taxes could not possibly be collected. To the extent that goods are purchased commercially, only the cheapest varieties are acquired. Thus luxury goods in the usual sense are virtually unknown. Alcoholic beverages are village produced, or the cheapest type purchased; cigarettes are rolled from tobacco, motor fuel is unknown. Consumer durables, confined to simple articles of furniture and housewares, are made by the family or local groups; excises could not possibly be applied.

It is thus possible to devise an excise system that will virtually exclude the rural low income groups from the burden of the tax. As a country develops, however, this becomes increasingly difficult as the two sectors tend to merge in consumption patterns.

The Criteria for Selection of Commodities for Excise Taxation

In terms of progressivity, the basic rule is that taxes should be applied to commodities with high income elasticity of demand; that is, as income rises, consumption rises by a greater percentage. A 5 percent increase in the family income, for example, will lead to a 10 or 15 percent increase in consumption of the commodities. If this rule could be used, personal views of those developing the legislation about what constitutes "luxury" spending would be avoided.

A second rule is that the tax should be applied to commodities with low price elasticity, that is, relatively inelastic demands. Otherwise, persons will shift from taxed to untaxed substitutes and little revenue will be obtained, with potential excess burden. This in turn requires the taxation of a relatively broad category of goods, since the broader the category, the less is the chance of shifting to substitutes.

A third requirement is that expenditures on the commodities constitute substantial segments of consumption in the higher income groups, and little in the patterns of the lower income groups. Unless the taxed goods are consumed in substantial amounts, the revenue potential will not be great enough to warrant taxation. Many excise systems single out minor items for taxation that constitute such a small element in total spending that taxation under an excise is useless. Cigarette lighters are an example.

A fourth requirement is the possibility of disaggregating the broad categories of commodities in such a way that differential rates can be applied according to the concentration of consumer purchases by income groups. Segregation may be possible by prices charged as with motor vehicles or by precise nature of product (octane level of gasoline, for example). Examples of these are numerous, even with traditional excises. A good example is the much lower rate applied to hand rolled kretak (clove) cigarettes in Indonesia, used primarily in the lower income groups, compared to rates on manufactured cigarettes. The use of a much lower rate on chibuku (unstable) beer in Zambia, the type purchased mainly in beer halls by the lower and lower middle urban income groups, relative to that on standard beer, is another. The very high rates on wine in Commonwealth Caribbean countries, compared to that on beer, is mainly designed to reach the higher income groups, including tourists, since beer is the standard drink in the lower income groups. Application of much higher rates to alcoholic beverages of types not produced in the country and used almost solely by the higher income groups is common, even though uniform rates apply to domestic and imported products. This type of differentiation, with the traditional excises applying at the manufacturing level, is administratively feasible.

Finally, there is strong justification for the use of ad valorem rates, as the amount of tax per physical unit will be greater on the more expensive varieties than on the cheaper ones.

Obstacles to Attainment of These Objectives

Unfortunately, it is difficult to implement policies that will attain these objectives. First, knowledge of income and price elasticities of demand is limited, particularly in developing countries. The price elasticity will of course vary with changes in prices of other goods; the usual concept of price elasticity assumes that prices of other goods and factors are unchanged.

Secondly, a relatively high demand elasticity requires broad coverage of the excises, but this in turn may cause loss of high income elasticity, which may be much greater for particular commodities than for a group of related commodities.

Thirdly, the disaggregation of taxed commodity groups necessary for increasing progressivity may be very difficult to do from an operational standpoint. Examples have been given in previous sections where this is possible: machine made vs. hand rolled cigarettes, for example, application of different rates to different types of alcoholic beverages whose purchases are concentrated in the different income groups; various grades of gasoline, etc., price or physical characteristics of motor vehicles, etc.

But disaggregation is not feasible with many types of commodities in a fashion that is operable. Clothing, hardware, lumber, etc. are examples. A large number of different subspecies makes both compliance and control increasingly difficult. One of the most serious objections is that the requirements could result in a number of different excises with different rates and operational rules. As a consequence, operation would be seriously complicated.

Fourthly, the requirements would lead to rejection of application of excises to certain commodities which are universally regarded as desirable for taxation and to have justification on economic efficiency grounds (alcohol, tobacco). The use of ad valorem rates may be contrary to the desire to relate the tax to quantities consumed rather than to value.

A major implication of these conclusions is that an attempt to use a large number of separate excises, disaggregated by a particular form of the commodity or service, would be operationally very difficult.

Differences Among Families

Even if an excise system can be made progressive, there is still an important disadvantage from an equity standpoint, particularly with the traditional excises. The tax burden relative to income will vary greatly among families depending on whether or not the particular commodities are used in the family. Relatively heavy taxation of families in which one or more members smoke cigarettes may be justified on economic efficiency grounds, but can be seriously questioned on equity grounds.

THE CHOICE BETWEEN AD VALOREM VS SPECIFIC RATES

A major issue with regard to excises is the choice between ad valorem and specific rates.[10] The issue is particularly important with the traditional excises and motor fuel. For most other excises the use of ad valorem rates is almost essential because of the problems of

[10] J. A. Kay and M. J. Keen, The Structure of Tobacco Taxes in the European Community (London: Institute for Fiscal Studies, 1982); Cnossen, Excise Systems, op. cit., pp. 104-05.

defining the taxable units and establishing suitable relative rates--as for example if all hardware items were made taxable.

Traditionally, excises had specific rates, and the major excises in terms of revenue still do in many countries, though not in all. There are several advantages claimed for the specific form of rate.

First, compliance and administration are typically simpler, as there is no need to determine the value of the product for application of the tax. Control involves the relatively easy task of determining physical output--numbers of cigarettes, etc. There is no need for audit to check upon reported values, and there are no issues relating to the appropriate value. These excises are typically collected at the manufacturing level; application of the tax to the actual selling price would encourage manufacturers to shift functions forward of the point of imposition of the tax to distributors. To avoid this, commonly the retail price is used. This is not difficult with cigarettes, for example, with more or less standard retail prices, but it is more difficult with a wide range of alcoholic beverages. In any event, it adds a complicating element to operation of the tax.

Secondly, the traditional excises are in part based upon a penalty philosophy--that use of the commodities creates negative externalities or, particularly in the past, is in some sense "immoral" or "sinful." Thus the specific levy ensures that the tax burden borne by consumers will be related to the physical quantity consumed, not to the value. Using U.S. wine prices as an example, presumably the tax "penalty" should be the same for consuming a litre of $1.98 wine as for consuming one of $25 super quality wine. If anything it might be argued that the cheaper wine may be more harmful, per litre, than the high quality wine--and certainly there is incentive to use more. This reasoning has validity only if one accepts the negative externalities penalty and/or "sin" justification for these taxes.

Thirdly, as demonstrated by J. A. Kay and M. J. Keen, specific levies avoid the effect of ad valorem levies in lowering the quality of the product and the range of varieties. With an ad valorem levy a firm can reduce its tax liability by lowering the quality (for example, use of inferior materials, less aging, etc.) whereas with a specific levy it cannot do so. By the same reasoning ad valorem rates tend to reduce the range of varieties available to the consumers, since provision of a number of varieties will raise costs relative to meeting the demand with a single variety and thus an ad valorem tax will give incentive to cut back on the number of varieties.

It should be noted that this is an advantage of the specific rate only if the quality and variety were optimal in the absence of the tax; if they are not, appropriate use of ad valorem rates might bring the industry closer to the optimum, but design of such a program is extremely difficult.

A final advantage of the specific rate is that its use tends to conceal the very high tax rate relative to purchase price that is evident with an ad valorem rate.

The ad valorem approach, in turn, has some significant advantages. First, it avoids the penalty placed by specific rates on the lower priced varieties of the product, and makes the tax more progressive or less regressive, as noted in a previous section. A uniform rate of tax on all wine places a much higher tax burden on the purchase of the litre of cheap wine compared to the purchase of an expensive wine. Ad valorem levies place a higher burden on drinking in luxury establishments, for example. To many observers, this is a much more significant matter than possible effects of an ad valorem levy in leading producers to reduce quality, given the demand for and the higher prices possible on high quality varieties. It may be possible to lessen this regressive feature of specific rates by varying the rate according to the price of the product, as some countries do with cigarettes and motor fuel, but this materially complicates operation of the tax, and is contrary to the "penalty" goal of traditional excises, or the road use philosophy of motor fuel taxes.

Secondly, the ad valorem approach eliminates the need for defining the taxable unit, since the tax can be applied to the selling price of groups of units; a firm produces and sells a particular batch of goods for a certain amount; tax applies to this selling price. There are no problems of determining appropriate price necessary if rate differentiation is used with specific rates. Closely related, there is no incentive, as with some specific levies, to "water down" the product--for example, beer or distilled spirits--if the tax is applied to the concentrate, which is diluted after the tax is applied. This problem of specification of units is particularly troublesome with some types of luxury goods, where the final product can be sold in parts, which may or may not be subject to excise.

Thirdly, and most seriously in many countries, specific rates do not keep pace with inflation, as do ad valorem rates. When prices are rising, the specific rates must be constantly revised. Experience in the United States and elsewhere shows that this is often not done. There are two primary reasons: inertia, especially in a nonparliamentary governmental structure, and political opposition to any tax rate increases, even though necessary to keep the real tax burden constant relative to selling prices. This tax increase psychosis has become very strong in recent years in many countries.

One of the greatest fears in many developing countries considering shift from specific to ad valorem rates is that the traditional levies are highly productive of revenue, and there is danger that tampering with the rate will interfere with effective enforcement and cause serious loss of revenue.

Since the lag of rates behind inflation is the most serious disadvantage of specific rates, one approach to the problem is to retain the specific rates but to index them automatically to keep them in line with price level changes.

ECONOMIC EFFICIENCY CONSIDERATIONS

Excises have often been criticized for serious adverse economic effects--interference with attainment of economic optimality. The effect long stressed is the excess burden argument; when some commodities are taxed and not others, persons shift from taxed to untaxed articles, and thus a net excess burden results. The persons suffer a loss in satisfaction but the government gets no revenue. Indirect taxes were often compared unfavorably with income taxes on this score. But the generality of the argument has been seriously questioned in recent years, although there remains an element of validity. The basic argument today following from the theory of optimal taxation is that when taxes are levied on particular commodities or services, they should be imposed on items with low price elasticity of demand, so that there will be a minimum of shifting of consumer purchases. But this rule, if broadly applied, would result in heavy taxation of basic necessities which have low price and income elasticity. Since these are consumed widely in the lower income levels, heavy taxation is not acceptable in terms of equity.

Of the typical excise taxes, those on cigarettes and beer, and to a lesser extent those on distilled spirits, meet the low price elasticity requirement relatively well, from all indications, because of their addictive nature. But of course this feature lessens the attainment of the objective of these levies of offsetting the negative externalities by reducing use. The tax on motor fuel is of a somewhat different character; it may be regarded as basically a charge for the use of roads to cover their costs, and like any other charge or price any reduction in usage below the volume with no charge may be considered to aid in attainment of the economic optimum. Failure to charge for the use of roads would result in excessive utilization relative to the optimum. Excises on polluting effluents would be justified, in terms of economic efficiency, for the same reason as motor fuel levies--with the motive of lessening pollution. The economic efficiency argument is strongest against excise systems that include a number of articles regarded as luxuries. Price elasticity may be relatively high, especially if close substitutes are not taxed.

Avoidance of Tax on Production Inputs

The reasoning applied to excises on consumption goods does not apply to production inputs, except when the tax represents a payment for inputs (motor fuel charges for commercial vehicles), or the government deliberately seeks to alter factor input ratios. The principal example of the latter is a higher tax on machine-manufactured goods than on those produced by hand--as the cigarette tax structure in Indonesia, and textile taxation in some countries.

Apart from these special cases, a tax on production inputs will almost certainly cause a shifting in factor proportions away from optimal production efficiency. An obvious example is the taxation of freight transport provided by public carriers, which will lead business firms to haul goods in their own vehicles to avoid tax, and may affect location decisions.

The Special Cases of Motor Fuel and Related Taxes

As noted, taxes on motor vehicles can play a major role in financing road construction and maintenance on a rational basis, and in a developing country, improve the equity of the tax structure, since relatively few persons own cars. These levies can also yield the government substantial revenue.

Apart from annual license charges, which are not included in the coverage of excises, there are two principal levies for highway use, the tax on the initial sale of the vehicles (and possibly upon subsequent resale), and the motor fuel tax, plus possible supplementary excises such as on vehicle tires. It is relatively easy to administer an excise tax on the sale of motor vehicles, on an ad valorem basis, with control through the licensing system. If there is a strong desire to hold down the size of vehicles, the ad valorem rate can be graduated sharply according to weight or engine capacity, relatively objective measures. The second, and frequently the most important, is the excise on motor fuel, collected from the refinery or wholesale distributor. In theory, the level of the tax should be determined by the short run marginal cost of maintenance of the highways--but given the constant high continuing levels of spending on highways charging a substantially higher amount to cover a large portion of overall highway costs has merit. The tax would be collected, of course, on sales for use by both private and commercial vehicles. Specific rates can be justified on the argument that quantity consumed, not amount paid, is the appropriate measure of road use. But indexing of rates to offset inflation is imperative.

Since, in most developing countries, there is substantial income elasticity of demand for motor fuel, the tax structure can be made more acceptable from an equity standpoint by raising the levy on noncommercial use above that necessary to cover highway cost, the additional to be placed in the general fund rather than the highway fund.

One major issue, political and economic, is the appropriate relative burden on gasoline and diesel fuel. In terms of highway financing, the tax on diesel fuel should be higher, because for vehicles of a given weight, less diesel fuel is required per mile than gasoline. But if a portion of the levy is regarded as a regular tax and not as a charge for road use, application of a higher rate or the same rate on diesel fuel as on gasoline is scarcely justified. In fact, most countries apply a rate on diesel fuel so much lower than that on gasoline that the difference is greater than that necessary to eliminate the nonhighway tax element on gasoline. This often results in a burden entirely inadequate in terms of highway costs on the larger transport vehicles, which are primarily diesel. A major problem is to confine the heavy tax on diesel fuel to that used for highway purposes; there is no logic to applying a higher rate, or any rate to diesel fuel for nonhighway use (except perhaps to lessen imports of petroleum). But differentiating purchases for highway and nonhighway use is very difficult in a developing country, so serious that David Newbery and others recommend against seeking to tax diesel fuel, using instead high taxes on the sale of diesel vehicles.[11] Probably the only other workable solution is to tax all diesel fuel sales and allow application for refunds for nonhighway use. The same problem arises with gasoline except that only limited amounts are used for nonhighway purposes, mostly in agriculture.

One aspect of the issue relates to the relative burden on heavier vehicles, especially trucks (freight vehicles). Motor fuel consumption and thus motor fuel tax does not increase in proportion to the greater damage done to the roads by the larger vehicles. Yet any form of levy based upon weight and distance travelled is difficult to enforce; the only feasible solution is substantially higher annual license charges, though these are unrelated to mileage travelled.

While the motor fuel levy is a reasonable measure of road use and effect on road costs, it does not reflect congestion costs--the effect upon the costs of other vehicles through delay, discomfort, and accident hazard as additional cars use the roads and the latter become overcrowded, as they do in urban areas in many developing countries. The only solution to this problem, in the absence of tolls, is the requiring of special vehicle licenses for persons living in congested areas, although these are unrelated to actual usage. Tolls are the alternative; the problem is the cost of collection and the nuisance and delay issue. Of all developing country cities, only Singapore has developed a systematic program for restriction of congestion.

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[11]David M. Newbery, Road User Charges and the Taxation of Road Transport, IMF Working Paper WP/87/5, 1987.

While beyond the scope of this paper, it is well to point out that a major method of reducing automobile congestion is the provision of efficient inexpensive public transportation--typically by bus, though in larger metropolitan areas, by light rail or rapid transit systems. To hold fares down, such vehicles should be relatively free of highway-related excise.

The Importance of Uniform Treatment of Domestic and Imported Goods

Historically, as noted, in many countries, excises apply only to domestically produced goods. While compensating import duty increases or supplements were provided, many countries have not maintained a uniform relationship between tax on the imported and domestic goods. Not infrequently, a higher rate was applied to imported goods, thus adding to protection. The results have been alterations in the degree of protection provided, and deliberate use of the excise system to increase protection. The undesirable consequences are obvious. Haphazard differences between the taxes on domestic and imported goods make no sense. Deliberate use of the excise system to increase protection has the effect of confusing and concealing the actual amount of protection provided. If a country is to protect domestic industry, this should clearly be done by one levy--the customs duties--not two, customs and excise differentials. For both political and economic considerations, excises should apply equally to imported and domestic goods.

This rule is simple with specific rate levies. It is more complicated with ad valorem levies, because of problems of ensuring that the taxable price is the same for imported and domestic goods, the problem that also arises with sales taxes at the manufacturing level. The prices of domestic goods may reflect significant cost items not appearing in the prices of imported goods--costs of domestic distribution, advertising, warranty, etc. Ensuring complete equality is difficult, but the problem must be faced.

EVALUATION OF THE USE OF EXCISES

The justification for excises must be approached in terms of each of the major types, as the rationale and objections differ substantially.

The Traditional Levies

Perhaps the most significant case for the traditional excises is their ability to yield substantial revenue with relatively little popular complaint.[12] This reflects in part the low price elasticity of demand, in part the rather general consensus that they are more acceptable forms of taxes than others, especially income taxes. Beyond revenue, the strongest justification rests upon negative externalities; use of the commodities to excess results in costs to society not borne by the purchasers of the commodities. This is particularly true of alcoholic beverages, but of cigarettes as well, given the effects on lung cancer, not only of the smokers but of nonsmokers inhaling the smoke. The third, and perhaps oldest, argument is the desire to place a deliberate "penalty" upon use of these commodities--that their use contributes little to the welfare of society, and their purchase takes funds away from goods essential for health and well being. This view in part reflects the Victorian notion that use of the commodities is in a sense sinful, and in part the antagonism of Islamic countries to the use of alcohol.

These levies, however, are not without criticism. As noted, they tend to be regressive, because of the low income elasticity of demand and they tend to place a very unequal burden on families at given income levels. A widespread argument in some developing countries is that their primary effect is to deprive the families which use these commodities of funds for milk, and other items essential for health,while, it is argued, the taxes have little effect in reducing

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[12] A recent discussion is provided by Joseph Cordes, Eric Nicholson and Frank Sammartino, "Raising Revenues by Taxing Activities with Social Costs," National Tax Journal, 43 (Sept. 1990), pp. 343-57.

consumption of the taxed goods because of the low price elasticity. Some recent studies suggest that the price elasticity is not negligible.[13] The high rates tend to increase smuggling and illicit production, often of inferior and sometimes dangerous substitutes. But perhaps the most serious objection is that the case for these levies is not strong, resting as it does on moral judgments. But one certain rule is that use of these excises will continue--given their revenue yield and general acceptance.

Motor Fuel and Motor Vehicle Levies

As noted, the tax on motor fuel, and related motor vehicle levies, usually one of the three most productive excises, has strong justification as a charge for the use of roads, in lieu of tolls. Properly adjusted, the tax aids in attaining optimal expenditure on roads and optimal road use.

The other major argument, one dominant in western Europe, is that these levies are progressive, constituting an important supplement to the income tax in reaching persons on the basis of ability to pay, with incidental gains of lessening road congestion.

The only significant criticism centers around the problems of adjusting the complex of levies relating to motor vehicles to attain the desired goals in optimal fashion--particularly with regard to congestion, relative burdens on light and heavy vehicles, relative treatment of gasoline and diesel fuel, and tax treatment of diesel fuel for nonhighway use.

Luxury Excises

The third category of excises consists of those designed to reach persons in a progressive fashion, as an alternative to heavier reliance on income taxation. The aim is to select commodities and services with high income elasticity of demand. Thus equity is attained with

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[13] For example, the article by Christine Godfrey and Alan Maynard, Economic Aspects of Tobacco Use and Taxation Policy, University of York, Economic Reprint Series 401, 1988.

less reliance on income taxes, which are not only more difficult to enforce in a developing country, but may have greater adverse effects upon incentives. Since in earlier years of development most of these commodities and the inputs to make them are imported, the excises, by lessening use, will not only stimulate saving, but reduce the drain on foreign exchange as well. Compared to a sales tax, an excise system avoids burden on widely used commodities with a low income elasticity of demand, and is thus likely to be progressive, which a sales tax rarely is.

But the "luxury" excise systems as they exist leave a great deal to be desired, and reflect inherent difficulties noted in a previous section. Except for a few obvious items such as motor vehicles, information on income elasticities is not adequate to select on this basis. Thus typically the taxed items are selected on the basis of what the persons making up the list regard as "luxuries"--without any serious analysis. These are typically consumer durables. If the system as at all broad, the result is a relatively long list of essentially separate taxes, and in some countries a separate return must be filed for each excise. The result is serious complication of compliance and administration. A variety of rates if often used, with narrow differentials that defy logic. There may be, for example, rates of 8, 9, 10, 11, and 12 percent--with no possible rational explanation of the differences. Numerous interpretive questions are inevitable, as well as discrimination among consumers (and producers) of closely related commodities.

The final criticism is that the selection of various goods for tax, whereas others are not taxed, is discriminatory against those persons who have relatively high preference for the taxed items and can create excess burden. This argument is not significant for traditional or motor fuel excises; it is for the typical range of luxury excises. Furthermore, in the selection of items, not infrequently, ones are included that are either not consumption goods (e.g., cement),or are widely used in the lower income groups, sugar and kerosene being the prime examples. In some countries, kerosene is the principal fuel of the poor. Furthermore, the luxury excise systems are scarcely "systems" at all and do not automatically adapt to changing conditions. New products developed, though similar to ones now taxed, will not be brought within the tax network unless there is deliberate action by the government. Firms may change the nature of taxed items slightly, bringing them out from under the tax.

It is these considerations that have led the majority of developing, as well as industrialized countries, to introduce sales taxes, which reach all commodities with few rates or a single rate (there are exceptions) and thus include new products as they are introduced. Only a single return is required for all the commodities. There are far fewer interpretative questions abut whether a particular item is taxed or not, though there are some, centering around exemptions.

In summary, once a country has developed substantial domestic production beyond basic agricultural commodities and ones subject to traditional excises, there is great merit in moving to a sales tax rather than continuing to add excises. By this means all commodities plus selected services are included, both domestic and imported, and new ones are automatically included in the tax net. There are far fewer interpretative questions, particularly if the list of exemptions is minimized. Firms need only report total sales of all taxable items and account for tax on them; there is no need for separate returns for various commodities or itemizing sales by category of goods. The issue of the appropriate rate structure is beyond the scope of this paper, but at least a wide range of different rates can be avoided. There is no need for registering or licensing firms separately for a range of separate excises.

Typically when a country introduces a sales tax, it retains the traditional excises, the tax on motor fuel, and a special levy on sales of motor vehicles. There is merit if eliminating the remainder of the excises and not establishing new ones, unless there is very strong justification in particular instances. There is little evidence that a tax structure can be made more progressive by including excises on a number of so-called luxury goods, just as there is no evidence that the use of multiple rates under a sales tax improves progressivity. If a higher tax rate is desired on a few commodities, such as motor vehicles, it is likely preferable, from an operational standpoint. to reach them by a separate excise rather than by use of higher special rates in the sales tax.

In some countries, however, there is so little domestic manufacturing as to make a general sales tax scarcely worth the trouble. In others there are political obstacles to the introduction of a sales tax. Yet there is enough domestic production that some form of domestic indirect tax, beyond the traditional and motor fuel excises is warranted. As a second best temporary solution, some form of onsumption or purchase tax, as used in the Caribbean countries, may be warranted. But experience in the Caribbean, Egypt, and elsewhere suggests that such a levy must be designed with care, and even so is likely to be suitable only for a few years. Second best optimality requires that the group of reasonably homogenous commodities, as for example, consumer durables, be subject to a uniform rate, tax paid on the basis of a single return, rather than imposing a substantial number of separate levies on different commodities, at different rates. Motor vehicles constitute such an important and clearly definable commodity class that different rates, based on value or other measures, may be warranted, distinct from the general levy.

ADMINISTRATION OF EXCISE TAXES

When excises were introduced, assignment of them for administration was universally to Customs, since they were similar in nature in many respects to customs duties, even though they were collected on domestic transactions, and the department was frequently renamed Customs and Excise. As levies were ultimately imposed upon hotels, communication, transportation, and other services, administration of these new ones was sometimes assigned to Customs and Excise, sometimes to Inland Revenue, which administers the income tax, thus splitting responsibility for the various forms of domestic indirect taxes.

The administrative structures and procedures for excises originated with the traditional levies on alcoholic beverages and cigarettes; for these commodities the systems remain largely unchanged in developing countries. As additional commodities were subjected to excises, initially the same procedures were attempted. This proved to be unworkable, and thus simpler techniques have come to be used.

The Traditional Techniques

Because of the very high rates of the traditional excises, they were particularly subject to evasion, and thus very strict physical control was established, with "physical presence" of the enforcement agency.[14] There are several steps in the process:

1. Licensing. A firm seeking to produce alcoholic beverages or tobacco must register and apply for a license. Detailed information is required about the physical layout of the plant, bonded warehouses, operational procedures, etc. Some countries require annual renewal of the license.

2. Physical Control of Production. Frequently an excise officer is stationed in the plant at all times, or during working hours; in other instances the officer will make regular--often daily--visits to the plant. The officer will check the process of production, the entry of materials, etc., into the plant, and the output, testing the strength as well as the quantity. He will pay particular attention to all transfers of the product from the factory to the bonded warehouse or similar facility, and particularly to the transfer out of the bonded warehouse, the point at which

[14] In the United Stats, rigid controls were introduced in 1866 after an increase in the tax on distilled spirits caused the revenue to fall in half.

the excise becomes payable. No transfers can be made without observation by the officer. In some instances metering devices are now used to check output. The checking of strength is mainly designed to prevent adulteration.

3. Record Control. The direct physical control is supplemented by records control. The firms are required to record materials acquisitions, output, stock on hand, as well as details of the production process.

Shipments from the bonded warehouse must be accompanied by a consignment note giving details of the purchaser, etc., for each shipment, or for each day.

4. Payment and Returns. In some instances payment must be made whenever the commodity becomes subject to tax, that is, upon shipment from the bonded warehouse, and thus no arrears are possible (if the procedures are strictly followed). In other situations, payment of any unpaid amounts is made on a monthly basis. Returns giving detailed information on acquisitions of materials, output, transfers from bonded warehouses, etc. are required. These are checked against the records kept on a day-to-day basis, but there is typically no true audit.

The picture is complicated by the fact that some shipments from the bonded warehouses are exempt from tax: for export, for industrial nontaxable use, etc. Adequate documentation must be provided for these--but inevitably they provide some avenues of potential leakage. In industrialized countries there is some tendency to move away from primary reliance on physical controls, with emphasis on accounts types of controls,[15] but most developing countries are not yet ready for this change; the potential loss of revenue is too great.

Motor Fuel Taxation. Usually there is only one oil refinery in a developing country, or at most a few. Strict physical control is neither possible nor necessary. Returns are required, with information on acquisition of petroleum and sale of various petroleum products, and indication of sales and tax due, which must be paid with the filing of the return.

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[15]For a discussion of the issues, note the study, Alcohol and Tobacco Excise Taxes: Laws and Audits Need Modernizing, Report by Comptroller General of the United States, Washington, DC, 1977.

There is a potentially serious problem if diesel fuel sold for nonhighway use is exempted; as noted, a refund system may be necessary despite its complications.

Extended Excise Systems. As countries began to extend their excises to other products, initially they sought to use the same procedures as for the traditional excises. But rigid physical control proved to be impossible. With a number of different products, information on plant layout, etc., was difficult to develop, and was not significant in any event. Nothing equivalent to a bonded warehouse was possible. Tax must apply to sales, not to physical transfer. With a variety of products, tax almost of necessity must be based upon amount of sales, not upon physical unit. When some services were made taxable, clearly physical controls could not be used.

Accordingly, transition to accounts control was imperative. But there are frequently carryovers from the old systems. Many firms will be taxable on several types of products. They must register for each type of taxable product, with separate registration files. Payment is on the basis of returns filed monthly or at some other interval, but frequently firms must show both quantities and sales figures by type of commodity and name of purchaser. Fig. 1 shows a typical return, from Trinidad, under the old purchase tax system. The laws affecting various commodities may be different, with varying requirements. Thus firms are subject to unnecessary work, providing information of which little use is made, as few governments have systematic audit programs for their excises. Even the follow-up systems for ascertaining and pursuing nonfilers are usually inadequate.

The tendency of countries to shift from these broad excise systems to sales taxes eliminates these problems in larger measure. If a few luxury excises are retained, such as on motor vehicles, these can be administered separately from the sales tax or in conjunction with it; the complications are largely eliminated once most luxury excises are emerged into the sales tax.

CUSTOMS AND EXCISE DIVISION

TRINIDAD AND TOBAGO

C. & E.—P.T.—3A

PURCHASE TAX ASSESSMENT

(Act No. 13 of 1963)

Manufacturer's Name..

Address..

Batch No.

Rotation No. Invoice No.

Assessment No.

Receipt No.

	Description and Quantity of Goods			Unit for Purchase Tax	Value (*)	Tax	
	Description	Quantity	Unit			Rate	Amount
				TOTALS ..			

We do hereby declare that the within-mentioned chargeable goods represent the total quantity of all such goods which were sold, appropriated or applied and delivered by me

during the period of..

We further declare that the above quoted values represent the wholesale values required by Act 13/63.

Signature of Manufacturer..

Date..

....

Signature of Witness

I/We declare the above particulars to be true and correct.

....

for Comptroller of Customs and Excise

Dated this day of 19

....

Signature of Manufacturer or Authorised Agent

*Value is selling Price to First Purchaser

G.P., Tr./To.—

Table A1

DATA OF EXCISE REVENUE BY COUNTRY

Country	Continent	GNP/PC	Year of Data	IV Total Tax Revenues	5.2 Excise Tax Revenues	5.4 Taxes on Services	5.2 + 5.4	% of Total Tax Revenue
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Gabon	Africa	4700	1985	449.6	0	1.6	1.6	0.36%
Seychelles	Africa	3210	1989	770.8	0	0	0	0.00%
South Africa	Africa	1890	1987	39975	2920	4	2924	7.31%
Mauritius	Africa	1490	1990	7819	630	339	969	12.39%
Tunisia	Africa	1180	1989	2257.8	291	12	303	13.42%
Botswana	Africa	1050	1988	1307.66	0	0	0	0.00%
Cameroon	Africa	970	1989	570.99	49.65	3.11	52.76	9.24%
Cote d'Ivoire	Africa	740	1984	574474	36682	23238	59920	10.43%
Swaziland	Africa	700	1990	609.27	0	0.55	0.55	0.09%
Egypt, Arab Rep.	Africa	680	1988	11470	1984	51	2035	17.74%
Morocco	Africa	610	1987	33114	7507	242	7749	23.40%
Zimbabwe	Africa	580	1990	4637	416.6	13.1	429.7	9.27%
Senegal	Africa	520	1984	189.63	8.88	1.18	10.06	5.31%
Liberia	Africa	450	1988	203.8	23	1.8	24.8	12.17%
Ghana	Africa	390	1988	131199	27138	782	27920	21.28%
Nigeria	Africa	370	1987	6447.6	886.6	0	886.6	13.75%
Comoros	Africa	370	1987	5302.3	0	0	0	0.00%
Lesotho	Africa	370	1986	230946	5518	865	6383	2.76%
Kenya	Africa	330	1988	29176	2573	531	3104	10.64%
Benin	Africa	310	1979	29754	1903	86	1989	6.68%
Sierra Leone	Africa	300	1989	3578.9	696	9.2	705.2	19.70%
Togo	Africa	290	1987	81696	1220	481	1701	2.08%
Uganda	Africa	260	1986	2843.74	97.26	22.68	119.94	4.22%
Burundi	Africa	250	1981	10461	3206	0	3206	30.65%
Zambia	Africa	250	1988	4699.7	667.8	5.7	673.5	14.33%
Gambia, The	Africa	220	1990	433.84	0	2.2	2.2	0.51%
Mali	Africa	210	1988	73.4	12.1		12.1	16.49%
Burkina Faso	Africa	190	1987	68923	6682	407	7089	10.29%
Tanzania	Africa	180	1985	17197	0	34	34	0.20%
Malawi	Africa	160	1988	653.7	20.94	0	20.94	3.20%
Guinea-Bissau	Africa	160	1988	16240	5615		5615	34.58%
Zaire	Africa	150	1988	155720	5597		5597	3.59%
Ethiopia	Africa	130	1987	2098.2	409.3	nap	409.3	19.51%
Japan	Asia	15760	1988	49024	7114	96	7210	14.71%
Kuwait	Asia	14610	1989	84	0	0	0	0.00%
Australia	Asia	11100	1988	73707	10285	49	10334	14.02%
Singapore	Asia	7940	1988	7519	544	430	974	12.95%
New Zealand	Asia	7750	1990	30341	2381	85	2466	8.13%
Israel	Asia	6800	1989	29420.6	840.7		840.7	2.86%
Oman	Asia	5810	1989	312.4	0	0	0	0.00%
Korea, Rep.	Asia	2690	1990	23262	2778	281	3059	13.15%
Malaysia	Asia	1810	1990	20088	2044	0	2044	10.18%
Syrian Arab Rep.	Asia	1640	1987	19028	0	0	0	0.00%
Fiji	Asia	1570	1988	300.74	38.87	9.9	48.77	16.22%
Jordan	Asia	1560	1988	321.99	61.17		61.17	19.00%
Thailand	Asia	850	1989	289284	70655	0	70655	24.42%
Papua New Guinea	Asia	700	1988	572.61	66.85	0.11	66.96	11.69%

Country	Continent	GNP/PC	Year of Data	IV Total Tax Revenues	5.2 Excise Tax Revenues	5.4 Taxes on Services	5.2 + 5.4	% of Total Tax Revenue
Yemen Arab Reb.	Asia	590	1990	11740.4	2302.5	4.1	2306.6	19.65%
Philippines	Asia	590	1988	90349	19597	3571	23168	25.64%
Indonesia	Asia	450	1988	21436	1390		1390	6.48%
Solomon Islands	Asia	420	1988	72.76	0.53	0	0.53	0.73%
Sri Lanka	Asia	400	1990	55920	7780	0	7780	13.91%
Pakistan	Asia	350	1986	69323	25052	0	25052	36.14%
India	Asia	300	1989	508.76	228.8	0.39	229.19	45.05%
Maldives	Asia	300	1989	271.8	0	84	84	30.91%
Nepal	Asia	160	1990	7235.6	1045.2	249.6	1294.8	17.89%
Bangladesh	Asia	160	1988	43274	11667	0	11667	26.96%
Switzerland	Europe	21330	1988	54264	1627	211	1838	3.39%
Luxembourg	Europe	18550	1988	111622	11237	792	12029	10.78%
Norway	Europe	17190	1989	218603	35338	1572	36910	16.88%
Iceland	Europe	16600	1987	46295.6	2762.2	199.1	2961.3	6.40%
Sweden	Europe	15550	1989	458.45	50.83	1.99	52.82	11.52%
Denmark	Europe	14930	1989	266164	32139	1564	33703	12.66%
Finland	Europe	14470	1988	125777	19596	44	19640	15.61%
Germany, Fed. Rep.	Europe	14400	1989	618.92	56.82	4.19	61.01	9.86%
France	Europe	12790	1989	2318.3	153.4	47.4	200.8	8.66%
Austria	Europe	11980	1989	529.28	37.26	10.05	47.31	8.94%
Netherlands	Europe	11860	1989	209.82	11.52	0	11.52	5.49%
Belgium	Europe	11480	1988	2388.9	115.1	18.7	133.8	5.60%
United Kingdom	Europe	10420	1989	163917	21381	2915	24296	14.82%
Italy	Europe	10350	1989	436871	30407	5103	35510	8.13%
Ireland	Europe	6120	1988	8481	1447	112	1559	18.38%
Spain	Europe	6010	1987	10283.7	709.5	73.2	782.7	7.61%
Cyprus	Europe	5200	1989	510.54	77.4	8.92	86.32	16.91%
Malta	Europe	4190	1988	150.4	5.81	0.24	6.05	4.02%
Greece	Europe	4020	1985	1483.38	228.81	5.1	233.91	15.77%
Portugal	Europe	2830	1988	1945.7	308.1	78.5	386.6	19.87%
Turkey	Europe	1210	1989	25572.1	675.4	1299.9	1975.3	7.72%
United States	N & C America	18530	1989	963.16	26.36	6.48	32.84	3.41%
Canada	N & C America	15160	1989	115857	6775	931	7706	6.65%
Bahamas	N & C America	10280	1986	373.2	0	27.7	27.7	7.42%
Barbados	N & C America	5350	1988	959.8	5.3	38.4	43.7	4.55%
Trinidad & Tobago	N & C America	4210	1989	4072.6	397.7		397.7	9.77%
Panama	N & C America	2240	1988	817	79.1	8.3	87.4	10.70%
Mexico	N & C America	1830	1990	88965	8610	1410	10020	11.26%
St. Kitts & Nevis	N & C America	1700	1989	92.46	2.11	2.51	4.62	5.00%
Costa Rica	N & C America	1610	1989	89.21	7.57	0.39	7.96	8.92%
St. Lucia	N & C America	1400	1990	264	1	10.7	11.7	4.43%
Belize	N & C America	1240	1984	82593	7024	329	7353	8.90%
St. Vincent & the GrenadiN & C America		1000	1989	110.2	1.2	12	13.2	11.98%
Guatemala	N & C America	950	1989	1853.75	194.73	17.61	212.34	11.45%
Jamaica	N & C America	940	1984	2614.2	532.8	80.5	613.3	23.46%
El Salvador	N & C America	860	1989	2509.9	429.4	22	451.4	17.98%
Nicaragua	N & C America	830	1988	66121	25642	0	25642	38.78%
Dominican Rep.	N & C America	730	1988	4019.3	757.8	116.4	874.2	21.75%
Haiti	N & C America	360	1987	994.9	274.8	22.9	297.7	29.92%
Venezuela	S America	3230	1986	88853	9138	76	9214	10.37%
Argentina	S America	2390	1988	94110	15201	1371	16572	17.61%
Suriname	S America	2270	1986	375.19	24.54	4.53	29.07	7.75%

Country	Continent	GNP/PC	Year of Data	IV Total Tax Revenues	5.2 Excise Tax Revenues	5.4 Taxes on Services	5.2 + 5.4	% of Total Tax Revenue
Uruguay	S America	2190	1988	625674	87721	655	88376	14.12%
Brazil	S America	2020	1988	12704.3	2232.4	597.3	2829.7	22.27%
Peru	S America	1470	1989	7165	1935	111	2046	28.56%
Chile	S America	1310	1988	1164.77	122.54		122.54	10.52%
Colombia	S America	1240	1987	1005.6	59.6	2	61.6	6.13%
Ecuador	S America	1040	1988	398407	16470	962	17432	4.38%
Paraguay	S America	990	1988	281734	52131	2066	54197	19.24%
Bolivia	S America	580	1989	1019.2	190.1		190.1	18.65%
Guyana	S America	390	1985	807.6	52.4	7.3	59.7	7.39%

Source: International Monetary Fund, <u>Financial Statistics Yearbook</u>, 1990.

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